

Water Acquisition Group  
Proposed Approach to  
Scenarios for Modelling and Gaming  
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I propose that we develop our scenario in several steps as outlined below:

1. Inventory year 1 opportunities (Usable in the year 2000). Include operational constraints such as input, output, throughput, storage maxima, priorities w/r basic Project Operations, etc. Base upon No Name results and recent work by Walthall et al. A reasonable list (which still needs to be filled out w/r constraints) might be:
  - Interim South Delta Program – 8500 cfs.
  - Joint point of diversion (full, unlimited)
  - Kern Water Bank (? KAF)
  - Semitropic high priority
  - Semitropic low priority
  - General rescheduling, exchanges, and demand shifting
  - Water purchases and transfers (? KAF). (Maybe can be more specific – purchase from Kern, purchase from Yuba, etc.)
  - Variable pumping at Tracy Pumping Plant
  - Modification of E/I standard
  - Allow variances (by EWA) to AFRP in-Delta operations.
  
2. Inventory year 8 opportunities. Include operational constraints. Base upon No Name results.
  - Interim South Delta Program – 10,300 cfs.
  - Joint point of diversion (full, unlimited)
  - DMC/California Aqueduct physical intertie (possibly not needed if the first two measures occur)
  - Small enlargement of Shasta Dam by 6.5 feet (adding roughly 300 TAF of new storage)
  - 240 TAF of in-Delta storage (for the purpose of this analysis the Delta Wetlands Project was used; CALFED proposals for in-Delta storage could also be considered)
  - Kern Water Bank
  - Semitropic high priority
  - Semitropic low priority
  - Additional groundwater storage?
  - Additional surface water storage?
  - Cross Valley Canal exchanges
  - General rescheduling, exchanges, and demand shifting
  - Southern California conjunctive use

- Water purchases and transfers. (Can we expand list?)
  - Variable pumping at Tracy Pumping Plant
  - Modification of E/I standard
  - Modification of other standards?
  - Allow variances (by EWA) to AFRP in-Delta operations.
  - Purchase water efficiency
3. For Year 1 and Year 8, develop specific scenarios to be used for modelling and gaming. Develop at least 1 scenario for each in which the projects control all new facilities and, in return, grant certain operational rights to the EWA (e.g., x cfs days of reductions per year). The scenarios must be at a level of detail sufficient for modelling and gaming. In some cases, we may wish to hardwire operational choices into the modelling. In other cases, we will want to leave operational decisions outside the models and deal with them by hand in the gaming. We must also generate operational rules adequate for the gaming (priorities for using facilities).

In practice, we will need to work closely with the bio team. If they go heavily prescriptive, then we will need to assign more supply benefits to the Projects. If they go heavily into real-time (e.g., meet AFRP in-Delta with EWA), then we must assign more assets to EWA.

As an example, for Year 1:

**Baseline for Modelling:** ACCORD + VAMP + AFRP UPSTREAM + AFRP IN-DELTA

Supplies and division of benefits:

- Interim South Delta Program – 8500 cfs. Controlled exclusively by Projects. Include in model
- Joint point of diversion (full, unlimited). Controlled exclusively by Projects. Include in model.
- Kern Water Bank (? KAF of high priority, refillable storage. Constraints = ?). Controlled by EWA. Do not include in model.
- Semitropic high priority (? KAF under contract with Santa Clara. Constraints = ?). Controlled by EWA. Do not include in model.
- Semitropic low priority (? KAF. Constraints = ?) Controlled by EWA. Do not include in model.
- General rescheduling, exchanges, and demand shifting. 100 KAF of options with MWD.) (probably couple to purchase option from Yuba to assure repayment). Controlled by EWA. Do not include in model.
- Water purchases and transfers (? KAF). How much? Quantify direct purchases, options and locations. Controlled by EWA.
- Variable pumping at Tracy Pumping Plant. None.
- Modification of E/I standard. Complete relaxation tied to annual contract for water generated by E/I relaxation + JPOD + South Delta improvements (+ Any

storage assigned to the Projects). Will require modelling to determine amount of water for contract. Include contract amount as new demand upon the Projects for modelling purposes. For first cut, deliver to San Luis each year in the fall in the model. Then manage by hand. For later cuts, need more sophisticated treatment (e.g., allow users to prepay this debt using empty environmental storage or by assigning Project storage to EWA. Also, delivery in fall not totally compatible with yield increase estimates, since Project demand assumed increased deliveries spread over the entire year).

- Allow variances (by EWA) to AFRP in-Delta operations. Controlled by EWA. Do not model, but does require modelled estimates of reduced pumping available through variances for each month as an output of the model.

#### Operational Priorities/ Protocols:

- EWA has rights to accrue debts only to the extent that it can assure no harm.
- EWA may transfer Project upstream storage to south of Delta storage, provided that it can assure no harm.
- EWA may use unused capacity in the Projects.
- Unless otherwise specified, EWA has the lowest priority for access to infrastructure.

#### Modelling and Gaming.

The model output will represent estimated Project deliveries and will provide the foundation for a gaming exercise.