

**BDCP MODELING FOR MODELERS MEETING**  
**CH2M HILL Offices**  
**2485 Natomas Park Drive**  
**Sacramento, CA**

**Meeting Minutes**

Date: Jun 18, 2010  
Time: 9:00 am-12:30pm

**I. Introduction**

- The modeling period is through 2060, which is the permitting period for the BDCP.
- The basecase and proposed project (the dual conveyance option) have been modeled. None of the other alternatives, the isolated facility or the separate corridors options, have been modeled.
- CALSIM, DSM 2, and DSM-PTM simulations have been completed for the basecase and the proposed project.
- The following six scenarios have been completed:
  - 1) No Action Alternative current: with current climate and sea level; also the current regulations are in place (current BO's apply)
  - 2) No Action Alternative 2025: 2025 climate change and sea level rise have been incorporated
  - 3) No Action Alternative 2060: 2060 climate change and sea level rise have been incorporated
  - 4) Proposed Project: current climate and sea level; current geometry apply; this scenario is the no action alternative with the dual conveyance option.
  - 5) Proposed Project 2025 (with early long-term actions): 2025 climate change and sea level rise; 25,000 acres of restoration near Cache slough and Suisun Marsh
  - 6) Proposed Project 2060 (with late long-term actions): 2060 climate change and sea level rise; 65,000 acres of restoration, expansive restoration near Cache slough, Suisun Marsh, and South Delta

**II. Climate Change**

- A quartile statistical approach was developed to simulate climate change scenarios.
- Five quartiles have been developed from 112 climate change projects.
- The center quartile will be used as the main climate change scenario.
- The other four quartiles will be used to conduct a sensitivity analysis.
- The climate change scenarios show a shift in the timing of the Sacramento Valley runoff. This is caused by a shift in precipitation patterns that will occur earlier. A reduction in the total volume of runoff occurs in high elevation rivers in the San Joaquin River Basin.

- The hydrology is modified in each climate change scenario but the operating standard of the facilities do not change.
- A sea level rise of 15cm occurs in 2025 and 45 cm in 2060.
- During the design of all the facilities of the BDCP a 140cm increase in sea level rise is assumed.
- The sea level rise caused a shift in the X2 line. A 0.5 -1 km shift inland will occur with a 15cm rise. A 2 -3 km shift inland will occur with a 45cm rise.

### III. General Modeling Issues

- No changes to land-use or levee configurations will occur.
- A sensitivity analysis will occur that examines different levee breach scenarios. This sensitivity analysis is based on the DREAMs work conducted by DWR. The analysis is assumes a Hayward Fault earthquake and 3-4 islands will fail. The levees will break instantaneously and this analysis will help determine if tidal marsh restorations will help mitigate damages. It is assumed that the conveyance tunnel does not fail during a seismic event.
- The North Delta Diversion operations were simulated on a daily basis in CALSIM then converted to a monthly volume. This would ensure that the daily variations were captured.
- North Delta Diversions guidelines are the same as the previous operating criteria received. However, the first 500cfs being diverted will be evenly distributed between all five intakes. Priority will be given to the upstream intakes once the diversion rate is greater than 500cfs.
- The flow criteria developed by the State Board will be distributed to the BDCP team after July.

### IV. Tidal Marsh Restoration

- The general locations of the tidal marsh restoration sites are currently known.
- A sensitivity analysis will be completed with respect to location and conveyance locations. This sensitivity analysis is on-going.
- McCormack Williamson tract is going be restored and there is a very high probability that Cache Slough will be restored.
- The DSM2 dispersion coefficients were not changed when the tidal marshes were added.

### V. Modeling Results – Flow Reversals

- A decrease in the frequency of reverse flow event occurs north of Sutter and Steamboat slough with the addition of the proposed project and tidal restoration sites. This is caused due to the addition of the tidal-marsh restoration in the Cache Slough and Suisun Marsh area.

- When the no action alternative is compared to the proposed project, with no tidal marsh restoration, then there is a slight increase in the number of reverse flow event at Freeport.
- These modeling results haven't been finalized and are not currently available to the public.
- There is little change in the North Delta mean stage except at higher water levels.
- No fish barriers are present in the proposed project. The current barriers exist in the no action alternative.