

## **Status of Suisun Marsh Planning Participation in the IEP Delta Model Project Work Team**

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### Background

A new one-dimensional Delta hydrodynamics and water quality model (DSM2) has been developed by the DWR Delta Modeling Section. An IEP PWT was formed to facilitate consensus building and direct participation by the Bay-Delta modeling community in calibration, verification, and application of the model. Based on the calibration results and limitations of the 1-dimensional model formulation, the PWT will determine error characteristics of the model in various modes of application. The final report from the PWT will document the calibration, and comment on the efficacy of the model for planning various IEP and CALFED actions and water operations.

### Suisun Marsh Planning Involvement

Suisun Marsh Planning has dedicated one to two staff persons effort to the activities of the PWT over the past year. Our goal is to carry out the PWT's mission by facilitating open and efficient daily participation by all PWT members in calibration of the model. We are also coordinating our efforts with the Delta Modeling Section of DWR.

### Completed Work

- Revised/updated the DSM2 geometry based on all available bathymetry data.
- Geo-referenced and digitized changes to the DSM2 grid map reflecting improvements in the grid based on new bathymetry data.
- Improved the bathymetry data viewer tool (CSDP).
- Developed automatic graphical tools and goodness-of-fit measures for rapid display and efficient analysis of complex and extensive calibration run output.
- Organized and facilitated general and sub-committee PWT meetings.

### Work in Progress

- Preparing hydrodynamic module input files for four calibration periods in May 1988, January 1993, May 1994, and April/May 1997.
- Preparing run control preprocessors for rapid input manipulation and documentation.
- Developing a feature that allows the user to select model cross-section detail in order to find a proper balance between accuracy and computation time.
- Preparing digital filter and running average postprocessors to ensure accurate spring-neap water level simulation.
- Preparing a web site for daily updates of calibration progress.

### PWT Work Plan

The PWT met in July 1998 and agreed to pursue two tasks prior to beginning the calibration. One is development of calibration protocols which are represented by the work Suisun Marsh Planning is contributing as discussed above. The second is an examination of the sensitivity of the model to various input parameters and the resolution of the geometry description in the model. The next meeting of the PWT in early October 1998 will address the sensitivity issues.

### DSM2 Calibration Time-Frame

We expect the calibration to begin in November 1998. Interested members of the PWT can participate on a daily basis by examining calibration results via the web site. After the team agrees on the next calibration step, Suisun Marsh Planning staff will carry out the decision for the next model run, and update the web site with the results.

Based on experience with other Delta model calibrations, the hydrodynamics calibration will require about 6 months to complete. In parallel with the hydrodynamics calibration, protocols for calibration of the water quality module will be prepared, again by Suisun Marsh Planning staff in consultation with the PWT. Calibration of the water quality module will commence before the hydrodynamics module is completed, and will likely require another 6 months to finish. The PWT will then collaborate on a final report to IEP management which documents the calibration, provides error characteristics, and describes the efficacy of the model for various modes and time-scales of analysis. The final report will be released by the end of 1999.