

## DSM2 Bay-Delta Tutorial 4: Planning Simulation

**Purpose:** The goal of this tutorial is to learn to preprocess and launch a Bay-Delta planning simulation using CalSim Output as the basis for flow inputs.

The CalSim study we will use is the `ocap_2005A01A_EWA2_71_novamp_DV.dss` provided in the tutorials/data directory. We will prepare and launch the run using both temporary barriers and permanent barriers configurations (SDIP: South Delta Improvements Program).

### Preparation

We will begin by creating a study space to house the planning study.

#### 1. Copy the study template:

- a. In windows, navigate to `\{DSM2_home\}\study_templates`. Copy the `ocap_sdip` template to `\{DSM2_home\}\tutorial\ocap_sdip`. Copy the `ocap_temp_barrier` template to `\{DSM2_home\}\tutorial\ocap_temp_barrier`
- b. In each new study folder, create a directory called “output” if there is not such a folder there already.
- c. Copy the file `ocap_2005A01A_EWA2_71_novamp_DV.dss` from `\{DSM2_home\}\timeseries` to `\{DSM2_home\}\tutorial\data\calsim`. Note that we just put this file in timeseries as a sample – in practice CalSim output will be exterior to the DSM2 distribution (or will be in the study folder).

#### 2. Preprocess for sdip and temp\_barriers:

- a. Navigate to the sdip study directory and open `config_sdip_ocap_71.inp`.
- b. Make sure that the run dates are set to the full 1974-1991 sixteen year planning period. It is a good idea to preprocess the full period even if you want to run a subset of these dates.
- c. Set the DSM2MODIFIER to `ocap_sdip_tutorial`.
- d. Make sure that the DICU version in the configuration file is 2020, representing a future (2020) level of development.
- e. Makes sure the STAGE\_VERSION in the configuration file is PLANNING-2-SL.

- f. Make sure the configuration file is pointing to the right data. Open `config_temp_barriers`. Make sure that it is pointing to the right directory, file and DSS path to find the CalSim results. In this case, set:
  - 1) CALSIMNAME to `ocap_2005A01A_EWA2_71_novamp_DV` (CalSim output file without the “.dss” extension)
  - 2) CALSIMSTUDY\_ORIGINAL to `2005A01A`
  - 3) CALSIMDIR to `../data/calsim`
- g. Save your data
- h. Launch the preprocessing system. Obtain a command prompt and type:
 

```
> prepro config_sdip.inp
```
- i. Repeat the steps above for the temporary barriers directory and the configuration file `config_ocap_temp_barriers.inp`! Make sure that the dates span the full 1974-1991 period and repeat the checks (d) and (e) for the temporary barrier configuration file.
- j. Set the DSM2MODIFIER to `ocap_temp_barrier_tutorial`.
- k. Launch the preprocessor with the command:
 

```
> prepro config_temp_barriers.inp
```

### 3. Run DSM2:

- a. In Windows Explorer, navigate to the directory,
 

```
{DSM2_home}\tutorial\ocap_temp_barrier
```
- a. Open the launch files `hydro.inp` and `qual.inp`.
- b. Set the dates to a shorter period, say 1974-1976, so that the run will take reasonable time for the tutorial. Note that we always preprocess the full period even when we attempt to shorten the run.
- c. Run the sdip simulation, for hydro and qual by typing:
 

```
> hydro hydro.inp
```

```
> qual qual.inp
```
- d. Follow these steps (a-c) and run the temporary barrier simulation, for hydro and qual.

#### **4. Examine the output:**

- e. The temporary barriers and permanent barriers protect water levels in the South Delta in very different ways. Compare the output at ROLD059, Old River at Tracy Blvd for your two runs to see the differences.