

**To: WSAC**  
**From: Rick Longinotti**  
**Re: Shortfall numbers for simplified Scenarios**

At its October meeting, the WSAC charged me with coming up with some worst-case drought shortfall amounts for future scenarios. I chose two scenarios that are significantly different in the amount of supply shortfall during a worst-case drought.

The shortfall amounts that I am submitting for the scenarios are the following:

1. 1977 stream flows; significant reduction in demand = 0 shortfall
2. 3<sup>rd</sup> drought year; minimal reduction in demand = 1 billion gallons shortfall

Both scenarios assume DFG-5 fish flows.

*Note about Scenario #1: If demand in 2035 is significantly lower than current demand (2012-2013 average), there would be ample water in the reservoir to meet demand in the second drought year (1977-type year). There are a number of ways that this lower demand could be achieved. See the appendix to this memo if you would like to see one example.*

*Note about Scenario #2: Assume that a drought equivalent to 1976 and 1977 is followed by a third critically dry year in which yield from river and streams is 20% below that of 1977. Assume that demand in 2035 is slightly lower than current demand (2012-13 average).*

### **Suggestions for Research**

The exercise in future scenarios has brought to light some areas of needed research.

1. How can the Confluence Model be modified to account for City action to reduce demand during drought years? Currently the Model assumes that normal demand will be completely met without any sort of curtailment --- even in a record dry year. The result of this assumption is that the Model is limited in its ability to depict real-life shortfalls during multiple drought years.
2. Will the Model be updated in time for WSAC consideration? As the DFG-5 spreadsheet from Gary Fiske states, the DFG spreadsheet was developed for the Draft EIR for the desal project in 2013. Calif Dept. of Fish and Wildlife had some suggestions for updating the Model in their comment on the DEIR. City staff are now working on updating stream flow data that will be entered into the DFG-model.
3. Does the Model include any assumptions regarding the current practice of recharge of the reservoir via Felton Diversion?

Accompanying this memo are the following documents

- The Excel document that Rosemary sent me that depicts Confluence Model results, *DFG-5 DEIR Mod Assump Prod & Lake Levels*, depicting the worst-case year under the DFG-5 flow regime.

## Agenda Item 8a

- Sue Holt's submission to the WSAC, "Rate Increases Strengthen Water Savings"

**Appendix:** Example of how demand in 2035 could be significantly lower than current demand:

Demand in 2035 can be derived as follows:

- Update the baseline (For existing demand use the average of 2012/2013 rather than previous estimates of what demand would currently be.)
- Add the growth in demand by 2030 projected by the City's *Water Supply Assessment* (2011) for the General Plan
- Subtract the amount of water saved through adoption of the Master Conservation Plan & Ca. Building Code; the LAFCO water-neutral requirement for UCSC growth; and the water saved as a result of the current price increase of 61% over 5 years.