

Comments from Harald Frederiksen [haralddf@comcast.net] on 2/13/2013 SWAN workshop. Harald is an independent consultant and SWAN advisor.

Dear Rich –

2/14/13

It was an interesting workshop. The information confirmed that the approaches discussed last year have been adopted for the 2013 Update. Based on what was presented, some comments and suggestions are offered.

1. Early on, one screen listed various areas of actions to free-up water with five or so levels of attention. One called for ‘aggressively addressing irrigation efficiencies’ at four levels. It is suggested that this ‘myth’ be addressed once and for all. Copies of the staff report of CIT Fresno State University, *Agricultural Water Use in California’ a 2011 Update* (first published 10 years ago by UC Davis) should be provided to the Rand and MWH WEAP model and the regional basin Organizations perhaps supported by a presentation by one of the authors. This would also help the modelers better understand the practice of irrigation and the assumptions and level of detail required to adequately simulate this activity.

2. The WEAP model has some built-in features that limit its usefulness. One-month steps for evaluating irrigations cannot describe the changing irrigation water consumption during a month nor the peak demands on the system. Similarly, the temperature increments vs. elevation will be of very limited use for evaluating water management options.

The estimate of crop water demand to determine the routing of water in the rivers does not simulate reality. Whatever water is available in a season is routed in accordance with the magnitude and priority of the irrigation districts’ water rights that divert from the source. Historical river-flow data reflecting diversions under various climate conditions and time of the year for the river would be a better basis for evaluating anticipated future supply / demand conditions.

It also would seem to give more confidence for regional plans in the Central Valley to use the USGS wealth of data and its model tailored to the Central valley as a check – or isn’t it functioning?

3. Given the 2050 time horizon for the Update, it would seem essential to reflect other factors that will come in to play during this period in addition to those already chosen. Some will alter cropping and others will reduce the need to curtail irrigation which now appears to be the only action applied in the Rand studies to meet the 2050 CV demands.

These additional factors and their ramifications should be included within the current study that would help engage the public and political leaders. It’s difficult to imagine that agriculture with its impact on California and the Central Valley will be sacrificed before these factors are adopted. The additional factors include;

a. Global food demand with the rapidly escalating prices will continue to grow coupled with adverse regional climatic conditions. The demand of the international markets will alter the traditional blend of crops in many countries. The long-term 'Land Grab's in Sub Sahara Africa, SE Asia and several other regions by China, the Gulf states, the Middle East North Africa (MENA) and Korea already exceed 200 million acres -- and all production will be taken back to the country to meet domestic needs, removing these quantities from the local and world markets.

b. Desalination, particularly for urbanized areas and heavy industries, is common in many countries as costs have dropped and water supplies diminish. A plant now being developed by a Saudi government agency scheduled for completion in 2018, will have the capacity to pump 600,000 cubic meters (158 million gallons) of desalinated water a day. Saudi Arabia has several other plants on both of its coasts to meet demands of the urban areas and their huge petrochemical industry -- among the world's largest. Israel has some along its coast.

c. The historic requirement to treat effluent from cities along rivers sufficiently for reuse by downstream urban centers will be imposed on the coastal cities and metropolitan areas. This new source should be expanded in the immediate future.

A side question –

Will the CV water supply and demand be altered significantly when 'fracking' is introduced to facilitate the expansion of the oil production in the Tulare and SW JR basin?

Thanks and regards

Harald

Conference: DWR Feb 13 SWAN Workshop Update 2013 presentation on analytical tools and methods for evaluating potential changes affecting water management through 2050/ with focus on Sacramento Basin, San Joaquin Basin and Tulare Lake.