

California Water Plan Update 2009
Notes from Desalination (Brackish & Seawater) Management Strategy Workshop
July 7th, 2008

Written comments on the Desalination Strategy due by August 11th
to author Brian Smith, besmith@water.ca.gov

General Comments

- How is this being integrated into IRWM
- How do we manage the calculation of outcomes?
- Conjunctive use needs to be considered

I. Desalination in California

- Make it very clear up front how desalination is different from other strategies – drinking water quality, recycled water, groundwater aquifer and recharge, and matching water quality to use
 - Lew Moeller to assist with this
- Desalination versus recycling. Clarify: at what point does desalination become recycling?
 - is desalination new water?
 - can provide net water improvement – not just new supply, but maintain current supply (which is better than losing supply)
- Provide more context on industrial use, and why these plants are not included in this strategy
 - how is this linked to municipal use?
 - explain what a “baseload” plant is, and the differences in intent, flexibility, and operations of different plant types
- Data gap discrepancy over number of desalination plants in CA
 - What constitutes a new plant? At what point is plant expansion considered to be a new plant
 - **Sharif Choudhury to follow up with Brian Smith**
- Recommended to look into a UC Santa Cruz desalination project in Monterey
- Suggested a need for plant permit tracking in terms of volume and trend
 - Difficult to track permits and construction – many competing development plans
- Add region specific table of costs including example plants from each of the three geographic regions in CA
 - add “acre-feet” to the volume, and the assumption of online time (90%)
- Add table including all plants in CA as 3 page appendix

II. Potential Benefits of Desalination

- Placement of “Potential Benefits of Desalination” header error. It is in the middle of section I and needs to be moved down

- Is desalinated water considered a *new water supply* or *improved water quality*? This issue can lead to the counting of water sources multiple times.
- Another possible benefit to include is the comparatively short amount of time it takes to have a desalination plant up and running. Ex- Santa Barbara
- Compare cost of desalination Current vs. Old cost, need numerical facts to back this up. It is said that the desalination process is becoming less expensive as membranes and technology become more efficient and cheaper.
- Point out how this strategy may help us maintain our current water supply
- Table #1: should explain that plant capacity has increased
- Data gap. An expressed need for:
 - Potential brackish water available for desalination in CA? What about blended water, or water quality improvement more generally?
 - Potential contribution of usable water from desalination to the state of CA?
 - Concern is that these numbers are extremely difficult to predict and involve too many factors

III. Potential Costs of Desalination

- Remove wastewater from table #2 (may have been left over from previous draft)
- Expand and add paragraph to draft speaking to the break down of costs within sea water desalination plants

IV. Major Issues Facing Desalination

- Create two sections one for brackish and one for ocean water to eliminate confusion
- Fundamental Challenge: Desalination plants are extremely site specific. Cost is extremely hard to generalize or predict

Carbon Footprint:

- **An electricity nexus will be included in all the Resource Management Strategies**
- Need to consider increasing cost of electricity. Add a projection of future electricity costs.
 - a. Sharif can help with this section
- Consider the impact of climate change at large, particularly the changing topography of the coastline with sea level rise, and how this will affect ocean plants
- Alternative energy sources (ex- Wind powered desalination plant in Australia) need consideration
- Poseidon decision could be examined for how it reduces its carbon footprint

a. **Scott Maloni to follow up with Brian Smith**

Energy Use:

- projections of increased energy costs noted as important to economic analyses of desalination
 - a. Sharif to follow-up with information on this
 - b. material and construction costs also noted as important
- the potential for using green energy to fuel desalination plants was noted, along with the challenge of storing these kinds of energy
- in terms of policy, will need to consider if using conserved or alternative energy for desalination is the best end use of this energy – this is linked to AB32 and climate change mitigation
- Change “33MW of power” to a range based on suggestion of Sharif 20,000-35,000 MW – there will always be some variation, and it was recommended to always use a range when giving estimates

Seawater Intakes:

- need for integration with salt management Resource Management Strategy

V. Recommendations to Facilitate Desalination in California

- Clearly define all terms used and use data ranges
 - Need a glossary of all technical terms
 - Need clarification of assumptions – for example, the costs of a plant ending at its boundary, or including distribution?
 - Many terms are being used interchangeably:
 - Seawater and ocean water
 - Brackish and groundwater
 - Urban and municipal
 - Possible action item for Betty Yee to follow up with a recommendation for word usage
- data gaps exist – especially for brackish water
- need to consider adaptation to climate change in design and siting of plants – the coastline, sea level rise, and ocean and wave energy
- need to integrate this strategy with the salt management strategy
- the energy and carbon nexus needs consideration – not just costs, but climate change
- desalination and discharge issues need to be included in Integrated Regional Water Management plans, which should involve the different permitting agencies
- add to benefits: rapid deployment possibility
- add the linkage between this strategy and conjunctive use
- compare increase cost effectiveness to the past
- create a table that shows different plants by region

List of Attendees

In-Room:

Evon Chambers, PCL
Rebecca Kanegawa, MWH
Dean Ruiz, South Delta Water Agency
Reyna Yagi, PCL

On-Phone:

Sharif Choudhury, CEC
J. Marcell Hall
Eugene Leung
Kevin Kashi, City of Oakland
Betsy Lichti, DPH
Scott Maloni, Poseidon Resources
Julie Moore, DSA
Leighanne Reeser

Jack Sullivan, League of Women Voters
Betty Yee, Central Valley RWQCB

DWR and Facilitation Staff

Lisa Beutler, CCP
Charlotte Chorneau, CCP
Megan Fidell, DWR
Dorian Fougères, CCP
Kamyar Guivetchi, DWR
Jennifer Kofoid, DWR
Ray Hoagland, DWR
Lew Moeller, DWR
Thang (Vic) Nguyen, DWR
Brian Smith, DWR
Shenoun Wu, DWR