

Memorandum

To: Santa Cruz Water Supply Advisory Committee
From: Bob Raucher, Colleen Donovan, Stratus Consulting Inc.
Date: 2/4/2015
Subject: An update on enrichment opportunities

In this memorandum we present past, planned, and possible additional enrichment opportunities to share with the Santa Cruz Water Supply Advisory Committee (WSAC). There has been broad interest in offering a series of supplemental “enrichment” presentation/discussions because there are so many technical analysis issues for WSAC to consider within the context of its deliberations, and there is limited time available for such presentations and discussions within the constraints and other priorities associated with formal WSAC meetings. Most of the items listed below have been suggested by WSAC members, and others have emerged from the Water Department or Technical Team. And, we are open to additional suggestions or requested priorities.

There are several options for how we can organize these enrichment presentations: immediately preceding the formal WSAC meetings, or the evening prior to a formal WSAC meeting (such as the upcoming February 11 session), and/or at other times and venues as convenient for Committee members. We also could investigate whether these might also be offered as on-line Webinars that can be recorded for viewing at any time.

Below is the list of what enrichment opportunities have already occurred. In addition, there have been a series of technical presentations provided within the context of the Modeling and Forecasting Working Group, through the series of their Wednesday evening sessions (including presentations by Toby Goddard and Dave Mitchell related to water demand, Shawn Chartrand on flow modeling, Gary Fiske on the Confluence model, and Bill and Lisa Maddaus on demand forecasting and conservation program evaluation using their DSS modeling tool). These have covered some of the topics for which interest had been expressed.

Below is the list of what enrichment opportunities have already occurred.

Table 1. Enrichment opportunities that have already occurred

Enrichment topic	Presenter	Date presented
1. Water rights 101, as relates to Santa Cruz water-rights issues.	Martha Lennihan	November 21, 2014
2. Aquifer/hydrology/hydrogeology 101, as relates to Santa Cruz aquifers	Mike Cloud	November 19, 2014

Below is a list of what is currently scheduled or anticipated.

Table 2. Enrichment opportunities that are currently scheduled or anticipated

Enrichment topic	Presenter	Date of presentation
1. Water supply and the local economy	David Mitchell	February 11, 2015
2. Conservation measures that go beyond building code	John Rosenblum	February 11, 2015
3. Panel on regional water exchanges	John Ricker and staff from Soquel Creek and Scotts Valley (Piret Harmon, Kim Adamson)	March 18, 2015 (not formally scheduled)
4. Local aquifers and recharge/recovery issues	Pueblo Water Resources	Around the time of the April WSAC meeting (likely, but not formalized)
5. Panel on climate change & local watershed impacts	Bruce Daniels, Shawn Chartrand, and possibly Joel Smith	Around the time of the April WSAC meeting (tentative)

Below is a list of other possible enrichment topics for which interest has been expressed (not necessarily in order of importance or level of interest):

1. **History of water treatment technology and where we are headed**

Some topics could include: membranes, UV and ozone today, whether forward osmosis is a viable option in the near future, and decentralized systems. There are at least two variations on this theme, as described below.

Desal technology. A WSAC presentation on desal technology (including a glimpse at the concept and viability of forward osmosis), examples of technology applications, including capital and operating costs, energy footprint, energy offset strategy, life cycle cost analysis, and environmental issues.

Potential Presenter: Rhodes Trussell, possibly joined by Brown & Caldwell.

Decentralized approaches: A look at some emerging thinking on the viability and value of more decentralized water and/or wastewater management approaches.

Potential Presenter: David Sedlak (UCB, Water 4.0). We are trying to see if we can schedule conveniently for WSAC, and also arrange a viable way for Sedlak to get oriented to the Santa Cruz context so his discussion can be better tailored to the local situation.

2. **Panel on water reuse: regulatory, public health, and technology overview**

To provide more context before the enrichment presentation, we might first distribute various materials, including a white paper on regulatory developments and public health implications of indirect potable reuse (IPR) and direct potable reuse (DPR), and on technologies for IPR and DPR, including status of deployment or planned deployment of such technologies. Some topics could include water quality, regulatory development, and public health perspectives.

Potential Panelists: Brian Ramaley (IRP), Rhodes Trussell (and/or George Tchobanoglous), Bob Holmquist (SWQCB, retired).

3. Life Lessons” panel from the IRP on water-supply challenges they’ve faced and solved

Presenters: IRP members.

4. Carbon footprint. What is a carbon footprint, how is one developed, and how can WSAC use this information?

Potential Presenter: John Rosenblum.

5. Climate change impact on water demands

Potential Presenter: Jack Keifer (Hazen and Sawyer), others (see overlap with item 8).

6. Revenue gaps and the rate impacts of reduced water consumption

In recent years, water utilities have struggled to develop appropriate pricing structures to allow for sufficient financial reserves for maintenance and growth and also promote conservation of water resources.

Potential Presenter: David Mitchell, or Bob Raucher, or possibly someone from Raftelis.

7. Perspectives on and details regarding historical growth, future growth, economic drivers, etc.

Potential Presenters: Juliana Rebagliati, Bill Tysseling.

8. Future demand forecasts for Santa Cruz

This could include (1) a discussion about future demand and the assumptions that go into growth projections, (2) a presentation by Bill Maddaus on future demand per the Long Term Conservation Master Plan, (3) implications of climate change on supply and demand, and (4) implications of fish flow releases.

Potential presenters: Juliana Rebagliati (1), Bill Maddaus (2), Dr. Sarah Feakins (3), Dr. Heather Cooley (3), Chris Berry (4), and Jeff Hagar (4).

9. How to think about long-range future planning

Potential Presenters: Someone from IFTF.org (Dawn Alva), possibly Heather Cooley (Pacific Institute).

10. Addressing water quality challenges

Potential presenters: Brian Ramaley. Could be embedded in item 2.

11. Groundwater recharge

Potential presenters: Andy Fisher (perhaps coordinate with anticipated Pueblo Water Resources presentation that is anticipated in April?).

12. Watersheds and fisheries

Potential presenters: Donna Meyers.