

Water Supply Advisory Committee

Meeting March 18 and 20, 2015

Both sessions at the Fellowship Hall, Peace United Church of Christ

Meeting Summary

Use and Meaning of the Meeting Summary:

The Summaries of the Water Supply Advisory Committee are intended to be general summaries of key issues raised and discussed by participants at meetings. The presentation of issues or items discussed is not designed to be totally comprehensive, or reflect the breadth or depth of discussions. However, it is intended to capture the gist of conversations and conclusions.

Where a consensus or other agreement was reached, it will be so noted. Where ideas or comments are from only one or several participants, or where a brainstormed list is presented the content of which was not agreed to by all Committee Members, the facilitators will to the best of their abilities note these qualifiers. Where the facilitators believe that the insertion of additional information would be useful to the group they insert it in this summary and indicate that the insertion comes from them, rather than from the Committee.

An early draft of this summary is sent to Committee Members so that they may provide comments to the facilitators and permit the preparation of a more reliable Presentation Draft for review at the Committee's next meeting. If the Members' comments conflict with each other the facilitators do their best to resolve the conflict in the Presentation Draft. When Members raise comments about the meeting Summaries, or make other suggestions or comments following meetings that propose changes that are more than "corrections" to the Summaries, the facilitators add these in a section at the end of the item or at the end of the meeting Summary captioned "Post Script".

This meeting consisted of two daily sessions. The first lasted 4½ hours, the second lasted 4 hours. Here is a list of the Members of the Committee. All Members attended both sessions except as specified.

David Green Baskin, Dana Jacobson (absent from second session), Charlie Keutmann, Sue Holt, Rick Longinotti, Sarah Mansergh, Rosemary Menard, Mark

Mesiti-Miller, Mike Rotkin (absent from both sessions), Sid Slatter, Erica Stanojevic, Doug Engfer, Peter Beckmann, Greg Pepping, David Stearns.

First Session, Wednesday March 18

Public comment

There was public comment including the following:

- Recommendations that certain Alternatives be put on a fast track for evaluation and implementation
- Enquiry about the size of the demand/supply gap
- Enquiry about who is in charge of negotiating water transfers with other agencies
- Recommendation about off-stream storage
- Concerns about water re-use
- Recommendation about water transfers from SqCWD to GHWTP
- Concern that the grouping of Consolidated Alternatives into Portfolios will make rating of those CAs less effective

Committee Member updates

Members reported that

- Desal Alternatives is considering the benefits of water pricing and the PAYS system.
- The Sierra Club is discussing the progress of the Committee at its meetings
- The Water Commission has discussed the significance of integrating the fees for sewer service with water fees to strengthen the economic signal of higher water prices
- The Santa Cruz Chamber of Commerce met recently with Desal Alternatives to discuss the work of the Committee

Another Member reported on the continued active interest among residents of Live Oak in the Committee's work.

Agenda review

Nicholas Dewar reviewed the meeting's agenda with the Committee. The Committee discussed the reasons provided by Rosemary Menard for the omission from the Agenda of a progress report from the technical consultants. The Committee agreed by consensus to insert questions about various aspects of the technical work into the agenda of the second session on Friday afternoon. The Committee agreed by consensus to accept the agenda as amended. The Flow Agenda and the Official Agenda can be downloaded from the list of documents at [this link](#) and [this link](#).

Consolidated Alternatives

Bill Faisst and Bob Raucher led a discussion of the Consolidated Alternatives and the Technical Sheets prepared for each of them. The materials distributed in advance of the meeting can be downloaded at [this link](#). The material presented at the meeting can be downloaded at the following links:

[Link to Presentation: Consolidated Alternatives](#)

[Link to 4b Alts. Master List for Comparison](#)

[Link to 4c Pt. 1/5 Copy of Alts. Summary Table Demand Side Alts](#)

[Link to 4c Pt. 2/5 CA-7 CA-14 & CA-15 \(Desal\) Draft Summaries](#)

[Link to 4c Pt. 3/5 CA-08 CA-17 & CA-19 \(Possible Storage\) Draft Summaries](#)

[Link to 4c Pt. 4/5 CA-09 CA-16 & CA-18 \(Increase Storage\) Draft Summaries](#)

[Link to 4c Pt. 5/5 CA-10 CA-11 CA-12 & CA-13 \(Recycled Water\) Draft Summaries](#)

The Committee provided the following questions and direction to the Technical Team to guide its work in the further development of Consolidated Alternatives:

- Make all assumptions clear
- Revise summary templates as follows:
 - Make demand templates more similar to supply templates

- For demand and supply add ramp-up times, implementation times, and discounted benefits (based on water yields)
- Develop a uniform approach to discounting to present values
- Cost parameters
 - Upfront Capital Costs (more informational)
 - Present Value (PV) costs in \$/MG
 - Energy – KWH/MG in O & M
- Show math for one of the demand CAs and one of the supply CAs
- Need to systematically go through the demand CAs and assess the extent of double counting
- Identify where CAs can't be used together e.g. they both use the same winter flows
- Identify how much of the winter flow is available for capture so we aren't taking more than is actually available.
- Winter flow questions
 - How much can be diverted to storage?
 - In dry years how much can you get back from storage?

CA-1: Peak Season Demand

- Explore how much water can be saved using low-water-needs vegetation versus no-water
- Explore new peak Season shortage strategies – Karen will support Rick, Sue & Peter

CA-2: Water-Neutral Development

- WSAC disappointed in current information. They want to know:
 - Does it give us more water?
 - How can demand management protocols be used? Savings in regulated versus voluntary programs.

CA-4: WaterSmart Home Water Reports

- Are you calculating % of single family only?
- Is Water Smart in Program C?
- Did we incorporate information from Soquel Creek's experience?

CA-5: Home Water Recycling (Graywater):

- Separate out low tech- should we treat this as a separate CA?
- Add commercial laundry

- Are we double counting the use of greywater and new more efficient washers?
- Why only used in new construction? Why not retrofit?
- Can we downscale to low cost opportunities?

CA-17: Expanded Treatment Capacity

- Add back alluvial plain wells – Tait St.
- Show how this fits in existing CIP
 - Is it already in CIP?
- Can we add even more treatment capacity?

CA-16: Aquifer restoration/storage (ARS)

- Can we get water back under ARS and, if so, when?
- Do we need to treat before injecting it?
- Are there ARS regulations – injection regulations?
- Is this an available resources – can we actually political, technically and legally do this?

Other Ideas for Alts

- Rain water cisterns under hotels
- How Evapotranspiration and Temperature changes impact effectiveness of Alts

Briefly discussed the use of Loch Lomond as an insurance policy

Scenario Planning Exercise Set Up

Karen and Bob Raucher explained the format of the Scenario Planning exercise, identified the members of each of the three break-out groups for the exercise and assigned the scenarios to be used by each break-out group. The documents provided in advance of the meeting are available at the following links:

[Link to 5a Final Drought Memo](#)

[Link to 5b Climate Change Summary](#)

[Link to 5c Sustainability White Paper](#)

The documents provided at the meeting are available at the following links:

Link to [Handout: Summary of Portfolio Designed for Draft Scenario #1](#)

Link to [Handout: Summary of Portfolio Designed for Draft Scenario #2](#)

Link to [Handout: Summary of Portfolio Designed for Draft Scenario #3](#)

Link to [Handout: Worksheet for Individual Action Selection](#)

Link to [Presentation: Climate Change Methods & Impacts](#)

Link to [Presentation: Portfolio Development Exercise](#)

Nicholas gave brief instructions about the use of interest based bargaining during the exercise.

Scenario Planning Exercise

The Committee Members formed into three break-out groups and completed the Scenario Planning exercise and prepared material for presentation at the Scenario Planning Report-Out at the second session on Friday afternoon. They obtained assistance from Bob and Karen Raucher, Bill Faisst and Gary Fiske, members of the Technical Team, who were present.

The session continued until all Members completed the exercise and adjourned at 10:15.

Evaluation of the session

Four Committee Members entered evaluations of this session at SurveyMonkey or by handing in written evaluations.

- How well did the session meet your needs?
 - Comments indicated that the meeting met the needs of the participants very well, although most felt that it ran too long and insufficient time was allocated to the Scenario Planning exercise.
- How did this session help the Committee work towards its long-term goal?
 - All wrote that the Scenario Planning exercise provided a good start on constructive engagement using interest-based bargaining and an exploration of portfolio building.
- What were the strengths and weaknesses of the session?
 - One appreciated the opportunity during the Scenario Planning exercise to discuss approaches to the problem rather than simply focusing on specific Alternatives.

- All noted the uncomfortable duration of the session. One attributed this in part to the scheduling of the Enrichment event immediately before the Committee meeting. Another felt that too much time was dedicated to setting up the exercise thus providing less time for the exercise itself and obliging Committee members to find time in addition to the meeting schedule to complete the exercise.
- One noted that one agenda item that the Committee had agreed should be included in every meeting (the progress report of the Technical Team) had been omitted, and felt that the Committee needed more input/control over the agenda.
- The respondents graded the session with a weighted average of 3.3 out of 5.0. Most graded it as “satisfied expectations.”
- What would you like to see at the next meeting?
 - Most respondents asked for more of the same sort of activity and process.
 - One respondent asked for the Technical Team to complete analysis of the Consolidated Alternatives especially providing cost data and the identification of issues questioning feasibility
 - One respondent requested more time for working groups to complete their tasks during the meeting.

Adjourn

Second Session, Friday March 20

Public comment

There was public comment including the following:

- Recommendation regarding Ranney collectors
- Enquiry about the demand projection

Scenario Planning Report Out

Each of the three Scenario Planning break-out groups reported on their findings and suggested portfolio(s) for each of the three scenarios. This was followed by a general discussion among Committee Members and members of the public.

Scenario 1

Doug Engfer reported on behalf of the breakout group that also included David Baskin, David Stearns and Charlie Keutmann.

Scenario 1: Planning for Extended Drought

Objective: Close demand-supply gap so it never exceeds 300 mg or 15% of Peak Season Demand (15% of 2BG).

This group developed three Portfolios to respond to Scenario 1. The group's Portfolio Development Worksheet is [at this link](#).

Portfolio 1: no gap

- CA-03 Program C
- Water Smart
Post Script Doug reports that this break out group has since discovered that this is in Program C at 1% reduction so this should be modified to account for only the incremental savings, since this measure projects 3% savings
- CA-10 Reuse, stored in aquifer

Portfolio 2: 2% curtailment, 34 mg in year 2

Post Script in the original Report-Out this Portfolio was calculated to produce a curtailment of 4%. Subsequent recalculations have reduced the curtailment to 2%

- CA-03 – Program C
- Water Smart
Post Script Doug reports that this break out group has since discovered that this is in Program C at 1% reduction so this should be modified to account for only the incremental savings, since this measure projects 3% savings
- CA-13 Water re-use non-potable North Coast

Portfolio 3: up to 27% curtailment

Post Script in the original Report-Out this Portfolio was calculated to produce a curtailment of 27%. Subsequent recalculation has reduced the curtailment to 15%. The subsequent calculations are detailed in the worksheet [at this link](#).

- CA-3 – Program C
- CA-16 – Aquifer restoration & storage & SLR protection
- Water Smart
Post Script Doug reports that this break out group has since discovered that this is in Program C at 1% reduction so this should be modified to account for only the incremental savings, since this measure projects 3% savings

For all three Portfolios the group wanted to know more about the following three Demand-management Consolidated Alts:

CA-01 Peak Demand Reduction

CA-02 Water Demand Offset

WCA-24 1st Year Drought Demand Mgt

Additional questions from this team included:

- What is ramp up of effectiveness for Program C-Rec?
- What is real cap on effectiveness for Program C-Rec?
That is, is 489 the number, or can we get more?

- What can we get from Peak Demand Offsets economically?
- Water Demand Offsets:
 - Concept: Program would be funded by the SCWD (rate-payers), rather than by developers, and must be additive to Program C (that is, not merely accelerate items that are in Program C to no net gain)
 - Question: How productive could a water-demand-offset program as described here be at offsetting demand due to growth?
- WCA-24 1st Year Drought Demand Mgt
 - Concept: we start managing demand the first year that Newell Creek dam doesn't spill
 - Question: what additional system productivity can we get in later years, by retaining more water in LL earlier
- CA-16 Aquifer restoration/storage (from SLR)
 - NB: Maximum storage is 6,900 MG
 - Question: What is realizable withdrawal rate and confidence?

Additional possible take

- Question: What additional "take" could we get with (a) relaxed turbidity standards and (b) additional water-transmission capacity?

Scenario 2

Scenario 2: Climate Change, City Fish Flows

Sarah Mansergh reported on behalf of the breakout group that also included Erica Stanojevic, Sid Slatter, Peter Beckmann and Greg Pepping.

Objective: Solve for no more than 15% Curtailments – 220mg

Primary interest – Conservation

This group used C-Rec to meet the gap. However, they also went further and decided to solve for less than 15% curtailment by adding:

- CA 9 – pull from Loch Lomond to fill quarry. Adding this alternative provides 1 billion in reserves.

This group would like to see how water offsets can be developed using different options.

Scenario 3

Scenario 3: Climate Change and DFG-5 fish flows

Sue Holt reported on behalf of the breakout group that also included Mark Mesiti-Miller, Rick Longinotti and Dana Jacobson.

Objective: Close demand-supply gap so it never exceeds 300 mg or 15% of Demand. The gap in Scenario 3 was 900 mg.

This group adopted cost effectiveness as its principal driver.

Portfolio:

- CA 4 – Water Smart
- CA 19 – Ranney Collectors
- CA 3 – C-REC
- CA 16 Aquifer restoration/storage

Additional questions from this team include:

1. Can the cost estimates be further fine-tuned? If so, our preferred Alts are likely to change.

2. Are there seismic concerns for Ranney collectors? Can the caissons be protected from undermining by floods?
3. What does Confluence say about combining CA 16 and 19? Are they independent? Does that protect against the 4-5 year duration limitation for Ranney collectors?
4. Can we apply for Prop 1 funds to integrate our supply methods across multiple water agencies?

Discussion

In the discussion that followed the presentations members of the public were invited to join in the discussion with Committee Members. The following points were raised:

- The Portfolios for Scenario 1 were developed apparently without attention to cost. Team members explained that, although the selection of CAs wasn't driven by cost, some attention was paid to cost for Scenario 1 so that the 1st Portfolio is the most expensive and the 3rd Portfolio the least expensive
- Committee Members asked if there are guidelines or a rule-of-thumb to suggest whether or not a system should be built to deliver water with 100% reliability or some lower number. The tech team explained that they know of no such rule-of-thumb: it's a judgment call.
- Committee Members asked at what severity of curtailment unemployment would start to grow. Members of the tech team replied that there is no empirical evidence to give an exact number for Santa Cruz, but that the evidence that does exist suggests that economic impacts would start to be felt somewhere around 15-20% curtailment.
- Committee Members discussed the consequences of over-engineering a solution instead of redesigning the way that we live so that demand is reduced. Others recognized that there is a choice to be made about the supply/demand "gaps" that are permissible. Others emphasized the value of selecting the easier, less expensive and most reliable options first and then build from there as necessary.
- Committee Members considered how to incorporate regional cooperation into Portfolios. One noted that the Committee needs first to be clear about what Santa Cruz needs and then look for opportunities for cooperation.

- A member of the public noted that he is developing Alternatives that would fill the Purisima aquifer for \$10M and the aquifers around Scotts Valley for \$5M producing storage 4-8 times greater than Loch Lomond. Another noted that water transferred to SqCWD and stored in Purisima would need to be transferred with the explicit understanding that we would get the water back in case of a drought.
- In response to questions about the storage capacity of Scotts Valley aquifers, Mike Cloud explained that, although there is plenty of storage capacity in those aquifers because they have been severely drawn down, the soils contain several contaminant plumes that may contaminate the aquifer if the water table is sufficiently raised. Additionally, it may be up to 20 years before the water stored in aquifers could be used.
- The Committee discussed the sorts of Scenarios that they should consider in future: whether it was appropriate to consider an 80-year drought, or just use an 8-10 year drought.

Questions regarding the work of the Technical Team

In the absence of a progress report from the Technical Team, the following questions about the work of the Technical Team were raised:

- Can the demand projection include a lower low range that reflects less than complete rebound of demand after droughts and a “serial” recession?
- Can the Confluence model include the rehabilitated Tait Street wells?
- Would the Technical Team provide all the written reports from Maddaus and Rosenblum?

A Committee Member introduced a member of the public: Joanna Milson of Stanford University who recommended developing scenarios that include drought and wildfire to better understand the effect of this combination on forest cover and the reservoir.

Evaluation Criteria and MCDS Evaluation Next Steps

Rosemary and Doug led a discussion of the Criteria and associated Rating Scales as refined in the document prepared by Rosemary with substantial input

from Doug and other members of the Planning Subcommittee (available at [this link](#)).

The following issues were discussed:

- MCDS will be applied to Portfolios and not to individual Consolidated Alts.
- The Local Economy Criterion: some Members felt that this criterion is unnecessary because the Committee is operating under the premise that we want to enable the local economy to continue. Others felt that they would not use this criterion to distinguish any portfolio. Members also discussed whether the rating scale showing that a CA produced public sector jobs was good or bad since this implied greater O&M cost for the City. The Committee preferred not to change this item and to rely on weighting to represent how significant each considers it to be. Rosemary said she would clean up this criterion to reflect this discussion.
- Regional Benefits criterion: Members discussed the rating scale some saying it should be a yes/no scale, and others noting that the rating scale system doesn't work well with a scale containing an even number of points and preferred a scale with more points to choose from. Rosemary said that she would provide more data points on this scale.
- Addresses Peak Season Demand criterion: Members described their confusion over this because it is a qualitative scale rather than a quantitative one.
- Infrastructure Resilience criterion: Members briefly discussed the changes to the rating scale.
- Energy criterion: Members considered whether this criterion is necessary because the cost of energy is captured elsewhere and greenhouse gases (GHGs) are so difficult to measure. Others said that, since GHGs are a function of the energy source, if we choose to power the project with solar panels GHG emissions will be zero. With the establishment of a Community Choice Aggregation program GHG emissions may be reduced to zero. In this case the cost of the electricity generation system would need to be added to the cost of the Alt. Should the calculation include construction energy as well as operating energy? Members of the Tech Team explained that, while energy for operations is quite easily calculated, the construction energy is complicated and will only be available much later.

- Cost metrics: Bill proposed that each CA have a metric for net capital cost and a present value of the cost of construction and operation for 30 years expressed as dollars per million gallons produced. This would be calculated on a lifecycle basis; that is, the calculations will reflect the residual value of CAs with operational lives longer than 30 years.
- Members discussed whether the MCDS analysis should use a single tier of criteria or a hierarchy of two tiers. Rosemary agreed to propose a single tier to Philip Murphy and to use this unless he strongly objects.

Public Comment

The Committee recognized the significance of this topic and invited public comment. Members of the public commented on the following issues:

- Impressed by the Committee. Noted that photovoltaic panels have an energy pay-back period of four to five years, and that, to provide a level playing field for comparisons between alternatives, all Alts would need to have the same power source. Concerned that the use of a 30-year PV calculation might not work for alternatives with shorter lives. The Tech Team members explained that shorter-lived Alts are assumed to be replaced and maintained for a thirty-year period.
- Encouraged the Committee to incorporate a serial recession into the calculation of the demand projection.

Correspondence received from the community

The Acting Corresponding Secretary, Sarah Mansergh, reported on correspondence received.

Materials resulting from the previous meeting

The Committee approved by consensus the Action Agenda and the Summary of the March meeting.

Overview of April30/May 1 Agenda

The Committee discussed the current draft of the agenda for the April/May meeting and made the following comments:

- This meeting will be held at the Simpkins Center
- A work-plan update will be included in the agenda
- Committee Members requested that information about the next round of scenarios be distributed in advance of the meeting.

Subcommittee Reports

Outreach Subcommittee: Charlie reported on the activity of this Subcommittee.

- Sarah and Erica wrote a Sentinel editorial about uncertainty and other issues.
- Considering a Water Awareness Night with the Warriors and will provide more information at the next meeting
- He encouraged Committee Members to “Like” the Committee’s Facebook page: <https://www.facebook.com/wsac.santacruz>. A Member asked if the Facebook page could be used with help from Civinomics to sound out public opinion about reverse osmosis or water re-use.
- He has broadcast another early morning talk on the radio.
- KUSP has limited its response to a request for interview opportunities to an invitation to “send press releases.”

Planning Subcommittee: Doug reported on the activity of this Subcommittee

- The Subcommittee has had some discussions about the improvement of the Criteria. This is probably outside of the scope given to the Subcommittee by the Committee. Doug hoped that the Committee was OK with this.
- Sue explained that she, Doug, Rosemary, Toby Goddard, Bob and Karen met on the previous day to review a list of questions that she and Doug had prepared about the Maddaus conservation measurements in C-Rec. They had general questions about the measurements as well as specific data-driven questions. As result of their meeting they reached agreement on recommendations presented to Rosemary who agreed to adopt them. In particular they recommended that the administrative cost of individual measures would be removed and then an aggregate administrative cost estimate would be added at a program level. Doug and Sue also noticed that Maddaus was used to marking down the expected productivity of projects under certain conditions, but not to marking them up. The group agreed that this was a philosophical issue and that this apparent “hedging” should be better understood. Karen reported that she has agreed to research these instances of “hedging” and to explain to Doug and Sue what the professional judgment of the Maddaus team was when they marked down their measurements so that they can decide whether or not to recommend that the markdowns be removed.

Enrichment activity: Rick reported on the Enrichment activities that are being organized:

- Friday April 8, 4:00-7:00 p.m. in the Loudon Nelson Center: various experts on Climate Change
- Wednesday April 22, 4:00-6:00 p.m. in City Council Chamber: Water Transfers
- Saturday April 11, 9:00 a.m. to 3 or 4:00 p.m. in the Civic Auditorium: Symposium on water in the San Lorenzo River. This is intended to be the start of a conversation about the state of SLR.

Oral Communication

There was oral communication including the following:

- The Committee should consider not just a plan A, but also a plan B to be adopted if necessary and to be adopted far enough in advance of being required so as to be implemented in a timely way.

- All alternatives need to be kept in the spreadsheets so that we can all see where they are even if you don't use them.
- The Committee should come up with a solution for five years and then build on that.

Evaluation of the Session

Two members of the public entered evaluations of this session at SurveyMonkey or by handing in written evaluations.

- How well did the session meet your needs?
 - Both respondents felt the session went very well. One called it the best yet.
 - One respondent noted the thoughtfulness of questions and the way the scenarios exercise helped develop experience and familiarity for decision-making.
- How did this session help the Committee work towards its long-term goal?
 - One observed that a “gelling” of interests and understanding among Committee Members appears to be underway and noted that the scenario exercise and the review of criteria advanced the Committee towards the development of a recommendation.
- What were the strengths and weaknesses of the session?
 - Both respondents appreciated the more interactive discussion using the semi-circle seating arrangement for the first half of the session.
 - One respondent noted the strength of meeting facilitation and agenda development, as well as the well-organized and substantial supporting materials.
 - One respondent observed how well the members of the technical team have worked both with the Committee members and with the public.
 - One respondent appreciated the good humor and respect shown by the participants in the session.

- What would you like to see at the next meeting?
 - One respondent asked for more interactive discussions like the first half of this session.
 - One respondent asked for consideration of a process to expedite a recommendation to City Council if any measures are swiftly identified as compelling.

Adjourn

PRESENTATION DRAFT