

Water Supply Advisory Committee

Meeting August 13 and 14, 2015

Both sessions at the Police Department community Room

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 4 1/2 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, Charlie Keutmann, Sue Holt, Rick Longinotti, Sarah Mansergh, Rosemary Menard, Mark Mesiti-Miller, Mike Rotkin, Sid Slatter, Erica Stanojevic (absent from second session), Doug Engfer (absent

from both sessions), Peter Beckmann, Greg Pepping, David Stearns (absent from second session).

First Session, Thursday August 13

Oral Communication

There was public comment by eight members of the public regarding the following:

- Recycled water is viable if done correctly and there is no reason to be afraid of it. It is used, for example, in Singapore and Orange County.
- Direct Potable Reuse (DPR) consumes five times the energy needed for the current water supply. Credible evidence shows that water from DPR contains endocrine disruptors that may be harmful to health. Santa Cruz Desal Alternatives (SCDA) recommends that DPR only be used if public health concerns are proven to be negligible, the risks of water shortages threaten public health and the recovery and use of aquifers for storage is not feasible.
- Santa Cruz is not a typical community: it is educated, health conscious and willing to read the existing studies on recycled water.
- Off-stream storage meets all needs at 1/10 the cost of Desal – frustrated that this has apparently not been heard;
- Appreciation for the Committee's hard work preparing 5 good proposals;
- The Building Blocks prepared by the Technical Team appear to have nothing that can be completed in less than 8 years and all are expensive;
- The winter harvest is underutilized;
- This is not the time for potable reuse, although it will provide valuable material for satirical cartoons;
- The proposals based on In-Lieu Recharge should be started immediately;
- The need for regional cooperation dealing with common concerns and recognition that water goes beyond boundaries;

- Potable reuse has no regulations yet – this should be factored into the timeline;
- Strategies based on groundwater recharge and demand management strategies will work.

Committee Member updates

Four Committee Members reported the following.

- Rick Longinotti reported on the discussions held by SCDA and reiterated the SCDA policy just described during Oral Communication.
- Mark Mesiti-Miller reported that the Chamber of Commerce has reviewed the Committee's packet materials and that a broad cross-section of the Chamber's members is enthusiastic and supportive of the solutions that are being developed.
- David Baskin reported that when he gave a report of the Water Commission to the City Council its members demonstrated that they had started to review the content of the Committee's work and were reasonably well informed and able to ask good questions.
- David Stearns hoped that everyone had been able to review the memo that Doug had sent for the Committee.

Agenda review

Co-facilitator Nicholas Dewar reviewed the meeting's agenda with the Committee. He noted that the sequence of agenda items in the first session was changed so that item #8 "Synthesis of issues ..." would precede item #5 "Identification of Areas of Agreement." The Committee agreed by consensus to accept the agenda with this amendment. The Flow Agenda and the Official Agenda can be downloaded from the list of documents at [this link](#) and [this link](#) respectively.

Proposal Presentations

The materials distributed at the meeting can be downloaded from the following links:

[Misc. Handout: Tech Team Created Building Blocks and Summary Table Updated 8.10.15](#)

[Misc. Handout: August Q-A](#)

Proposal #10

David Baskin presented this proposal that he developed with Peter Beckmann, Sue Holt, Charlie Keutmann and David Stearns. He explained that they sought to develop a proposal that would effectively cover the “gap” and that, in the long term, would go further than that and provide the capacity to supply water even if events occurred such as a wildfire around Loch Lomond. The materials distributed in advance of the meeting can be downloaded from the following links:

[4-10a Build a Portfolio Form](#)

[4-10b Building Block Summary Table](#)

[4-10c Poster of Timeline](#)

In a brief discussion to clarify the proposal, Committee Members asked the following:

- Why is there such a distinction in the proposal between the City and its partners in neighboring water districts? Santa Cruz needs to rebuild trust with Soquel Creek Water District. It will take time to reach agreement on issues such as the allocation of costs and yield. Meanwhile Santa Cruz needs to get going by itself. The City has a way to go to rebuild trust with its neighbors and it will help if it has a project to put on the table. Scotts Valley and Soquel Creek are both considering the development of water supply policy as if there was no opportunity to partner with neighboring agencies.
- What about the health risks of Direct Potable Reuse (DPR)? We recognize the appearance of the health risks. The City Council has asked us to consider all opportunities, and we expect the state to properly consider safety issues as it develops regulations for DPR.
- Isn't it risky to depend on DPR? In fact it seems that DPR is a more certain source of supply than many alternatives.

Proposal #20

Greg Pepping presented this proposal that he developed with Rick Longinotti, Mark Mesiti-Miller and Sid Slatter. He described this proposal as a combination of a hybrid of In-Lieu and Aquifer Storage and Recovery (ASR) with Building Block #3 (DPR). He explained that the group reached consensus on the component parts and found that they disagreed as to whether, to ensure success, it would be necessary to implement the parts of the proposal sequentially or concurrently. Proposal #20 does it concurrently. The Sequential approach is explored in proposal #21.

The materials distributed in advance of the meeting can be downloaded from the following links:

[4-20a Longinotti, Mesiti-Miller, Slatter, & Pepping Water Solution](#)

[4-20b Portfolio 20 Implementation Protocol](#)

In a brief discussion to clarify the proposal, Committee Members asked the following:

- Why do we need to implement both approaches at once? Some members of the group needed the feeling of assurance provided by doing both at once. Others didn't want to wait while ASR and In-lieu were developed before starting on DPR.
- Did you discuss what you would do with the DPR plant? The group thought that In-lieu and ASR should be combined into a single project and that the DPR project could be smaller than proposed in Building Block #1. An equal level of resources should be applied to each of the projects for about five years and then Santa Cruz could "pick a winner" and finish developing it in another five years so we'd have a solution in-place in about ten years.
- How did you decide on the numbers of years or the degree of urgency? The five and ten year milestones are somewhat arbitrary although they seem reasonable and it was important to the group to specify a certain number.
- Why did you decide to dedicate half of the resources to DPR? This was a proportion negotiated by the members of the group.

Proposal #21

Rick Longinotti presented this. He explained that he prepared it in consultation with Erica Stanojevic and members of Desal Alternatives because Proposal #20

did not encompass everything that he wanted the Committee to Consider. This proposal scales down the In-Lieu Building Block and then, monitoring the aquifer, we will either maintain the level of effort or scale up as necessary. This has the benefits of:

- The capacity to go beyond 3BG of storage in the aquifer so that we could resolve even bigger problems in future;
- Increase the base flow in the San Lorenzo River;
- Protect against seawater intrusion – the 1.1MGD agreement with the Soquel Creek Water District could also be enlarged;
- The project can be scaled back if necessary;
- This proposal would manage the water resource the way it would be managed if we were all one single water district.

The materials distributed in advance of the meeting can be downloaded from the following links:

[4-21a Longinotti Portfolio](#)

[4-21a1 Poster Longinotti Portfolio](#)

[4-21b Longinotti on Energy Impacts](#)

In a brief discussion to clarify the proposal, Committee Members asked the following:

- Doesn't the increased in-stream flow result from leakage? Isn't that a problem? "Leakage" can be beneficial. For example it is "leakage" that protects us from seawater intrusion.
- What about the cost of recovering the water from the aquifer. The existing pipe would carry 1.5MGD and can be oversized a bit to accommodate more.
- How does this proposal's changes to the Building Blocks effect yield? The constraint is the 10MGD capacity at GHWTP. We need to see how this will work.
- Why not allow DPR to go ahead concurrently as in Proposal #20? The interest that drives the concurrent development of DPR is security of supply, so let's address security without DPR.

Proposal #30

Sarah Mansergh presented this. She explained that this proposal shows an approach that recognizes a different level of urgency. These investments seek to achieve multiple benefits and she believes that working with partner agencies to develop the aquifer for storage has multiple benefits. She favors Ranney collectors to provide pre-treatment of river water and the use of recycled water to take advantage of local opportunities.

The materials distributed in advance of the meeting can be downloaded from the following links:

[4-30a Mansergh Build A Portfolio Form](#)

[4-30b Mansergh Portfolio Timeline](#)

In a brief discussion to clarify the proposal, Committee Members asked the following:

- Which dam do you propose to remove in 2022? The inflatable dam at Felton would be removed and instead Ranney collectors would be used.
- Can you show your sources of data to the Technical Team? Yes.
- How does this proposal support the aims of the HCP? The HCP intends to increase the habitability of the river for fish. Increased flow is only part of this. Other qualities include, for example, cooler water and lack of stream obstructions.

Proposal #40

Erica Stanojevic presented this. She explained that this proposal combines the storage capacity of Loch Lomond with the aquifer. By starting the project immediately and sorting out our water rights, security will be increased and we could achieve 3BG in storage by 2020.

The materials distributed in advance of the meeting can be downloaded from the following links:

[4-40a Stanojevic Portfolio](#)

[4-40b Poster Gantt Chart for Lochquifer Portfolio](#)

In a brief discussion to clarify the proposal, Committee Members asked the following:

- How did you calculate your capital costs? We excluded existing plans for CIP.
- When will you be sufficiently confident in the aquifer's ability to provide storage so that you can draw down the Loch? As long as we are not certain, we will not draw it down entirely.
- If we export water to neighboring Districts won't this put the staff of other districts out of work? The main interest of water districts is water security. As well as taking water from us, neighboring agencies will send water to us so they will need infrastructure to do this.

Public Comment

There was public comment by six members of the public including the following:

- It is premature to put any money into DPR until the regulations have been completed and we understand them.
- Fast-tracking of DPR is a concern. There are no federal or state systems in place to document or track water-borne illnesses from DPR.
- Certainty is a central issue. Anything that improves water supply reduces risk. All are agreed that ASR is the lowest cost and best way to go. We should get this going and reduce risk right away.
- We need to have certainty in our water system. It would be irresponsible not to build a Plan B at the same time as the ASR plan.
- The portfolios prepared by the Committee are not using the same building blocks. You need to use the same building blocks.
- The Committee is getting the risk picture backwards: as time passes the risks associated with ASR reduce, whereas the huge abandonment risk of desal and other projects will remain.

Synthesis of issues discussed and identification of areas of agreement

Co-Facilitator Carie Fox guided the Committee through a discussion of issues raised by the presentations.

In answer to questions, staff and the Technical Team confirmed that:

- Building Blocks (BB) 1 and 2 included winter flows estimated by Gary Fiske using the Confluence model;
- CIP items are included in BBs 1 and 2;
- BB 9 doesn't work by itself: it has nowhere to store water so must be combined with another suitable BB;
- Adjustments to the First Flush are not figured in to any BB;
- Some additional capacity to convey water to the Loch is provided by the replaced Felton pipe.

The following items were discussed without reaching any agreements.

- A Member noted that every presentation preferred In-lieu recharge and ASR but no one used the exact design of the corresponding Building Blocks 1 and 2.
- A Member noted that all appear to like ASR. Some are concerned that it may not work while others are so confident in it that they appear to be ready to take water from Loch Lomond immediately.
- All Members appeared to be concerned about fish flows, but not necessarily supportive of DFG5 although none expressed an interest in reducing in-stream flows below DFG5 in dry years.
- All Members appeared to support the provision of sufficient suitable habitat for fish, which they understood to mean more than just sufficient water flows. Although the agreed regime may not be DFG5, all appeared agreed that fish should not be required to suffer for the benefit of the City during dry years. One noted that this sort of regime would be most effective as part of a regional solution.
- Members appeared to support the use of renewable power to drive the proposals.
- Some felt it would be prudent to move forward with In-lieu recharge even without the recommendation of the Committee.
- Rosemary Menard, Water Department Director, interjected that the Department is currently negotiating a tentative five-year agreement on In-lieu based on 100MGY. Santa Cruz wouldn't get any water returned for the moment. The water will be sold for a reasonable price. The important

element is the collection of data that would help us to understand what happens to the aquifer when they take their wells off-line for a prolonged period.

- One Member noted that all appeared to agree that the Committee doesn't want to run the Water Department. Instead it will provide policy direction that finds a balance between being neither too precise nor too vague.

Carie guided the Committee through a discussion of obstacles that Members perceived and ways to resolve them. The following points were raised and discussed without reaching any agreement.

- There is uncertainty about In-lieu and ASR. The energy behind the optimism regarding ASR can be turned into support for immediate consideration of back-up proposals.
- There is uncertainty about DPR and IPR. These reuse approaches need a pilot phase just as In-lieu and ASR do.
- There are differences in Committee Members' understanding of the opinions of the Technical Team about these risks. Many Members hear only what they want to hear. The Committee needs to work this out.
- Some of the uncertainty results from a lack of research. This research will have to be done, although some of the research cannot be done in a reasonable time: e.g. conclusively showing that DPR is safe will require a major research program.
- Committee Members have differing views about urgency. Carie announced that there will be an opportunity to discuss Confluence data with Gary on Friday morning. One suggested that "urgency" is used as a surrogate for "uncertainty." Another suggested that experience of the water supply constraints this year in Santa Cruz illustrates the urgency. Another described how public agencies tend to seek certainty so that they will not be asked "Why did you let this happen?"
- One Member wondered how the City can reassure people that if we invest in Plan B from the start we can be counted on to prefer Plan A as long as it works. One responded that having a secure source of supply in Plan B would give more breathing room for Plan A to prove its reliability, and asked how it would hurt the City to have the extra security of supply provided by Plan B if that allowed us to use water in a variety of beneficial

ways. Several Members recognized that the problem with doing both plans concurrently is the extra cost.

Possible Performance Measures for ASR and In-Lieu Recharge

Robert Marks of Pueblo Water Resources reviewed with the Committee the materials that he prepared for the Packet. The materials distributed at the meeting can be downloaded from the following link:

[Misc. Handout: Potential Performance Measures for ASR](#)

[Potential Performance Measures for ASR CHART](#)

The following issues were discussed. Andy Fisher, Professor of Hydrogeology at UC Santa Cruz, also joined the discussion. No agreements were reached during this discussion.

- If the total time to perform the technical analysis testing and implementation takes 6-12 years Can the Non-technical elements be done concurrently? Yes, negotiating agreements with other water districts and acquiring well sites etc can be done concurrently, although some of these, such as well-site acquisition, needs to wait for the completion of some studies.
- There will be a Groundwater Modeling & Management Enrichment Session at 6:30 on August 26 in the Loudon Nelson Community Center
- There is potential for adverse geochemical reactions (e.g. precipitation and/or dissolution) when river water is injected into an aquifer. Pilot testing of actual ASR wells is needed to prove that we can inject it and recover it at rates and water quality that we need.
- We could do site-specific well analyses during phase 1 (e.g. on existing Belz Wells) but this wouldn't enable us to avoid the broader study of the entire aquifer for ASR.
- ASR well sites will probably require about ¼ acre each.
- Recovery pumping can potentially adversely affect other pumpers by lowering water levels at their wells.
- All water contains small amounts of particulates and the injection well acts as a filter that collects this particulate and can become plugged up and

require back-flushing. Back-flushing is a normal procedure for all ASR wells that may need to occur as frequently as once a day or as rarely as twice a year depending on the plugging characteristics. Determining this ASR operational parameter is one of the objectives of pilot testing.

- Geochemical modeling addresses some water quality questions up-front. When you inject highly oxygenated (high ORP) water it can leach elements such as arsenic into the stored water. Based on current information we can't say if river water is better or worse than recycled water in this respect. IPR works in Orange County where it is injected into the aquifer, but that's a different aquifer with different geochemical qualities.
- Can you develop a red/yellow/green-light system that would help us to check in at various points to give us an indication for a trigger? Yes, we could do a flow chart that is a sort of decision tree indicating where there might be delays or additional costs.
- What should we do: proceed with sequential alternatives or develop them concurrently? WE can't answer that question for you but can say that you will benefit from a Plan B on an equal footing. With all the things that can go wrong with ASR you should have a Plan B.
- How and when will we know whether in lieu is working? Modeling will provide important information. However, models are almost inevitably wrong. Once you've run the model over many years you will be able to use it with more confidence.
- What would an In-lieu model look like? Is there a similar modeling process for In-lieu? With In-lieu there are no uncertainties related to injection, so In-lieu analysis is mostly done with groundwater models. Water not taken out is essentially the same as injecting it, so you rest the well and monitor water in the aquifer to see if the aquifer responds. The natural recharge process will happen, but recharge might not happen if it's a dry year, if other wells start pumping, instead of a rise in aquifer level you may get a reduction in the rate of decline – that would be positive. Often the study must span a couple of rainy seasons to see what's happening. A lot of wells aren't metered so you don't even know what is being drawn from the aquifer.
- What is time frame for the study of In-lieu? Scotts Valley and San Lorenzo valley just got a new ground water model and they could analyze that in a

matter of months. The Soquel Creek/Aptos Basin model will be ready in a year or so. Data collection will provide information about what happens when you take some wells off-line. This may demonstrate some holes in data.

- What else should we be measuring in addition to well yield? Stream-flow is a useful indicator of the aquifer level for shallow aquifers, but there's not much stream-flow data available. Deep aquifers that provide storage opportunities often contribute little to stream flow. It's very hard to correlate well-management with stream flow.
- Can you have two wells on the same site injecting into different aquifers e.g. Santa Margarita and Lompico? Yes, although the Santa Margarita in Scotts Valley is very permeable and may be good for recharge generally, it isn't recommended to recharge using injection-wells because you won't be able to effectively back-flush injection wells due to a lack of aquifer saturation for pumping. It's a better candidate for surface percolation.
- Can we collect and infiltrate surface run-off? Yes but it takes a lot of space. We're studying it for the whole county, but starting in south County where there is more opportunity for this.
- Do septic systems interfere with ASR? These normally stay near the surface. For example we might limit the rate of injection so that it doesn't raise water levels within 10 feet of the surface in areas where septic systems exist. This is similar to concerns about reaching the plumes from gas station leaks, or dry-cleaner pollution.
- What recharge projects have you seen not working? None. All have worked to various degrees, but it depends on how you define success. Some were ambitious and didn't do all the testing or didn't manage public expectation properly so produced less than expected. But most projects are stopped as soon as problems appear in the feasibility investigation phase so don't show up as failures.
- Rosemary reports that recharge using IPR has been evaluated by Scotts Valley. She imagines that the Soquel groundwater basin model will include similar scenarios for IPR. SqCWD got a grant and a consultant to support the study and is looking at using IPR of CAT-treated effluent. They've done analysis but no test wells yet.

- What are the concerns related to sea-level rise? The biggest concern is that as sea-level rises the landward gradient in the aquifer will increase so the value of active recharge of the aquifer will be greater.

Public Comment

There was public comment by 2 members of the public including the following:

- Every year of delay in capturing winter flows results in lost water. How would you compress the plan for study of the aquifer if you only had 3 years in which to do it? Robert responded that he cannot reply to that without speculation.
- Read about a project in San Bruno that used 16 recovery wells and injected 7.2MGD at a total cost of \$43M. The pilot study took 2.5 years and construction started in 2015 and will be complete in 2018.

Correspondence received from the community

Mike Rotkin, the Corresponding Secretary, reported that the community continues to send suggestions to the Committee and that he forwards all of them to the Committee Members.

Subcommittee and Working Group Reports and Technical Work Plan Update

The Committee was asked to refer to the reports sent on these topics.

The materials distributed in advance of the meeting can be downloaded at the following links:

[10a Notes of Agreement Development S.Ctte Meeting 7.31.15](#)

[10b WSAC Outreach August 2015](#)

[10c Tech Team Update August 2015](#)

Materials resulting from the previous meeting

The Committee agreed by consensus to approve the Action Agendas and the Summaries prepared for the June Joint Meeting with the City Council and the July meeting of the Committee.

The materials distributed in advance of the meeting can be downloaded at the following links:

[11a WSAC & Council Joint Study Session Action Agenda](#)

[11b Updated Joint Study Session Summary](#)

[11c WSAC Action Agenda 7.23-24.15](#)

[11d Summary Presentation Draft July 2015](#)

Evaluation of the Session

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

- How well did the session meet your needs?
 - Comments ranged from “Well” to “awesome.”
 - One noted the benefit of open direct discussion
 - Another appreciated the attention to the uncertainties of ASR and to timelines.
- How did this session help the Committee work towards its long-term goal?
 - Most noted the progress towards agreement
 - Others noted the valuable discussions to flush out issues and work on proposal elements that built toward agreement.
- What were the strengths and weaknesses of the session?

Strengths:

- Really building consensus
- Respectful dialogue between Committee Members.

Weaknesses:

- No air-conditioning
- No wifi
- Too long
- What would you like to see at the next meeting?
 - More work on the agreement.

Adjourn

Second Session, Friday August 14

Oral Communication

There was public comment by 3 members of the public including the following:

- There is a wrong impression held by Doug Engler that after four years of drought there is no economic impact and that there is no economic urgency. We've already damaged the fish population that has caused economic impact, and the center of the county is considering a building moratorium. You should already feel the urgency.
- Agree with the previous speaker. Also to advance the work of aquifer recharge Santa Cruz could start purchasing the necessary property.
- The "Vote No" graphic displayed yesterday intended to make a statement about the added energy needed to produce DPR water. Consideration of this needs to include financial costs.

Continuation of the discussion from the Thursday Session

Carie guided a discussion following on issues previously raised by Committee Members.

- A Member noted that the examination of BBs #1 and 2 has been less intense than the examination of other BBs. Consequently, In-lieu and ASR have less available data than DPR and other BBs. As a result the advocacy of BBs 1 and 2 is based on relatively flimsy knowledge. In order to make reasoned comparisons the examination of BBs 1 and 2 has to be at a comparable level with the examination of other BBs. A Member

responded that Recycled water and In-lieu/ASR both have details to be developed and opportunities to stop and reconsider whether or not to proceed, adding that relevant technology can be expected to change and that we will need to be flexible as we go forward.

- A member asked if the 5-year plus 5-year timing in Proposal #20 can be changed. It was explained that 5 years is a fairly arbitrary amount that recognizes that it will take some years to work out the answers that will allow us to choose between Plan A and Plan B and that there will be some adjustments during the first years.

In a substantial discussion about whether to adopt a sequential implementation of Plan A and Plan B or to implement them concurrently in parallel the following points were raised without reaching any agreements.

- The reason for having parallel tracks is to know more before deciding on a solution and parallel tracks provides some insurance in case either one of the projects is a dud. By starting with two tracks we'll be able to decide on one or to keep both.
- Running two tracks will run into strong opposition if one of the tracks is reuse or desal. However if we have first demonstrated that we've really tried all alternatives, people are more likely to accept Plan B. We also need to do something from the start to advance Plan B even if we hope not to use it. And at the same time reach agreement on a path for studying Plan B and develop an understanding of the decision points that might lead to its implementation. On the other hand, some in the community will be opposed to a solution that does not include a more certain project from the start: running Plan A and B concurrently in parallel will save some time.
- One Member noted that the studies for Desal are already advanced, so perhaps Desal should be adopted as the Plan B/last resort. In a discussion comparing Desal with DPR Members identified the benefits of DPR as its lower cost, lower energy consumption and the lack of a discharge to the ocean. Another Member pointed out that Desal was considered a "stinker" and should not be relied on as a backup plan. A Member pointed out that Santa Cruz Desal Alternatives (SCDA) has always considered desal to be a "last resort."

Although the Committee reached no agreement about what Plan B should be, the Members agreed by consensus that its recommendation to the Council

should include a Plan B. They also reached consensus that Plan A should be a combination of BBs 1 and 2.

In further discussion the Committee noted the following without reaching agreements:

- The Water Department staff could do a phased implementation plan including decision points for A and B.
- The unit cost for worst-year yield in all BBs is comparable when the range of uncertainty is considered.
- The benefits of collaboration for our potential partner water districts are that: They would be able to rest their wells and determine whether water banking works; as long as water from Santa Cruz is cheaper than available alternatives they will benefit; they recognize that the full solution to their problems is an additional water source, and collaboration with Santa Cruz may provide that.

Members noted that they need to know more details about the hybrid that results from the combination of BBs 1 and 2. They agreed by consensus to ask the Staff to develop a hybrid of BBs 1 and 2 to be used for further discussion of Plan A and that this should include additional elements that staff considers appropriate. Members asked if other elements such as surface storage could be usefully included in the exploratory phase of BBs 1 and 2. Staff explained that the identified surface storage sites are on the west side of the system and that filling them from the San Lorenzo River is less practical than filling the nearby aquifer.

In further discussions the following comparisons were made between desal and recycled water without reaching any agreements about them.

- Speed is more important than cost for Plan B and Desal may be faster because it is already relatively developed.
- As a “last resort” desal would be more acceptable than DPR.
- IPR would be a better Plan B because it’s already been proven as an effective seawater barrier.
- We should wait and see what our neighboring water Districts prefer – this should influence our choice.

Committee Members reached consensus that the Committee should request that Water Department Staff sketch schedules and budgets for Plans B that describe a DPR alternative and a desal one.

The Members also reached consensus that these sketched schedules and budgets should show Plan B starting on “day 1,” recognizing that these sketches can move each Plan to a later start date.

Adaptive Management Strategy

Carie explained that the adaptation strategy will identify when you have to make adjustments to implement the plan more successfully and when you have to stop and consider a change to the plan. Bob Raucher of Stratus Consulting drew a layered diagram illustrating adaptation (see two of the layers, converted to a computer graphic, [at this link](#)). Carie asked for a list of “game-changers” which she described as the thresholds to watch and keep in the decision making process, adding that these thresholds need to be substantial enough so that their significance will be evident to the public. Committee Members listed the following as a “brainstorm” without reaching agreement on the validity of any:

- The discovery of fatal flaws based on research (e.g. water quality, geochemistry)
- Inadequate yield
- Too expensive
- Takes too long
- Can't reach agreement with neighboring Water Districts
- Can't resolve water rights, regulatory or other legal issues
- Experience many years without water shortage, or never experience severe shortage
- Major lifestyle change alters water use
- Change in water demand
- Change in exogenous assumptions
- Change in regulations

- Change in river water temperature radically alters fish habitat
- Change in technologies
- Contamination of river
- Change in population
- More severe climate change towards more extended droughts
- Wildfire damages Loch Lomond etc.
- Seawater rise increases intrusion into aquifer
- Increased scarcity of energy

The materials distributed in advance of the meeting can be downloaded at the following link:

[16a Preliminary Working Draft: WSAC Agreements and Recommendations](#)

Tasks and assignments in preparation for the September meeting

The following tasks and assignments were agreed by consensus:

The Agreement Development Subcommittee will integrate existing agreements into the framework document for the Agreement and Recommendation.

The Agreement Phase Outreach Subcommittee will support the outreach efforts for the community meeting on September 9. This may include substantial spending on advertising, the development of a mailer or flyer and a presentation to City Council on August 29.

The Adaptation Work Group will be formed to develop proposals for an adaptation strategy. The members of the group will be Dana, Doug, Sarah, Sue and Mike.

Evaluation of the Session

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

- How well did the session meet your needs?
 - Comments ranged from “well” to “outstanding.”
 - One added that more discussion on Plan B would have been helpful
- How did this session help the Committee work towards its long-term goal?
 - Most noted how the meeting is moving towards a consensus
 - Some noted how challenging issues were discussed and how adaptive management is now on the table
- What were the strengths and weaknesses of the session?
 - One considered the facilitation outstanding.
 - Others noted how Committee Members are searching for opportunities to compromise.
 - The only weakness reported was the lack of wifi.
- What would you like to see at the next meeting?
 - More salty snacks and protein.
 - Continued progress.

Adjourn