

To: Committee Members

From: Nicholas and Carie, Co-Facilitators

Thursday June 19, 2014

RE: Materials for your meeting on Thursday-Friday June 26-27, 2014

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Here is a list of the materials sent to you for next week's meeting. Note that these materials have been sent in a series of emails because there is so much material that some email servers will choke on it if we send it all together! There will be a bit more coming at you early next week, but this is the bulk of it.

- | <b>Item #</b> | <b>Description</b>   |
|---------------|--|
| <b>01</b>     | <b>Agenda for the meeting of June 26-27</b>  |
| <b>02</b>     | <b>Summary of the meeting on May 29-30</b><br>Please review and prepare to discuss any changes needed before approving this record of the Committee's second meeting.  |
| <b>03</b>     | <b>Introduction to the History of Water Planning</b><br>These slides will be used to introduce the topic.  |
| <b>04</b>     | <b>Compilation of Survey results regarding Presenters</b>  |
| <b>05</b>     | <b>Outline of the presentation "Water supply and water demand in Santa Cruz"</b><br>This outlines the Supply/Demand topic that will be presented to the meeting using PowerPoint.  |
| <b>06</b>     | <b>Short set of slides extracted from the presentation "Water supply and water demand in Santa Cruz"</b>   |
| <b>07</b>     | <b>Revised Independent Review Panel (IRP) Concept Paper</b><br>This concept paper has been revised by the IRP Subcommittee. Please review and prepare to discuss any changes needed before proceeding with the process of forming the IRP. |
| <b>08</b>     | <b>IRP RFQ</b><br>This RFQ has been prepared on the basis of the revised Concept Paper   |
| <b>09</b>     | <b>Evaluation form for Thursday's session</b>  |

**10 WSAC’s report to the City Council**

This report and its attachments were delivered to the Council in preparation for its meeting next Tuesday June 24. Mike will represent the Committee. It is currently expected to be on the Council’s evening agenda (schedule not yet confirmed).

**11 Carie’s 3 philosophical e-mails**

This is a compilation of the three “philosophical” e-mails sent to you by Carie this month dealing with the Vision, the Gap, the Alternatives, Uncertainty, Scenarios, Criteria, Weighting, Rating, and dealing with the drought tolerance question. You may want to re-read these before we discuss Scenarios on Friday.

**12 Strategies and Alternatives Convention (formerly Alts Fair) concept paper**

This concept paper has been prepared by Rosemary in consultation with the Co-Facilitators to provide the Committee with opportunities to consider a broad array of alternatives. Please review and prepare to discuss any changes needed before proceeding to implement this proposal or another proposal that achieves similar goals.

**13 Draft Agendas for July and August**

Your work is starting to get complicated, and so we must keep some focus on future meetings.

**14 Evaluation form for Friday’s session**

**Other items**

**15 Grand Jury Report**

**16 Stratus Contract**

This Stratus contract will be considered by Council at its meeting next Tuesday June 24.

**“Elements of Decision” game**

This describes a “game” to help the Committee explore and reach a mutual understanding of the meaning of key terms including “Scenario,” “Alternative” and “Criteria” for the purposes of the Committee’s decision making process. Additional materials will be provided at the meeting.

**Evaluation forms**

These forms will be used to evaluate each session of your meeting.

## Water Supply Advisory Committee

Meeting May 29 – May 30, 2014

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 co-facilitators will to the best of their abilities note these qualifiers. Where the co-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 co-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 co-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 meeting Summary captioned "Post Script".*

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This meeting consisted of two consecutive daily sessions each lasting three hours. Here is a list of the members of the Committee. All members attended both sessions of the meeting. The late arrivals are noted below.

Peter Beckmann, Doug Engfer, David Green Baskin, Suzanne Holt, Dana Jacobson, Charlie Keutmann, Rick Longinotti, Sarah Mansergh, Mark Mesiti-Miller, Greg Pepping, Mike Rotkin, Sid Slatter, Erica Stanojevic, David Stearns.

Late arrival in the first session was Sarah Mansergh and in the second session David Stearns.

### **First Session, Thursday May 29**

#### **Public Comment**

- “Standing aside” allowed in the Charter but may be a form of abstention that violates Section 607 of the City Charter.

Facilitator’s note: according to the City Attorney there is no legal requirement for the “no abstention” provision of the City Charter to be extended to all City advisory bodies. Provided that the City Council adopts the Charter of the Committee including the provision for “standing aside” that provision will be allowable and will not violate the City Charter.

- What does “Recon” mean?
- The Committee should pay attention to the work that has already been done on the subject of the City’s water supply.
- The Committee’s meeting packets should be distributed to interested community members.
- Jerry Paul discussed the letter he had previously sent to the Committee.
- Bill Feberling discussed the letter he had previously sent to the Committee

#### **Processes for selecting and managing consultants**

Heidi described the process followed by the City to select and manage consultants. She also described how this process was used to select Stratus Consulting. In answer to questions she described why Stratus was selected as the preferred candidate and explained the utility of the economic study that they were originally selected to perform.

Rosemary explained how a consultant such as Stratus can be managed. She explained the way that a scope of work is developed if a consultant has been selected using a Request for Qualifications, and how a contract such as this is closely managed on the basis of specific task orders.

### **Committee member updates**

Members provided the following news of significant communication between them and organizations with significant interest in the development of water policy in Santa Cruz:

The Chamber of Commerce has appointed a sub-committee of its Community Affairs Committee to support the work of the WSAC. Their particular interests are the economic impact of water policy and water system decisions both locally and regionally.

The Water Commission is moving forward with the master conservation plan and will organize workshops to encourage public participation in the process. The agenda on Monday night June 2 includes presentations explaining what fish need to thrive.

The County Land Trust has discovered that the water rights of the former Cemex property in Davenport were once offered for sale by Cemex to the Trust for Public Land for \$1.2M. TPL was not interested.

### **Materials resulting from last meeting**

By consensus the Committee approved the draft Action Agenda and Summary of the meeting of April 30-May2. They agreed that similar documents should be prepared for every meeting.

### **Calendar through April 2015**

The Committee reviewed the schedule of meeting dates through April 2015 and agreed to it by consensus.

The Committee considered whether the amount of time allowed for each session of the Committee is sufficient and reached a consensus agreement that the meetings should last longer and use the following schedule:

Meetings on Wednesday or Thursday: 5:00 p.m. – 9:30 p.m.

Meetings on Friday: 2:00 p.m. – 6:00 p.m.

### **Charter Subcommittee recommendations**

The Charter Subcommittee presented its recommended Charter to the Committee. The Committee reached consensus on changes to the provisions of Article I as recommended by the Subcommittee and on the removal of Article XI Managing Expert Input in its entirety. The Committee requested that the Charter be reviewed by the City Attorney before submission to the Council for its approval. The Charter, as amended, is attached to this summary.

Facilitator's note: The attached Charter reflects the changes agreed to by the Committee but it has not yet been reviewed by the City Attorney.

### **Public Comment**

The Committee invited public comment about the proposed Charter.

- Better public access to the Committee's meeting packet. Correspondence from the community to the Committee should also be posted.
- Expected public comment after each agenda item.

### **Recon Overview**

Carie led a discussion of the design of the Recon phase. This included discussion of the "Alts Fair" in which many members said they felt that July would be too soon to conduct the Alts Fair.

### **Public Comment**

The Committee invited public comment about the Recon overview.

- Soquel Creek Water District arranged something similar to the Alts Fair and got no actionable input.
- Less substantial input such as the Alts Fair should come after the Committee has considered more substantial information.
- Need to develop criteria before considering alternatives so that you can weigh them all against the same criteria.

### **Written Evaluation and Wrap Up**

Carie asked all participants (Committee members and members of the public) to complete evaluation forms and hand them in.

### **Second Session, Friday May 30**

#### **Public Comment**

- Will there be a guest presentation today?
- Committee should be careful of the neutrality of contractors. The City seems to favor desalination over alternatives. Be wary of subcontracting to Kennedy Jenks because of their history. In the past, six of their consultants were members of CalDesal. CalDesal and Kennedy Jenks were significant funders of efforts to defeat Measure T “Voter Approval for the Marin Desalination Plant” that was defeated in November 2010.

#### **Committee member updates**

Members asked for an opportunity to add to the member updates of the previous session:

- The owner of the Cemex quarry near Lydell is willing to lease water rights.
- The Water Commission will forward its meeting packets to Committee members if they are interested. All members said that they want to receive the packets.

## Criteria for Expert Selection

Committee members requested that the meeting attempt to pick up the discussion about consultant selection where it was left at the last meeting. Consequently there was no further discussion of criteria for expert selection.

## Technical Support Consultant

Carie facilitated a discussion about the selection of a technical support consultant for the committee. After substantial deliberation the Committee reached consensus, with Peter standing aside. He stood aside because Stratus was originally selected based on a Request for Qualifications for a consultant to provide an economic impact report. That selection process therefore excluded any consultants who do not include economic analysis in their primary portfolio, whereas the requirements for the Recon consultants are much broader than the economics of any alternatives. The terms of the consensus agreement were as follows:

The Committee will recommend to the Council that the City contract Stratus as its general contractor for technical support of the Committee during the Recon phase only (through approximately the end of November 2014).

The agreement included the following conditions:

- The Committee will be actively engaged with the City and contractor in a partnership approach:
  - Stratus will only engage subcontractors after discussion with the Committee.
  - Scoping and funding of tasks will be developed together
  - Refinement of the consultant task will occur iteratively and together
- The Committee will have an Independent Review Panel that will either be approved by the Council and funded by the City, or will be made up of volunteers.
- The Committee may request the termination of the Stratus contract at any time.
- The Stratus contract terminates at the end of Recon unless the Committee requests that they continue.

Before reaching this consensus the Committee agreed on the following provisions that were described as the “escape clause.”

- Starting in the August Committee meeting, the City and the Committee will initiate a contracting process for a general contractor. The intention is that the new consultant, if needed, would be in place after Recon is over (approximately December 2014).
- This contracting process will be suspended if the Committee agrees to continue with Stratus after Recon is over. (See above.)
- If the Committee does not agree to use Stratus after Recon, or, in the alternative, if the Committee decides at any time that they do not wish to continue to use Stratus, the City will proceed with the alternative contracting process.
- Anyone who is hired to provide technical assistance to the Committee shall reveal their trade organization relationships and lobbying practices relevant to WSAC projects.

### **Independent Review Panel**

Nicholas facilitated a discussion about the creation of an independent review panel (IRP). The Committee invited public comment, but no member of the public wanted to comment on this item.

The Committee considered the list of criteria developed at the last meeting to guide the selection of a consultant and made some modifications to it so that it would be applicable for the selection of members of an IRP. This brief discussion produced the following list that was recognized as needing further development if it is to be useful:

Unbiased  
Skillful,  
Effective, efficient,  
Attentive, reliable,  
Available  
Has integrity, courage  
Uses "communicable" science; understandable and transparent  
Has insights into best practices  
Easy to contract with  
Able to draw on deep bench  
Serves the environment  
Familiarity with Santa Cruz

The Committee also discussed a paper drafted by Rosemary describing the formation of an IRP. The discussion considered the size of an IRP, the amount of remuneration necessary, the amount of effort expected from the IRP, whether to emphasize the qualities of academics or of consultants and how the Committee would participate in the

selection and contracting process. The discussion was cut short for lack of time. The Committee agreed by consensus that an IRP Subcommittee consisting of Rosemary, Sue, Mark, Sid and Rick will develop a proposal for an RFP or RFQ and a Council Staff Report to be presented to the Committee at its next meeting. The Subcommittee will continue to work closely with the City through the selection and contracting process. The Subcommittee expects to complete its task before the end of August and has a small enough size so that it will not be required to follow the public meeting requirements of the Brown Act.

### **Website Subcommittee update**

The Website Subcommittee reported briefly on their progress. The Committee discussed ways to use the website to receive correspondence directed to the Committee by the public, to show correspondence received and to record Committee responses.

The Committee agreed by consensus that Mike would be responsible for receiving all correspondence directed to the Committee, answering routine and procedural questions and forwarding more complex comments and questions to the full Committee in the monthly meeting package. Complex items that are received by Mike between the date of the meeting package and the meeting itself will be forwarded to Committee members individually as they are received.

Facilitator's note: The appointment of Mike to this task appears to satisfy the requirements of article IV(e)(ii) of the Charter so that Mike will be able to respond to correspondence as a spokesperson of the Committee, and not merely on his own behalf.

Nicholas drew attention to the need for the Committee to decide who will deliver the Committee's report to the Council at their meeting on Tuesday June 24. The Committee agreed to appoint Mike to this task.

Facilitator's note: This report appears to constitute the completion of the Committee's first "Milestone" specified by the Council which is to demonstrate "Agreement on definitions and basic principles of problem, purpose, process, common timelines and work plan."

### **Agenda for June and July meetings**

Nicholas facilitated a discussion of the agenda for the next two meetings. Members described their interests in including various topics during these meetings including:

- The need for a good background/history lesson
- Planning for the Alts Fair

- Setting up the Outreach Subcommittee
- A presentation from John Ricker
- A presentation on supply and demand – this would likely be of popular interest so should be held on Thursday evening
- Develop criteria for the selection of presenters

Facilitator's note: we ran out of time before we could conclude your discussion of this important topic. Below is an outline of the agenda for June as the Co-facilitators currently see it. We believe that this reflects your interests. This agenda will change – perhaps substantially. The times specified are very rough – inserted simply to give an idea of the dimensions of the discussion.

THURSDAY session

5:00 Housekeeping and Public Comment

Roll Call  
Public Comment  
Committee Member updates  
Agenda Review  
Summary and Action Item Approval  
Committee Work Plan / Gantt Chart

6:00 Stratus Team

Introduce Stratus Team  
Q&A

6:15 Model for decision making

Elements of a Decision (How scenarios, alts, criteria etc fit together)  
The Recon Workbook (or Report)  
The Multicriteria Model you may want to use

7:00 Selection of Presenters

Presenters  
The Glove (Criteria and specific needs)  
What fits the glove?

7:45 Website Subcommittee

Curated History

8:15 Outreach

Outreach (City presentation)  
Outreach subcommittee appointment  
Alts Fair Committee direction to Outreach Subcommittee (if this is in fact something you want to do)

8:45 Independent Review Panel

9:20 Wrap-up

9:30 Adjourn

FRIDAY session

2:00 Housekeeping and Public Comment

Roll Call  
Public Comment  
Committee reflections on the day before

2:15 Correspondence received from public

Rotkin presents on public submissions requiring Committee discussion

2:45 Major topics for discussion

Supply and Demand  
Scenarios  
More on Criteria

5:15 Planning future agendas

July and August agendas

5:40 Public Comment

5:55 Wrap Up

6:00 Adjourn

**Written Evaluation and Wrap Up**

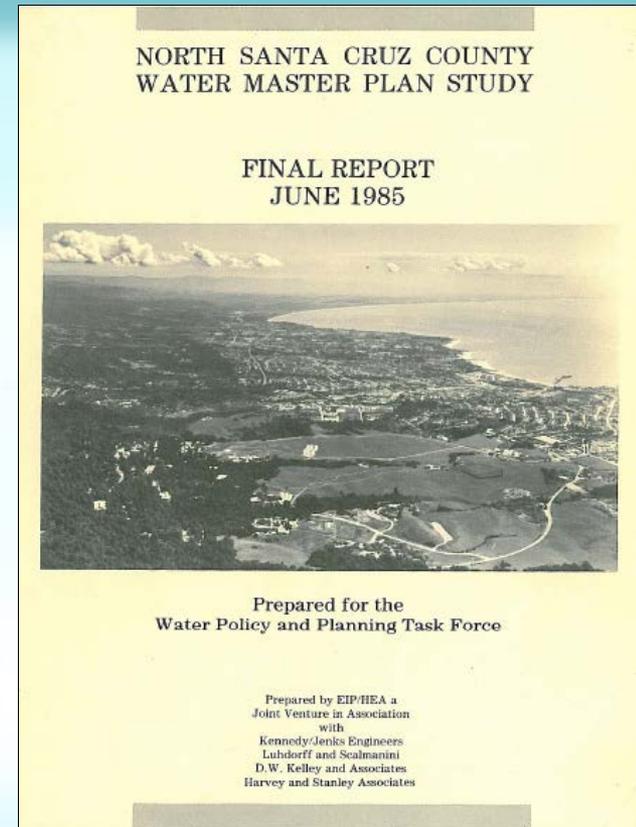
Carie asked all participants (Committee members and members of the public) to complete evaluation forms and hand them in.

# Water Supply Planning: 1980's

## North Santa Cruz County Water Master Plan

### Recommended alternatives

- Conservation and leak control programs
- Interties
- Zayante Creek Dam
- Scotts Valley/SLV groundwater wells
- Baldwin Creek off stream reservoir
- Pump Station at Majors Creek diversion
- City of SC groundwater wells
- Glenwood Dam



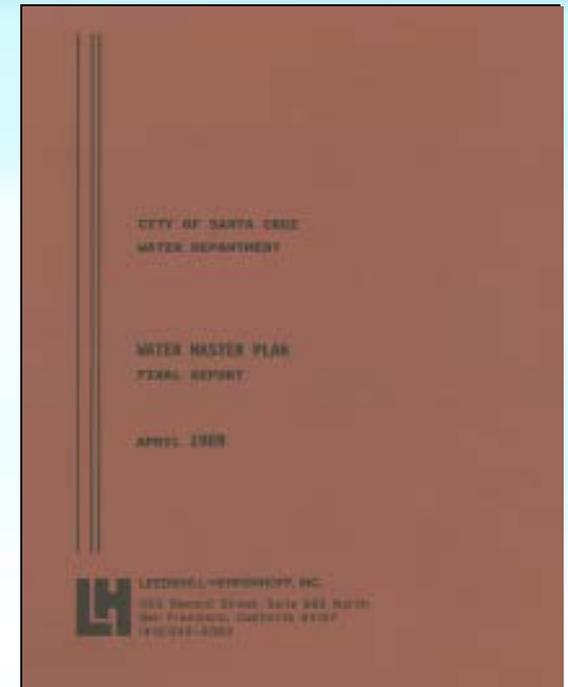
Focused on regional opportunities to augment supply and proposed some City-only alternatives.

# Water Supply Planning: 1980's

## City of Santa Cruz Water Master Plan- 1989

### Evaluation of Supply Alternatives

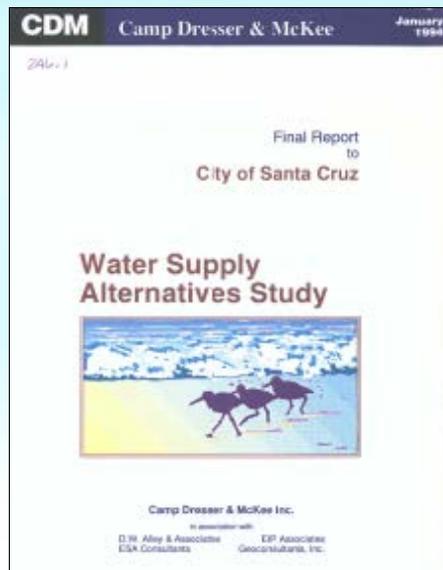
- Upgrade existing supply system
- Increase Felton Diversion capacity
- North coast pump stations
- Additional groundwater wells
- Wastewater reclamation
- Enlarge Loch Lomond
- Interties
- Various reservoir projects



Report included water demand projections and an evaluation of other water supply alternatives to meet the future demands.

# Water Supply Planning: 1990's-early 2000's

Report by Camp Dresser McKee



## Evaluation of Supply Alternatives

- Enlarge Loch Lomond
- Waterman Gap Reservoir
- Kings Creek Reservoir
- Yellow Bank Creek Off Stream Storage
- Brackish Groundwater from North Coast

The project with the highest rating was a “No Reservoir” project with new groundwater wells near Thurber Lane and a Brackish Groundwater Wells project along the north coast.



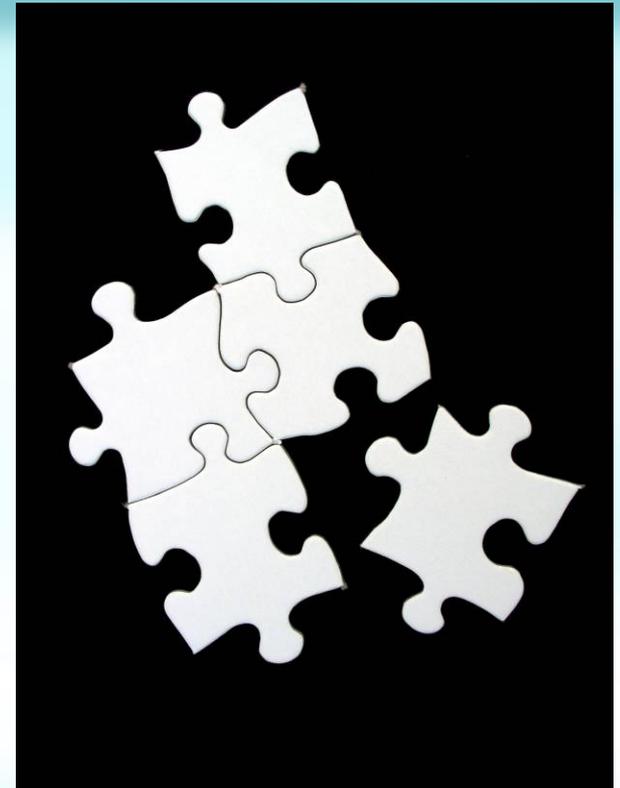
# Integrated Water Planning – 1997 to present

## Programmatic Approach

Decrease demand and increase supply

## Additional Studies and Reports

- Water Demand Investigation (1998)
- Water Conservation Plan (2000)
- Water Curtailment Study (2001)
- Alternative Water Supply Study(2000)
- Evaluation of Regional Water Supply Alternatives (2002)



# Integrated Water Planning – 1997 to present

## Reports

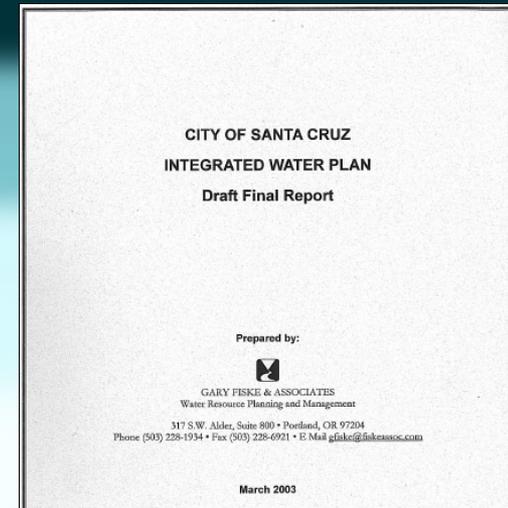
**2003- Integrated Water Plan**

**2005 – Program Environmental Impact Report**

## Public Participation and Input

**Over 75 public meetings were held**

*Fundamental objective:* Make optimum use of existing water resources to help meet future water needs, and minimize the need for additional water supply development.



DRAFT  
**Integrated Water Plan**  
Program Environmental Impact Report  
State Clearinghouse #2003102140



Linette Almond, Deputy Director  
City of Santa Cruz  
Water Department  
809 Center Street, Room 102  
Santa Cruz, California 95060  
(831) 420-5200

Prepared by:  
**EDAW**  
150 Chestnut Street  
San Francisco, California 94111

In Association with:  
Hopkins Groundwater Consultants  
Chambers Group, Inc.  
Gary Kittleson

JUNE 2005

# Integrated Water Plan- Program Approach



## 1. Conservation

Continue water conservation programs to reduce demand and maximize the use of existing water resources

## 2. Curtailment

Plan on an additional 15% temporary rationing during droughts

## 3. Develop Supplemental Supply

**Cooperative desalination facility** to protect against drought and preserve groundwater resources

On November 8, 2005, City Council unanimously adopted the IWP as the City's long-term water resource strategy.

# But Wait, there's more.....

- 2007 Formation of **scwd**<sup>2</sup> to pursue feasibility of a seawater desalination facility
- 2009 Water Shortage Contingency Plan adopted
- 2011 Water Supply Assessment completed for Santa Cruz General Plan
- 2012 Measure P passes in November
- 2013 public review period for Desal DEIR from May to August
- 2013 Council decision to initiate reset of supplemental water supply decision in August
- 2014 WSAC created in February

**Compilation of candidates to make presentations to the Committee during RECON**

**Survey respondent:** **DOUG**  
**Name** **John Ricker**  
**Why?** Deep/broad perspective on the raft of regional issues we confront.  
**What problems?** n/a  
**What controversy?** n/a

**Survey respondent:** **DAVID B**  
**Name** **Trevi Systems**  
**Why?** Trevi Systems is a company in Petaluma that appears to be leading the field in forward osmosis, a process that purportedly uses 1/8 the energy to desalinate water as compared to reverse osmosis. They are currently working on two pilot projects with water utilities, one overseas and one in Orange County. I believe this is an alternative that at the very least should be researched by the City as an alternative to the reverse osmosis plant currently under consideration and technology that should be presented to the SWAC. They are interested in doing a presentation to us.  
**What problems?**  
**What controversy?**

**Survey respondent:** **MARK**  
**Name** **Donna Meyers**  
**Why?** Donna is very knowledgeable about watersheds and fisheries especially the ones that provide water to us and is adept at communicating complex issues in simple terms the average person can understand.  
**What problems?** None  
**What controversy?** Donna previously served as a Water Commissioner for the City of Santa Cruz

**Name** **Bill Tysseling**  
**Why?** Bill is very knowledgeable about the local and regional economic systems, has a deep understanding of multiple factors affecting economic systems and is extraordinarily adept at communicating complex issues in simple terms the average person can understand.  
**What problems?** None  
**What controversy?** Bill is director of the Santa Cruz Area Chamber of Commerce and as much as business interests might be perceived as evil, may be viewed with some skepticism.

**Name** **Andy Fisher, PhD**  
**Why?** Andy is very knowledgeable UCSC professor of hydrogeology with deep understanding of surface and subsurface water issues especially with regards to the technical difficulties in recharging the subsurface aquifers in our region. Andy has studied and is familiar with several of the proposals for increasing our water supply and / or storage.  
**What problems?** None  
**What controversy?** None of which I am aware.

**Survey respondent:** **ROSEMARY**  
**Name** **Toby Goddard/Terry McKinney**  
**Why?** For info on CURRENT SUPPLY: Santa Cruz Water Staff: These people know the topic, in detail, and can both present it and answer questions about it.  
**What problems?** none  
**What controversy?** none -- should be able to provide extensive factual information to the committee

## Compilation of candidates to make presentations to the Committee during RECON

<b>Name</b>	<b>Toby Goddard</b>
<b>Why?</b>	For info on CURRENT DEMAND: Santa Cruz Water Staff: Toby has done extensive work on current demand, especially as it relates to water uses, conservation etc. He has detailed knowledge to share.
<b>What problems?</b>	none
<b>What controversy?</b>	none
<b>Name</b>	<b>Juliana Rebagliati, Santa Cruz Planning Director</b>
<b>Why?</b>	For info on FUTURE DEMAND per the City of Santa Cruz General Plan: Juliana is knowledgeable about the assumptions that have gone in to growth projections.
<b>What problems?</b>	none
<b>What controversy?</b>	none
<b>Name</b>	<b>Bill Maddaus, principal, Maddaus Water Management</b>
<b>Why?</b>	For info on FUTURE DEMAND per the Long Term Conservation Master Plan. Bill has spent his career (30+ years) working on water conservation, he has developed detailed models for analyzing conservation programs and done detailed work, including the Santa Cruz Baseline Conservation Survey, to evaluate the effectiveness of existing conservation programs.
<b>What problems?</b>	None
<b>What controversy?</b>	None
<b>Name</b>	<b>Dr. Sarah J. Feakins</b>
<b>Why?</b>	For info on FUTURE DEMAND esp. Implications of Climate Change on Supply and Demand (see <a href="http://earth.usc.edu/feakins/home">http://earth.usc.edu/feakins/home</a> ). Dr Feakins is knowledgeable about climate change issues and can place information related to drought in a context of geologic time.
<b>What problems?</b>	Dr. Feakins is on the faculty of the University of Southern California. Don't know about availability or cost of her participation
<b>What controversy?</b>	
<b>Name</b>	<b>Dr. Heather Cooley, Pacific Institute, Water Program Director</b>
<b>Why?</b>	For info on FUTURE DEMAND ESP. Implications of Climate Change on Supply and Demand. See <a href="http://pacinst.org/about-us/staff-and-board/heather-cooley/">http://pacinst.org/about-us/staff-and-board/heather-cooley/</a>
<b>What problems?</b>	The Pacific Institute is located in Oakland, CA
<b>What controversy?</b>	
<b>Name</b>	<b>Chris Berry, Fishery Biologist, Jeff Hagar</b>
<b>Why?</b>	Water Department staff. For info on FUTURE DEMAND esp implications of fish flow releases.
<b>What problems?</b>	
<b>What controversy?</b>	

## Content outline for Supply Demand Presentation for June WSAC Meeting

### Introduction and Context:

- The fundamental question the WSAC will have to grapple with in its work is the reliability of Santa Cruz's water supply.
- The fundamental measure for reliability is the degree to which available supply can meet existing and future demand under a range of foreseeable and unforeseeable but probable circumstances or conditions.
- In the event that supply is not determined to be adequate to meet existing and future demand, the typical response is to develop approaches to manage demand, augment supply, or do some of both.
- If supply augmentation is contemplated, the lead time necessary to develop or acquire additional supply is typically very long (10 to 20 years), so planning will typically begin long before current supply is fully allocated to current or near term future demand.

### A Representational View of How Current Water Demand is Met by Current Supply Resources

#### Current Supply:

- Sources
- Source characteristics (quantity/quality)
- Production from sources in recent years (historical source of supply graphic)
- Recent changes in supply (short term flow agreements)

#### Current Demand:

- Customer characteristics
- Historical demand
- Historical demand trends (what we've learned – demand forecasting over time graphic)
- GPCD data
- Peak demand characteristics (sfr/mfr; c&l, parks/large irrigators)

#### Future Supply:

- Modeling Inputs
  - Hydrology
  - Operating rules
  - State of the Model –
    - Why do you change models
    - Changes since the dEIR,
    - Additional changes to come...
- Modeling Outputs
  - Duration and frequencies of shortages

- Forces affecting future supply
  - Fish flow releases
    - Sources of and rationale for selecting these flow sets
    - High end estimate of required level of releases (dEIR Tier 3 flow set) (including addressing how the DFG 5 flow set fits or doesn't fit into this picture)
    - Low end estimate of required level of releases (dEIR Tier3/2 flow set)
  - Climate change – introduces irreducible uncertainty
    - probable increased variability,
    - probable increased frequency of drought,
    - probable changes in precipitation patterns
- Implications of potential changes on source characteristics
  - Potential implications for water treatment and regulatory compliance

#### **Future Demand:**

- Urban Water Management Plan Requirements
- Assumptions and modeling tools
  - how we estimate demand (model inputs and outputs)
  - methodology and methodology source reference
  - uncertainty
- How past forecasts have or have not reflected what has actually occurred – comparative graph
- Projecting future demand
  - Assumptions and the irreducible uncertainty associated with those assumptions
    - Population
    - Growth in number of accounts
    - Water use in future development
    - Price elasticity of demand
  - Long Term Conservation Master Plan
  - The role of water curtailment – when do you make a decision to institute curtailment, what policy is in place, if any, how might that changes
    - What's going on this year, performance, percent fined, level of demand vs. consumption goal
- Level of service goals – 15% drought tolerance

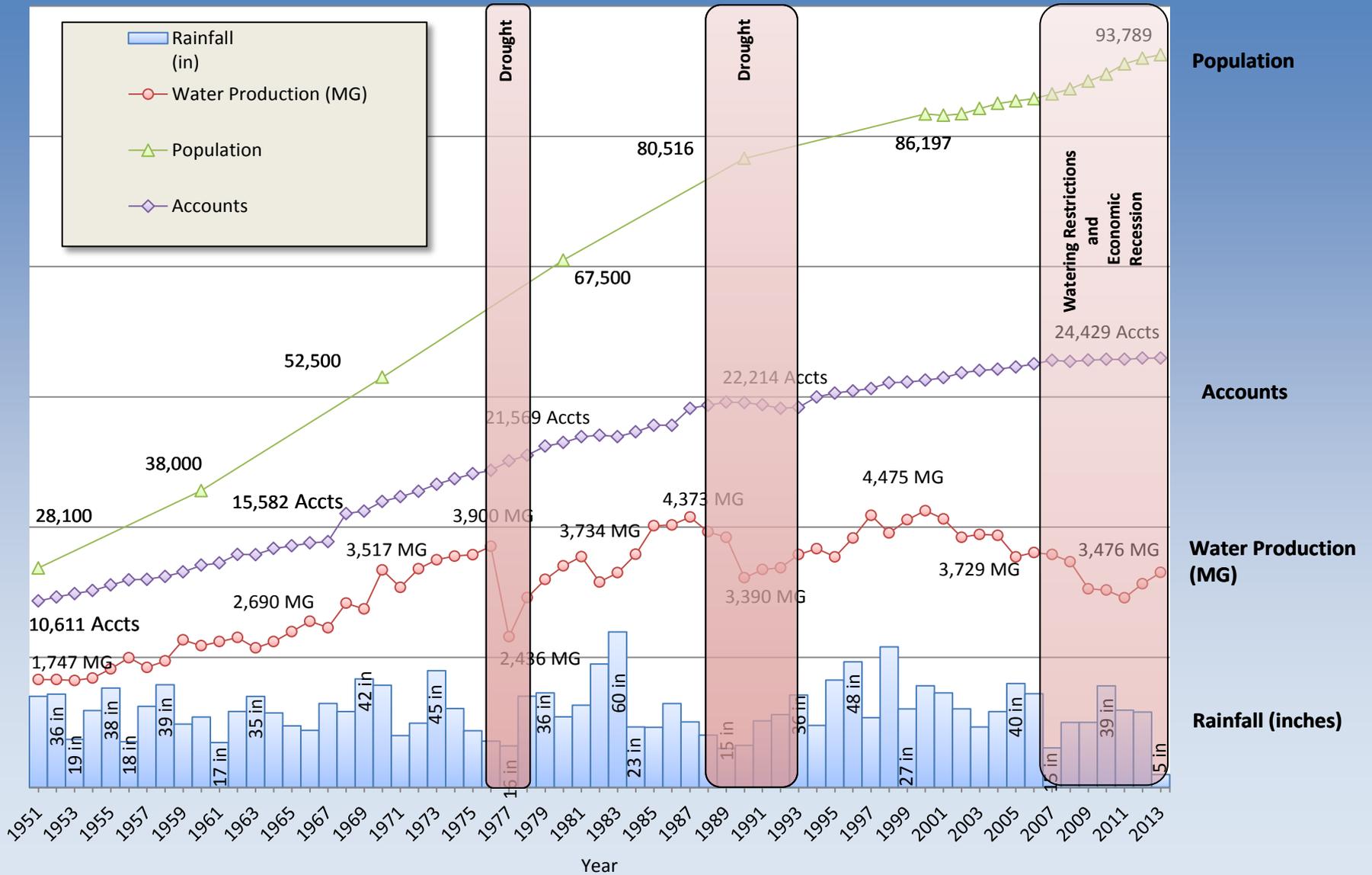
#### **Conclusions and Take-Aways**

- Applying the precautionary principle to water resources planning;
  - Potential implications for water users and our community of being “right” or “wrong” about how much water supply we need, of over-investing or under-investing;
- Lots of opportunity to discuss and disagree about what are the right assumptions about future demand, but there is no guaranteed right answer;

- Climate change introduces irreducible uncertainty into our process – ultimately we'll have to figure out how to take this uncertainty into account in our planning, but we aren't likely to find ways to resolve it; and
- Scenario planning is a useful way to learn about and get a better handle on how the various factors we're dealing with in our planning could affect our future.

DRAFT

# Population, Accounts, Water Production, and Rainfall 1951-2013 City of Santa Cruz

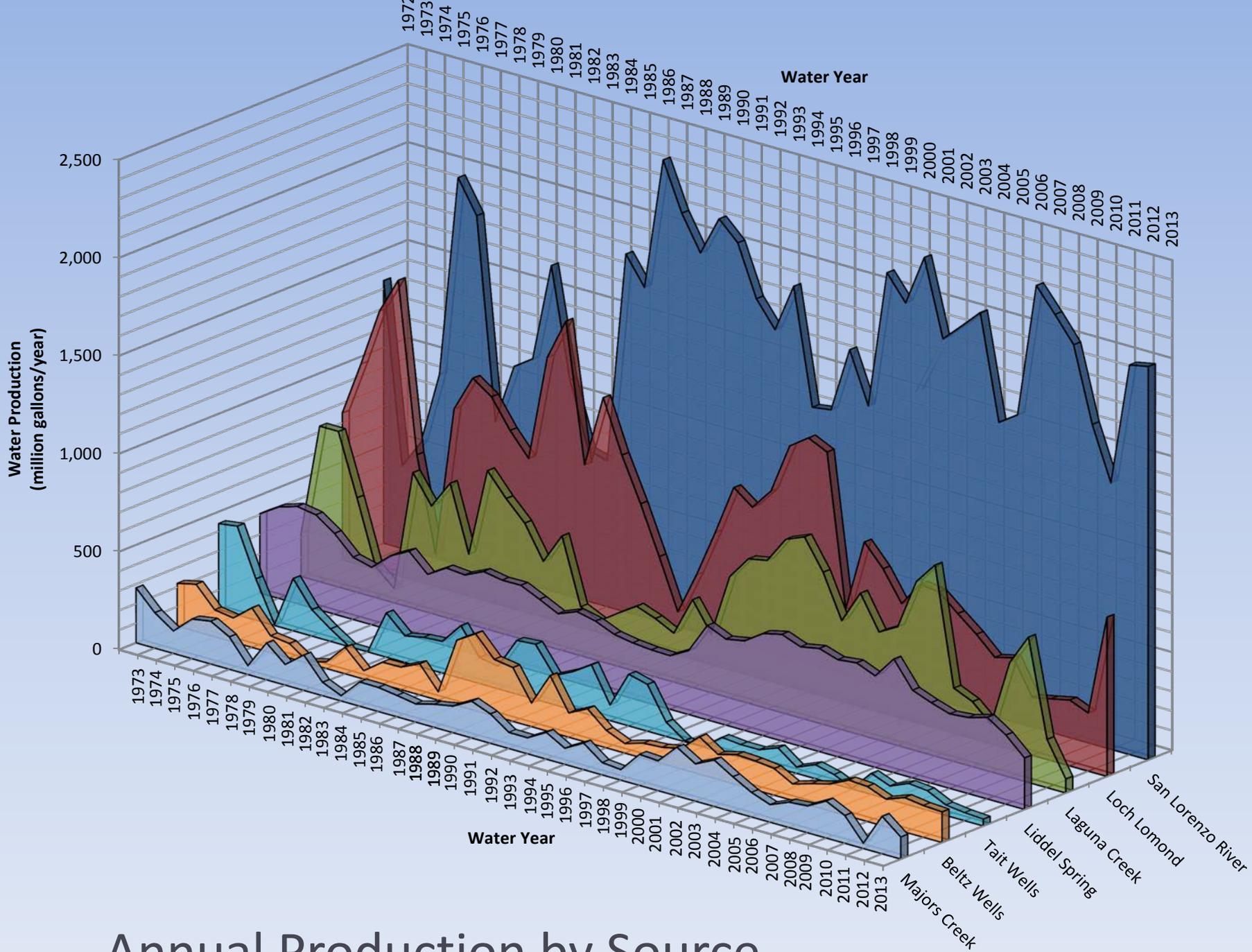


# Gross Water Supply Sources for the City of Santa Cruz's Water Utility, 2009-2013

Calendar Year					
All figures in million of gallons					
<u>Source</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Coastal Sources	814	1,168	1,211	711	400
San Lorenzo River	2,038	1,468	1,465	1,959	2,110
Loch Lomond	195	411	228	462	807
Beltz Wells	165	145	163	163	160
Totals	3,212	3,192	3,067	3,295	3,477

# Water Consumption by Customer Class and Geographic Location

Calendar Year 2013					
Figures are in millions of gallons					
<u>Customer Class</u>	<u>Inside City</u>	<u>Capitola</u>	<u>North Coast</u>	<u>Outside City</u>	<u>Total</u>
Single family	764	9	2	451	<b>1,266</b>
Multi-family	366	4	2	319	<b>690</b>
Irrigation residence	28	<1	-	15	<b>44</b>
Irrigation business	38	4	-	33	<b>75</b>
Bulk/Hydrant mtrs	2	-	-	-	<b>2</b>
North Coast Irrigation	-	-	24	-	<b>24</b>
Irrigation golf	45	-	-	63	<b>108</b>
Construction	1	-	-	-	<b>1</b>
Business general	249	30	4	169	<b>452</b>
Business restaurant	38	1	-	1	<b>40</b>
Hotel/motel	70	8	-	2	<b>80</b>
Industrial	55	-	-	1	<b>56</b>
UC Santa Cruz	182	-	-	-	<b>182</b>
City of Santa Cruz	61	-	<1	1	<b>62</b>
<b>Total</b>	<b>1,899</b>	<b>56</b>	<b>32</b>	<b>1,055</b>	<b>3,043</b>



Annual Production by Source

## WSAC Review Draft

### Revised Independent Review Panel Concept Paper<sup>1</sup>

**Note:** *The ultimate RFQ will include a narrative description of the WSAC and its mission, timeline etc. That introductory material will set the stage for the information below. In the interest of getting this out to subcommittee members to see whether I've accurately reflected your input, I've not included that introductory text here.*

**Panel Role:** The role of the Independent Review Panel (Panel) would be to assist the Water Supply Advisory Committee (WSAC or Committee) in effectively interacting with its consultant support team.

To achieve this goal, the Panel would:

- Provide critical review, on an as assigned or as needed basis, of products created by the WSAC technical support team. **The goal of the Panel's work is to offer feedback to the Committee on the work provided by its technical support team.** Specifically, review of the work produced by the technical support team would focus on:
  - The accuracy and appropriateness of analytical, scientific, and technical methods;
  - The clarity and accuracy of statements of assumptions; and
  - The appropriate characterization of the strengths and weaknesses of the analyses, especially with respect to uncertainty, data quality, or other factors that, if different, could affect the results in a significant manner.
- Offer advice or suggestions to the WSAC regarding lines of inquiry or technical questions that should be evaluated by the technical team.

The Panel would work together as a team, or be individually assigned, to review products prepared or created by the technical team and report their findings to the Committee.

**Panel Characteristic:** Panel characteristics would include the following:

- The Panel would include 3 to 5 members;
- Panel members would have scientific or technical training and significant hands on experience as a practitioner (fifteen years or more of experience preferred) in scientific or technical disciplines relevant to the work of the WSAC.
- Panel member experience and expertise would be diverse with the experience and expertise of each panel member complementing and supplementing the experience and expertise of the other. An example of an effective Panel would made up of:
  - An environmental engineer/scientist, especially with experience related to climate change, watersheds, fisheries, hydrology, hydrogeology, permitting or related issues;

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<sup>1</sup> Revisions based on WSAC Input on June 12, 2014 and the work of a WSAC Subcommittee which included Sue Holt, Rick Longinotti, Mark Mesiti-Miller, and Sid Slater

- A civil engineer with experience related to municipal water systems and resource planning, management, treatment technology, facilities design and operations; and
- A public policy expert, especially related to environmental and community sustainability issues and decision-making by local governments in light of significant uncertainty.

Other combinations of expertise will be evaluated by the Panel selection team.

- Panel members would be expected to bring their broad knowledge and experience to the process and apply this expertise to the topics the WSAC will be dealing with.
- Panel members would have reasonable availability to work with the WSAC during the coming year, including being willing to at least occasionally attend WSAC monthly meetings, being willing to commit the time needed to review documents, and being willing to prepare and personally present to the WSAC summaries of their review efforts.
- Panel members would have demonstrated ability to explain complicated topics in terms non-technical people can understand as well as the ability to present facts without concealing values and with clear articulation of assumptions.

Additional Panel characteristics that would be desirable include:

- Panel members would have demonstrated skills as technical and/or scientific reviewers through experiences such as providing peer review for articles or other publications on scientific and technical topics; and
- Panel members would have some previous experience supporting, advising, and engaging with citizen groups on topics with public policy implications.

**Panel Compensation:** Compensation would be provided in the form of an honorarium only. The honorarium amount would be limited to \$5,000 per panel member. Direct expenses (mileage, other transportation, per diem, if and as needed) would be reimbursed.

**Panel Selection Process:** Selection would be done using a qualifications based selection process.

The Request for Qualifications (RFQ) would be developed by City staff and would include background information on the WSAC's process and a description of the Panel Role, Desired Panel Characteristics, and Panel Compensation.

The RFQ would include criteria for evaluating submittals that would emphasize the Panel Characteristics. The RFQ would be provided to WSAC members for review prior to being issued.

Those interested in responding to the RFQ would be asked to submit resume or curriculum vitae and a cover letter describing:

- How they fit the Panel Characteristics;
- Their interest in working with the Committee on this project;
- Their availability to work with the WSAC over the coming year; and
- Their willingness to accept the offered compensation.

Prior to issuing the RFQ, City staff will receive suggestions of individuals who will be sent the RFQ and, in addition, the RFQ will be posted on the City's purchasing websites where RFQs and RFPs are typically posted.

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# Request for Qualifications for an Independent Review Panel

Water Supply Advisory Committee  
City of Santa Cruz Water Department



Vern Fisher/Herald Archive

Qualifications Due: ENTER DATE

## **I. Request for Qualifications**

The City of Santa Cruz Water Department is soliciting Statements of Qualifications (SOQ) from individuals with expertise in assisting citizen advisory bodies in effectively interacting with a consultant support team.

## **II. Water Supply Advisory Committee Overview**

### **A. Project Description**

The City of Santa Cruz Water Department (SCWD) is a municipal utility that provides water service to a geographic area that includes the entire City of Santa Cruz, adjoining unincorporated areas, a small part of the City of Capitola, and coast agricultural lands north of the City limits. The current population served is approximately 94,000.

The SCWD's water supply comes entirely from local sources. Surface water accounts for over 95% of the SCWD's total water supply. Groundwater pumped from wells comprises the remaining 5% of SCWD's water sources. Due to this, the region's water supply is extremely vulnerable to fluctuations in seasonal rainfall. Frequent water shortages and restrictions exemplify the region's vulnerability.

In response to the region's water supply reliability issues, the City has spent decades observing, researching, and reporting on new water supply opportunities and conservation methods. In 2010, after multiple studies, evaluations and reports, SCWD (partnered with Soquel Creek Water District) proposed a sea water reverse osmosis desalination plant (desal) as a potential solution to the region's water shortages.

The public responded to the proposed desalination plant by requesting that it be put to a vote, and gathered enough signatures to qualify a measuring requiring a public vote before funding for construction or acquisition of a desal project could commence. This measure, known as Measure P, was placed on the November 2012 ballot and passed with 72% of the vote.

In the fall of 2013, following continuing expressions of concern about a possible desal project by community interests, the City stepped back from the path it had been on and decided to create a citizens committee to consider the water supply issues, alternative strategies and solutions, and the public policy implications for Santa Cruz and provide recommendations to the Santa Cruz City Council. The Water Supply Advisory Committee (WSAC or Committee) was formed in early 2014 and began meeting in late April. It is made up of 14 citizens with diverse backgrounds and professions and the Santa Cruz Water Department Director is an ex officio member of the committee.

The Committee will have the support of a team of technical consultants throughout its process and the role of the proposed Independent Review Panel (IRP or Panel) is to support the committee by providing critical review of the work products produced by the technical support team and to provide suggestions to the Committee lines of technical inquiry that would be helpful in completing their work.

### **IRP Role Description**

The role of the IRP would be to assist the WSAC in effectively interacting with its consultant support team. To achieve this goal, the Panel would:

- Provide critical review, on an as assigned or as needed basis, of products created by the WSAC technical support team. The goal of the Panel's work is to offer feedback to the Committee on work provided by its technical support team. Specifically, review of the work produced by the technical support team would focus on:
  - The accuracy and appropriateness of analytical, scientific, and technical methods;
  - The clarity and accuracy of statements of assumptions; and
  - The appropriate characterization of the strengths and weaknesses of the analyses, especially with respect to uncertainty, data quality, or other factors that, if different, could affect the results in a significant manner.

## Request for Qualifications for an Independent Review Panel

- Offer advice or suggestions to the WSAC regarding lines of inquiry or technical questions that should be evaluated by the technical team.

The Panel would work together as a team, or be individually assigned, to review products prepared or created by the technical team and report their findings to the Committee.

Link to City Council Agenda Report:

### B. Panel Characteristic: Panel characteristics would include the following:

- The Panel would include 3 to 5 members;
- Panel members would have scientific or technical training and significant hands on experience as a practitioner (fifteen years or more of experience preferred) in scientific or technical disciplines relevant to the work of the WSAC.
- Panel member experience and expertise would be diverse with the experience and expertise of each panel member complementing and supplementing the experience and expertise of the other. An example of an effective Panel would made up of:
  - An environmental engineer/scientist, especially with experience related to climate change, watersheds, fisheries, hydrology, hydrogeology, permitting or related issues;
  - A civil engineer with experience related to municipal water systems and resource planning, management, treatment technology, facilities design and operations; and
  - A public policy expert, especially related to environmental and community sustainability issues and decision-making by local governments in light of significant uncertainty.Other combinations of expertise will be evaluated by the Panel selection team.
- Panel members would be expected to bring their broad knowledge and experience to the process and apply this expertise to the topics the WSAC will be dealing with.
- Panel members would have reasonable availability to work with the WSAC during the coming year, including being willing to at least occasionally attend WSAC monthly meetings, being willing to commit the time needed to review documents, and being willing to prepare and personally present to the WSAC summaries of their review efforts.
- Panel members would have demonstrated ability to explain complicated topics in terms non-technical people can understand as well as the ability to present facts without concealing values and with clear articulation of assumptions.

Additional Panel characteristics that would be desirable include:

- Panel members would have demonstrated skills as technical and/or scientific reviewers through experiences such as providing peer review for articles or other publications on scientific and technical topics; and
- Panel members would have some previous experience supporting, advising, and engaging with citizen groups on topics with public policy implications.

### C. Panel Compensation

Compensation would be provided in the form of an honorarium only. The honorarium amount would be limited to \$5,000 per panel member. Direct expenses (mileage, other transportation, per diem, if and as needed) would be reimbursed.

### D. Schedule

Development of a Request for Qualifications for the Independent Review Panel contract may commence after the award of contract. Duration is dependent on several key decision points for the City and WSAC.

### III. RFQ Process

#### A. Process

Parties interested in being considered to provide these services are requested to submit their SOQs on or before ENTER DATE. SOQs will be evaluated by a Panel selection team using the criteria established in Section V. The top rated team will be asked to prepare a proposal for the purpose of negotiating a contract. Where no clear winner is determined, semi-finalists may be asked for supplemental information and may be invited to interview with the Evaluation Committee. During the interview, semi-finalists may be asked to:

- Make an oral presentation, and/or
- Respond to pre-established questions.

All responsive teams will be given equal opportunity to provide any requested additional information to the City. Any interviews will be scheduled on a mutually agreed upon date and will be at no cost to the City. The Evaluation Committee will use all available information to rank the semi-finalists in order of their ability to best meet the needs of the City.

#### B. Timeline

The tentative timeline for the selection process is as follows.

ENTER DATE ----- SOQs Due  
ENTER DATE ----- Evaluation of SOQs complete and start negotiation with top rated team  
ENTER DATE ----- Award of Contract

#### C. Information Disclosure to Third Parties

SOQs are a matter of public record and are open to inspection under the California Public Records Act. If any respondent claims any part of its SOQ is exempt from disclosure and copying, they shall so indicate in the transmittal letter. By responding to this RFQ, respondents waive any challenge to the City's decision in this regard.

If any SOQ contains confidential information, the respondent shall clearly label and stamp the specific portions that are to be kept confidential. The respondent is urged to identify the truly confidential portions of the SOQ and not simply mark all or substantially all response as confidential. Notwithstanding the foregoing, respondents recognize that the City will not be responsible or liable in any way for losses that the respondents may suffer from the disclosure of information or materials to third parties.

#### D. City Rights and Options

The City, at its sole discretion, reserves the following rights:

1. To reject any, or all SOQs or information received pursuant to this RFQ;
2. To supplement, amend, substitute or otherwise modify this RFQ at any time by means of written addendum;
3. To cancel this RFQ with or without the substitution of another RFQ or prequalification process;
4. To request additional information and/or schedule interviews as part of the selection process;
5. To verify the qualifications and experience of each respondent;
6. To require one or more respondents to supplement, clarify or provide additional information in order for the City to evaluate SOQs submitted;
7. To hire multiple contractors to perform the necessary duties and range of services if it is determined to be in the best interests of the City; and
8. To waive any minor defect or technicality in any SOQ received.

E. Questions/Clarification Request

For the City, the primary contact is:

Rosemary Menard  
Water Director  
City of Santa Cruz Water Department  
212 Locust Street, Suite C, Santa Cruz CA 95060  
Email: [RMenard@cityofsantacruz.com](mailto:RMenard@cityofsantacruz.com)  
Phone: (831)420-5205

During the SOQ process, interested parties shall direct all questions via email to the City's primary contact listed above.

**IV. Submittal of SOQs**

The SOQs shall provide the information requested and be organized into sections as follows:

- Cover letter describing:
  - How they fit the Panel Characteristics
  - Their willingness to accept the offered compensation
  - Their availability to work with the WSAC over the coming year
- Resume or curriculum vitae.

**V. Evaluation Criteria and Selection**

The City will evaluate each respondent's experience and expertise with the qualifications designated in IV. B. Teams will be evaluated on the information presented in the SOQ. Final selection may be based on the SOQ as well as any supplemental information or interviews conducted. Evaluation factors used to select the semi-finalists shall include the following:

1. Experience and qualifications as they relate to this project (100%).
  - a. The match of individual qualifications and experience to the Panel characteristics described in this RFQ, and
  - b. An individual's availability to participate.

If a clear choice is not evident, interviews will be scheduled with those semi-finalists of exceptional rating.

**VI. Response Format**

One copy of the Statement of Qualifications shall be submitted and are to be no longer than 20 individual sheets in length (proposal may be printed on both sides of sheet), including resumes and attachments. Teams are encouraged to use a double-sided format and recycled paper when possible.

Parties interested in being considered for this project are requested to submit their Statements of Qualifications **by ENTER TIME, DATE** to:

City of Santa Cruz Water Department  
212 Locust Street, Suite C  
Santa Cruz, CA 95060  
Attention: Rosemary Menard

City reserves the right to determine the extent, duration and limit of Panel member service.

**Meeting Evaluation Form**

Thursday, June 26

1. **Are you here as a member of the public, a Committee Member, City staff or other (and please define 'other')?**
  
2. **Please describe how well the meeting met your needs.**
  
3. **How did this meeting help the Committee to work towards its long-term goal?**
  
4. **What were the strengths and weaknesses of the meeting, taking into consideration the Committee needs as a whole?**
  
5. **On a scale of 1 to 10 (10 is super), how would you rate this meeting?**
  
6. **What would you like to see at the next meeting or meetings?**

**Thanks for completing this evaluation.**



## CITY COUNCIL AGENDA REPORT

DATE: June 10, 2014

AGENDA OF: June 24, 2014

DEPARTMENT: Water Supply Advisory Committee (CN)

SUBJECT: Water Supply Advisory Committee Charter, Work Plan and Feedback to City Council on Consultant Support Resources

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**RECOMMENDATION:** Motion to approve the Water Supply Advisory Committee Charter, to acknowledge receipt of a report from the Water Supply Advisory Committee on its Work Plan, and receive feedback from the Water Supply Advisory Committee on the selection of consultant resources to support the Committee's work.

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**BACKGROUND:** In February 2014 the Santa Cruz City Council appointed representatives to a new advisory body whose role is to provide the City Council with recommendations on issues related improving the reliability of the current water supply serving the Santa Cruz water service area. This new advisory committee, the Water Supply Advisory Committee (WSAC or Committee) has specifically been asked to "explore, through an iterative, fact-based process, the City's water profile, including supply, demand and future threats; analyze potential solutions to deliver a safe, adequate, reliable and environmentally sustainable water supply, and develop strategy recommendations for City Council consideration."

In establishing the WSAC, the Council asked to receive periodic reports from the Committee. The purposes of these reports are to give the Council updates, to ask for Council action on key steps on the process, for example, the WSAC Charter, or the problem statement, or to provide opportunities for the Council to give the WSAC its feedback about issues or topics such as the work plan.

**DISCUSSION:** This agenda item provides the City Council with the first of several planned WSAC status reports and reports on major milestones. Included in this agenda item are requests for Council action on the WSAC Charter and Work Plan, and the WSAC's response to the Council's request for feedback on the topic of consultant support resources for the WSAC.

### WSAC Charter:

During its first two meetings, the WSAC developed and agreed to a Charter for the group (see Attachment A). The WSAC Charter is, in effect, its proposed bylaws and, for the Charter to be used to govern the operation of the WSAC, the City Council must approve it.

The Charter includes the following articles:

- I. Purpose of the Committee
  - II. Authority and Establishment of the Committee
  - III. Organization of the Committee
  - IV. Roles and Communications
  - V. Work Plan
  - VI. Decision Making Process
  - VII. Subcommittees
  - VIII. Committee Dissolution
  - IX. Meeting Procedures
  - X. Public Outreach
  - XI. Resolving Contention
- Glossary of Terms

Key provisions of the Charter include those in Article VI, which guide Committee decision making. The Committee has chosen to make a strong effort to achieve consensus, which is acknowledged by WSAC members to be highly desirable for an issue of this importance to the community and worth the extra effort that reaching consensus typically requires. The Committee has also demonstrated its pragmatism by creating provisions for decision-making in the event that consensus cannot be reached.

Committee actions taken to date have been reached by consensus.

Small changes have been proposed to the charge of the Committee so that it would refer to “future risks” in the City’s water profile rather than “future threats” and would seek to deliver a water supply that is also “affordable.”

Additional highlights of the WSAC Charter include:

- Article III on Committee Organization includes a provision that the Committee could appoint a Chair and a co-Chair, but at this time, the Committee has chosen not to appoint a Chair and a co-Chair. Rather, the role typically played by a chair or vice-chair in a committee will be played by the facilitation team and when the Committee needs to have someone make a public statement on its behalf, it will identify a Committee member to play that role.
- In Article IV, the Charter lays out roles and established communication protocols for a range of interactions. Section IV(a) includes the communication protocols between the Committee and the City Council and includes the preferred methods of communication as well as the anticipated reasons for the Committee to communicate with the Council.
- Article VII describes how the Committee will establish and use subcommittees, and the Committee has already formed several subcommittees to support its work. Finally, Article X provides details of the WSAC’s commitment to outreach to and communication with the community as it does its work.

## WSAC Work Plan:

In its first meeting, the WSAC made a decision to use a two phased, iterative process to conduct its work. The first phase is basically designed to take the Committee through the range of pertinent issues at a coarse level of detail with a goal of using this first pass to familiarize WSAC members with the information and tools they can use to address uncertainty about the future as it considers options and develops recommendations. This phase is basically a reconnaissance effort, and is called “Recon,” for short.

There are at least three significant benefits to the Committee’s process from the Recon phase:

1. This approach uses a “learn by doing” approach to engage Committee members in working with the key content (i.e., current and future supply and demand and the uncertainty around each, values, evaluation criteria and rating scales) from the beginning, which is more engaging than more traditional methods for getting groups up to speed on issues;
2. The Recon process helps the Committee become familiar with the issues of uncertainty and develop both the tools and perspectives they will need to develop recommendations for the City Council’s consideration that appropriately take into account the uncertainties that exist today and that will continue to exist in the future; and
3. The Recon phase allows Committee members to learn about how sensitive various options are to changes in assumptions, which will help the Committee prioritize the key questions and information that its technical consultants will need to work on.

The second phase of the work, called “The Real Deal” for short, takes all the learning and skill building developed in the Recon phase and applies it in a much more granular consideration and analysis of the options, including integrating results from the technical support consultant’s work on specific questions identified during the Recon phase.

Attachment B provides a schedule of topics to be discussed during planned WSAC meetings of the Recon phase from June to November, and identifies the Real Deal phase of the work as beginning in December and running through April.

As a result of adopting this approach to the Committee’s work, the Milestones listed in Article V of the Charter will be tackled in a different order than that which would occur in a more traditional approach to the work. Regardless of the order, however, all the milestones will be accomplished.

## WSAC Feedback to Council on Selection of Technical Consultant Support for the Committee:

The Committee agreed by consensus, with one member standing aside (as provided in the definition of consensus provided in the Glossary appended to the Charter), to recommend to the Council that the City’s contract with Stratus be approved. The Stratus contract has been written as a task order contract in which each task is authorized as it is assigned and the scope and funding assigned to each task is negotiated at the time it is assigned.

Stratus will act as a general contractor to provide technical support for the short term, with these conditions:

- Using a partnership approach, the Committee will be actively engaged with the City and the contractor in defining work products to be developed in support of the WSAC process;
- Stratus will only engage subcontractors after discussion with the Committee;
- Scoping of tasks will be developed by all parties working together, the City will oversee;
- Refinement of the consultant task will occur iteratively and together;
- The Committee may request the termination of the Stratus contract at any time and
- The Stratus contract terminates at the end of Recon unless the Committee requests that they continue. (Recon is expected to end in late November)

The City and the Committee agreed, by consensus, to work together to initiate a process for selecting an alternative contractor to serve as the Committee's general contractor. The intention is that the new consultant, if needed, would be in place after Recon is over. To meet this timeline, work on a new selection process would need to begin in August. This contracting process will be suspended if the Committee agrees to continue with Stratus after Recon is over. If the Committee does not agree to use Stratus after Recon, or, in the alternative, if the Committee decides at any time that they do not wish to continue to use Stratus, the City will proceed with the alternative contracting process.

The Committee also agreed that anyone who will be providing technical assistance to the Committee will be asked to disclose the trade organization they belong to as well as any direct lobbying activities related to any water supply or treatment options relevant to the Santa Cruz water supply issues that they are currently or have in the past engaged in.

The Committee has also agreed by consensus to form an Independent Review Panel to provide them with expert advice about lines of technical inquiry that the technical support consultant should pursue and to provide critical review of the products prepared by the technical review consultant. The current working draft of the concept paper for the Independent Review Panel is attached as Attachment C. The Committee will bring a future item to the City Council asking for its review and action on the Independent Review Panel, which could be either funded by the City, if the Council approves, or will be made up of volunteers.

**FISCAL IMPACT:** There is no fiscal impact associated with the any of the actions recommended in this staff report.

Submitted by:

Mike Rotkin  
Member, Water Supply Advisory Committee

Attachments: Draft WSAC Charter  
Sequence of WSAC Meetings (Work Plan)  
Independent Review Panel – Draft Concept

## **Attachment A**

# **Santa Cruz Water Supply Advisory Committee CHARTER**

**Approved by the Committee: May 28<sup>th</sup>, 2014**

**Approved by the Santa Cruz Council \_\_\_\_**

### **Article I. Purpose of Committee**

The Committee's purpose is to explore, through an iterative, fact-based process, the City's water profile, including supply, demand and future risks; analyze potential solutions to deliver a safe, adequate, reliable, affordable and environmentally sustainable water supply and develop recommendations for City Council consideration.

### **Article II. Authority and Establishment of the Committee**

The Committee was established by Santa Cruz City Council by resolution on November 26, 2013 and was sworn in and seated on or before April 30 2014. The Committee is subject to the Brown Act and all other applicable law. The Committee is established for 12 months from the time of the first meeting, with extensions allowed with Council approval.

### **Article III. Organization of the Committee**

#### **(a) Committee Composition**

(i) The Committee starts work with the following fourteen members:

Peter Beckmann  
Doug Engfer  
David Green Baskin  
Suzanne Holt  
Dana Jacobson  
Charlie Keutmann  
Rick Longinotti  
Sarah Mansergh  
Mark Mesiti-Miller  
Greg Pepping  
Mike Rotkin  
Sid Slatter  
Erica Stanojevic  
David Stearns

**(b) Committee may add members**

The Committee may propose to the Council the addition of Committee Members.

**(c) Committee member withdrawal**

Members may withdraw from the Committee at any time by providing a letter of resignation to the Council, with copies to the facilitators to be distributed to the other Members

**(d) Director of the Water Department as ex-officio member**

The Committee appointed the Director of the Water Department (or her designee) as a supporting Committee member. Her role is to support the Committee as they seek consensus, but not to advocate for any particular outcome. She will not vote.

**(e) Chair and Co-Chair**

The Committee may establish Committee members as Chair and co-Chair. Their responsibilities will be determined by the Committee.

**(f) Quorum**

A meeting of the Committee will be considered to have sufficient members present for it to function if there are at least 10 members at the meeting.

## **Article IV. Roles and Communications**

**(a) Committee-City Council**

- (i) The Committee appreciates if Council members would not speak or actively participate in Committee meetings unless input is specifically requested by the Committee.
- (ii) The Committee will communicate with the City Council by letter or written report which may be accompanied by an oral communication as authorized by the Committee.
- (iii) Reasons for the Committee to report to the Council include
  - 1) It reaches predetermined Milestones;
  - 2) It wishes to change its Charter;
  - 3) It wishes to add new Members(s);
  - 4) Individual Committee Members may communicate personally with Council members, within the constraints of the Brown Act. Individual Committee

Members who communicate personally with Council members will only do so on their own behalf. They will not represent the Committee.

**(b) Committee-Other Entities with Significant Interests in Water Policy**

Members recognize that other entities in Santa Cruz such as business and professional organizations, academic institutions, environmental organizations, or civic organizations have significant interest in the development of water policy in Santa Cruz. They also recognize that trust and collaboration among Members will be fostered and supported by adopting an open communication policy with regard to these institutions. So Members will keep the Committee up to date on significant communications between them and these institutions.

**(c) Facilitators**

(i) Work for the Committee

The co-facilitators' primary responsibility is to the Committee and to the productive pursuit of its purpose. They:

- 1) Design, prepare for, facilitate and record the Committee's meetings;
- 2) Liaise on behalf of the Committee with City staff members and with technical experts;
- 3) Work with Members to mediate resolutions to disputes that may arise and
- 4) Assist Members in their public outreach, as requested and within budget limitations.

(ii) Facilitators shall not:

- 1) Communicate with the media nor engage in discussions of this topic on social media except as requested by the Committee.
- 2) Communicate with Council members except as requested by the Committee, the Council, or to meet other legal obligation;

**(d) Committee Member - Committee Members**

- (i) Collaboration with an open outlook: Members will at all times keep to their commitment to the City that they will participate collaboratively and maintain an outlook that is open to new information and new outcomes.
- (ii) Members understand that in order to collaborate effectively in the Committee it will be important to communicate with stakeholder groups that they influence in ways that are consistent with the collaborative ideals of the

Committee. Members should encourage stakeholder whom they influence to adopt similarly collaborative behavior as appropriate during the months that the Committee is working.

**(e) Committee-Public**

- (i) Members are encouraged to fully engage with the public to describe their experience as Members of the Committee, the information that they have learned, any changes to their perspectives, et cetera.
- (ii) Unless they have been appointed a spokesperson for a specific task, Members will always make it clear when they speak or write in public that they speak for themselves, and not as a spokesperson for the Committee
- (iii) Members who are relied upon by any stakeholder groups as their representative on the committee will identify those groups to the Committee and describe the nature of their relationship to those groups.
- (iv) Members respect the time that their fellow-members have committed to the meetings of the Committee, and will make every effort, both before, during and after meetings, to ensure that any members of the public, who are members of stakeholder groups that they influence, will participate in meetings with the same collaborative spirit as the Members of the Committee, and will not disrupt the Committee's meetings and delay its work.

**(f) City Staff**

City staff shall:

- (i) Support the Committee's work by ensuring that appropriate resources are made available to the Committee in a timely manner.
- (ii) Strive to be clear about the level of collaboration they understand to be appropriate in a given instance: Inform, Consult, Involve or Collaborate.
- (iii) Engage in the same level of collaborative participation as specified for the Committee members.

**Article V. Work Plan**

- (a) The Committee will agree on a work plan. This will include an early agreement about the form of the work product.**

## **(b) Milestones**

- (i) At significant points in the completion of the work plan the Committee will prepare and submit to Council Milestone reports. It is initially anticipated that Milestone reports will be filed when the following achievements are reached:
  - 1) Agreement on definitions and basic principles of problem, purpose, process, common timelines and work plan
  - 2) Achievement of an advanced understanding of the City's water supply profile, including historical and predicted hydrologic cycles, water production and delivery, regional concerns such as saltwater intrusion, climate change threats, demands, conservation and environmental and regulatory considerations.
  - 3) Agreement on clear criteria for what constitutes a viable water supply solution.
  - 4) Exploration of a broad array of potential solutions. and
  - 5) Development of recommendations for City Council consideration.
- (ii) Any changes to these milestones agreed to by the Committee will be recommended to the Council for its approval.

## **Article VI. Decision-making process.**

### **(a) General Decision Process**

The Committee's decision-making processes will differ from the Council or City Commissions in that it is intended to reach consensus through a collaborative process. (See glossary.)Therefore, the Committee will use this hierarchy of decision tools:

- (i) The preferred decision tool is for the Committee to arrive at a "sense of the meeting."
- (ii) Consensus is highly desirable.
- (iii) Informal voting may only be used to explore the decision space.
- (iv) Formal voting may be used as a fallback when consensus fails as long as there is consensus that a vote should take place. The voting shall be by a supermajority of 10.

## **Article VII. Subcommittees**

When the Committee establishes a subcommittee it shall give them a clear charge, duration and a scope of responsibility as well as external communication parameters. The Committee may agree to form subcommittees to fulfill specific roles or to complete specific tasks during the time between the normal meetings of the Committee. These meetings may be facilitated if the budget allows.

### **(a) Standing Subcommittees**

Standing Subcommittees are expected to last more than 6 months and are subject to the Brown Act.

### **(b) Temporary Subcommittees**

Temporary Subcommittees last fewer than 6 months. These will not normally be subject to the public access provisions of the Brown Act. Therefore, provisions to be made for public access to such a subcommittee shall be determined by the Committee at the time the subcommittee is formed

## **Article VIII. Committee Dissolution:**

### **(a) A super-majority of 10 votes may recommend to the Council that it dissolve the Committee. However, when they do so, they must**

- (i) appoint a spokesperson to describe the dissolution to the Council and
- (ii) provide the spokesperson with guidance and
- (iii) prepare a report about the reasons for the dissolution and a summary of areas of agreement and disagreement

### **(b) Committee Members agree that, to the extent possible, any Committee dissolution will "fail forward"--leave the City in a better condition than it was before. Examples of improved condition may include:**

- (i) issues will be more clearly articulated,
- (ii) a common vocabulary will be developed and
- (iii) areas of agreement and disagreement will be clearly mapped out.

## **Article IX. Meeting Procedures**

### **(a) Committee Meetings will occur monthly, usually in two or three sessions on Wed evening Thursday evening and/or Friday afternoon, towards the end of each month.**

- (i) Committee members may miss no more than 3 meetings per year. If they miss more than 3 meetings per year, they forfeit their membership.
- (ii) Committee members who cannot attend should notify the facilitators in advance.
- (iii) Committee members who have a conflict of interest shall recuse themselves from the discussion and decision on the issue with respect to which they have a conflict.

**(b) The meeting times shall be posted on the Committee's website**

**(c) Facilitators will coordinate meeting materials**

- (i) including the agenda, presenters' PowerPoints, etc.
- (ii) and will ensure that these materials are posted on the Committee website and that an e-mail containing links to those documents will be sent to Members at least a week in advance, except in extraordinary circumstances.
- (iii) With respect to Summaries , they will be prepared according to this example, where meeting A occurs in April and Meeting M occurs in May:
  - 1) Draft Summary for meeting A will be prepared by the facilitators and posted with an email distributed to Committee Members within one week of that meeting.
  - 2) Committee Members may send corrections within one week of receiving the draft (usually at the mid-point between meeting A and meeting M).
  - 3) The revised Summary will be included in the materials for the following meeting (meeting M) and will be amended and approved by the Committee during meeting M.
  - 4) In the process of improving the Summary for meeting A and preparing for meeting M, the facilitators will elicit information from the Committee members and synthesize it. In doing this, the facilitators prepare materials for Committee deliberations but they do not help the Committee Members engage prematurely in Committee deliberations.
  - 5) The meeting notes will include an ongoing record of attendance, including Committee Members and those members of the public who choose to identify themselves.
- (iv) As well as approval of the previous meeting's notes, regular agenda items may include

- 1) developing the next meeting's agenda,
- 2) reports on Committee members' interactions with the public, council, city or commissions on Committee-related topics,
- 3) subcommittee reports,
- 4) a briefing from the City's Water Department including a report on activity at the Water Commission

**(d) Involvement of the Public in Meetings**

Each session will include an opportunity for public comment regarding water-related matters. The Committee will also provide an opportunity for public input before major decisions are made.

## **Article X. Public Outreach.**

**(a) Outreach Materials and Outreach Plan**

The Committee recognizes that it bears a responsibility to facilitate the development of educational and outreach materials. The Committee, or a subcommittee appointed by the Committee, will work closely with the City to develop a comprehensive public outreach plan for approval by the Committee.

**(b) Website**

The Committee will have a website which will be funded by the City and designed by the website subcommittee. It will select material for the Committee's website that gives a balanced presentation of the Committee's work and identifies where the Committee has been and where it is going. It should present the information being considered by the Committee, even on controversial topics, in the broadest sense. It will work in collaboration with the City and with the approval of the Committee as a whole.

## **Article XI. Resolving Contention**

**(a) Committee members will use the collaborative approach expressed throughout this charter in resolving contention, for instance by inviting informal dialog with other Committee members.**

**(b) Once these methods have been exhausted, any Member may invoke the resolution provisions at any time, by notifying one of the facilitators. Once the resolution provision is invoked it must proceed promptly to resolution. The discussion will be facilitated.**

## Glossary

**Action only minutes:** these are the minutes that show the actual decisions and forward actions.

**Consensus:** consent of all the parties. Consensus can include “standing aside,” in which one or more parties can say “I am not going to block this, but I am willing to let it go. However, I want my non-agreement to be noted.”

**Decision space:** The Decision Space is the range of options available to the members of the committee. The decision space may be constrained by the council, the law, budget limitations etc.

**Ex officio:** An ex officio member is a member of a body (a board, committee, council, etc.) who is part of it by virtue of holding another office. The term is Latin, meaning literally "from the office", and the sense intended is "by right of office." That means that if the person leaves the office, the position on the committee is filled by the next person who occupies that office. Often, ex officio members sit at the table but don't vote. In the case of consensus, the ex officio member will support the Committee-members search for consensus but will not advocate for a particular option.

**Sense of the Meeting:** After discussing an issue, often at some length, there is a palpable feeling in the room that a wise and stable decision has been reached the facilitator will confirm with the group that a sense of the meeting has been achieved.

## **Attachment B**

### **Sequence of WSAC Meetings/Substantive Decisions during Recon**

**June:** Agree on supply/demand gap, possibly using scenarios. Confirm use of multi-criteria decision support tool. Presentations on supply and demand, multi-criteria decision support, uncertainty and scenarios.

**July:** Agree on criteria and sub-criteria for Recon. Begin work on alternatives for recon. Presentations about alternatives and uncertainty.

**August:** Agree on alternatives for Recon. Begin work on ratings scales. Presentations about alternatives and ratings.

**September:** Coarse ratings of the Alternatives. Presentations about the alternative's ratings.

**October:** Iteratively run decision model. Adjust the Decision Model. Prioritize research, outreach and discussion needs for Real Deal. Prepare Council Report.

**November:** Possible community outreach. Work Plan for Real Deal. Recon Report finalized.

**December – April:** Real Deal

## Attachment C

### Independent Review Panel – 2<sup>nd</sup> Draft Concept based on WSAC Input on May 30, 2014

**Panel Role:** The role of the Independent Review Panel (Panel) would be two-fold:

1. The panel would provide critical review of any products created by the technical team with a focus on ensuring the analysis provided is:
  - Unbiased;
  - Methodologically, scientifically, and technically accurate;
  - Includes a clear and accurate statement of assumptions; and
  - Appropriately characterizes the strengths and weaknesses of the analyses, especially with respect to uncertainty, data quality, or other factors that, if different, could affect the results in a significant manner.
2. The Panel would offer advice or suggestions to the WSAC regarding lines of inquiry or technical questions that should be evaluated by the technical team.
3. The Panel would work together as a team or be individually assigned to review products prepared or created by the technical team. If working together as a team on reviewing a product, Panel members could express divergent views on the technical team's product if their views are, in fact, divergent, or they could express a consensus view if that is their conclusion.

**Panel Characteristic:** Panel characteristics would include the following:

- The Panel would include 3 to 5 members;
- Panel members would have scientific or technical training and significant hands on experience as a practitioner in scientific or technical disciplines relevant to the work of the WSAC. The most relevant areas of expertise are likely to be environmental science, especially related to climate change, water system operation, planning, and/or management, civil engineering related to water resources planning, management, treatment technology, facilities design and operations, public policy, especially related to environmental and community sustainability issues and decision-making by local governments in light of significant uncertainty.
- Panel members would be expected to bring their broad knowledge and experience to the process and apply this knowledge and experience to the topics the WSAC will be dealing with.
- Panel members would have demonstrated skills as technical and/or scientific reviewers through experiences such as providing expert level review for articles or other publications on scientific and technical topics;
- Panel members would have some previous experience supporting, advising, and engaging with citizen groups on topics with public policy implications;

- Panel members would have demonstrated ability to explain complicated topics in terms non-technical people can understand as well as the ability to present facts without concealing values and with clear articulation of assumptions;
- Panel member experience and expertise would be diverse with the experience and expertise of each panel member complementing and supplementing the experience and expertise of the others; and
- Panel members would have reasonable availability to work with the WSAC during the coming year, including a willingness to regularly participate in and attend WSAC monthly meetings as well as a willingness to commit the time needed to review documents, and prepare and present to the WSAC summaries of review efforts.

**Panel Selection Process:** Selection would be done using a qualifications based selection process. The Request for Qualifications (RFQ) would be developed by City staff and would include background information on the WSAC's process and a description of the Panel Role, Desired Panel Characteristics, and Panel Compensation. The RFQ would include criteria for evaluating submittals that would emphasize the Panel Characteristics. The RFQ would be provided to WSAC members for review prior to being issued. Those interested in responding to the RFQ would be asked to submit a cover letter describing how they fit the Panel Characteristics, their willingness to accept the offered compensation, their availability to work with the WSAC over the coming year, a resume or curriculum vitae and their specific response to no more than three questions. Prior to issuing the RFQ, City staff will receive suggestions of individuals who will be sent the RFQ and, in addition, the RFQ will be posted on the City's purchasing websites where RFQs and RFPs are typically posted.

**Panel Compensation:** Compensation would be provided in the form of an honorarium only. The honorarium amount would be limited to \$5,000 per panel member. Direct expenses (mileage, other transportation, per diem, if and as needed) would be reimbursed.

**Proposed RFQ Questions:**

1. Please describe any familiarity you have with water supply issues in Santa Cruz County. Please include in your response any information that would help reviewers understand and evaluate your knowledge and experience of the local context of the work that the WSAC is doing.
2. Please describe any professional organizations to which you or your firm belongs.

*This document contains three e-mails sent to the ctte in June 2014. It concerns goals, forecasting scenarios (predicting future conditions and shortfalls) and backcasting (visioning) scenarios.*

Hey all--

The June meeting is going to be a real mind-bender. To relieve that impact and give you a chance to intervene if you don't like how we're structuring the June discussion, I propose to bend your mind a little at a time between now and then. I'll send three philosophical e-mails in the next weeks. (I'll also take the information from the e-mails and drop it in the appropriate places in the Recon Report so you can find it later if you want to.)

So this is the first philosophical e-mail.

To start with, I have been bad. I sloppily referred to the topic coming up as "Supply and Demand." But supply and demand issues permeate your whole project! What I should have said is "Goal." The June meeting is about your goal.

There are two parts to that goal. The first is your vision of what you want SC to be, which I'll discuss in the next e-mails. The second is your problem identification: the gap between supply and demand.

For today I'll assume you all agree on how you want SC to be. In that case the only thing you need to work out is how far off you will be from that vision *if you do nothing*. That's the gap: The gap between your expected supply and your expected demand assuming you do nothing.

It is important to distinguish between alternatives and goals in your decision model. Alternatives are levers, ways to change the problem. Traditionally, cities have mostly looked at the levers for increasing supply. But you want to do both: you want to look at increasing supply and decreasing demand. Good!

Still, don't get alternatives mixed up with your goal. If something is a lever, it is an alternative. Levers are the discussion for July and August! So composting toilets, pricing schemes, building permits, rebates, reservoirs, desal, aquifer recharge and pushing back to LAFCO are examples of alternatives.

Now the complexity. Both your goal and your alternatives have uncertainty. Your levers are uncertain because you don't know how well they will work. Or you don't know how much they will cost. Or or or.

Your goal is uncertain because the world is changing around you. Even if you all

agree on the kind of SC you want, that pesky gap between supply and demand won't sit still for you. You'll have trouble predicting rainfall patterns because the future weather may not look a lot like the past's. Nor will you know, in time, what the results of the negotiations on instream flows will be.

Thus you don't even have the gift of being able to clearly identify your problem, even if you did share a common vision for the future of SC.

In June, your task will be to agree on a range. Can you agree, provisionally, for purposes of Recon, what the range in the gap might be? Take the best and worst supply predictions and the best and worst demand predictions?

Just remember, that's best-and-worst *if you do nothing*.

But sheesh even so that gap might have a really big range. Not because you are argumentative. Because this issue is pickled in uncertainty.

That's why in the next e-mails I want to suggest to you that instead of using a range for your gap you go for scenarios.

But for today: alternatives are levers (July and August). The gap is defined in terms of Supply and Demand *if you do nothing* (June). Your overall goal is to close that gap using the best mix of alternatives.

Thanks and I'd love feedback!

---

Reply, but Do Not 'Reply-all'

Esteemed Ctte Members:

In my last e-mail I emphasized that the focus of the June meeting will be on the gap you have between supply and demand if you do nothing. That gap helps you identify your **goal**. (In July and August you'll discuss the things you could and should do to manipulate supply and/or demand—your alternatives.)

I asked you to imagine that you all share the same vision for the future of Santa

Cruz. In fact, you have quite different visions—I'll discuss what that means for you in June in the next e-mail.

I said that even if you agree on your vision for Santa Cruz, the gap in supply and demand is uncertain because climate and instream flows will change—and you don't know how. (There are other reasons for uncertainty about the gap, but I think those two are the big ones. Demand is another contender.) Having uncertainty about how well an alternative might work is to be expected. Having uncertainty about what your actual goal is--that's another layer of complexity. But that's the situation you are in.

The following is a proposal for handling the complexity. You'll need to evaluate this and see if it is the tack you want to take. The technique is to use scenarios. Go with me on this simplistic example and Imagine you were trying to decide now about a future car-buying purchase but you didn't know whether you were going to keep your job. At the same time, Aunt Tilly might be giving you a lot of money. Or not. So what you can afford could be radically surprising.

You are also not exactly sure about adding another person to the family, so your ideas about roominess might change.

What to do about this massive uncertainty related to your goal?

Using scenarios would be a really good idea. Make four of them:

- rich and no baby,
- poor and no baby,
- rich and baby,
- poor and baby.

And then make a normal decision model with alternatives (VW beetle, Spark, Small Pickup Truck, Hummer, make do with what you have) and with criteria (in budget, adequate room, good mpg, safe, good-looking etc).

To run your decision model, even if you do this unconsciously in your head, you have to *rate* each of the alternatives for each criterion and you have to *weigh* each criterion for how important it is to you. (Rating: Does the VW get good mileage? Weight: Does the mileage matter to you as much as the roominess?)

With scenarios, what you would do is run the same decision model four times. You don't change the alternatives or the criteria, but some of the ratings and

most of the weights will change depending which scenario you are in.

In the way this decision model is framed, the ratings for fuel efficiency won't change. But the ratings for 'in budget' will! The Hummer is in budget for the rich scenarios but not the poor ones. Likewise, making do with what you have is roomy enough for the no-baby scenarios but not the with-baby scenarios. Even the rating for "safety" might change depending on that baby.

And the weights will certainly change. In the baby scenarios, you might find yourself caring a lot more about safety. And in the no-baby scenarios, you might find yourself caring a lot more about appearance.

What you will find is that in different scenarios you come up with a different preferred alternative.

That's useful if you want to make a *contingent choice*. You get all this stuff figured out and then when Aunt Tilly makes a commitment and the baby issue is resolved—your decision is made.

The analog for that is that you could forward a contingent choice to the Council. (I hope not, but it is a fallback option you should be aware of.) You could say "if instream flow demands are at or above X, do Y and if they are below X, do Z."

But the two much more useful thing for you in scenarios are

- a) The trends you might see across scenarios will tell you a lot. You might see that certain alternatives, or certain features across alternatives, do well for all the scenarios. That is incredibly useful information! It is as though the facts were popping out bits of consensus. (Yes, this actually happens.)
- b) If you use scenarios, you don't have to sweat the Supply/Demand "gap" question too much during recon. As process designers, Nicholas and I don't want you to be confronted with agreeing on climate change in your third meeting! Recon is meant to allow you to be loosy-goosey for a while. You might as well take advantage of it.

We recommend that you handle the uncertainty in the projected S/D gap by building scenarios mostly around the issues of climate change and instream flows (and possibly demand projections). Keep the scenarios to 3 or 4, (because otherwise your audience will get lost). When you get to the end of Recon choose

when/whether you want to drop the scenarios and shift to one goal. (You could still keep the scenarios through most of the Real Deal—it just depends how long they are useful to you).

Next up: a twist on the scenarios idea: how to handle the vision thing.

To those of you who responded--your comments were tremendously helpful! (And Peter, I hope to your view this still takes your range approach. Each scenario will have a range, and when you rate the alternatives you will also use a range. The more often the range can be numeric, the better. Even if they are very round numbers.)

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In the last two e-mails I emphasized that the June meeting is about deciding on the gap you have to fill: the gap you would have if you do nothing.

Because the gap itself is quite uncertain, I suggested you use three or four scenarios—different versions of the gap.

And I also asked you to pretend that your ctte had one vision for Santa Cruz.

In fact, you have very different visions for Santa Cruz. So now, in this e-mail, I want to talk about how to handle the differences in core values, at least for Recon.

For Recon (and longer if you want to), I suggest you handle the vision by using scenarios similarly to the way you might choose to handle scientific uncertainty by scenarios.

Ok, but first, what do I actually mean by vision?

In the context of your decision, I think the vision of Santa Cruz is made real in great part by your approach to drought tolerance.

In the olden days, most cities wanted no drought tolerance. They built systems that would almost never allow their clients to want for a drop of water. That's expensive, and it has environmental and social consequences. Leading up to Desal, Santa Cruz was quite progressive in that they wanted some drought tolerance. Some people in your ctte advocate for more drought tolerance yet.

The way drought tolerance has been framed is by looking at what happens in the worst historic drought. If you are an old-school water person, you want to

make sure you have enough capacity to handle that drought—nobody has to put buckets in showers, even then. Leading up to the desal effort, Santa Cruz chose 15% curtailment for the worst year of drought. And if you are more aggressive than that, you might say that 25% curtailment in a drought year is a reasonable place to be.

Yup. Like this year is expected to be.

This drought tolerance issue makes your process incredibly complicated (and interesting). First of all, it is very difficult for people to grok what 15% or 25% means even in a single year. To combine the 15% curtailment with the historic probability is a hard cognitive task, never mind the uncertainty related to climate change. But even to focus on a single rare year is misleading, because you should think about the in-between years, too. If you manage for 25% curtailment in the worst years, you choose maybe 20% curtailment for your second- or third- or fourth-worst year. To probe “what does drought tolerance really mean for the city?” a person has to be able to conceptualize probability, percentages *and* trends over time.

In terms of outreach, it is possible the single most important thing you could do is to figure out a way to explain this. Preferably something that doesn't bring on a migraine.

For you to agree how to communicate it is vital. To agree on the right single vision target is premature, I think.

If you like the idea of doing scenarios around S/D uncertainty as I described in the last e-mail, I suggest that for Recon you wrap the drought tolerance/who-do-we-want-to-be-as-a-city issue into the scenarios, at least for Recon. So it would be something like this:

- Big S/D gap expected in future; high drought tolerance for City vision
- Big S/D gap expected in future; low drought tolerance for City vision
- Smaller S/D gap expected in future; high drought tolerance for City vision
- Smaller S/D gap expected in future; low drought tolerance for City vision

At the June meeting, we are going to ask you to decide whether you want to give this a try for Recon. I think it is a good idea, and I could show you a dozen reasons why it would be nice for you to decide this and give a green light on the next steps. Choosing preliminary, ludicrously general scenarios and putting them onto the path of becoming reasonably respect-worthy provisional scenarios could be pivotal to your outreach, your alternatives exhibit (if you choose to do that) and Recon itself.

But. Never ever let us bludgeon you with a schedule. If you get a gut feeling this is going too fast, that matters for several reasons. First of all, you may very well be right. Secondly, that feeling is akin to the "this isn't my process anymore" feeling. That's just not ok. If you are feeling rushed, to heck with the schedule.

One of the best adages for mediators and facilitators is "never work harder than your parties." Like all good nuggets of wisdom, we have to be able to embrace reasonable exceptions. Because of your schedule, N & I have been willing to work a lot between meetings to try to prepare materials and help make your own workload more bearable, as well as making the crowded meeting agenda more workable. That's ok. But if we violate the underlying principle, the principle that this is your process and not ours, that is not ok. Believe me I say this not just out of consideration for you but also from painfully-gained experience. There's just no magic in the work once we get out of balance with you.

I like these three essays. I think I did a good job. My intentions were good. But none of that means squat if you feel rushed.

Fondly--

Carie

**DATE:** June 19, 2014  
**TO:** Members of the Water Supply Advisory Committee  
**From:** Rosemary Menard, Director, Santa Cruz Water  
**SUBJECT:** Strategies and Alternatives Convention Concept Paper

The purpose of this concept paper is to provide members of the Water Supply Advisory Committee with a partially fleshed out description of an idea for their consideration. In this case the idea is a Strategies and Alternatives Convention (SAC). The idea presented in this concept paper is not a recommendation. In discussing this idea, the Committee can decide both whether to proceed and, if it chooses to proceed, it can provide direction on how to do so.

**Goals and Desired Outcomes:** A Strategies and Alternatives Convention would be intended to produce the following desired outcomes:

- To provide an opportunity for any (and all) parties (individuals, groups, agencies) to prepare and submit alternative approaches to augmenting the City of Santa Cruz's water supply;
- To provide an opportunity for citizens and community interests to view alternatives and interact with those who have submitted them;
- To create an opportunity for WSAC members to evaluate a range of ideas and alternatives for augmenting the City's water supply or managing water use by applying at least simplified version the alternative evaluation criteria they have developed during the Recon phase of their work; and
- To create an opportunity for the WSAC to consider how the use of rating criteria can support the process of narrowing the potential range of feasible options for further consideration as part of the Real Deal phase of their work.

**How we might set up and conduct a virtual and a real time Strategies and Alternatives Convention:**

Note: the assumption behind the timeline used here is that a virtual SAC would be held beginning in mid-July and that a real time SAC would be held in September.

- **At the June WSAC Meeting:** The Committee would review the SAC concept and, if there is agreement to proceed, the Committee would identify any changes to the proposal and authorize a temporary subcommittee to work on the project. The subcommittee would be given authority to send out invitation to submitters, work to get the website portions of the project up and running and develop the submittal form that would be used.
- **In early July:** Invitations would be sent out for people to submit the first, very basic description of the alternatives through the website. Invitations ask for submittals by July 28<sup>th</sup>.
- **In mid-July:** Website submissions begin to come in and are available to be viewed by Committee members and the public.

- **July 29th:** All first-phase submittals are received. The Subcommittee analyzes what has been received and develops a recommendation on next steps for the Committee.
- **At the July C Meeting:** The Committee hears from the subcommittee and discusses next steps. Relevant questions at this stage could include:
  - Do you want a face-to-face event for the Committee and the community to have a chance to interact with those who have developed alternatives?
  - Do you want ask submitters to provide additional information by sending out follow-up questions?
  - Do you want to cut some of the alts now?

If there are only a few submissions, the Committee might conclude that the lack of interest doesn't make it worthwhile to proceed with additional work on either a virtual or a real-time Strategies and Alternatives Convention. Assuming the Committee decides to proceed, the schedule below is an example of next steps.

**In early August:** The subcommittee sends follow-up questions or information requests to submitters and gives submitters a heads up that a real time event is scheduled for a date in September. Instructions for presenting an alternative at the real time Alternatives Event are also provided at this time.

- **From late August through mid-September:** Submitters update their materials online and the public and Committee continues to have access to view alternatives. Consider using something like an online town hall (see <http://www.opentownhall.com/>) to allow citizens to submit comments or ask questions about the alternatives that have been submitted.
- **Third week in September:** Website submissions deadline is followed by the real time SAC. At this event, Committee members, submitters and members of the public would have a chance to view alternatives submitted and talk to those who have developed them in a face to face setting.

To avoid any potential Brown Act issues with Committee participation in this event, the following steps would be taken:

1. Post the event for the possibility of a WSAC to be present at some point during the event and include in the posting the fact that no business will be conducted at the event;
2. Remind Committee members that they should not discuss their impressions of alternatives among themselves until they are in a duly noticed public meeting where the topic has been put on the agenda for discussion and/or action; and
3. Remind Committee members that in discussing alternatives with various submitters or citizens who might be present that they should ask any submitter or citizen who starts

to repeat or convey the impressions of other Committee members in the conversation, not to share such information.

The SAC would occur a few days before the September WSAC meeting, and Committee members would be able to fully discuss their impressions at that meeting.

- **September Committee Meeting:** The Committee rates alternatives using 3 criteria (i.e., very coarsely); this rating information is posted on the website alongside each of the submissions. Carie recommends for your consideration that your 3 criteria might be *Effectiveness*, *Environmental Impact* and *Practicability*. These 3 criteria are broad enough to cover a lot of the key concerns, for example, social and economic issues tuck into *Effectiveness* while cost and reliability tuck into *Practicability*. This exercise is a great opportunity to test out the Committee's evaluation tools, and also would help the Committee see what range of alternatives might exist, and what contribution various alternative might make to closing the gap between supply and demand.
- **Immediately Post-Sept Meeting:** Committee posts its ratings and, in some cases, its rationale for the ratings online.
- **Long Range:** Committee continues to use website format over the long term to engage the public about alternatives.

#### **Outcome:**

At the conclusion of the Strategies and Alternatives Convention exercise, the Committee will have:

- become familiar with the range of potential options for increasing water supply reliability,
- developed and applied preliminary evaluation criteria to a range of options,
- had an opportunity to consider how uncertainty and values affect the rating of alternatives, and
- identified topics that they would like their technical support team to work on to provide additional key information and perspectives for consideration in the "Real Deal" phase of their work.
- begun to engage the public in their website and provided a long-term platform for the alternative dialog.

#### **Next Steps:**

To move forward on this concept, the Committee would need to accomplish the following at its June meeting:

- *Critical Milestones:*
  - *agree on concept*
  - *form subcommittee*
  - *give subcommittee sufficient direction about the invitation*
  - *agree on the 3 criteria*

*Desirable Milestones*

- *identify and agree on very bumper-sticker level definition of scenarios*
- *let Stratus and the City and the Subcommittee assign very coarse description of the problem (water supply needed) to the scenarios so that submitters have a sense of the goal their projects need to address*

DRAFT

## Draft July and August Agendas

To plan, we have to make some assumptions about what you will decide to go forward with. For instance, this agenda assumes that you provisionally agreed with the scenario idea and generally what the scenarios might be, you asked Stratus to write that up in a very broad way, and need significant more opportunity to discuss. Likewise, that you gave the green light to the Alts Ex idea and now have the results of the first submissions (so you now actually know how many submissions there will be). But if this agenda gets blown into the stratosphere, that's fine!

### Draft July Agenda

Time	Agenda Item	Major Prep	Ctte ammend decision/approval
	<b>Session 1, Thursday</b>		
5:00	Roll Call		
	Public Comment		
	Ctte Member Updates		
	Introduce Bob Raucher (Stratus)		
	Agenda Review		yes
	Summary and Action Item Approval		yes
	Ctte Work Plan / Gantt Chart		
6:00	IRP Progress Report		
	Website Progress Report		
6:20	Initial Alts Submissions		

	AltsEx Subctte Recommendations	Alts Subctte	yes
	Direction for Phase 2		YES
	Probable public comment		
7:15	Discuss, Agree provisionally on Criteria and subcriteria		YES; direct revisions
	Direction to Stratus for writing up Criteria		yes
	Probable public comment		
8:45	Revisit Scenarios and direct further refinement	Stratus Doc	yes
9:20	Wrap-up / Plan for tomorrow		
9:30	Adjourn		
	<b>Session 2, Friday</b>		
2:00	Roll Call		
	Public Comment		
	Ctte reflection on day before		
2:15	Public Submissons requiring ctte review?	Rotkin	
2:30	Review changes to S/D presentation & ask for refinements		yes

2:45	Outreach panel (?)		
3:30	Play with the decision model OR work more on Criteria (or both) [Interaction]		
4:30	Review Ratings Scales for 'grist' alternatives [Interaction]		direction to stratus to adjust those scales and to develop scales for more criteria
5:15	[Interaction] How are the <i>ratings</i> going to be handled? [this should go earlier]	We'll need to elicit some information from ctte in mid-July; i think a <i>mini</i> -assessment	direction to stratus to hire the appropriate people and to do some preliminary ratings work for the grist alternatives
5:40	Public Comment		
5:55	Wrap Up		
6:00	Adjourn		

## Draft August Agenda

Note that all of these "reviews " will undoubtedly have had a round of review by e-mail and conference call as we have been doing. So it isn't as though the ratings scales will just disappear into a black hole for a month!

Time	Agenda Item	Major Prep	Ctte ammend decision/ approval
	<b>Session 1, Thursday</b>		
5:00	Roll Call		
	Public Comment		
	Ctte Member Updates		
	Agenda Review		yes
	Summary and Action Item Approval		yes
	Ctte Work Plan / Gantt Chart		
6:00	Website Progress Report (other than AltsEx)		
6:10	Alts Ex		
	Hard to say... if pub event is to be in late Sept then update and planning for event	Alts Subctte	yes
6:30	Report on Criteria improvements from July meeting		
	Agree provisionally on Criteria and subcriteria		yes
	Direction to Stratus for writing up Criteria		yes
	Probable public comment		
8:45	Revisit Scenarios and direct further refinement if necessary	Stratus Doc	yes

9:00	Open		
9:20	Wrap-up / Plan for tomorrow		
9:30	Adjourn		
	<b>Session 2, Friday</b>		
2:00	Roll Call		
	Public Comment		
	Ctte reflection on day before		
2:15	Public Submissions requiring ctte review?	Rotkin	
2:30	Review changes to S/D presentation & ctte direct refinements if necessary		yes
2:40	Outreach subctte update		
2:50	Review ratings scales		direct stratus to revise
3:30	Review plan for ratings		yes
4:00	Review 'grist' alternatives' preliminary ratings		yes
4:30	Run the decision model		
5:40	Public Comment		
5:55	Wrap Up		
6:00	Adjourn		


draft

**Meeting Evaluation Form**

Friday, June 27

1. **Are you here as a member of the public, a Committee Member, City staff or other (and please define 'other')?**
  
2. **Please describe how well the meeting met your needs.**
  
3. **How did this meeting help the Committee to work towards its long-term goal?**
  
4. **What were the strengths and weaknesses of the meeting, taking into consideration the Committee needs as a whole?**
  
5. **On a scale of 1 to 10 (10 is super), how would you rate this meeting?**
  
6. **What would you like to see at the next meeting or meetings?**

**Thanks for completing this evaluation.**



CITY COUNCIL  
AGENDA REPORT

DATE: 6/9/14

AGENDA OF: 6/24/14

DEPARTMENT: Water

SUBJECT: Water Supply Reliability – Multidisciplinary Work Effort: Economics, Policy, Environmental Sciences, Natural Resource – Award of Contract.  
(WT)

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**RECOMMENDATION:** Motion to authorize the City Manager to execute an agreement with Stratus Consulting of Boulder, Colorado in the amount not to exceed \$350,000 for technical and analytical work to support the Water Supply Advisory Committee and respond to issues related to water supply reliability and to proceed with Phase One of that agreement.

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**BACKGROUND:** At its October 8, 2013 meeting, the City Council directed City staff to develop a detailed engagement program for a community examination of water supply issues. City staff developed the foundation for a Water Supply Advisory Committee (WSAC) and recommended hiring a neutral third-party facilitator to assist the committee. Staff presented these concepts to City Council at their November 26, 2013 meeting and after robust discussion, the Council set forth the WSAC's purpose to "explore, through an interactive, fact-based process, the City's water profile, including supply, demand and future threats, and analyze potential solutions to deliver a safe, adequate, reliable and environmentally sustainable water supply, and develop strategy recommendations for City Council consideration." At their February 11, 2014 the City Council approved the membership of the WSAC and at their March 11, 2014 meeting the City Council awarded a contract to Public Policy Collaboration (San Francisco, CA) for facilitation services for the WSAC.

When contemplating the WSAC's potential scope of work and the tools the Committee would need to successfully meet its objectives, staff asserted that contracted technical assistance would be a necessary component. At a minimum, staff anticipated the WSAC would need scientific, engineering and environmental support for the exploration of water supply options. In the November 26, 2013 staff report to the City Council, staff estimated that hiring the appropriate technical experts could cost between \$500,000 and \$700,000. Given the preliminary nature of the concept, however, staff indicated that a recommendation would be developed and returned to the City Council for discussion.

At the April 8, 2014 City Council meeting, staff recommended entering into an agreement with Stratus Consulting to fulfill the breadth of WSAC's anticipated technical assistance requirements. Stratus is an interdisciplinary team of economists and environmental scientists that can deliver a range of work products that the WSAC may need to fulfill its mission. Stratus

was being recommended because they pre-qualified for a similar body of work the City intended to pursue last year: economic analysis of the impacts of water curtailment.

At that meeting, the motion passed unanimously to ask the Water Supply Advisory Committee to discuss and provide feedback to Council on the sourcing of technical and analytical work, paying full attention to the urgency for timeliness in moving the project forward, and bring back to Council for decision on May 13, 2014.

**DISCUSSION:** The WSAC considered this item at both their May and June meetings. At their June meeting the Committee agreed by consensus (with one member standing aside) to recommend to the City Council that the contract with Stratus be approved. Stratus will act as a “general contractor” to provide technical support for the short term, with the conditions described below. Upon Council approval, Stratus will develop a scope, schedule and budget specific to Phase One.

- The Committee will be actively engaged with the City and contractor in a partnership approach.
  - Stratus will only engage subcontractors after discussion with the Committee.
  - Scoping and funding of tasks will be developed together.
  - Refinement of the consultant task will occur iteratively and together.
- The Committee will have an Independent Review Panel that will either be approved by City Council and funded by the City, or will be made up of volunteers.
- The Committee may request the termination of the Stratus contract at any time.
- The Stratus contract terminates at the end of the Committee’s Recon phase unless the Committee requests that they continue. (Recon is expected to end in late November).

The City and the Committee agreed, by consensus, to work with the Committee, starting in the August Committee meeting, to initiate an alternative contracting process for a general contractor to be in place after Recon is over if needed.

- This contracting process will be suspended if the Committee agrees to continue with Stratus after Recon is over.
- If the Committee does not agree to use Stratus after Recon, or, in the alternative, if the Committee decides at any time that they do not wish to continue to use Stratus, the City will proceed with the alternative contracting process.
- Anyone who is hired to provide technical assistance to the Committee shall reveal their trade organization relationships and lobbying practices relevant to WSAC projects.

Contrary to the April 2014 scope of work, this current scope does not include any subcontractors. Rather, and as described above, subcontractors will be engaged only after discussions with the Committee.

#### Independent Review Panel

In addition to the general contractor, the Committee is interested in forming an Independent Review Panel. The role of this panel is preliminarily described as 1) provide critical review of any products created by the technical team; 2) offer advice or suggestions to the WSAC regarding lines of inquiry or technical questions that should be evaluated by the technical team;

and, 3) work together as a team to review products prepared or created by the technical team. (See attached.)

A temporary Independent Review Panel Subcommittee was created; Sid Slatter, Sue Holt, Mark Mesiti-Miller and Rick Longinotti volunteered for the subcommittee to generate either a Request for Proposal or a Request for Qualification and a Council Staff Report on this topic. The subcommittee's duration will be temporary and will not need to follow the Brown Act.

**FISCAL IMPACT:** This contract will be managed on a Task-Order basis. Once a piece of work is identified and communicated to the Stratus Team, they will develop a scope, schedule and budget for that effort, followed by a notice to proceed from City staff.

The current estimated not to exceed value is \$350,000; funds are available in the Water Department FY14 Capital Improvement Program budget, project c701402 Water Supply Reliability and c701403 Water Supply Reliability – SDC.

Submitted by:  
Rosemary Menard  
Water Director

Approved by:  
Martín Bernal  
City Manager

Attachments:

Agreement

Concept Paper: WSAC Independent Review Panel



Professional Services Agreement For  
**WATER SUPPLY RELIABILITY – MULTIDISCIPLINARY WORK EFFORT:  
ECONOMICS, POLICY, ENVIRONMENTAL SCIENCES, NATURAL RESOURCES**

THIS AGREEMENT for professional services is made by and between the City of Santa Cruz (“City”) and \_\_\_\_\_ (“Consultant”) (together referred to as the “Parties”) as of \_\_\_\_\_, 2014 (the “Effective Date”).

**SECTION 1: SCOPE OF WORK**

The services to be performed under this Agreement are set forth in Exhibit A.

**SECTION 2: RESPONSIBILITIES OF CONSULTANT**

All work performed by Consultant, or under its direction, shall satisfy the City's objectives for entering into this Agreement and shall be rendered in accordance with the generally accepted practices, and to the standards of, Consultant's profession.

Consultant shall not undertake any work beyond the Scope of Work set forth in Exhibit A unless such additional work is approved in advance and in writing by City. The cost of such additional work shall be reimbursed to Consultant by City on the same basis as provided for in Section 4.

If, in the prosecution of the work, it is necessary to conduct field operations, security and safety of the job site will be the Consultant's responsibility excluding, nevertheless, the security and safety of any facility of City within the job site which is not under the Consultant's control.

Consultant shall meet with **Rosemary Menard Water Director**, hereinafter called "Director", or other City personnel, or third parties as necessary. Such meetings shall be held at the request of any party.

**SECTION 3: RESPONSIBILITIES OF THE CITY**

City shall make available to Consultant all necessary data and information in the City's possession and shall actively assist Consultant in obtaining such information from other agencies and individuals as needed.

The Director may authorize a staff person to serve as his or her representative. The work in progress shall be reviewed at such intervals as may be mutually agreed upon between the parties. The City will be the sole judge of acceptable work. If the work is not acceptable, City will inform Consultant of the changes or revisions necessary to secure approval.

**SECTION 4: FEES AND PAYMENT**

For the services performed, the City will pay the Consultant on a time-charge plus expense basis, monthly as charges accrue, the sum of consultant's salary expenses and non-salary expenses. Payment for the Consultant's services shall be made upon a schedule and within the limit, or limits

shown, upon Exhibit B and as further refined in each Task Order. Such payment shall be considered the full compensation for all personnel, materials, supplies, and equipment used by Consultant in carrying out the work.

Salary expenses include the actual direct pay of personnel assigned to the project (except for routine secretarial and accounting services) plus payroll taxes, insurance, sick leave, holidays, vacation, and other fringe benefits. The percentage of compensation attributable to salary expenses includes all of Consultant's indirect overhead costs and fees. For purposes of this Agreement, Consultant's salary expenses and non-salary expenses will be compensated at the rates set forth in the fee schedule attached as Exhibit B and in accordance with the terms set forth therein. Non-salary expenses include travel, meals and lodging while traveling, materials other than normal office supplies, reproduction and printing costs, equipment rental, computer services, service of sub-consultants or subcontractors, and other identifiable job expenses. The use of Consultant's vehicles for travel shall be paid at the maximum rate of the current standard business mileage rate as established by the U.S. Internal Revenue Service.

Salary payment for personnel time will be made at the rates set forth in the attached fee schedule for all time charged to the project. Normal payroll rates are for 40 hours per week. Consultant shall not charge the City for personnel overtime salary at rates higher than those set forth in the attached fee schedule without the City's prior written authorization.

Budget estimates of the cost of each phase of the project are as follows:

This is a task-order based contract. Consultant, upon direction from the City, will develop a scope, schedule and budget for each task and will not commence work until receiving a Notice to Proceed authorized by City Staff.

Variations from the costs for each phase which are justified by statements indicating personnel time expended are allowed after advance written City approval is obtained, in the manner set forth in the Agreement; however, in no event shall the total fee charged for the scope of work set forth in Exhibit A exceed the budget of **\$350,000** without additional advance written City authorization.

Payments shall be made monthly by the City based on itemized invoices from the Consultant which list actual costs and expenses. Such payments shall be for the invoice amount.

Invoices shall indicate the percentage completion of each work task as identified in the Scope of Work (Exhibit A), the overall percentage of completion of the total required services and the hours worked by Consultant's staff.

Unless otherwise specified in the attached fee schedule, Consultant's fees shall be payable on monthly statements. The monthly statements shall detail the time worked by each class of employee and the expenses incurred for which billing is made. The monthly statements shall contain the following affidavit signed by a principal of the Consultant's firm:

"I hereby certify as principal of the firm of (Insert Firm Name), that the charge of (Insert invoice amount) as summarized above and shown in detail on the

attachments is a fair and reasonable use of public funds, is in accordance with the terms of Agreement dated (Insert Agreement Date), and has not been previously paid."

#### SECTION 5: CHANGES IN WORK

City may negotiate changes in the Scope of Work. No changes in the Scope of Work shall be made without the City's written approval. Any change requiring compensation in excess of the sum specified in Exhibit B and any approved Task Order shall be approved in advance in writing by the City.

#### SECTION 6: TIME OF BEGINNING AND SCHEDULE FOR COMPLETION

Consultant shall begin work upon its receipt of a written Notice to Proceed from Director. The Notice to Proceed shall not be issued until after this Agreement has been approved and authorized by the Department Head.

The schedule for completion of the work is to be determined but is currently estimated at 12-24 months. In the event that major changes are ordered, the schedule for completion will be adjusted by City so as to allow Consultant a reasonable period of time within which to complete any additional work which may be required as a result of the ordered changes.

Neither party will be held responsible for delay or default caused by declared emergencies, natural disasters, or any other cause which is beyond the party's reasonable control. Vendor will, however, make all reasonable efforts to remove or eliminate such a cause of delay or default and will, upon the cessation of the cause, diligently pursue performance of its obligations in this agreement.

The City reserves the right to obtain the item(s) covered by this contract from another source during any on-going suspension of service due to the circumstances outlined above.

Consultant acknowledges that it is necessary for Consultant to complete its work on or before the completion date set forth in each Task Order in order to allow the City to achieve its objectives for entering into this Agreement. The parties therefore agree that time is of the essence in the performance of this Agreement.

#### SECTION 7: TERMINATION

The City or Consultant may terminate the agreement for convenience by providing written notice to the other party not less than 30 calendar days prior to an effective termination date.

The City or Consultant may terminate the agreement for material breach of agreement by providing written notice to the other party not less than 14 calendar days prior to an effective termination date.

Upon notice of termination, the Consultant will immediately take action not to incur any additional obligations, costs or expenses, except as may be reasonably necessary to terminate its

activities. The City's only obligation to the Consultant will be just and equitable payment for services authorized by, and received to the satisfaction of, the City up to and including the effective date of termination. All finished or unfinished work or documents procured or produced under the agreement will become property of the City upon the termination date. The City reserves the right to obtain the services included in Exhibit A elsewhere, and the defaulting Consultant will be liable for the difference between the prices set forth in the terminated agreement and the actual cost to the City. In no event will the City be liable for any loss of profits on the resulting agreement or portion thereof so terminated. After the effective date of termination, Consultant will have no further claims against the City under the agreement. Termination of the agreement pursuant to this paragraph may not relieve the Consultant of any liability to City for damages sustained by City because of any breach of agreement by Consultant, and City may withhold any payments to Consultant for the purpose of set-off until such time as the exact amount of damages due City from Consultant is determined

The rights and remedies provided in this section will not be exclusive and are in addition to any other rights and remedies provided by law or under the agreement.

#### SECTION 8: INSURANCE

Prior to the beginning of and throughout the duration of the agreement, the Vendor will maintain insurance in conformance with the requirements set forth below. The Vendor will insure the City against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the Vendor, his agents, representatives, employees or subcontractors.

##### CERTIFICATE REQUIREMENTS

The City will be issued a Certificate of Insurance (a Memorandum of Understanding will not be accepted) with the following minimum requirements:

- Certificate(s) will show current policy number(s) and effective dates,
- Coverage and policy limits will meet, or exceed, requirements below,
- The Certificate Holder will be City of Santa Cruz, Risk Management, 809 Center St, Rm 7, Santa Cruz, CA 95060,
- Certificate will be signed by an authorized representative,
- An endorsement will be provided to show the City, its officers, officials, employees, and volunteers as additional insured.

##### MINIMUM SCOPE AND LIMITS OF INSURANCE

The Vendor acknowledges that the insurance coverage and policy limits set forth in this section constitute the minimum amount of coverage required. The City will be entitled to coverage for the highest limits maintained by the Vendor. Coverage will be at least as broad as:

- PROFESSIONAL LIABILITY (ERRORS AND OMISSIONS): \$1,000,000 PER OCCURRENCE OR CLAIM, \$2,000,000 AGGREGATE.

The Vendor will maintain insurance appropriate to the Vendor's profession; with limit no less than \$1,000,000 per occurrence or claim, \$2,000,000 aggregate. Insurance must be maintained and evidence of insurance must be provided for at least five years after date

of completion of the agreement work. The Vendor agrees to purchase an extended period coverage for a minimum of five years after completion of agreement work.

- **COMMERCIAL GENERAL LIABILITY (CGL): \$1,000,000 (Including products and completed operations)**  
Proof of coverage for \$1 Million per occurrence for bodily injury, personal injury and property damage will be provided on Insurance Services Office (ISO) Form CG 00 01 12 07 covering CGL. If a general aggregate limit applies, either the general aggregate limit will apply separately to this project/location or the general aggregate limit will be twice the required occurrence limit.
- **AUTOMOBILE LIABILITY: \$1,000,000**  
Proof of coverage for \$1 Million will be provided on ISO Form Number CA 00 01 covering any auto (Code 1), or if Contractor has no owned autos, hired, (Code 8) and non-owned autos (Code 9), per accident for bodily injury and property damage.
- **WORKERS' COMPENSATION AS REQUIRED BY THE STATE OF CALIFORNIA, WITH STATUTORY LIMITS, AND EMPLOYER'S LIABILITY INSURANCE: \$1,000,000 per accident for bodily injury or disease. Must include a waiver of subrogation.**

#### OTHER INSURANCE PROVISIONS

The insurance policies are to contain, or be endorsed to contain, the following provisions:

- **ADDITIONAL INSURED STATUS**  
The City, its officers, officials, employees, and volunteers are to be covered as insured on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the Vendor including materials, parts, or equipment furnished in connection with such work or operations. General liability coverage will be provided in the form of an endorsement to the Vendor's insurance at least as broad as ISO Form CG 20 10 11 85, or if not available, through the addition of both CG 20 10 and CG 20 37 (if a later edition is used).
- **PRIMARY COVERAGE**  
For any claims related to this agreement, the Vendor's insurance coverage will be primary insurance as respects the City, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees, or volunteers will be excess of the Vendor's insurance and will not contribute with it.
- **NOTICE OF CANCELLATION**  
Each insurance policy required above will provide that the City will be notified of any coverage canceled with 30 days' prior written notice (10 days for non-payment).
- **WAIVER OF SUBROGATION**  
Vendor hereby grants to the City a waiver of any right to subrogation which any insurer of said Vendor may acquire against the City by virtue of the payment of any loss under such insurance. Vendor agrees to obtain any endorsement that may be necessary to effect this waiver of subrogation, but this provision applies regardless of whether or not the City has received a waiver of subrogation endorsement from the insurer.

The Worker's Compensation policy will be endorsed with a waiver of subrogation in favor of the City for all work performed by the Vendor, its employees, agents and subcontractors.

- **DEDUCTIBLES AND SELF-INSURED RETENTIONS**  
Any deductibles or self-insured retentions must be declared to and approved by the City. The City may at its option allow the Contractor to purchase coverage with a lower deductible or retention, or require the Contractor to provide a financial guarantee satisfactory to the City guaranteeing payment of losses and related investigations, claim administration, and defense expenses.
- **ACCEPTABILITY OF INSURERS**  
Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII, unless otherwise acceptable to the Entity.
- **VERIFICATION OF COVERAGE**  
Vendor will furnish the City with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the City before work commences. However, failure to obtain the required documents prior to the work beginning will not waive the Vendor's obligation to provide them. The City reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.

#### SECTION 9: INDEMNIFICATION

Consultant agrees to indemnify, defend, and hold harmless the City, its officers, agents and employees, from and against any and all claims, demands, actions, damages, or judgments, including associated costs of investigation and defense arising in any manner from consultant's negligence, gross negligence, recklessness, or willful misconduct or patent or copyright violation in the performance of this agreement.

#### SECTION 10: EQUAL EMPLOYMENT OPPORTUNITY

The City of Santa Cruz strongly supports equal employment opportunities for all and requires its Consultants to ensure that effective policies and procedures concerning the prevention of illegal discrimination and harassment exist in their companies. In addition, all Consultants must be in compliance with all applicable Federal and State and local equal employment opportunity acts, laws, and regulations. The City's current Equal Employment Opportunity and Anti-Discrimination policies to which this provision applies may be viewed at <http://www.codepublishing.com/CA/SantaCruz/?SantaCruz09/SantaCruz0983.html>.

#### SECTION 11: LEGAL ACTION/ATTORNEYS' FEES

If any action at law or in equity is brought to enforce or interpret the provisions of this Agreement, the prevailing party shall be entitled to reasonable attorneys' fees in addition to any other relief to which he or she may be entitled. The laws of the State of California shall govern all matters relating

to the validity, interpretation, and effect of this Agreement and any authorized or alleged changes, the performance of any of its terms, as well as the rights and obligations of Consultant and the City.

#### SECTION 12: ASSIGNMENT

This Agreement shall not be assigned without first obtaining the express written consent of the Director after approval of the City Council.

#### SECTION 13: MISCELLANEOUS PROVISIONS

1. Project Manager. Director reserves the right to approve the project manager assigned by Consultant to said work. No change in assignment may occur without prior written approval of the City.
2. Consultant Services Only. Consultant is employed to render professional services only and any payments made to Consultant are compensation solely for such professional services.
3. Licensure. Vendor warrants that it has complied with any and all federal, state, and local licensing requirements and agrees to provide proof of a current City of Santa Cruz Business Tax Certificate if:
  - Vendor is located in the City of Santa Cruz;
  - Will perform physical work in the City of Santa Cruz for 6 or more days annually; or
  - Will use company vehicles to deliver within the City of Santa Cruz for 6 or more days annually.For additional information and licensing requirements, view the City's Business Licenses and Permits webpage or call the Revenue and Taxation division at 831/420-5070.
4. Other Agreements. This Agreement supersedes any and all other agreements, either oral or in writing, between the parties with respect to the Scope of Work specified in Exhibit A..
5. City Property. The work, or any portion, of Consultant in performing this Agreement shall become the property of City. The Consultant shall be permitted to retain copies or such work for information and reference in connection with the City's use; however, such work shall not be used by the Consultant on other projects, except by agreement in writing by the City.
6. Consultant's Records. Consultant shall maintain accurate accounting records and other written documentation pertaining to the costs incurred for this project. Such records and documentation shall be kept available at Consultant's office during the period of this Agreement, and after the term of this Agreement for a period of three years from the date of the final City payment for Consultant's services.
7. Independent Contractor. In the performance of its work, it is expressly understood that Consultant, including Consultant's agents, servants, employees, and subcontractors, is an independent contractor solely responsible for its acts and omissions, and Consultant shall not be considered an employee of the City for any purpose.

8. Consultant Not an Agent. Except as City may specify in writing, Consultant shall have no authority, express or implied, to act on behalf of City in any capacity whatsoever as an agent. Consultant shall have no authority, express or implied, pursuant to this Agreement to bind City to any obligation whatsoever.
  
9. Conflicts of Interest. Consultant stipulates that corporately or individually, its firm, its employees and subcontractors have no financial interest in either the success or failure of any project which is, or may be, dependent on the results of the Consultant's work product prepared pursuant to this Agreement.
  
10. MacBride Principles/Peace Charter. City of Santa Cruz Resolution NS-19,378 (7/24/90) encourages all companies doing business in Northern Ireland to abide by the MacBride Principles and Peace Charter.
  
12. Notices. If either party shall desire or is required to give notice to the other such notice shall be given in writing, via facsimile and concurrently by prepaid U.S. certified or registered postage, addressed to recipient as follows:

**To CITY:**  
Water Department  
Rosemary Menard  
212 Locust Street, Suite C  
Santa Cruz, CA 95060

**To CONSULTANT:**  
Stratus Consulting Inc.  
Robert S. Raucher PhD  
1881 Ninth Street, Suite 201  
Boulder, CO 80302

Changes to the above information shall be given to the other party in writing ten (10) business days before the change is effective.

**Technical Review by:**

Heidi R. Luckenbach  
Heidi Luckenbach, P.E.  
Deputy Water Director/Engineering Manager

Dated June 10 2014

**Approved As To Form:**

John G. Barisone  
John G. Barisone  
City Attorney

Dated 6-10-14

**Department Approval by:**

Rosemary Menard  
Rosemary Menard, Water Director

Dated \_\_\_\_\_

**STRATUS CONSULTING INC**

Robert S. Raucher, PhD  
Robert S. Raucher, PhD

Dated \_\_\_\_\_

**CITY OF SANTA CRUZ**

By Martin Bernal  
Martin Bernal, City Manager

Dated \_\_\_\_\_

EXHIBIT A: SCOPE OF WORK

See attached.

## **Appendix A**

### **Santa Cruz Water Reliability Study: Scope of Work for Economic and Related TBL Analysis**

#### **Overview**

The City of Santa Cruz (City) is currently exploring options for providing a sustainable water supply to meet long-term demand and address changes in environmental conditions, climate change, and other factors. The City Council has appointed a Water Supply Advisory Committee (WSAC, or Committee), composed of 14 citizens, to represent and assist the community in assessing the water situation and help forge a path forward. Stratus Consulting (Stratus) would provide technical support to the Committee as it seeks to develop a robust understanding of the community's long-term water supply challenges, identify potential solutions, and engage the broader community in an active and effective dialogue for collectively charting a path forward.

The Scope of Work (SOW) developed in this document is designed to accommodate a "Task Order" approach. Under this SOW, Stratus will be authorized on a task-specific basis to execute technical work assignments and develop deliverables based on the needs of the Committee and staff and as authorized (in writing) by the City of Santa Cruz Water Department. As various tasks are developed, there may be a need to broaden the team. Stratus will work with City and Committee to develop an understanding of the need for additional expertise.

The overall objectives of this SOW -- and the Task Orders (TOs) to be issued under it -- are to

1. assemble and enhance current information to help the Committee and City better define and articulate the community's water supply challenges;
2. establish a "baseline" reflecting the future if no actions are taken to enhance the water supply portfolio (or reduce demands);
3. identify a suite of potential alternative supply-enhancing solutions (if a need is identified); and
4. evaluate a set of identified potential options by assessing the broad suite of Triple Bottom Line (TBL) benefits and costs of each option relative to the baseline -- including the financial, societal, and environmental consequences for the community.

To accomplish that effort, consultant support activities provided by Stratus are envisioned as being conducted in three phases, subject to modification by City in consultation with the Committee:

- Phase 1: a "reconnaissance" exercise to help orient and familiarize the Committee and Team with the extensive studies, data and issues.
- Phase 2: working with the Committee and City to define the extent of the problem (purpose and need).

- **Phase 3: explore the comparative benefits and costs of a range of potential options to address the need.**

Because of the nature of the project and parties involved, the details provided in this scope of work are preliminary in nature. Stratus recognizes that the sequence and content of work efforts, other than Phase 1, will be subject to review by the Committee and direction of the City. Therefore, the scope details provided herein are intended to give a possible overview of the direction of the work.

## **Technical Approach and Guiding Principles**

The work efforts developed under this SOW are likely to be complex and multi-faceted, will be subject to considerable scrutiny, and require considerable interaction and coordination with others. Accordingly, this SOW, and its associated technical approach and level of effort for each anticipated task, will likely embody the following features:

1. **A considerable amount of on-going communication, collaboration, and technical integration with the Committee, City of Santa Cruz staff, the City's other consultants, and others, as they examine topic areas that are fundamentally linked to the overall efforts defined by this SOW.**
2. **Frequent and on-going interactive integration and participation with the Committee and others in public outreach and related communication activities – orchestrated by the City and its facilitation consultants – to ensure the work products and areas of focus developed under this SOW are an informative part of an on-going, two-way public discourse and knowledge exchange. Numerous on-site, facilitated working meetings and briefings are anticipated throughout the course of the project effort.**
3. **Technical robustness and transparency are critical aspects of the work to be performed. The analyses performed under this SOW will be subject to considerable public review discussion as part of a high profile and likely public discourse on the future of the City's water supply, potential growth, economic vitality, and quality of life. The technical quality and transparency of the work, and the manner in which it is communicated, are critical to the value and success of the overall effort.**
4. **Iterative review and refinement/adjustment of task-specific work efforts and priorities – and associated adjustments to task-level budgets and levels of effort – will be prudent as details emerge regarding data availability, topic relevance to key stakeholders, and other key factors as become evident as the work progresses. An iterative approach of "preliminary screening," followed by more detailed and focused work planning and execution, will provide the City, in consultation with the Committee, the flexibility to re-prioritize and adjust the SOW (jointly with Stratus) as information and knowledge is accumulated by the Committee, Stratus, and City. Any adjustments to task-specific work efforts and budgets will be coordinated with the City and subject to written approval by the City.**

## **Phase 1: Reconnaissance and Review of Existing Information**

Phase 1 is intended to provide a technical foundation through developing a basic understanding of existing and on-going studies, analyses, and data related to the City's current and anticipated water supply yields, water demands, and any projected supply shortfalls and related curtailments. Phase 1 also consists of a basic contract and project administration and management task, and a general meeting participation and support task.

### **Project Management and Administration**

This task consists of activities related to ensuring the overall contract and project efforts are properly managed, tracked, and administered. This includes developing, administering, and maintaining suitable budget tracking, work plan development and authorization, quality assurance and control, invoicing, periodic progress reports, and other project and contractual requirements. These activities will rely on standard accounting, tracking, and related management systems in place at Stratus Consulting, and will be implemented and monitored on an ongoing basis during the project duration.

### **Reconnaissance and Review of Existing Analysis, Reports, and Data**

The City and others have in recent years compiled a considerable amount of relevant data, knowledge, and studies related to anticipated future supply yields, alternative supply options, water demand projections, conservation program alternatives, and possible water shortfalls and curtailments. It is important that Stratus, Committee, and City develop a shared comprehension of the relevant work completed or in progress, articulate any perceived key gaps or concerns regarding these analyses and findings, and define a set of future data gathering efforts and analyses that will properly fill key gaps or address currently unanswered questions.

### **Team Support for, and Participation in, Committee and other Meetings**

In support of Committee activities, and to gain or share additional information, Stratus will need to participate in numerous meetings, briefings, and other such activities. Many of these meetings and briefings will require in person, on site participation, and several may also be successfully accomplished through virtual approaches such as web-based "Go-To Meeting" (or equivalent) and conference calls. This task is intended to provide the team with the resources needed to prepare for, attend, and actively engage in such meetings and similar activities.

## **Phase 2: Identifying and Characterizing the Potential Water Shortage Problem**

While specific tasks to be pursued under Phase 2 will depend on what issues and requests are articulated by the Committee and authorized by the City, the objective of Phase 2 is to clarify the set of questions that need to be addressed by the Committee and the City concerning Santa Cruz's future water supply and demands, and develop a baseline understanding of the problem. These questions may include, but are not limited to:

- How much water is available to the city given in-stream fishery requirements and changes in precipitation and temperature due to climate change?
- How much might water demands change?
- How large might future water shortages and related curtailments be?
- How much will curtailments affect the local economy?
- How will curtailment impacts be distributed and borne by different portions of the community?

It is a further objective of Phase 2 to engage with the City's retained facilitators to ensure that the Committee activities, and perhaps other forms of public participation, are focused and engaged on developing a shared understanding of the current and anticipated water supply situation for the City.

At this time, the Phase 2 effort is designed to meet these objectives by focusing on three key subject areas: (A) Examining the current and projected future water supply; (B) Updating water demand projections; and (C) Re-evaluating curtailment assumptions and scenarios. Individual task descriptions are integrated into the discussion of each of these three key subject areas.

### **A. Updating Information on Current Water Supply**

Stratus will work with the Committee, and the City and its other consultants, to compile an assessment of the anticipated future water supply yields from its current portfolio under varying hydrologic conditions. This task could also include reviewing and assessing potential changes in surface yields under the HCP, updating groundwater yield projections, and including potential climate change impacts into the future supply yield projections.

### **B. Updating Information on Future Water Demand**

Changing forecasts of future demand have become a key issue as the City works with the broader community to assess the best future path of supply and infrastructure development. If directed by the Committee and City, Stratus will work with the City and its other consultants to compile an assessment of the anticipated future water demands -- by residential, by commercial, industrial, and institutional (CII), and by large landscape water customers -- The update will use existing projections as a starting point, and then incorporate revisions and refinements to reflect these three inter-related "Issue Areas:" (1) Changes in future demand associated with build out to planned levels; (2) Potential to generate additional water savings through conservation programs beyond the advanced conservation and water use efficiency elements already in place; and (3) Potential impacts of climate change on water demands by residential and CII customers.

### **C. Re-Evaluating Curtailment Assumptions and Assessing Curtailment Impacts**

The City had a Curtailment Study prepared in 2001 to qualitatively address the potential impact of water supply reductions in a drought. Additional information has been compiled by the City in the 2010 Urban Water Management Plan (UWMP) and associated studies. That 2001 and other studies may need to be updated and/or expanded to review various levels of curtailment, explore the associated economic impacts, and recommend modifications to the curtailment plan to minimize economic impacts.

In order to recognize the impacts curtailment would have on social equity, the environment, quality of life issues, and financial costs to the City and its customers/citizens, such impacts will need to be explored and analyzed. Broadening the analysis into a Triple Bottom Line (TBL) assessment is viewed as a highly useful way to assemble the broad range of impacts (benefits, costs, and transfers) within a transparent, readily communicated framework. This would entail placing the economic analysis of curtailment impacts into the TBL (probably under the “societal” bottom line), and also weaving in results from other work efforts the City has conducted (e.g., using the EIR results to flesh out the environmental bottom line, and including the utility and customer-borne direct costs from the City’s financial assessment under the “financial” bottom line. In this task, modifications to the current curtailment plan may be recommended and evaluated and/or other curtailment allocations may be evaluated that will redistribute and lessen the overall negative impact of water supply shortfalls.

### **Phase 3: Identifying and Evaluating Potential Solutions**

The specific tasks that could be pursued under Phase 3 will depend in part on what issues and requests are articulated by the Committee and authorized by the City. While Phase 2 will define the impacts of the status quo “baseline” indicating the impacts if Santa Cruz does nothing to modify its current water supply portfolio (or reduce demands), Phase 3 is envisioned as examining the impacts under a range of alternative pathways for the City. The Phase 3 effort will explicitly consider a broad (but manageable) range of alternatives. The specific alternatives to be considered will be determined as the process unfolds, as directed by the Committee and authorized by the City. Stratus will work with the Committee and City to determine the level of analysis that is warranted for the alternatives that are chosen for inclusion.

### **Overall Budget and Timeline**

Budget allocations will be prepared and authorized on a task-by-task basis, as consistent with a Task Order-based SOW. An overall budget allotment of \$350,000 will enable the project to proceed through most of the anticipated TO assignments (although supplemental funding may be required, depending on the breadth and depth of analyses requested and authorized by the Committee and City).

The project timeline will depend largely on the pace established by the Committee, the number and scale of the Task Orders issued, and other considerations that are largely beyond the control of Stratus Consulting.



EXHIBIT B: FEE SCHEDULE(S)



**Exhibit B: Standard Hourly Time and Materials Rates for Stratus Consulting, for CY2014<sup>1</sup>**

<b>Stratus Personnel<sup>2</sup></b>	<b>Title</b>	<b>Hourly rate for 2014</b>
Robert Raucher	Principal	\$230
Jeffrey Morris	Managing Fisheries Scientist	\$160
James Henderson	Managing Economist	\$150
Janet Clements	Senior Economist	\$125
Karen Raucher	Senior Associate	\$95
Colleen Donovan	Senior Policy Analyst	\$105
Carolyn Wagner	Senior Policy Analyst	\$105
Jeffrey Oxenford	Managing Analyst	\$160
Michael Duckworth	Research Associate	\$65
Sue Visser	Research Librarian	\$110
Diane Callow	Senior Admin/Editor/Doc.	\$125
Erin Miles	Senior Document Specialist	\$85
Jody Jennings	Support Associate	\$80
Caitlyn Quinn	Support Associate	\$75
Stephanie Collins	Senior Editor	\$110
<b>Subconsultants<sup>3</sup></b>		
Gary Fiske	Principal, Gary Fiske & Assoc	\$220
David Mitchell	Principal, M-Cubed	\$220

**Nonlabor Direct Expenses**

charged at cost, plus applicable General and Administration (G&A) or Materials and Handling (M&H) charges, per federally audited and approved G&A and M&H rates and protocols.

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<sup>1</sup> Hourly rates will be updated each calendar year, to reflect salary adjustments, changes in indirect costs, and other applicable factors. Typical annual increases have ranged from 3% to 5%.

<sup>2</sup> Additional personnel may be added to fit specific technical staffing needs as may arise, and charged at rates comparable to those shown above for similar job classifications.

<sup>3</sup> Subconsultants will have Materials and Handling (M&H) charges (typically under 2%) and a 10% fee added to their hourly charges.



## Attachment C

### Independent Review Panel – 2<sup>nd</sup> Draft Concept based on WSAC Input on May 30, 2014

**Panel Role:** The role of the Independent Review Panel (Panel) would be two-fold:

1. The panel would provide critical review of any products created by the technical team with a focus on ensuring the analysis provided is:
  - Unbiased;
  - Methodologically, scientifically, and technically accurate;
  - Includes a clear and accurate statement of assumptions; and
  - Appropriately characterizes the strengths and weaknesses of the analyses, especially with respect to uncertainty, data quality, or other factors that, if different, could affect the results in a significant manner.
2. The Panel would offer advice or suggestions to the WSAC regarding lines of inquiry or technical questions that should be evaluated by the technical team.
3. The Panel would work together as a team or be individually assigned to review products prepared or created by the technical team. If working together as a team on reviewing a product, Panel members could express divergent views on the technical team's product if their views are, in fact, divergent, or they could express a consensus view if that is their conclusion.

**Panel Characteristic:** Panel characteristics would include the following:

- The Panel would include 3 to 5 members;
- Panel members would have scientific or technical training and significant hands on experience as a practitioner in scientific or technical disciplines relevant to the work of the WSAC. The most relevant areas of expertise are likely to be environmental science, especially related to climate change, water system operation, planning, and/or management, civil engineering related to water resources planning, management, treatment technology, facilities design and operations, public policy, especially related to environmental and community sustainability issues and decision-making by local governments in light of significant uncertainty.
- Panel members would be expected to bring their broad knowledge and experience to the process and apply this knowledge and experience to the topics the WSAC will be dealing with.
- Panel members would have demonstrated skills as technical and/or scientific reviewers through experiences such as providing expert level review for articles or other publications on scientific and technical topics;
- Panel members would have some previous experience supporting, advising, and engaging with citizen groups on topics with public policy implications;

- Panel members would have demonstrated ability to explain complicated topics in terms non-technical people can understand as well as the ability to present facts without concealing values and with clear articulation of assumptions;
- Panel member experience and expertise would be diverse with the experience and expertise of each panel member complementing and supplementing the experience and expertise of the others; and
- Panel members would have reasonable availability to work with the WSAC during the coming year, including a willingness to regularly participate in and attend WSAC monthly meetings as well as a willingness to commit the time needed to review documents, and prepare and present to the WSAC summaries of review efforts.

**Panel Selection Process:** Selection would be done using a qualifications based selection process. The Request for Qualifications (RFQ) would be developed by City staff and would include background information on the WSAC's process and a description of the Panel Role, Desired Panel Characteristics, and Panel Compensation. The RFQ would include criteria for evaluating submittals that would emphasize the Panel Characteristics. The RFQ would be provided to WSAC members for review prior to being issued. Those interested in responding to the RFQ would be asked to submit a cover letter describing how they fit the Panel Characteristics, their willingness to accept the offered compensation, their availability to work with the WSAC over the coming year, a resume or curriculum vitae and their specific response to no more than three questions. Prior to issuing the RFQ, City staff will receive suggestions of individuals who will be sent the RFQ and, in addition, the RFQ will be posted on the City's purchasing websites where RFQs and RFPs are typically posted.

**Panel Compensation:** Compensation would be provided in the form of an honorarium only. The honorarium amount would be limited to \$5,000 per panel member. Direct expenses (mileage, other transportation, per diem, if and as needed) would be reimbursed.

**Proposed RFQ Questions:**

1. Please describe any familiarity you have with water supply issues in Santa Cruz County. Please include in your response any information that would help reviewers understand and evaluate your knowledge and experience of the local context of the work that the WSAC is doing.
2. Please describe any professional organizations to which you or your firm belongs.

**Desalination and Alternatives**  
Water for a Thirsty County

2013-2014 Santa Cruz County Grand Jury  
June 2014

## **Summary**

Water is one of the most important resources for life. Much of Santa Cruz County receives its drinking water from groundwater sources (underground aquifers). Wells pump water from the aquifers to be treated and sent to our homes and businesses. In the coastal areas from Live Oak to the Pajaro Valley, many of the aquifers are already contaminated or in danger of contamination due to saltwater intrusion caused by over-pumping. There are many different ways to protect our aquifers from this environmental disaster. One way is to work with local agencies to come up with a regional plan to halt the intrusion where it has already occurred and to protect those aquifers yet to be tainted.

The City of Santa Cruz Water Department (SCWD) and Soquel Creek Water District (SqCWD) entered into a plan to do this through the construction of a regional seawater desalination plant. However, after several years of planning and studies, the Santa Cruz City Council put a halt to the project just a year before public vote due to strong and vocal opposition from a number of residents. This decision left SqCWD without a supplemental water supply and the City of Santa Cruz more vulnerable to future droughts. Additionally, the tabling of the desalination plant forces a restart of the process, since both agencies must now spend more than a year reevaluating projects either related to the desalination or that were originally eliminated from consideration seven years ago.

SqCWD is currently finishing work on its preliminary study of alternatives, while the City of Santa Cruz is only beginning the process of re-examining its alternatives. When time for project planning, environmental studies, and construction are factored in, there could be three to ten years or more of damage to the aquifer before a supplemental supply is in place. This leaves residents of the county both vulnerable to drought and in danger of having their underground water sources contaminated by seawater. It could take three to ten years to work out a reliable water source plan and get it up and running.

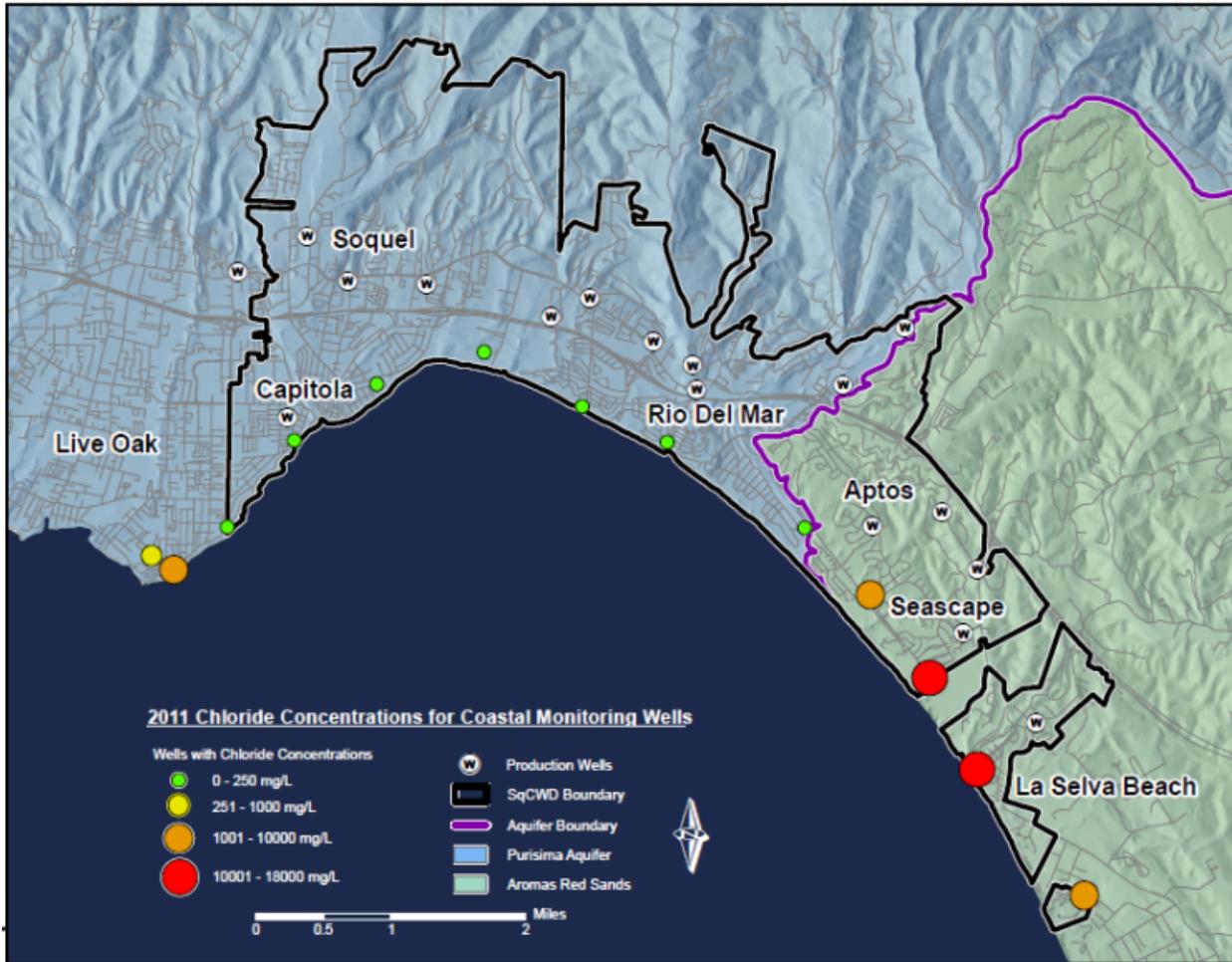
The Grand Jury examined the issues facing both SCWD and SqCWD as they attempt to manage their local water supply problems. Additionally, we examined the prospective plans for the regional desalination project as well as other alternatives being considered.

## **Background**

### **Soquel Creek Water District**

Soquel Creek Water District supplies water to the City of Capitola and the unincorporated areas of Aptos, Soquel, Rio del Mar, Opal Cliffs, Seascape, La Selva Beach, and portions of Live Oak. SqCWD obtains all of its water from groundwater sources in the Purisima and Aromas Red Sands aquifers. Portions of the Aromas Red Sands aquifer have been experiencing active saltwater intrusion for decades.

## Soquel Creek Water District service area<sup>[1]</sup>

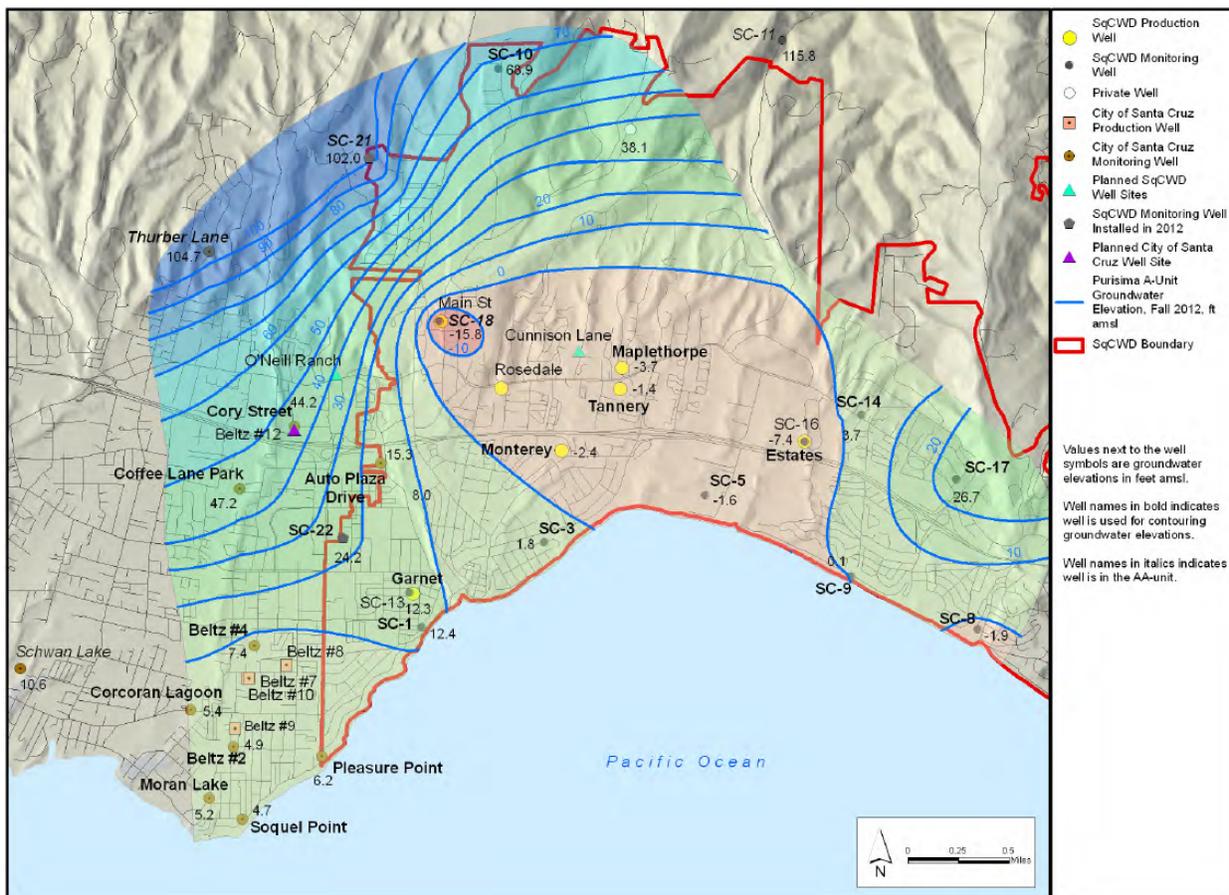


Due to overuse, the aquifers that supply water to the Soquel Creek Water District (SqCWD) are in imminent danger of saltwater intrusion. Maps from Basin Implementation Group (BIG) reports between 2007 and 2012 show wide fluctuations in aquifer levels in the Purisima basin. Purisima is one of the two aquifers from which SqCWD draws water. These fluctuations show low groundwater levels near major production wells, and especially near the coastline. These coastal groundwater levels need to be above sea level to prevent the seawater from pushing into the aquifer. In the fall of 2007, SqCWD production wells located less than half a mile north of Highway 1 reported water levels of 20 feet below sea level, with one portion in the 30 feet below sea level range. Water levels along the majority of the Purisima's coastline were also reported as being below sea level. Currently, the majority of SqCWD's portion of the Purisima aquifer is below the level needed to protect against saltwater intrusion.

SqCWD has moved its pumping further inland and is using the wells near the coast mainly for monitoring salinity. However, this relocation alone is not enough. Because the low groundwater levels are so close to our shoreline, once saltwater breaches the coastline it

will flood a major portion of the aquifer. And once saltwater has contaminated a well, it can no longer be used to produce drinking water. This issue is further compounded by climate change and the prediction of rising sea levels, which will require even higher groundwater levels to maintain adequate protection.

### Groundwater Elevation Contours, Purisima Aquifer, Fall 2012<sup>[1]</sup>



Note: Areas in red represent groundwater levels below sea level.

### Santa Cruz

The City of Santa Cruz Water Department's (SCWD) service area covers the coastline from 41st Avenue to Davenport. The majority of the water supplied by the City of Santa Cruz Water Department (SCWD) comes from surface water (streams and rivers), with a small number of wells servicing customers in portions of Live Oak. The City of Santa Cruz also stores water in Loch Lomond Reservoir. During drought years the City's water supply is at risk due to high dependency upon flowing sources which dry up. The City's monitoring wells near Pleasure Point have already begun to show signs of saltwater intrusion.

In 2007 SCWD and SqCWD entered into negotiations to form the Santa Cruz Water Department and Soquel Creek Water District Regional Seawater Desalination Project (scwd<sup>2</sup>). Its goal was to plan, construct, and operate a regional desalination plant located

within the City of Santa Cruz. This was done in an effort to decrease the amount of water drawn from wells, and to provide water to the City during drought years,

During the summer of 2013, the City of Santa Cruz tabled plans for building the desalination plant and finalizing the project's Environmental Impact Report (EIR), as a result of public outcry from a number of citizens. Without an added water source SCWD will be in jeopardy during drought years, and both SCWD and SqCWD risk contaminating their shared aquifer with saltwater.

The Grand Jury examined supplemental water sources for residents and businesses in SqCWD. It also examined options to supply water to the City of Santa Cruz during droughts.

## **Scope**

In evaluating the issues facing SCWD and SqCWD, the Grand Jury gathered data on alternatives. We met with staff and representatives of SCWD, SqCWD, and the County of Santa Cruz. We also spoke with field experts and local opposition groups to hear what is currently being done to address the water issues. In addition, we sought to find relative time frames for solutions to be implemented, and when possible, the ability of proposed solutions to remedy the overall problem.

Our main questions were:

- What are the main threats to our water supplies?
- What are the options to protect and preserve our local water supply?
- What options are currently being pursued?
- When can the relevant parties begin work on these options?
- When will the solutions be in place?

## **Investigation**

### **Soquel Creek Water District**

Although the word "creek" appears in the name of the water district, SqCWD is entirely reliant upon groundwater sources from the Purisima and Aromas Red Sands aquifers. There is no surface water source supplying water to the District, and it does not have water rights to any streams, rivers, or lakes within its service area. SqCWD shares the Aromas Red Sands aquifer with the Pajaro Valley Water Management Agency (PVWMA), Central Water District, and with private pumpers throughout the district's boundaries. SqCWD shares the Purisima aquifer with Central Water District, SCWD, and private pumpers. SqCWD is responsible for roughly 50% of the well pumping that occurs within its boundaries. The rest of the pumping is beyond SqCWD's control.

For the past 30 years more water has been pumped from the aquifers supplying SqCWD than has been recharged back into the aquifer. As a consequence, water levels in portions of the Purisima aquifer are approaching 16 ft below sea level.<sup>[1]</sup> Additionally, as of October 2013, SCWD monitoring wells on the coast have begun to show increased levels of chlorides, which indicates the start of saltwater intrusion.

SqCWD contracts with an outside firm, Hydrometrics Water Resources Inc. (Hydrometrics), to analyze and assess SqCWD's aquifers. Hydrometrics estimates that the total sustainable yield from SqCWD's portion of the aquifers is 4,200 acre feet per year. Prior to 2009, the district had exceeded this number, pumping between 4,800 and 6,000 acre feet per year, resulting in a substantial deficit in the aquifer. Currently SqCWD is pumping water from its aquifers at 4,000-4,400 acre feet per year. At current pumping rates it is impossible for groundwater to rise to a level that would prevent seawater intrusion. Hydrometrics estimates that SqCWD would need to reduce pumping to 2,900 acre feet per year (a decrease of 28-35%) for a period of 20 years to replenish the aquifer.

When the district became aware of the severity of the problem, it began to look for and evaluate supplemental water supplies. In an effort to mitigate impact from development, until a secondary water source was secured, SqCWD instituted a Water Demand Offset (WDO) program. This program required conservation measures to offset 120% of projected water use for new developments. In many cases, developers achieved the offset by funding the replacement of inefficient fixtures with high efficiency ones, or by replacing lawns with artificial turf. These offsets could be done anywhere within SqCWD's service area and were not limited to the projects being developed. In 2013, SqCWD increased the offset to 200%. During the last 10 years, 33,000 toilets have been replaced within the boundaries of SqCWD. Now, less than 10% of toilets in SqCWD are high flow. SqCWD ratepayers are in one of the top tiers of conservation in the state (9%), using 118 gallons per capita per day (0.132 acre feet per capita per year).

The purpose of the WDO program and conservation measures is to allow time to develop an adequate supplemental water supply. Due to the Santa Cruz City Council tabling the scwd<sup>2</sup> desalination plant, which had been projected to start service around 2016, the WDO program is under pressure. With no supplemental supply on the horizon there are questions about how long new development can be allowed to continue. This has led to portions of the community pressuring the Board of Directors to issue a moratorium on new hook-ups until there is a plan to replenish the aquifer.

Unfortunately, any reductions in use mandated by SqCWD do not apply to the private pumpers or other water agencies that share the aquifer. Additionally, private pumpers within the SqCWD's boundaries do not assist in the costs of research or development of a secondary supply. There are also no limits to how much water private pumpers can take from the aquifer.

In drought years, the rate at which the aquifer is recharged is reduced. Yet even during periods of intense storms much of the rainwater is not able to be absorbed into the ground and is lost as it flows to the ocean. Since current predictions are that climate change will increase the frequency of droughts and the intensity of winter storms groundwater recharge could be reduced even further over the next 50 to 100 years. SqCWD staff stated that climate change could slow recharge by as much as 30%.

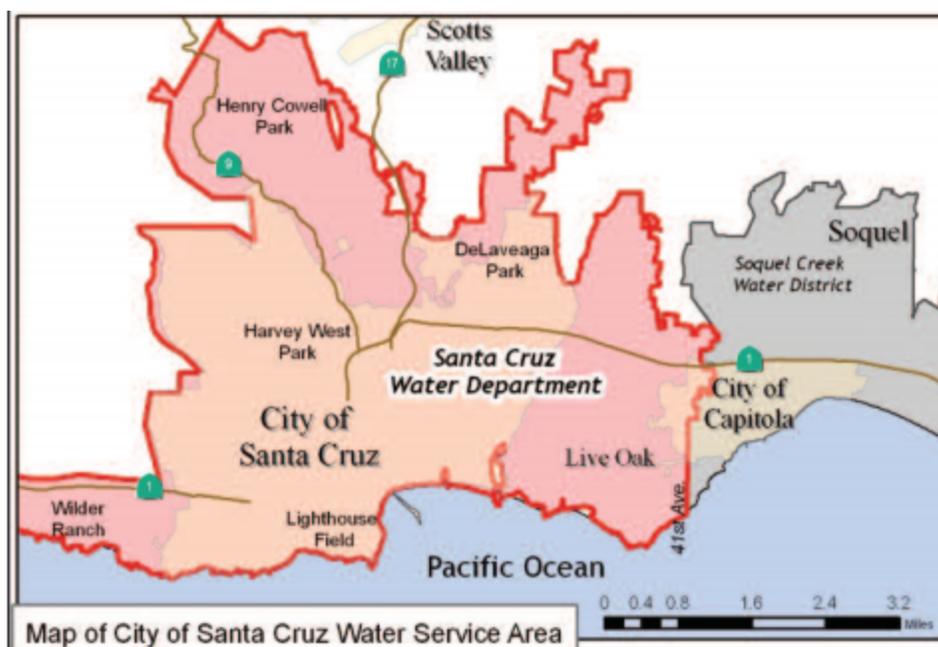
SqCWD is preparing to spend upwards of \$115 million on projects to prevent saltwater intrusion into its aquifers. These projects include the scwd<sup>2</sup> desalination plant, DeepWater Desalination (DWD), Waste Water Recycling (Recycling), District-only desalination,

Regional Water Transfers, forming a Replenishment District, and Mandatory Rationing.

During our investigation, SqCWD began to re-evaluate the various supplemental sources available. In an effort to increase public awareness of its dire situation, a series of Board meetings were recorded and broadcast on local television and the Internet. The results of the re-examination process were expected for the June 2014 Board meeting.

### **City of Santa Cruz Water Department**

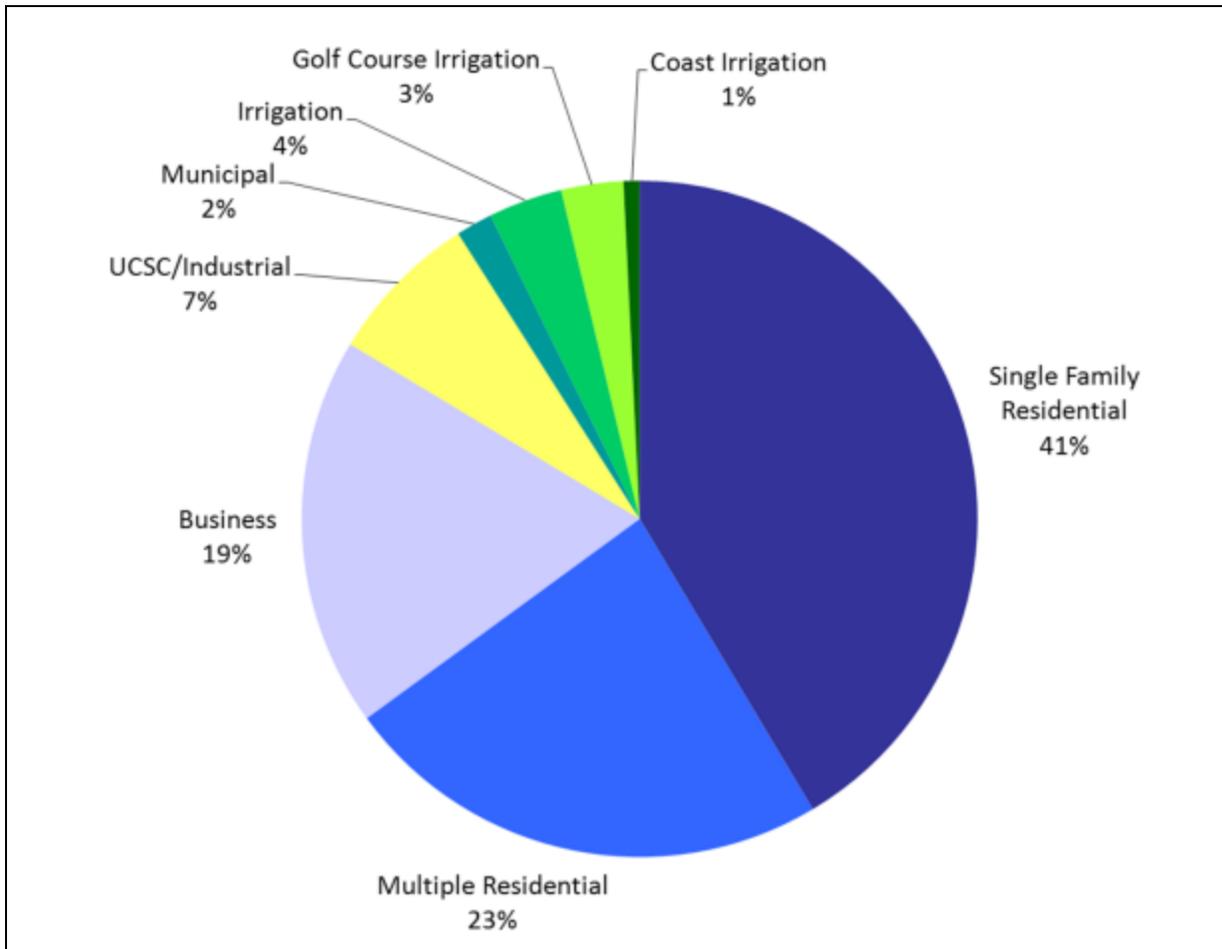
The City of Santa Cruz receives 95% of its water from flowing sources, such as the San Lorenzo River and north coast streams. An additional 5% comes from wells located largely in the western portion of Live Oak serviced by SCWD. Additionally, the City has up to 8,991 acre feet<sup>[2]</sup> of water storage in Loch Lomond Reservoir to supplement supply when water cannot be drawn from the rivers.



During years with reduced rainfall, SCWD must pull water from Loch Lomond. When below average rainfall continues for multiple years, storage in Loch Lomond drops. At the end of 2013, Loch Lomond was only two-thirds full, its lowest point in 16 years.<sup>[3]</sup> During drought years, SCWD cannot both meet water demand and simultaneously replenish its water storage. This places its water supply and storage in jeopardy.

In March of 2013, SCWD began updating its Water Conservation Master Plan. SCWD is analyzing its current conservation achievements and evaluating future water conservation options. On 3/4/14, SCWD presented results of this analysis to the Santa Cruz City Water Commission, a body that advises the City Council on water issues. Water use in the City of Santa Cruz is 113 gallons per capita per day (0.126 acre feet per capita per year), placing it in the top 7% of conservation among California urban water agencies.

### SCWD Use by Customer Category<sup>[4]</sup>



One of the concerns voiced by residents is the increase in enrollment at UCSC. The above chart lists University of California Santa Cruz (UCSC)/Industrial accounting for 7% of water use. Through interviews with officials, we were informed that after the company Texas Instruments left Santa Cruz, UCSC became the single largest water use customer in the city, using 5% of the City's water supply. While UCSC enrollment has doubled over the last 14 years, its daily average water use per student has decreased, going from 210 gallons (0.235 acre feet per student per year) in 1997 to 164 (0.183 acre feet per student per year) in 2012. Current plans for University growth include water negotiations with the City.

With the desalination project on hold, SCWD does not currently have a long term solution to address its water shortfall in drought years. To help look into long term options, the Santa Cruz City Council created a fourteen member Water Supply Advisory Committee in October 2013. The committee will be counseled by Public Policy Collaboration, which will be paid an estimated \$280,000 from the money set aside for the scwd<sup>2</sup> desalination project.<sup>[5]</sup>

## **Desalination**

The process of converting seawater to drinking water is used successfully in many parts of the world, including California.<sup>[6][7][8]</sup> The desalination process examined by scwd<sup>2</sup> planned to use reverse osmosis technology for the creation of a local supplemental water supply. In the scwd<sup>2</sup> draft Environmental Impact Report (dEIR), alternatives to desalination were also studied. However, criteria used for the selection of supplemental water sources<sup>[9]</sup> led to community as well as State and Federal agency criticism that many alternatives were not recommended or not adequately addressed.

The dEIR looked at several potential desalination plant and pumping station locations on Santa Cruz's Westside near the present Waste Water Treatment Facility. This would allow for mixing of the brine from the desalination plant with the outflow from the Treatment Facility, making the water expelled into Monterey Bay closer to the salinity of seawater and saving the cost of building a separate outflow. Several different intake and pumping station location studies were also completed. The Grand Jury noted that while 18 of the 331 written comments on the dEIR were made by Federal, State, and local agencies, the majority came from residents in the vicinity of the proposed plant and pumping station locations.<sup>[10]</sup>

The desalination plant is designed to be modular, which gives it the ability to be expanded as needed due to population growth or increases in demand due to changes in climate, streamflow requirements, or groundwater needs. Since desalination and direct-to-potable (drinkable) treatment of waste water both use reverse osmosis, the dEIR discussed the potential for changing the desalination plant to a direct-to-potable recycling facility once it becomes feasible. The consultants on the dEIR even considered having a small demonstration of this recycling on the plant grounds to educate the public.

The proposed desalination plan calls for SqCWD to manage the plant for most of the year at less than full capacity. During this time the plant would send desalinated water into the SCWD distribution system, mainly going to the residents in the vicinity of the plant. SqCWD would receive an equal amount of treated surface water from SCWD via a proposed intertie at the boundary between the two agencies near 41st Avenue in Capitola. During summer months, or whenever a decreased stream flow necessitated a reduction in pumping from the river, SCWD would operate the desalination plant at mid to maximum capacity to meet its water need, and SqCWD would draw from its well system.

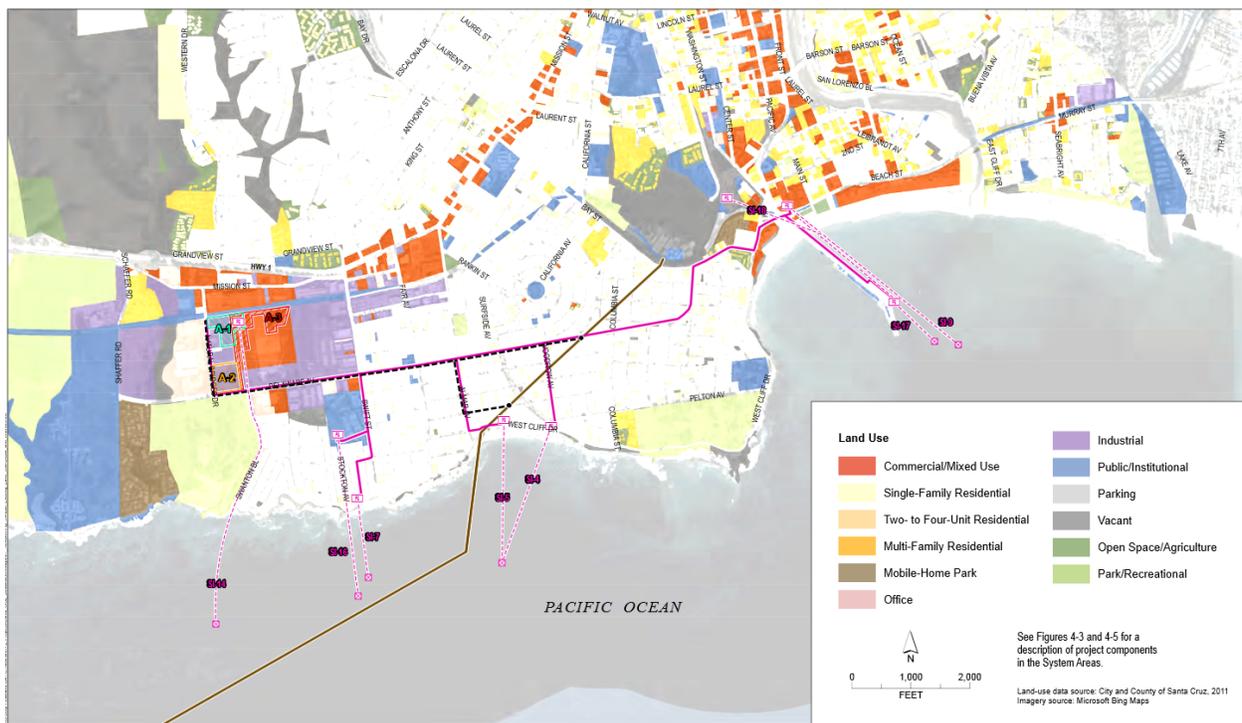
## **Opposition to scwd<sup>2</sup> Desalination**

Opponents to the desalination plan cited several concerns during the development of the project.<sup>[11]</sup> One of the major concerns brought up by the community dealt with the large amounts of electricity needed to push seawater through filters and the cost of that electricity, in both dollars and carbon emissions. There were also misgivings regarding the impact on the life of aquatic invertebrates and fish larvae since any intake, no matter how well it is designed, leads to impingement and entrapment to some degree. Some residents expressed apprehension about safety of the desalinated water for drinking if chemicals or pollutants were not completely removed from the ocean-sourced water.

Portions of the community also felt that the project was being pushed forward despite opposition primarily to support growth in the County and that little attention was given to

alternatives that do not yield a secondary supply of water, such as conservation. Additionally, there were concerns by local residents regarding the location of pumping stations in their neighborhoods. Each of the eight proposed intake locations included a different route through pumping stations. The inclusion of all the potential intake and pumping station locations in maps led to confusion since some residents thought that because a location was being studied the station would be built there. The Grand Jury was told by multiple officials that the large number of intake and pumping station locations that were presented led to opposition by neighbors of each location, multiplying opposition to the overall project.

**Map of Proposed Intake, Pumping Station and Desalination Plant Locations<sup>[9]</sup>**



Officials from Santa Cruz City, County, and SqCWD mentioned that the failure of the desalination plan was partly due to an inadequate public information outreach to residents. The City did not address the various concerns of the citizens most directly affected by the proposed system. Multiple officials told the Grand Jury that the need for the project was not properly conveyed to the public. Additionally, one official noted, “Public outreach has not been done well. We butt heads behind the scenes. We need to reach out and talk to people, but the City [of Santa Cruz] says we need to be quiet and let it pass.”

In November of 2012, Measure P was passed by the citizens of the City of Santa Cruz. Measure P requires voter approval prior to the construction of a desalination plant within City limits. Such approval must occur during a general election year and only residents of the City of Santa Cruz may vote. The measure passed with a yes vote of 72%. This, combined with the number of negative public comments on the dEIR, led the City Council to

table discussions on finalizing the dEIR and pull the desalination plant proposal from the 2014 ballot. This has left the dEIR in an unfinalized state and leaves SqCWD ratepayers powerless to continue the cooperative scwd<sup>2</sup> Desalination plan.

The dEIR is based on older versions of SCWD and SqCWD resource plans, which predated recent information on climate change. Because of this, the dEIR does not account for recent climate change data and the projected impact on streamflow and groundwater recharge. Since desalination pulls water from the ocean it is not affected by drought or climate change. All other secondary supply options are susceptible to drought and/or climate change.

Every official we talked with recommended finalizing the EIR. SCWD and SqCWD are not bound by the recommendations of the EIR; they can choose or reject any or all options of the projects listed. Also, some of the projects and studies in the dEIR cannot be implemented or used until the EIR is finalized and approved. If the EIR is finalized, portions of it can be used in the construction of an independent desalination plant. This would allow for some savings in the development and planning process.

Of all the options explored in the dEIR and presented to SCWD and SqCWD, the scwd<sup>2</sup> desalination plan is the only option that by itself can meet the criteria to provide water to SCWD during a drought as well as allow SqCWD to rest its wells to recharge the aquifers.

### **DeepWater Desalination**

DeepWater Desalination (DWD) is a project to run a regional desalination plant in Moss Landing. The proposed intake would be located 1.5 miles offshore. This project relies on the success of the Central Coast Regional Water Project (CCRWP) in establishing multiple private business ventures to use its cold seawater in their commercial plans. The warmed seawater will then be sent to the desalination plant. CCRWP will own both the intake and outflow that will service the proposed desalination plant.

Positive aspects of an intake/outflow in deep water include the fact that fewer organisms live in the deeper water, leading to a smaller impact on aquatic life. Preliminary studies conducted by Tenera Environmental<sup>[12]</sup> suggest an insignificant impact on larval fish. Additional studies by Monterey Bay Aquarium Research Institute and Moss Landing Marine Laboratories show low turbidity in the water due to its depth and distance from shore. The depth of the outflow produces a positively buoyant plume, resulting in less impact on aquatic life at that depth.

While CCRWP will own the intake and outflow and operate a heat exchange unit in the vicinity of the desalination plant, the plant will not be run by CCWRP. Instead, a Joint Powers Authority (JPA) will be formed to operate the desalination plant. This JPA will be comprised of the agencies being supplied with water from the plant. One key criticism of DWD is that it relies on a business venture with the ownership of the intake/outflow in the hands of CCRWP. If CCRWP should become insolvent there are no measures currently in place to ensure that the JPA retains affordable access to the intake/outflow and gets electricity at an affordable rate. These concerns were brought up by SqCWD staff during a public board meeting on 10/15/13.

The largest cost of desalination is electricity. Through a deal with the City of Salinas, which

will establish a municipal electric utility, the JPA will get power at a reduced rate for the proposed desalination plant. The Salinas Municipal Utility will also work with CCRWP to supply power to a proposed data center that will be constructed near the DWD site. Parts of this plan are modeled on the City of Santa Clara's Municipal Utility agreement to supply power to Silicon Valley data centers. By pumping in very cold seawater from the deeper portions of the Monterey Bay, CCRWP can dramatically cut power costs for the data centers. Normal data centers use two to three times the power for cooling than a deep water cooled data center. As an example, in Finland Google uses deep water to cool its European data center. Salinas will buy power wholesale and sell it to both the desalination plant and the data center. Reduced power costs from Salinas and the use of a heat exchanger for cooling result in cheap energy and warmed seawater, lowering DWD's water production cost.

A major problem is that there is currently no pipeline between SqCWD and Moss Landing. One proposal would be to build the pipeline along existing rail lines at an estimated cost of \$1 million per mile, not including easements. When discussing the pipeline, representatives of SqCWD mentioned that they could design the pipeline so it could be used by other agencies, such as SCWD and Scotts Valley Water Department (SVWD).

A second problem for the proposed DWD plan is as follows. Phase 1 of development would produce 10,000 acre feet of water per year, while phase 2 would produce 25,000 acre feet per year. DWD predicts that Salinas will need at least 10,000 acre feet per year in order to get a reasonable return for contributing the electricity to the project. This is the total amount of water produced in phase 1. It is unlikely that all of phase 1 output would be allocated to Salinas. With expansion to 25,000 acre feet per year in phase 2, if Salinas receives the full 10,000 they expect, only 15,000 acre feet per year would be available for the remaining agencies. There are several agencies from Monterey, Santa Cruz and San Benito Counties evaluating this water source.

Project developers believe they can start producing water by 2016. However, there is little evidence that this schedule can be reached, as the project's EIR has not yet been completed, nor has the Joint Powers Authority (JPA) been formed to run the desalination plant.

### **Regional Water Transfers**

Santa Cruz County has been updating the Integrated Regional Water Management (IRWM) program, a framework for local stakeholders to manage the region's water-related resources. IRWM is evaluating regional water transfers. This plan would take excess water from the Tait Street diversion of the San Lorenzo River between November and April. The water would be treated and distributed to nearby groundwater agencies, allowing them to rest their wells for a portion of the year. In return, Scotts Valley Water District (SVWD) and SqCWD would increase pumping during drought periods and send the water to SCWD. The amount of water returned to SCWD would require negotiations between the agencies to insure that aquifers are properly recharged in order to hold off saltwater intrusion and other effects of overdraft.

Currently, during periods of high water flow from winter storms, turbidity in the water forces

SCWD to halt water production at Tait Street and pull water from other sources. To overcome this problem, the County has discussed upgrades to the intake and pre-treatment facilities at Tait Street, allowing the more turbid water to be used (Diversion). Additionally, the County has looked into upgrading the Graham Hill Water Treatment Plant (GHWTP). These improvements are expensive, but would increase the amount of water available to SVWD and SqCWD from SCWD during periods of high turbidity. The following information covers water delivery from SCWD to SqCWD and SVWD.

**Infrastructure Upgrades and Costs<sup>[13]</sup>**

- Intertie to SLVWD/SVWD (1-2 mgd )                      \$5.8 M
- Intertie to SqCWD (1.5-3.5 mgd)                      \$18.5 M
- Tait Division Works Upgrades (7.8 mgd)              \$2.8 M
- Tait Expansion (to 14 mgd)                              \$5.9 M
- Treatment Plant Upgrades (to 16 mgd)              \$55.7 M
- Diversion of Increased Turbidity Water              \$1.1 M
- Operating Costs:    \$147-715 K/yr

*Note: The cost of pump stations and additional wells to deliver water back to SCWD during drought years has yet to be presented. M = Million, K = Thousand, mgd = million gallons per day.*

### **Regional Water Transfer Project Phases<sup>[13]</sup>**

	<b><i>Project (deliveries to SVWD and returns to SCWD not shown)</i></b>	<b><i>SqCWD Yield (af/y)</i></b>	<b><i>Total Potential Yield</i></b>	<b><i>Capital Cost</i></b>
<b>1</b>	New Interties (Existing Rights)	120	445	\$27 M
<b>2</b>	Increase GHWTP capacity from 10 mgd to 16 mgd	292	623	\$78 M
<b>3</b>	Increase GHWTP capacity and Tait capacity from 7.8 to 14 mgd	1,022	1,495	\$91 M
<b>4</b>	Increase GHWTP capacity and turbidity treatment from 15 to 200 NTU (7.8 mgd)	417	798	\$86 M
<b>5</b>	Increase GHWTP capacity, increase Tait Street capacity, increase turbidity treatment	1,178	1,712	\$92 M

\* Acre feet per year (af/y), Nephelometric Turbidity Units (NTU), million gallons per day (mgd).

To complete one of these projects, both SVWD and SqCWD must request water rights on the San Lorenzo River. This is a complicated process involving the California Environmental Quality Act (CEQA), California Department of Fish and Wildlife (CDFW), and the National Oceanographic and Atmospheric Administration (NOAA). Depending on the environmental studies, and on satisfaction of the requirements of the agencies dealing with streamflow and fisheries, granting of new water rights can take upwards of 10-20 years. Some County officials hope that previous studies of the Tait Street diversion could expedite the approval process. The state will not approve new water rights without compliance with CEQA, and the consent of CDFW and NOAA. The outcome of the above water rights approval process is unknown at this time. In the meantime, SVWD and SqCWD could apply for short term or emergency water rights to allow for some access to the water. All this would have to be done without jeopardizing SCWD's existing water rights.

### **Recycled Water**

The City of Santa Cruz Waste Water Treatment Facility (SCWT) discharges more than twice as much water as SqCWD uses each year. All sewage within SqCWD and SCWD service areas is handled by onsite septic systems or processed at the SCWT. SCWT treats the water to secondary levels (not safe for reuse), then discharges it into the ocean. The facility currently discharges 9,415 acre feet per year.<sup>[14]</sup>

In order to recycle water for use in agriculture, extra treatment is required. Currently state law does not allow for recycled water, regardless of treatment level, to be used as drinking water. Also, due to another state law, any application of recycled water requires separate pipes to transport the water to locations where it will be used. The cities of Scotts Valley

and Watsonville both use recycled water for irrigation.

SCWD uses over 8% of its drinking water for irrigation. SqCWD uses 11%-12% of its drinking water for irrigation. When the Grand Jury asked officials from SCWD and SqCWD about using recycled water exclusively for irrigation, they said they did not feel that the cost of building a plant to treat water to irrigation levels, and adding infrastructure to deliver the water for landscaping use, would be a wise fiscal choice. Additionally, since the largest irrigation users in SqCWD are private pumpers, there is no financial incentive for them to switch to recycled water for irrigation, only the incentive to do the right thing.

Construction of a reverse osmosis treatment facility would allow for expanded uses of recycled water. This more highly treated water can be used in natural recharge areas to form percolation ponds where the water filters into the aquifer. It can also be injected into the aquifer along the coast to help raise groundwater levels and create a barrier against saltwater intrusion. This would provide some direct recharge to the basin, but due to the close proximity to the ocean, only a portion of the injected water would be retained in the aquifer. Much of the injected water would diffuse toward the ocean. Another option is to inject the recycled water farther inland in an effort to recharge the aquifer.

Desalination typically uses twice as much electricity as recycled water uses for groundwater recharge because of the colder temperature of the seawater. This leads to production cost estimates of \$1,500-\$2,000 per acre foot for recycled water used in groundwater recharge versus \$2,500 per acre foot for desalination.

There are potential problems with all groundwater injection methods. The Department of Public Health sets “travel time” for recycled water injected into the ground. This is the time it takes for the injected water to travel through the aquifer to the closest production well. This can vary from 2 to 6 months<sup>[15]</sup> and can only be done if there are no active or potential wells in the vicinity of the injection site. Given the large number of district and private wells currently in use, it is difficult to find a satisfactory location for injection. Since there is no current groundwater model of the Purisima basin there is no accurate way to project the impact of a given injection method.

Recycled water can also be used to augment streamflow or reservoir storage. However, due to high levels of nitrates from various sources present in the San Lorenzo watershed,<sup>[16]</sup> this is unlikely to be useful for the San Lorenzo River or Loch Lomond Reservoir.

Potential changes in state law over the next two to eight years could open up the possibility of recycling water directly into drinkable water by using tertiary or higher level treatment. This would allow the over 9,000 acre feet of wastewater from the SCWT to be treated and used to augment the current water supply. The greatest barrier to potable reuse is perception, not technology. Public perception of “drinking toilet water” is a factor that would need to be overcome to move forward with direct-to-potable reuse.

In February of 2014, Kennedy/Jenks, a water engineering firm, presented a study of recycled water uses to the SqCWD Board. This study included plans for piping treated water from the SCWT to a recycled water treatment plant in mid-County. From there, it would be piped to irrigation sites and to injection wells. The Board elected to have options

2 and 3 (see below) researched and presented in June 2014. Additionally, the Board elected to continue examining direct-to-potable reuse.

**Recycling Plans Presented to SqCWD Board on 2/4/14<sup>17</sup>**

<b>Alt</b>	<b>Description</b>	<b>Average Annual Recycled Water (AFY)</b>	<b>Potential Supplemental Supply (AFY)</b>	<b>Conceptual Capital Cost (mil \$)</b>	<b>Project Annualized Unit Cost (\$/AF)</b>
<b>1a</b>	Centralized Recycled Water for Irrigation in SqCWD	510	510	\$68	\$8,600
<b>1b</b>	Decentralized Recycled Water for Irrigation in SqCWD	315	315	\$30	\$6,500
<b>2</b>	Recycled Water for Seawater Intrusion Barrier and Irrigation in SqCWD	4,000	1,030	\$154	\$9,700
<b>3</b>	Recycled Water for GW Replenishment and Irrigation in SqCWD	2,800	2,230	\$134	\$4,000
<b>4</b>	Recycled Water for GW Replenishment, Seawater Intrusion Barrier and Irrigation in SqCWD	6,200	2,750	\$190	\$4,600

\* AFY = Acre feet per year, AF = Acre feet, GW = Groundwater

In the past, SqCWD studied the impact of a satellite recycling plant on Seascape Golf Course. In this scenario, the District could send recycled water to the golf course in exchange for Seascape reducing its pumping from the aquifer. However, since Seascape is not a part of SqCWD, there is no financial incentive for it to contribute to the cost of the project. Currently, SCWD, the Pasatiempo Golf Course, and the City of Scotts Valley are working on a deal to bring excess recycled water from Scotts Valley to the Pasatiempo course in exchange for SCWD sending drinking water to Scotts Valley.

With the SCWT being operated by the City of Santa Cruz, any plans that SqCWD might have for using recycled water depend on a partnership with the city. There is a limited amount of wastewater available, and if the city moves forward with recycling on its own, there could be little to no wastewater for SqCWD. During our investigation, no representatives from the City or SqCWD mentioned plans for a regional wastewater recycling plant.

## **Individualized Desalination (District-only Desalination)**

While SCWD cannot construct a desalination plant of its own without a “yes” vote from the citizens of Santa Cruz, SqCWD is able to construct its own desalination plant. This issue is addressed in the scwd<sup>2</sup> EIR.<sup>[18]</sup>

Due to the constraints of Measure P, a SqCWD desalination plant needs to be constructed on land outside the Santa Cruz City limits. Studies suggest that a District-only plant would require at least a two acre plot. Currently, SqCWD does not own a plot of land large enough to construct such a plant.

The scwd<sup>2</sup> intake studies had to contend with environmental issues from the sediments deposited by the San Lorenzo River. However, since SqCWD’s area of service is outside the sediment flow zone of the San Lorenzo River, it has several different options for intakes that were not possible with the scwd<sup>2</sup> plant. There are also potential amendments that could allow direct discharge of brine. Although legal in some situations, the direct discharge of brine can cause damage to aquatic life.

If secondary treated water is piped in from Santa Cruz there is the possibility for brine to be mixed with treated water and discharged at a normal salinity level. This would address some of the concerns regarding aquatic life. This would also allow the plant to be converted to a direct-to-potable recycling plant at a later date. Once again, SqCWD would depend on the availability of treated water from SCWT. If the City of Santa Cruz chose to create its own recycling or desalination plant this could limit the amount of treated water available to SqCWD.

The Integrated Resource Plan (IRP) projects that a district-only desalination plant is ten years from completion, if no studies carry over from the scwd<sup>2</sup> dEIR. Some issues from the scwd<sup>2</sup> dEIR require additional research, but consultants advise that no major faults exist. Finalization of the dEIR would require meeting with regulators, renegotiating the contract with URS Corporation (an engineering firm that was involved in the process), and addressing public comments to incorporate them into the EIR. The City’s original date to address public comments was 11/12/13, but due to the City Council’s decision to table the project and the EIR, it has been postponed indefinitely. Since the finalization process was placed on hold, there is nothing that SqCWD or SCWD can do to formally address the EIR. SqCWD is researching which portions of the dEIR can be applied to its District-only project.<sup>[19]</sup> The results of this research will have an impact on any cost projections and time table of the project. Current projections list the cost of the project between \$86.2 million and \$114 million. The low number is greater than SqCWD’s portion of the scwd<sup>2</sup> project; the high number is the full cost of the scwd<sup>2</sup> plant. These cost estimates are similar to SqCWD’s expenses for mandatory rationing.

## **Mandatory Rationing**

In the absence of a supplemental supply, SqCWD will be forced to enact its mandatory rationing plan. This entails mandating a drastic cut in water usage to all its ratepayers for over 20 years. Residential customers in the District use approximately 74 gallons per day per person (0.083 af/y per person). If mandatory rationing is in effect, water use would be reduced to 53 gallons per day per person (0.059 af/y per person), a reduction of 30%.

Currently, one third of the ratepayers in SqCWD use 53 gallons per day or less.

Mandatory rationing would be combined with a moratorium on new hookups. This would require SqCWD to cease granting “conditional will serve” letters for new development or remodels. This would hamper growth within the district’s boundaries and limit future County tax revenue.

Mandatory rationing will cost the district \$110 million to implement, taking away funds needed for a supplemental supply. Much of the cost of mandatory rationing is due to increases in conservation measures that the district will have to fund and install for the businesses in their jurisdiction, such as replacing all toilets and commercial fixtures with lower flow models. Also, additional staff hours will be needed to deal with these installations and the enforcement of water budgets, as well as likely litigation secondary to the higher rates. Water sale reductions of 30% will reduce SqCWD’s income by as much or more. This will force the district to almost double water rates, with sharp penalties for those exceeding rationing guidelines. This increase will have drastic effects on small businesses within the district. Commercial use accounts for approximately 5% of the District’s use.<sup>[20]</sup> In addition, mandatory rationing in SqCWD will likely have a negative impact on tourism throughout the County due to the effect increased water rates will have on vacation rental prices in SqCWD.

### **Replenishment District**

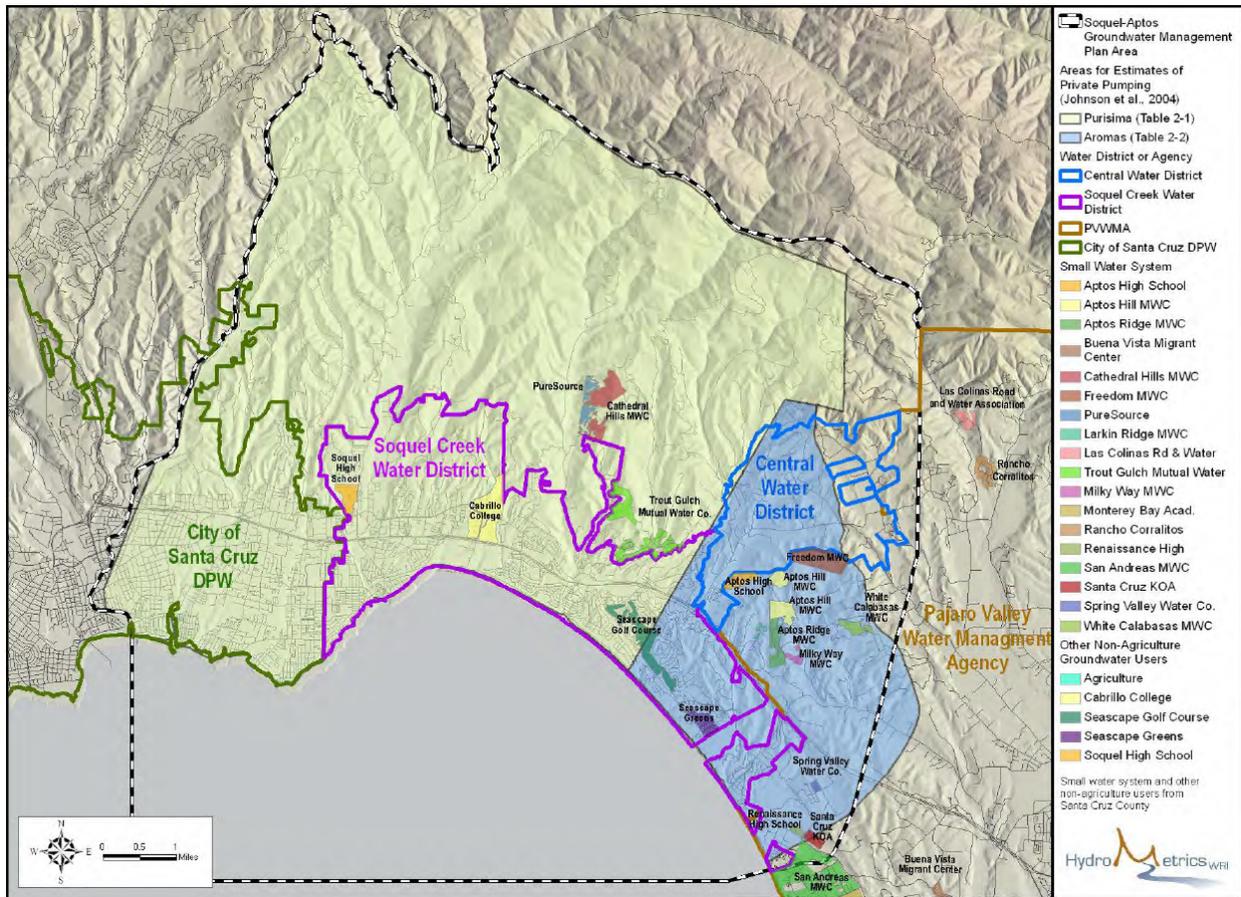
SqCWD is responsible for just over half of the water pumping in the Purisima basin, yet it is paying for more than half of the cost to research and develop methods to protect the aquifer from saltwater intrusion. Other County water districts and the City of Santa Cruz also assist in the research process designed to keep the shared groundwater source safe for all. Private pumpers and small water systems account for approximately 3,000 acre feet per year or 35% of the overall groundwater extractions within SqCWD’s boundaries. Private pumpers in the Purisima basin are not limited in the amount of water that they can pump, nor do they pay to assist in the development of any solution designed to protect the aquifer.

In 1996 SqCWD and Central Water District (CWD) formed the Basin Implementation Group (BIG) to manage the Purisima aquifer. This group is composed of representatives from the water agencies involved, and includes an at-large member who is typically associated with a smaller water system, such as a private pumper. During the course of the Grand Jury’s investigation, both CWD and SqCWD voted to invite SCWD and the County of Santa Cruz to join BIG.

A Replenishment District would allow for private pumpers to contribute to the protection of the aquifer. Under AB 3030<sup>[21]</sup> one of the powers provided to BIG with an approved and adopted groundwater management plan, is the establishment of a Replenishment District to raise revenue and pay for facilities to manage the basin. This could allow BIG to charge a groundwater management fee to private pumpers within its boundaries to help pay for the research and implementation of any plans to save the aquifer. Any fees assessed in this manner are obligated to go to basin-specific research and projects. Revenue obtained from the Replenishment District could be used on projects such as injecting recycled water

into the basin for a barrier or recharge.

### Map of Potential Groundwater Replenishment District Boundaries<sup>[22]</sup>



Due to the inclusion of the County in BIG, any replenishment district established over the Purisima aquifer is able to extend to the full dimensions of the basin, not just the portions represented by SqCWD, CWD, and SCWD. Areas can only be included if the mapping of the groundwater basin demonstrates that the area contributes to the danger at hand and will be protected by actions taken. Currently there is no in-depth mapping of the Purisima basin.

## Findings

- F1.** Both SCWD and SqCWD urgently need a supplemental water source.
- F2.** The longer SqCWD and SCWD wait to secure a viable alternative to the overdraft problem, the greater the danger of degradation and possible permanent loss of aquifers.
- F3.** The decision by the City of Santa Cruz to suspend participation in the scwd<sup>2</sup> desalination project forced SqCWD to re-start the planning process without a regional partner.
- F4.** The City of Santa Cruz did not adequately communicate the urgent need for a

supplemental water source to its ratepayers.

**F5.** The scwd<sup>2</sup> desalination plant is the only available single alternative that can address in a timely manner all of the supplemental water needs of SCWD and SqCWD, while at the same time being immune to climate change.

**F6.** The draft EIR must be finalized before the environmental studies and alternative projects included in it can be implemented.

**F7.** DeepWater and District-only desalination projects will face many obstacles, including completion of EIRs and securing local approval.

**F8.** The private company Central Coast Regional Water Project will have inordinate control over the water rates of the DeepWater Desalination project since it will control the intake pipe.

**F9.** Agencies that wait to buy into the DeepWater plant may be excluded because the limited amount of water produced may already be allocated.

**F10.** State water rights evaluations will delay the prospective start date of the Regional Water Transfer Project.

**F11.** Without modification, the SCWD Tait Street treatment facility is not large enough to accommodate the needs of the Regional Water Transfer Project.

**F12.** Officials in SCWD and SqCWD have not given sufficient consideration to a regional recycling plant.

**F13.** A water recycling facility would allow for injection wells to either help recharge the aquifer or to build a barrier against seawater intrusion.

**F14.** Because there is no detailed groundwater model of the Purisima basin, it is difficult to do the studies and research needed to protect the aquifer.

**F15.** Private pumpers have unregulated access to water and do not contribute financially to aquifer protection efforts.

## **Recommendations**

**R1.** City of Santa Cruz Water Department should secure a supplemental water supply. (F1, F2)

**R2.** Soquel Creek Water District should secure a supplemental water supply. (F1, F2)

**R3.** The City of Santa Cruz should ensure that the scwd<sup>2</sup> draft EIR be finalized by the end of calendar year 2014. (F5-7)

**R4.** The City of Santa Cruz should immediately convey to its citizens the urgency of the long term regional water situation. (F1-4)

**R5.** The City of Santa Cruz should strongly consider reviving the scwd<sup>2</sup> desalination plan prior to the next available General Election. (F1-7)

**R6.** City of Santa Cruz Water Department and Soquel Creek Water District should continue to pursue a regional solution such as Desalination or Regional Water Transfers

with Recycling. (F7-13)

**R7.** Members of the Basin Implementation Group should complete work on a groundwater model of the Purisima basin as soon as possible. (F14)

**R8.** The Basin Implementation Group should establish a Replenishment District for the Purisima aquifer. (F15)

## Commendations

**C1.** We commend SqCWD for holding board meetings at Capitola City Hall to address supplemental supply and mandatory rationing. This allows for greater public participation and awareness of the discussions via local access television and the internet.

## Responses Required

<i>Respondent</i>	<i>Findings</i>	<i>Recommendations</i>	<i>Respond Within/ Respond By</i>
Board of Directors, Soquel Creek Water District	F1-15	R2, R3, R6	90 Days 9/15/14
City of Santa Cruz Water Commission	F1-6, F10-15	R1, R3, R6	90 Days 9/15/14
Santa Cruz City Council	F1-6	R1, R3-6	90 Days 9/15/14
Basin Implementation Group, Purisima Groundwater Basin	F14, F15	R7, R8	90 Days 9/15/14

## Definitions

- *Acre-foot*: Unit of volume often used in reference to groundwater sources and reservoirs. It is the volume of one acre of surface area with a depth of one foot, exactly 43,560 cubic feet. It contains 325,853 gallons.
- *af/y*: Acre feet per year.
- *BIG*: Basin Implementation Group
- *CDFW*: California Department of Fish and Wildlife
- *CCRWP*: Central Coast Regional Water Project
- *CEQA*: California Environmental Quality Act
- *CWD*: Central Water District
- *dEIR*: Draft Environmental Impact Report
- *DWD*: Deep Water Desalination
- *EIR*: Environmental Impact Report
- *HCP*: Habitat Conservation Plan
- *IRWMP*: Integrated Regional Water Management Plan

- *IWRP*: Integrated Water Resources Program
- *mgd*: Million gallons per day
- *NOAA*: National Oceanic and Atmospheric Administration
- *NTU*: Nephelometric Turbidity Units. A measure of particulates in water.
- *Public Policy Collaboration*: Agency hired to mediate the Santa Cruz Water Alternatives Advisory Committee.
- *SCWD*: City of Santa Cruz Water Department
- *scwd<sup>2</sup>*: Santa Cruz Water Department and Soquel Creek Water District Regional Seawater Desalination Project
- *SqCWD*: Soquel Creek Water District
- *SVWD*: Scotts Valley Water District
- *Turbidity*: The measure of clarity in water. Particles carried in water make the water cloudy or opaque and can cause difficulty in treatment. In local streams and rivers this is often due to storm runoff carrying soil into the surface water sources.
- *UWMP*: Urban Water Management Plan
- *WDO*: Water Demand Offsets. A program to compensate for new demand by implementing conservation measures elsewhere.

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## Site Visits

SqCWD Board of Directors Meetings  
City of Santa Cruz Water Commission Meetings  
Desalalternatives.org Meetings

## Web Sites

<http://soquelcreekwater.org>

<http://cityofsantacruz.com>

<http://www.co.santa-cruz.ca.us/>

<http://cityofwatsonville.org>

<http://www.pvwma.dst.ca.us/>

<http://www.svwd.org/>

<http://waterboards.ca.gov>

<http://cdph.ca.gov>

<http://scwd2desal.org>

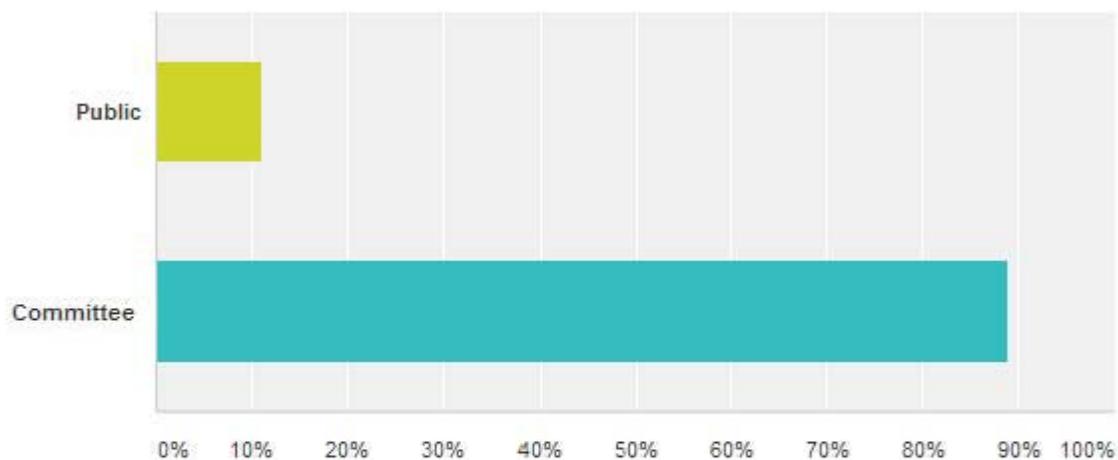
[http://www.scwd2desal.org/Page-EIR\\_Docs.php](http://www.scwd2desal.org/Page-EIR_Docs.php)

<http://www.deepwaterdesal.com>

<http://desalalternatives.org>

## Are you here as a member of the...

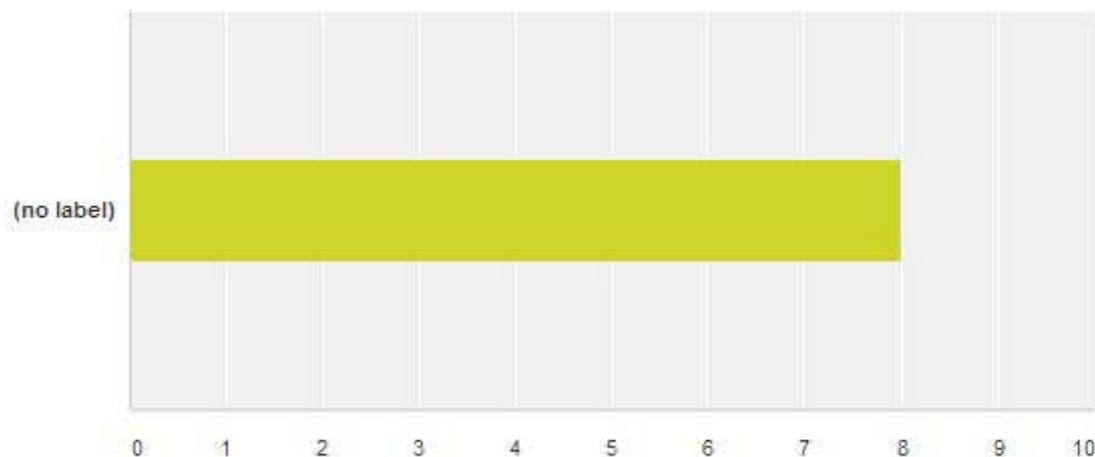
Answered: 9 Skipped: 0



Answer Choices	Responses
Public	11.11% 1
Committee	88.89% 8
Total	9

On a scale from 1 (could not have gone worse) to 10 (could not have gone better), how would you rate this meeting?

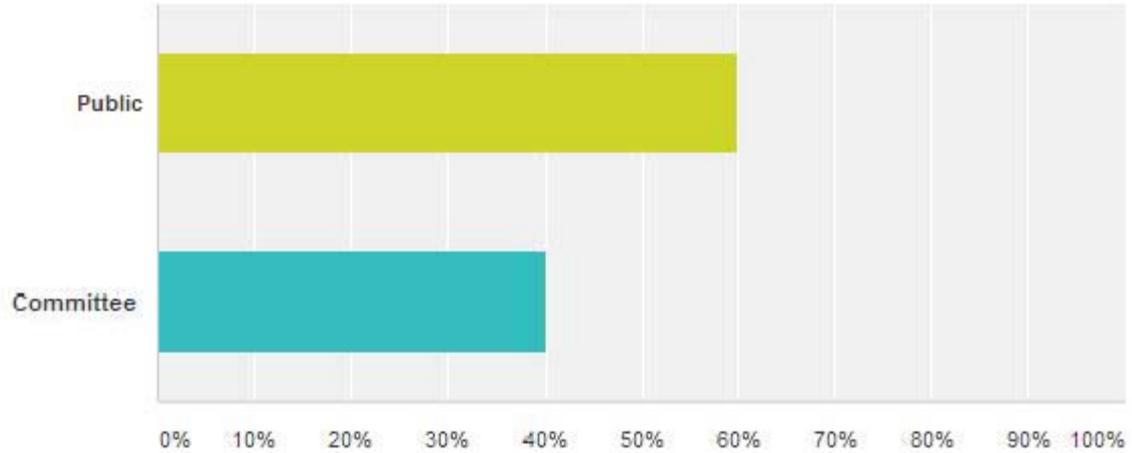
Answered: 9 Skipped: 0



	Could not have gone worse	Very poor	Poor	Needed substantial fixing	Below average	Average	Above average	Good	Great	Could not have gone better	Total	Average Rating
(no label)	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	33.33% 3	33.33% 3	33.33% 3	0.00% 0	9	8.00

# Are you here as a member of the...

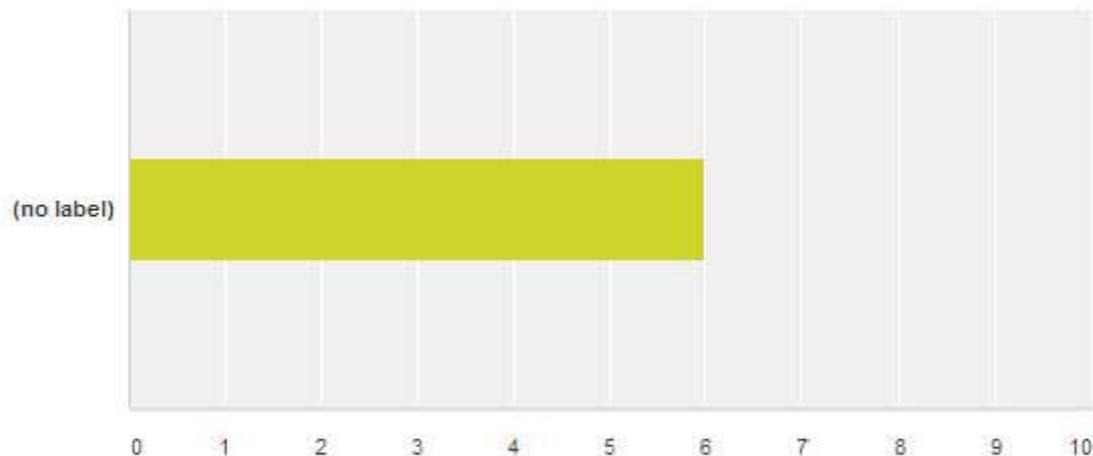
Answered: 5 Skipped: 0



Answer Choices	Responses
Public	60.00% 3
Committee	40.00% 2
Total	5

On a scale from 1 (could not have gone worse) to 10 (could not have gone better), how would you rate this meeting?

Answered: 5 Skipped: 0



	Could not have gone worse	Very poor	Poor	Needed substantial fixing	Below average	Average	Above average	Good	Great	Could not have gone better	Total	Average Rating
(no label)	0.00% 0	0.00% 0	40.00% 2	0.00% 0	0.00% 0	20.00% 1	0.00% 0	20.00% 1	0.00% 0	20.00% 1	5	6.00