1. **ROLL CALL**

President LaHue called the meeting to order at 7:00 p.m. at the Capitola City Council Chambers. Director Jaffe arrived at 7:02 p.m.

**Board Members Present:**
Dr. Thomas LaHue, President
Bruce Daniels, Vice President
Dr. Don Hoernschemeyer
Dr. Bruce Jaffe
Rick Meyer

**Board Members Absent:**
None

**Staff Members Present:**
Kim Adamson, General Manager
Taj Dufour, Engineering Manager/Chief Engineer
Bob Bosso, District Counsel
Ron Duncan, Conservation & Customer Service Field (CCSF) Manager
Michelle Boisen, Financial/Business Services Manager
Leslie Strohm, Supervising Accountant
Christine Mead, Operations & Maintenance Manager
Shelley Flock, Staff Analyst
Melanie Schumacher, Special Projects Engineer
Karen Reese, Executive Assistant/Board Clerk

**Others Present:**
76 members of the public

2. **CONSENT AGENDA**

Director Daniels requested that Items 2.4 and 2.5 be removed from the Consent Agenda for discussion.

**MOTION:** President LaHue; Second; Director Meyer: To approve the consent agenda, except items 2.4 and 2.5. Motion passed by unanimous vote.

2.1 Approve minutes of December 17, 2013

*Action: Approved*

2.2 Report of Expenditures over $25,000

*No Action Taken – Informational Only*

2.3 Conditional Will Serve Letters-None
2.4 Board Authorization for Six-Month Position for Monthly Billing Conversion  
*Action: Removed from Consent; discussed; Approved*

*Director Daniels asked why this temporary position was needed. Kim Adamson replied that with the change to monthly billing there may be more field service requests. Customers may be calling to question their usage and this creates an opportunity for outreach.*

**MOTION:** Director Daniels; Second; President LaHue: To approve and authorize a six-month unbenefted CCSF I position at a salary of $3,566 per month and approve the allocation of $21,396 from OCR to fund the CCSF I six-month temporary position. Motion passed by unanimous vote.

2.5 Nob Hill Shallow Well Relocation Project, Approve Preliminary Environmental Assessment & Categorical Exemption, Authorize Transfer from Operating Contingency Reserve  
*Action: Removed from Consent; discussed; Approved*

*Director Daniels asked if this shallow well is being used. Taj Dufour replied that it is used to help determine water levels in the creek. Data is collected from all of the shallow wells.*

**MOTION:** Director Daniels; Second; Director Meyer: To approve the Preliminary Environmental Assessment and finding of a Categorical Exemption for the Nob Hill Shallow Well Relocation Project, CWO 14-024 and authorize transfer of $15,000 from Operating Contingency Reserve to fund the Nob Hill Shallow Well Relocation Project, CWO 14-024. Motion passed by unanimous vote.

2.6 Raw Water Main Between Bonita Well and San Andreas Well Project, Approve Preliminary Environmental Assessment & Statutory Exemption, Authorize Transfer from Operating Contingency Reserve  
*Action: Approved*

**END CONSENT AGENDA**

3. **PRESENTATION BY GENERAL MANAGER**

3.1 Where We’ve Been, Where We’re Going

Ms. Adamson gave a presentation reviewing the water shortage, seawater intrusion issue and a brief overview of the District’s short and long term planning efforts. *(See Attached Exhibit A)*

**Public Comments:**
A member of the public asked what a replenishment district is.
Ms. Adamson replied that a replenishment district is a groundwater management district that is able to spend money on protecting and replenishing the basin. Everyone within that district boundary shares the costs. President LaHue noted that the March 4, 2014 meeting will focus on replenishment districts.

A member of the public commented that the active salt water intrusion in Soquel Creek Water District (SqCWD) is in the Aromas Red Sands aquifer and that the active salt water intrusion in the Purisima is only coming from Beltz Wells over-pumping by the City of Santa Cruz.

Don Heichel stated that the Board has failed to ask themselves what the political ramifications are of cutting SqCWD customers to 2,900 AF. He stated that a groundwater management district manages the groundwater. They charge everyone who takes water out of the ground. Mr. Heichel stated the legislature has passed a new law that is going to prevent duplication of water agencies doing things in southern California where they have a groundwater replenishment district that covers 43 cities in more than 400 square miles. It charges and fines cities if they take too much water or if they don’t pay their costs for the water they extract. Mr. Heichel stated this is what SqCWD customers need in order to be able to apportion costs to all users of the aquifer. If a groundwater replenishment district was created by an election, SqCWD customers would greatly outnumber the private well owners and would be able to charge them for the water they are taking. There is information about groundwater management districts at wrd.org. He feels all four of the aquifers in Santa Cruz County are in serious trouble as a result of having individual water districts with their own point of view and their own way of looking at things rather than having an inclusive regional approach. Mr. Heichel stated that politically it’s going to be difficult if the District does rationing.

A member of the public stated she moved here in 1998 and at that time asked the water board why a million gallons a year were being over-drafted and why rationing was not in effect. She said she was told they were afraid of being sued. She believes that the District should be rationing. She feels that private well owners need to be held responsible also.

A member of the public expressed concern about a 200% water demand offset because he doesn’t think it’s there. He is a resident of Capitola and sees the city building a parking garage that he says is for a hotel that will be a big water user. He questioned how a large development would ensure the 200% offsets when everyone is rationing.

Ms. Adamson stated this is something staff will look at when they review the water demand offset program.
The gentleman stated he is getting tired of the District “looking at things”. He stated he was one of the original people who said the District is over-pumping the aquifer in the 1990's. He stated that if the Board doesn’t adopt a moratorium they are ruining the community for the future.

John Ricker, County Water Resources Division Director thanked Ms. Adamson for her presentation. He pointed out that the County and SqCWD have shared concerns about groundwater management in the basin for many years. In 1981 the County amended its well ordinance to prohibit new domestic wells within the SqCWD service area. That provision is still in effect. As Ms. Adamson pointed out water law in California is not particularly clear cut and that provision has not been challenged in court so he doesn’t know who might prevail if it were. Mr. Ricker stated that if the Board goes in the direction of restricting use he would anticipate County staff would take a measure to the Board of Supervisors to consider declaring a groundwater emergency and implementing various measures that would support the District’s efforts.

Julie Townsend, environmental problem solving specialist, asked Ms. Adamson to clarify how people end up using more water in a drought.

Ms. Adamson replied that drought results in more outside discretionary water use. When the rain doesn’t come people continue to irrigate lawns and gardens.

Director Daniels noted that, also in a drought, more rain evaporates and doesn’t recharge the groundwater.

4. **ORAL COMMUNICATIONS** *(items not on the Agenda)*

Sam Storey, mayor of Capitola, welcomed the District and the audience to their chambers for this meeting. He thanked District staff for taking the time to meet with him today and brief him in more detail on the issues and the plans moving forward. As the mayor of Capitola, he wants the city to do its part to work with the District regarding conservation, reclamation and supplemental supply. Mr. Storey noted that we are all in this together and need to find a common solution. He assured the Board that Capitola will continue to do its part to maintain collaboration, communication and coordination with the District.

Rosemarie McNair remarked that she read an article from the December 5th Science Digest, written by Vincent Post, a hydrologist, about discovery of freshwater found on the floor of the ocean at various places in the earth, some at the base of North America. She believes it is 121,000 miles of water that was discovered because of oil and gas exploration.

Mr. Heichel commented on evaporation of rainfall stating the District’s groundwater management plan from 2007 says that only 15% of average rainfall percolates to groundwater which means 85% of rain disappears in an average year. If 15% of the
85% were captured the amount of water in the Purisima formation would double. That far exceeds what evaporates. If you go back to the Soquel Creek diversion, historical figures show there was plenty of water for SqCWD needs as a diversion project except in the very driest of years. In the desal situation that has been considered water would go to Santa Cruz first. Mr. Heichel stated there is plenty of water to be garnered through rain harvesting as they do in southern California.

Director Daniels stated that he reported a year ago that the USGS had done a study of a number of basins across the country including the SqCWD basin and found that 64% of the rainfall evaporates from the ground with about 15% never reaching the ground because it evaporates from the leaves of plants. In the past, the District has discussed taking water out of Soquel Creek; the problem is that once it goes into a stream it is no longer rain harvesting. It is a water source and you have to get a water right.

Director Daniels reported that he was a part of the committee that met to consider hydrology consultants to do peer review of the District’s groundwater data. The oral interviews will be held tomorrow.

Director Daniels observed that current precipitation is 1.3 inches; normal is 12.3 inches for this time of year.

Director Daniels noted that the District asked for a 15% curtailment from May through October because of the drought in previous years. The actual cutback by customers was ½ of 1%. He shared data from the previous year when a 5% cutback was requested and there was actually a 5% increase in water use.

5. INFORMATION ITEMS
5.1 Informational Only: Presentation by Staff on Mandatory Water Rationing

Ron Duncan and Shelly Flock gave a presentation revisiting the mandatory rationing program that the Board adopted conceptually as a backup plan in 2013 and presenting a phased variation of that concept. (See Attached Exhibit B) Mr. Duncan noted this plan has been designed by staff and they are presenting it tonight to the Board and the public to generate feedback.

Mr. Duncan identified the key concepts in the three phases and discussed the “fiscal cliff”, the point at which the District would be unable to fund a different supplemental supply project.

Ms. Adamson said there has been a lot of conversation about placing the cost of this program on the highest users which might work initially. The District currently uses tiered rates. The more water you use, the higher you pay per unit of water. Tiered rates are designed to encourage people to use less water. If they are successful, the highest users would conserve and eventually everyone would be using less water. As use is lost from the higher tiers and successful
conservation is achieved, then costs will need to be redistributed to the entire customer base.

Mr. Duncan continued with the presentation and discussed what this program would mean to the community, how it would impact the quality of life and the economy. Mr. Duncan asked County Supervisor Zach Friend to speak on what this might mean to the community.

Mr. Friend believes water rationing would have a significant impact from an economic standpoint, be it jobs, housing values, infrastructure, and neighborhood integrity. He voiced concerns that customers living in the same neighborhood can be served by different water agencies and if mandatory rationing and/or moratorium are enacted in SqCWD this would affect home values, the job market and other associated issues. Mr. Friend noted that this problem is not recognized the same throughout the county. He feels that the conservation measures being proposed tonight are not enough. He also stated that this is not a technical issue but a political-will issue and a lack of willingness of the entire basin to work together to find a solution. He stated that small businesses cannot survive with 35% water reduction and/or rate increases whereas corporations can. Mr. Friend stated that decisions made by the Board should not just be made about the water itself but what is impacted beyond the water issues and should be made at a political level. He stated he is in favor of an economic impact study.

Director Jaffe asked Mr. Friend to recommend how the Board could expand their scope and connect with those who have the power to politically move efforts forward.

Mr. Friend noted there is a forum to expand the discussion and educate people as evidenced by the number of people who are attending tonight’s meeting. He also stated that he feels the District has the ability to inform people that this is not just about being unable to water your lawn; this is a question of whether or not your home value and your overall quality of life may be affected.

Mr. Duncan closed his presentation noting that this plan is not the preferred plan but a backup plan that has a high risk of failure associated with it because of the following:

- Highly dependent on community participation
- Rationing for 20 years at this level has never been done anywhere else
- Disparity of conditions between District customers and others
- Customers could opt to drill their own well

If mandatory water rationing is unsuccessful or if a supplemental supply is not secured there will be continued seawater intrusion.
Public Comments:
A member of the public asked where the number of 35% over 20 years comes from and if the rationing went on for a longer period of time could the percentage of rationing be lower.

President LaHue replied this is an estimate from the District hydrologist and is not an absolute number; it is something that would need to be reevaluated over time.

Director Daniels noted that 30 years ago the usage went over the sustainable supply and there is a large amount of water to be replaced in order to avoid seawater intrusion. The faster it is replaced the less risk there is of seawater intrusion.

Director Hoernschemeyer noted that in the time it takes to reach protective levels, the seawater is coming in. It is not known how fast or how far, but the longer it takes the more likelihood there will be of a seawater interface reaching the production wells.

Rick Longinotti, Chair of Santa Cruz Desal Alternatives supports the Board’s goal for pumping reduction to 2,900 AF. Regardless of what type of alternative water supply solutions are found, he recommends that reducing demand remain a goal of the District. Mr. Longinotti shared data from other California districts that have decreased water usage. As far as an economic study, he suggested the District look at those communities to determine if there has been an economic hardship. Mr. Longinotti observed that we don’t know how to increase public participation. He stated that there is frustration in the community that more customers are not taking advantage of rebate opportunities. He would like to see more public participation in understanding the problem and being part of the solution.

Cherie Bobbe asked the Board why they have not continued the curtailment past October. She feels the public does not understand the seriousness of the issue because curtailment is on then off. Ms. Bobbe wondered what shape the District would be in if a 10% curtailment had been instituted 30 years ago.

Director Daniels responded that the curtailment program has always been voluntary.

Ms. Bobbe stated the Board should have been expressing concern many years ago instead of waiting and that customers need to trust the Board. She expressed concern that, having put “all their eggs in the desal basket”, they made a mistake.

Director Daniels responded that any idea has the possibility of failure.
A member of the public from Aptos commented that he is hearing that by conserving water, revenue will be reduced which will increase water prices and on top of that money will be spent to implement solutions to incentivize people to use less water. He does not see how this is a long term solution. He expressed concern over the lack of detail in addressing feasibility studies or supply in the presentations tonight.

President LaHue noted that the supply issue is not being addressed tonight; this has been discussed at previous meetings and will be discussed again at an upcoming meeting.

Ms. Adamson invited the gentleman or any interested audience members to contact her for more information about rate and financial projections.

Kirsten Liske, Ecology Action, said she has been pleased to share with staff what they know about behavior change and infrastructure change programs to achieve sustainable practices at homes and businesses. It is clear that conservation achievement is important to the community. She recognizes that information alone does not bring change; that cultural change takes time and needs to be economical and easy. She supports continued conservation and likes the proof of concepts idea. Ms. Liske recommends that the District start small and see what happens. She thanked the Board for taking on this important issues and stated Ecology Action is willing to help wherever they can.

Barbara Graves complimented the environmental credentials of the Board. She stated she has been watching since the late 90’s and feels inroads have been made in improving the situation. She feels it’s ironic that we are here tonight partly because the City of Santa Cruz has backed out on the partnership. She stated the City of Santa Cruz is responsible for the current pollution of the Purisima aquifer which is our common water supply. Ms. Graves thinks the City of Santa Cruz should be sued because they are polluting the common water supply. She also feels that Cabrillo College and Seascape Golf Course should be sued as major private users to force adjudication which would be a good thing. Her hope would be that being called into court would cause people to do the right thing. Ms. Graves stated while the City of Santa Cruz indulges in more analysis she encourages the Board to take action tonight to begin rationing and a building moratorium to avert almost always irreversible contamination of our common water supply. She feels it should be up to customers to cut their water use, rather than the District’s expense.

A member of the public asked what percentage of water use in the District is billed at a flat rate and how is the household size determined for water budgets.

Director Daniels replied that all single family and multi-family users are on tiered rates.
Mr. Duncan noted that an affidavit is sent to customers asking for household size. If they do not reply, a low number may be assigned and usually results in dialogue with the customer.

Steve James asked a question about the time intervals that have been discussed tonight – 20 years and two years for Phase 1. Does the clock start today?

Director Daniels stated that when it is down to 2,900 AF and down 35% is when the clock starts. It’s going to take many years to get to that level and once it’s at that level it will take at least 20 years to recharge the aquifers. In the meantime, the seawater intrusion continues.

Ms. Adamson noted the schedule the District has adopted as the goal to have something in place, whether it is supplemental supply or mandatory rationing down to 35%, is within six years.

A member of the public stated he is in the lower 1/3 of usage in the District and feels as if he’s put in a lot of work and private well owners are the people that need to be reached. He doesn’t know if they participate in any of the conservation measures because they don’t have to answer to the District. He has asked the District why people still have lawns in this area and was told by the District that they can’t take lawns away. He understands there is a real problem but when the grass is still green it seems like the District is not that serious. The member of the public questioned how the golf course was able to bypass the District.

President LaHue noted that the golf course has its own well and the District does not have control over their water use. According to California law the owner of the property has the rights to the water under their land.

Mr. Bosso responded that they have always had their own well and have never been a District customer.

Director Hoernschemeyer reiterated that this needs to be a community solution.

The member of public asked how to get private well owners to participate in conservation measures.

Director Meyer mentioned a water replenishment district as discussed earlier where private well owners would need to start paying their part to make sure there is enough water for everyone.

Director Daniels pointed out this does not restrict the amount of water they can pump; they can still pump as much as they want, they would just be charged for it. The only way to stop pumping would be a lawsuit. He pointed out it has been
done in other basins in California where water users took court action and the courts decide how much water is reasonable and portions it out.

The member of the public asked if the District is considering a lawsuit.

Director Daniels replied that the Board has not talked about it. It does present problems. It takes a long time but is something that should be discussed. It would be best if agreement can be reached on how to solve the problem. Sometimes the threat of a lawsuit will bring people to the table but it is not something to be considered lightly.

Ms. Adamson noted this was a very good question. She wanted to touch again on replenishment district versus adjudication. While a replenishment district cannot control what people pump out of the ground, neither can SqCWD do so with their own customers. What the District can do is structure price pressures to encourage people to lower their pumping. The District has the same incentive to conserve as a replenishment district does as they start charging people to pump out of their wells. Ms. Adamson feels the rationing program requires that a replenishment district be put in place and that it’s very important that we get private well owners to come to the table voluntarily to protect their own wells. It would be difficult to get cooperation if it’s not voluntary. A replenishment district might spend its money fighting lawsuits rather than restoring the basin as has happened in Pajaro. Ms. Adamson encouraged the public to come to the meeting in March where replenishment districts will be discussed.

A member of the public commented that he doesn’t think it is right to not do the right thing just because your neighbor is not doing the right thing. He does not feel that actions should be based on what your neighbor or other districts are doing. As a community the right thing to do is to conserve water. He stated he doesn’t want people to feel bad for doing the right thing and it’s time to do something to preserve and restore our basin.

President LaHue remarked that one benefit to having a replenishment district is to educate people who have private wells who may not be aware of the severity of the problem.

A member of the public commented that she likes the Board’s collaborative attitude about the people who are sharing the water and noted that they will be as equally damaged because they are sharing the aquifer. She feels this is not an “us and them” issue, but that we are running out of water. She feels we should be at Phase 2 now and encouraged the Board to go further in getting the attention of customers through their bills. She would like to see more public outreach such as volunteers going door to door or standing at grocery stores talking to people about conservation.
A member of the public asked if people in the Soquel hills get a water bill and if private well owners are aware of seawater intrusion and will it affect their wells.

Director Daniels responded private well owners do not get a bill from the District.

President LaHue stated they will eventually get seawater in their wells.

5.2 Informational Only: Possible Financial Impacts associated with Funding the Water Rationing Program

Ms. Adamson noted that financing the mandatory rationing program is unlike any other project because normally there is a capital project, bonds are sold, and an asset is built. There is a physical asset that is tied to the money that was borrowed. This is different because items such as low flow toilets and showerheads will be purchased and put into other people’s homes so the District does not maintain an asset. There are different implications to the balance sheet for this type of project. Bonds can’t be sold to finance this entire project, so approximately $40 million dollars will have to be paid out of rates. The rest can be financed over a period of time and it is still being reviewed how this will affect the District in the long run.

Leslie Strohm, Supervising Accountant, gave a presentation on financial implications of debt funding with a water rationing program (See Attached Exhibit C)

A member of the public asked if assets such as toilets that are placed in homes remained the property of the District and the homeowner paid off the value of the asset through their bill, would the depreciation of that asset then work more effectively in terms of supporting a bond issue.

Ms. Adamson noted this is on a list of ideas to investigate.

Director Meyer commented that although we’ve discovered through our traditional method of bond financing we can only finance a portion of the program leaving a substantial portion to be funded some other way, it isn’t necessarily the case that it has to be done on a pay as you go basis. Director Meyer has spoken with other sources who have expressed a willingness to finance any portion that can’t be financed through the traditional debt method.

6.  **ADMINISTRATIVE BUSINESS**

6.1 Direction to Staff Regarding Mandatory Water Rationing Program

Ms. Adamson requested direction from the Board to staff for proceeding with a mandatory rationing program.
Director Daniels agreed that a phased process is best. This has already started through the monthly billing that began January 1st.

**MOTION:** Director Daniels; Second: Director Meyer: That the District declare that a phased concept rationing program with WDO building restrictions will be implemented in stages beginning immediately as a stop-gap measure until an alternative water supply can be defined to restore the groundwater basin to sustainable levels. Motion passed by unanimous vote.

Director Meyer feels that the District needs to proceed immediately with Phase 1. The District has the policy that supplemental supply would be used in conjunction with conservation savings and Phase 1 has more and better conservation savings. Although the reduction in demand through this program puts an upward pressure on rates, it has some financial benefits as well. It reduces the size of the problem that needs to be solved with supplemental supply. The biggest risk and cost of the rationing program comes in Phase 3. Director Meyer is optimistic that one of the supplemental supplies the District is looking at will succeed before Phase 3 is reached. He also feels that creative finance needs to be explored for subsequent phases.

Director Jaffe asked if WDO is considered a building restriction in Director Daniel’s motion. Director Daniels replied yes.

Director Daniels clarified that he is recommending the concept of a phased plan.

President LaHue clarified that pilot studies would be a part of this phased plan.

President LaHue noted that the Board has received letters regarding mandatory rationing and that a lot of customers have already made efforts to conserve. He wanted to clarify that a 35% reduction would be based on water budgets and not an across the board cutback so that those who are already using less are not penalized.

**MOTION:** Director Daniels; Second: Director Jaffe: That there not be an across the board 35% cutback for every customer in the District. Motion passed by unanimous vote.

Director Hoernschemeyer noted that part of the pilot program is to find out what businesses can live with.

Ms. Adamson requested staff direction on the economic analysis. Staff took part in the city’s selection process for the consultant for their economic analysis. Does the Board request that staff does their own selection process or use the consulting firm that was chosen during the selection process? There was consensus that there is no reason to start this process again. Ms. Adamson will agendize this for the next meeting.
Director Meyer commented that the study should include the economic impact of rationing by itself, with an expensive supplemental supply, or some combination of conservation and supplemental supply.

Ms. Adamson noted that an economic impact study would look at the impact across a range of conservation levels.

Director Meyer feels this is not a comprehensive enough study for District purposes, because we are also pursuing a supplemental supply that will have a major rate impact in addition to the conservation we would do through rationing.

Director Daniels recommends that the Board consider these issues after Ms. Adamson has brought this back for the next meeting.

Director Daniels commented that customers ask “how does this affect me” and he was hoping tonight’s meeting would answer that question for him. It did not. He also has concerns about how long it will take to move forward with a solution. He shared information on an alternative plan based on outdoor conservation (See Attached Exhibit D) This plan could be implemented soon and be used in combination with the phased plan as outlined in the earlier presentation.

Mr. Bosso was asked if there are legal constraints to this type of program. He replied the one thing that jumps to mind as a potential legal problem is the provision of Prop 218 which requires that charges be proportional to the cost of providing the service.

The Board directed staff to review the information presented by Director Daniels focusing on the phased approach to reducing outdoor irrigation and bring information back to the next meeting. Staff was also asked to quantify estimated outdoor conservation savings.

Ms. Adamson noted that she and Mr. Duncan have been discussing the use of irrigation meters and a way to roll out a program like this with irrigation rates where you don’t necessarily have to have a meter but there is an incentive to get one. Once irrigation meters are in place the District can shut down irrigation if needed in a water emergency.

Director Daniels remarked that, in the lead up to this meeting, staff asked the Board to submit questions that they wanted to have this meeting address. Director Daniels noted he has about 35. For Brown Act reasons he has not seen the questions from the other Directors. He would like to see staff post all of the Director’s questions on the website so they can all take a look at them and consider for possible discussion at future meetings.
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7. **WRITTEN COMMUNICATIONS AND CORRESPONDENCE**
    7.1 Letter from customer regarding moratorium

8. **ADJOURNMENT**
   There being no further business, President LaHue adjourned the meeting at 10:18 p.m.
   to the next scheduled meeting on January 21, 2014.

   SUBMITTED BY:               APPROVED BY:

   ___________________________________________  ___________________________________________
   Karen Reese, Board Clerk              Thomas R. LaHue, President
WHERE WE’VE BEEN,

WHERE WE’RE GOING...
Outline of Tonight’s Discussion

- Review of District’s Water Shortage Problem
- Overview of District’s Long Term Planning Efforts
- How District is Addressing Water Shortage Issues
- Developing a Supplemental Water Supply
  - Exploring Back up Options
  - Tonight’s focus on Mandatory Rationing
  - Future meetings will cover other potential options
Primary Water Shortage Issue: Seawater Intrusion
Seawater Intrusion: California
Southern Monterey Bay, Moss Landing to Seaside

Source: Monterey County Water Resources Agency
BAY AREA NEWS GROUP
Seawater Intrusion: California
Pajaro Valley (Just south of Soquel Creek WD)
Seawater Intrusion: Our Community
Soquel Creek Water District’s service area

2011 Chloride Concentrations for Coastal Monitoring Wells

- Green: 0 - 250 mg/L
- Yellow: 251 - 1000 mg/L
- Orange: 1001 - 10000 mg/L
- Red: 10001 - 16000 mg/L

Legend:
- Production Wells
- SoCWD Boundary
- Aquifer Boundary
- Purisima Aquifer
- Arroyas Red Sands

Distance Scale:
- 0 to 2 miles
Groundwater Levels are Below Sea-Level
Soquel Creek Water District’s service area

Figure 3-3 (2012): Groundwater Elevation Contours, Purisima A-Unit, Fall 2012
Public Process for Long-Term Water Planning

1999
Developed with a Public Advisory Committee of more than 20 individuals

2006
Updated with newer information on supply & demands

2012
- Updated with newer information on supply and demand and re-evaluated 10 different alternatives
**RE-EVALUATING ALTERNATIVES:**

1. Continue water conservation
2. Continue to evaluate recycled water (as feasible)
3. Proactive groundwater management
4. Continue to evaluate scwd² desalination
5. Continue to evaluate surface water exchange
6. Consider District-only desalination and mandatory water rationing if scwd² desalination is no longer pursued.
SUPPLY & DEMAND = SHORTAGE

Where we thought water use could be*

Re-evaluated Water Demands **

Conservation Savings

Water Shortage

35% Shortage

Groundwater Supply Yield

Not to exceed 2,900 acre-feet per year for at least 20 years for Basin Recovery

* Based on District’s 2005 Urban Water Management Plan

**Based on District’s 2010 Urban Water Management Plan
Supply and Demand for Soquel Creek Water District

Projected Community Water Demand: 4790 afy

- Water Shortage 1,360 afy (30%)
- Conservation 530 afy (10%)
- Groundwater Supply 2,900 afy (60%)

Water Portfolio (2025)

- Limit groundwater pumping to no more than 2,900 afy
  - Based on groundwater modeling
  - 70th percentile goal of achieving groundwater levels and outflows to protect against seawater intrusion
  - Recovery time estimated to be at least 20 years

- Continue to maximize and increase water conservation savings
  - Set goal to reduce overall use by 15% (720 afy) by 2030
Addressing Water Shortage Issues: Shared Groundwater Basin

- Groundwater Basin is used by many: District, City of SC, Central WD, small mutuals, and private pumpers

- Property Owners Have Priority Right to the Water Under Their Property

- Municipal Water Suppliers Only Have a Right to Surplus Water in the Basin
Addressing Water Shortage Issues:

Development

- District increased the water demand offset (WDO) factor from 1.2 to 1.6 in July 2013.
- Goal is for new development to offset water use by 200% through retrofitting existing homes with conservation fixtures.
- Will discuss revised WDO program and connection moratoriums at April 1st meeting.
- Unique legal and conservation challenges related to moratoriums.
Addressing Water Shortage Issues: Ongoing Conservation

- Maximizing and Prioritizing Water Conservation in our Community.
- Goal is to achieve an additional 10% by 2025.
- Emphasizing water conservation year-round
- District pilot tested Water Smart program and applied for Water Smart Grant to continue and expand program
- Continue to expand and add new rebates for conservation
- Initiated monthly billing
Addressing Water Shortage Issues: Securing a Supplemental Supply

- District is actively pursuing a supplemental water supply
- Public Advisory Committee recommended both regional desalination and recycled water as recommended options for supplemental supply.
Looking Closer at Back-up Options

- Exploring Desalination (October 15)
  - Deep Water Desal
  - District only Desal

- Exploring Surface Water (November 5)
  - SC County Water Transfer Study Update
  - Surface Water Rights
  - Presentations by Public Individuals (Bill Smallman and Jerry Paul)
Looking Closer at Back-up Options

Recycled Water (February 4)

- Groundwater Injection
- Saltwater Barrier
- Rail Trail Purple Pipe

Groundwater Options (March 4)

- Private Well Stakeholder Group
- Replenishment District Powers
- Replenishment District Formation
Looking Closer at Back-up Options

- **Water Demand Offset**
  (part of Demand Reductions) *(April 1)*
  - Water Demand Offset and Moratorium

- **Evaluation and Shortlisting Back-Up Options** *(May 6 and June 3)*
  - Review and evaluate back-up options based on a set of objective criteria
  - Criteria weighting and sensitivity analysis
Tonight:
Mandatory Water Rationing

- Can we develop a program to reduce overall water use by 35% if a supplemental water supply isn’t secured?
- What would the impacts be to the community: quality of life, business, parks, economy, etc.?
- What might a water rationing program look like and what might it cost?

2012
Presented Two Mandatory Water Rationing Scenarios: Enforcement and Full-Toolbox

2013
Board Adopts Resolution 13-02

2014
Tonight Presenting a Modified Phased-Approach to further consider
Challenges to Success

California Water Law results in this program needing full voluntary community support in order to be successful in a shared basin.
Questions for the Board

- 35% blanket reduction or use of personal and business water budgets?
- Use of phased approach with off-ramps to allow for diversion from mandatory rationing to supplemental supply?
- Study the economic impacts to the region from mandatory rationing and try to minimize those impacts?
- Move forward with WDO program and explore moratoriums (April meeting)
- Can a mandatory rationing program be successful without a Replenishment District to remove the incentive for homeowners to obtain their own water supply?
Seawater Intrusion: Florida
Miami
Seawater Intrusion: Big Picture Europe
Addressing Water Shortage Issues: Water Quality

- Changing Water Quality Requirements: Hexavalent Chromium
- Working on treatment upgrades at affected wells
- Looking into emergency water purchases from nearby agencies
CONCEPTUAL MANDATORY WATER RATIONING PROGRAM, REVISITED

1 2 3 PHASED APPROACH

JANUARY 7, 2014
Public Hearing

2012 & 2013

5180 Soquel Drive, Soquel

The Soquel Water District's Board of Directors will consider establishing District policy to pursue specific programs and projects to significantly reduce the use of groundwater until this resource has adequately recovered to protect against seawater intrusion.

The proposed policy states that if the desalination project currently being evaluated does not proceed, then the District will pursue mandatory water rationing designed to reduce water use by 35% for at least 20 years in order to assure a safe and sustainable groundwater supply.

475-8500 www.soquelcreekwater.org
WE’VE COME A LONG WAY!

1995
11,744 Single Family Homes
95 gallons per person per day

2005
12,257 Single Family Homes
87 gallons per person per day

2010
12,447 Single Family Homes
68 gallons per person per day

Mandatory Water Rationing Approach

53 gallons per person per day
WATER RATIONING

Residential households
Given a water budget

Low Water Users
30 gppd
Under Water Budget

Average Water Users
70 gppd
25% decrease in use

High Water Users
150 gppd
65% decrease in use

53 gallons per person per day (gppd)
2012 Mandatory Water Rationing

- Direct Install
- Enhanced Rebates
- Outreach and Education
- Water Waste Enforcement
- Other
- Mandatory Water Budget
- Pricing
- Monthly Billing
- Moratorium
WHERE ARE WE NOW?

ADD SUPPLY:
- Desalination
- Deep Water
- Water Transfer
- Recycled Water
- Other?

SELECTED SOLUTION...

REDUCE DEMAND:
- PHASE 1
- PHASE 2
- PHASE 3
  - Water Rationing

FISCAL CLIFF

WHERE ARE WE NOW?

Supply(ies)
PHASED WATER USE REDUCTION

What does this mean?
PHASE 1

Implementation of First Measures

Proof of Concept Testing and Studies

INFORM

Are supply sources available?

YES

No additional phases necessary

NO

Go to Phase 2
Additional Phases Needed

Select Program Components

Are supply sources available?

YES

No additional phases necessary

NO

Go to Phase 3

IMPLEMENT PHASE 2

PHASE 2

PHASE 3

EXHIBIT B 01/07/14 MINUTES
PHASE 3
MANDATORY RATIONING
It gets harder with each phase.
PHASE 1:

**DO**

- Direct Install Commercial Toilets
- Enhanced Rebates
- Water Use Reports (WaterSmart)
- Water Demand Offset
- Water Waste Enforcement
- Outreach and Education
- Monthly Billing
- Pricing
- Other Critical Actions

**TEST**

- Direct Install Proof of Concept
- Water Budgets
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Commercial Toilets
Direct Install

PHASE 1:
Direct Installs

NO PHASE 2 or 3
(completed in phase 1)
PHASE 1: Expand to All Single-family

PHASE 2: Expand to Multi-family and Commercial

PHASE 3: Incorporate Mandatory Water Budgets
PHASE 1: Implement January 2014

PHASE 2: Ongoing – Implement Bill Readability and Improvements

PHASE 3: Ongoing
PHASE 1: Study Water Demand Offsets (WDO)

PHASE 2: Continue WDO or Moratorium

PHASE 3: ?
Enhanced Rebates

PHASE 1: Enhanced Rebates for Turf Replacement, Graywater and Rain Water Harvesting

PHASE 2: Consider Additional Enhancements

PHASE 3: Consider Additional Enhancements
Outreach & Education

PHASE 1:
Enhanced Outreach

PHASE 2:
Expand Outreach and School Education Program

PHASE 3:
Continue to Expand as Appropriate

DO MORE TO USE LESS
{plant drought tolerant}
Other Critical Actions

PHASE 1:

- Perform an economic analysis
- Begin dialogue with private well owners
- Evaluate water trading scenarios
- Evaluate funding options beyond Phase 1
- Evaluate new technology and concepts
- Policy and code changes
- Evaluate case studies
Water Waste Enforcement

PHASE 1:
Educate Customers, Enforce Water Waste Prohibitions

PHASE 2:
Consider Additional Enforcement

PHASE 3:
?
Pricing

**PHASE 1:** Evaluate Changes to Irrigation & Commercial

**PHASE 2:** Additional Price Increase Needed

**PHASE 3:** Substantial Price Increase (Nearly Double); Penalty Pricing for Exceeding Budget
Proof of Concept Pilots

PHASE 1:
Water Use Surveys and Pilots

PHASE 2:
Expand Retrofits

PHASE 3:
Fully Implement Direct Installs
Proof of Concept Pilots

1. Residential – install indoor/outdoor retrofits
   20 single-family homes
   2 multifamily complexes

2. Submetering of 10 multifamily complexes

3. Commercial – survey 200 sites; install indoor/outdoor retrofits at 17 sites
   Focus on common sectors (e.g., restaurants, hotels, schools, offices, grocery stores, etc.)
Water Budgets

PHASE 1: Educational for Single-family Residential

PHASE 2: Add Water Budgets for Multi-family and Commercial

PHASE 3: Mandatory for All Customer Types; Penalty Pricing for Exceeding Budget
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Phase 1 Estimated Costs and Water Savings

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<th>First Measures</th>
<th>Costs ($)(^1)</th>
<th>Water Savings (acre-feet/year)</th>
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<tr>
<td>Proof of Concept Pilots</td>
<td>$4 M</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>$1.25 M</td>
<td>To Be Determined</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>$5.25M</strong></td>
<td><strong>300 +</strong></td>
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\(^1\) Estimated costs are in addition to the regular Conservation Department budget of approximately $250,000 per year.
What does this mean to us?
Impacts to quality of life and economy
Risks and Consequences

- Highly Dependent on Community Participation
- Rationing for 20+ years at this level is not proven
- Disparity of conditions between District customers and others
- Customers could opt to drill own well

Consequence:
If mandatory water rationing is unsuccessful or we don't secure a supplemental supply, we will continue to see seawater intrusion occurring.
Evolving Strategy

PHASE 1: Are supply sources available?

PHASE 2: Are supply sources available?

PHASE 3: Mandatory Water Rationing

FISCAL CLIFF
The Financial Implications of Debt Funding
A WATER RATIONING PROGRAM
The Balance Sheet (or Statement of Net Position)

- **ASSETS** – What does the District own?
  - Assets must be owned by the District
  - District must have control of the asset’s use

- **LIABILITIES** – What does the District owe?
  - Vendor payables
  - Wages and benefits owed
  - Includes debt principal and interest

- **NET POSITION** – What is left over?
  - Assets minus liabilities
  - Also called equity or net worth
  - A decrease in assets or an increase in liabilities lowers the District’s net position
The Income Statement (or Changes in Net Position)

- **OPERATING REVENUE**
  - Water sales and associated fees

- **OPERATING EXPENSES**
  - Cost of sales
  - G & A
  - Depreciation of capital assets over time

- **NON-OPERATING REVENUE (EXPENSE)**
  - Interest earned on invested cash
  - Interest expended on borrowed funds

- **CAPITAL CONTRIBUTIONS**
  - Grants
  - Capacity charges
  - Developer-donated system improvements
How Financial Statements Work Together

Each fiscal year a portion of capital assets are expensed as depreciation.

Assets increase as water sales are billed and collected.

Liabilities decrease as vendors and employees are paid.

Net income for a fiscal year improves net position and the District’s reserves. A net loss would have an adverse effect.
Debt Funding a Water Rationing Program

**Length of Term**
- Useful life of product purchased must match the term of the debt issuance

**Debt Strategy**
- Requires a mix of long-term and short-term borrowing
- Only a portion of Phase I can be funded through borrowing

**Borrowing Costs**
- Multiple borrowings will increase the cost of issuing debt
Financial Statement Impacts of Water Rationing Program

**Borrowing for Capital Asset Purchases**

- Bulk of expenditure appears on balance sheet as an asset
- Expensed over time as depreciation
- Smooths the impact on net income (loss)
- District net position remains relatively stable as the asset is offset by the debt liability

**Borrowing for Operating Expenditures**

- Expenditure appears on the income statement
- Entire expense recognized in a single fiscal year
- Significant effect on net income (loss)
- Net position declines because debt liability is not offset by an asset
Debt Service Coverage

• In lieu of collateral, the District has pledged water rates will be maintained at a level necessary to meet debt service coverage.

• Net revenues (operating revenue less operating expenses) must be at least 120% of the interest and principal payments due on debt each fiscal year.

• Conservation programs are excluded from operating expenses for purposes of calculating the debt coverage ratio.

• Without a corresponding increase in water revenue, debt coverage ratio decreases as debt increases.
Potential Effect on Water Rates

• Water rate revenue will need to be maintained to meet debt coverage requirements and keep reserve levels healthy

• Successful rationing program will put upward pressure on rates

• Switch from capital assets to operating cost will increase net income volatility and effect net position
• How much can we borrow for a water rationing program and still have funding options available for supplemental supply?

• How can we structure the program and the financing to avoid rate spikes?

• How much of our operating expense budget can we commit to this program annually and still maintain healthy reserves?
OBSERVATIONS

• Indoor conservation
  – Much already done
    • e.g. high flow toilets 85% → 9%
  – Savings potential = rather small

• Outdoor conservation
  – Relatively unaddressed
  – Savings potential = quite large
  – Savings possible without massive investment
    • NO Toilets, Washing Machines, Showerheads, Recirculation Systems, etc.
    • Just rebates for Graywater & Turf Replacement
FACTS

• “Summer” usage double “Winter” usage\(^1\)
  (Outdoor Irrigation as large as Indoor use)
  - Average use is double
  - Therefore, for many customers:

  “Summer” use More Than Double “Winter”
  (Outdoor Irrigation Larger Than Indoor use)

\(^1\)[many thanks to Sue Holt of Cabrillo College for this fact]
Policy

• Outdoor Irrigation **less important** than Indoor water for drinking, cooking, cleaning, etc.
  - i.e. if shortage, then irrigation restricted first

• Concentrate first on reducing Outdoor Irrigation
Phase 1
“Reduce Excessive Irrigation”

• Determine “Winter” baseline amount
  – Do not consider future usage
    • Discourage schemes to “game” the system
  – Do not consider 2013/14 or 2012/13 usage
    • Weird freaky weather, esp. winters
  – Consider 2011/12 and 2010/11 usage
  – Use customer's own usage data
    • In later phases, mix with neighborhood usage data
  – Easy to calculate and print on monthly bills etc.
Phase 1
“Reduce Excessive Irrigation”

- Employ Cost as primary signal
- New Rate Structure
  - Charge for “Excessive” Outdoor usage
    i.e. more than double Winter Baseline
  - As Usage increases past double Baseline, rate of “Excess” Charge increases
- Increase Rebates & Help for Outdoor Usage:
  Graywater & Turf Replacement
  - Paid for by “Excess” Charge??
- Works even for Businesses and Organizations
- Start When? = this summer, next summer?! --> ASAP!
Phase 2
“Reduce Significant Irrigation”

- Baseline is mixture of past personal Winter use and current neighborhood Winter use
  - Note: Charge possible in winter if using way more than neighborhood normal

- Charge for any Usage more than 1.5 * Baseline

- Even larger Rebates for Outdoor savings
Phase 3

- Baseline is largely the current neighborhood Winter use
- Charge for Usage more than \(1.25 \times\) Baseline
- Even Very Much Larger Rebates for Outdoor Usage
Phase 4 ..... 

• Manage Usage by adjusting:
  - **Baseline** computation
    • **Mixture** of
      - Past personal winter use
      - Current neighborhood winter use
      - Current efficient neighborhood winter use
      - EPA best indoor practices
      - Etc.
  - **Charge** threshold
    • **Multiple** of baseline
Summary

- Actual explicit Plan
  - Not just undefined “Outreach” & “Pricing”
- This Plan is not perfect
  - Can be improved
- Seems to work for all customer classes
- Pricing signals should make it effective
- Offers some degree of fairness
- Might avoid “fiscal cliff”

- Allows customer to answer: “How will this affect me?”