MEMO TO THE BOARD OF DIRECTORS

Subject: Agenda Item No. 3.2 Continuation of the Issuance of Will Serve Letters Prior to Consideration of Declaration of a Moratorium with Public Hearing

Attachments:
1. March 4, 2003 Memo to Board of Directors Including Attachments Regarding Policies & Options for Controlling Increased Water Demand
2. Minutes from June 18, 2013 Public Hearing to Discuss Moratorium on New and Expanded Water Connections
3. Updated Santa Cruz County Health and Safety Code Section 7.70.130 Pertaining to Groundwater Emergencies
4. Updated Water Supply Reliability and Water Shortage Contingency Planning from Section 5 of 2010 UWMP
5. Updated Will Serve Letters Approved on December 7, 2010
6. Updated 2005-2013 Annual Production by Aquifer and Total Production in AFY
7. Comparison Chart of Projected and Anticipated Conservation through 2030
8. Comparison Chart for District Supply and Demand
9. Graph of Acre-Foot Savings vs. Cost Prepared by Sue Holt

The District’s sole source of water supply is threatened by seawater intrusion. This is a result of pumping more water out of the aquifers than is naturally recharged by rainfall. At least two locations within the District show evidence of active seawater intrusion at coastal monitoring wells. In the mid-1990’s, the District developed a long-term strategic plan to address groundwater overdraft with its original roadmap known as the 1999 Draft Integrated Resources Plan (IRP). This IRP, produced through an 18-month process with a citizen’s advisory group, represented current knowledge of the time and understanding about the District’s water supply resources, projected future water demand and supplies, and the policies and projects identified to meet the objectives of assuring a safe and reliable water supply for District customers while preventing the degradation of local groundwater and surface water resources.

In 2006, the District adopted a revised IRP with updated information and further evaluation of potential water supply alternatives, including identifying a regional seawater desalination project with the City of Santa Cruz as the preferred alternative combined with additional conservation to restore the groundwater basin.

In 2012, more recent information about the groundwater conditions of the Soquel-Aptos basin and reduced demand projections became available, and the 2012 IRP
Update was prepared and accepted by the Board of Directors on September 18, 2012. Recovery of more than 22,000 acre-ft is required to restore the basin and thus the District’s groundwater pumping must be reduced to 2,900 acre-ft for at least 20 years to raise water levels. The 2012 IRP Update considers eight potential supply alternatives to reduce pumping and two potential water use rationing scenarios in the event the supply alternative of a joint seawater desalination plant with the City of Santa Cruz is not secured within 6-8 years. In addition to seawater desalination, water exchange to augment supply was identified as an alternative to further evaluate.

In August of 2013, the City of Santa Cruz put the joint desalination project on hold while they initiate a citizen advisory process, making it unlikely that a joint desalination project will meet the 6-8 year timeline. The District is now evaluating back-up options for supplemental supply projects.

**Current Activities to Address Water Shortage**

Since September 2013, the District has been actively looking at back-up water supply alternatives and have held a series of exploratory meetings to discuss options such as surface water exchanges, recycled water, and desalination (in our service area or partnering on the Deep Water Desal project).

In addition, the Board directed staff to further accelerate conservation while we undergo this supply evaluation process, recognizing it could take several years to develop a new project or re-join with Santa Cruz on the scwd2 Project. The proposed Water Use Reduction Program (WURP) is currently being developed and is scheduled to be brought to the Board in August 2014 for final adoption of the policy and then implemented beginning in the fall. The WURP is a long term program with a goal of reducing District demand by 500 acre feet per year.

In the absence of securing a supplemental supply, the District can further increase water restrictions enact demand reduction actions and measures identified in Section 5, Water Supply Reliability and Water Shortage Contingency Planning in the 2010 UWMP (Attachment 2), including declaring a groundwater emergency and adopting a moratorium. The Board of Directors on January 7, 2014 directed staff to develop the first phase of a water reduction program and schedule a public hearing on a moratorium for June 3, 2014. With the possibility of a moratorium in the near future, the Board voted on April 1, 2014 to delay issuance of any additional will serve letters. They then requested that a public hearing on will serve letters be scheduled for a special meeting on April 29, 2014.

At the June 3rd public hearing the Board will evaluate whether we have sufficient information to determine that a threat to public health and safety currently exists, allowing for a moratorium to be declared on new connections to our system.
Considerations for Declaration of a Moratorium

Many considerations will go into that decision including whether development has a significant impact on any possible threat, if the Water Demand Offset (WDO) program mitigates this, whether the current levels of mandatory water reduction are adequate to justify a moratorium and whether the County will support our efforts with their own moratorium on new water supply development in our shared basin. But first and foremost, the main consideration will be whether the District is committed to obtaining a supplemental supply, a position which is required if we impose a moratorium. If the District is committed to a project to obtain additional water, then we need only look out about ten years for effects of current development. If there is not commitment to move forward with a project we need to look longer term and use the 20 year projections we are providing in this memo for development impacts.

Water Demand Offset (WDO) Program: In March 2003, the Board considered policies and options to temporarily control increased water demand due to development while pursuing a supplemental supply. Shortly thereafter, the Water Demand Offset (WDO) program was implemented to allow growth to continue without increasing water demand or instituting a moratorium on new and expanded water use. The WDO program has been a large success, lasting more than 10 years. Since the WDO program began, developers have paid for over 3,000 water-efficient toilets and other fixtures in existing homes, businesses and schools within the District. The program accounts for 150 acre-feet per year of net water saved—enough to supply 600 households with water each year that the program is in effect.

New development since the inception of the WDO program has added an average future demand increase of 10 acre feet per year. To date this is about 100 acre feet future increase. The anticipated impact of the WDO program is for the builder to offset their annual use for a target period of 20 years, with the result being a delayed impact to our pumping levels. The importance of this is that if a supplemental supply were to be obtained we should have one within 20 years and prior to the impacts of any new additional pumping increasing our demand as long as the WDO continues. Up until 2013, the requirement was for development to offset 100% of their annual use. This was changed in 2013 to require a 200% offset. Records show that to date the program has offset approximately 150 acre-feet, this is more than the expected future impact of development. It’s important to remember that the goal for most of the history of the program wasn’t to achieve a net gain but to be water neutral.

As stated above the program only delays impacts of additional use. The estimate of 20 years is approximate because some fixtures would have been changed out at some point in that timeframe. So the program speeds up conservation that would already happen. But every year that conservation doesn’t happen compounds the amount of required conservation as well. It’s impossible to totally quantify what may happen or what would have happened anyway. But assuming the program has the effect of offsetting water for twenty years, the first impact of an additional 10 acre-feet of water use is expected to be seen in 2024 when the first WDO’s expire.
The expected impact of 10 acre feet added each year after 2024 is at unrestricted water use levels but if mandatory water reductions are imposed we can expect those numbers to be reduced by up to 35% or an approximate total WDO adjusted impact of 45.5 acre feet (6.5 acre-feet per year) additional demand by year 2030. If the WDO program continues, developers will likely help pay to offset some of this additional use coming online since the WDO program has now been changed to require an offset of 200%, resulting in a net positive effect for 20 years. Assuming a continued average growth of 10 acre feet per year starting in 2014, by 2020 we will not see increased demand but will see reductions of about 240 acre-feet paid for by developers rather than rate payers.

150 acre feet through 2013 + 7 years @ 10 acre-feet gain = 220 acre feet

Taking this projection to 2030 and accounting for the expiration of early offsets, we expect to be approximately 260 acre-feet net positive. Assuming growth continues at rates which have been limited by the county, the result once early WDO projects expire would be that we have built up a positive savings then switched back to a net neutral program. This is because as an average of 10 acre-feet of water use come onto our system from early projects, current projects are offsetting not only their own water use but twice that for an approximate gain of 10 acre-feet per year. Attachment 7 shows this projection, although it uses the numbers from the UWMP which were projections and I have used what we have seen as a historical growth average, the table still shows 213 acre-feet of net positive savings in 2030. The table shows approximately 288 acre-feet net positive in 2030. The difference is likely due to the effects the economic down turn had on growth in our historically data which is not reflected in the UWMP projections.

The first phase of the water use reduction program (WURP) approved by the Board on April 1, 2014, has a goal of reducing pumping by 500 acre feet per year. The program consists of the following:

- A Water Budget component where residential customers are assigned a water budget of 75 gallons of water per person day and nonresidential customers (i.e. businesses, schools, parks, etc.) will be required to install low flow devices and use best practices for water reduction.
- Significant rate increases (e.g., several fold) for all customers and pricing penalties if customers exceed their water budgets.
- Monthly billing to provide customers with more timely feedback on water use.
- Expansion of WaterSmart program to all customers.
- Education programs to help customers to understand the situation and to encourage water-saving behavior modifications.
- A substantially expanded rebate program.
This is intended to be only the first phase of the WURP program and was designed to ease our customers into it. Approximately half of our customers are already below or well below the current budget allowance – even during the summer months. The current program is resulting in a nearly 40% increase in operations costs and requires $2 million for customer rebates in the next couple years, the costs of which are absorbed by our customers. We are currently working on the budget for the 2014-2015 fiscal year and are faced with some serious financial challenges, many due to the direct and indirect effects of the water reduction program. Sue Holt has looked at the impacts of allowing the WDO program to continue and how it would affect acre-feet saved and the cost per acre-foot. She will present her findings included in Attachment 9.

If the District chooses not to move forward with a supplemental supply, we will have to roll out additional phases to reach an overall 35% reduction which would be in place by 2020. The majority of water cutbacks will come from existing customers, with new development also being affected if a moratorium on new and expanded water use is adopted in May. It should be noted that Section 3 of the 2010 Urban Water Management Plan (UWMP) does not attribute significant water demand to new development through 2030. Based on the current population we expect an increase of about 5% in that timeframe. Based on the numbers presented above and in Attachment 7, if development and the WDO program are curtailed, water budgets for existing customers will not be able to be increased, nor would they be decreased as a result of development with WDO’s. With the need to reduce pumping by 1,500 acre feet, a moratorium on new and expanded water services will not eliminate the District’s need for a supplemental supply.

**Considerations for Continuance of Processing Will Serves**

The question before the Board now is whether to continue issuing will serve letters prior to consideration of a moratorium in June. There are many aspects to this question. The likelihood of a moratorium based on the actual impacts of growth and the current severity of the restrictions placed on our customers are important to consider. So is the question of whether the County Board of Supervisors will support our efforts, which is the only way to actually reduce pumping in the basin. The financial burden to property owners for WDO’s or to our customers for supporting the entire water reduction program with no help from WDO dollars is also very important. Do the majority of our customers want a moratorium or do they just want to be assured that new homes and businesses are water neutral while we are obtaining a supplemental supply? And finally, should the District stop issuing will-serve letters before they officially enact a policy change, or should we alternately make sure that all conditional will serve applicants are thoroughly informed of the possible impacts to their project if the Board should adopt a moratorium in June?

**POSSIBLE BOARD ACTION**

1. Open public hearing and receive public testimony.
2. By Motion, close the public hearing.

3. By Motion, approve continued issuance of will-serve letters until such time as a public hearing on and action adopting a moratorium has occurred.

4. Take no action (current postponement of consideration of will serve letters will remain in effect).

By ______________________________________

Kim Adamson
General Manager
March 4, 2003

MEMO TO THE BOARD OF DIRECTORS

Subject: Agenda Item No. 5.A.3 Approvals/Authorizations: Policies & Options for Controlling Increased Water Demand – For Information and Direction to Staff

Attachments:
1. Relevant California Water Code Sections Regarding the District’s Authority as a Water Purveyor to Restrict Water Use
   1A. Swanson v. Marin Municipal Water District Appellate Court Decision
2. Legislation Regarding Groundwater Management Plans
3. Santa Cruz County Health and Safety Code Section 7.70.130 (Current and Proposed Revisions) Pertaining to Groundwater Emergencies
5. Santa Cruz County General Plan Policies and Programs Relevant to Water Demand and Supply
7. Estimated Total Number of Wells and Associated Groundwater Pumping in the Soquel/Aptos Area
8. SCWD Production by Aquifer 1993–2002
9. SCWD Total Production 1993–2002
10. Total Precipitation for Calendar Years 1993–2002
12. Water Demand Projections with Sphere of Influence
13. SCWD Historical Service Connections Excluding Fire

At the February 18, 2003 Board meeting, Staff was directed to place an item on the March 4, 2003 agenda in order to allow the Board to discuss policies and options for controlling increased water demand until the District has developed a supplemental water supply. Following is information for the Board to consider in its deliberations.
I. LEGAL AUTHORITY TO RESTRICT WATER USAGE

A. Authority as a Water Purveyor
Soquel Creek Water District is a County Water District formed pursuant to the provisions of Sections 30,000 et. seq. of the California Water Code (The County Water District Act). The following sections are relevant to the analysis:

Section 31020: Provides that a district may do any act necessary to furnish water in the district for any present or future beneficial use.

This section, in theory, would seem to permit “any act” which could include a moratorium on new connections. The operative language, however, is that the power is so that the District can “furnish sufficient water in the district for any present or future beneficial use.” Clearly, the section implies that the function of the district is to take acts which will provide water in the district for present and future beneficial use; not take acts which will ensure that there is not sufficient water for future users. [emphasis added]

Section 31021: Provides that a district may store water for the benefit of the district, conserve water for future use, and appropriate, acquire and conserve water and water rights for any useful purpose.

Again, this section seems to imply that the District has these powers in order to carry out its mission of providing water to the users (both present and future) of the district.

Section 31026: Provides for restrictions on the use of water. It states as follows:

“A district shall have the power to restrict the use of district water during any emergency caused by drought, or other threatened or existing water shortage, and to prohibit the wastage of district water or the use of district water during such periods, for any purpose other than household uses or such other restricted uses as may be determined to be necessary by the district and may prohibit use of such water during such periods for specific uses which the district may from time to time find to be non-essential.”
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This is the only section in the Act which authorizes limitations on the “use” of water. In reading the section, it is fairly clear that it does not authorize a moratorium of new connections, but rather suggests in times of water shortage, from whatever cause, the District may limit the use of all customers until the shortage is overcome.

Nevertheless, it is clear that the District has some general powers under the Act including Section 31001 which states:

“Each district has the power generally to perform all acts necessary to carry out fully the provisions of this division.”

Similarly, Section 31024 provides that:

“A district may establish rules and regulations for the sale, distribution, and use of water and may therein provide that water shall not be furnished to persons against whom there are delinquent water rates.”

Similarly, the California Water Code has some general provisions concerning water shortage emergencies which would apply:

Sections: 350, 351, 353, 356, and 358 of the California Water Code provide:

Section 350: The governing body of a distributor or a public water supply, whether publicly or privately owned and including a mutual water company, may declare a water shortage emergency condition to prevail within the area served by the distributor whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation and fire protection.

Section 351: Excepting in the event of a breakage or failure of a dam, pump, pipe line or conduit causing an immediate emergency, the declaration shall be made only after a public hearing at which consumers of such water supply shall have an opportunity to be heard to protest against the declaration and to present their respective needs to said governing board.

Section 353: Provides that the district may establish regulations and restrictions during the emergency.
Section 355: The regulations and restrictions shall thereafter be and remain in full force and effect during the period of the emergency and until the supply of water available for distribution within such area has been replenished or augmented.

Section 356: Specifically authorizes regulations and restrictions in such an emergency which deny applications for new or additional service connections.

Section 358: Provides for review by a court of such a declaration, but on the limited grounds that the decision of the Board was not fraudulent, arbitrary or capricious.

These sections have been interpreted in at least two cases dealing with the Marin Municipal Water District: Building Industry Assn. v. Marin Municipal Water District, 235 CA3d 1641, 1 R2d 625 (1991); and Swanson v. Marin Municipal Water District, 56 CA3d 512, 128 CR485 (1976). Both these cases upheld a moratorium on new connections by Marin Municipal Water District based on the Board's findings that there was an insufficient water supply to meet any future connections and that there was no potential other source to augment the water supply. The appellate courts (not the California Supreme Court which has never heard such a case) agreed that the District could impose a moratorium under those conditions. The Swanson Court, however, in upholding the moratorium went on to say:

"In passing, it must be noted that, as to Mr. Swanson and others who are similarly situated, we are not unmindful of the somewhat dire consequences which flow from our decision on this matter. Politically, the power to "cut off one's water" by the simple expedient of imposing a moratorium such as the one here involved is a potent weapon in effecting no-growth policy with a community. Since District has neither the power nor the authority to initiate or implement such a policy, the imposition of any restriction on use of its water supply for that purpose would be invalid. We hasten to point out, however, that, as indicated by our decision, we find no evidence in the record before us of any such abuse of authority. Nevertheless, we do foresee a continuing obligation on the part of the District to exert every reasonable effort to augment its available water supply in order to meet increasing demands. Clearly, the Legislature anticipated the need for such a requirement when it limited the duration of such restriction to the period of the emergency and "until the supply of water available for distribution within such area has been replenished or augmented." (§355) [emphasis added]
While a specific case has not been found authorizing a moratorium on new connections based on the County Water District Act, it would seem to follow that a district could impose such a moratorium while it was in the process of developing solutions to a problem which would result in the district being able to “furnish sufficient water in the district for beneficial uses.” Indeed, the provisions above which specify “until the water supply is replenished or augmented” require, as the Swanson Court makes clear, that a moratorium is only appropriate while such solutions are being sought if the other conditions of a water shortage emergency exist. If the District were to impose a permanent moratorium on new connections as a method of resolving its perceived potential overdraft, it must also continue to explore the feasibility of other solutions that may exist. In the opinion of District Legal Counsel, that is the only manner in which a moratorium would be authorized under current California law.

B. Authority as a Groundwater Management Agency
To explore all possibilities with respect to the ability of the District to limit connections, District Legal Counsel reviewed the current AB 3030 provisions. From that review, there does not appear to be any authority for the Joint Powers Authority to limit connections, either on an annual basis, or by project, without a finding that all extraction shall be limited.

A copy of Water Code Section 10753.8 is attached (Attachment 2), which sets forth the components that a plan “may” include. One could argue that “may” is permissive and not all-inclusive, but Counsel believes the better argument is that the list is exclusive and the “may” means that all plans do not have to contain all of these components.

A copy of Water Code Section 10753.9 is also attached (Attachment 2). That section permits the adoption of rules and regulations to implement a groundwater management plan, but specifically prohibits the making of a binding determination of water rights on any person or entity [that is reserved to the State Division of Water Rights] and does not authorize the ability to limit or suspend extractions unless specific findings are made which show that replenishment programs or other alternative sources of water supply have proved insufficient or infeasible to lessen the demand for groundwater.

Neither of those Code Sections deals with limiting “connections,” but rather deals with prohibiting further wells from being drilled or the amount of water that can be taken from existing wells.
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II. CURRENT DISTRICT POLICY

A. **Urban Water Management Plan Update 2000**

1. **Groundwater Emergency Declaration**
   The District adopted Urban Water Management Plan Update 2000 in May 2001. This document, by State Law, must contain a water shortage emergency plan. Because the District depends on coastal aquifers for its water supply, the plan includes a specific policy for addressing groundwater emergencies due to overdraft exceeding the sustainable yield when such degradation threatens the public health, safety and welfare of the community. Very few if any other Urban Water Management Plans currently include specific procedures for addressing groundwater emergencies.

   The District's Groundwater Emergency Response Plan was modeled after the existing Santa Cruz County Groundwater Emergencies legislation, which is contained in the County Well Ordinance adopted in August 2000 (Attachment 3). This was done in order to assure consistency and coordinated actions by both agencies. (Additional amendments to require a finding by the Board of Supervisors that adequate measures are not already being taken by water users and other responsible agencies to alleviate the overdraft situation have been proposed by County Staff.)

   The Groundwater Emergency Response Plan requires that steps taken to restrict usage need to be supported by sound data, and therefore, requires the District to employ the services of one or more qualified groundwater hydrologists to review groundwater monitoring data and periodically report on aquifer conditions. (The District’s hydrologist, Luhdorff & Sculmanini, is in the process of preparing a groundwater basin status report.) The declaration of a groundwater emergency must be based on the findings of a professional hydrologist that groundwater overdraft conditions exist such as to warrant an emergency response. In order to further defend the District’s actions, a peer review panel of two or more qualified groundwater hydrologists is to be formed to review and confirm the findings of the District’s hydrologist prior to declaration of a response that includes mandatory use reductions and a service connection/well moratorium.
Prior to declaring a groundwater emergency, the Plan requires the District to consult with neighboring water agencies, such as Pajaro Valley Water Management Agency, the City of Santa Cruz and Central Water District, to explore joint options and/or programs that could be undertaken or adopted to possibly defray the need for such a declaration. If a cooperative effort cannot successfully address the concerns, then declaring a groundwater emergency will be considered. Declaration of such an emergency requires a resolution of the Board after the public hearing to consider all relevant information such as, but not limited to, the most current groundwater study and recommendations of other water purveyors with an interest in the basin and other governments having water, land-use or other relevant jurisdiction within the basin, and only after the following findings can be made:

a. The groundwater basin is experiencing overdraft conditions;
b. The addition of new wells or the expanded use of existing wells in order to meet supply needs will significantly increase the demand on the affected aquifer and thereby increase the overall overdraft; and
c. The continuation of the overdraft will result in further depletion and degradation of the water resource that can lead to, but is not limited to, impairment of the aquifer or allowing the ingress of poor quality or saline waters.

The Groundwater Emergency Response Plan includes recommended actions beyond those taken by the District in other types of water supply emergencies that affect only District customers (e.g., short-term system failures or breaks, or long-term emergencies that jeopardize the District’s ability to meet demand such as contamination or major disasters). The additional groundwater emergency measures are intended to foster cooperation among all users of the groundwater basin to address the concerns so the burden of reducing the overdraft does not fall exclusively on District customers. Therefore, in addition to those actions identified in the Water Supply Emergency Response Stages, the District’s Board of Directors is also to consider the following potential actions:

1. Request the County to place a moratorium on new wells within the overdrafted aquifer, and request other water purveyors pumping from that aquifer to place a moratorium on service commitments and connections similar to any imposed by the District.
2. Request all other water purveyors utilizing the affected aquifer for water supply to implement water conservation measures and use restrictions consistent with those actions taken by the District to the extent feasible.

3. Request the County to require meters and monitoring of all wells within the impacted area, and require water conservation measures and use restrictions by private well owners consistent with those actions taken by the District to the extent feasible.

4. Request the County to enact restrictions on agricultural water use within the affected area in accordance with its groundwater emergency policy;

5. Take such other actions as authorized and appropriate within the joint powers shared with Central Water District as established by AB 3030 (Water Code Section 10750 et. seq.)

B. Water Shortage Stages and Triggering Mechanisms

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<td>Percent Reduction of Supply</td>
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<td>Water Supply Condition</td>
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<th>Water Rationing Stages and Reduction Goals</th>
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<tr>
<td>Shortage Condition</td>
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<tr>
<td>5 – 15%</td>
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<td>15 – 30%</td>
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<td>30 - 50%</td>
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Consumption Reduction Methods

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<th>Examples of Consumption Reduction Methods</th>
<th>Stage When Method Takes Effect</th>
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<td>Demand reduction program</td>
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<tr>
<td>Restrict for only priority uses</td>
<td>Stage 4</td>
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<tr>
<td>Use prohibitions</td>
<td>All stages</td>
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<td>Water shortage pricing</td>
<td>All stages</td>
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<tr>
<td>Per capita allotment by customer type</td>
<td>Stage 4</td>
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<tr>
<td>Plumbing fixture replacement</td>
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<td>Voluntary rationing</td>
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<td>Mandatory rationing</td>
<td>Stages 2, 3, 4</td>
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<td>Incentives to reduce water consumption</td>
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<td>Education Program</td>
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<td>Percentage reduction by customer type</td>
<td>Stage 4</td>
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<tr>
<td>Restrictions on new or expanded service</td>
<td>Stage 2, 3, 4</td>
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Under current policy, restrictions on new or expanded services are invoked at a Stage 2 emergency.

C. Will Serve Letters

The County’s General Plan, last updated in 1994, contains policies and programs that tie land development to the ability of the water agencies to provide water (see Attachment 5.) Concurrent with project application, the County requires a written commitment from the water purveyor that verifies the capability of the system to serve the proposed development. This written commitment is a letter from the purveyor indicating that based on current conditions that the required level of service for the proposed project will be available prior to the issuance of building permits, or in the case of a subdivision, prior to filing the Final Map or Parcel Map. The County decision-making body may not approve any development project unless it determines that the project will have adequate water supply available (General Plan Section 7.18.2, LCP.) The City of Capitola does not require a “will serve” letter from the District.

Under current procedures, Board approval of the “will serve” letter is required for projects involving parcels of land divided into more than four parcels; condominium developments of more than four units; apartment complexes of more than ten units in one structure or more than one structure on the parcel; and commercial development. Smaller projects within the unincorporated area are granted “will serve” letters by Staff.
The criteria used by Staff in recommending or issuing a "will serve" letter are:

1) Is the property within the District? If not, then would annexation be an appropriate recommendation to LAFCO?

2) Does the property front on an existing main? If yes, does the existing main meet fire flow requirements? If not, is a main extension or variance needed? This consideration includes an assessment of what may be needed for the orderly expansion of the water system to meet future expected growth.

3) Does the elevation of the project provide pressure between 40-80 psi? If not, then a pressure waiver is recorded with the Santa Cruz County Recorders Office and a copy placed in the District files. A pressure regulator (for high pressure) or a private booster pump (for low pressure) would be required as a condition of service.

4) Is there an existing well? If yes, then a requirement to install a backflow prevention device and a requirement to destroy the well may be imposed as a condition of service.

On May 11, 1999, the standard "will serve" letter was modified to reflect conservation requirements and further clarify that the letter does not guarantee service. Relevant statements within the current Board issued "will serve" letter are as follows:

1. "This present indication to serve is valid for a two-year period from the date of this letter; however, it should not be taken as a guarantee that service will be available to the project in the future. Instead, this present indication to serve is intended to acknowledge that, under existing conditions, water service would be available provided the developer, without cost to the District . . ."

2. "Future conditions which may negatively affect the District’s ability to serve the proposed development include, but are not limited to, a determination by the District that existing and anticipated water supplies are insufficient to continue adequate and reliable service to existing customers while extending new service to your development. In that case, service may be denied."

3. A condition has been added that the development must satisfy all conditions for water conservation required by the District at the time of application for service. For projects whereby the developer will be installing landscaping and plumbing fixtures, the following requirements are listed in the "will serve" letter:

   a) "Plans for a water efficient landscape and irrigation system shall be submitted to District Conservation Staff for approval;"
b) All interior plumbing fixtures shall be low-flow and all applicant-installed water-using appliances (e.g. dishwashers, clothes washers, etc.) shall have the EPA Energy Star label;

c) District Staff shall inspect the completed project for compliance with all conservation requirements prior to commencing domestic water service.”

The “will serve” letter for single-family residences that is issued by Staff also states that it is valid for two years and that service is subject to such conditions and reservations as may be imposed at the time final approval for service is granted. It, too, states that the District does not guarantee that service will be available if it has been determined that water supplies are insufficient to continue adequate and reliable service to existing customers while extending service to new development.

Conservation Staff is in the process of developing specific landscape design and water use criteria for new development that will be presented to the Board for approval.

III. ISSUES ASSOCIATED WITH A GROUNDWATER EMERGENCY DECLARATION AND ASSOCIATED ACTIONS TO RESTRICT NEW SERVICES

In order to assist the Board with assessing its options within the District’s current Groundwater Emergency Response Plan process, Staff and Legal Counsel have anticipated questions that Board Members may have with respect to the primary topic of discussion, which is the potential to restrict new services until a supplemental source of supply is developed.

A. Under what conditions may the District mandate restrictions in response to a declared groundwater emergency?

Under the current Groundwater Emergency Plan procedures, the criteria for declaring a groundwater emergency is a finding by the District’s hydrologist that the groundwater basin is experiencing overdraft exceeding the sustainable yield and that such degradation threatens the public health, safety and welfare of the community. The procedures and requirements of the groundwater emergency response plan would enable the District to declare a groundwater emergency and take those actions identified in the Water Supply Emergency Response Stages as deemed appropriate to achieve the level of reduced demand recommended by the professional hydrologist based on the extent and severity of the groundwater emergency. In order to defend its actions if mandatory restrictions were to be imposed, the District would have to establish a case for the need to reduce supply by the prescribed amount listed for each Stage. The finding of the water shortage must be validated. Existing shortage and
projections for future demand should be confirmed to be accurate before a moratorium or rationing is instituted. In order to provide the District valid rationale for imposing restrictions, the plan calls for a peer review panel of two or more qualified groundwater hydrologists to review and confirm the findings and recommendations of the District’s hydrologist.

C. Can the District selectively choose among the actions to be taken or must the full list of actions under each stage be implemented?

Implementation of the water shortage actions should be progressive, i.e. Stage 1 measures should be taken before going to Stage 2, unless it can be supported that one or more of the actions would not be helpful. For example, the District should have evidence of why all of the actions in Stage 1 are not appropriate before proceeding with actions in Stage 2.

If selective actions are taken, e.g. a moratorium on new connections, exclusive of rationing, there needs to be evidence of why those water needs are being singled out. There should be a rational basis for selecting this approach to solving the problem and that approach cannot be arbitrary, capricious or discriminatory.

D. Can the District compel the County and other water purveyors to take similar action to restrict non-District pumping of the groundwater basin?

The District has no legislative authority to do so. The District can however make recommendations to the County and coordinate actions with other governmental agencies. Indeed, the current Groundwater Emergency Plan calls for the District to consult with neighboring water agencies to explore joint options and/or programs that could be undertaken or adopted to possibly defray the need for declaring a groundwater emergency. In the event of a declared emergency, it requires the Board to consider requesting the County and all other water purveyors utilizing the affected aquifer to implement consistent conservation measures and use restrictions consistent with those actions being taken by the District to the extent feasible. Each agency, though, retains the discretion to take emergency actions based on its own judgment and those actions need not mirror each other.

The questions may then be asked whether the County and other water purveyors within the basin currently have the authority to restrict new private wells or connections and potentially take other actions to alleviate overdraft conditions? The City of Santa Cruz has an Urban Water Management Plan that would set forth actions in the event of a declared water shortage. Their plan does not specifically address groundwater emergencies, so it is unclear how they would respond to such a declaration
made by the District. Central Water District is not required to have an emergency response plan because of their size.

Attachment 3 is Section 7.70.130 of the County’s Groundwater Ordinance, which describes the responses for groundwater emergencies. This ordinance establishes the findings needed for the County to potentially prohibit new wells and regulate existing pumping and the actions the County would take to correct the shortage problem. Revisions to this ordinance have been proposed by County Staff to clarify that, in addition to a finding that degradation of water resources threatens public health, safety and welfare of the community, the Board of Supervisors must also find that adequate measures are not already being taken by water users and other responsible agencies to alleviate the overdraft situation. According to County Staff, the County considered having a basin management plan in the Pajaro Valley sufficient to continue issuing well permits. Presumably, the District’s long-term water supply planning efforts to date would create the same scenario for the Soquel-Aptos Basin. The County could find it difficult to single out this basin for declaring an emergency when conditions are so much worse in other groundwater basins.

E. What role can SCWD assume in land use planning as a long-term water supply solution?
There is no question that if the County wants to control growth, it may do so within the limits of its police power, although a permanent moratorium on new development is not likely to stand the test of a constitutional equal protection argument. Nothing, however, in Constitutional or State Water Law appears to authorize, empower or require that a County Water District step into the land use role of the County or offer to create situations by not carrying out its duty to develop water for beneficial future and current use that will assist the County in that endeavor.

F. If the District were to declare a moratorium on new connections, what projects would be included or excluded and how would the effective date be established?
The Model Ordinance for Water Service During a Declared Water Shortage (Attachment 4B) sets forth criteria for making these determinations. Considerations would include: public projects such as parks and schools; remodels or additions; older, unconditioned “will serve” letters; inactive services; projects or existing well operators currently outside the District’s boundaries that would like to annex; and new wells within the District’s boundaries on lots that are more than 200 feet from a water main. These issues would need to be resolved in an equitable and due process manner.
IV. ANALYSIS OF WATER DEMAND CHANGES

A. Production Comparison

Within the last five years, estimates have been made of the total pumping in the Soquel-Aptos groundwater basin, which includes the developed portion of the Purisima Formation and a portion of the Aromas Red Sands aquifer to the District’s southern service area boundary at Cañon del Sol. 1999 estimates of Purisima Formation pumping developed by Santa Cruz County Environmental Health Staff places the District’s pumping at approximately 55% of the total pumping from the Purisima Formation. 1998 estimates of Aromas Red Sands pumping prepared by District Staff places District pumping at approximately 34% of the total pumped from the northern portion of that aquifer. (See Attachment 7.)

The amount of water produced by District wells fluctuates from year to year due to a myriad of factors including the number and types of services, precipitation quantities and patterns, system leaks or large main breaks, system maintenance and construction (such as flushing mains, flow testing fire hydrants, draining storage tanks and cleaning wells), fire suppression activities and conservation. Consequently, there can be as much as a 15% change in production from one year to the next that does not necessarily reflect long-term demand changes.

Certainly precipitation quantities and patterns play a principal role in annual fluctuations. Charts showing annual precipitation over the past ten years and percentage changes in precipitation and production have been prepared in order to illustrate this fact (Attachments 10 and 11.) Of particular note is the three-year period of 1996-1998. Total annual production peaked in 1997, a year with only 26.82 inches of precipitation following a wet year with 48.27 inches of precipitation. The following year, total production plunged by nearly 14% in conjunction with a 101% increase in precipitation (54.01 inches.)

Conservation is another factor in water demand changes. It is estimated that current quantifiable water savings from District conservation programs amount to approximately 75 acre/feet of water saved each year. (This figure is based on 1,869 toilet retrofits and 866 high efficiency washer retrofits.)

In order to evaluate trends, Staff has provided charts showing annual production from 1993 through 2002. For groundwater management purposes, it is important to consider production from each of the two aquifers serving the District in addition to considering total production. The two sources of water are the Purisima Formation, which on average is approximately two-thirds of total production, and the Aromas Red Sands, which provides
approximately one-third of current supply. As can be seen on Attachments 8 and 9, total annual production in calendar year 2002 was 5,614 acre-feet. The Purisima Formation production was 3,420 acre-feet for this past year, and the Aromas Red Sands was 2,194 acre-feet. An apparent trend in recent years of increased annual demand from the Aromas Red Sands aquifer can be attributed to several new subdivisions, the Aptos Academy, expansion of Seascape Resort and shifting portions of Service Area 2 to 3 (i.e., some customers whose previous source of water was the Purisima Formation now receive water from the Aromas Red Sands.

Given the annual fluctuations in production, Staff prepared the following comparison of the most recent five-year period to the previous five-year period.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Purisima</td>
<td>3,501</td>
<td>3,374</td>
<td>-3.6%</td>
</tr>
<tr>
<td>Aromas Red Sands</td>
<td>1834</td>
<td>2044</td>
<td>11.5%</td>
</tr>
<tr>
<td>Total Production</td>
<td>5,335</td>
<td>5,417</td>
<td>1.5%</td>
</tr>
</tbody>
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In 1997, Montgomery Watson prepared a study of future demand projections as part of the District’s long-term supply planning process. Attachment 12 is an update of the Montgomery Watson chart, which plots the upper- and lower-range demand projections through 2030. The Montgomery Watson study assumed that a new source of water supply to supplement groundwater pumping would be developed in 2006 and that demand at that time would be 6,200-6,400 acre feet per year. The study also estimated that demand over the five years following 1996 would continue previous trends and, therefore, increase by 400 to 500 acre-feet per year by 2001. In actuality, total production was approximately 300 acre-feet (more than 5%) below the low-range projection.
B. Increase in Number of Services
Attachment 13 provides the number of services over the past ten years. This information is presented in two ways in order to look at the actual number of services and then to show the "equivalent service units." Approximately 90% of the District's connections are single-family residential. Most of these customers, as well as the majority of commercial and about one-third of the multiple residential customers have 5/8 inch by 3/4 inch "standard" meters. Since larger meters have a larger capacity, connections are also shown in "equivalent service units," meaning that the number of equivalent standard meters is shown by multiplying the number of meters for each size by the capacity factor for that size meter.

The actual number of new connections has increased by 3.1% in the five and one-half years since fiscal year 1997/98. In equivalent service units, the increase has been 3.9%. The average annual number of new connections during this period was 75.5 per year. Using equivalent service units to estimate annual demand per connection, the average annual demand per service unit in 2002 was roughly one-third acre-foot per year. There have been two significant new connections in recent years, Anna Jean Cummings Park and Cabrillo College. Combined, these two services alone impacted demand in the Purisima Formation by 28.5 acre-feet in 2002 (or the equivalent of 85.5 service units.)

V. PROGRAMS USED BY OTHER WATER AGENCIES TO LIMIT THE IMPACT OF NEW SERVICES
In the course of the Board's discussion at its last regular meeting, Staff was requested to research what other agencies have done to control or limit the impact of new services in cases of limited water supplies. In the short time available to prepare this report, the Conservation Coordinator was able to prepare the following information. The programs identified fall into two areas: 1) those that restrict new services based on available water supply and/or system capacity; and 2) those that limit the impact of new services through mandatory conservation measures.

A. Programs Restricting New Services

1. Monterey Peninsula – Monterey Peninsula Water Management District (MPWMD) determines water allocations for eight jurisdictions in Monterey County. Each jurisdiction decides how they are going to use their allocations. The MPWMD does not allow jurisdiction's to transfer allocations.
Example: The City of Monterey currently does not have water allocations available for commercial and residential development. The one exception is Ryan Ranch, which has its own water source for new commercial developments. In other areas of the City, proposed commercial and residential projects are placed on a water waiting list. The City’s waiting list is broken into three categories: Commercial/Industrial, New Residential and Residential Remodel. They use square footage to determine allocations for Commercial/Industrial property and number and type of plumbing fixtures to determine allocations for residential development. While there may be some additional water available in the future for projects on the waiting list, the timing for and amount of any additional water is unknown at this time.

2. Scotts Valley Water District – New meter connections are only issued if the District’s system is capable of supplying four days of water from a combination of storage and wells with the two largest supply wells out of service while maintaining an elevated storage capacity of 1.2 million gallons for fire suppression requirements, based upon 90% of maximum day usage. Capacity is determined each October and again upon each new application for water service.

B. Programs Limiting the Impact of New Services on Water Demand
The programs below have been adopted by agencies to control the impact of new development. These programs require new development to offset additional water demand by retrofitting existing developed properties so that any new development has at least a “zero impact” on water supplies.

1. City of Watsonville – Groundwater Impact Fee
New development pays the full cost of mitigating their new water demand. The mitigation fee is based on the number of bedrooms for new dwellings and average new water demand for commercial and industrial development. New development is required to pay an impact fee of $302 per bedroom. The impact fee is based on mitigating new water demand from development and the reduction of existing demand.

2. City of Lompoc - Retrofit/Rebate Program
Requires new development to offset new water use by retrofitting existing property in the City so that any new development has “zero impact” on the City’s water supply. The retrofit requirement is dependent on the type of project that is being built. New users have the ability to independently perform documented retrofits within the City system, or to pay retrofit fees into a fund that is administered by City staff. The majority of the new development chooses to pay the retrofit fees, which are used to provide
rebates to citizens volunteering to replace high-flow toilets, showerheads and faucet aerators with low-flow fixtures.

Developers make a payment to the City for the material cost of retrofitting sufficient showerheads, kitchen and bathroom sink faucets, up to a maximum of $80.00 for the material cost and $50.00 for the installation cost of each toilet, to offset the expected water use of their development. Developers are also assessed a charge for the City staff/representative of $10.22 per retrofitted unit. The current impact fee for each new single-family home, condominium or apartment is $2,256.00, which equates to the cost of retrofitting eight single-family homes, condominiums, or apartments.

3. City of San Luis Obispo – Water Use Offsets
Water use offsets are intended to allow development that will not increase City water use and to encourage water savings which otherwise would not occur. These offsets comply with the City’s Water Allocation Regulations, which aim for a balance between normal levels of water demand and the amount of supply the City can count on during droughts. The Water Allocation Regulations allow developers to build a project when no water allocations are available, if they make changes in existing development that will permanently reduce water use equal to twice the allocation that would be needed. (Example: If a developer wants to build a single-family residence on a 6,000 square-foot lot, they would need an allocation of 0.30 acre-foot annual water use. In order to build without this water allocation, the developer would be required to install permanent water-saving fixtures that reduce water use in existing development by $2 \times 0.30 = 0.60$ acre-feet.)

RECOMMENDED BOARD ACTION
Review and discuss the information provided in this report and give direction to Staff with respect to any additional information or specific policy issues to be presented to the Board for consideration and possible action.

By Laura D. Brown
General Manager

By Robert E. Bosso
District Legal Counsel
4.3 Public Hearing to Discuss Moratorium on New and Expanded Water Connections
Taj Dufour gave an overview of the staff reports. Mr. Dufour pointed out a correction referencing Section 5 of the Urban Water Management Plan. Water shortage contingency planning is referred to as Attachment 2 but is actually Attachment 4. Just after 2003, the Board’s response to try to cut back demand was the Water Demand Offset Program. A graph dating back to the 1960’s was presented showing historic water production and number of accounts. Even with the reduced production since 2003, the basin is still not achieving protective water levels at the coast, which is really what the District is trying to resolve. The Board’s drive is to protect the aquifer from seawater intrusion. Last year HydroMetrics, the District’s groundwater hydrologists, presented a plan to reduce pumping by about 35% for at least 20 years to restore fresh water levels at the coast. The District is attempting to restore 22,000 acre feet that was withdrawn by over pumping. In order to do that, the District has identified in the 2012 Integrated Resource Plan (IRP) and even in earlier IRP’s, that the proposed Regional Desalination Plant is a possible option to reduce pumping. In the absence of a supplemental supply, on March 19, 2013, the Board adopted Resolution 13-02, indicated its intent to cutback pumping and in doing so without a supplemental supply, the Board would turn to the customers to do that. Existing customers would assist with that reduction but also new connections would participate through a moratorium on new connections and possibly expanded connections such as a remodel or expansion of an existing structure. Staff took the 2003 memo and updated the sections that are relevant. The major changes result from the 2010 Urban Water Management Plan as well as the revised recovery-pumping goal and post recovery-pumping goal. The will serve letters were significantly revised in 2010. The executive summary from the 2012 annual report summarizes there are still conditions in the basin that are at risk of salt-water intrusion. Out of the 13 coastal monitoring wells we have along the coast, 9 of them are below protective levels.

Director Daniels talked about active salt-water intrusion in the eastern part of the District, the Aromas Red Sands portion, and of new concern is the active salt-water intrusion in the Live Oak area in the City’s portion of the Purisma aquifer.

President LaHue wanted people to understand the rationale of why the Board is talking about the Water Demand Offset program tonight and this initial discussion on potential moratorium. President LaHue noted that when he talks to groups the question comes up that if we have this much of a problem how can there be any development.

President LaHue opened the public hearing.

Mr. Don Heichel stated the District’s groundwater Management plan of 2007 estimates 2,250-acre feet a year is pumped by private pumpers in the Purisma. That is 1/3 of the ground water that is extracted from this aquifer.
yet Soquel Creek customers are the only ones that have to pay to cure this. He referred to the slide that shows Santa Cruz water department wells at Pleasure Point. These wells are right on the coast while Soquel Creek customers are paying $18 million dollars for capital project to move five of the production wells inland. Mr. Heichel stated the District is asking Soquel Creek Water customers to pay for Seascape golf course landscaping and Seascape commons landscaping, Cabrillo College is a big pumper, and they are not paying to fix the problem. Mr. Heichel stated that John Ricker, County Water Resource Director has agreed with him in an email that a groundwater replenishment district is the way to go to spread the cost equally among all extractors of groundwater from the Aromas and Purisma aquifers. He feels this should not all be put on Soquel Creek customers when Pajaro Valley agriculture depletes the basin.

Ms. Cherie Bobbe agreed with previous speaker. She wants to know if there is an ongoing effort to cap abandoned wells in the district. In addition, she and many others have been asking Soquel Creek Water District to declare a moratorium for 12 years now. When she ran for the water board in 2001, one of the main platforms was that the District is in a water crisis. Twelve years has now gone by and nothing has changed. The District has done water neutral growth studies but there are other strategies to get serious about other sources than desal. Ms. Bobbe stated in 2009, the Black and Veatch study found that 134-acre feet from a satellite recycling plant at Seascape golf course. She stated if desal isn’t built, which it might not be, the District is going to be asking customers to reduce to 53 gallons per day, but not going to have Seascape do something about their pumping. She was on the Santa Cruz County Water Commission from 2000-2005 and talked about “us behaving regionally with each other” and we are still not doing it.

Mr. Brian Arthur became concerned when he heard about a proposed moratorium, as he had purchased a vacant lot in May 2007 with the expectation of obtaining a building permit to build his dream home within a short period. Several months after the purchase, he submitted plans to the County but before he received approval, his neighbor sued to stop him from building. He went through many hearings and later he won on all counts. After 6 years, over $300,000 in cost, lots of anxiety, he now has a Will Serve letter. He is currently in the second round of revisions with City planning and he will get a permit for his project. His project will use very little water. He plans to use 0.8 gallons-per flush toilets and landscaping is minimal with no lawns or sprinklers.

Mr. Walter Huff of Monte Sereno has property at 3700 Hilltop. He is on the Santa Clara Water Board and a council member for the City of Monte Sereno. He has listened to this discussion and knows the Board has hard choices. He stated the bottom line is we are stuck and at the end of the day, he has always tried to use common sense. He looks at costs and offsets and
understands what the Board is trying to do but he is not sure it is the right thing. He pointed out that in front of this building, there is green grass. Mr. Huff stated he has read the report. It is extensive, it is complicated and he cannot say he understands it by any means, but he is thinking an across the board reduction of at least 20% to 25% is an answer. Mr. Huff is also requesting a Will Serve letter. He bought his property here because he fell in love with the area and plans to live here and be a part of the community.

Ms. Carol Gioia from San Jose bought a lot and has been holding onto it for a very long time. The purpose was that she and her husband were going to build. He passed away in 2006, the recession hit, and she has held onto the property. She saw the proposal of the Aptos Village and was excited because she knew that her land was going to be valuable. She decided this year that she was going to put it up for sale. She received notice of moratorium, which devalued her property completely. She doesn't see how a moratorium will solve this problem. She has seen how Marin has gotten past some hurdles and is going to build a desalination plant. She doesn't understand why the District cannot do the same. She sees that as an answer to all of these problems and she doesn't see how damaging the value of her property is going to harm the water table and believes the desalination plant is the answer, not the moratorium, nor the 30% reduction.

Ms. Tere Thomas has lived on Park Avenue for 40 years. She wants to know how many vacant parcels are left in Capitola.

President LaHue stated he did not know. Mr. Dufour stated that in Capitola there are very little. The District sent out letters to 600 vacant lots in the entire service area. Most of those are unbuildable County identified vacant lots.

Ms. Thomas stated that one of those is hers. It is a small lot and they are thinking of someday building an energy efficient retirement home. She questioned if you pass a moratorium does that mean the Water Demand Offset does not apply. She has contiguous lots of an acre that she currently waters, so if she builds then whatever she uses to water that property. She asked if she will ever be able to build on her property and if not, would she get property tax relief for the reduced value.

President LaHue noted this meeting is for discussing these ideas and no decision has been made. The moratorium issue is being discussed along with the Water Demand Offset program because they influence each other.

Ms. Thomas wanted to know when decisions would be made about her questions.

Director Daniels noted that the Board would talk tonight about what the next steps are. There will probably be additional public hearings going forward depending on what the Board decides to do. If the District goes into
the 35% cutback program, the assumption is that everything that you could
save, you are going to have to save anyway for the 35% cutback. The
moratorium represents no new additional usage and everything that people
are currently using would have to be cut back. In particular, no outdoor
watering would be part of the program. The rationing program includes
customers getting new toilets, new washing machines, and cisterns to catch
the rainwater, gray water hookups.

Ms. Thomas wanted to know if the water rates were going to be increased
again.

President LaHue noted that the last rate increase went into effect for a
period of 3 years and includes a yearly increase.

Director Meyer commented that one of the questions that probably will not
be addressed later in the discussion was if the property value changed by
the action of the Board, can the property owner get a reassessment. That
would be a question for the County assessor and they can tell the
homeowner under what circumstances property values could be reassessed.

Mr. John Chance from Sacramento spoke about the house and lot his
parents bought 50 years ago in La Selva Beach. His mom sold the house but
kept the empty lot hoping it could be built on. The family is concerned
because they do not know what the moratorium will do for them and they
are in a quandary. What he is hearing is that there are very few buildable
lots anyway so why would the District put a moratorium on building on
those lots.

Mr. Terry Fast of Walnut Creek has a vacant lot in La Selva Beach
purchased in the 1960’s with the idea of retiring and hoping to build there.
A moratorium really concerns him, for not only the property value as others
have said, but also concern about not being able to use the lot. He desires to
move down here. He believes desalination is a good option not a
moratorium.

Mr. Owen Lawler has an unconditional Will Serve but he wanted to talk
generally about the concept of moratorium. He thanked staff for a
tremendous job on the staff report. There is a lot of good information and he
really appreciates their work. He feels that the important point is the
amount of water that is contemplated to be saved by a moratorium is not
small, it is insignificant if put in the context of huge demand in this discussion.

Most water that is used in
homes is not in the home, but is the irrigation outside the home. Maybe customers need to look at removing lawns.

**MOTION:** Director Hoernschemeyer: Second: Director Meyer: To close the public hearing. The Motion passed by unanimous roll call vote.

Director Daniels noted that the District needs to start thinking about the Water Demand Offset Policy because it is increasingly unlikely that desal will happen. Desalination is the preferred option of the Board and has been for quite some time because people who have property will continue to be able to use them. Customers who have homes will have enough water to have a decent lifestyle. One of the reasons it is called rationing rather than conservation is because, unlike conservation, it is mandatory, difficult, and expensive and people will have to change their lifestyles. A 35% cutback is huge. The District is seeing growth that was not planned for as developers split lots and build higher density housing. There is also the sociological issues of a new house being built while existing customers have to cut back.  

For years, a moratorium has been discussed because it is a guarantee of seriousness and, in Director Daniels’ opinion, there are no alternatives. Tonight there are four Will Serves on the agenda to approve and those will be active for two more years assuming a moratorium doesn’t apply to them. That’s additional usage built into the system and so far this year the District has had eight Will Serves so the number has been going up. Usage numbers have started to go back up. Staff had predicted that as the financial recovery comes along people would stop conserving as much as they did and usage will go up and it indeed has. After meeting with Ron Duncan last week, Director Daniels noted the rationing plan has built into it the savings from not doing these Will Serves. By continuing this program, we are making it that much harder on customers. Director Daniels noted there are two ways to implement a moratorium. One is through the Urban Water Management Plan and the other is through the water code, where the first requires declaring a groundwater emergency to prove we are over the “sustainable yield”. Director Daniels moved that staff should be directed to draft a moratorium based on the water code.

Director Meyer commented that the laws that are set up so that Soquel Creek Water District is given the job of provided water and not withholding it, so a moratorium goes against the purpose of the District. There are some opponents of desal that would like to stop growth. Director Meyer noted a court decision that concluded withholding of water could not be used to stop growth. It can only be done in an emergency while additional sources of water are trying to be found. The District has been trying to find those sources of water for 30 years. Director Meyer agrees that it is unfair that private well owners continue to pump out of their own wells and there is not a mechanism for the District to make them share the burden of the cutbacks that are needed. The District is starting to talk to the County about those
issues, and believes the County is receptive to doing something that will help regionally to work together with the other agencies.

Director Daniels feels that before proceeding with a specific plan for a moratorium, discussions need to take place with the County and to consider some of these issues. A moratorium will not be decided tonight and would not necessarily begin as soon as a decision is made. One of the options available is to have a “sunset” provision where some amount of additional development could get started by people holding onto lots that are currently empty to give them time to do something with them. That is an option that the Board may consider. Although the growth is not large and is not a substantial drain, there is still the principle involved of handing out water when we don’t know where it is going to come from.

Director Meyers considers that when we give a Will Serve letter the District is saying we can provide adequate water for a normal lifestyle for up to 50 years. That promise cannot be made in good conscience right now without additional water. Director Meyer feels the District should move in the direction of a moratorium, but cautiously because this will disrupt plans, will affect the work of realtors, developers and contractors and the District needs to do this with a minimal amount of impact. One of the measures that might be taken before instituting a moratorium would be to do a peer review of the hydrology. The District’s plan is based upon the conclusions of the hydrologists. Water needs to be kept moving out to sea constantly to keep seawater at bay, and it is not happening enough now and it won’t happen for quite a few years into the recovery program.

Director Jaffe commented this is a decision that although ultimately the Board of Directors is going to have to make, it is really a community decision. Director Jaffe agreed with Director Daniels’ points that although the amount of water saved by imposing a moratorium, although small, may have a cascading effect on water usage. Director Jaffe feels that a moratorium is premature and agrees that we should proceed with looking at ways to actually enact a moratorium. Not only is there the issue of whether or not a desal plant is going to be built and additional supplemental supply available to the District, but there is the issue of whether or not the customers are able to reduce their water usage further. Many customers are already using water prudently, but there are also a significant percentage of customers who are using water at several times the rate of other customers. Director Jaffe supports continuing the steps towards a moratorium but feels it is premature to enact anything at this point.

President LaHue noted that he is of that mind as well, although he would like to discuss the Water Demand Offset program because having some changes to that or having new development have to offset their water use by even a greater factor might help the aquifer as much as a moratorium.
Director Daniels withdrew his motion that staff should be directed to draft a moratorium based on the water code, and moved that the District should start the process of having two hydrologists to look at the groundwater assessment.

**MOTION** Director Daniels: Second: Director Meyer: To bring a request for proposal to the Board to start the process of having two hydrologists do a peer review of the HydroMetrics data. The Motion passed by a unanimous roll call vote.

Director Daniels responded to public comments that District is not behaving regionally. The District is increasing their work with Central Water District on the eastern portion of the aquifer and started working with the City of Santa Cruz and the saltwater intrusion that is starting in the Live Oak wells and how to handle that regionally. The District is also working with the City of Santa Cruz with the water transfer idea. The water replenishment district is on the work plan to look at that. This would apply only to people within the District boundaries. The District is not out to damage the property values of homeowners. Anytime the District were to have a moratorium, whether it’s this year or next year or years into the future there will be someone who is just beginning to develop their property. Director Daniels agreed that desal is a good option but it is not looking very likely to him.

**MOTION** Director Jaffe: Second: Director Daniels: That Staff agendize item looking at and discussing the water usage from the new information that is coming on how water usage is partitioned among customers and what effects that has on water rationing and water restriction program. The Motion passed by a unanimous roll call vote.
Well Construction within the Soquel Creek Water District Service Area. The construction of new wells shall be prohibited on parcels that are both within the area designated as the “Soquel-Aptos Groundwater Basin” (as adopted by separate Board Resolution 233-81) and within 200 feet of a water distribution line of the Soquel Creek Water District.

New Well Construction—Exceptions. The following new well construction shall not be subject to the prohibition of this section:

1. Replacement of existing wells;
2. Construction of a well for agricultural use, monitoring and observation purposes, geothermal heat exchange or cathodic protection; and
3. Well construction on parcels which cannot be served by the Soquel Creek Water District, as determined by the Environmental Health Director based on a written statement from the District clearly demonstrating their inability to provide service.
4. Construction of a well by any public water purveyor. [Ord. 4901 § 1, 2008; Ord. 4593A § 1, 2000].

7.70.130 Groundwater emergencies.

A groundwater emergency shall be declared in areas demonstrated to be experiencing a groundwater overdraft exceeding the safe yield in order to prevent further depletion and degradation of water resources where such degradation threatens the public health, safety and welfare of the community and where the Board of Supervisors finds that adequate measures are not already being taken to alleviate the overdraft situation. The emergency shall have no effect on drilling of monitoring geothermal heat exchange or cathodic protection wells.

(A) Declaration. A declaration of a groundwater emergency shall be made by the Board of Supervisors only after a public hearing. Such an emergency shall be declared by resolution of the Board after the public hearing to consider all relevant information such as, but not limited to, the most current groundwater study, recommendations of water purveyors and the Water Advisory Commission and only after the following findings can be made:

1. The designated area is experiencing a groundwater overdraft exceeding the long-term average annual recharge of groundwater resource;
2. The creation of new wells or the expansion of existing wells will significantly increase the demand on the affected aquifer and thereby increase the overdraft;
3. The continuation of the overdraft will result in further depletion and degradation of the water resource that can lead to, but is not limited to, impairment of the aquifer or allowing the ingress of low-quality or saline waters; and
4. Adequate measures are not being taken by water users and other responsible agencies to alleviate the overdraft situation.
(B) Immediate Measure to Alleviate. In areas where a groundwater emergency is declared, the Board of Supervisors shall take action to establish water conservation measures, to limit construction of new wells, to regulate pumping from or expansion of existing wells, and in order to prevent further depletion and degradation of the affected aquifer. In taking these actions, the Board shall give consideration to the seasonal needs of agriculture including, but not limited to, the following factors.

1. Agriculture’s need to repair, maintain and replace existing wells serving existing agricultural use acreage;
2. Well construction for agricultural use to serve existing agricultural acreage when new parcels are created due to change in legal ownership, split parcels or parcels created by change in zoning laws or other governmental regulations; and
3. The different water requirements of agricultural crops.

(C) Long-Term Measures to Alleviate. The Board shall initiate actions such as, but not limited to, joint power agreements with other agencies with the goal of finding permanent solutions to the groundwater problem.

(D) Duration. A groundwater emergency and the measures enacted to alleviate the emergency shall remain in effect until rescinded as established in subsection (F) of this section.

(E) Annual Review. The establishment of a groundwater emergency and all actions to alleviate the emergency shall be reviewed by the Board of Supervisors within one year of the date of enactment of the measures at a public hearing to decide whether the declaration of emergency shall remain in effect.

(F) Rescinding. A groundwater emergency shall be rescinded by resolution of the Board of Supervisors after a public hearing when one of the following findings is made:

1. Alternative water sources which compensate for the existing overdraft and supply the affected area are developed;
2. A groundwater management program is implemented which will allow for additional development without contribution to groundwater overdraft; or
3. The Board of Supervisors determines that new information is available which indicates that the technical data upon which the original findings were based is no longer valid. [Ord. 4901 § 1, 2008; Ord. 4593A § 1, 2000].

7.70.140 Abatement—Investigation.

The Health Officer may, upon reasonable cause to believe that an abandoned well, a cathodic protection well, or any other well may potentially either contaminate or pollute groundwater, investigate the situation to determine whether such potential threat to groundwater quality or present nuisance does, in fact, exist. The Health Officer shall have the power upon presenting identification to any person apparently in control of the premises to enter upon any such premises between the hours of 8:00 a.m. and 6:00 p.m. to discover or inspect any thing or condition which may indicate such a nuisance or threat to groundwater quality. The Health Officer may examine such premises, things or
Section 5: Water Supply Reliability and Water Shortage Contingency Planning

This section includes two main topics: water supply reliability and water shortage contingency planning. The supply reliability portion includes a general discussion of factors (i.e., climatic, environmental, water quality and legal) that could potentially limit the quantity of water available from Soquel Creek Water District’s (SqCWD) current source of supply through 2030. The quantitative impacts to the water supply from potential climatic, environmental and water-quality issues and the possible methods for addressing these issues are discussed. The water supply reliability portion of this section also describes the management tools that SqCWD has implemented to maximize current resources, identify supplemental sources of supply, and minimize the need to import water from other regions.

This section also includes SqCWD’s Water Shortage Contingency Plan (WSCP). The purpose of the WSCP is to conserve the available water supply and protect the integrity of the water supply, with particular regard for domestic water use, sanitation, and fire protection; and to protect and preserve public health, welfare, and safety. The potential types of water supply shortages are categorized into three groups as follows:

- Short-term supply shortages due to catastrophic emergencies;
- Long-term supply shortages due to prolonged drought, contamination, destruction of critical water supply facilities, etc.
- Supply shortages due to groundwater overdraft.

Catastrophic emergencies that cause short-term supply shortages may be natural or of man-made origin and include but are not limited to the following events: power outages, winter storms, earthquakes, structural failures, contamination and bomb threats. These types of emergencies may limit SqCWD’s immediate ability to provide adequate water service to meet the requirements for human consumption, sanitation and fire protection. Such emergencies are usually limited in duration and, at the time of declaration, are not expected to last more than a few weeks.

Long-term supply shortages can be due to various factors, such as prolonged drought. For the drought scenario, this Urban Water Management Plan (UWMP) considers available supplies during single-dry and multiple-dry years. Conditions during these years are based on historical records of annual runoff for the watershed in which SqCWD obtains its groundwater supply. Other long-term supply shortage scenarios are included with the drought discussion because the water restriction stages, consumption reduction measures and prohibitions for each are similar.
Lastly, groundwater supply shortages due to overdraft affect many or all users of the groundwater basin, not just SqCWD customers. Overdraft is the result of ongoing pumping in excess of the recharge capabilities of the aquifer, i.e., in excess of the sustainable yield. The undesirable result of overdraft is a combination of chronically depressed coastal groundwater levels, reversed seaward gradients, and degraded groundwater quality. A groundwater emergency may be declared when it is demonstrated that a groundwater overdraft exceeding the sustainable yield threatens the public health, safety, and welfare of the community.

For the three types of water supply shortages (short-term, long-term, and groundwater overdraft), the following information is provided: (1) actions SqCWD will undertake to prepare for and implement during an interruption of water supply; (2) mandatory prohibitions against specific water use practices; (3) consumption reduction methods that would achieve a 50 percent reduction in water use in the most restrictive stages; (4) penalties or charges for excessive use; and (5) assessment of the impacts of prohibitions and restrictions on SqCWD revenues and the actions that may be taken to address these impacts.

Please note that there is significant overlap in regards to stages, target curtailment levels, mandatory prohibitions, and consumption reduction methods for each of the three types of shortages.

**Water Supply Reliability**

**Required Elements — Water Supply Reliability**

*Checklist Item #5. An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions (10620(f)).*

The SqCWD actively manages groundwater resources in the Soquel-Aptos area using a combination of management tools that were first established in the 1996 Soquel-Aptos Area Groundwater Management Plan, which was updated and expanded in 2007. As a result of SqCWD’s ongoing groundwater monitoring program, signs of coastal overdraft were detected early and the District adopted the current Integrated Resources Plan (IRP) in 2006. The goal of the IRP is to characterize the groundwater supply shortage, to evaluate and identify programs and methods to best protect and maximize existing resources, and to evaluate potential supplemental-supply options and identify those that merit further evaluation. The final IRP sets forth the following components for meeting this goal:

- **Demand Management**: continued implementation of existing and new conservation and drought management programs
- **Conjunctive Use Supply Project**: evaluation and potential development of a regional seawater desalination facility with the City of Santa Cruz
• **Local Supplemental Supply Alternatives:** if determined to be needed, preparation of project-level feasibility studies for a modified Soquel Creek diversion project and/or local-only desalination as alternatives, or in addition to, the regional desalination project; and development of site specific recycled water supplies for non-potable irrigation use

• **Groundwater Management:** continued monitoring/assessment of coastal groundwater quality and levels under the guidelines provided in the Groundwater Management Plan for the Soquel-Aptos Area (SqCWD and CWD, 2007); redistribute groundwater pumping as identified in the Well Master Plan to alleviate the potential for saltwater intrusion; and support recharge protection and enhancement projects and policies

The IRP supplemental supply components are to be implemented in phases to meet the growing shortages that could occur in the future, to respond to changes in water supply conditions as individual components are carried out, and to facilitate periodic updates to the IRP.

Since its adoption, SqCWD has sustained a focused effort to implement the IRP. A description of tasks accomplished under the IRP is included in Section 2. Continued implementation of the IRP components will maximize resources and minimize the need to import water from other regions, which is currently infeasible.

**Checklist Item #23.** For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable (10631(c)(2)).

In Table 4-2, SqCWD identifies “supplier-produced groundwater” as the current source of supply. Supplier-produced groundwater is the groundwater from two geologic formations (the Purisma Formation (Purisma) and the Aromas Red Sands (Aromas)) that underlie the SqCWD service area. As shown below in **Table 5-1**, consistent future use of both the Purisma and the Aromas may be affected by climatic (i.e., climate change) and environmental factors (i.e., groundwater overdraft and seawater intrusion). Additionally, consistent future use of the Aromas may be affected by water quality factors (i.e., hexavalent chromium). These factors are discussed below in greater detail.
Table 5-1
Factors Resulting in Inconsistency of Supply

<table>
<thead>
<tr>
<th>Water Supply Sources&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Specific Source Name</th>
<th>Climatic</th>
<th>Legal</th>
<th>Environmental</th>
<th>Water Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier-Produced Groundwater (Current Source)</td>
<td>Purisima Formation</td>
<td>✓</td>
<td>Not expected to affect available supply</td>
<td>✓</td>
<td>Not expected to affect available supply</td>
</tr>
<tr>
<td></td>
<td>Aromas Red Sands Aquifer</td>
<td>✓</td>
<td>Not expected to affect available supply</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Desalination (Potential Future Source)</td>
<td>Regional with City of Santa Cruz</td>
<td>These factors are not expected to affect the consistency of supply that would be available from the proposed desalination plant. SqCWD would receive less water from the proposed desalination plant during times of drought. However, the total volume of water produced from the desalination plant would not be affected by drought.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Footnote:
<sup>a</sup> From Table 4-2.

**Climatic Factors**
Consistent future use of the Aromas and Purisima groundwater sources may be affected by climate change. Climate change forecasts indicate an increase in the intensity of storms, potentially leading to higher runoff and less recharge of groundwater basins. Additionally, projected rises in sea level may increase the risk and extent of seawater intrusion. Potential impacts to SqCWD’s groundwater supply from climate change are discussed in Section 7. Reductions in future groundwater supply due to impacts associated with climate change cannot be quantified at this time.

**Environmental Factors**
As discussed in Sections 2 and 4, the coastal aquifer underlying the Soquel-Aptos area is in a state of overdraft. Coastal groundwater levels are below elevations that protect the basin from seawater intrusion (HydroMetrics LLC, 2009a). This potential for seawater intrusion indicates that collective pumping by numerous public and private users has exceeded the sustainable groundwater yield of the Soquel-Aptos area over the long-term. In order to recover groundwater levels to protective elevations and eliminate overdraft, SqCWD must reduce pumping to levels below the sustainable yield (HydroMetrics WRI, 2011) and other pumpers must not further impact the overdrafted portion of the basin. The IRP and the 2007 Groundwater Management Plan update suggested the total sustainable yield for
Soquel Creek Water District was not more than 4,800 acre-feet per year (afy) (3,000 afy from the Purisima and 1,800 afy from the Aromas). Recent modeling and evaluations by Hydrometrics WRI (2011) indicate that the sustainable yield in the Purisima is approximately 2,500 afy and the sustainable yield in the Aromas could be just several hundred acre-feet, which is significantly less than the 1,800 afy previously projected. Additional modeling and evaluations are still underway to more fully characterize protective elevations and the sustainable yield within portions of the Aromas aquifer used by SqCWD.

**Water Quality Factors**
Consistent future use of the Aromas may also be affected by the presence of naturally-occurring hexavalent chromium as discussed in Section 2, and in the section below (Checklist Item #52) titled “Water Quality”.

**Legal Factors**
SqCWD does not anticipate any legal factors (i.e. adjudication) that would have an impact upon the future supply of groundwater from the Aromas or the Purisima.

**Response to Factors**
In response to the climatic, environmental and water quality factors mentioned above that could potentially impact the consistency of SqCWD’s existing groundwater supply in the future, SqCWD is advocating continued conservation and pursuing a supplemental supply from a proposed desalination plant. SqCWD does not anticipate any legal, environmental, water quality or climatic factors that would have a limiting effect on the amount of supply expected to be available to the SqCWD from the proposed desalination plant.

Additionally, SqCWD completed a Well Master Plan and will be developing up to five new wells to redistribute pumping inland to reduce the risk of seawater intrusion.

**Required Elements — Water Quality**
*Checklist Item #52. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability (10634).*

**Current SqCWD Water Quality Issues**
The SqCWD annually publishes a Consumer Confidence/Water Quality Report that presents the results of test data from all the District’s groundwater wells in the Purisima and Aromas, plus any water purchased from Central Water District. In 2010, the SqCWD tested for 127 constituents to ensure the water meets State and Federal drinking water standards.
During the 2005-2010 reporting period for this UWMP, groundwater from SqCWD wells was within current primary Maximum Contaminant Levels (MCLs). The constituents with primary MCLs that have been detected in the past and are closely monitored include naturally occurring elevated metals (i.e. arsenic in the Purisima and chromium (total) in the Aromas) and nitrates. The source of arsenic and chromium in the groundwater is the erosion of natural deposits, whereas nitrates are primarily present due to runoff and leaching from fertilizer use and septic tanks. A few naturally occurring constituents exceed secondary drinking water standards (i.e., iron and manganese in the Purisima), and other naturally occurring constituents are closely monitored even though they are currently unregulated (i.e. hexavalent chromium or chromium-6).

Groundwater from 3 of 15 wells is currently treated to remove arsenic even though historic concentrations do not exceed the primary MCL for this constituent. Groundwater from 8 of 15 wells is currently treated to reduce iron and manganese concentrations to levels below secondary MCLs for these constituents. Groundwater treatment for all three of these constituents consists of oxidation and filtration.

**Future SqCWD Water Quality Issues**

Of the constituents discussed above, the one that may have the greatest impact on future supply reliability is the presence of naturally occurring chromium-6 in the Aromas. As discussed in Section 2, chromium-6 is currently regulated as total chromium which has a State MCL of 50 parts per billion (ppb) and a Federal MCL of 100 ppb. Since 2001 when SqCWD first began testing for chromium-6, it has been detected in six of the 15 active wells within SqCWD service areas 3 and 4. Measured levels within the six wells ranged from 0.42 ppb to 40 ppb, all below the current State and Federal MCLs for total chromium. However, the State set a Public Health Goal (PHG) of 0.02 ppb for chromium-6 on July 27, 2011. The adopted PHG will be used to develop a State MCL for chromium-6. As an MCL must be set at a level as close as is technically and economically feasible to a constituent’s PHG, it is likely that SqCWD will have to conduct some level of chromium-6 treatment in the Aromas to continue using this source of water in the future. The U.S. Environmental Protection Agency (US EPA) is also developing a federal MCL for chromium-6, though the State MCL will likely be more stringent. Depending upon the MCL adopted by the State and the US EPA, future challenges for SqCWD include the availability of treatment technology that can remove chromium-6 to very low levels and the cost of the treatment technology.

A State MCL for chromium-6 could be in place by the 2015 or 2020 UWMP reporting period. As the MCL for chromium-6 has not been finalized, it is difficult to predict the volume of water that may be affected. However, it is possible that the majority of the water pumped from the Aromas (approximately one third of the District’s total groundwater supply or an average of about 1,600 acre-feet per year) would require
treatment to remove chromium-6. When the treatment technology capable of meeting these low levels is developed, the cost of treatment will need to be evaluated in comparison to other potential sources of supply.

**Water Shortage Contingency Plan**

As previously mentioned, SqCWD's Water Shortage Contingency Plan (WSCP) addresses three types of water supply shortages that could potentially impact SqCWD and its customers:

1. Short-term water supply shortages due to natural or man-made catastrophic emergencies;
2. Long-term supply shortages due to prolonged drought, contamination, destruction of critical water supply facilities, etc.; and
3. Supply shortages due to groundwater overdraft.

The provisions of the WSCP apply to all persons, customers, and property utilizing water provided by the SqCWD. The terms “person” and “customer” as used in the Plan include individuals, businesses, public agencies, corporations, partnerships, associations, and all other legal entities.

A draft model resolution establishing criteria to declare a water shortage emergency is included as Appendix O.

**Required Elements — Emergency Planning for Short-Term Water Shortages**

Checklist Item #37. Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster (10632(c)).

Short-term water supply shortages may have a natural or man-made origin and include but are not limited to the following events: failures in the water system that disrupt production and delivery capability, power outages, winter storms, earthquakes, structural failures, contamination (physical, biological, or radiological) and bomb threats. These types of emergencies may limit SqCWD’s immediate ability to provide adequate water service to meet the requirements for human consumption, sanitation and fire protection. Such emergencies are usually limited in duration and, at the time of declaration, are not expected to last more than a few weeks. The actions SqCWD has taken to prepare for and respond to these types of emergencies are discussed below.

**Actions to Prepare for Catastrophic Interruption of Water Supplies**

In accordance with Section 1433(b) of the Safe Drinking Water Act (SDWA) as amended by the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, California Health and Safety Code (Section 116460, 116555 and 116750), and California Waterworks Standards (Section 64560), SqCWD has
### Table 5-3, Continued

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>Normal Yr.</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
<th>Stage 4</th>
<th>Stage 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>REVENUES &gt; EXPENDITURES</td>
<td>2011-12</td>
<td>5%</td>
<td>15%</td>
<td>25%</td>
<td>35%</td>
<td>50%</td>
</tr>
<tr>
<td>LESS: CAPITAL IMPROVEMENTS(b)</td>
<td>$3,047,200</td>
<td>$2,670,500</td>
<td>$1,867,000</td>
<td>$779,700</td>
<td>$(600)</td>
<td>$(1,157,700)</td>
</tr>
<tr>
<td>SURPLUS (DEFICIT)</td>
<td>$12,415,200</td>
<td>$12,415,200</td>
<td>$12,052,000</td>
<td>$10,964,700</td>
<td>$10,184,400</td>
<td>$9,027,300</td>
</tr>
<tr>
<td>BEGINNING RESERVE</td>
<td>$(9,368,000)</td>
<td>$(9,744,700)</td>
<td>$(10,185,000)</td>
<td>$(10,185,000)</td>
<td>$(10,185,000)</td>
<td>$(10,185,000)</td>
</tr>
<tr>
<td>ENDING RESERVE (c)</td>
<td>$5,622,000</td>
<td>$5,245,300</td>
<td>$4,805,000</td>
<td>$4,805,000</td>
<td>$4,805,000</td>
<td>$4,805,000</td>
</tr>
</tbody>
</table>

Footnotes:
(a) Amount reduced by the percentage indicated in each Stage level.
(b) Capital Improvement Projects reduced to maintain $4,805,000 Reserve level ($3,805,000 restricted to Certificate of Participation projects in 2012-13 and $1 million in a Rate Stabilization Reserve to maintain debt coverage ratio).
(c) Reserve reduced to fund deficit; see footnote (b) for clarification of Ending Reserve levels.

### Checklist Item #42.

A draft water shortage contingency resolution or ordinance (10632(h)).

A draft model resolution establishing criteria to declare a water shortage emergency is included as Appendix O.

### Required Elements - Emergency Planning for Long-Term Water Shortages

Long-term water supply shortages can result from prolonged drought, contamination, or emergencies that destroy critical water supply facilities, or other situations that jeopardize the District’s ability to meet normal demand for human consumption, sanitation and fire protection for the foreseeable future. Since there is generally time to prepare for such issues, declaration of a long-term water-shortage emergency involves Board participation and approval.

The Board of Directors shall make the determination of the need to declare long-term water shortage emergencies and authorize implementation of the applicable provisions of the WSCP as necessary to protect public health, safety, and welfare. Prior to implementing mandatory measures in response to a long-term emergency, the Board of Directors shall conduct a public hearing on the proposed measures to be taken to reduce demand prior to imposing such measures.

When declared, it is anticipated that a considerable period of time will pass until normal supply production can be resumed (e.g. groundwater levels reach acceptable recovery after drought, contamination is removed, or lost water supply facilities are replaced).
Checklist Item #22. Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following: (A) an average water year, (B) a single dry water year, (C) multiple dry water years (10631(c)(1)).

Although the groundwater in the Soquel-Aptos area is in overdraft, the SqCWD has not experienced a water supply shortage on a short-term regular annual, monthly, or peak period basis due to drought periods. Table 5-4 indicates the water years that represent an average rainfall year (1984), single driest year (1990), and multiple-dry water years (1987 - 1990) for the Soquel-Aptos area.

Table 5-4
Basis of Water Year Data

<table>
<thead>
<tr>
<th>Water Year Type</th>
<th>Base Year(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Water Year</td>
<td>1984</td>
</tr>
<tr>
<td>Single-Dry Water Year</td>
<td>1990</td>
</tr>
<tr>
<td>Multiple-Dry Water Years</td>
<td>1987 - 1990</td>
</tr>
</tbody>
</table>

Table 5-5 shows that 100 percent of the groundwater supply would be available during these dry years relative to a normal rainfall year. This is due to the capacity of the groundwater aquifers to withstand a relatively short-term drought.

Table 5-5
Supply Reliability – Historic Conditions (acre-feet/year)

<table>
<thead>
<tr>
<th>Average/Normal Year</th>
<th>Single Dry Year</th>
<th>Multiple Dry Water Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Year 1</td>
</tr>
<tr>
<td>4,610 a</td>
<td>4,610 a</td>
<td>4,610 a</td>
</tr>
</tbody>
</table>

Percent of Average/Normal Year: 100% 100%

Footnote:
a The 4,610 acre-feet/year value represents the average of the following two production periods: the 5-year production period from 2004-2008, and the 2-year production period of 2009-2010. See Section 4 for additional description of the methodology used to calculate the baseline 4,610 afy value.

Although SqCWD has not experienced short-term supply impacts from multi-year periods of low rainfall, modeling was recently performed to estimate the long-term impacts of drought on groundwater recharge rates. The SqCWD contracted with its hydrologic consultant, HydroMetrics WRI, to perform modeling to provide input for designing a drought curtailment policy. HydroMetrics WRI (2011) developed a model that can be used to estimate the relationship between rainfall and deep groundwater recharge in the Soquel-Aptos area. The model uses the Precipitation-Runoff Modeling System (PRMS) model, which is an established model code from the U.S. Geological Survey.
The modeling results indicate that the effects of prolonged drought have a significant effect on recharge rates. For example, a median water year like 1984 was modeled to have contributed 5,932 acre-feet of deep recharge and a single-dry year like 1990 was estimated to contribute approximately 767 acre-feet of deep recharge. Thus, SqCWD has devised, as part of this WSCP, an approach to lessen the long-term impacts of prolonged drought and to capitalize on drought awareness to help save water.

**Checklist Item #35. Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage (10632(a)).**

The modeling effort described above, in conjunction with input from District staff and the Board, resulted in the long-term water shortage stages shown in Table 5-6.

<table>
<thead>
<tr>
<th>Stage No.</th>
<th>Water Supply Conditions</th>
<th>% Shortage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Water shortage alert - voluntary curtailment</td>
<td>0-5%</td>
</tr>
<tr>
<td>2</td>
<td>Water shortage warning - mandatory curtailment</td>
<td>5-15%</td>
</tr>
<tr>
<td>3</td>
<td>Emergency water shortage - mandatory curtailment</td>
<td>15-25%</td>
</tr>
<tr>
<td>4</td>
<td>Severe water shortage - mandatory curtailment</td>
<td>25-35%</td>
</tr>
<tr>
<td>5</td>
<td>Critical water shortage - mandatory curtailment</td>
<td>35-50%</td>
</tr>
</tbody>
</table>

**Table 5-7** provides some of the mandatory prohibitions that are in effect during different water shortage stages.

<table>
<thead>
<tr>
<th>Examples of Prohibitions</th>
<th>Stage When Prohibition Becomes Mandatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaks</td>
<td>Always in effect</td>
</tr>
<tr>
<td>Exterior washing</td>
<td>Stage 2</td>
</tr>
<tr>
<td>Flushing of mains</td>
<td>Stage 2</td>
</tr>
<tr>
<td>Filling of ornamental fountains</td>
<td>Stage 3</td>
</tr>
<tr>
<td>Turf irrigation</td>
<td>Stage 4</td>
</tr>
<tr>
<td>Filling of nonpublic pools and hot tubs</td>
<td>Stage 4</td>
</tr>
<tr>
<td>Filling of public pools and hot tubs</td>
<td>Stage 5</td>
</tr>
<tr>
<td>All outdoor irrigation</td>
<td>Stage 5</td>
</tr>
</tbody>
</table>

*See Table 5-9 for additional examples.*
Table 5-8 indicates some of the consumption reduction methods for the stages of a long-term water shortage.

<table>
<thead>
<tr>
<th>Consumption Reduction Methods</th>
<th>Stage When Method Takes Effect</th>
<th>Projected Reduction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary actions</td>
<td>Stage 1</td>
<td>5% +</td>
</tr>
<tr>
<td>Enhanced outreach</td>
<td>Stage 2</td>
<td>5-10%</td>
</tr>
<tr>
<td>Increase water waste patrol</td>
<td>Stage 2</td>
<td>up to 5%</td>
</tr>
<tr>
<td>Landscape water budgets</td>
<td>Stage 3</td>
<td>5%+</td>
</tr>
<tr>
<td>Residential/commercial water rationing</td>
<td>Stage 3/4/5</td>
<td>20%+</td>
</tr>
</tbody>
</table>

See Table 5-9 for additional examples.

Table 5-9 summarizes the WSCP for long-term water supply shortages due to prolonged drought. The WSCP is triggered based on rainfall amounts, and in the later stages (4 and 5), also takes aquifer water levels into consideration. For long-term shortages that are not caused by drought, the stages, curtailment targets, SqCWD actions and customer demand reduction measures remain the same; however, the trigger conditions are based on production (i.e., as a percentage of normal production) as opposed to rainfall.

As shown in Table 5-9, there are five curtailment stages for long-term supply shortages with target cutback levels ranging from 5% to 50%. The trigger levels shown for each curtailment stage are based on cumulative rainfall amounts (ending in March of the current year); however the stages and curtailments could be related to any long-term shortage cause (e.g., water-quality issues, etc.). Note also that the SqCWD Board may call for Stage 2 curtailment, even if the rainfall values criteria in Table 5-9 are exceeded, if the City of Santa Cruz announces Stage 2 curtailment. The concept is that since the groundwater basin already is in overdraft, SqCWD should capitalize on the momentum from the City of Santa Cruz. The customer demand reduction measures and key SqCWD actions for long-term water supply shortages identified in Table 5-9 are meant to serve as a guide and may be modified due to specific conditions.
### Table 5-9
**Summary of Demand Reduction Actions and Measures**

<table>
<thead>
<tr>
<th>Shortage Stage and Curtailment Target</th>
<th>Trigger Conditions&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Key District Communication and Operating Actions</th>
<th>Customer Demand Reduction Measures</th>
</tr>
</thead>
</table>
| **Stage 1:** Water Shortage Alert    | Rainfall total as of March 31: < than median (26.2 inches) for current year | • Undertake public information and advertising campaign  
• Promote rebates  
• Publicize water waste prohibitions and suggestions to reduce water use  
• Coordinate conservation with other agencies | • Voluntary water conservation requested of all customers  
• Enforce water waste ordinance |
| **Curtailment Target 5%**            |                                 |                                                 |                                   |
| **Stage 2:** Water Shortage Warning  | Stage 1 PLUS Rainfall total as of March 31: <= 50 in. over two yrs; or <= 80 in. over three yrs; or <= 109 in. over four yrs; or <= 137 in. over five yrs | • Intensify public information campaign  
• Send direct notices to all customers  
• Contact landscape managers to inform them of the situation and heightened enforcement  
• Contact large users (mail/phone/email)  
• Optimize water sources; intensify system leak detection and repair; suspend flushing (except as necessary for health & safety)  
• Increase water waste patrol and customers site visits | • Stage 1 measures +  
• Work with large landscapes on adhering to ordinances  
• Prohibit exterior washing of structures (only for surfaces for sanitation and health purposes)  
• Increase leak violation enforcement |
| **Curtailment Target 15%**           |                                 |                                                 |                                   |
| **Stage 3:** Emergency Water Shortage| Stage 1 PLUS Rainfall total as of March 31: <= 68 in. over three yrs; or <= 97 in. over four yrs; or <= 129 in. over five yrs | • Expand, intensify public information campaign  
• Establish conservation hotline  
• Provide regular media briefings; publish weekly consumption reports  
• Prepare to modify utility billing system and bill format to accommodate residential rationing, penalty rates – starting in Stage 3 or 4  
• Hire additional temporary staff in customer service, conservation  
• Give advance notice of possible moratorium on new connections if shortage continues  
• Contact surrounding water providers about purchasing water  
• Work with large users to reduce consumption  
• Work with other water providers and users of the basin to help reduce consumption  
• Stop irrigation on District owned property  
• Increase rebate promotion  
• Enhance usage monitoring | • Stage 1 & 2 measures +  
• Work with large landscapes on water budgets  
• Institute water rationing for residential customers if necessary  
• Require commercial customers to display “save water” signage and develop conservation plans  
• Increase leak detection and repair  
• Prohibit water use for aesthetic purposes (i.e., for ornamental fountains, ponds, etc.) except where necessary to support life  
• Prohibit restaurants from serving water except upon patron request  
• No vehicle washing, except at sites that recycle 80% or more of water used |

<sup>a</sup> Conditions as of March 31:
### Table 5-9 (Continued)
Summary of Demand Reduction Actions and Measures

<table>
<thead>
<tr>
<th>Shortage Stage and Curtailment Target</th>
<th>Trigger Conditions&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Key District Communication and Operating Actions</th>
<th>Customer Demand Reduction Measures</th>
</tr>
</thead>
</table>
| **Stage 4:** Severe Water Shortage Emergency Curtailment Target 35% | Rainfall total as of March 31: <= 80 in. over four yrs; or <= 107 in. over five yrs; or Stage 2/3 AND water levels are dropping | • Contract with outreach consultant to carry out major publicity campaign  
  • Continue to provide regular media briefings  
  • Open centralized drought information center  
  • Promote increase in graywater use to save landscaping  
  • Scale up appeals staff and frequency of hearings as needed  
  • Expand water waste enforcement to 24/7  
  • Develop strategy to mitigate revenue losses and plan for continuing/escalating shortage  
  • No new, additional, or expanded water service, except for health and safety issues | • Stage 1, 2 & 3 measures +  
  • Implement or reduce residential water allocations  
  • Institute water rationing for commercial and institutions (residential also if not already done)  
  • Minimal water budgets for large landscapes  
  • Prohibit turf irrigation  
  • Rescind hydrant and bulk water permits  
  • No filling of nonpublic pools/hot tubs  
  • No grace period for waste violations |
| **Stage 5:** Critical Water Shortage Emergency Curtailment Target 50% | Water levels are significantly dropping | • Continue all previous actions  
  • Implement crisis communications plan and campaign  
  • Activate emergency notification lists  
  • Coordinate with CA Department of Public Health regarding water quality and public health issues and with law enforcement and other emergency response agencies to address enforcement challenges  
  • Continue water waste enforcement 24/7  
  • Flow restrict accounts exceeding ration/allocation | • Stages 1-4 measures +  
  • Further reduce residential water allocations  
  • Reduce commercial water allocations  
  • Prohibit all outdoor irrigation  
  • No water for recreational purposes, including filling public pools/hot tubs  
  • Continue all measures initiated in prior stages as appropriate  
  • Lock off all dedicated irrigation accounts |

<sup>a</sup> Rainfall is measured at the California Irrigation Management Information System (CIMIS) Station No. 104 (De Laveaga, Santa Cruz, CA).

The probabilities of the five drought stages shown in Table 5-9 are as follows (derived from HydroMetrics, WRI, 2011):

- Stage 1 – 50% of the time.
- Stage 2 – 19% of the time.
- Stage 3 – 13% of the time.
- Stage 4 – 3% of the time.
- Stage 5 – unlikely, very low probability.
Penalties for Excessive Use
SqCWD’s three-tiered rate structure discourages excessive water consumption at all times. Depending on the severity and anticipated duration of the shortage, SqCWD may institute an allocation program if necessary. SqCWD has the ability to establish restrictions or discontinue service in the case of repeat offenders under the Water Code of the State of California.

Checklist Item #36. An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency’s water supply (10632(b)).

An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the Soquel-Aptos area is shown below in Table 5-10. As the amount of water stored in the aquifers is relatively large compared to a multiple-year rainfall shortage, an evaluation indicates that SqCWD should be able to meet its water supply needs on a short-term basis. Additionally, SqCWD would implement proactive curtailment actions as noted, which should lower the demand.

<table>
<thead>
<tr>
<th>Water Supply Source</th>
<th>Average/Normal Water Year Supply</th>
<th>Multiple Dry Water Year Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Year 2011</td>
</tr>
<tr>
<td>Groundwater</td>
<td>4,610^a</td>
<td>4,610^a</td>
</tr>
</tbody>
</table>

Footnote:  
^a See Table 5-5 footnote or Section 4 to see how this baseline value was calculated.

Checklist Item #43. A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis 10632(i).

The water savings from implementation of the WSCP will be determined based on measurements of consumption from water meters and well production meters. Although all meters will be read at least bimonthly, some of the larger accounts may be read on a more frequent basis. At first, the cumulative consumption for the various sectors (e.g., residential, commercial, etc.) will be evaluated for reaching the target level. Then if needed, individual accounts will be monitored. Weather and other possible influences may be accounted for in the evaluation.

Checklist Item #53. Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and
demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier (10635(a)).

Tables 5-11, 5-12, and 5-13 indicate the forecasted available water supplies over the next 20 years during normal, dry, and multiple dry years. The forecasts do not show any predicted water shortfalls over the 20-year timeframe, even during a multi-year drought. However, this forecast is predicated on a supplemental supply being available, such as the proposed desalination plant. Without a supplemental water supply, the SqCWD would be short water over the 20-year horizon, even in a normal year. The shortage amounts (if no supplemental water is available) and percentages can be approximated as the amounts shown as “desalinated water” in Tables 5-11 and 5-12. As footnoted in Table 5-13, during a multi-year drought, even with a supplemental supply, some of the demand would be reduced due to the curtailment actions outlined in Table 5-9.

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier-produced</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>groundwater</td>
<td>4,448</td>
<td>3,000</td>
<td>3,000</td>
<td>3,000</td>
</tr>
<tr>
<td>Desalinated water</td>
<td>0</td>
<td>1,392</td>
<td>1,254</td>
<td>1,116</td>
</tr>
<tr>
<td>Supply Total</td>
<td>4,448</td>
<td>4,392</td>
<td>4,254</td>
<td>4,116</td>
</tr>
<tr>
<td>Demand (after</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>normal savings)</td>
<td>4,448</td>
<td>4,392</td>
<td>4,254</td>
<td>4,116</td>
</tr>
<tr>
<td>Difference as % of</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demand</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Footnote:

* Calculated using a 2010 baseline demand value of 4,610, see Section 4 for methodology.
### Table 5-12
Supply and Demand Comparison – Single Dry Year (acre-feet/year)

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier-produced groundwater</td>
<td>4,448</td>
<td>3,000</td>
<td>3,000</td>
<td>3,000</td>
</tr>
<tr>
<td>Desalinated water</td>
<td>0</td>
<td>1,392</td>
<td>1,254</td>
<td>1,116</td>
</tr>
<tr>
<td><strong>Supply Total</strong></td>
<td>4,448</td>
<td>4,392</td>
<td>4,254</td>
<td>4,116</td>
</tr>
<tr>
<td><strong>Demand (after normal savings)</strong></td>
<td>4,448</td>
<td>4,392</td>
<td>4,254</td>
<td>4,116</td>
</tr>
<tr>
<td>Difference as % of Supply</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Demand</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Footnotes:
- a Assumes SqCWD would not call curtailment in a single-dry year.
- b Calculated using a 2010 baseline demand value of 4,610, see Section 4 for methodology.

### Table 5-13
Supply and Demand Comparison – Multiple Dry-Year Events (acre-feet/year)

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier-produced groundwater</td>
<td>4,448</td>
<td>3,244</td>
<td>3,106</td>
<td>2,968</td>
</tr>
<tr>
<td>Desalinated water</td>
<td>0</td>
<td>1,148</td>
<td>1,148</td>
<td>1,148</td>
</tr>
<tr>
<td><strong>Supply Total</strong></td>
<td>4,448</td>
<td>4,392</td>
<td>4,254</td>
<td>4,116</td>
</tr>
<tr>
<td><strong>Demand Total (after normal savings)</strong></td>
<td>4,448</td>
<td>4,392</td>
<td>4,254</td>
<td>4,116</td>
</tr>
<tr>
<td>Difference as % of Supply</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Demand</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Footnotes:
- a Assumes SqCWD would use 41% capacity of the 2,800 acre-feet/year of the proposed plant.
- b Depending on drought stage and associated curtailment actions, some of the demand would be lessened, which would result in less groundwater pumping.
- c Calculated using a 2010 baseline demand value of 4,610, see Section 4 for methodology.

Checklist Item #41. An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments (10632(g)).
An analysis of the financial impacts associated with each of the curtailment stages during a long-term water supply shortage due to drought or other emergencies is shown in Table 5-3.

Groundwater Overdraft

In addition to short-term and long-term water supply shortages due to emergencies and prolonged drought, SqCWD has also established protocols for shortages due to groundwater overdraft. This type of emergency affects many or all users of the groundwater basin, not just District customers. It is the result of ongoing discharge in excess of the recharge of the aquifer, i.e., in excess of the sustainable yield. The undesirable result would be a combination of chronically depressed coastal groundwater levels, reversed seaward gradients, and degraded groundwater quality that collectively define seawater intrusion.

A groundwater emergency may be declared when it is demonstrated that a groundwater overdraft exceeding the sustainable yield threatens the public health, safety, and welfare of the community.

Specifically, the SqCWD shall employ the services of one or more qualified groundwater hydrologists to review groundwater monitoring data and periodically report on aquifer conditions. Where it is demonstrated by a professional hydrologist that the groundwater basin is experiencing groundwater overdraft exceeding the sustainable yield and where such degradation threatens the public health, safety and welfare of the community, a groundwater emergency may be declared to prevent further depletion and degradation of groundwater resources.

Prior to declaring a groundwater emergency, the SqCWD shall consult with neighboring water agencies, such as the Pajaro Valley Water Management Agency, Central Water District, City of Santa Cruz, and the County of Santa Cruz to explore joint options and/or programs that could be undertaken or adopted to possibly defray the need for such a declaration. If a cooperative effort cannot successfully address the concerns, then consideration will be given to declaring a groundwater emergency.

Such an emergency shall be declared by resolution of the Board after a public hearing to consider all relevant information such as, but not limited to, the most current groundwater studies, recommendations of other water purveyors with an interest in the basin, and other governments having water, land-use or other
relevant jurisdiction within the basin, and only after the following findings can be made:

1. The groundwater basin is experiencing overdraft conditions;
2. The addition of new wells or the expanded use of existing wells in order to meet supply needs will significantly increase the demand on the affected aquifer and thereby increase the overall overdraft; and
3. The continuation of the overdraft will result in further depletion and degradation of the water resource that can lead to, but is not limited to, impairment of the aquifer or allowing the ingress of poor quality or saline waters.

Upon being informed by the District’s groundwater hydrologist that conditions exist which warrant declaration of a groundwater emergency; the Board of Directors shall receive the groundwater hydrologist’s report and recommendations for appropriate actions at a public meeting. The Board of Directors shall act within its authority as established by AB 3030 and other applicable State Laws to address the groundwater emergency. Prior to implementing mandatory measures in response to a groundwater emergency, the Board of Directors shall conduct a public hearing on the proposed measures to be taken to reduce demand.

If a sufficient supplemental supply to address the issue is readily available to come online in the near future, then the Board may consider that declaring a groundwater emergency is not necessary.

Immediate Measures to Alleviate Overdraft Emergency

In areas where a groundwater emergency is declared, the Board of Directors shall take those actions identified in this WSCP and Action Plan 7 of the SqCWD ERP, as deemed appropriate to achieve the level of reduced demand recommended by the professional hydrologist based on the extent and severity of the groundwater emergency. Prior to declaring a Stage 3 or greater response, a peer review panel of two or more qualified groundwater hydrologists shall be formed to review and confirm the findings and recommendations of the District’s hydrologist. In addition, the District’s Board of Directors shall also consider the following potential actions:

1. Request the County to place a moratorium on new wells within the overdrafted aquifer, and request other water purveyors pumping from the aquifer to place a moratorium on service commitments and connections similar to any imposed by the SqCWD;
2. Request all other water purveyors utilizing the affected aquifer for water supply to implement water conservation measures and use restrictions consistent with those actions taken by the SqCWD to the extent feasible;
3. Request the County to require meters and monitoring of all wells within the impacted area, and to require water conservation measures and use restrictions by private well owners consistent with those actions taken by the SqCWD to the extent legally feasible;

4. Request the County to enact additional restrictions on agricultural water use within the affected area within its Groundwater Emergency policy; and

5. Take such other actions as authorized and appropriate within the joint powers shared with Central Water District as established by AB 3030 (Water Code Section 10750 et seq.)

Long-term Measures to Alleviate Groundwater Overdraft
The Board shall initiate actions such as, but not limited to, joint power agreements with other agencies and development of supplemental supply projects, with the goal of finding permanent solutions to the groundwater problem.

A groundwater emergency and the measures enacted to alleviate the emergency shall remain in effect until rescinded. A groundwater emergency shall be rescinded by resolution of the Board of Directors after a public hearing when one of the following findings is made:

1. Alternative water sources which compensate for the existing overdraft and supply the affected area are developed;

2. A groundwater management program is implemented which will allow for additional demand without contribution to groundwater overdraft as determined by the District’s hydrologist and confirmed by a panel of two or more qualified groundwater hydrologists; or

3. The Board of Directors determines that new information is available which indicates that groundwater basin conditions are sufficiently improved and that the original findings of overdraft are no longer applicable after review by a panel of two or more qualified groundwater hydrologists.

The establishment of a groundwater emergency and all actions to alleviate the emergency shall be reviewed by the Board of Directors, and other governing boards who have implemented restrictions as the result of the emergency, within one year of the date of enactment of the measures at a public hearing to decide whether the declaration of emergency shall remain in effect.
New Water Service Installation Process for Tier I & Tier II Single Family Residences

Please refer to the back of this sheet for detailed instructions.

1) Submit “New Water Service Application Request” form.

2) Complete “New Water Demand Offset Form” and meet with developer.

3) Pay Will Serve fee.

4) District processes request.

5) Conditional Board Approval Required

6) Issue Conditional Will Serve Letter.

7) Obtain Building Permit.

8) Request New Service Installation.

9) Submit documents identified in Requirements Checklist.

10) Pay WDO fee.

11) Verify compliance with Water Use Efficiency Requirements.

12) District processes request.

13) Unconditional Board Approval Required

14) Issue Unconditional Will Serve Letter.

15) Build project.

16) Pay remaining fees and schedule on-site compliance verification.

17) Conduct on-site compliance verification.

18) If compliant, schedule service installation.

18a) If not compliant, send letter to developer.

18b) Correct deficiencies and schedule on-site compliance verification

= Developer  = District Staff  = District Board of Directors
New Water Service Installation Process for Tier I and II Single-Family Residences

1. Submit “New Water Service Application Request” form. (link)
2. Complete “New Water Demand Offset Form” (link) and meet with developer.
   (Engineering staff will discuss requirements; Conservation staff will discuss water demand offset and water use efficiency requirements, and the voluntary Go Green program. Have developer sign meeting attendance sheet.)
3. Pay Will Serve fee.
4. District processes request. (The Engineering Manager will request that the Conditional Will Serve Letter approval be placed on the next Board meeting agenda; will draft memo to the Board. The Board generally meets two Tuesdays/month in September-November and January-May, and one Tuesday/month in December and June-August. *Please allow a minimum of 2 weeks.)
5. Conditional Board Approval Required.
6. Issue Conditional Will Serve Letter. (Engineering staff to initiate Conditional Will Serve Letter and Engineering/Conservation staff to complete applicable portions of the Requirements Checklist and send to developer.)
7. Obtain Building Permit.
8. Request New Service Installation. (Developer requests New Service Installation on the New Water Service Application Request Form (link).)
9. Submit documents identified in Requirements Checklist. (Developer must submit: (1) Indoor Water Use Efficiency checklist (link); (2) Outdoor Water Use Efficiency Checklist (Tier I SF) (link) or Landscape Project Application Package (Tier II SF) (link); and (3) WDO Residential Green Credit Application (optional) (link). If Green Credits are applicable, Conservation staff will provide adjusted offset requirements to developer.)
10. Pay WDO fee.
11. Verify compliance with Water Use Efficiency Requirements. (Conservation staff will review Indoor Checklist and Outdoor Checklist or Landscape Project Application Package for compliance. Provide verification to Engineering Manager, or in the event of non-compliance, send letter to developer identifying discrepancies and requesting corrective action.)
12. District processes request. (Pending verification of compliance with Conservation requirements, Engineering Manager will request that the Unconditional Will Serve Letter approval be placed on the next Board meeting agenda; will draft memo to the Board. *Please allow a minimum of two weeks.)
13. Unconditional Board Approval Required.
15. Build project.
16. Pay remaining fees and schedule on-site compliance verification. (Remaining fees may include water capacity and meter installation. Developer must contact SqCWD Conservation staff at 475-8501, x 146 to schedule an on-site verification of compliance with water use efficiency requirements and the Go Green program (if applicable).
17. Conduct on-site compliance verification.
18. If compliant, schedule service installation. (*Service installation to be completed within 4-6 weeks.)
18a. If not compliant, send letter to Developer. (Conservation staff will prepare a letter identifying deficiencies and required corrective action.)
18b. Correct deficiencies and schedule on-site compliance verification.
June 13, 2013

Name of Owner/Applicant
Street Address
City, State Zip

SUBJECT: Conditional Water Service Application for Tier I Single-Family Residential Development at insert street address, city, APN insert APN

Dear Name of Owner/Applicant:

In response to the subject application, the Board of Directors of the Soquel Creek Water District (SqCWD) at their regular meeting of insert date of Board meeting voted to grant you a Conditional Will Serve Letter for the proposed Tier I (parcels sized less than 10,000 square feet) single-family dwelling to be located at insert street address, city, so that you may proceed through the appropriate land use planning entity.

After you have received a building permit from the land use planning agency, you will be required to meet all applicable SqCWD requirements defined in the attached Requirements Checklist before your application can be considered for final Board approval. If you meet all of the applicable requirements (including possible future requirements that arise prior to development approval of your project), and final Board approval is granted, you will be issued an Unconditional Will Serve Letter, which would secure your water service.

This conditional approval of water service for your project is valid for two years from the date of this letter; however, it should not be taken as a guarantee that service will be available to the project in the future or that additional conditions, not otherwise listed in this letter, will not be imposed by the District prior to granting water service. Instead, this present indication to serve is intended to acknowledge that, under existing conditions, water service would be available on the condition that the developer agrees to meet all of the requirements without cost to the District.

Future conditions which negatively affect the District’s ability to serve the proposed development include, but are not limited to, a determination by the District that existing and anticipated water supplies are insufficient to continue adequate and reliable service to existing and/or new customers. In that case, service may be denied.
The Board of Directors of the SqCWD also reserves the right to adopt additional policies to mitigate the impact of new development on the local groundwater basins, which are currently the District’s only source of supply. Such actions would be in response to concerns about existing conditions that threaten the groundwater basins and the lack of a supplemental supply source that would restore and maintain the aquifers. The subject project would be subject to any applicable conditions of service that the District may adopt prior to granting water service. As new policies and/or requirements are developed, the information will be made available by the SqCWD.

Sincerely,
SOQUEL CREEK WATER DISTRICT

Mike Wilson, P.E.
Interim Engineering Manager/Chief Engineer

Attachment: Requirements Checklist for APN insert APN

Enclosures - Blue (for Tier I Single-Family Residential Development):
1. Overview of the SqCWD Water Use Efficiency Requirements for Tier I Single Family Residences
2. Indoor Water Use Efficiency Checklist
3. Outdoor Water Use Efficiency Checklist for Tier I Single-Family Development
4. Water Demand Offset Policy Fact Sheet
5. Go Green Program/Water Demand Offset Residential Green Credits Fact Sheet and Application
June 13, 2013

Name of Owner/Applicant
Street Address
City/State/Zip

SUBJECT:  Conditional Water Service Application for
Tier II Single-Family Residential Development at insert street
address, city, APN insert APN

Dear Name of Owner/Applicant:

In response to the subject application, the Board of Directors of the Soquel Creek
Water District (SqCWD) at their regular meeting of insert date of Board meeting
voted to grant you a Conditional Will Serve Letter for the proposed
Tier II single-family dwelling to be located at insert street address, city so that you
may proceed through the appropriate land use planning entity.

After you have received a building permit from the land use planning agency, you
will be required to meet all applicable SqCWD requirements defined in the attached
Requirements Checklist before your application can be considered for final Board
approval.  If you meet all of the applicable requirements (including possible future
requirements that arise prior to development approval of your project), and final
Board approval is granted, you will be issued an Unconditional Will Serve Letter,
which would secure your water service.

This conditional approval of water service for your project is valid for two years
from the date of this letter; however, it should not be taken as a guarantee that
service will be available to the project in the future or that additional conditions,
not otherwise listed in this letter, will not be imposed by the District prior to
granting water service. Instead, this present indication to serve is intended to
acknowledge that, under existing conditions, water service would be available on
the condition that the developer agrees to meet all of the requirements without cost
to the District.

Future conditions which negatively affect the District’s ability to serve the proposed
development include, but are not limited to, a determination by the District that
existing and anticipated water supplies are insufficient to continue adequate and
reliable service to existing and/or new customers. In that case, service may be
denied.
The Board of Directors of the SqCWD also reserves the right to adopt additional policies to mitigate the impact of new development on the local groundwater basins, which are currently the District’s only source of supply. Such actions would be in response to concerns about existing conditions that threaten the groundwater basins and the lack of a supplemental supply source that would restore and maintain the aquifers. The subject project would be subject to any applicable conditions of service that the District may adopt prior to granting water service. As new policies and/or requirements are developed, the information will be made available by the SqCWD.

Sincerely,
SOQUEL CREEK WATER DISTRICT

Mike Wilson, P.E.
Interim Engineering Manager/Chief Engineer

Attachment: Requirements Checklist for APN insert APN

Enclosures – Green (for Tier II Single-Family and Multi-Family Residential Development):
1. Overview of the SqCWD Water Use Efficiency Requirements for Tier II Single Family Residential, Multi-Family Residential, Commercial, Industrial & Public Development
2. Indoor Water Use Efficiency Checklist
3. Landscape Project Application Submittal Requirements Package
4. Water Demand Offset Policy Fact Sheet
5. Go Green Program/Water Demand Offset Residential Green Credits Fact Sheet and Application
June 13, 2013

Name of Owner/Applicant
Street Address
City/State/Zip

SUBJECT: Unconditional Water Service Application for Tier I Single-Family Residential Development at insert street address, city, APN insert APN

Dear Name of Owner/Applicant:

In response to the subject application, the Board of Directors of the Soquel Creek Water District (SqCWD) at their regular meeting of insert date of Board meeting voted to grant your Tier I single-family residential development project an Unconditional Will Serve Letter based upon your compliance with SqCWD submittal requirements and payment of Water Demand Offset fees.

Please note that this Letter is specifically granted for the project as proposed in regards to uses and densities. Any changes in the project that result in a change in use or an increase in water demand will require an application for a modification of this Unconditional Will Serve Letter.

Additionally, final installation of your water service is dependent upon payment of all remaining fees and compliance with all previously identified requirements, including those specified in your Conditional Will Serve Letter. At your convenience, please contact Conservation staff at (831)475-8500, x146 to schedule an on-site verification appointment.

Upon payment of remaining fees and SqCWD on-site verification of compliance, you will need to schedule the installation of your water service. Note that water services may take up to 6 weeks to install. Should you have any questions about this process or require assistance, please contact Conservation staff or Engineering staff at (831) 475-8500.

Sincerely,
SOQUEL CREEK WATER DISTRICT

Mike Wilson, P.E.
Interim Engineering Manager/Chief Engineer
Soquel Creek Water District          5180 Soquel Dr.   Soquel, CA  95073   Ph . 831.475.8500   Fax 831.475.4291                   11/04/10

New Water Service Installation Process for Minor Land Divisions, Subdivisions, Multiple Unit, Commercial, Industrial, or Institutional Developments
Please refer to the back of this sheet for detailed instructions.

1) Submit “New Water Service Application Request” form.

2) Complete “New Water Demand Offset Form” and meet with developer.

3) Pay Will Serve fee.

4) District processes request.

5) Conditional Board Approval Required

6) Issue Conditional Will Serve Letter.

7) Obtain Development Permit/Tentative Map and request New Service installation.

8) Prepare Infrastructure Agreement (if applicable)

9) Submit documents identified in Requirements Checklist and pay all fees, including WDO’s.

10) Verify compliance with Water Use Efficiency Requirements.

11) District processes request.

12) Unconditional Board Approval Required

13) Issue Unconditional Will Serve Letter and sign off plans for land use agency review.

14) Notify SqCWD 48 hours prior to construction; build project.

15) Schedule on-site compliance verification.

16) Conduct on-site compliance verification.

17) If compliant, recommend project acceptance.

17a) If not compliant, send letter to developer.

17b) Correct deficiencies and schedule on-site compliance verification

18) Project Acceptance by Board

19) Issue project acceptance letter and activate services.

= Developer  = District Staff  = District Board of Directors

ATTACHMENT 5 - ITEM 3.2
New Water Service Installation Process for Minor Land Divisions, Subdivisions, Multiple Unit, Commercial, Industrial or Institutional Development

1. Submit “New Water Service Application Request” form. (link)
2. Complete “New Water Demand Offset Form” (link) and meet with developer. (Engineering staff will discuss requirements; Conservation staff will discuss water demand offset and water use efficiency requirements, and the voluntary Go Green program. Have developer sign meeting attendance sheet.)
3. Pay Will Serve fee.
4. District processes request. (The Engineering Manager will request that the Conditional Will Serve Letter approval be placed on the next Board meeting agenda; will draft memo to the Board. The Board generally meets two Tuesdays/month in September-November and January-May, and one Tuesday/month in December and June-August. *Please allow a minimum of 2 weeks.)
5. Conditional Board Approval Required
6. Issue Conditional Will Serve Letter. (Engineering staff to initiate Conditional Will Serve Letter and Engineering/Conservation staff to complete applicable portions of the Requirements Checklist and send to developer.)
7. Obtain Development Permit/Tentative Map and Request New Service installation. (Developer requests New Service installation on the New Water Service Application Request Form (link).)
8. Prepare Infrastructure Agreement. (if applicable)
9. Submit documents identified in Requirements Checklist and pay all fees, including WDO’s. (Developer signs Infrastructure Agreement (if required) and submits: (1) Proof of insurance & bonding; (2) Indoor Water Use Efficiency checklist (link); (3) Outdoor Water Use Efficiency Checklist (for Tier I Single-Family planned developments only) (link) or Landscape Project Application Package (link); and (4) WDO Residential (for all Tier I and Tier II Single-Family planned developments or Multi-Family developments) or Commercial Green Credit Application (optional) (links). If Green Credits are applicable, Conservation staff will provide adjusted offset requirements to developer.)
10. Verify compliance with Water Use Efficiency Requirements. (Conservation staff will review Indoor Checklist and Outdoor Checklist or Landscape Project Application Package for compliance. Provide verification to Engineering Manager, or in the event of non-compliance, send letter to developer identifying discrepancies and requesting corrective action.)
11. District processes request. (Pending verification of compliance with Conservation requirements, Engineering Manager will request that the Unconditional Will Serve Letter approval be placed on the next Board meeting agenda; will draft memo to the Board. *Please allow a minimum of two weeks.)
12. Unconditional Board Approval Required
13. Issue Unconditional Will Serve Letter and sign-off plans for land use agency review. (Engineering staff to initiate Unconditional Will Serve Letter and send to developer.)
14. Notify SqCWD 48 hours prior to start of construction; build project.
15. Schedule on-site compliance verification. (Upon completion of construction and prior to activation of water service, developer must contact SqCWD Conservation staff at 475-8501, x 146 to schedule an on-site verification of compliance with water use efficiency requirements and the Go Green program (if applicable)).
16. Conduct on-site compliance verification.
17. If compliant, recommend project acceptance.
17a. If not compliant, send letter to Developer. (Conservation staff will prepare a letter identifying deficiencies and required corrective action.)
17b. Correct deficiencies and schedule on-site compliance verification.
18. Board Project Acceptance Required
19. Issue Board acceptance letter, activate service.
June 13, 2013

Name of Owner/Applicant
Street Address
City/State/Zip

SUBJECT:  Conditional Water Service Application for Commercial Development at insert street address, city, APN insert APN

Dear Name of Owner/Applicant:

In response to the subject application, the Board of Directors of the Soquel Creek Water District (SqCWD) at their regular meeting of insert date of Board meeting voted to grant you a Conditional Will Serve Letter for the proposed commercial development to be located at insert street address, city, so that you may proceed through the appropriate land use planning entity.

After you have received a building permit from the land use planning agency, you will be required to meet all applicable SqCWD requirements defined in the attached Requirements Checklist before your application can be considered for final Board approval. If you meet all of the applicable requirements (including possible future requirements that arise prior to development approval of your project), and final Board approval is granted, you will be issued an Unconditional Will Serve Letter, which would secure your water service.

This conditional approval of water service for your project is valid for two years from the date of this letter; however, it should not be taken as a guarantee that service will be available to the project in the future or that additional conditions, not otherwise listed in this letter, will not be imposed by the District prior to granting water service. Instead, this present indication to serve is intended to acknowledge that, under existing conditions, water service would be available on the condition that the developer agrees to meet all of the requirements without cost to the District.

Future conditions which negatively affect the District's ability to serve the proposed development include, but are not limited to, a determination by the District that existing and anticipated water supplies are insufficient to continue adequate and reliable service to existing and/or new customers. In that case, service may be denied.
The Board of Directors of the SqCWD also reserves the right to adopt additional policies to mitigate the impact of new development on the local groundwater basins, which are currently the District’s only source of supply. Such actions would be in response to concerns about existing conditions that threaten the groundwater basins and the lack of a supplemental supply source that would restore and maintain the aquifers. The subject project would be subject to any applicable conditions of service that the District may adopt prior to granting water service. As new policies and/or requirements are developed, the information will be made available by the SqCWD.

Sincerely,

SOQUEL CREEK WATER DISTRICT

Mike Wilson, P.E.
Interim Engineering Manager/Chief Engineer

Attachment: Requirements Checklist for APN insert APN

Enclosures - Yellow (for Commercial, Industrial and Public Development):
1. Overview of the SqCWD Water Use Efficiency Requirements for Tier II Single Family Residential, Multi-Family Residential, Commercial, Industrial & Public Development
2. Indoor Water Use Efficiency Checklist
3. Landscape Project Application Submittal Requirements Package
4. Water Demand Offset Policy Fact Sheet
5. Go Green Program/Water Demand Offset Commercial Green Credits Fact Sheet and Application
June 13, 2013

Name of Owner/Applicant
Street Address
City/State/Zip

SUBJECT: Unconditional Water Service Application for
Minor Land Division at insert street address, city, APN insert
APN

Dear Name of Owner/Applicant:

In response to the subject application, the Board of Directors of the Soquel Creek Water District (SqCWD) at their regular meeting of insert date of Board meeting voted to grant your minor land division development project an Unconditional Will Serve Letter based upon your acceptance of an Infrastructure Agreement, compliance with SqCWD submittal requirements and payment of Water Demand Offset fees.

Please note that this Letter is specifically granted for the project as proposed in regards to uses and densities. Any changes in the project that result in a change in use or an increase in water demand will require an application for a modification of this Unconditional Will Serve Letter.

Additionally, activation of your water service is dependent upon compliance with all previously identified requirements, including those specified in your Conditional Will Serve Letter. At your convenience, please contact Conservation staff at (831)475-8500, x146 to schedule an on-site verification appointment.

Upon SqCWD on-site verification of compliance, your project will be presented to the SqCWD Board of Directors for final acceptance during a regularly scheduled meeting. If approved by the Board, SqCWD will work with you to schedule water service activation. Should you have any questions about this process or require assistance, please contact Conservation or Engineering staff at (831)475-8500.

Sincerely,

SOQUEL CREEK WATER DISTRICT

Mike Wilson, P.E.
Interim Engineering Manager/Chief Engineer
SCWD Purisima Production

Acre Feet

Months

January February March April May June July August September October November December

ATTACHMENT 6 - ITEM 3.2
\[ y = 17.142x^2 - 337.61x + 5827.4 \]

\[ R^2 = 0.8554 \]
## Comparison Table of Projected Demands and Anticipated Conservation through 2030

<table>
<thead>
<tr>
<th></th>
<th>Baseline 2014</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>With Moratorium</td>
<td>With Development</td>
<td>With Moratorium</td>
<td>With Development</td>
</tr>
<tr>
<td>Demand Projection Start Point (AFY)</td>
<td>4,400</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimated Population of Service Area (persons)</td>
<td>37,720</td>
<td>37,808</td>
<td>38,771</td>
<td>37,720</td>
<td>39,168</td>
</tr>
<tr>
<td>Population Gain (persons)</td>
<td>88</td>
<td>969</td>
<td>937</td>
<td>382</td>
<td></td>
</tr>
<tr>
<td>Population Gain (%)</td>
<td>0.23%</td>
<td>2.55%</td>
<td>1.02%</td>
<td>0.98%</td>
<td></td>
</tr>
<tr>
<td>Baseline of 2014 Per Capita Usage (AFY per person)</td>
<td>0.117</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Projected Demand of Current Population(AFY)</td>
<td>4,400</td>
<td>4,400</td>
<td>4,400</td>
<td>4,400</td>
<td>4,400</td>
</tr>
<tr>
<td>Projected Cumulative Demand with Growth Population(AFY)</td>
<td>123</td>
<td>123</td>
<td>123</td>
<td>123</td>
<td>123</td>
</tr>
<tr>
<td>Projected Demand (before anticipated savings, AFY)</td>
<td>4,400</td>
<td>4,410</td>
<td>4,400</td>
<td>4,523</td>
<td>4,400</td>
</tr>
</tbody>
</table>

### CONSERVATION

#### SEPT-Method Anticipated Cumulative Conservation (AFY)

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Use Reduction Program (WURP) Anticipated Savings, Phase 1 (AFY)</td>
<td>(257)</td>
<td>(257)</td>
<td>(513)</td>
<td>(533)</td>
</tr>
<tr>
<td>Water Use Reduction Program (WURP) Anticipated Savings, Phase 2 (AFY)</td>
<td>(513)</td>
<td></td>
<td>(533)</td>
<td></td>
</tr>
<tr>
<td>Water Use Reduction Program (WURP) Anticipated Savings, Phase 3 (AFY)</td>
<td>(513)</td>
<td></td>
<td></td>
<td>(533)</td>
</tr>
<tr>
<td>WDO Program Anticipated Cumulative Savings (AFY)</td>
<td>(21)</td>
<td>(245)</td>
<td>(338)</td>
<td>(427)</td>
</tr>
<tr>
<td>Subtotal of Conservation Savings, (AFY)</td>
<td>(278)</td>
<td>(773)</td>
<td>(1,027)</td>
<td>(1,404)</td>
</tr>
</tbody>
</table>

### ADJUSTED DEMAND (PROJECTED - CONSERVATION)

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROJECTED DEMAND (Before Conservation), AFY</td>
<td>4,400</td>
<td>4,400</td>
<td>4,523</td>
<td>4,400</td>
</tr>
<tr>
<td>CONSERVATION SAVINGS, AFY</td>
<td>(257)</td>
<td>(278)</td>
<td>(773)</td>
<td>(1,027)</td>
</tr>
<tr>
<td>Adjusted Demand (with conservation), AFY</td>
<td>4,143</td>
<td>4,132</td>
<td>3,877</td>
<td>3,750</td>
</tr>
</tbody>
</table>

### SUPPLY

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target Groundwater Production (AF)</td>
<td>2,900</td>
<td>2,900</td>
<td>2,900</td>
<td>2,900</td>
</tr>
<tr>
<td>Shortfall (Adjusted Demand - Groundwater), (AF)</td>
<td>1,243</td>
<td>1,232</td>
<td>987</td>
<td>850</td>
</tr>
</tbody>
</table>

### Net Difference between moratorium v development w/ WDO

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shortfall is LESS with Development than with Moratorium</td>
<td>(11)</td>
<td>(137)</td>
<td>(208)</td>
<td>(288)</td>
</tr>
</tbody>
</table>

Population Projections from Table 2-2 of UWMP
Baseline Per Capita Usage Factor is based on Estimated 2014 Yield.
SEPT-Method Anticipated Conservation (from 2010 UWMP) has been rolled into WURP Conservation
WURP Conservation is based on achieving 35% savings at full maturation of all three phases in 2030.
WDO Savings is based on achieving 200% savings based on anticipated demands due to growth.
## Comparison Chart for District Supply and Demand

### With a Moratorium or WDO

<table>
<thead>
<tr>
<th>Funding Considerations to further conservation efforts in the District.</th>
<th>With Moratorium</th>
<th>With Water Demand Offset Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Customers pay for their own retrofits and conservation efforts</td>
<td>• District funds conservation programs and rebates through water rates</td>
<td>• Customers pay for their own retrofits and conservation efforts</td>
</tr>
<tr>
<td>• District funds conservation programs and rebates through water rates</td>
<td></td>
<td>• District funds conservation programs and rebates through water rates</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Projected Growth, Anticipated Water Demand, and Anticipated Savings in 2020</th>
<th>With Moratorium</th>
<th>With Water Demand Offset Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Population increase is 0% from 2014 to 2020.</td>
<td>• Population increases 3% from 2014 to 2020 for an additional 963 persons</td>
<td>• Population increases 3% from 2014 to 2020 for an additional 963 persons</td>
</tr>
<tr>
<td>• No additional water demand</td>
<td>• Demand projected to be an additional 123 afy</td>
<td>• Demand projected to be an additional 123 afy</td>
</tr>
<tr>
<td>• No anticipated water savings from WDO Program</td>
<td>• Anticipated water savings is 245 afy from WDO Program</td>
<td>• Anticipated water savings is 245 afy from WDO Program</td>
</tr>
<tr>
<td>• Net Water Footprint = 0 afy</td>
<td>• Assume $50,000 afy x 245 afy = $12.25M through WDO program</td>
<td>• Assume $50,000 afy x 245 afy = $12.25M through WDO program</td>
</tr>
</tbody>
</table>

|---|---|---|

<table>
<thead>
<tr>
<th>Declare GW Emergency</th>
<th>District declares Groundwater Emergency and adopts moratorium.</th>
<th>District declares groundwater emergency and updates or expands WDO program.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Requests County to support and initiate moratorium basinwide with requirements to private pumpers</td>
<td>• Requests County to support and initiate regional implementation of expanded WDO program to Mid-County residents for toilet replacements. (since shared basin).</td>
<td>• Requests County to support and initiate regional implementation of expanded WDO program to Mid-County residents for toilet replacements. (since shared basin).</td>
</tr>
<tr>
<td>• District must actively be pursuing a supplemental water supply or groundwater replenishment project.</td>
<td>• District must actively be pursuing a supplemental water supply or groundwater replenishment project.</td>
<td>• District must actively be pursuing a supplemental water supply or groundwater replenishment project.</td>
</tr>
</tbody>
</table>

*See Comparison Table of Projected Demands and Anticipated Conservation Savings through 2030 (Attachment 7 of Item 3.2)
Full Tool Box -- Acre Feet Saved by Method, from Cheapest to Most Costly (truncated at 1600 AF, $30K)

- Initially, cost climbs by $2.50 for each additional AF saved
- Later, cost climbs by $200 for each additional AF saved
- Then, cost climbs by $265 for each additional AF saved

To the extent that WDOs have used the residential DI method, they've spent ~ $2800/AF