MEMO TO THE BOARD OF DIRECTORS

Subject: Agenda Item No. 6.4 Proposed Revisions to Existing WDO Program

Attachment: 1. Graph by Dr. 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 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 Conservation Plus program is currently being developed and is scheduled to be brought to the Board in August 2014 for final adoption of the policy, with implementation beginning in the fall and fully in effect by January 2015. Conservation Plus is a long term program with an initial goal of reducing District demand 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 per day (gpcd) 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 the WaterSmart program to all residential 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 program and was designed to ease our customers into it. Approximately half of our residential customers are already below or well below the current budget allowance. The current program is resulting in an approximately 33% increase in operations costs and requires $2.5 million for customer rebates over the next two years, the costs of which are absorbed by our customers.

Due to not obtaining a supplemental supply in the time projected, the Board directed staff to present resolutions to be enacted at the current meeting that will result in demand reduction actions and measures identified in Section 5, Water Supply Reliability and Water Shortage Contingency Planning in the 2010 Urban Water Management Plan (UWMP). These include declaring a Groundwater Emergency and a Stage 3 Water Shortage Emergency. Public Hearings were held on these actions at the June 3, 2014 Board meeting. At the same meeting the Board conducted a public hearing on the possibility of declaring a moratorium, but instead directed staff to come back with possible revisions to the Water Demand Offset (WDO) program.

**Considerations for Modification of the WDO Program**

**Water Demand added by New Development:** In the past 10 years, new development has added approximately 10 acre-feet per year of new demand. Due to conservative Santa Cruz County growth goals we don’t expect any change in normal development activity in the absence of a moratorium. If we continue to see comparable average annual growth, demand will have increased by 110 acre-feet per year from year 2014 through year 2025 if demand is not offset. This estimate correlates with the projections included in our 2010 UWMP which used 2010 Census Data and AMBAG projections.
Since past growth may have been dampened by the struggling economy and the mortgage crisis, we have compared this number with updated projections for growth. The draft AMBAG 2014 Regional Growth Forecast is predicting a 0.01% annual increase in housing in Capitola proper and a 0.36% increase in housing in unincorporated Santa Cruz County. This means very little change in housing units in Capitola and approximately 1,500 additional housing units in the entire unincorporated county by 2025. We would expect an approximate increase in housing within the District of about 400 units by 2025, keeping in mind that these are best estimates using professionally accepted methods and may vary somewhat. It’s also important to remember that connections don’t come on uniformly. As our past history shows, we will have years with high connections and years with low connections. The average occupancy in the District according to census information is 2.5, so at 75 gallons per capita per day (gpcd), the increase in demand would be approximately 84 additional acre-feet by 2025. If we use AMBAG’s population projections rather than housing projections, they are predicting a 0.07% annual increase in Capitola and 0.42% annual increase in unincorporated Santa Cruz County. At 75 gpcd this reflects an approximate increase of 56 acre-feet by 2025. While these numbers are lower than the projections contained in the UWMP, they don’t account for additional commercial growth.

There was concern at the last meeting that AMBAG’s population forecasts are based on vacant land inventory. This isn’t the case, instead they are derived from methodology that predicts population growth based on job growth. AMBAG is predicting job recoveries for our region, but predicts that a 28.2% increase in Santa Clara County jobs, coupled with high housing prices, will result in more out-commuting in our region. The result is that population growth reflects a high person to job ratio which is reflected in the population growth numbers. This is a trend seen historically in the District and it appears it will continue into the future.

While AMBAG’s revised estimates are actually lower than those in our UWMP, we can safely use the higher projections to account for additional demand due to additional commercial growth. Approximately 13% of the water delivered by the District is used by commercial accounts (excluding institutional). Demand projections in the UWMP estimate an additional 20 acre-feet per year by 2025 due to commercial. Adding this number to the current population projections gets close to the projections we have been using, but is still a bit low. To be conservative, we will continue to use the estimate of 10 acre-feet per year increase in demand. By 2025 this will be a total increase since 2004 of 210 acre-feet. By 2030 the increase will be 260 acre feet.

**Water Demand Offset (WDO) Program**

*History:* 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 idea was that this program would provide a temporary bridge to a point in the future when a supplemental supply could be brought online. Up until 2013, the requirement was for development to offset 120% 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 that has been allowed to connect to the system to date. 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. It’s impossible to totally quantify what may happen or what would have happened anyway. Because the program was seen as a short term bridge program it wasn’t designed to be easily quantifiable, nor was it designed to assure it didn’t encroach on District required conservation efforts. Both of these things should be mandatory if the Board considers keeping the WDO program in place.

A Modified WDO Program: A modified approach to the Water Demand Offset (WDO) Program has been conceived to address the concerns that: (1) the program is allowing offsets that are actually retrofit opportunities that may be needed in the future; and (2) that by allowing developers to perform the current low-cost retrofits, they may burden existing customers with higher cost retrofits in the future. The concept of the modified WDO Program would be to make developers pay for the cost of water demand offsets associated with the more expensive identified measures that may be necessary for conservation or recharge in the future. This concept of centering the WDO Program on the cost of future offsets is a paradigm shift for the program because it makes us think in terms of not just offset amounts, but also equitable cost. At the June 3, 2014 meeting, the Board was presented with a graph developed by Dr. Sue Holt to show the relationship between water saved and cost per acre foot for conservation measures. It shows that the first 1400 acre-feet of savings achieved in the District can be achieved at approximately $5,000 per acre-foot. Above 1500 acre-feet the cost per acre-foot rises rapidly. Since the District’s goal is to reduce 1500 acre-feet, and development is adding an additional 110 acre-feet that must be offset, this
cost for the additional conservation is very high. In the past, the program allowed builders to use the lower cost offsets such as residential toilet replacements. There has been concern from the Board that we are going to require our customers to make these changes anyway, so it invalidates the offset. To that end, we have discussed ways to structure the program to avoid those conservation measures that our customers will be required to undertake in either of the three phases of conservation plus.

With the current structure, projects that require large offsets are few and far between. This means that more expensive recharge projects or water saving equipment purchases have been off the table because the program was basically pay-as-you-go, meaning the offsets must be completed before new connections would be approved. This sets up a situation in which it wasn’t possible for most projects to use offsets other than those the District is going to be requiring customers to do anyway. Staff is now recommending we restructure the program to collect funds in a dedicated account to be used for new and permanent projects to be completed by the District. Examples include rain gardens for recharge, the purchase of a No-Des machine to reduce District water waste, recycled water scalping plants for either irrigation or recharge, or grant projects for rainwater flushing systems in institutional settings. These types of projects can reduce the amount of water coming from the basin, therefore lower the amount we have to reduce pumping. This can essentially offset the impact development has on demand without eating into the conservation we expect customers to undertake themselves.

The positive aspect of this program is that we can undertake projects that will reduce our need for long term reduction or for a larger supplemental supply. These are things we likely wouldn't undertake without the program because our priority for finance is funding supplemental supply. The down side is that it’s possible that new development could come on the system before the offsets are in place. This would depend on the goal project, the fund balance and how long it takes the new development to become an active account. Those paying into the fund early could conceivably have their construction complete before there is any benefit from their offset funds. On the other hand, those paying the final amount needed for a project to move forward will likely come on the system after their offsets are in place.

One way to mitigate the problem of offset timeliness is to front fund projects, and then sell offset credits to recapture capital costs. Alternately, offsets could only be offered for sale when a project has been completed and not fully funded. The effect of this structure would be a heavier burden on District finances initially, as well as a more erratic approval of new connections if they are only sold upon project completion.

This structure has been widely used in stormwater utilities, which are basically funding mechanisms for stormwater mitigation projects. The collect funds from developers to pay for projects to offset stormwater runoff from development. According to the Environmental Protection Agency there were 1,000 stormwater
utilities across the country by 2010, all using a similar project funding structure (EPA 901-F-09-004).

Cost of Offsets: If this structure is adopted, the Board will need to identify a cost per acre-foot that they feel will meet the needs of the program. A cost of $40,000 per acre-foot was suggested by the Board at the June 3, 2014 meeting. Staff has reviewed the cost of several higher cost projects including the purchase of the No-Des machine (capital costs only) and providing $2 per square foot to our customers to help them replace turf (combined with our District rebate this makes turf replacement more feasible for customers). The cost per acre foot of savings for these projects more closely aligns with $50,000 - $55,000 per acre-foot.

Program Development and Implementation: Due to the current staff focus on the Conservation Plus program development and implementation, the District does not have the staffing resources to make substantial changes to the WDO program at this time. The concept was presented to illustrate there may be an acceptable way to design the WDO program for future use.

Once Conservation Plus is launched and operational, staff can undertake the planning necessary to identify projects and return with a more detailed program recommendation. In the interim, staff proposes:

1. To continue operating the current WDO Program for those builders who already hold will serve letters (i.e. developers must perform residential toilet replacements or commercial toilet/urinal replacements if the retrofit properties are owned by the developer/project applicant).
2. For any new will-serve applications staff suggests identifying the cost per acre-foot and collecting it with the understanding that the rest of the program will be developed sometime in early 2015.

Also, we identified schools as being significantly impacted by the Conservation Plus program. We recommend allowing developers to retrofit toilets, urinals, and sinks in public schools within the District for offset credit and paying the difference in cost into the program fund. As schools will have to comply with the upcoming Conservation Plus Best Management Practices for these fixtures, thus allowing developers to perform these retrofits will ease the cost-burden on public schools and tax payers, who are also our rate payers.

The Board requested more information on the cost to schools to meet the requirements of the program so staff contacted one Pajaro Valley School District, Soquel Union Elementary School District and Soquel High School. We haven’t received information from the high school yet, but both Pajaro School District (includes Aptos Jr. High, Rio Del Mar Elem., Mar Vista Elem., and Valencia Elem.) and Soquel Union Elementary District (New Brighton Middle, Soquel Elem., Main St. Elem.) would require 100
retrofit of fixtures based on the inventories they provided. Opal Cliffs Preschool is excluded because it is new and already meets new fixture requirements.

The scope of projects that will be required by the schools, excluding substantial landscape/turf requirements, was forwarded to a consulting firm specializing in schools who put together prevailing wage project costs for the plumbing scope. The estimated cost for indoor fixture replacement if completed by the school is as follows:

<table>
<thead>
<tr>
<th>School District</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pajaro Valley School District</td>
<td>$102,670</td>
</tr>
<tr>
<td>Soquel Union Elementary District</td>
<td>$139,480</td>
</tr>
</tbody>
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In addition they will have the additional cost of dedicated landscape meters for their functional turf areas, as well as costs to revise irrigation, remove non-functional turf, etc. Pajaro Valley would have to add irrigation meters at all schools included in the survey with the exception of Aptos Jr. High. Soquel Union Elementary would have to add irrigation meters to all schools surveyed. So the schools are looking at projects costing approximately $128,000 and $165,000 respectively. In addition, the way school funding works, the schools likely wouldn’t be able to fund a project until their next budget cycle resulting in high penalties until that time. If this work was not publicly bid, and was not subject to prevailing wage, this would lower the cost of the project by up to 35% and allow it to move forward sooner.

Since schools are a special case, as they are basically also funded by our rate payers, we believe it would be beneficial to help defray some of these costs. We suggest the Board consider allowing WDO’s for developers to undertake this work. Because the cost per acre foot would be significantly less than anything the Board will be considering, the difference can be paid to the District for the program fund. This will maintain parity between those purchasing offsets in the beginning of the program and those purchasing offsets later, when school upgrades are no longer available.

**Staff Recommendations:** If the Board choses to move forward with this concept, staff recommends the cost per acre-foot be set at $50,000 - $55,000 per acre foot. We also recommend that the Board approve the program in concept and implement collection of the fees with project identification to follow. If that isn’t acceptable, the No-Des machine could be identified as an initial project. Finally, we recommend allowing schools to be retrofit with the difference in cost per acre foot to be paid into the fund. Once we require developers to make up the difference in cost for schools, it’s likely they would choose to just pay the District for the entire offset and not bother with the time and effort involved in the school retrofits. This won’t address the problem of large unbudgeted capital projects for the schools or the expense of public prevailing wage projects, so we recommend requiring the retrofits be part of the offset package until all public schools have been retrofit. Another option is to just collect the funds and have either the District or the school do the project, but again it would be up to 35% higher cost if either did the work. That additional 35% cost would be better used on additional recharge or conservation projects.
POSSIBLE BOARD ACTION

1. By MOTION, provide staff direction regarding redesign of the Water Demand Offset program.

2. By MOTION, adopt a cost per acre-foot for the WDO program.

3. By MOTION, provide staff direction on collection of funds prior to full adoption of the program.

4. By MOTION, approve the mandatory retrofit of public schools as part of the new program with the difference in cost per acre-foot collected by the District.

5. Take no action.

By ____________________________
Kim Adamson
General Manager
Full Tool Box -- Acre Feet Saved by Method, from Cheapest to Most Costly

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