

One step closer to a reliable water supply?

By Charlie Keutmann

The Santa Cruz City Council has declared a Stage 3 Water Shortage Emergency with mandatory water rationing for the second consecutive year. Community response to the first year of rationing was commendable and an encore performance is anticipated. However, hoping for emergency compliance during droughts is not an effective strategy for a water supply future shrouded in the uncertainties of climate change and fish habitat conservation.

The Water Supply Advisory Committee (WSAC), with oversight from an independent technical review panel, has been tasked with making a recommendation to the City Council with a portfolio of strategies for reducing demand and providing a reliable supply of water. As we proceed with strategy evaluation, our water education is supplemented with enrichment sessions open to WSAC members and the general public. These sessions, presented by respected experts in their field, have explored topics of Water Rights, Climate Change and Aquifer Recharge.

Our most recent WSAC meeting was held in Live Oak on April 30th and May 1st. The meeting commenced with a presentation from the technical team defining a range of likely future demands for treated water through the year 2035. The methodology examined the influence of various factors on demand, including, pricing, personal income, UCSC growth, and demand rebound following a drought.

The next topic was a review of the consolidated alternatives. Each consolidated alternative (CA) is like a folder containing multiple files of submitted alternatives with common elements. This reduced nearly 100 individual ideas into 20 manageable groups in order to facilitate effective evaluation against a common schedule of criteria.

The committee then broke into four groups for an exercise in building portfolios of consolidated alternatives to solve for the gap between supply and demand under one of two possible future scenarios.

One scenario presented an extended period of severe drought defined by the combined impacts of the 1976-1977 drought and the 1987-1992 drought occurring back to back. The other scenario examined the potential impacts of climate change with higher temperatures and changes in precipitation patterns that could adversely affect our ability to capture runoff from surface water sources. Both scenarios assumed the stringent threshold for fish flows as proposed by the California Department of Fish and Wildlife. Each group worked with 2020 interim demand projections of 3.2 billion gallons annually and 1.9 billion gallons during peak season (May through October).

The four groups independently engaged in two hours of problem definition and consolidated alternative assessment. The deliberations examined opportunities for dovetailing potential CA's with existing planned capital improvement projects to minimize capital costs. Environmental impacts, energy intensity and regional benefits were other factors considered.

The groups reconvened to report their individual findings. It was of little surprise that the first element of every portfolio was the CA labeled "C-rec", a package of robust conservation measures yielding incrementally significant demand reduction over time.

The true eye-opener occurred when each group independently selected CA-16 as the cornerstone of their portfolio. CA-16 proposes harvesting extra winter flows from the San Lorenzo River during normal to wet years and transferring treated water to Soquel Creek Water District. The treated water would be injected into the aquifer for groundwater recharge, or be used directly to satisfy demand while allowing the well fields to be rested. In exchange, Santa Cruz would receive groundwater from the restored aquifer during drought years and have the ability to pump year round from the Live Oak wells without risk of saltwater intrusion.

While these common findings represent an intriguing convergence of ideologies at the conceptual level, we must remember that previous seemingly obvious solutions have proven infeasible under greater scrutiny. The devil is in the details and it is now the task of the technical team to assess the significant legal, geotechnical and economic uncertainties associated with injecting and retaining water in the aquifer as well as the timeline for potential extraction for near term drought relief. Stay tuned!

The next Enrichment Session, open to the public, will be May 21, 7:00 pm at the SCPD Community room to discuss conservation successes and opportunities.

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