The Daily Transcript

The Business of Water: A conversation with Dennis Bostad

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As one of the smaller member agencies of the San Diego County Water Authority (SDCWA), serving over 170,000 customers, the Sweetwater Authority has managed to do what most agencies in the area could only dream of: generate a large amount of its operating water budget from local sources.

While the majority of San Diego-area water agencies depend heavily on imported water from the Metropolitan Water District and the San Diego County Water Authority, the Sweetwater Authority, with multiple local sources such as a groundwater desalination plant and the Sweetwater River, has the capability to supply its customers with local sources of water for up to two years.

The Daily Transcript sat down with Dennis Bostad, the general manager of the Sweetwater Authority to talk about how the agency has managed to achieve such diversification and how it plans to build on its successes in the future.

The Sweetwater Authority has the capability to get a majority of their water from local sources?
Water demands and water rainfall are all variable. You tend to have less water use when it rains, because people use a lot of water for irrigation. You have a lot of demands during the year and from year to year. Our water supplies locally vary from year to year. Our surface supplies (are from the) Sweetwater River.

Groundwater supplies can be more drought resistant. And they can actually be a more consistent supplier from year to year, if the groundwater basin is large enough. Sweetwater Authority -- when there's enough run-off, when it's a very wet year and it fills our two reservoirs, Loveland reservoir and Sweetwater reservoir -- we can operate probably over two years without importing any water.

That's pretty rare for this area.

It’s extremely rare. To give you a little more clarification, that’s in a wet year. In a dry year, our surface supplies are limited. So we depend more on our groundwater supplies. So the imported regional supply from the County Water Authority is really important to us because if we lose our surface supply from the rivers then we only have our groundwater supplies and right now that supplies about 30 percent of our average daily demand.

We continue to build on our local supplies. We have the National City well field that pumps groundwater and it’s potable, other than needing disinfection. That provides about 10 percent of our supply. Probably won’t be able to produce more on that because we don’t know that there’s enough supply to pump.

The groundwater desalination plant was started 1999. We’re getting up to 4 million gallons a day from. There are times that we have to pull back because we monitor the environment and we see that there are certain salinity changes in the river, or groundwater in that area of the river, we pull back that pump because we want to avoid any environmental harm.

We also have a very large groundwater study working with the U.S. Geological Survey. They’re installing and testing groundwater wells to monitor the groundwater basin so that we know what is happening to the groundwater basin as we’re pumping it out of the ground, and I think those are as critical to using the water as anything, so we avoid environmental harm or overdrafting the groundwater basin. When we’re pumping about 4 million gallons per day, that works out to be about 20 percent of our supply. As we continue to study the groundwater basin, we continue to add wells as we can support it financially. And also as we read the environmental changes. Right now there haven’t been any environmental problems.

Is your ability to provide your customers with more abundant local sources of water due to your geographical advantages or institutional foresight?
I think it’s a kind of a thing that is partly a shifting in approach and attitude. It used to be, when they put in the first aqueduct by the County Water Authority in the late 1940s, the thought was, “Let's go and find fresh water, put a pipe in and export it. Then we’ll have plenty of fresh water.” There is no place where you can economically go and put in a pipe to a new river somewhere to get new water. First of all, people don’t want you to do that economically. There are issues with who is already using that water; there are environmental concerns.

Over the years we've been looking for new water. Years ago they used to pump from wells. Due to changes in water quality and overdrafting, that water has become saltier. So instead of dealing with the saltier or brackish water, they would switch to the aqueduct and use that water. Now that the aqueduct water is costing more -- there's less of it -- it's more difficult to obtain new water, and people are beginning to focus on local supply alternatives more and more.

In 1999, we went after the brackish groundwater that is probably about four to five times saltier than drinking water. That's not even close to seawater. So it's easier to run through reverse osmosis membranes at lower energy levels, and lower cost.

Well, it's still much more difficult to treat and obtain for a low cost. It's comparable to imported water, right now. But if we can increase production from groundwater, if you will, the per-unit cost will go down, relatively speaking. And that's related to the fact that if you had the same size facilities, the same staffing levels, for basically an incremental increase in electricity and chemicals, you'd get more production out of the same facility. So then the efficiency of the next amount of water goes down. So it's more cost effective.

What brought you to groundwater desalination in the first place?
Our board, for a number of years, has been very interested in developing an additional layer of reliability. We've been working on our local resources for years, and it's kind of embedded in the culture of Sweetwater. So as part of the next steps we've put many programs in to protect our local reservoir from water quality deterioration, making sure we have the latest equipment at our surface water plant, for treating surface water, and then looking at new production for going to the groundwater desalination.

We're currently working with others, including Otay, County Water Authority, the city of San Diego, and we're looking at the possibility of replicating this type of an approach for brackish groundwater treatment to look at some of the other river systems. That could include Otay, some of the other river systems going north. The hurdle, associated with building a new groundwater plant, is such that you have to make sure you address all of the environmental concerns I mentioned earlier: that there's adequate water supply that you can pump out of the ground and treat, and that you can do it at an economically viable cost.

A lot of times we look at cost not only in the immediate effort but what would be the costs after 10, 20, 30 years or more. The reason being that opens up more opportunities if you look at the long-range cost effect. Because a lot of the

technology for membrane treatment of brackish water or seawater, that technology is getting more effective. So you're able to get more salt removed out of the same amount of water. And as a result you can lower your costs.

What are some long-term goals of the agency?
A lot of our goals have to do with developing adequate local resources to have a layer of reliability and couple that cost and reliability with our regional supplier, which is the SDCWA. There is value from the regional delivery system. There is value from the local. By coupling the two and doing an appropriate mix you don't overpay for things.

If we built a lot of local water facilities for Sweetwater Authority customers, we would still have to pay for the regional support to be there as part of that fabric. So if you overbuilt local supplies or overbuilt local reliability, you would end up still having to pay the regional reliability, but wouldn't have to use it. It probably is an over-investment. But the layering between each of these regional levels -- I think there is a responsibility on the regional level and I think there is a responsibility of the local agency. So that dovetailing between them there is an appropriate level of safety and reliability for each of the customers throughout the county.

To give an example: When we had the outage on the delivery pipeline, when they had the planned shutdown of the Metropolitan's Skinner Treatment Plant, there were some agencies that were affected dearly, there were major issues. And some of the agencies you didn't hear from. And part of that had to do with the difference in reliable investments from a local level vs. a regional level.

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