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OPINION

Desalination comes of age

By Mariel Garza

Water, water everywhere, nor any drop to drink.

That line is all that remains in my brain from an early exposure to “The Rime of the Ancient Mariner,” the endless poem that has been cruelly inflicted upon generations of American schoolchildren.

It comes with a mental picture, too, though not one from the poem: a bedraggled man with a painfully sunburned face sitting in a small, inflatable raft. The midday sun bears mercilessly down while he licks his chapped lips and gazes longingly at the limitless expanse of glorious, tantalizing, undrinkable sea water.

To update that picture for modern times, I should probably put California’s 38 million people in it. And surround them with sharks.

In the midst of the worst drought of our lifetimes, the state’s lakes and reservoirs are at historically low levels. Wells are going dry across the Central Valley, and there are communities that have no water. Not a drop, to drink or otherwise.

Those countless billions of gallons of water sparkling enticingly along our western border are looking mighty refreshing right about now.

Even in water-flush times, seawater desalination has been heralded as the obvious solution to the West’s inevitable droughts. How hard can it be to remove salt from water? Nature does it all the time.

But like personal flight packs, teleporters and other gee-whiz technology 20th-century visionaries

predicted for us modern-day folk, it has been curiously elusive.

Until now.

The once-fanciful idea of sticking a straw into the ocean is no longer a pipe dream, thanks to a convergence of new technology and, let’s face it, grim desperation.

That would be San Diego County’s situation. The county sits at the very end of the state’s water pipes, an unfortunate location made all the worse by the fact

it has almost no groundwater and very little surface water. Given that, it’s more than a little amazing that it grew from a series of sleepy coastal towns into one of the largest metropolitan regions in America – San Diego is the nation’s eighth-largest city.

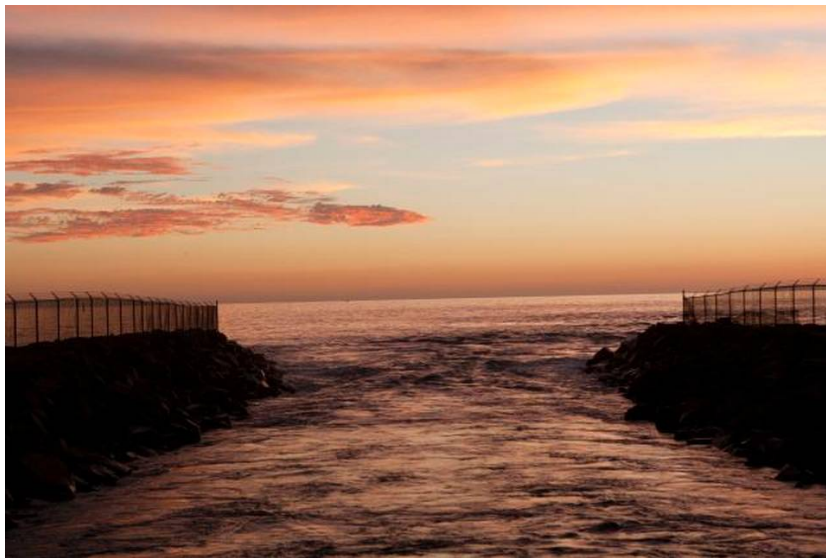
Consequently, San Diego has been at the mercy of Mother

Nature and the state’s largest water supplier.

San Diego County Water Authority, which supplies water to 97 percent of the 3.2 million residents of county, has been feuding with the Metropolitan Water District of Southern California for decades. In lawsuits and publicly, San Diego has accused Metropolitan of charging too much to deliver water.

But then in 1991, folks in San Diego were done with its overdependence on one water source.

That was bad enough during wet years, but at the start of the ’90s the region had been through four



years of a severe five-year drought and now faced the threat of Metropolitan slashing its water deliveries in half. At the time, they depended almost entirely upon Metropolitan for water. Just 5 percent came from local sources.

“Coming out of that, the business community and region basically said we have to make sure that doesn’t happen again,” said Bob Yamada, water resources manager for SDCWA. “The way we were going to do that is diversify our water supplies.”

And they did. As of last year, Metropolitan provided only 46 percent of the San Diego’s water. Initially, that meant securing water from the Colorado River, while taking steps to conserve water. By 2020, San Diego expects that 30 percent of its water will come from Metropolitan. Who says getting mad never gets you anywhere?

The way the district will get to that 2020 goal is twofold: water recycling – the current drought making it harder for Southern Californians to turn up their noses at “toilet-to-tap” water sources – and desalination.

The 1991 plan began an odyssey of 23 years that now seems astonishingly prescient. Remember, it was long before Al Gore’s book “An Inconvenient Truth.” Climate change still meant winter vacations in Hawaii.

The desalination plant is scheduled to open next fall and will immediately produce the equivalent of 10 percent of the county’s water, or about 50 million gallons.

I was eager to see how this new technology would work, which took me to Carlsbad in north San Diego County this month for a tour of the state’s first large-scale seawater desalination plant. Yamada, who joined the water authority in January 1992, was one of my hosts as were two top executives from the company building the plan, Boston-based Poseidon Water, and the plant’s construction manager.

The desalination plant, which I have taken to calling Hedionda – “stinky water” in Spanish – in honor of its location on the edge of the eponymous salt water lagoon, sits between the Pacific Coast Highway and the coast. The \$1 billion project is more than halfway complete, with three cranes and every construction vehicle conceivable in use, seemingly, at all times. The site is buzzing with orange-vested workers welding, operating machinery, lifting, inspecting, everything you can imagine and some you can’t.

The modern reverse-osmosis/administration

building offers a stark contrast to the power plant next door, Encima. The natural-gas plant, an aesthetic relic of grim, gray plant design of the 20th century, is about to be decommissioned, replaced with a new plant to the east of the desalination facility. Hedionda is only partially up, but that part is a huge improvement.

The plant is really two plants: a typical water-treatment plant, which looks pretty much like all water-treatment plants, though probably still more attractive than anything built last century, and a reverse-osmosis plant.

That’s where the magic happens. If I were an adviser to the builder, I’d suggest glass walls for the reverse-osmosis building. This is technology people will want to see in action.

When Hedionda opens for business next fall, it will be the largest desalination facility in the Western Hemisphere and will likely become a destination vacation for officials from other cities and counties looking to start their own desalination projects. That might be sooner rather than later. In the \$7.5 billion water bond on the Nov. 4 ballot, \$1.54 billion is set aside for projects across the state that that make better use of the resources we have, including desalination.

On my visit, the reverse-osmosis building was still without outside walls, allowing a view of its oddly elegant guts: stacks of long, white tubelike “pressure vessels” in which the mysterious “membrane” technology is used to separate salt from water. It makes water so pure that they have to add minerals and chemicals before flowing it into the rest of the county’s water.

Reverse osmosis is what made the plant viable for San Diego, and likely will do the same for other parched California communities. It is a more efficient way to desalt seawater than the old evaporative method, especially with the energy-saving gizmos patented by the experts in this business, the Israelis.

Even so, it’s a laborious, expensive, energy-sucking proposition that has not been worth the cost while California’s rivers flowed heavily and the Sierra sported a healthy snowpack. Though Poseidon Water is financing the building of the plant, San Diego’s water users will eventually pay for the plant through an increase in their water bills.

All Californians must know by now that drinkable water is no longer cheap. But it can be plentiful, for those desperate enough to reframe that old lament: *Water, water everywhere, and every drop to drink.*