OPINION // COMMENTARY

Broad Texas effort needed to make desalination cost-effective, environmentally responsible

By **Tony Quesada**, *Express-News Deputy Editorial Page Editor*
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San Antonio Water System's H2Oaks Center includes a desalination plant, along with aquifer storage and a Carrizo Aquifer water recovery

Billy Calzada, San Antonio Express-News / Staff photographer

the newly proposed one at Galveston Bay, pose greater environmental challenges.

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The road toward making desalination an effective — sizable and sustainable — part of meeting Texas' growing demand for water has been winding and bumpy. And so far, it hasn't led us where we need to reach.

It's hard to envision a future water supply portfolio that meets our state's ever-increasing demand for potable water that doesn't include desalination, the process of removing salt and other solids from seawater or brackish groundwater. Yet how to get there remains uncertain.

Just as one coastal city, Corpus Christi, scrapped a plan to build a long-anticipated seawater desalination plant to help supply an ever-thirstier industrial base and residential consumers, roughly 190 miles up the shoreline, a private company is seeking state approval to build one to serve Harris and Galveston counties.

EPCOR Utilities Inc. this month announced its intention to build a plant in Texas City that would provide an estimated 26.5 million gallons per day of potable water, having applied for a permit from the Texas Commission on Environmental Quality to discharge the brine generated during desalination.

While EPCOR has not said how much its newly proposed plant would cost, the Corpus Christi City Council learned several weeks ago that the cost of its project — initially proposed to produce 10 million gallons of water a day and later increased to 20 million gallons a day — had swelled from $140 million at its original size to $1.2 billion in its latest design.

Council members understandably couldn't stomach the sticker shock, which is several times what comparable-size plants in other parts of the country have cost. Assuming that EPCOR wouldn't be pursuing its project if it didn't think it would be profitable, we must assume the company expects the cost to build in Texas City won't be nearly as high.

So is EPCOR foolishly taking on an untenable project, or was the Corpus Christi project mired in incompetence?

For Texas' sake, I hope it's the latter. But we won't be able to say until we get more information on a postmortem analysis in Corpus Christi, which I suppose some local leaders are not eager to conduct, or evidence-supported numbers from EPCOR.

In the meantime, we can say a few things with high confidence:

- Desalination won't be inexpensive — at least not in the near term.
- Desalination won't be environmentally simple and, therefore, will be contentious.
- Desalination won't be successful without a much greater all-hands effort — from local, state and possibly federal officials; academic researchers; and private industrial water customers.

Perhaps we need to stop fighting culture wars long enough to pay real attention to critical issues like this — how to produce the resources we need, like water and energy, without irrevocably harming the environmental assets we also need, like air and the food chain.

Desalination has two major challenges: the cost and brine disposal.

In Corpus Christi, the cost rose disturbingly during the project's early stages as parameters changed before spiking alarmingly at the end before the City Council jettisoned it.

Many — it seems like nearly all — major infrastructure projects cost more than their initial estimates. But few local governments can plan for or absorb a more than eightfold increase that pushes a project from ambitiously expensive to utterly unaffordable. And even if a realistic cost of a project like Corpus Christi's is somewhere between its initial and final-straw estimates, that's a lot, so state resources will be needed to make desalination feasible in more communities.

Texas' Proposition 4 on the Nov. 4 ballot seeks to amend the state Constitution to require the Comptroller of Public Accounts to deposit $1 billion annually over 20 years — 2028 through 2047 — in the Texas Water Fund. If voters approve the amendment, that money would be used toward water-related projects such as repairing infrastructure that loses water, water conservation programs and new water supply projects, including desalination plants.

It's an encouraging start — but only a start, as a report by Texas 2036 estimates that the state collectively will have to spend nearly $154 billion on water infrastructure by 2050. That figure consists of $59 billion for water supply projects, $74 billion for leaky pipes and infrastructure maintenance and $21 billion to fix broken wastewater systems.

But, as the saying goes, money isn't everything. At least it's not the extent of challenges to desalination.

The brine produced from extracting salt and minerals from seawater or brackish groundwater, such as from San Antonio Water System's H2Oaks Center on the South Side, must go somewhere — but not anywhere. Discharging brine into coastal waters can profoundly affect, even destroy, localized marine ecosystems, which have varying degrees of sensitivity to raising the salinity levels of their water.

It's not in our best interests to ravage such water habitats, which so often are vital to local economies, as the tradeoff for meeting our water needs.

The reality is that large industrial water users in many cases are driving the accelerated demand for freshwater — more than human consumption — that is pushing communities to gravitate toward desalination. So sacrificing the environment for desalination in such cases can equate to facilitating big industry at the expense of local ones, such as fishing and tourism. And in locations where a local fishing industry is vital to a community's actual food supply, it hardly seems like a reasonable or even smart exchange.

It's worth noting that EPCOR included in its discharge permit application two environmental studies conducted by Texas A&M University-Galveston indicating that the proposed Texas City plant's discharge won't raise the salinity above the levels at which Galveston Bay's wildlife can thrive.

I expect at least some environmentalists will challenge those reports, but regardless of whether they withstand scrutiny, not all coastal habitats are equally resilient.

A recent letter writer to the Express-News suggested that in the interest of taking responsibility for the environmental impact of desalination, whoever builds coastal plants must include long pipelines — several miles and preferably buried under the ocean floor — to discharge brine far enough from shore where the vast ocean can disperse it.

That, of course, adds to the cost of building and maintaining such systems.

Another potential solution is to find uses for brine that we need anyway, such as extracting vital rare minerals that are present in seawater in some parts of the world. Research literature suggests that the long-term viability of doing this remains more aspirational than practical.

What happened in Corpus Christi is a blow to desalination and the idea that tapping the Earth's vast oceans can provide a more sustainable way than draining rivers, lakes and aquifers to provide life-sustaining drinking water to a human race that isn't going anywhere.

Texas needs to shake it off, refrain from politicizing the outcome, and do what it takes to figure it out.

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