

# Advocating for Desalination in Texas



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**By Paul Choules**

***Paul Choules, CEO of Water Cycle and President of TexasDesal, offers some insights into the state of desalination in one of the USA's largest states.***

Five hundred people move to Texas every day, making it one of the fastest-growing states in the United States. The population of Texas is currently at 27 million (which is only 10 million less than Canada) and growing. Texas has a landmass almost twice the size of Germany and has a coast that is 3,360 miles (5,400 kilometers) long. The industrial base continues to invest billions of dollars each year in new or refurbished infrastructure, so when it comes to desalination, opportunities abound. Combining the increase in population with a large industrial base and ever-changing weather patterns means that desal will continue to grow across all sectors of the market in Texas.

TexasDesal was established in 2011 in response to the effect of a multi-year drought on municipal, agricultural and industrial water supplies, including those needed for oil and gas production. The record-breaking heat and fire and drought conditions made it clear that surface water is not sufficient to meet Texas' growing needs. The state's historic dependence on that limited supply has become a liability for public safety and economic prosperity. Texas must create new water supplies, and the obvious source is below our feet and in the Gulf.

While desalination and recycling are not new to Texas, they have lacked unified vision and representation. Since 2011, the members of TexasDesal have been involved at the state level educating decision-makers about the need to incorporate desalination and recycling into long-term water supply planning. Streamlining state agency permitting processes as it pertains to desalination and recycling water has been a TexasDesal priority.

Outreach efforts are part of TexasDesal's mission. TexasDesal hosts an annual conference that attracts about 300 participants from federal, state and local government agencies, state legislators, state regulators from multiple agencies, the public, academia and desal industry experts and suppliers. Additionally, monthly Capitol Seminars (from February – June 2018) are held where desal experts will present various topics to legislative staff at the state Capitol. TexasDesal also funds a scholarship program for university students in Texas.

According to DesalData, there are approximately 180 desalination plants in Texas (both municipal and industrial) with installed capacity of 310 million gallons per day (1.177 million m<sup>3</sup>/d). The Texas Water Development Board reports more than 100 desalination plants (predominately municipal) are installed in Texas.

There are three large municipal facilities in-state: The Kay Bailey

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Hutchinson plant in El Paso, which can produce up to 27.5 million gallons (104,000 m<sup>3</sup>/d) of fresh water daily, the Southmost Regional Water Authority Desalination Plant, which produces 7.5 million gallons (28,400 m<sup>3</sup>/d) a day for south Texas and a new brackish water desal plant in San Antonio. Phase 1 of the San Antonio Water System (SAWS) desalination plant produces 10 million gallons of fresh water daily. By the time Phase 3 is completed in 2026, the system will produce 25 million gallons (94,600 m<sup>3</sup>/D) of fresh water each day.

The feed water sources for virtually all desalination facilities in Texas are brackish ground water, river water or wastewater. There are no seawater plants in operation in Texas as of February 2018, although there is an 8 million gallon per day (30,280 m<sup>3</sup>/d) seawater reverse osmosis plant installed at a petrochemical plant in Corpus Christi that is approximately 90% complete.

To truly understand the desal opportunities in Texas, one must understand what impact the upstream and downstream oil and gas sector has on demand. Texas

has 29 operating refineries (some of these facilities use as much as 10 million gallons a day of potable water [37,850 m<sup>3</sup>/d]) processing approximately 5.8 million barrels of crude oil per day. Houston, soon to be the third largest city in the US, accounts for over 40 percent of the nation's base petrochemical capacity on its own. Plants in Freeport, Beaumont, Corpus Christi and other Texas cities and towns make Texas the largest petrochemical market in the US, and these numbers rival many global markets and locations.

The interest level continues to be high among our elected officials including Texas Governor Greg Abbott. He and other politicians have traveled to Israel to visit desalination and reuse facilities and witness the positive effects of desalination and reuse in Israel.

Texas needs desalination and TexasDesal is here to help the public, industrial, agricultural, military, academic, regulatory and legislative sectors interact and be educated on the positive impact of desalination. ■

