

# CORPUS CHRISTI

## INDUSTRIAL SEAWATER DESALINATION

### *SUMMARY OF KEY INFORMATION*

#### **Background**

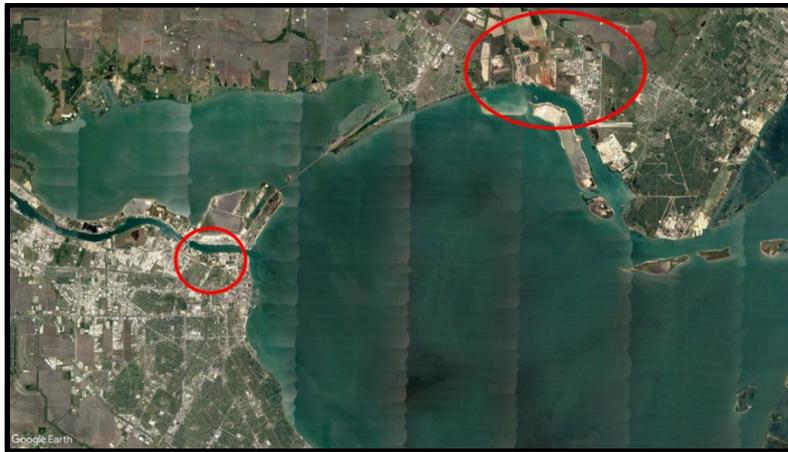
In 2014, public and private partners in the Corpus Christi region began evaluating potential future water supplies because of the drought conditions experienced in 2010-13. Major industrial water users urged the City of Corpus Christi (City), the regional water supplier, to consider new sources with a focus on seawater desalination. A working group was established that included the Port Industries of Corpus Christi (PICC) members, the Corpus Christi Regional Economic Development Corporation (CCREDC), the City of Corpus Christi and the San Patricio Municipal Water District (SPMWD). PICC membership includes industries in Nueces and San Patricio County as well as the Port of Corpus Christi (Port). The PICC, the City, and the CCREDC funded this initial effort.

A team led by Freese and Nichols, Inc. was selected as the “Owners Representative” for the effort. The Freese and Nichols team brings together global, national and state experts with desalination experience, public-private partnerships expertise, and Texas and federal permitting proficiency.

For two years, the partners in the working group conducted intensive evaluations and discussions to determine the feasibility of seawater desalination as a water source and develop a financially and administratively viable approach. Industry partners contributed extensively with engineering and technical support. The City, SPMWD, Port, CCREDC, and industries from Nueces and San Patricio counties were involved throughout this process.

The resulting recommendations included:

- Seawater desalination is feasible, though the water produced would be more costly than existing surface water supplies given current desalination technologies.
- The next step should focus on development of one or two 10-20-MGD plants producing sufficient water to protect major industries from shortages during drought conditions. This approach would protect jobs and benefit the entire region with an additional, resilient supply.
- To allow flexibility and reduce transmission costs, the likely product of the plants would be potable water.
- Further evaluation was needed to select two sites - one along the Inner Harbor and one in San Patricio County in the general vicinity of La Quinta Channel.
- Key factors in site selection include access to power and the water distribution systems; proximity to demand; environmental issues (such as intake/outfall); and local considerations.
- Specific activities in the next phase should include selection and securing of sites, predesign work, and obtaining of permits so that “trigger ready” projects could proceed expeditiously, if warranted by a drought cycle or additional demands.
- The City should secure a State Water Implementation Fund for Texas (SWIFT) loan to assist in the funding of the next phase.
- Major industries are ready to partner in further efforts and help with financing.



**Areas of focus for siting of plants as of April, 2019 following initial review of sites in a larger area**

**Current Phase**

A SWIFT loan was secured and is funding these activities:

- Evaluating potential locations and securing two sites,
- Obtaining key permits for the two sites, and
- Implementing communication and outreach efforts.

The Port identified two possible sites on land owned by the Port and decided to proceed with permitting of these sites. These two sites were among those considered by the City effort as possible plant locations in San Patricio County. One of these sites has been eliminated based on initial screening since, for the purposes of this project, there were issues related to proximity to the water distribution system, distance from the majority of the water demand, and power availability to the site. The City effort continues to work in concert with the Port effort.

Key tasks and the schedule are shown below:

Major Events/Milestones	Start	End
Notice to Proceed MSA-Task One	July 30, 2018	
Confirm Project Definitions	Sept. 2018	Nov. 2018
Site Selection		
Screening Potential Sites	Dec. 2018	Feb. 2019
Evaluate Candidate Sites	Feb. 2019	July 2019
Identify Preferred Sites	July 2019	
Permitting		
Source Water Characterization	Oct. 2019	Sept. 2020
TPDES Applications	July 2019	Oct. 2019
Joint Evaluation Meeting	Sept. 2019	
Marl, Sand, Gravel Shell, or Mudshell Permits	Nov. 2019	
Texas Land Application Permit	Sept. 2019	Oct. 2019
Conceptual Design of Plant Intake/Outfall Facilities	Aug. 2019	Nov. 2019
Water Rights	Aug. 2019	Dec. 2019
New Source Water Approval	Aug. 2019	Dec. 2019

This methodical, incremental approach is designed to lower risk, reduce unknowns and be cost-effective. Plants would be built only when the need is apparent.