# CITY OF CORPUS CHRISTI
# CORPUS CHRISTI WATER

**TO:** Peter Zanoni, City Manager

**FROM:** Nicholas Winkelmann, P.E., Interim Chief Operating Officer

**COPY:** Mayor & City Council

**DATE:** November 7, 2025

**SUBJECT:** **Water Supply Update**

---

Corpus Christi Water (CCW) continues to progress forward on our water supply projects to add new sources and diversify the water supply portfolio.

Community outreach and engagement this past week consisted of:

- Presentation at the San Patricio County Commissioners Court by the City Manager and Interim COO
- Presentation at the San Patricio County State of the County by the City Manager
- Community Information Session in the Calallen area

**Nueces River Groundwater Wells Project**

As of today, the current expenditure for the Eastern Well Field Project is $16,177,200, and $9,014,659 for the Western Well Field Project. The State has committed to providing a $30,000,000 grant for this project. City staff have been working with the Texas Water Development Board (TWDB) on the appropriation of funds. The resolution to request the grant money will be presented to Council on November 18, 2025.

In the Eastern Well Field, Well Nos. 1 to 8 are complete. The City is currently discharging into the Nueces River in accordance with the approved monitoring plan and in compliance with all State laws. There is a warranty issue with well pump No. 8 and two generators, which our suppliers are addressing. A temporary diesel generator is being utilized in place of the natural gas generators until they can be brought back online.

In the Western Well Field, the status is as follows:

- Well No. 9 – Drilling complete, permanent pump has been designed, awaiting delivery and installation of the permanent pumping equipment is expected for next week
- Well No. 10 – Drilling complete, test pumping and water quality sampling complete. The permanent pumping equipment is currently being designed

- Well No. 11 – Drilling complete, test pumping and water quality sampling complete. The permanent pumping equipment is currently being designed
- Well No. 12 – The well screen and production casing will be installed this weekend
- Well No. 13 – The 20" casing has been installed and cemented. The production well screen has been designed, and we are awaiting delivery
- Water line and river outfall have been designed with construction ongoing with 2,408 linear feet (LF) of 24" diameter PVC water line, 1,560 LF of 16" diameter PVC water line, and 1,360 LF of 12" diameter PVC water line installed by CCW crews

The Texas Commission of Environmental Quality (TCEQ) Permit No. 14124 is a temporary water rights permit authorizing the use of the bed and banks of the Nueces River, Nueces River Basin, to convey a maximum of 17,9820 acre-feet of groundwater per year from the Gulf Coast Aquifer for subsequent diversion. Three specific discharge locations are identified in this bed and bank permit. The permit also requires the City to follow a monitoring plan that specifies monitoring points within the river.

The monitoring plan identifies four different action levels. Each action level establishes triggers and subsequent operational changes. A summary of each action level is below.

Action Level 0 – The 8-hour average for Total Dissolved Solids (TDS) is less than 1,000 mg/L.

Action Level 1 – If the 8-hour average for TDS is greater than 1,000 mg/L and is 20 to 29.9% greater than the upstream reading, then staff must review equipment status and current data. Action Level 2 is triggered if the conditions of Action Level 1 persist for 48 hours.

Action Level 2 – If the 8-hour average for TDS or the increased 4-hour average is greater than 1,000 mg/l and is 30 to 39% greater than the upstream reading, then City staff must follow all steps in Action Level 1, increase monitoring, and reduce the pumping by 10%. Action Level 3 is triggered if the condition of Action Level 2 persists for 48 hours.

Action Level 3 – If the 8-hour average for TDS or the increased 4-hour average is greater than 1,000 TDS and is 40% greater than the upstream, then City staff must follow all steps in Action Level 2. This involves reducing pumping in increments of 10%, with further adjustments being made every 8 hours until TDS levels return to Action Level 2. The concentration must return to the previous Action Level within 48 hours.

CCW continues to work with TCEQ to share data biweekly as requested. TCEQ also requires annual reporting.

Further investigative work continues on the Nueces River to better understand other factors affecting river water quality. Five locations have been identified that are contributing high levels of TDS into the river. These sources are independent of the City's groundwater wells and have measured total dissolved solids ranging from 4,400 to 11,700 ppm.

Attached is a history compiled by Jeff Edmonds, the Director of Engineering, of the Calallen Dam and the Nueces River.

City staff is also developing a website project page for this project that will include reports, data, information, and schedules. It is expected that this web page will go live next week.

A community information session on the Nueces Groundwater Project was held on Thursday, November 6, 2025, with over 40 people attending. The session included 30 minutes of questions and answers, followed by an open discussion with City staff members who addressed questions about the well program, well construction, the Gulf Coast Aquifer, City assistance with well monitoring and sampling, and the current drought conditions.

**Evangeline Groundwater Project**

The design team, consisting of Pape Dawson, Hanson, Interra, and HDR, is moving forward on due diligence and pre-design efforts. Following is a status of some of the primary efforts:

- The initial layout of the well field is complete
- Coordination with AEP continues, and 20% of the electrical demand design has been completed
- The Mary Rhodes Pipeline (MRP) connection point has been identified, with coordination and modeling work continuing to support design operating scenarios
- The detailed delivery schedule is anticipated to be available for review by December 16, 2025
- The detailed opinion of probable construction cost (OPCC) is anticipated to be available for review by December 3, 2025
- Completion of an independent hydrogeologic review of groundwater availability, which concurs with the previous investigative work and has provided some design considerations for the well field
- The preliminary boundary survey has been received and provided to Evangeline Laguna LP for review. The survey contractor is working toward a final, signed, and sealed boundary survey

The City has a workshop scheduled for next week to further review the distribution of Evangeline water, its integration into the MRP, and the coordinated operation of the Evangeline Well Field and the MRP.

The City has also engaged a contractor to provide support for pre-construction services to ensure the most efficient delivery.

**Reclaimed Water Infrastructure Project**

CCW has worked with Ardurra to finalize a proposal for effluent conveyance from the Oso Wastewater Treatment Plant to the Greenwood Wastewater Treatment Plant. A Master Services Agreement (MSA) will be presented to Council on November 18 for consideration, advancing this phase of the reclaimed water plan. The MSA would specifically cover design and associated professional services for this project. The project will be designed for expediency and would involve bringing on a contractor early in the process to expedite delivery.

CCW has been in discussions with multiple entities regarding the use of effluent water from our Wastewater Treatment Plants. Discussions and negotiations are ongoing, with multiple meetings scheduled for next week. City staff are working diligently to bring one of the contracts to the Council for consideration on November 18.

Garver has completed their preliminary technical and feasibility memo regarding Aquifer Storage and Recovery, effluent conveyance, and direct potable reuse.

**NRA - Harbor Island Seawater Desalination Project**

The next board meeting for the Nueces River Authority (NRA) is scheduled for Friday, November 14. At this meeting, a request to begin negotiations with respondents for the conveyance line request for proposals (RFP) will be presented. The NRA and its consultants are continuing to develop an RFP for a private partner to provide plant design, with the goal of advertising it by the end of November 2025.

The City has reserved 56,007 acre-feet of water annually, or approximately 50 MGD of the 100 MGD plant. Other entities have reserved an additional 45 MGD.

Required permits include the following:

- TCEQ Intake: draft expected 10/2025
- TCEQ Discharge: draft expected 10/2025
- US Army Corps of Engineers (USACE) – Construction on Harbor Island
- USACE – Bore under the Island
- USACE – Structures and diversion

The NRA's agreement with the Port of Corpus Christi (POCC) includes the following provisions:

- 30 acres of land located on Harbor Island
- Fifty-year agreement with an extension to build and operate a water treatment plant
- Includes easements for water conveyance line
- POCC would obtain all TCEQ and ACOE permits

**South Texas Water Authority**

On September 23, South Texas Water Authority (STWA) Executive Director John Marez provided an update to Council and provided the following information:

- The STWA Board of Directors approved the offering of water to the City on September 9, 2025
- Raw water quality results from their test well were provided to the City as requested
- The water purchased by the City will be treated/finished water and meet or exceed all TCEQ primary and secondary drinking water standards
- The final target of Phase 1 of the project is 13 MGD, with 3 MGD for STWA and 10 MGD available for sale to the City

- There could be an option to add additional water in 10 MGD increments
- STWA has drafted a potential contract to prepare for potential future negotiations

STWA has requested that current discussions initially focus on extending its existing water purchase contract with the City, which expires on December 31, 2025. The STWA contract extension agreement will be presented for consideration at the November 18 Council meeting.

**CC Polymers Seawater Desalination Treatment Plant**

CC Polymers has stated that it would be open to continuing discussions regarding alternative forms of collaboration.

**Inner Harbor Water Treatment Campus**

Per the Council's direction, a formal request was made to the TWDB via correspondence dated October 14, 2025, to authorize a scope change for the State Water Implementation Fund for Texas (SWIFT) loans currently allocated to the City's Inner Harbor Desalination Treatment Plant Project. A response was received on November 7, stating that the Executive Administrator recommends denying any change that would allow the funds committed for Inner Harbor to be used for any other project. A copy of this letter is attached.

**Next Week's Community Engagement and Outreach**

| Event | Date | Time | Location |
|---|---|---|---|
| City of Rockport Council Meeting | November 12 | 5:00 PM | 2751 S.H. 35 Bypass<br>Rockport, TX 78382 |

**Attachment:** Memo from Jeff Edmonds, The History of Calallen Reservoir
**Attachment:** Letter from TWDB, dated November 7, 2025

# The History of the Calallen Reservoir

Jeff H. Edmonds, P.E.
Director of Engineering Services
City of Corpus Christi

In the late 1800's, the City of Corpus Christi was having difficulty supplying fresh water the population. City Council explored several alternatives including groundwater wells and utilizing Tule Lake for a reservoir. Ultimately, council decided to utilize the Nueces River and built a pumping and filtration plant 13 miles upstream. That is near the current-day Labonte Park.

Unfortunately, the bottom of the Nueces River is below sea level for 23 miles upstream of the mouth. That resulted in the water works frequently distributing saline water to the city when there were low flows in the Nueces River of high tides in Nueces Bay. Shortly after construction of the water works in 1892, the City built the first temporary dam with a crest that was 1.5' above mean sea level (MSL). That first dam was constructed of sandbags and would need to be reconstructed after storms.

The City sought and received authorization from the state legislature in 1895 to construct a permanent dam that would create a permanent reservoir. By 1898, the City built a more robust dam consisting of timbers and rocks. The permanent dam maintained the 1.5' above sea level crest elevation. That created a reservoir with a normal pool area of 100 acres and held roughly 300 million gallons of water. That met the City's needs for over a decade.

By 1914, however, the water works limits were again being taxed. The City found that during times of low flow, if the level of the Calallen reservoir were brought too low, the water seeping from the bed and banks was reported to average 3,000 ppm of chlorides. The City petitioned the state in 1914 to add one foot to the dam crest thus increasing it to 2.5' above MSL.

Construction was completed in 1916 to increase the crest elevation of the Calallen Dam. This was done by adding additional rock and timber cribbing. The storage capacity was increased by roughly 35 million gallons for a total of 335 million gallons.

By the late 1920's, the City was once again facing water supply challenges. When the Calallen reservoir was pumped below sea level, salt water would seep from the bed and banks. That limited the amount that could be pumped from the reservoir. Engineers estimated that the City could pump 2 million gallons per day for 60 days of no inflows. Unfortunately, daily demands at that time were reaching 2.8 million gallons per day. In 1931, the City petitioned the State Board of Water Engineers to raise the Calallen dam crest to 3.5' above MSL. Construction was completed in 1931.

It also became evident by the mid-1920's that the Calallen reservoir could not be relied on for much longer to satisfy the growing city's fresh water needs. Design began on the La Fruta Dam in 1926. Construction started in 1927 and was completed in 1930. The La Fruta dam failed during its first year of operation due to a design error. It was reconstructed at the same location and went back into operation in 1934. By the 1950's, the City once again needed to augment water supplies. The Wesley Seale dam was completed in 1958 just downstream of the La Fruta Dam.

Although the water delivery system has evolved over time, the configuration has basically been the same since 1930. The upstream reservoirs are used to feed the Calallen Reservoir which is used to feed the City's filtration plant as well as other users. Without the storage in the upstream reservoirs, the Calallen pool would be able to only supply a tiny fraction of current demands based on its firm yield.

By 1950, the City was once again having difficulty managing water levels in the Calallen pool. There is a two-day travel time for releases from Wesley Seale dam to reach the Calallen Reservoir. There are raw water users withdrawing from the Calallen Reservoir as well as inflows during rainfall events. It was becoming increasingly difficult to avoid drawing the water level too low or spilling over the dam. In 1951, the City received permission from the State Board of Water Engineers to raise the crest elevation by one foot to 4.5' MSL. That construction was completed in 1952.

From the temporary dam that was first installed in 1892, the Calallen dam went through 4 evolutions ending with the 1952 project that is currently in place. While the city's demands have dramatically outstripped the ability of the Calallen Reservoir to supply, it still remains an essential component of the city's water supply system. Without the Calallen Reservoir, it would be impossible to efficiently manage the delivery of Nueces River water supplies to Corpus Christi and the Coastal Bend.

Reference List:

Atlee M. Cunningham, 2000. Corpus Christi Water Supply – Documented History 1852 – 1997. Republished by Nueces Press.

TEXAS WATER DEVELOPMENT BOARD

P.O. Box 13231, 1700 N. Congress Ave.
Austin, TX 78711-3231, www.twdb.texas.gov
Phone (512) 463-7847, Fax (512) 475-2053

November 7, 2025

Mr. Peter Zanoni
City Manager
City of Corpus Christi
1201 Leopard Street
Corpus Christi, TX 78401

Dear Mr. Zanoni:

In response to the City of Corpus Christi's (City) request for a change in the scope of the Inner Harbor Desalination Treatment Plant (Inner Harbor) project, my recommendation will be to deny any change that will allow the funds committed for Inner Harbor to be used for any other project.

Should the City wish to pursue financing for any project other than Inner Harbor, the City will need to submit a new application for financial assistance.

As a reminder, at its December meeting, the Board will consider the City's September 2025 request to modify its annual closing schedule to allow for an extension of time on the financing of the Inner Harbor Desalination Treatment Plant project.

Regards,

Bryan McMath
Executive Administrator

Cc: The Honorable Juan "Chuy" Hinojosa, State Senator, Texas Senate
The Honorable Lois Kolkhorst, State Senator, Texas Senate
The Honorable Adam Hinojosa, State Senator, Texas Senate
The Honorable Todd A. Hunter, State Representative, Texas House of Representatives
The Honorable J. M. Lozano, State Representative, Texas House of Representatives
The Honorable Denise Villalobos, State Representative, Texas House of Representatives
The Honorable Paulette Guajardo, Mayor, City of Corpus Christi
The Honorable Roland Barrera, Council Member, City of Corpus Christi
The Honorable Mark Scott, Council Member, City of Corpus Christi

Our Mission

Leading the state's efforts in ensuring a secure water future for Texas

Board Members

L'Oreal Stepney, P.E., Chairwoman | W. Brady Franks, Board Member | Ashley Morgan, Board Member

Bryan McMath, Executive Administrator

The Honorable Carolyn Vaughn, Council Member, City of Corpus Christi
The Honorable Everett Roy, Council Member, City of Corpus Christi
The Honorable Sylvia Campos, Council Member, City of Corpus Christi
The Honorable Eric Cantu, Council Member, City of Corpus Christi
The Honorable Kaylynn Paxson, Council Member, City of Corpus Christi
The Honorable Gil Hernandez, Council Member, City of Corpus Christi