



INTERIM REPORT

TO THE 88TH TEXAS LEGISLATURE

HOUSE COMMITTEE ON
NATURAL RESOURCES
JANUARY 2023

**HOUSE COMMITTEE ON NATURAL RESOURCES
TEXAS HOUSE OF REPRESENTATIVES
INTERIM REPORT 2022**

**A REPORT TO THE
HOUSE OF REPRESENTATIVES
88TH TEXAS LEGISLATURE**

**Tracy O. King
CHAIRMAN**

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Committee On
Natural Resources

January 3, 2023

Tracy O. King
Chairman


P.O. Box 2910
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The Honorable Dade Phelan
Speaker, Texas House of Representatives
Members of the Texas House of Representatives
Texas State Capitol, Rm. 2W.13
Austin, Texas 78701

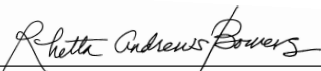
Dear Mr. Speaker and Fellow Members:

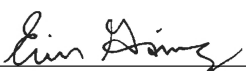
The Committee on Natural Resources of the Eighty-eighth Legislature hereby submits its interim report including recommendations for consideration by the Eighty-ninth Legislature.

Respectfully submitted,


Tracy O. King

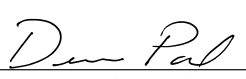

Cody Harris

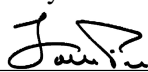

Rhetta Andrews Bowers

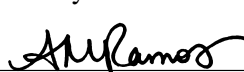

Erin Elizabeth Gamez



Kyle Kacal

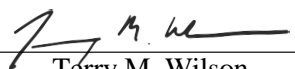

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GULF COAST PROTECTION DISTRICT

Overview

The 87th Texas Legislature passed SB 1160, which created the Gulf Coast Protection District (GCPD) to serve as the non-federal sponsor for the U.S. Army Corps of Engineers (USACE) led Sabine to Galveston (S2G) and Coastal Texas programs, known together as the coastal barrier system. The House Committee on Natural Resources was charged by the Speaker to conduct oversight of the implementation of SB 1160 to ensure its intended legislative purpose is being met.

Because the GCPD is just over one year old, the Committee took this opportunity to familiarize itself with the District, some of its important partners, and the USACE. Through this exercise, the invited witnesses were able to provide the Committee with a valuable progress report on the Texas Coastal Program and other projects under their purview.

The Texas Coastal Program includes a combination of coastal storm risk management and ecosystem restoration projects that function as a system to reduce the risk of coastal storm surge damage to our coastal communities and critical industries and to restore degraded coastal ecosystems. The program includes:

- The Galveston Bay Storm Surge Barrier System, to reduce damage to communities, critical petrochemical, and refinery complexes, Federal navigation channels, and other existing infrastructure in and around Galveston Bay from storm surge.
- A Coastwide Ecosystem Restoration Plan, to restore degraded ecosystems that buffer communities and industry at eight locations on the Texas coast from erosion, subsidence, and storm losses.
- The South Padre Island Beach Nourishment Project, including 2.9 miles of beach nourishment and sediment management activities.

The General Land office is the lead non-federal sponsor for both the Coastwide Ecosystem Restoration Plan and the South Padre Island Beach Nourishment Project, while the GCPD is the lead non-federal sponsor for the Galveston Bay Storm Surge Barrier System. The Galveston Bay Storm Surge Barrier System is the most significant and major component of the Texas Coastal Program.

Summary of SB 1160

SB 1160 passed the Legislature with overwhelming bi-partisan support and was signed into law by the Governor on June 16th, 2022, going into immediate effect. The bill provides that the Gulf Coast Protection District, which includes Chambers, Galveston, Harris, Jefferson, and Orange counties, is a special District created under Section 59, Article XVI, of the Texas Constitution and is necessary to establish an instrumentality for protecting the coast in that region. The purpose of the District is to serve as the non-federal sponsor of the Coastal Texas Program and the S2G Program projects located in this territory. The District is subject to review by the Sunset Commission every 12 years, but cannot be abolished through that process.

The GCPD is governed by a board of 11 directors that serve staggered four-year terms. Each member county commissioners court appoint one director. The governor, with the advice and consent of the Texas Senate, appoints the remaining six directors as follows:

- two directors to represent Harris County;
- one director to represent a municipality in the District;
- one director to represent ports;
- one director to represent industry;
- one director to represent environmental concerns.

The board elects from its membership a president to serve in that position for two years. The majority of directors cannot be from a single county.

The bill authorizes the GCPD to establish, construct, extend, maintain, operate, or improve a coastal barrier or storm surge gate, among other related powers.

The bill grants the GCPD both taxing authority and eminent domain authority, which are necessary to carrying out its mandate and required by the USACE. Subject to voter approval, the District may impose an ad valorem tax not to exceed \$.05 per \$100 of valuation. The District must also seek voter approval to issue bonds payable by an ad valorem tax but not those secured by other sources of revenue. The District is granted power of eminent domain and may exercise that authority in the manner provided by CH. 21, Property Code, but is prohibited from exercising the power of eminent domain to acquire property owned or operated by a port authority, navigation district, drainage district, or common carrier railroad.

SB 1160 permits the GCPD to enter into project partnership agreements with the USACE and cooperative and interlocal agreements with other political subdivisions to carry out the District's mission. It expands provisions regarding contracts necessary to the exercise of the District's powers, rights, duties, and functions.

Discussion

Since the District's creation roughly a year ago they have hit significant milestones. GCPD reports 15 regular board meetings, a signed letter of intent with the USACE on the Coastal Texas Program, an executed project partnership agreement with USACE on the Orange County projects, and a series of interlocal and local cooperation agreements. In order for the District to move forward with the Texas Coastal Program, Congress must give final authorization by passing the Water Resources Development Act of 2022, which has been delayed, but is expected to pass before the end of 2022. Once authorized, the Coastal Texas Program is eligible for federal funding and the project partnership agreements can be finalized.

Prior to the passage of SB 1160, the Texas Legislature indicated it was committed financially to the suite of projects at large. SB 2212 (86R) allowed local drainage Districts involved in the S2G program to sign project partnership agreements with USACE, and SB 500 (86R) allocated \$200 million for project costs and non-federal cost-share for the S2G program. With the passage of SB 1160 alongside \$200 million in funding appropriated by SB 1 (87R) for GCPD administrative costs, project costs, and non-federal cost

share for both the S2G and Coastal Texas Projects within GCPD territory, the Legislature demonstrated it seriously endorsed the project.

The completion timeline spans 20 years and the total projected cost is \$30.91 billion in today's dollars. Similar to most USACE projects, the Coastal Texas Program will require a 65/35 federal/non-federal cost share. The Galveston Bay Storm Surge Barrier, GCPD's lead project, has a total authorized cost of \$28.05 billion. That breaks down to a federal share of \$17.5 billion and a non-federal share of \$10.72 billion. This price tag will be minimized by flood insurance reductions and the significant reduction in structural damages and business disruption. For example, it was reported to the Committee that Hurricane Ike caused an estimated \$25 billion in direct damages and an additional \$142 billion in economic impacts to the region. Texas, the nation, and the world have significant interest in the region, but the lives and livelihoods of everyday Texans are chief among them and are alone worth protecting. Our assessment is that the non-federal cost share portion of the project would be financially advantageous for Texas.

There is criticism that these projects will not protect the Houston area from a Hurricane Harvey-like event. While it is possible that some components of the system can positively impact rainfall flooding, the Coastal Texas and S2G are explicitly storm surge reduction projects, and the Committee has heard no claims to the contrary from GCPD or USACE. Note that since Hurricane Harvey, flood mitigation strategies and funding are being addressed elsewhere by the legislature. In fact, the first regional flood plans are due in January 2023, while the first state-wide flood plan is set to be completed in 2024.

Conclusion/Recommendations

The Committee is encouraged by the steps the GCPD has taken to get up and running. Because the continued support of a diverse range of stakeholders is vital to the project's success, we are further impressed by the pace in which the District was able to organize itself in a transparent and accessible manner.

Some issues out of GCPD's control could impact the progression of these programs. First, while the project is set to receive congressional authorization, that does not include funding. It is worrying that the work of the USACE, GCPD, and other partners could hang in the balance while waiting for federal funding, which is necessary for the projects to move forward. GCPD should continue to work with the Texas legislature and Texas Congressional delegation to coordinate funding needs and expenditures.

Second is the timeline. While the Committee has demonstrated in the past its commitment to responsible environmental stewardship and recognizes the importance of impact studies, the number of those studies and the time it takes to complete them can be frustrating. Those delays can have consequences in their own right, and time and paperwork can suffocate progress. We hope this will not be the case with the Coastal Texas Program. In order to reduce the impact of the timeline, GCPD should continue to work with USACE to plan the sequence of the project components in a manner that provides protection in segments until completion.

We conclude that the Legislature has given the District the tools they need to move forward and no statutory changes are necessary at this time. That being said, it is important that the Legislature remain financially committed to the project's success.

Accordingly, the Gulf Coast Protection District (GCPD) will be seeking an appropriation in the 88th regular session from the Texas legislature to continue funding GCPD operations and the non-federal share of the US Army Corps of Engineers' storm surge suppression projects in the S2G and Coastal Texas programs that are located in the GCPD's five county territory. In order to protect our citizens and such an important industry in Texas, the Committee recommends their request be approved and passed.

Because of the continued need for state investment, and the long-term impacts on coastal resiliency and the state economy, the Committee also recommends that it continue to monitor the progress of GCPD.

ISSUES REGARDING THE HIDALGO COUNTY WATER IMPROVEMENT DISTRICT #3

The Committee was assigned the task of monitoring the implementation of SB 2185, which as introduced, dissolved a particular water control and improvement district, and as passed, mandated certain best practices to the same in lieu of dissolution. Despite this and given the lengthy, fraught history of this subject, we felt it necessary to consider the history of water districts and the Legislature's role in disputes of this kind. From there the 88th legislature may be better positioned to consider holistic approaches to ensuring all districts are operating at their very best.

Arising from allegations of mismanagement, price gouging, and political ill-will, SB 2185 was the latest iteration in a series of bills filed over the last decade that sought to dissolve the Hidalgo County Water Improvement District #3 (District). Like its predecessors, as part of the dissolution process, the bill provided that the District's assets, including infrastructure and water rights, were to be transferred to the City of McAllen. The District maintains that because they still provide a necessary and statutorily authorized service the bill is unnecessary and simply an attempt by the City to take its assets.

The House companion to SB 2185 was referred to the House Natural Resources Committee, but due to a longstanding familiarity with the issue, it was not brought up for a hearing. After passing the Texas Senate, SB 2185 was received by the House and referred to the Urban Affairs Committee (instead of the Natural Resources Committee) where it was summarily reported favorably in a formal meeting without a public hearing. While not a requirement under the House rules, it is custom that a committee hold a public hearing on a bill for which the subject of has not previously been considered. Even more so on matters of consequence or controversy, which SB 2185 qualifies as both.

While under consideration by the full House, the Chairman of this Committee raised a point of order on further consideration of SB 2185 on the grounds that the bill was drafted contrary to the Texas Constitution's prohibition on most local bills, a provision very much designed to prevent the legislature from enacting legislation meddling in local affairs. In an agreement to withdraw the point of order, the dissolution procedures were replaced with best practice language and other agreed to terms. It was further promised that this Committee would consider the subject at an interim hearing in the McAllen, Texas area.

The Committee met in Weslaco on November 14th, 2022. Both the author and House sponsor of SB 2185 were present and joined the committee in questioning witnesses, which primarily consisted of District or City representatives and their allies. Though very informative, the hearing was often tense, accusatory, and argumentative. To supplement, we thoroughly reviewed documents on file with the Public Utility Commission relating to the rate case the City has filed against the District. That included petitions, petition responses, certificates of adjudication, water supply and delivery contracts, and a decade-old state audit report. Lengthy questioning during the hearing was unable to definitively determine if the District's rate structure is comparable to other similar districts. However, it is neither the charge of this Committee nor its duty to audit the District or otherwise engage in the rate dispute between the parties.

In order to better understand the function and purpose of Hidalgo County Water Improvement District #3, we will provide a brief history of water districts. The following summary owes a great deal to Glenn Jarvis' essay the *Evolution of Water Resources Management in Texas*.

In the early 1850s, the state realized the need to develop and manage surface water resources. Back then the legislature enacted special laws granting charters to create private irrigation companies. The concept was that these companies would then raise private capital for irrigation projects to provide water to farms and the burgeoning towns they surrounded.

Over the next 50 years, this system proved limited and largely ineffective. For successful growth, there was a clear need for publicly financed and organized water development.

Accordingly, the citizens of Texas voted to approve a 1904 amendment to Art. III, Sec. 52 of the Texas Constitution. This amendment authorized the legislature to establish political subdivisions and districts with bonding authority for certain water improvement projects. Works specifically authorized by the 1904 amendment included the improvement of watercourses to prevent flooding, permit navigation, and use for irrigation. It also allowed for the construction and maintenance of pools, lakes, reservoirs, dams, canals, and waterways for irrigation, drainage, or navigation purposes.

During the following Session the legislature passed a series of laws aimed at promoting water development in light of this newly granted constitutional authority. Notably, this is when irrigation districts were first authorized.

Despite these efforts, development still languished. As noted in the *Evolution of Water Resource Management in Texas*, the 1904 amendment was enacted during a period of widespread public concern about higher taxes. Consequently, the amendment was drafted in a manner that impeded its effectiveness. Limitations such as a two-thirds majority vote of resident property owners to issue bonds, a conservative debt ceiling, and barring taxation where cities were included within a district's boundaries all contributed to the amendment's failure.

Nearly a decade later in 1913, the legislature took another swing by implementing what was entitled the Irrigation Act (sometimes referred to as the Glasscock Act). Not only was this a major advancement in codifying surface water law, it again authorized the creation of irrigation districts, but this time with expanded water development authority.

Since the days of private irrigation companies leading up to the Irrigation Act of 1913, irrigation and economic development were in many regards synonymous. Without irrigation, there were no farms. Without farming, there was no economic activity. In many regions, irrigation was essential to the state's growth and development. Understanding that relationship, The Chairman of the Irrigation Committee, Rep. D.W. Glasscock from McAllen, Texas, and one of the major sponsors of the 1913 Irrigation Act addressed the House in support of the bill, stating:

"[W]hile known as the 'Irrigation Bill' , it is in fact much more extensive in scope than this term would indicate, and is an effort to form a comprehensive system of statutory 'Water Law' for this state. It deals, not only with the important question of irrigation, in which millions of capital is now invested in this state, and upon

which many thousands of people are dependent; but also with every right to use the water; from the Primary use for drinking and domestic purposes, the supply of cities and towns, the natural use for stock raising, the use for mining, the development power, and other purposes; up to the problem of conservation of this great natural resources, and its control application and use, to the benefit of all people of this state."

So while irrigation may have been a force in the modernization of Texas water law, the statutes enacted in those early days granted districts broad authority necessary to develop water resources for reasons beyond irrigation, as articulated by Rep. D.W. Glasscock.

Following a series of destructive floods and recognizing that districts organized under the 1904 amendment were integral to the state's development but were effectively limited, public sentiment began to shift. The need to develop and control water now outweighed fiscal restraint. The Legislature responded by further refining and expanding upon the 1913 Irrigation Act to include "water improvement districts." But more significantly, they passed a Joint Resolution to amend the Texas Constitution. On August 21st, 1917, the citizens of the state of Texas fully endorsed the district-based concept of water management by approving what is known as the "Conservation Amendment."

By authorizing the legislature to create conservation and reclamation districts with broad operational authority and no financial restrictions, the Conservation Amendment essentially replaced the 1904 amendment. In fact, the Legislature reiterated its clear preference for these new districts the following year in a 1918 special session called to implement the Conservation Amendment. The Canales Act of 1918 both reaffirmed large provisions of the 1913 and 1917 Acts and created conservation and reclamation districts with the powers of water improvement districts but none of the limitations imposed by the 1904 Amendment. Though the process was cumbersome, it also authorized existing districts to convert to conservation and reclamation districts authorized by the Conservation Amendment.

Following some confusion in the courts and the onerous conversion requirements of the 1918 Act, the 1925 Legislature again enacted legislation creating a new type of district, the water control and improvement district. Following the same trend, these new districts had expanded powers and duties but lost the limitations that hampered the success of their predecessors. This Act allowed any existing water improvement district or irrigation district to convert into a water control and improvement district by a simple action of its board of directors. This authority was extended to any other conservation or reclamation district a few years later. It has been noted that many districts created prior to this Act eventually converted as HCWID #3 did in 1926.

It is here that today's Water Code dealing with districts begins to take shape. After 1925, amendments to this area of Texas water law came slower and were more particular and specific, and much of what was enacted up until this point became the foundation for what Water Code chapters 51 and 55 are today. It is also within this context that we must look at Hidalgo County Water Improvement District #3.

The Hidalgo County Water Improvement District #3 was created in 1921 as a constitutionally authorized conservation and reclamation district to furnish raw water for irrigation and to deliver water to the City of McAllen for municipal purposes. It was formed through the county petition process as set forth in general law as opposed to by the Legislature through the enactment of a special law. Following the 1925 Act, the

District's board voted affirmatively in 1926 to convert the district into a water control and improvement district. WCIDs, of course, were specifically designed to accomplish more than just irrigation.

During the hearing, the District was repeatedly referred to as an irrigation district that has outlived its original purpose. This characterization disregards the historic intent of water control and improvement districts. As previously illustrated, the Water Code was purposefully crafted to include WCIDs among the preferred entities given the express responsibility of providing raw water for municipal and irrigation users. Because WCIDs still fulfill this statutory obligation they are by no means a vestige of the past. Rather, they are successfully operating across the state and their governing statute is consistently updated and tweaked to respond to contemporary issues. By design, districts have been able to heavily invest in water rights acquisition and delivery infrastructure in ways that municipalities may not have always been able to.

Unhappy with the rates, dissatisfied with management, and unable to successfully negotiate a mutually agreeable solution the City desires to dissolve the District and take over its assets and operations by legislative action.

After an exhaustive search of the legislative archives, it is apparent that legislation like SB 2185 is largely without precedent. The Committee found only one other instance where a general law water district was dissolved by the legislature. Under current statutory dissolution procedures, a district's water rights revert back to the state. However, in the example found, the district was voluntarily dissolving and desired legislation to transfer its assets. While untraditional, in light of such an agreement, legislation of this sort is understandable. However, that is not the case between the City of McAllen and the HCWID 3.

While we believe the District has shown in good faith that it is working towards implementing the requirements of SB 2185, we remain confused about the District board elections. We are unimpressed with any explanation thus far in regard to how and when lists of qualified voters are produced or how qualified voters are made aware that an election is even taking place. If the District wishes to continue operating as a WCID, there are issues here that need to be resolved. The Committee is cautiously open to exploring legislative possibilities, but we want to stress that any changes made in statute will potentially impact thousands of other districts for which we've heard no complaints.

The Committee has ultimately determined that WCIDs still very much serve their intended purpose. While there may be issues at Hidalgo County Water Improvement District #3, they are not ones for which the Legislature is suited to specifically address. It is situations like this that Art. III, Sec. 56 of the Texas Constitution is designed to protect against: "the purpose of Section 56 is to stop the legislature from meddling in local matters" (*The Constitution of The State of Texas: An annotated and Comparative Analysis*, George Braden). It is contrary to the Constitution and would set a dangerous precedent to act in such a fashion simply because we may favor one political subdivision over another. It is our job to regulate districts as a whole and not on the individual level. Accordingly, there are statutory options to pursue grievances available in addition to judicial remedies. If those options are insufficient, it is the Legislature's prerogative to enact a statutory framework that keeps districts honest, transparent, and efficient. As always we welcome suggestions on improvements to the law to keep all districts functioning at their very best.

INFRASTRUCTURE

Overview

The Committee on Natural Resources heard testimony on topics pertaining to Interim Charge 3, including sections that focus on Water and Flood Mitigation Infrastructure Capabilities and Future Infrastructure Needs, Sustainable Funding for Water Projects and Infrastructure Repair and Replacement, and Cost-Effective Water Supply Improvements. Testimonies made clear the need for better water management practices in light of an anticipated 9% increase in water demand coupled with an 18% decrease in supply over the coming years - a deficit projected to cause potential water shortage during any drought of record.

Infrastructure and Flood Mitigation

Investing in infrastructure will only become more expensive in the future. The current cost projection to design, construct, and implement infrastructure strategies suggested by ASCE-TX by 2070 is \$80 billion. That price tag rises to \$153 billion if we were to start in 2070.

ASCE-TX has graded our state's drinking water infrastructure a C -. Outdated and deteriorated water utility infrastructure has led to increasing water stoppages and boil water notices, posing a serious health threat to millions of Texans every year. Furthermore, according to *Hidden Reservoirs: Water Loss in Texas*, a report published by the Texas Living Waters Project, Texas utilities are losing at least 572,000 acre-feet of water per year or about 51 gallons per day per connection. That is more than the combined 2020 water needs of Austin, Fort Worth, El Paso, Laredo, and Lubbock.

The Texas Rural Water Association (TRWA) conducted a Water Line Infrastructure Survey of small to mid-sized rural water systems and small cities with populations of 50,000 or less. Their report notes that 70% of water lines in each surveyed system are over 20 years old and 57% of water lines in each surveyed system are over 40 years old. The average date of installation for the water systems surveyed is 1966, meaning some infrastructure is nearly 60 years old. TRWA notes that the life span of transmission structures (pipes) is 35 years and that 70% of transmission structures for community water systems are at or near the end of their life span, while 57% exceed the life span. Revenue drawn from drinking water utilities in small, rural communities is not sufficient to update their infrastructure, making state financing help critical.

Our flood-related infrastructure also received a C - grade. Significant challenges here include managing flood risks for older developments (which requires adaptation or retrofitting) or managing flood risks for new developments (which requires adopting more costly higher floodplain management standards and development rules). According to the ASCE-TX, the higher costs of adopting modern floodplain management standards and development rules will significantly reduce the risk of flooding and lower recovery costs when it does occur.

Additional testimony advocated for nature-based flood mitigation and water conservation approaches that serve multiple water benefits by incorporating green spaces. Areas with native vegetation and especially well-managed natural habitats over aquifer recharge zones promote the natural recharge of groundwater resources. Green spaces adjacent to any watershed, especially prominent wet-weather creeks, rivers, streams, etc. retain flood waters and thereby reduce flood risk downstream.

There is ample opportunity to achieve flood mitigation and water conservation by protecting our natural systems and promoting nature-based infrastructure projects. It was noted at the hearing that implementing new or fostering existing greenways, land conservation, and low-impact building design are often cheaper, faster to implement, and self-maintaining. Texas should be unafraid to embrace green infrastructure to augment traditional methods.

Flood Planning

In 2019 the Texas Legislature expanded the TWDB's role in flood planning. The first flood planning groups were put together on October 1, 2020 - the first regional flood plans will be due at the start of the 88th legislative session in January 2023 and the first state flood plan will be due on September 1, 2024.

Each of the 15 independent regional flood planning groups will be responsible for creating its own regional flood plans, which will culminate in the Texas' first-ever state flood plan. Flood planning groups have been directed to identify specific flood risks and recommend flood mitigation projects, similar to how the regional water planning process functions. Groups must consider strategies aimed at reducing existing flood risks and floodplain management to avoid increasing flood risks in the future.

In addition to the regional and statewide flood planning process, funding has already been provided to achieve or study the following:

- Create a Flood Resource Guide for Flood Officials and Communities
- Create a Flood Early Warning System (FEWS) Guidance Document for communities
- Asses the Causes and Predictability of Extreme High Rainfall and Linkages to Flooding in Texas
- Update the Texas Statewide Highwater Marks Inventory
- Study effective Flood Awareness Communication
- Study infrastructure Assessment Methodologies
- Create a model for Calculating Agricultural Flood Loss
- Study nature-based Solutions for Flood Mitigation in Texas
- Develop Future Rainfall Frequency Grids

Flood planning in Texas has made significant strides in the past several years. We look forward to the publication of the first statewide flood plan and hope to maintain funding to turn proposed projects into reality.

New and Alternative Water Supply Development

As we progress into a future of increasing demand and decreasing supply, it is essential that Texas invest state dollars in the development of new and alternative water sources.

Desalination is a treatment process that removes salt, metals, suspended solids, and other constituents found in source water. It's a process not new to Texas. In fact, the first evaporation demonstration plant opened in Freeport in 1961, with then-Senator Lyndon Baines Johnson speaking at the ribbon cutting. Built on the heels of the drought of the 1950s, after eight years federal funding dried up and the plant was closed down. Technology has come a long way since then. Instead of evaporation, reverse osmosis is used today.

Today, 36 brackish water desalination plants produce 90 million gallons of freshwater per day in the state. We encourage the concept of regional partnerships to develop brackish water between cities in areas with that resource. Regional approaches should be more affordable and able to produce more water.

Projects along the gulf coast offer significant potential. For example, the proposal by the Port of Corpus Christi has a planned capacity of 40 million gallons of freshwater per day. The Corpus Christi region is experiencing rapid growth and a potential water deficit. A new water supply is vital to the region. If the Port project is completed, water from the plant can be for current and projected drinking water needs, and to offset industrial reliance on existing water supplies.

Desalination, though, is not without its risks. Texas has a sensitive coastal ecology and any project done in that region requires extra investment to ensure those risks are properly mitigated. For this reason, it is imperative that the state participate financially in the success of these projects to realize the full benefits desalination offers.

In addition, the Committee is aware that as water becomes more scarce, strategies to develop new sources get vastly more expensive and difficult to build. The legislature should consider ways to incentivize and promote regional infrastructure partnerships. That includes strengthening statutes that protect regional partnerships that allow cities and other utilities to work together through interlocal agreements to develop solutions to local water needs.

Recommendations

Texas water and wastewater infrastructure are at a crisis point. To prepare for the future, we should seriously consider large-scale investments in water development. The state budget surplus and billions of dollars coming to us from the Infrastructure Investment and Jobs Act present a unique opportunity to make the necessary investments in our future water security.

In addition to the suggestions above, we offer the following for consideration by the 88th Texas Legislature:

- Flood and stormwater infrastructure. The state's new regional flood planning process will cease after the development of the first state flood plan in 2024 if we do not provide additional funding. TWDB received over \$2.4 billion in applications for the Flood Infrastructure Fund (FIF), but the \$793 million appropriated is now exhausted. Adding FIF funds would address flood and stormwater infrastructure deficiencies, reduce inequality, and reduce risks to the public.

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- Encourage local communities to adopt higher floodplain management regulations.
 - Water Availability Models (WAMs). Updating WAMs is important to accurately inform TCEQ's water rights permitting and surface water availability decisions.
 - Water and Wastewater Infrastructure. New and additional funding is necessary to protect public health and reduce water loss. We need to increase principal investment in the State Water Infrastructure Fund and State Water Implementation Revenue Fund for Texas. Consider prioritizing utilities with above-average water loss.
 - Encourage water and wastewater utilities to establish rates that generate sufficient revenue to fund proactive infrastructure replacement (both pay-as-you-go and debt-financed) as well as management programs to track facility age and conducted planned replacements. This is critical given the age of many of the water and wastewater infrastructure systems in the state.
 - Encourage water and wastewater utilities to establish rates that generate sufficient revenue to fund system improvements, backup power systems, general repairs, and replacement work. This is critical given the age of many of the water and wastewater infrastructure systems in the state.
 - Update the statewide planning process to consider projected drought conditions rather than the "drought of record."

WATERS OF THE UNITED STATES

The committee heard testimony relating to proposed federal regulations under consideration by the EPA pertaining to the definition of Waters of the United States (WOTUS). Originally coined in the 1970's Clean Water Act (CWA) as a "threshold term...that established the scope of federal jurisdiction under the Act." The Clean Water Act does not explicitly define WOTUS and leaves the EPA and Army Corps of Engineers with the power to define WOTUS at their discretion, yet jurisdiction remains highly uncertain and the scope of CWA lacks interpretability according to witness testimony. There are three Supreme Court decisions that have addressed the definition of WOTUS:

- In 1985 (*United States v. Riverside Bayview Homes, Inc.*) the court deferred (as told by the EPA's WOTUS description) the "Corps' assertion of jurisdiction over wetlands adjacent to a traditional navigable water, stating that adjacent wetlands may be regulated as waters of the United States because they are 'inseparably bound up' with navigable waters and 'in the majority of cases' have 'significant effects on water quality and the aquatic ecosystem' in those waters."
- In 2001 (*Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*) the court (as told by the EPA's WOTUS description) "rejected a claim of federal jurisdiction over non-navigable waters, noting that the term 'navigable' must be given meaning within the context and application of the statute. The court held that the use of 'isolated' non-navigable intrastate ponds by the migratory birds was not by itself a sufficient basis for the exercise of federal regulatory authority under the Clean Water Act."
- In 2006, (*Rapanos v. United States*) a four justice plurality stated that (as told by the EPA's WOTUS description) "waters of the United States include only those relatively permanent, standing, or continuously flowing bodies of water forming geographic features that are described in ordinary parlance as streams, oceans, rivers, and lakes... and wetlands with a continuous surface connection to a relatively permanent body of water connected to traditional interstate navigable waters."

Fluid policy objectives driven by changing presidential administrations impact the rules set forth by the Environmental Protection Agency and the Army Corps. As an example, the current guidelines of the Biden administration include two entirely different rules for defining jurisdiction, the "Relatively Permanent" and the "Significant Nexus" standards.

Under the Obama administration, a ruling was set forth designating "Significant Nexus" as the test for determining the waters of the United States. The definition of "tributaries" under this methodology is what's confusing, as "tributaries" were defined broadly as water with an ordinary high mark that has a bed and banks that contribute flow directly or through another water. There are innumerable smaller perennial, intermittent, and ephemeral streams in Texas. Testimony made clear that such vast jurisdiction is untenable - the EPA has admitted so - and there are more efficient approaches for defining jurisdiction that protect clean water and less drastically impact citizens.

Testimonies emphasized how these frequent rule changes confound the ability of citizens to understand and abide by regulations and how failure to comply often leads to costly fines. The combination of severe penalties, the lack of jurisdictional certainty, and the inability of the Texas Commission on Environmental Quality to provide a situational and regulatory perspective to citizens is the impetus for recommending push-back against the federal government and an invocation of state sovereignty to limit the jurisdiction of the federal government.

The Committee agrees with the sentiment expressed by witnesses at the hearing, but recognizes the inability of the Texas Legislature to influence the matter. Accordingly, we urge our congressional delegation to intervene in a manner that brings regulatory clarity to the issue.

GROUNDWATER

The Speaker directed the Committee to explore five separate groundwater management and regulatory topics. A hearing was held and testimony was taken on August 24th, 2022. Below are brief summaries of important issues within those topics and recommendations, if applicable.

Large-Scale Groundwater Transfers

Introduction

For this topic, we approached the question of large-scale water transfers through an examination of the Vista Ridge project. While attempting to avoid casting judgment on this project alone, we felt it was an appropriate proxy to discuss the issue at large.

As was noted in the hearing, these are primarily rural to urban projects and as demand grows, so will the number of proposals. Because we recognize that the development of groundwater is inevitable to the state's growth, we also understand that there will be -- and already have been -- impacts on aquifers as a direct result of these projects. Consequently, we heard from many Texans whose wells have run dry due to aquifer depressurization. Despite being assured that these aquifers remain healthy and plentiful, this fact is not reassuring to affected landowners who face the significant financial burden of deepening their wells and dropping their pumps.

Because there is no doubt that Vista Ridge has impacted other surrounding wells, and that information is well-documented elsewhere, we feel it unnecessary to record a summary of that testimony here. Instead, this report looks at the general regulatory framework regarding large-scale transfers and suggests some possible avenues to address problems associated with such projects.

GCD Regulation of Water Transfers

Chapter 36 of the Texas Water Code, along with certain recent and historic court cases, provide the structure for the ownership, governance, and regulation of groundwater resources in Texas. Section 36.002 provides that landowners own the groundwater beneath their property, subject to regulation by a groundwater conservation district (GCD or district), but are not guaranteed the right to produce any specific amount of groundwater. Chapter 36 also declares GCDs to be the state's preferred method for the management of these resources through rules promulgated consistent with Chapter 36 using the best available data and science, and consistent with neighboring GCDs in Groundwater Management Areas. Management of groundwater resources by a GCD inherently focuses on the production of the resource and must be fair and impartial to all property owners, as long as the use is beneficial regardless of the type or location of use.

Section 36.122 of the Texas Water Code sets forth a GCD's authority to regulate the transfer of groundwater outside its boundaries. A district may not adopt rules expressly prohibiting the export of groundwater and Section 36.122(c) prohibits a GCD from imposing more restrictive permit conditions on transporters than existing in-district users, except as provided in Section 36.113(e) (which sets forth criteria for the imposition of more restrictive permit conditions). As detailed in Section 36.122(f) and (g), a GCD may limit an export

permit if the following conditions warrant limitation, and are subject to the criteria of Section 36.113(e) being met:

- the availability of water in the GCD and in the proposed receiving area during the period for which the water supply is requested;
- the projected effect of the proposed transfer on aquifer conditions, depletion, subsidence, or effects on existing permit holders or other groundwater users within the GCD; and
- the approved regional water plan and GCD's approved management plan.

In addition, when reviewing all permit applications (whether for export or in-district use), Section 36.113(d)(2) provides that a district shall consider whether the proposed use unreasonably affects existing groundwater and surface water resources or existing permit holders, along with other enumerated factors. GCDs may collect export fees under Section 36. 122(e), which are in addition to fees collected on in-district users. These export fees have not changed since 2001 and when adopted, were intended to fund operations needed to monitor impacts of the withdrawal on the resource.

Permitting

Transport project applications, just like all permit applications, are processed pursuant to the requirements set forth in Chapter 36 and district rules, which provide for a notice and hearing process. When reviewing any permit application, a GCD will receive information from the applicant regarding the project. This will typically include well locations, production rates, and annual volumes, and may also include construction standards, conservation plans, and drought plans. Transfer project applications will include the applicant's information on projected impacts and water availability. Groundwater Availability Model runs, pump tests and other technical processes of review are some of the science that a district will consider. The application and associated information are reviewed by the district in accordance with their rules and Chapter 36.

GCDs provide notice of applications that are subject to a hearing in conformance with Chapter 36 and district rules, which allows the public the opportunity to review those proposed applications. Notices include a deadline by which an affected party must submit comments and protest the application to the district. If uncontested, the application proceeds to the district board for consideration of approval. If the application is contested, the application undergoes a hearing process held in conformance with the requirements of Chapter 36.

After a GCD issues a transport permit, the district will monitor compliance with the terms and conditions of the permit; the district's rules; the Desired Future Conditions (DFCs) and the management plan; and if applicable, the drought plan and conservation plan of the district. Production will be reported by the permittee monthly, quarterly, or annually. Water level measurements inform the district of aquifer responses to production. Communications with well owners may provide resource information on monitoring, best management practices, triggers, and thresholds on achievement of DFCs and unreasonable impacts that may occur, as well as how the district will respond.

Existing Well Owner Assistance Programs

As large-scale transfer projects become more commonplace, a formalized set of mitigation procedures may be needed to provide relief to landowners whose existing wells are impacted by new pumping. Because the ability of GCDs to regulate or even prevent transfer projects is limited, it is essential that they are not only given the tools necessary to administer successful well assistance or mitigation programs, but that the Legislature recognize their authority to implement them. It should be noted that the Committee is informed of at least one district that has suspended its mitigation program due to the threat of a lawsuit alleging the program violates Art. III, Sec. 52 of the Texas Constitution, which prohibits the use of public funds for private purposes. This uncertainty is problematic and is understandably a concern to districts as they attempt to strike the delicate balance between two often opposing private property interests with little statutory direction.

To date, there are two active assistance/mitigation programs:

- Gonzales County UWCD - A mitigation program funded from fees negotiated and collected by the district from groundwater transfer permit holders who are authorized to transfer or who produce more than 3,000 acre-feet of water per year.
- Post Oak Savannah GCD - A well assistance program, funded by fees collected by the district on all non-exempt producers to add additional monitor wells to the district's monitoring well network for addressing situations of depressurization of aquifers due to regional production which has caused lower water levels.

Remediation guidelines contained in the terms and conditions of groundwater rights sales contracts are another potential option that has met some success elsewhere.

The obvious drawback of district-based mitigation is that impacts associated with a project are not confined by district boundaries. Transfer projects in one district can and do impact wells in another. There is no clear answer for how this should be addressed, except that the neighboring district should have a mitigation plan of its own. Of course, they are not benefiting from any export fees.

Conclusion

Clearly stated in the first section of Ch. 36, groundwater conservation districts are the state's preferred method of groundwater management. They are created to protect property rights and balance the conservation and development of groundwater to meet the needs of the state. We've heard it put another way: GCDs serve to protect against harm caused by the rule of capture. In this vein, large-scale water transfer projects are testing the powers of GCDs.

The Legislature has tasked GCDs with threading the needle between production and the conservation of a shared resource. This can often pit one private property interest against another. At its worst, this means to retain one's private property, another's is sacrificed. Regrettably, this Committee cannot offer a silver bullet. We do, however, put forward the following for consideration:

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- Mitigation/assistance programs. In some form or another, we believe these programs are necessary to compensate those who've been adversely affected by transfer projects. It is not 1904, and a landowner's only remedy shouldn't be to pay out of pocket for a bigger, deeper well.
 - We need to ask what role should mitigation of impacts to neighboring wells from large-scale transfers have in recognizing the investments of all well owners, and could Ch. 36 better incorporate this concept as a permitting tool?
 - Up-to-date and precise science is vital to making accurate assumptions about aquifer conditions and impacts from large-scale pumping. We should examine the export fee structure, which has not been updated in over 20 years, to help provide additional funding for continued monitoring and the development of science for assessing and addressing impacts from large-scale water transfers.

Desired Future Conditions

Background

In carrying out its duty to the citizens of Texas under Section 59, Article XVI of the Texas Constitution to manage the natural resources of the state, the Texas Legislature has entrusted groundwater conservation districts (GCDs) to manage the state's groundwater resources for the benefit of current and future generations of Texans. The vast majority of the state's major and minor aquifers are located within the combined boundaries of the approximately 100 GCDs that have been created under the authority of the legislature.¹

In order to promote coordinated management of aquifers in Texas by multiple GCDs that may overlie a single aquifer, Chapter 36 of the Texas Water Code requires the GCDs in each of 16 Groundwater Management Areas (GMAs) designated by the Texas Water Development Board (TWDB) to meet annually for the purpose of engaging in joint planning and to establish long-term management goals for the aquifers. GMAs are regional areas that are suitable for the management of groundwater resources and generally follow aquifer boundaries. The primary joint planning activity undertaken by the GCDs in a GMA is the development and adoption of desired future conditions (DFCs) for the aquifer, which must be adopted no less than once every five years. A DFC is defined by TWDB rule as "the desired, quantified condition of groundwater resources (such as water levels, spring flows, or volumes) within a (groundwater) management area, at one or more specified future times as defined by participating GCDs within a groundwater management area as part of the joint planning process." Simply stated, it is the 50-year future condition of an aquifer that the GCDs desire to be realized through their groundwater management efforts.

Once adopted, DFCs are then provided to the TWDB, which uses groundwater availability models to calculate the average amount of groundwater that can be produced each year that will achieve the DFCs. These "modeled available groundwater" (or "MAG") estimates then help GCDs determine how much groundwater is available for pumping each year, on average, from all wells located within their boundaries in order to achieve the DFCs that apply to them. The MAGs are also used by the regional water planning

¹ There are presently 98 groundwater conservation districts in Texas, but also the Edwards Aquifer Authority, Harris-Galveston Subsidence District, and Fort Bend Subsidence District that manage groundwater resources and function similarly to GCDs.

groups and the TWDB in setting groundwater availability values over the ensuing 50-year period for regional and state water planning.

The joint planning process through which the GMAs develop and adopt DFCs each five-year period requires consideration and balancing of numerous statutory criteria and is beyond the scope of this report.

Rather, this report focuses on how to promote the achievement of DFCs to ensure that the very important responsibility of managing the groundwater resources of this state that the legislature has delegated to GCDs for the future of Texas will be successful.

Current Requirements and Challenges for Achieving DFCs

Current law requires each GCD to achieve the DFCs that apply to it. Chapter 36, Water Code, requires GCDs to:

- (1) participate in the joint planning process to develop and adopt DFCs;
- (2) update their management plans within two years of adoption of DFCs by the GMA to include goals, objectives, and performance standards that are consistent with achieving the DFCs, and;
- (3) update their rules (typically their permitting regulations) within one year of updating their management plans so that the rules are designed to achieve the DFCs and to adequately protect groundwater resources;
- (4) to the extent possible, issue permits up to the point that the total volume of groundwater produced by permitted wells and wells that are exempt from permitting requirements will achieve the DFCs;
- (5) in issuing permits, manage total groundwater production on a long-term basis to achieve DFCs; and
- (6) enforce substantial compliance with their rules.

The specificity of these statutory requirements in laying out how GCDs must achieve the DFCs underscores the importance the legislature has placed on this responsibility. What is less clear and more challenging is how to determine whether the rules of a particular GCD and how it is enforcing those rules will result in the achievement of the DFCs.

Monitoring Achievement of DFCs

The primary challenge in ascertaining whether a GCD is on track to achieve DFCs is that the DFC is a planning goal that is 50 years in the future. So, no one involved in the groundwater management process

today, not a GCD representative or a GMA, no employee or board member of a GCD, nor anyone in a GCD-oversight role at the Texas Legislature or the TCEQ—will still be involved in the process in 50 years to determine if a DFC was actually achieved. Compounding the difficulty is the fact that a DFC is a moving target. Because DFCs are updated at least once every five years, the DFCs are always 50 years in the future at any point in time, and most DFCs change over time.

Because Texans cannot afford to gamble with their groundwater resources by risking waiting until an uncertain date in the future that will never actually arrive to determine whether the groundwater resources so critical to our state were or were not being adequately protected, it is important that GCDs are able to determine and demonstrate whether they are on track to achieve those goals at any point in time during that rolling 50-year planning period.

There are two primary means by which a GCD can assess whether it is on track to achieve DFCs. First, GCDs track achievement of DFCs by monitoring aquifer conditions over time through water level measurements that are analyzed to project changes in water levels into the future.² Many GCDs in Texas have committed substantial resources to water level monitoring wells, spring flow gauges, and other data collection and analysis to help track their achievement of DFCs. Because almost all DFCs today are developed through the use of numerical groundwater availability models that can project not only what water levels will look like in 50 years but also at any point in time along the way, GCDs can compare their actual monitored water level measurements and trends at any time to what the model predicts those water levels should be at that time. One problem with this method of tracking achievement of DFCs is that some GCDs may lack sufficient resources or other means to engage in this type of water level monitoring on a meaningful scale; others may simply not prioritize using their limited resources for this purpose.

The second primary means of tracking achievement of DFCs is by comparing the actual total pumping from an aquifer that is occurring annually in a GCD to the annual groundwater availability budget established by the modeled available groundwater estimates from the TWDB, because those estimates are by definition designed to achieve the DFCs. GCDs that require metering of wells and reporting of groundwater production by permittees, and therefore have a more accurate assessment of how much water is being produced each year, may utilize this method fairly successfully. However, many GCDs do not require their permit holders to meter groundwater production. Moreover, virtually all GCDs have a substantial number of wells that are exempt from the requirement to obtain a permit from a district or to meter groundwater production. Estimating how much water is being produced annually by the exempt wells in a particular GCD is difficult—an estimate that the TWDB is charged with developing in coordination with GCDs. Obviously, if a GCD is not able to estimate actual annual groundwater production from permitted and exempt wells with some degree of confidence and accuracy, this means of tracking achievement of DFCs by a GCD will be less meaningful. It is common that GCD use both methods to assess progress toward the long-term achievement of DFCs.

It is also clear that all GCDs should be utilizing whatever methods and means are available to them and appropriate under their local circumstances to monitor achievement of DFCs, and that all GCDs should be

² Some karst limestone aquifers that recharge and discharge quickly have DFCs based on minimum spring flow rates during drought times or other metrics appropriate for such aquifers. However, the vast majority of DFCs in the state are based on quantified water level declines or loss of groundwater in storage over time.

able to publicly articulate for their property owners and other interested persons the monitoring methods they have chosen to employ by including the information in their district management plans.

Finally, as the persons who serve as GCD representatives to the GMA change over time, it would be helpful to the historical record, to the decision-making process of the then-current GMA representatives, and to the public if the GMAs were required to explain in the DFC explanatory report submitted to the TWDB why a DFC has been changed from one five-year cycle to the next. It may be that a different or updated groundwater availability model was used, or perhaps the GMA determined they needed more groundwater availability to meet demand. Whatever the reason, there would be numerous benefits to the process if it were articulated in the report.

State Assistance for Groundwater Science and DFC Development

As indicated above, it is imperative the districts have reliable groundwater availability models and other science-based tools and data at their disposal to not only develop meaningful DFCs, but also to monitor the efforts of GCDs in achieving those DFCs. The legislature has provided technical assistance from the TWDB staff to the GMAs and has provided funding to the TWDB for the development of groundwater availability models. However, the TWDB no longer has sufficient funding or staff to provide the level of technical assistance needed by all GMAs.

Groundwater availability models estimate future trends in water levels and predict how the aquifer will respond to different pumping scenarios over time. Models include comprehensive information on each aquifer, such as recharge rates, and the geology and hydraulic properties of the aquifer. Continued and increased funding is vital to develop new models or update existing models for the state's major and minor aquifers to support the joint planning process. Moreover, as improved modeling techniques have been developed, groundwater availability models should be enhanced to perform additional functions, particularly related to better characterizing and understanding local hydrogeologic conditions and impacts. Several GCDs have helped fund groundwater availability modeling for the aquifers in their respective jurisdictions, but additional assistance from the state is desperately needed in the forms of both additional funding for modeling and data collection, and additional assistance from the TWDB to the GMAs if requested.

Although the legislature has required DFCs to engage in joint planning and DFC development, adoption, and achievement, it has never provided any direct financial assistance to the GMAs. The GCDs and their district representatives who serve in the joint planning process have spent substantial financial resources and time on the joint planning process. Almost all GCDs coordinate their joint planning efforts using a consulting geoscientist, hydrologist, or professional engineer. Expertise in water law and economics is also necessary to fulfill all considerations of DFCs required by law. In addition, meaningful consideration of all the required statutory factors and the preparation of a detailed explanatory report required to be submitted to the TWDB in the DFC development and adoption process, not to mention the costs of potential legal appeals of DFCs, necessitates significant investment of financial and staff resources for GCDs. Much like the Texas Legislature and TWDB have provided direct financial assistance to the regional water planning groups for the development of regional water plans, the Texas Legislature and TWDB could provide direct

financial assistance to the GCDs in the joint planning process to support the development of DFCs. As the joint planning process and the development of the DFCs inform groundwater availability in the regional and state water planning processes, it is in the state's best interest to ensure that the DFC process is as effective as possible utilizing the best available science.

Modeled Sustained Groundwater Pumping

Many of the state's aquifers have been so over pumped that many landowners can no longer economically or physically produce water in sufficient quantities to continue engaging in historical activities that rely on groundwater. Vast areas of land that were historically in irrigated production agriculture are now in dryland farming or have ceased to be used for farming purposes at all. Many large municipal and industrial users that historically relied on groundwater for their operations have converted to surface water because of declining well yields and declining groundwater quality. Water level elevations in some confined aquifers have fallen on a scale ranging from hundreds of feet to over 1,000 feet in the last century. Moreover, in many areas of the state, large-scale groundwater production projects for municipal use implemented in the last couple of decades have placed additional pressures on aquifers for which the effects are only now starting to be measured.

While GCDs are certainly authorized to set DFCs that will result in water level declines and allow more pumping than the aquifer can sustain on a long-term basis, they should be required to at least consider, as an additional key reference point in developing and adopting DFCs, the amount of groundwater that can be produced annually from an aquifer on a sustainable basis. In that regard, TWDB should be required, using the best available science, to calculate and distribute to each of the GMAs the maximum amount of groundwater that may be produced annually from an aquifer in perpetuity, also known as the "modeled sustained groundwater pumping" amount. This would be provided by TWDB in similar fashion to the total estimated recoverable storage amounts that the TWDB provides to the GMAs under current law but would serve as a reference point at the other end of the pumping spectrum. This should not apply in areas of west Texas over the Ogallala Aquifer, where groundwater production has been so heavy historically that vast areas of land can no longer economically afford to irrigate their crops with groundwater because of declining well yields, and sustainability is no longer feasible.

Enforcing Achievement of DFCs

Other than seeking legislative oversight, the legal means by which a landowner, another GCD, or other affected person can take a GCD to task to ensure that it is on track to achieve the DFCs and adequately protecting the groundwater resources in the area is limited. Outside of challenging an individual permitting decision of a GCD, the sole process is the ability of an affected person to petition the TCEQ to conduct an inquiry as to whether a GCD is complying with all of the requirements related to achievement of DFCs, as set forth in Section 36.3011, Water Code. If the TCEQ does not dismiss the petition, it appoints a review panel comprised of five persons who are GCD directors or general managers from other groundwater management areas to review the petition and evidence and make recommendations to the TCEQ commissioners on any actions that it deems should be taken. The commission may order a GCD to take

certain actions or to refrain from taking certain actions, dissolve a GCD's board of directors, request that the attorney general bring a suit to appoint a receiver to carry on the business of the GCD, or dissolve the GCD altogether.

It has become apparent in the limited number of petitions that have been filed under this section of the code and survived preliminary dismissal by the TCEQ that there are a number of areas in which this petition process and the review panel could be improved or clarified by the legislature. First, the TCEQ has had considerable difficulty in finding persons willing and able to serve on the review panels. A review panel appointee presently serves on the panel at their own expense and without any legal or technical assistance whatsoever. This can place a substantial burden on a panel member in terms of the time required to serve, the costs incurred for travel, photocopying and other administrative expenses, and the realization that if the panel needs legal or technical assistance, it will have to obtain it at its own expense.

There are a number of legal questions that may arise in the review panel process. Based on reports from past panel members, the legislature could eliminate a number of these by simply clarifying some issues of confusion in the statute. For example, to what extent do the open government provisions of the Texas Open Meetings Act or Public Information Act apply to review panel members, their discussions with each other, their public meetings, and their notes and records? Or, are there any legal standards the review panel must utilize in receiving evidence for their consideration? The legislature should consider requiring the TCEQ's Office of Public Interest Counsel to provide legal advice to the review panel upon request from a panel member, and relieving the Office of Public Interest Counsel of any other obligations in such a petition for inquiry so as to avoid any conflicts of interest.

Similarly, depending on the nature of the complaint in the petition, the review panel may need technical assistance. If a petition for inquiry is based on a litmus test item, such as whether a GCD timely updated its management plan after new DFCs were adopted, it is a relatively easy determination for the review panel to make. However, the petition raises an issue of whether the District's management plan, rules, or permitting system that implements the rules achieve the DFCs and protect the groundwater resources of the area, some groundwater availability modeling or other technical analyses may be required that are beyond the capabilities of the review panel or the TCEQ. The legislature could redress this weakness in the process by allowing the TCEQ or review panel to seek technical assistance, if needed, from the TWDB.

Recommendations

The 88th Texas Legislature should consider taking the following measures to promote achievement of desired future conditions by groundwater conservation districts:

- Require the GCD representatives in a GMA, using groundwater availability models, to adopt intermediate DFCs for each five-year period between adoption of the DFC and the DFC that is established 50 years in the future so that interim progress towards achievement of the DFC may be more easily assessed.

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- Require GCDs to include information in their district management plans that explains how the GCD is tracking achievement of DFCs and how the District has actually performed in achieving DFCs over the previous five-year period.
 - Require the GCD representatives in a GMA that has changed the DFCs for an aquifer from those adopted in the prior five-year cycle to include an explanation of why the DFC was changed in the explanatory report submitted to the TWDB.
 - Appropriate additional funding and full-time staff to the Texas Water Development Board to support state-of-the-art groundwater availability modeling, and to provide technical and financial support to groundwater conservation districts as they develop their DFCs.
 - In a manner similar to how financial assistance is currently provided to the regional water planning groups to carry out regional planning, provide direct financial assistance through the TWDB to the GCDs in each groundwater management area to assist with the joint planning costs related to considering DFC statutory criteria and preparing explanatory reports as mandated by the legislature.
 - Create and fund a grant program administered by the TWDB for GCDs to apply to develop local data and science that can support the DFC process and management of the resource.
 - Amend Section 36.108(c)(4), Water Code, to include an annual discussion between district representatives in the joint planning process of how and whether each district's rules and its implementation and enforcement of the rules is achieving the DFCs, and to require a summary of the discussion to be included in the DFC explanatory report.
 - Require TWDB to calculate the modeled sustained groundwater pumping volumes for the aquifers in a GMA and provide them to GCDs to inform the DFC process (*See* HB 2851, 87th Regular Session).
 - To improve the TCEQ petition process in which an affected person can request a TCEQ inquiry about the actions or inactions of a particular GCD in complying with statutory requirements, including achievement of DFCs:
 - Allow the TCEQ or the review panel to seek technical assistance from the TWDB if needed;
 - Allow panel review members to be reimbursed from TCEQ for reasonable out-of-pocket costs incurred in serving on a review panel, including travel reimbursement, administrative costs such as photocopying, and similar out-of-pocket costs;
 - Require the TCEQ's Office of Public Interest Counsel to provide legal advice to the review panel upon request from a panel member, and make clear that the Office of Public Interest

Counsel has no other duties or obligations in such a petition for inquiry so as to avoid any conflicts of interest;

- Clarify that a review panel is only an advisory body that can make recommendations to the TCEQ for the TCEQ itself to take action, and is therefore not a governmental body subject to Chapters 551 or 552, Government Code. Consistent with this change, consider reducing the number of panel members from five to three to make it easier for TCEQ to empanel a review panel. The number of panel members should not be reduced unless the statute is clarified to provide that review panels are not subject to Chapter 551, Government Code. Clarify also how notice shall be provided of any public meetings or public hearings of the review panel.
- Clarify deadlines in Chapter 36 for updating a management plan and rules after adoption of a DFC consistent with Section 36.3011, Water Code.

Transparency In The Permit Application Process

Included in the House substitute of SB 152 (87R) was language that addressed stakeholder concerns that notice required under Chapter 36 may be insufficient in districts that have adopted certain well spacing requirements. In particular, their concern relates to situations where a district has adopted rules that require new wells, or existing wells that are reworked to increase their size, to be spaced a certain distance from other existing wells. Depending on the exact rules and the specific well involved, this can result in a situation where a neighboring landowner's right to drill a well in the future is impacted because of the district's approval of the first well.

Due to other factors, SB 152 from the 87th Legislature did not make it through the legislative process. Accordingly, for this section of the report, the Committee would like to reaffirm its support for permit transparency legislation that includes:

- In those districts that have adopted rules requiring well spacing from other existing wells, notice of a permit application is to be provided to any neighboring landowner who owns land within the spacing distances from other existing wells whose right to drill his or her own well on their property would be impacted under the spacing rules if the district approves the application for which the notice is provided.
- No special notice is required for an emergency well or a replacement well that is not larger than the well being replaced.
- If the applicant is a groundwater lessee, then the applicant is not required to provide notice to the lessor, since it is the lessee who has the right to produce the groundwater.
- Flexibility in how districts provide the notice. Some districts currently require the applicant to provide the notice while in others the districts themselves provide the notice. The bill allowed districts to determine this, as well as the manner in which notice is provided—which could be by individual mailed notice or by posting the application information on the main webpage of the district's website and at a place readily accessible to the public at the district office.

Abandoned and Deteriorated Water Wells & Orphan Oil and Gas Wells

The committee on Natural Resources examined the state's groundwater quality protection efforts in light of various environmental, human, and health-related risks posed by abandoned and deteriorated water wells and orphan oil and gas wells. Abandoned and orphan wells extending through multiple strata in the Earth's surface provide a conduit from which contaminants can leak into groundwater. Specifically, contaminants or lower-quality water from one aquifer or formation can migrate into the deteriorated well bore and then move laterally through the deteriorated well casing into useable, higher-quality groundwater resources.

The Texas Department of Licensing and Regulation (TDLR) estimates there are approximately 150,000 abandoned water wells in Texas. Several Groundwater Conservation Districts across the state have stepped up to provide well-plugging programs and financial resources to plug and cap abandoned water wells within their boundaries, despite their modest budgets. On the oil and gas side, The Railroad Commission (RRC) estimates approximately 8,000 orphaned oil and gas wells in Texas. The Commission has a robust plugging program that has done great work across the state. However, both estimates are considered low and both abandoned and deteriorated water wells and orphan oil and gas wells pose one of the most significant threats to groundwater quality. How dire the situation is cannot be overstated.

P-13 Wells

The Texas Natural Resources Code grants jurisdiction to the RRC over all oil and gas wells in Texas. The RRC's jurisdiction includes the power to exercise authority and pursue rules enforcement over "orphaned wells," "abandoned wells," "inactive wells," and wells actively operated for the production of oil and gas, amongst others.

For many years and continuing today, the RRC has allowed for oil and gas wells that were originally drilled under its jurisdiction to be reconditioned for the production of groundwater ("P13 Wells"). The process of recompleting an oil and gas well for groundwater production involves "plugging back" a well to a depth consistent with the subsurface groundwater bearing formation, which is typically much shallower than the relevant oil and gas bearing formation and then perforating the casing to allow production of that groundwater.

The RRC contends that its jurisdiction ends once a well has been reconditioned and converted into a water well, which means such wells are ineligible for remediation through the Oil & Gas Regulation Cleanup Fund. The P-13 form states that a landowner assumes the responsibility to plug the well if and when it becomes abandoned. However, many P-13 wells actually predate both the modern form and the controlling statute.

While we recognize the contractual obligations inherent in the P-13 form, the fact is that many of these wells pose a dangerous risk to public health. That being the case, it is imperative they be properly plugged.

Despite the contractual obligations in the P-13 form, it seems apparent that the RRC can still exercise its jurisdictional authority over these wells should it choose to do so. Nothing in statute appears to preclude them from doing so. In defining "wells," statute only contemplates the purpose for what it was originally

drilled for, not what it ended up as. These are not simple water wells and the RRC is the only regulatory agency with the expertise, personnel, and funding necessary to address this issue.

Sulfur Wells

Several mid-century-era sulfur wells are already serious environmental hazards. Similar to the P-13s, the RRC claims it does not have the authority to plug these wells because it does not regulate sulfur mining. Today, TCEQ has regulatory authority over sulfur mining, however, the Committee has been informed that many of these legacy wells have associated paperwork with the RRC, which has regulated sulfur mining in the past, though we were unable to independently verify this. Regardless, the RRC seems properly positioned to address these wells despite any jurisdictional confusion.

Abandoned Water Wells

There are an estimated 150,000 abandoned water wells in Texas. Many pose a significant risk of contaminating groundwater. Larger-diameter wells can be hazardous to both humans and animals.

The Legislature should consider efforts to plug these abandoned and deteriorated water wells.

The latest report published by the Texas Groundwater Protection Committee recommends that the legislature provide positive incentives for landowner-initiated closure of abandoned or deteriorated water wells through the establishment of a statewide abandoned water well plugging fund.

Promote Conservation and Achieve Waste

Background

The Texas Legislature has created groundwater conservation districts (GCDs) as the state's "preferred method of groundwater management" and charged them with the responsibility of providing for "the **conservation**, preservation, protection, recharging, and **prevention of waste** of groundwater, and to control subsidence...consistent with the objectives of Section 59, Article XVI of the Texas Constitution."³ The notions of encouraging conservation and preventing waste seem to go hand in hand—to prevent waste is to promote conservation of groundwater. The legal premise in Texas that groundwater cannot be wasted dates back to the opinion of the Texas Supreme Court when it first adopted the Rule of Capture for groundwater in 1904.

"Waste" is defined in Section 36.001(8), Water Code, as follows:

- (8) "Waste" means any one or more of the following:

³ Section 36.0015, Texas Water Code.

(A) withdrawal of groundwater from a groundwater reservoir at a rate and in an amount that causes or threatens to cause intrusion into the reservoir of water unsuitable for agricultural, gardening, domestic, or stock raising purposes;

(B) the flowing or producing of wells from a groundwater reservoir if the water produced is not used for a beneficial purpose;

(C) escape of groundwater from a groundwater reservoir to any other reservoir or geologic strata that does not contain groundwater;

(D) pollution or harmful alteration of groundwater in a groundwater reservoir by saltwater or by other deleterious matter admitted from another stratum or from the surface of the ground;

(E) willfully or negligently causing, suffering, or allowing groundwater to escape into any river, creek, natural watercourse, depression, lake, reservoir, drain, sewer, street, highway, road, or road ditch, or onto any land other than that of the owner of the well unless such discharge is authorized by permit, rule, or order issued by the commission under Chapter 26;

(F) groundwater pumped for irrigation that escapes as irrigation tail water onto land other than that of the owner of the well unless permission has been granted by the occupant of the land receiving the discharge; or

(G) for water produced from an artesian well, "waste" also has the meaning assigned by Section 11.205.⁴

Much of the current framework for the statutory definition of "waste" of groundwater in Chapter 36, Water Code, dates back to the original 1949 legislation that authorized creation of groundwater conservation districts,⁵ although some components of the definition date to 1917. Numerous other minor amendments have been made to the definition by multiple legislatures over the intervening years. What no legislature has done, however, is to revisit the definition to try to incorporate any semblance of what could be considered promoting water conservation or efficiency as those terms are commonly understood by water industry professionals in the 21st century.

The current definition of "waste" in Chapter 36, in its essence, boils down to: (1) not allowing pollution of groundwater resources; or (2) pumping so much groundwater that it simply runs off of your land. Texas can do better.

Interplay with Definition of "Use for a Beneficial Purpose"

⁴ Section 36.119(a), Texas Water Code, also provides that drilling or operating a water well without a required permit or in violation of a GCD rule regulating groundwater production is "wasteful per se."

⁵ Under the 1949 legislation, groundwater conservation districts were called "underground water conservation districts." See ch. 306, Act of May 23, 1949, 51st Leg., R.S., ch 306, 1949 Tex. Gen. Laws 559.

Another obstacle to promoting groundwater conservation and avoidance of waste is the interplay between the definitions of “waste” and “use for a beneficial purpose” in Chapter 36. Section 36.001(9), Water Code, defines “use for a beneficial purpose” as “use for:

- (a) agricultural, gardening, domestic, stock raising, municipal, mining, manufacturing, industrial, commercial, recreational, or pleasure purposes;
- (b) exploring for, producing, handling, or treating oil, gas, sulfur, or other minerals; or
- (c) any other purpose that is useful and beneficial to the user.”

Some GCD applicants for permits or water well registrations have claimed that a highly inefficient use of groundwater is nonetheless not wasteful because it is used for a beneficial purpose. While Chapter 36 as a whole and when read in the context of the greater body of water law in Texas seems to authorize GCDs to require that an applicant demonstrate that the groundwater will be used for a beneficial purpose, that the applicant will not commit waste of groundwater, and that the applicant must employ reasonable conservation measures and efficiencies in the use of groundwater, Chapter 36 should be revised to state this expressly and unequivocally.

Interplay with Bed and Banks Authorizations by TCEQ

Probably the most controversial issue surrounding the definition of “waste” in Chapter 36 over the last couple of decades has been whether a person may obtain authorization from the TCEQ to discharge groundwater, prior to its beneficial use, into a surface watercourse to transport the groundwater using the bed and banks of the watercourse downstream for subsequent diversion and beneficial use. Attorneys specializing in water law and other water stakeholders seem to have differing opinions on whether such authorizations are prohibited as “waste” under Section 36.108(8)(E), Water Code, which includes “willfully or negligently causing, suffering, or allowing groundwater to escape into any river, creek, natural watercourse...unless such discharge is authorized by permit, rule, or order issued by the commission under Chapter 26.” A wastewater discharge permit issued under Chapter 26, Water Code, is not required by TCEQ for discharges of fresh groundwater into a watercourse. Such bed and banks authorizations are issued by TCEQ under Chapter 11, Water Code, rather than Chapter 26. The controversy has led to a number of legal disputes.

The primary concern related to bed and bank authorizations is one of promoting conservation and preventing waste because of evaporation, transpiration, seepage, and other carriage losses that can occur between the point of discharge of the groundwater and the point where it is diverted. There was a landmark Texas Supreme Court legal opinion involving such a groundwater discharge project in 1955, in which it was estimated that approximately 63 to 74 percent of the groundwater discharged into the Nueces River near Pleasanton, Texas, for diversion and use 118 miles downstream by the City of Corpus Christi was lost in transit and, thus, never put to a beneficial use.⁶ What the court made clear in the opinion was that the

⁶ See *City of Corpus Christi v. City of Pleasanton*, 276 S.W.2d 798 (Tex. 1955).

legislature—not the courts—has the exclusive right and duty under the conservation amendment of the Texas Constitution⁷ to conserve the state’s natural resources, and therefore the exclusive authority to pass such laws to determine if such losses of groundwater constituted unlawful waste. Because of the statutory definition of “waste” from artesian wells in effect at that time, the court found that the city’s activities did not constitute waste. But, the court also implored the legislature to revise the definition if it so chose in carrying out its constitutional duties, and the legislature responded that same year by amending the definition of “waste” in the statutes governing groundwater conservation districts to address and remove the language in the definition on which the court had based its opinion.⁸ Somewhat ironically, the offending language seems to have made its way back into the modern definition of “waste” in Chapter 36 by a cross-reference to Section 11.205, Water Code, regarding waste from artesian wells by a legislative floor amendment intended to strengthen the definition of “waste” when Chapter 36 of the Water Code was codified by the legislature in 1995.⁹

The legislature should exercise its exclusive duty under the conservation amendment to address the use of bed and banks authorizations to transport groundwater prior to its beneficial use. There are certainly situations in which bed and banks authorizations for groundwater do not result in water loss levels prior to beneficial use that offend the conscience, where the construction of a pipeline in lieu of using the bed and banks of a watercourse is infeasible for financial or other reasons, and where certain stream segments can benefit from increased instream flows from groundwater discharges. TCEQ has issued many permits authorizing such bed and banks authorizations for groundwater. However, Section 11.042, Water Code, lacks sufficient clarity regarding TCEQ’s authority to do so. The TCEQ should be given express statutory authority to authorize bed and banks permits for discharge of groundwater prior to its beneficial use into a watercourse for subsequent diversion and beneficial use, but only if that authority is coupled with a mandate that TCEQ evaluate the losses of water associated with a proposed authorization and approve, approve with special conditions, or deny the application based on a reasonableness standard to avoid waste and promote reasonably efficient conservation practices under the totality of the circumstances involved with the application.

Similarly, Section 36.108(8)(E), Water Code, should be amended to exclude from the definition of “waste” groundwater that is discharged into a watercourse under a bed and banks authorization approved by the TCEQ under Chapter 11, Water Code. However, such a statutory change should be coupled with: (1) granting express authority to GCDs to consider whether and the extent to which an applicant will avoid waste and implement reasonably efficient water conservation measures in determining whether to grant, grant with special conditions, or deny an application for a permit; and (2) amending the definitions of “waste” and “use for a beneficial purpose” for groundwater in Chapter 36 and adding a definition of “conservation” to that chapter to incorporate some of the reasonableness, efficient practices, and

⁷ Section 59, Article XVI of the Texas Constitution, which was approved by Texas voters in 1917, is commonly known as the “conservation amendment.”

⁸ The definition exempted such discharges of groundwater into a watercourse from being “waste” if the groundwater was used downstream “for the purposes and in the manner in which it may be lawfully used on the premises of the owner of such well.” The legislature in 1955 responded by incorporating the definition of “waste” for artesian wells into the statutes governing GCDs, but with this language that was the basis of the court’s opinion removed (ch. 496, Sec. 2, 54th Leg., R.S., 1955).

⁹ See House Floor Amendment 1, House Bill 2294, 74th Texas Legislature (Regular Session), 1995, and Section 36.001(8)(G), Texas Water Code.

economically necessary concepts set forth in the definition of “waste” under TCEQ’s rules¹⁰ and the definitions of “conservation” and “beneficial use” set forth in Section 11.002, Water Code.¹¹ These proposed changes would also allow GCDs to help promote conservation and avoidance of waste in other areas in which substantial water losses are frequently observed, such as transport of groundwater by an unlined irrigation canal, or delivery of groundwater by a public water system with excessive system line loss.

Interplay with Artesian Wells Law

Subchapter F, Chapter 11, Water Code (“Subchapter F”), sets forth certain requirements to be administered by TCEQ related to “artesian wells,” which are defined under Section 11.201 as “artificial water well(s) in which the water, when properly cased, will rise by natural pressure above the first impervious stratum below the surface of the ground.” Subchapter F originated in the Irrigation Act of 1917,¹² and has been roughly in its current form with only minor amendments for the last 105 years. While it was a huge step forward in 1917 to address some of the most egregious examples of waste of groundwater from free-flowing artesian wells, the subchapter in modern times is one of the most archaic, ignored, and unused water laws in Texas.

It is also important to realize that the early laws that are now Subchapter F were in effect and administered by the Board of Water Engineers long before the legislature began to create GCDs, and long before the legislature enacted the water well drillers laws under Chapter 1901, Occupations Code.

Subchapter F entitles a person to drill an artesian well for domestic or livestock purposes under certain circumstances, sets forth certain well completion, capping, and plugging requirements, requires drilling and operational records and reports to be submitted to the TCEQ, prohibits waste of water from an artesian well and includes its own definition of waste, prohibits certain improperly cased, capped, or deteriorated wells and provides that such wells are a public nuisance and subject to abatement by the TCEQ executive director. It also requires annual reports to be submitted to TCEQ by any owner or operator of an artesian well using

10 Waste is defined in 30 Tex. Admin. Code Sec. 297.1 as follows: “Waste--The diversion of water if the water is not used for a beneficial purpose; the use of that amount of water in excess of that which is economically reasonable for an authorized purpose when reasonable intelligence and reasonable diligence are used in applying the water to that purpose. Waste may include, but not be limited to, the unreasonable loss of water through faulty design or negligent operation of a water delivery, distribution or application system, or the diversion or use of water in any manner that causes or threatens to cause pollution of water. Waste does not include the beneficial use of water where the water may become polluted because of the nature of its use, such as domestic or residential use, but is subsequently treated in accordance with all applicable rules and standards prior to its discharge into or adjacent to water in the state so that it may be subsequently beneficially used.”

11 Section 11.002, Texas Water Code, defines “beneficial use” and “conservation” as follows:

“Beneficial use” means use of the amount of water which is economically necessary for a purpose authorized by this chapter, when reasonable intelligence and reasonable diligence are used in applying the water to that purpose and shall include conserved water.

“Conservation” means: (A) the development of water resources; and (B) those practices, techniques, and technologies that will reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses.

12 See Sections 90 – 94, Act of March 19, 1917, 35th Leg., R.S., Ch. 88.

it for purposes other than domestic use, setting forth the amount of water produced, the use of the water, and the change in the level of the water table, and for irrigation wells the acreage and yield of each crop irrigated.

One of the biggest problems with Subchapter F is that much of it is obsolete in light of other laws enacted by the legislature since 1917, and it seems that it is being entirely ignored by virtually everyone. Many of these same requirements are now implemented by GCDs in areas of the state that have GCDs, and by the Texas Department of Licensing in Regulation (TDLR) in all areas of the state. Subchapter F evidently escaped meaningful review or amendment when the legislature authorized these other changes in the law.

There are a number of problems with Subchapter F that should be addressed by the legislature. The reporting requirements in Sections 11.203 and 11.204, Water Code, in light of the water well drillers law and rules administered by the TDLR and similar rules required by most GCDs, are obsolete and ignored. Section 11.202(a) and (b), Water Code, which provides a right to drill certain artesian wells for domestic or livestock purposes, is in direct conflict with more recent legislative enactments to Chapter 36, Water Code, including Section 36.117, and outside the boundaries of any GCD could be in conflict with the rules of the TDLR depending on the circumstances. Section 11.207, Water Code, which requires detailed reports by well owners and operators to be submitted annually to TCEQ is obsolete and universally ignored. The legislature should consider repealing each of these provisions in Subchapter F.

The definition of “artesian well” in Section 11.201, Water Code does not conform to the modern day meaning and usage of the term by hydrogeologists, which has to do with water rising because of artesian pressure up the well bore above the water bearing formation in which the well is completed, rather than above the “first impervious stratum below the surface of the ground.” This discrepancy could cause artesian wells to fall within or out of the purview of Subchapter F, and thus under a different set of legal standards and requirements, over time because of changes in water levels in the well bore, even though they are artesian wells under the contemporary view of the term in both instances. The legislature should consider amending this definition as necessary or appropriate to make sense under whatever provisions the legislature decides to retain from Subchapter F.

The concept of “waste” as described in Section 11.205, Water Code, should be amended by deleting the introductory clause to the sentence, to wit “Unless the water from an artesian well is used for a purpose and in a manner in which it may be lawfully used on the owner’s land,...” which was eliminated from the definition of “waste” that is now in Chapter 36, Water Code, by the legislature in 1955, but was inadvertently revived by a legislative amendment cross-referencing the provision some 40 years later. The remainder of the definition could be retained, or it could be replaced with a cross-reference to the definition of “waste” in Chapter 36 as such definition may be modified by the legislature to implement the recommendations in this report.

The remainder of Subchapter F may have some usefulness in prohibiting certain wasteful activities related to the drilling or operation of artesian wells outside the boundaries of any GCD, and in bringing state support from the TCEQ to enforce the prohibitions on committing waste or having improperly cased wells under Sections 11.205 or 11.206, Water Code. The remaining provisions set forth under Section 11.202(c) through (e) should be further evaluated for retention, repeal, or amendment by the legislature after receiving input from the TCEQ, the Edwards Aquifer Authority, GCDs, and other groundwater stakeholders.

Recommendations

The 88th Texas Legislature should consider taking the following measures to promote conservation and prevention of waste of groundwater by groundwater conservation districts:

- Update and clarify the definition of “waste” in Chapter 36, Water Code, to reflect basic modern conservation and hydrogeology concepts, eliminate confusion regarding the meaning of certain components of the definition, and remove any obsolete references. Relatedly, reconcile the tension between and confusion regarding the definitions of “waste” and “use for a beneficial purpose” in Chapter 36, Water Code, by amending “use for a beneficial purpose” to incorporate the concept that use of groundwater should be non-wasteful and utilize reasonably efficient conservation practices. Also, add a definition of “conservation” to Chapter, 36, Water Code.

Specifically, the legislature should consider:

- Incorporating some of the reasonableness, efficient practices, and economically necessary concepts set forth in the definition of “waste” under TCEQ’s Chapter 297 rules and the definitions of “conservation” and “beneficial use” set forth in Section 11.002, Water Code, into definitions for those terms in Chapter 36;
 - Deleting Section 36.001(8)(G), Water Code, which cross-references an outdated concept of waste for artesian wells in Subchapter F, Chapter 11, Water Code, and which unnecessarily weakens the definition of “waste”; and
 - Whether any of the other subsections of the definition of “waste” in Chapter 36, such as Section 36.001(8)(C), should be updated to reflect modern hydrogeological understanding and practices, or other changes in state law, such as water well drilling and completion regulations adopted by the Texas Department of Licensing and Regulation.
- Amend Chapter 36, Water Code, to expressly authorize all GCDs in the state to adopt reasonable rules in light of local circumstances and considerations that promote conservation and efficiency in the use of groundwater in whole or in part for filling amenity ponds, and to consider the rules in taking action on an application for a water well.
 - Clarify in Section 11.042, Water Code, that TCEQ has express statutory authority to authorize bed and banks permits for discharge of groundwater into a watercourse prior to its beneficial use for subsequent diversion and beneficial use, but couple that authority with a mandate that TCEQ evaluate the losses of water associated with a proposed authorization, and approve, approve with special conditions, or deny the application based on a reasonableness standard to avoid waste and promote reasonably efficient conservation practices under the totality of the circumstances involved with the application.
 - In conjunction with the amendment to Section 11.042, Water Code, amend the definition of “waste” of groundwater in Section 36.108(8)(E), Water Code, to exclude from the definition groundwater

that is discharged prior to its beneficial use into a watercourse under a bed and banks authorization for subsequent diversion and beneficial use that is approved by the TCEQ under Chapter 11, Water Code. However, couple the amendment with the amendment to Section 36.113(d)(6), Water Code, described below.

- Amend Section 36.113(d)(6), Water Code, to grant express statutory authority to GCDs to consider whether and the extent to which an applicant will avoid waste and implement reasonably efficient water conservation measures in determining whether to grant, grant with special conditions, or deny an application for a permit, rather than simply considering whether the “applicant has agreed to avoid waste and achieve water conservation.”
- Review the continued usefulness of each of the provisions of Subchapter F, Chapter 11, Water Code, or lack thereof, in light of the numerous groundwater management laws that have been enacted by the legislature since its or. Specifically consider the recommended amendments to Subchapter F that are set forth in the body of this report.