Senate Committee on Agriculture, Water & Rural Affairs

Interim Report
to the
85th Legislature

November 2016

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Senate Committee on Agriculture, Water, and Rural Affairs

Senator Charles Perry, *Chairman*

Members: Senator Judith Zaffirini, Vice-Chair; Senator Brandon Creighton; Senator Bob Hall; Senator Juan "Chuy" Hinojosa; Senator Lois Kolkhorst; Senator José Rodríguez

November 7, 2016

Dear Members and Fellow Texans:

Enclosed is the interim report for the Senate Committee on Agriculture, Water & Rural Affairs. The Committee's interim report would not have been possible without the leadership and forward-looking vision of Lieutenant Governor Dan Patrick, members of the Committee and their thoughtful questions, the willingness of witnesses to share their expertise and opinions, and my dedicated staff of Matt Dowling, Jeremy Hagen, Lauren Murray, Robert Papierz, Alix Morris, and Shannon Harmon. Water and agriculture are critically important issues for the State of Texas, and I appreciate everyone who treats those issues with the respect they demand.

Water is the lifeblood of human civilization; without water there is no life. For thousands of years, mankind nomadically migrated from one place to another in search of a consistent and clean supply of water. Today, we are less nomadic than our forefathers because of technological advances in water capture, retention, and treatment, but the need for a consistent and clean water supply is no less of a requirement to sustain human life. It was true then and it remains true now: only where there is water, there is life.

In addition to sustaining life by providing clean drinking water for Texans across the state, water supports our economy and is necessary for it to grow. Without water, major Texas industries, such as agriculture, oil and gas production, electricity generation, and chemical manufacturing, would wither away. For industry and commerce to continue expanding and migrating to Texas, businesses must trust in Texas' ability to consistently deliver a reliable, clean, and adequate supply of water. Thus, my goal for the 84th Interim, as Chairman of this committee, was to study ways to update and improve Texas water and agriculture law.

To achieve this goal, I conducted a series of stakeholder meetings to identify the challenges with Texas water law identified in the interim charges and the best way to solve those challenges. Accordingly, the Committee held public hearings on December 8th, May 23rd, June 20th, and July 25th where it received testimony on surface water permits, interbasin transfers, storm water flood control, the frequency of the state water plan, desired future conditions, modeled available groundwater, groundwater district performance, private property rights, regulatory takings, the application of oil and gas law to groundwater, chronic wasting disease and agriculture liens. As a result, and by all accounts, the Committee had an educational interim on the critically important

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issues of water and agriculture. It is my hope that the report reflects this, allowing members of the Legislature, stakeholders, and the public to engage in the legislative process, so we can move our state forward on these issues together.

After carefully examining a host of water issues during the interim, I believe there are several areas in which Texas water law can be improved. On surface water, the research I have reviewed during this interim shows that updating water availability models and changing the contested case hearing process can improve the timeliness and accuracy of surface water permitting decisions. It is also my belief that Texas should create a state flood plan to identify cost-effective ways to control flood water to increase our water supply, mitigate the economic effects of flooding, and save lives. Additionally, testimony reaffirmed that locally-elected groundwater conservation districts clearly remain the preferred method of groundwater management in Texas. However, it was also clear that many groundwater conservation districts have overstepped their statutory authority. Groundwater conservation district performance, especially as that performance relates to permitting authority, discretion, and decision-making, will be a focus of mine during session. Lastly, testimony suggests that provisions are needed to ensure the state water plan can realistically achieve its goal of meeting the next drought of record.

Interim hearings were also held on chronic wasting disease and agricultural liens. After an extensive and inclusive stakeholder meeting process during the interim, comprehensive rules were adopted to stop the spread of chronic wasting disease and protect a multi-billion dollar industry. I am grateful to all those who participated in that process and helped develop those rules. Like chronic wasting disease, stakeholders are also coming together to identify a way to fix an unforeseen problem with an agricultural lien bill that passed last session. I encourage those stakeholders to continue working together until a solution has been found.

During the 85th Regular Session of the Texas Legislature, I plan to continue working with members of the Legislature, stakeholders and hard-working Texans to enact the reforms necessary to protect private property rights, streamline permitting processes, and encourage the development of our water and agriculture resources to meet the growing needs of our great state.

In closing, the question is not whether Texas has the capacity to meet its water, rural, and agriculture challenges, but whether Texas has the political will to do so. If we find the political will to make necessary reforms, I believe Texas can meet the water needs of the state for many years into the future. I believe Texas has many challenges and opportunities ahead, but with our intrepid spirit and can-do attitude, we will persevere, creating a better economy, life, and future for all Texans no matter where they live. Texas is big in everything, and the urban and rural future of water and agriculture in our great state should be no different.

Respectfully,

Charles Perry
Chairman
Senate Committee on Agriculture, Water & Rural Affairs

Senate Committee on Agriculture, Water, and Rural Affairs

Senator Charles Perry, *Chairman*

Members: Senator Judith Zaffirini, Vice-Chair; Senator Brandon Creighton; Senator Bob Hall; Senator Juan "Chuy" Hinojosa; Senator Lois Kolkhorst; Senator José Rodríguez

November 7, 2016

The Honorable Dan Patrick
Lieutenant Governor of Texas
Members of the Texas Senate
Texas State Capitol
Austin, Texas 78701

Dear Lieutenant Dan Patrick and Fellow Members:

The Senate Committee on Agriculture, Water & Rural Affairs of the Eighty-Fourth Legislature hereby submits its interim report including findings and recommendations for consideration by the Eighty-Fifth Legislature.

Respectfully submitted,

Senator Charles Perry, Chair

Senator Judith Zaffirini, Vice-Chair

Senator Brandon Creighton

Senator Bob Hall

Senator Juan "Chuy" Hinojosa

Senator Lois Kolkhorst

Senator Jose Rodriguez

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EDUCATION
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THE SENATE OF TEXAS

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November 4, 2016

The Honorable Charles Perry, Chair
Senate Committee on Agriculture, Water, and Rural Affairs
Sam Houston Building 335
201 E 14th St.
Austin, TX 78701

RE: Senate Committee on Agriculture, Water, and Rural Affairs Interim Report to the 85th Legislature

Dear Chairman Perry:

I very much appreciate the manner in which you have led the Texas Senate Committee on Agriculture, Water, and Rural Affairs. The four interim hearings allowed for a many stakeholders to express their opinions on the proper regulation of water in Texas. I highly recommend that anyone interested in current issues facing agriculture and water in Texas take time to read it this comprehensive and informative report. I commend both you and your committee staff.

I have agreed to sign the report but the second recommendation on Charge No. 2 (page 53) raises concern. While I understand that many stakeholders support removing the MAG as a cap, along with making many other adjustments to the water planning process, I am concerned that permitting over the MAG could result in a drastic depletion of an aquifer during a severe drought or other rapid increase in demand. I feel that any alteration of the MAG standard should accommodate prior permits in the case of an increase in demand, and be tailored to the specific needs and characteristics of a particular district or aquifer.

Sincerely,

Lois W. Kolkhorst
State Senator

November 4, 2016

The Honorable Charles Perry, Chair
Senate Committee on Agriculture, Water, and Rural Affairs
Sam Houston Building 335
201 E 14th St.
Austin, TX 78701

Via interagency mail

RE: Senate Committee on Agriculture, Water, and Rural Affairs Interim Report to the 85th Legislature

Dear Chair Perry:

Thank you for your leadership of the Texas Senate Committee on Agriculture, Water, and Rural Affairs and for organizing four informative hearings that resulted in a comprehensive Interim Report to the 85th Legislature.

We signed the Committee's report, but would like to express the concerns raised by some stakeholders who felt that their voices were not included in the interim hearings or reflected in the resulting report. They believe the Interim Report over-represents the views of those who have a financial interest in reducing groundwater conservation districts' authority to manage groundwater production, excludes the viewpoint of stakeholders who favor continued emphasis on water conservation, and creates an unfair impression that locally elected or appointed boards of groundwater conservation districts are poor managers of Texas' groundwater resources.

Although we support the Committee's recommendation that lawmakers make necessary changes to improve groundwater conservation district performance and the regional water planning process, we would scrutinize legislation that would unduly inhibit local control of water management.

The Legislature has made clear that its preferred method for managing groundwater production is via groundwater conservation districts. With limited resources, these districts have the unenviable task of balancing the rights of landowners to access groundwater under their property against the district's legislatively mandated role to provide for the conservation of groundwater aquifers to desired future conditions. The decisions establishing desired future conditions and permitting decisions to meet desired future conditions are necessarily political ones, as they determine what future quality of life a community wants to preserve for itself. Such decisions are best made locally.

As a Legislature, we certainly should explore options to make the water planning and management process more transparent and fair. We also should, however, avoid proposals that would usurp a role the Legislature has reserved for local communities by placing it in the hands of private interests or the state.

Finally, based upon work during the 84th Legislative Session and feedback from interested stakeholders, Senator Zaffirini requested an interim charge related to litter that was similar to the windborne and waterborne litter charge AWRA ultimately heard. Accordingly, as part of the Committee's consideration of the charge, Senator Zaffirini respectfully requested that the Chair invite testimony from the San Marcos River Foundation's Program Director. This request was honored, and the Program Director provided valuable insight into the impacts of littering caused by the heavy recreational use of our rivers and waterways. The section of the interim report addressing stakeholder perspectives regarding litter issues, however, focused almost exclusively on problems in New Braunfels and failed to include the Foundation's testimony or mention the ever-increasing litter problems on the San Marcos River in Senate District 21, a primary reason for requesting the litter interim charge.

Thank you for your service to our state and for your consideration of these important issues.

Sincerely,

Judith Zaffirini
Senate District 21

José Rodríguez
Senate District 29

Interim Charges

The Senate Committee on Agriculture, Water & Rural Affairs is charged with conducting a thorough and detailed study of the following issues, including state and federal requirements, and preparing recommendations to address problems or issues that are identified.

1. Study and make recommendations regarding the ownership, production, and transfer of surface water and groundwater in the State of Texas.

2. Study and make recommendations on improving the process of developing and executing the State Water Plan.

3. Study and make recommendations on improving the law in this state regarding agricultural liens under Chapter 70, Agricultural Code. The study should include whether sufficient safeguards exist to protect the financial interest agricultural producers have in their product.

4. Study and make recommendations on the effects of windblown and waterborne litter. The study should include an analysis of the economic effects of litter, any necessary methods to prevent and remediate litter, and an assessment of state and local programs to reduce litter.

5. Study and make recommendations on improving the laws regarding the management of game animals, production of domestic fowl, and development of agricultural products in the state to reduce the occurrence and spread of disease and harmful pests.

6. Study the economic benefits the Texas Department of Agriculture's Market Development Services provide to the state through promoting Texas Agricultural products. Review the current marketing services and strategies available to Texas producers and determine additional resources necessary to increase the Market Development Services capabilities. Make recommendations for legislative action, if needed.

7. Monitor the implementation of legislation addressed by the Senate Committee on Agriculture, Water & Rural Affairs during the 84th Legislature, Regular Session, and make recommendations for any legislation needed to improve, enhance, and/or complete implementation. Specifically monitor the Texas Water Development Board's process in the identification and designation of brackish groundwater zones.

Senate Committee on Agriculture, Water & Rural Affairs
Interim Hearings

December 8, 2015, *Capitol Extension Rm. E1.012*
The Committee received invited testimony on Charge Nos. 3, 4, 5, and 6.

May 23, 2016, *Capitol Extension Rm. E1.012*
The Committee received invited testimony on Charge No. 1.

June 20, 2016, *Capitol Extension Rm. E1.012*
The Committee received invited testimony on Charge No. 2.

July 25, 2016, *Capitol Extension Rm. E1.012*
The Committee received invited testimony on Charge No. 1.

Interim Charge Discussion and Recommendations

Charge No. 1

Study and make recommendations regarding the ownership, production, and transfer of surface water and groundwater in the state of Texas.

Charge No. 2

Study and make recommendations on improving the process of developing and executing the State Water Plan.

Charge No. 3

Study and make recommendations on improving the law in this state regarding agricultural liens under Chapter 70, Agricultural Code. The study should include whether sufficient safeguards exist to protect the financial interest agricultural producers have in their product.

Charge No. 4

Study and make recommendations on the effects of windblown and waterborne litter. The study should include an analysis of the economic effects of litter, any necessary methods to prevent and remediate litter, and an assessment of state and local programs to reduce litter.

Charge No. 5

Study and make recommendations on improving the laws regarding the management of game animals, production of domestic fowl, and development of agricultural products in the state to reduce the occurrence and spread of disease and harmful pests.

Charge No. 6

Study the economic benefits the Texas Department of Agriculture's Market Development Services provide to the state through promoting Texas Agricultural products. Review the current marketing services and strategies available to Texas producers and determine additional resources necessary to increase the Market Development Services capabilities. Make recommendations for legislative action, if needed.

Charge No. 7

Monitor the implementation of legislation addressed by the Senate Committee on Agriculture, Water & Rural Affairs during the 84th Legislature, Regular Session, and make recommendations for any legislation needed to improve, enhance, and/or complete implementation. Specifically monitor the Texas Water Development Board's process in the identification and designation of brackish groundwater zones.

Charge No. 1

Study and make recommendations regarding the ownership, production, and transfer of surface water and groundwater in the state of Texas.

Surface Water

The committee held a public hearing on May 23, 2016 where it received testimony on issues related to the production, ownership, and transfer of surface water in the State of Texas, such as surface water permitting, interbasin transfers, and storm water flood control.

Surface Water Permitting

In Texas, most surface water is owned by the state and is called state water.[1] The state holds this water in trust for the public.[2] Texas law states that:

> *The water of the ordinary flow, underflow, and tides of every flowing river, natural stream, and lake, and of every bay or arm of the Gulf of Mexico, and the storm water, floodwater, and rainwater of every river, natural stream, canyon, ravine, depression, and watershed in the state is the property of the state.*[3]

As most surface water is property of the state, state law determines its appropriation or allocation.[4] Texas law appropriates state water using the prior appropriation doctrine, which grants the first person to divert and beneficially use state water the right to continue using the same amount from the same source for the same purpose as originally used.[5] Under the doctrine, subsequent users may divert and beneficially use any remaining state water from the same source provided that their use does not impair the rights of (*i.e.*, decreases the amount of water available to be used by) earlier users.[6] A state water right permitting system was established to enforce the prior appropriation doctrine, ensuring that the rights of "senior" (*i.e.*, earlier in time) water users to divert, use, and store state water are protected against the use of "junior" (*i.e.*, later in time) users by assigning a "priority date" to each issued water right permit.[7] In practice, a priority date determines the order in which water right permit-holders receive state water when there is not enough state water, such as during times of drought, for each user to use the full amount allowed by their permit.[8] From 2009 to 2015, the Texas Commission on Environmental Quality ("Commission") received forty-eight priority calls from senior water right permit-holders who were willing, but unable to use the full amount of state water allowed by their permit due to the

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[1] Tex. Water Code § 11.021(a).
[2] Tex. Water Code § 11.0235(a).
[3] Tex. Water Code § 11.021(a).
[4] Tex. Water Code § 11.022.
[5] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of L'Oreal Stepney and Kim Wilson, Texas Commission on Environmental Quality).
[6] *Id*.
[7] *Id*.
[8] *Id*.

use of junior water right permit holders upstream during a drought.[9] A "priority call" occurs when a senior water right permit-holder officially summons the Commission to enforce the prior appropriation doctrine by curtailing the usage of state water by a water right permit-holder with a priority date later in time than the permit-holder who issued the priority call.[10] The prior appropriation doctrine has been codified in Texas, which is why the right to use state water must be lawfully acquired by an "appropriation" in a manner consistent with Chapter 11 of the Water Code.[11]

To lawfully acquire an appropriation, a person must submit an application to the Commission and be granted a water right permit.[12] Texas law states "no person may appropriate any state water or begin construction of any work designed for the storage, taking, or diversion of water without first obtaining a permit from the Commission to make the appropriation."[13] However, there are several instances in which a person is exempt from the requirement to obtain a water right permit.[14] For example, a person may use, divert, or store state water from the Gulf of Mexico without a water right permit to drill and produce petroleum[15] or for various mariculture activities, such as propagating and rearing shrimp, finfish, and mollusks.[16] Additionally, unpermitted state water can nonetheless be lawfully used to irrigate historic cemeteries[17] or control sediment in a surface coal mine.[18] Lastly, a person may construct a small dam or reservoir[19] for domestic, livestock, fish, or wildlife purposes without obtaining a water right permit.[20] However, the owner of an exempt dam or reservoir that uses state water for a purpose other than domestic, livestock, fish, or wildlife, such as to irrigate agricultural crops, must obtain a permit to use state water for that purpose.[21] Any "person who wilfully takes, diverts, or appropriates state water" for a non-exempt purpose without a permit is subject to a civil or administrative penalty not to exceed $5,000 for every day the violation occurs.[22]

To avoid a penalty, a person must receive a water right permit allowing the use of state water and also comply with the terms of the permit, such as only using state water from the source, in the amount, and at the diversion point named in the permit.[23] This allowance is "perfected" when the permit holder demonstrates an intent to divert state water, actually diverts it, and subsequently puts the water to a beneficial use, such as to irrigate agricultural crops or to

[9] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of L'Oreal Stepney and Kim Wilson, Texas Commission on Environmental Quality).
[10] *Id*.
[11] Tex. Water Code § 11.022.
[12] Tex. Water Code § 11.121.
[13] *Id*.
[14] *Id*.
[15] Tex. Water Code § 11.142(c).
[16] Tex. Water Code § 11.1421(b).
[17] Tex. Water Code § 11.1422.
[18] Tex. Water Code § 11.142(d).
[19] The normal storage of a reservoir intended to store exempt state water cannot exceed 200 acre-feet.
[20] Tex. Water Code § 11.142(a)-(b).
[21] Tex. Water Code § 11.143(a).
[22] Tex. Water Code § 11.082(a).
[23] Tex. Water Code § 11.135(a).

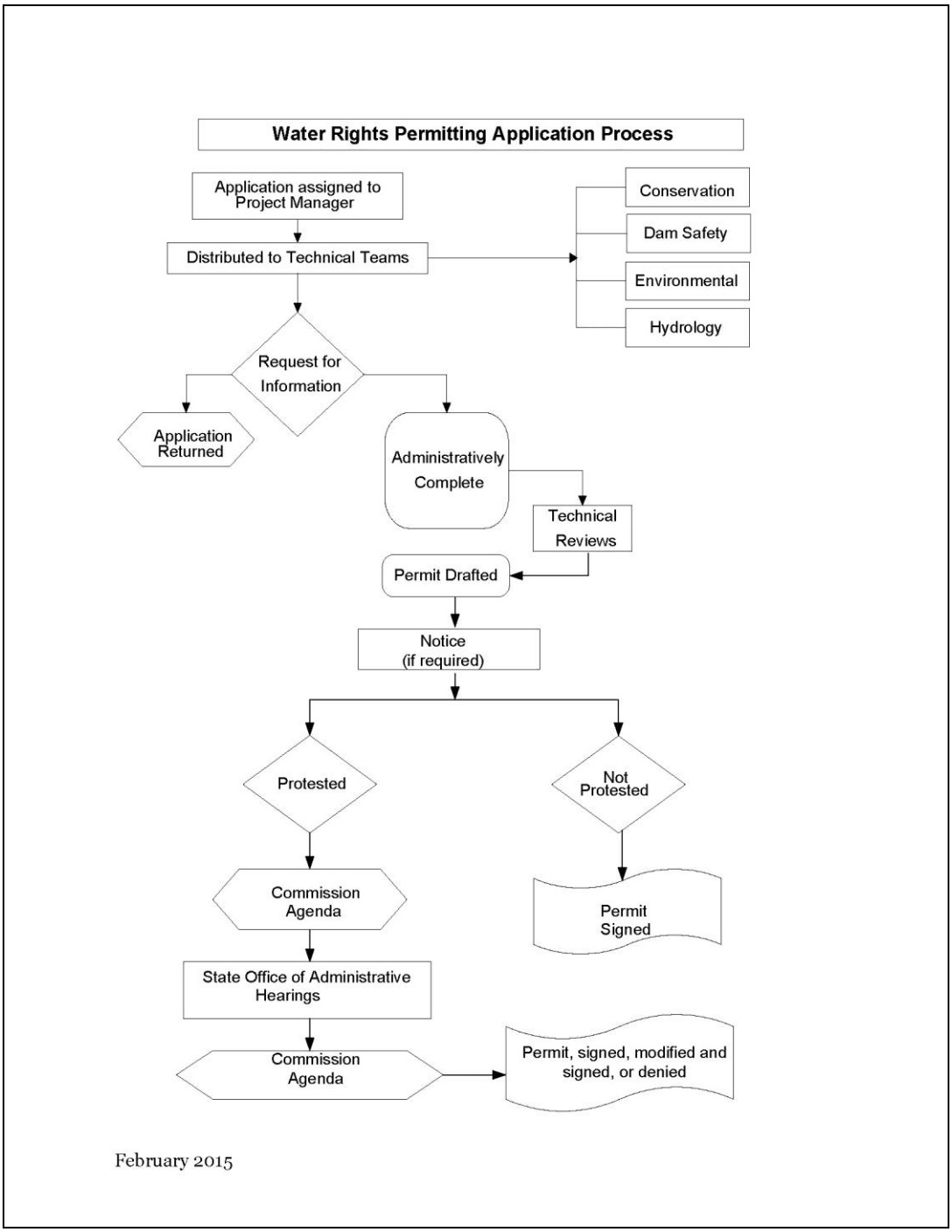
generate steam for electricity production.[24] The perfection of a water right is consequential because a perfected water right is recognized as a vested property right by the Texas Legislature and Texas courts.[25] In *Clark v. Briscoe*, the Texas Court of Civil Appeals exhaustively examined the law of appropriative water rights and concluded that a water right constituted a vested property right for the beneficial use of a specific amount of state water.[26] Citing *Briscoe*, the Texas Supreme Court has ruled that "a matured appropriation right to water is a vested right."[27]

As a vested property right, a person can acquire perpetual title in a matured or perfected water right, as long as the water has been beneficially used for three years.[28] However, if a water right is not used, it may be subject to forfeiture.[29] In *Texas Water Commission v. Wright*, the Texas Supreme Court ruled on the constitutionality of a Texas statute which "authorized the cancellation of water permits upon proof of ten continuous years of non-use."[30] There, the court held that a water right granted an usufructuary right, or a right-to-use, state water on the implied condition that the water would be used.[31] Explaining its ruling, the court said that an owner of a water right was "at no time…vested with the right of non-use of the water for an indefinite period of time."[32] Presently, Texas law states any water right that is "wilfully abandoned" for three successive years is forfeited and subject to appropriation to someone else.[33]

The process to acquire a vested property right for the use of state water begins with submitting a water right permit application to the Commission. An application for a new water right permit must be in writing and include the name and address of the applicant, the source of the water supply, the amount of the diversion, the purpose and use of the diverted water, and the rate, method, and location of the diversion.[34] The fees associated with processing a water right permit vary based on the type of permit and the amount of water. For example, a new water right permit that seeks authorization to divert 5,000 acre-feet per year is $250 plus any applicable notice fees.[35] The Commission evaluates each water right permit application to determine if a permit can be granted.[36] When an application is received, the application is assigned a project manager and distributed to technical teams.[37] Following the assignment of a project manager and distribution to technical teams, there may be a request for additional information to determine whether the application is administratively complete.[38] If administratively complete, technical reviews are conducted to determine whether there is state water available for appropriation from

[24] Tex. Water Code § 11.026.
[25] *Id*.
[26] *Clark v. Briscoe Irr. Co.*, 200 S.W.2d 674, 679 (Tex. Civ. App.—Austin 1947, no writ).
[27] *Texas Water Rights Commission v. Wright*, 464 S.W.2d 642, 647 (1971).
[28] Tex. Water Code § 11.029.
[29] Tex. Water Code § 11.030.
[30] *Texas Water Rights Commission v. Wright*, 464 S.W.2d 642, 644 (1971).
[31] *Id*. at 649.
[32] *Id*. at 648.
[33] Tex. Water Code § 11.030.
[34] Tex. Water Code § 11.124.
[35] 16 Tex. Admin. Code § 295.132(A)(1)(a)(ii), (A)(3).
[36] Tex. Water Code § 11.129.
[37] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of L'Oreal Stepney and Kim Wilson, Texas Commission on Environmental Quality).
[38] *Id*.

the source named in the application.[39] If the technical reviews determine water is available for appropriation, a water rights permit is drafted.[40]



Source: Texas Commission on Environmental Quality

[39] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of L'Oreal Stepney and Kim Wilson, Texas Commission on Environmental Quality).
[40] *Id*.

After a water right permit is drafted, the applicant must notify any "affected persons" of the draft permit.[41] An affected person is a current water right permit-holder for the same water source named in the application, a navigation district within the relevant river basin, or any person the Commission determines may be impaired by the application.[42] An affected person has the legal right to object to the issuance of the permit application, but if no affected person objects, the permit is signed and issued.[43] However, if an affected person objects, the permit application becomes a "contested case" and is scheduled for a public hearing at the State Office of Administrative Hearing.[44] The public hearing at the State Office of Administrative Hearing is similar in demeanor and procedure to those of a Texas district court. At a contested case hearing, documents and testimony are presented and considered as evidence before an administrative law judge.[45] Following the State Office of Administrative Hearing proceeding, the administrative law judge prepares a proposal for decision, which contains findings of fact, conclusions of law, and the administrative law judge's recommendation to the Commission regarding how to decide the contested case. The proposal for decision is then considered in a public hearing by the Commission and is either signed, modified and signed, or denied. If a water rights permit application is not signed or is denied, the applicant has not lawfully acquired the right to divert, use, or store state water.[46] Once lawfully acquired, the right to use state water allows a person to divert water from its natural channel for any beneficial use, such as domestic and municipal, agricultural, mining, hydroelectric power, navigation, and recreation.[47] While state water may be appropriated for navigation, recreation, or any beneficial use, the law gives preference to appropriations for domestic, municipal, agricultural, industrial, and mining purposes.[48] To approve an application granting a water right permit, the Commission must determine that (i) the application meets the requirements of Chapter 11 of the Water Code and is accompanied with the correct fee, (ii) there is unappropriated water available in the source of supply, (iii) the proposed appropriation is a beneficial use that won't impair an existing water right nor is detrimental to public welfare, (iv) considers environmental flow standards, and (v) is consistent with the state water plan.[49] According to the Commission, "water availability is a key component to the technical review of a water right permit application."[50]

As part of its technical review, the Commission uses surface water availability models.[51] These models are used to (i) determine if there is unappropriated state water available in the source of supply named in the water rights permit application, (ii) assess whether the new or

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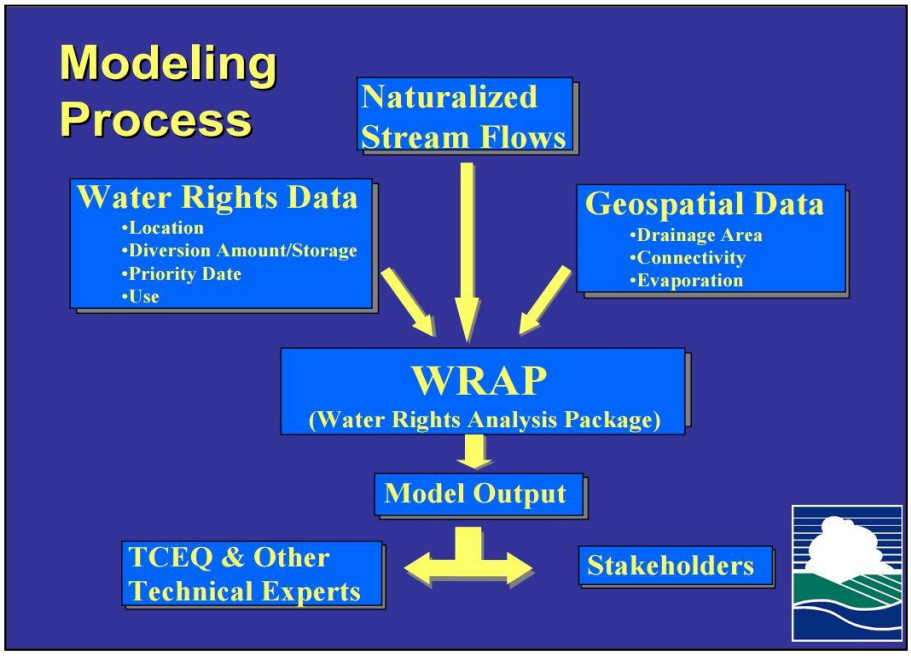
[41] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of L'Oreal Stepney and Kim Wilson, Texas Commission on Environmental Quality).
[42] Tex. Water Code § 11.132.
[43] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of L'Oreal Stepney and Kim Wilson, Texas Commission on Environmental Quality).
[44] *Id*.
[45] *Id*.
[46] Tex. Water Code § 11.121.
[47] Tex. Water Code § 11.023(1)-(8).
[48] Tex. Water Code § 11.024.
[49] Tex. Water Code § 11.134(1), (2), (3)(A)-(E).
[50] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of L'Oreal Stepney and Kim Wilson, Texas Commission on Environmental Quality).
[51] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Robert Brandes, Texas Water Conservation Association).

amended permit would impair an existing water right, (iii) investigate the viability of proposed surface water supply projects, (iv) analyze future available surface water supplies as part of the regional water planning process, and (v) evaluate the projected yield of surface water supply projects in the state water plan.[52] Water availability models are computer simulations that predict the amount of water flowing through a network of rivers or streams under a specified set of conditions, which includes water rights data, naturalized stream flows, and geospatial data.[53] Water rights data, such as the location and amount of the diversion, priority date, and water use, is the information provided by the permit applicant on their water right permit application. Geospatial data refers to the physical characteristics of the river basin, such as the size of the drainage area, connectivity, and evaporation rate.[54] Lastly, naturalized stream flow is the estimated flow of a river without human impacts, such as diversions, reservoir storage, and return flows.[55] Naturalized stream flow is created by adjusting fifty years of United States Geological Survey historic stream flow data to remove human use.[56] The water rights, naturalized stream flow, and geospatial data are combined to form the water rights analysis package.[57] This package represents the "specified conditions" the computer considers when predicting how much, if any, state water is available for appropriation.[58] When the computer simulation is complete, the model's output is reviewed by the Commission, technical experts, and stakeholders.[59]



Source: Texas Commission on Environmental Quality

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[52] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Robert Brandes, Texas Water Conservation Association).
[53] Water Availability Modeling, http://tceq.state.tx.us, http://www.tceq.state.tx.us/assets/public/permitting/watersupply/water_rights/eflows/wam_trinity10022008.pdf (last visited Aug. 10, 2016).
[54] *Id*.
[55] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of L'Oreal Stepney and Kim Wilson, Texas Commission on Environmental Quality).
[56] *Id*.
[57] Water Availability Modeling, http://tceq.state.tx.us, http://www.tceq.state.tx.us/assets/public/permitting/watersupply/water_rights/eflows/wam_trinity10022008.pdf (last visited Aug. 10, 2016).
[58] *Id*.
[59] *Id*.

There are two types of water availability models.[60] The full authorization model is typically used to evaluate applications for perpetual water rights. This type of authorization model assumes the full, long-term use of a water right with no return flows.[61] The current conditions model, however, includes return flows in its assessment and usually evaluates "term permit" applications, which is a water right permit that seeks to appropriate already appropriated (but unused) state water for a limited period of time.[62] Regardless of type, the output of a water availability model determines the amount of unappropriated state water (*i.e.*, water that is not already permitted to an existing user) and the reliability of the water right based on the prior appropriation doctrine, environmental flow requirements, and interstate compacts.[63] While balancing human needs, an "environmental flow" is an amount of water that remains in a stream or river for the benefit of the environment of the river, bay, or estuary.[64] Ultimately, water availability is basic arithmetic, calculated by taking the amount of flow in the stream and subtracting the amount of flow that is appropriated to other water rights or environmental flows. In general, the formula frequently looks similar to this:[65]

NSF (naturalized stream flow) – AWR (appropriated water rights) – EF (environmental flows)
=
WAA (water available for appropriation)

Stakeholders have expressed interest in water availability models, specifically the frequency (or infrequency) in which they are updated using recent hydrologic data.[66] Water availability models became a part of the Commission's water right permit evaluation process in 1997 with the passage of Senate Bill 1, which appropriated funds for their development and completion of each river basin in Texas.[67] The development of the models began in 1999 and was completed in 2004.[68] The Commission claims that since that time Commission staff has updated the models to account for current water usage, return flows in fast-growing parts of the state, changing technology, subsequently granted water rights, and issues identified during the regional water planning process.[69] However, stakeholders assert that the information the Commission uses to update the water availability models in nineteen out of twenty river basins

[60] Water Availability Modeling, http://tceq.state.tx.us, http://www.tceq.state.tx.us/assets/public/permitting/watersupply/water_rights/eflows/wam_trinity10022008.pdf (last visited Aug. 10, 2016).
[61] *Id*.
[62] *Id*.
[63] *Id*.
[64] Tex. Water Code § 11.002(16).
[65] Water Availability Modeling, http://tceq.state.tx.us, http://www.tceq.state.tx.us/assets/public/permitting/watersupply/water_rights/eflows/wam_trinity10022008.pdf (last visited Aug. 10, 2016).
[66] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Robert Brandes, Texas Water Conservation Association).
[67] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of L'Oreal Stepney and Kim Wilson, Texas Commission on Environmental Quality).
[68] *Id*.
[69] *Id*.

does not include recent hydrologic data.[70] For example, the water availability models for the Sulphur, Nueces, Neches, Trinity, San Jacinto, Lavaca, Colorado-Lavaca Coastal, Neches-Trinity Coastal, Trinity-San Jacinto Coastal, and Lavaca-Guadalupe Coastal river basins do not include hydrologic data from the last twenty years. Even longer, the water availability model for the Guadalupe-San Antonio river basins does not include hydrologic data from the last twenty-seven years.[71] In fact, the hydrologic data used for the water availability models for all river basins, except the Lower Colorado,[72] does not go beyond the year 2000, even though many river basins have experienced significant hydrologic changes, such as a new drought of record, since that year.[73] A drought of record is "a time when, generally, water supplies are lowest and water demands are highest."[74] The current drought of record for the state and many individual river basins occurred from 1950 to 1957.[75]

According to stakeholders, outdated hydrologic data prevents the Commission from suitably evaluating water right permit applications in most of the river basins across the state.[76] These parties assert that "in order to represent a reliable source of water, the calculated yield of both existing and proposed reservoirs and water supply projects should reflect the appropriate drought of record."[77] In light of the continued use of outdated hydrologic data, there is growing support for each water availability model to be updated through at least the year 2015 over the next five years at an estimated cost of approximately $8.0 million.[78]

Interbasin Transfers

According to the Commission, surface water permitting is changing in Texas.[79] There are fewer applications for new water right permits than there has been in the past, and more applications for other types of surface water permits, such as interbasin transfer permits.[80] In written testimony presented to the committee, the Commission stated:

> *As surface water resources across the state become more fully appropriated and the population of the state continues to grow, there has been a shift in the types of applications received by the Commission. Over time, the applications have become increasingly complex. There are fewer requests for new appropriations and an increase in other types of applications, such as reuse and waste effluent discharged into the bed and banks of rivers. Another common request is to move existing water rights to new*

[70] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Robert Brandes, Texas Water Conservation Association).
[71] *Id*.
[72] The hydrologic data for the Lower Colorado river basin's water availability model was updated in 2013.
[73] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Robert Brandes, Texas Water Conservation Association).
[74] 2017 State Water Plan, Texas Water Development Board, http://www.twdb.texas.gov/waterplanning/swp/2017/doc/2017_SWP_Adopted.pdf (last visited Sept. 8, 2016).
[75] *Id*.
[76] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Robert Brandes, Texas Water Conservation Association).
[77] *Id*.
[78] *Id*.
[79] *Id*.
[80] *Id*.

locations. Applications may be as simple as changing diversion points or a place of use within the basin, or as complicated as moving surface water outside of a basin (also called an interbasin transfer or IBT).[81]

An "interbasin transfer" is the transport or movement of state water from the river basin where it accumulated, flowed, or was stored (*i.e.*, the basin of origin) to another river basin (*i.e.*, the receiving river basin).[82] Interbasin transfers have been done in Texas since 1900, when the state approved a transfer of 168,000 acre-feet of state-owned surface water from the Colorado River basin to the Lavaca River basin.[83] There are currently more than 150 active interbasin transfers throughout the state and some municipalities, such as Dallas, receive a majority of their water from interbasin transfers.[84] Modern interbasin transfer law began in 1977 with the enactment of Senate Bill 1139, which created Section 11.085 of the Texas Water Code, prohibiting the prejudicial transfer of state-owned surface water from one river basin to another.[85] *In San Antonio vs. Texas Water Commission*, the Texas Supreme Court held that determining whether an interbasin transfer was prejudicial required a balancing test between the detriments to the basin of origin and the benefits to the receiving basin.[86] To pass the court's test, the benefits of the interbasin transfer to the receiving basin must outweigh the detriments to the basin of origin.[87] Following a severe drought in 1996 that caused agricultural losses of more than $2 billion, the Texas Legislature codified the judicial test established in *San Antonio* by passing Senate Bill 1.[88] The bill created Section 11.085(s), which makes the water transferred as part of an interbasin transfer junior in priority to all other water rights in the basin of origin that were granted before the date the interbasin transfer application was filed with the Commission.[89]

Similar to the prior appropriation doctrine, a permitting system was created to enforce interbasin transfer law.[90] As such, the lawful movement of state water from one river basin to another requires an interbasin transfer permit granted by the Commission.[91] Transferring state water without a permit is a "misdemeanor punishable by a fine of not more than $1,000 or by confinement in the county jail for not more than six months."[92] An application for an interbasin transfer permit must include the price someone is willing to pay for the transferred water, a general and detailed description of its proposed uses, and the cost of diverting, transporting, distributing, and treating the water for the proposed users.[93] An applicant for an interbasin

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[81] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Robert Brandes, Texas Water Conservation Association).
[82] Tex. Water Code § 11.085(a).
[83] Josiah Neeley, *Interbasin Transfers: A Water Solution for Texas*, Texas Public Policy Foundation Policy Perspective, April 2014, http://www.texaspolicy.com/library/doclib/2014-04-PP15-InterbasinTransfersWaterSolutionforTexas-CEE-JosiahNeeley.pdf
[84] *Id*.
[85] S.B. 1139, 65th Leg., Regular Sess. (Tex. 1977).
[86] *City of San Antonio v. Texas Water Commission*, 407 S.W.2d 752, 759 (Tex. 1966).
[87] *Id*.
[88] S.B. 1, 75th Leg., Regular Sess. (Tex. 1997).
[89] *Id*.
[90] *See generally* Tex. Water Code § 11.085.
[91] Tex. Water Code § 11.085(a).
[92] Tex. Water Code § 11.085(q).
[93] Tex. Water Code § 11.085(b)(1)-(3).

transfer must provide notice of the application.[94] Notice of the application is required to be given to (i) all water right permit-holders in the basin of origin, (ii) each county judge in the basin of origin, (iii) every mayor of a city with a population greater than 1,000 in the basin of origin, (iv) all groundwater conservation districts in the basin of origin, and (v) each legislator in both the basin of origin and the receiving basin.[95] Notice of the application must also be published during two different weeks within a 30-day period in a newspaper of general circulation in either the basin of origin or the receiving basin.[96] The applicant is responsible for paying for the cost, such as postage and newspaper advertising fees, associated with providing notice for interbasin transfer permit applications.[97] Before taking action on an interbasin transfer application, the Commission is required to "conduct at least one public meeting to receive comments in both the basin of origin of the water proposed for transfer and the basin receiving water from the proposed transfer."[98] Additionally, the Commission must hold an evidentiary hearing, if the application is contested.[99]

Following notice, a public meeting, and any evidentiary hearings, the Commission must take action on the permit by weighing its effects, such as (i) the need for the water in the basin of origin and the receiving basin, (ii) feasible alternative supplies in the receiving basin, (iii) the amount of water sought to be transferred and plans to ensure its beneficial use, (iv) water conservation methods and drought contingency plans in the receiving basin, (v) the projected economic impact of the transfer in both basins, (vi) the anticipated effect on existing water rights, water quality, and aquatic habitat, and (vii) any proposed mitigation or compensation to the basin of origin by the applicant.[100] After weighing these factors, the Commission may grant, in whole or part, an application for an interbasin transfer permit, but only if the applicant has prepared a drought contingency plan, implemented a water conservation plan, and the Commission determines that "the detriments to the basin of origin…are less than the benefits to the receiving basin."[101] Even if an interbasin transfer permit is granted, "the proposed transfer of all or a portion of a water right under this section is junior in priority to water rights granted before the time the application for transfer is accepted for filing."[102] This section of Texas law is often called the "junior water rights" provision because, in most cases, it makes a water right used for an interbasin transfer junior in priority to all other water rights in the basin of origin.[103]

However, not all water transferred as part of an interbasin transfer loses its priority.[104] Some transfers are exempt from the requirements and provisions of Section 11.085 of the Water Code. Exempt interbasin transfers include (i) a transfer of less than 3,000 acre-feet per year, (ii) an emergency transfer, (iii) a transfer to an adjoining coastal river basin, (iv) transfer from a

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[94] *See generally* Tex. Water Code § 11.085(f).
[95] Tex. Water Code § 11.085(f)(1)-(5).
[96] Tex. Water Code § 11.085(g).
[97] Tex. Water Code § 11.085(i).
[98] Tex. Water Code § 11.085(d).
[99] Tex. Water Code § 11.085(e).
[100] Tex. Water Code § 11.085(k)(1)-(5).
[101] Tex. Water Code § 11.085(l)(1)-(2).
[102] Tex. Water Code § 11.085(s).
[103] *Id*.
[104] Tex. Water Code § 11.085(v)(1)-(5).

county, city, or service area that is in two river basins, and (v) a transfer of water that is imported from another state using the bed and banks of a river.[105]

Many stakeholders are concerned by the effect the junior water rights provision has on water supply in Texas.[106] They claim that state-owned water needs to be moved for Texas to meet its future water needs.[107] After Senate Bill 1 went into effect, they say, the number of new non-exempt interbasin transfers approved by the Commission declined dramatically and the number of exempt interbasin transfers increased sharply.[108] To them, this "suggests…the junior rights provision is having a significant impact on the number and character of water transfers in the state."[109] According to these concerned stakeholders, the dramatic drop in new interbasin transfers is because the "junior [water] rights provision…creates a situation where the act of transferring a water right…erases much of the value of that right."[110] These stakeholders acknowledge that the junior water rights provision was passed with the best intentions, but that in practice it "actually serves to devalue water; can have a negative impact on the proper valuation of water and hinders the creation of an effective water market."[111] They argue that the junior water rights provision devalues water by preventing "a willing seller and willing buyer to reach a deal to move water."[112] This is why, in the opinion of concerned stakeholders, no other western state has enacted a provision similar to the junior water rights provision found in § 11.085(s) of the Texas Water Code.[113]

The opinion of concerned stakeholders is that the "Texas Legislature should repeal the junior rights provision."[114] Some are "convinced that Texas cannot meet its future water needs" if the junior water rights provision is not repealed.[115] Regional Water Planning Groups C and H have in past regional plans called for significant change or repeal of the junior water rights provision.[116] In its 2006 regional water plan, Region C stated that "obtaining a permit for [an] interbasin transfer [is] significantly more difficult than it was under prior law and thus…discourage[s] the use of interbasin transfers."[117] This is undesirable, according to Region C, because the junior water rights provision "provide(s) an unnecessary barrier to development

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[105] Tex. Water Code § 11.085(v)(1)-(5).
[106] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Carlos Rubinstein, RSAH20).
[107] *Id*.
[108] Josiah Neeley, *Interbasin Transfers: A Water Solution for Texas*, Texas Public Policy Foundation Policy Perspective, April 2014, http://www.texaspolicy.com/library/doclib/2014-04-PP15-InterbasinTransfersWaterSolutionforTexas-CEE-JosiahNeeley.pdf
[109] *Id*.
[110] *Id*.
[111] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Carlos Rubinstein, RSAH20).
[112] *Id*.
[113] *Id*.
[114] Josiah Neeley, *Interbasin Transfers: A Water Solution for Texas*, Texas Public Policy Foundation Policy Perspective, April 2014, http://www.texaspolicy.com/library/doclib/2014-04-PP15-InterbasinTransfersWaterSolutionforTexas-CEE-JosiahNeeley.pdf
[115] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Carlos Rubinstein, RSAH20).
[116] Socioeconomic Analysis of Selected Interbasin Transfers in Texas, R.W. Beck, Inc., 19-20 (Oct. 2007).
[117] *Id*. at 19.

of the best, most economical, and most environmentally acceptable water supplies."[118] Furthermore, Region H stated in its 2006 regional water plan that:

> *[U]nder the current Texas Water Code, water rights developed as a result of an interbasin transfer become junior to other water rights granted before the interbasin transfer permit. The effect of this…is to make obtaining a permit...significantly more problematic than it was under prior law and thus discourages the use of interbasin transfers for water supply.*[119]

However, not everyone agrees that the junior water rights provision should be significantly changed or repealed.[120] According to these stakeholders, repealing or significantly changing the junior water rights provision is unjustified considering its narrow applicability, the larger effect of pipeline construction costs, and laws in other western states.[121] Regarding its applicability, they claim that the junior water rights provision only applies to a small number of surface water transactions.[122] Supporting their claim, they point out that the junior water rights provision does not affect new surface water rights, movement of water stored in a reservoir, or exempt interbasin transfers.[123] The junior water rights provision does not affect new surface water rights because they are already junior in priority, and it doesn't affect water stored in a reservoir because that water has already been appropriated and no longer has a priority date.[124] Next, those who oppose repeal cite a 2006 study Commissioned by the Texas Water Development Board ("Board") and conducted by R.W. Beck, Inc. which concluded that the primary reason there has been so few interbasin transfers following the enactment of Senate Bill 1 is not the junior water rights provision, but rather the financial cost to construct a pipeline to move water from one river basin to another.[125] For example, the 142-mile Vista Ridge pipeline is estimated to cost the San Antonio Water System $844 million or $5.95 million per mile.[126] Lastly, opponents of repeal counter that, while no other western state may have a statutory provision that changes the priority date of a water right, they all have provisions that similarly protect the basin of origin.[127] In effect, according to repeal opponents, all western states protect the basin of origin as much as if the transferred water right was made junior.[128]

Storm Water Flood Control

> *What you northerners never appreciate is that Texas is so big that you can live your life within its limits and never give a damn about what anyone in Boston or San Francisco thinks. - James Michener*

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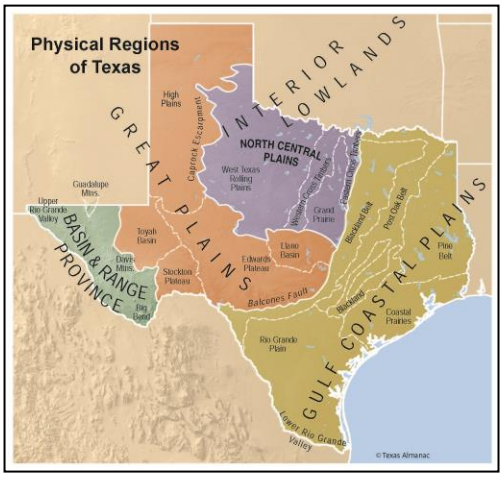
[118] Socioeconomic Analysis of Selected Interbasin Transfers in Texas, R.W. Beck, Inc., 19 (Oct. 2007).
[119] *Id*. at 20.
[120] *Id*. at 21.
[121] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Michael Booth).
[122] *Id*.
[123] *Id*.
[124] *Id*.
[125] *See generally* Socioeconomic Analysis of Selected Interbasin Transfers in Texas, R.W. Beck, Inc., (Oct. 2007).
[126] Scott Huddleson, *Audience split over Vista Ridge pipeline project*, San Antonio Express News, Oct. 8, 2014, http://www.mysanantonio.com/news/local/article/Audience-split-over-pipeline-project-5810660.php
[127] *Id*.
[128] *Id*.

Covering 268,581 square miles, Texas is a comparably large state.[129] It is the second largest state in the United States of America, representing more than seven percent of the country's land mass.[130] The state measures 801 miles north (Texhoma) to south (Brownsville) and 762 miles east (Orange) to west (El Paso).[131] By distance, El Paso is closer to the Pacific Ocean than Port Arthur and Port Arthur is closer to Jacksonville, Florida than it is to El Paso.[132] Dalhart, Texas is closer to the state capitals of Kansas, Nebraska, Colorado, New Mexico, Oklahoma and Wyoming than it is to Austin, its own state capital.[133] Texas is so large the state of Florida would fit into it four times, Pennsylvania six times, and Rhode Island, the smallest state, would fit into Texas 221 times.[134]

With such size, Texas is geographically diverse.[135] There are forests and an ocean to the east; prairies, plains, and plateaus in the center; and mountains to the west. According to the Texas Almanac, there are four distinct geographic regions in the state: the Gulf Coastal Plains, the North Central Plains, the Great Plains, and the Basin & Range Province.[136] The Gulf Coastal Plains extends from the Gulf of Mexico to the Balcones fault line, which runs from Del Rio through San Antonio and Austin to Dallas, and contains coastal prairies, piney woods, rolling hills, post oak forests, and brushlands.[137] The North Central Plains is mostly rolling plains and prairie that covers much of North Texas, including Dallas, Fort Worth, and Wichita Falls.[138] The Great Plains region flows down from the panhandle in northwest Texas, wraps around the North Central Plains, and eventually abuts the Gulf Coastal Plains along the Balcones fault line.[139] It is mostly high plains and plateaus.[140] Finally, the Basin & Range Province in far west Texas contains the Guadalupe Mountains, the Davis Mountains, and Big Bend.[141]

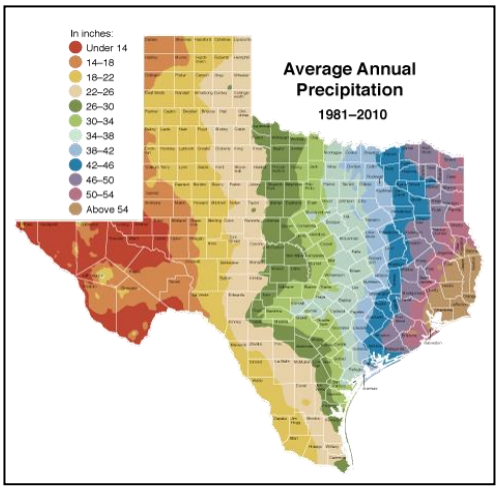


Source: Texas Almanac

[129] Geography of Texas, http://wikipedia.com, https://en.wikipedia.org/wiki/Geography_of_Texas, (last visited Aug. 22, 2016).
[130] *Id*.
[131] *Id*.
[132] *Id*.
[133] *Id*.
[134] Map Shows How Many Times Each State Fits Into Texas, http://1023blakefm.com, http://1023blakefm.com/texas-size-map/ (last visited Aug. 22, 2016).
[135] Physical Regions of Texas, http://texasalmanac.com, http://texasalmanac.com/topics/environment/physical-regions-texas (last visited Aug. 22, 2016).
[136] *Id*.
[137] *Id*.
[138] *Id*.
[139] *Id*.
[140] *Id*.
[141] *Id*.

I have moved over a great part of Texas and I know that within its borders I have seen just about as many kinds of country, contour, climate, and conformation as there are in the world. - John Steinbeck

Bounded by the Gulf of Mexico to the southeast and desert to the west, Texas is also climatically diverse with temperatures and precipitation amounts varying greatly across seasons and geographic regions.[142] Temperatures are the most diverse during winter.[143] For the month of December, the average minimum temperature is less than twenty degrees Fahrenheit in the Texas panhandle and nearly fifty degrees (or 150 percent warmer) in the Rio Grande valley.[144] Precipitation amounts are equally divergent. For example, the average annual precipitation in Jefferson County (far east Texas) from 1981-2010 was more than fifty-six inches and only eight inches in El Paso County (far west Texas).[145] A little more than half the state receives less than thirty inches of precipitation per year.[146] In most regions of the state, spring is the wettest month of the year, followed by fall, winter, and summer.[147] April and May are often the wettest months due to spring thunderstorms that are frequently caused by successive weak frontal systems that move through the state.[148] In September and October, tropical cyclones, such as hurricanes and tropical storms, can drop large amounts of precipitation across sizeable portions of the state.[149] Winter and summer are typically drier months for most regions of Texas.[150]



Source: Epic-Century Magazine

The climatic and geographic diversity of Texas increases the state's risk for flooding, which has plagued the state "throughout its history, causing hardship and economic loss."[151] The federal government has issued 143 disaster declarations in Texas since May 1953 and fifty-four (nearly thirty-eight percent) of those declarations are flood-related.[152] Since March 2015, eighteen major flood events have hit Texas, Louisiana, Oklahoma, and Arkansas.[153] A destructive flood afflicts

[142] Paulson, Richard, Edith Chase, Robert Roberts, and David Moody. *National water summary 1988-89: Hydrologic events and floods and droughts*. Washington, DC: United State Geological Survey, 1991.
[143] *Id*.
[144] *Id*.
[145] *Id*.
[146] *Id*.
[147] *Id*.
[148] *Id*.
[149] *Id*.
[150] *Id*.
[151] *Id*.
[152] FEMA Disaster Declarations, http://fema.gov/declarations, https://www.fema.gov/disasters?field_state_tid_selective=24&field_disaster_type_term_tid=6837&field_disaster_declaration_type_value=All&items_per_page=10 (last visited Aug. 23, 2016).
[153] Jon Erdman, *18 Major Flood Events Have Hit Texas, Louisiana, Oklahoma, Arkansas Since March 2015*, The Weather Channel, Aug. 16, 2016, https://weather.com/storms/severe/news/flood-fatigue-2015-2016-texas-louisiana-oklahoma

at least one Texas community every year.[154] A flood is defined as the partial or complete inundation of two or more acres of normally dry land from an (i) overflow of inland or tidal waters, (ii) unusual and rapid accumulation of runoff of surface waters, (iii) mudflow, (iv) or the collapse or subsidence of land along the shore of a lake or similar body of water.[155] From 1959 to 2014, Texas had three times more flood-related deaths than any other state with 883 and nearly 7,000 flood-related injuries.[156] Texas' nearly $2.25 billion in flood insurance losses from 1978 to 2001 are the most in the country during that time.[157] In the last thirty-eight years, Texas has lost more than 267,000 structures to floods.[158]

> *The weather of Texas is remarkable for its versatility and suddenness. Oftenest told on this subject is the one about the farmer who started to town in a wagon drawn by an ox team. On the way, one of the oxen froze to death and, while he was skinning it, the other died of sunstroke.*

Texas is particularly susceptible to flood-related deaths and economic loss because a large area along the Balcones fault line from Del Rio to Dallas, known as "Flash Flood Alley," is prone to "rapidly occurring flood events due to its unique topography and the periodic occurrence of significant, heavy rainfall."[159] Heavy rainfall is caused by an unstable atmosphere, as warm, moist air from the Gulf of Mexico uses the hilly terrain along the Balcones Fault line to collide with cooler air from the north.[160] This is the major reason why Austin is "one of the most flash-flood prone regions in North America" and flooding is the "number one natural disaster threat" to the city.[161] Austin is not the only area with flood susceptibility. All of Texas is prone to extremely heavy rains and flooding.[162] In fact, Texas holds more than half the world records for rainfall rates during a 48-hour period.[163] Additionally, many Texas floods are so destructive because they often occur in areas where extreme flooding had not occurred for many years.[164] These floods often seem unexpected or unprecedented because water levels can greatly exceed those of past floods.[165]

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[154] Paulson, Richard, Edith Chase, Robert Roberts, and David Moody. *National water summary 1988-89: Hydrologic events and floods and droughts*. Washington, DC: United State Geological Survey, 1991.
[155] What to do? Before, During, and After a Flood, http://texasflood.org, http://www.twdb.texas.gove/flood/prep (last visited Aug. 22, 2016).
[156] Ashley, Sharon and Walker Ashley, *Flood Fatalities in the United States*, DeKalb, IL: Northern Illinois University, 2007.
[157] Flood Damage and Fatality Statistics, http://floodsafety.com, http://floodsafety.com/national/life/statistics.htm (last visited Aug. 23, 2016).
[158] Loss Statistics Country-wide as of 06/30/2016, http://bsa.nfipstat.fema.gov/reports/1040.htm (last visited Aug. 29, 2016).
[159] What to do? Before, During, and After a Flood, http://texasflood.org, http://www.twdb.texas.gove/flood/prep (last visited Aug. 22, 2016).
[160] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Michael Segner and Robert Mace, Texas Water Development Board).
[161] Austin, Texas "One of the most flood-prone regions in North America," http://floodsafety.com, http://floodsafety.com/texas/regional_info/regional_info/austin_zone.htm, (last visited Aug. 23, 2016).
[162] *Id*.
[163] *Id*.
[164] Paulson, Richard, Edith Chase, Robert Roberts, and David Moody. *National water summary 1988-89: Hydrologic events and floods and droughts*. Washington, DC: United State Geological Survey, 1991.
[165] *Id*.

Year	Area	Type	Rainfall	Impact
1913	Houston	Severe storm	20-25 inches	$8.5 million in damage, 177 deaths
1921	San Antonio	Tropical storm	40 inches	$19 million in damage, 215 deaths
1949	Clear Fork	Severe storm	11 inches	$10 million in damage, 10 deaths
1952	Austin	Severe storm	23-26 inches	$12 million in damage, Lake Travis rose 57 feet, 5 deaths, 454
1967	Statewide	Hurricane Beulah	10-27 inches	$160 million in damage, 44 deaths
1972	South Central Texas	Severe storm	16.5 inches	$15-20 million in damage, 18 deaths
1973	Houston	Severe storm	10-15 inches	$50 million in damage, 10 deaths
1976	Houston	Severe storm	10-13 inches	$25 million in damage, 8 deaths
1978	Statewide	Tropical storm	30 inches	$110 million in damage, 33 deaths
1981	Austin	Severe storm	10 inches	$35 million in damage, 13 deaths
1994	Statewide	Hurricane Rosa	20-30 inches	$700 million in damage, 22 deaths
1998	San Antonio	Severe storm	16 inches	$500 million in damage, 25 deaths
2001	Houston	Hurricane Allison	40 inches	$5.2 billion in damage, 22 deaths
2002	South Central Texas	Severe storm	30 inches	$2 billion in damage, unknown deaths

Source: Houston Chronicle[166] *and United States Geological Survey*[167]

Stakeholders agree that Texas has a "major flood risk."[168] They cite the state's climate and geography as reasons for the high risk level.[169] According to stakeholders, the state's long coastline and sensitivity to El Nino conditions regularly subjects it to major rain events, such as hurricanes, tropical depressions, and severe thunderstorms.[170] The regularity of significant rain events is particularly problematic given that Texas is normally experiencing some degree of

[166] Matt Levin, *How past Texas flooding events compare to the Tax Day floods*, Houston Chronicle, April 23, 2016, available at http://www.chron.com/news/houston-texas/houston/article/Historic-Texas-flooding-events-and-Houston-this-7255052.php
[167] Paulson, Richard, Edith Chase, Robert Roberts, and David Moody. *National water summary 1988-89: Hydrologic events and floods and droughts*. Washington, DC: United State Geological Survey, 1991.
[168] *Id*.
[169] *Id*.
[170] *Id*.

drought, which has caused "our rivers and streams [to] have relatively small channels; so they typically can handle only a few inches of rain before they are full."[171] When the typical Texas river, creek, or stream receives more than a few inches of rain, they tend to flood.[172] Many stakeholders claim this problem remains effectively unaddressed by state and local government.[173] They claim that less than ten percent of creeks, streams, and rivers statewide have detailed engineering studies and as a result there is little knowledge of flood risk.[174]

The responsibility for flood control projects is fragmented and shared between federal, state, and local government.[175] The federal government has created a flood mitigation program within the Federal Emergency Management Agency (FEMA) called the Flood Mitigation Assistance grant program.[176] The program provides grant funding to local governments to design, construct, and operate projects that cost-effectively reduce or eliminate the long-term risk of flood damage to homes, businesses, and other structures.[177] FEMA has partnered with the Board to administer the program.[178] Since 1997, the Board has solicited, received, and processed applications from local governments.[179] For example, county flood control districts have applied for funding to plan, design, and construct flood control projects within their community.[180] Specifically, the program has provided $40 million to Jefferson County for storm water detention and channelization, $10 million to buyout repetitively flooded structures in Harris County, $18 million to elevate structures in Guadalupe County, and $22 million to Webb, Zapata, Brooks, Hidalgo, Nuecess, and Dallas Counties, among others. The funds were used to assess risks of flooding and evaluate solutions to flooding problems.[181] The purpose of the flood control districts within these counties is to "devise flood damage reduction plans, implement the plans, and maintain the infrastructure."[182] Common flood control strategies include surface water reservoirs, levees, structural buy-outs and relocation, channelization, flood warning systems, and dry dams.[183]

To address the problem, stakeholders argue that the state needs a flood plan to reduce the risk of flooding, save lives, and prevent economic loss.[184] To formulate such a plan, they recommend taking a "watershed approach," whereby each watershed is studied, individually and

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[171] Paulson, Richard, Edith Chase, Robert Roberts, and David Moody. *National water summary 1988-89: Hydrologic events and floods and droughts*. Washington, DC: United State Geological Survey, 1991.
[172] *Id*.
[173] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Wes Birdwell, Texas Floodplain Management Association).
[174] *Id*.
[175] *Id*.
[176] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Michael Segner and Robert Mace, Texas Water Development Board).
[177] *Id*.
[178] *Id*.
[179] *Id*.
[180] *Id*.
[181] *Id*.
[182] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Michael Talbott, Harris County Flood Control District).
[183] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Wes Birdwell, Texas Floodplain Management Association).
[184] *Id*.

in its entirety, to "develop detailed rainfall runoff data" that will increase the ability to project rainfall probability and thus predict floods.[185] Some stakeholders may suggest that using the current water availability model would be adequate; however, other stakeholders disagree.[186] They point out that the current water availability model only incorporates historical stream flow into its estimates and does not consider rainfall data or rainfall estimation methods.[187] A state flood plan would be useful in reducing the effects of flooding and, in the opinion of stakeholders, could be incorporated into the state's water supply planning to "truly determine how much water Texas has to meet [its] future water demands."[188]

Groundwater

The committee held a public hearing on July 25, 2016 where it received testimony on issues related to the production, ownership, and transfer of groundwater in the State of Texas, such as groundwater district performance, private property rights, regulatory takings, and the application of oil and gas law to groundwater.

Groundwater Conservation District Performance

There are ninety-nine groundwater conservation districts in Texas that cover all or part of 173 counties in the state.[189] A groundwater conservation district ("district") is a local unit of government that "provide[s] for the conservation, preservation, protection, recharging, and prevention of waste of groundwater" resources within its jurisdiction by developing, enacting, implementing, and enforcing rules regulating groundwater production.[190] The Texas Supreme Court has said "one purpose of [districts] is to afford each owner of water in a common, subsurface reservoir a fair share." Districts are "the state's preferred method" of (i) balancing the conservation and production of groundwater, (ii) applying the best available science to develop, adopt, and implement rules that conserves and develops groundwater, and (iii) protecting private property rights in groundwater.[191] The protection of private property rights in groundwater is necessary because, unlike surface water, groundwater is not owned by the state.[192] The Texas Legislature "recognizes that a landowner owns the groundwater below the surface of the landowner's land as real property."[193] The Texas Supreme Court also recognizes the private ownership of groundwater. In *Edwards Aquifer Authority v. Day*, the court held that groundwater is "owned in place," like oil and gas.[194] Groundwater ownership entitles a person to "drill for and produce groundwater…without causing waste or malicious drainage" and any other rights

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[185] Senate Committee on Agriculture, Water & Rural Affairs hearing, May 23, 2016 (Written testimony of Wes Birdwell, Texas Floodplain Management Association).
[186] *Id*.
[187] *Id*.
[188] *Id*.
[189] Groundwater Conservation District Facts, https://www.twdb.texas.gov/groundwater/conservation_districts/facts.asp (last visited Aug. 29, 2016).
[190] Tex. Water Code § 36.0015(b).
[191] Tex. Water Code § 36.0015(b).
[192] Tex Water Code § 36.002(a).
[193] *Id*.
[194] *Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814 (Tex. 2012).

recognized under common law.[195] While groundwater can be owned in place, Texas law seems to distinguish groundwater ownership rights from other ownership rights.[196] For instance, a groundwater owner is not entitled by statute to produce a specific amount of groundwater nor a proportionate share of available groundwater based on the amount of acreage owned.[197]

The statutory provisions governing the operation of districts can be found in Chapter 36 of the Texas Water Code.[198] Perhaps the most consequential provision of that chapter requires a district to adopt a desired future condition. A desired future condition is the desired condition of groundwater resources, such as a certain water table level, spring flow, or volume, at specified future time.[199] Desired future conditions are adopted by each district every five years as part of the joint planning process, which is a process that places districts into groups called groundwater management areas that regularly meet to jointly plan, authorize research, discuss, propose, and ultimately adopt an updated desired future condition for the management area.[200] A desired future condition is used by the Board to develop "modeled available groundwater," which estimates the maximum amount of groundwater that can be produced within the jurisdiction of a district on an annual average basis and still achieve the desired future condition.[201] A district's desired future condition may not be achieved if groundwater production exceeds the modeled available groundwater estimate over a long period of time. To increase the likelihood districts achieve their desired future condition and other goals, each district must create and adopt a management plan.[202] The plan identifies the performance standards, actions, and procedures necessary to (i) provide for the most efficient use of groundwater, (ii) prevent waste and subsidence, and (iii) address drought conditions, conservation, and recharge enhancement.[203] The plan must incorporate modeled available groundwater and include estimates of groundwater usage, aquifer recharge rate, surface water supply, and overall water demand.[204] The Board must approve each district's management plan.[205]

Following creation, adoption, and approval of a management plan, a district is required to "adopt rules necessary to implement the plan."[206] A district's rules must be fair, impartial, non-discriminatory, and consider groundwater uses, needs, and ownership rights.[207] To adopt rules, a district must hold a public hearing and provide notice of the hearing no later than the twentieth day before the date of the hearing.[208] Notice of the time, date, location, and an explanation of the reason for the hearing must be provided at the district's office, the county clerk's office, in at least one newspaper of general circulation within the district, and by mail, fax, or e-mail to any person

[195] Tex. Water Code § 36.002(b)(1)-(2).
[196] Tex. Water Code § 36.002(b-1)(1), (d)(3).
[197] *Id*.
[198] *See generally* Chapter 36, Texas Water Code.
[199] Tex. Water Code § 36.001(30).
[200] Tex. Water Code § 36.108(c)-(d).
[201] Tex. Water Code § 36.001(25).
[202] *See generally* Tex. Water Code § 36.1071.
[203] Tex. Water Code § 36.1071(a)(1)-(8), (e)(1)-(3).
[204] Tex. Water Code § 36.1071(e)(3)(A)-(G).
[205] Tex. Water Code § 36.1072(a-1).
[206] Tex. Water Code § 36.1071(f).
[207] Tex. Water Code § 36.101(a)(1)-(3), (6).
[208] Tex. Water Code § 36.101(d).

who has specifically requested notice in writing of a rulemaking hearing.[209] The rules a district adopts to implement a management plan must include the requirement that a person receive a permit before drilling, equipping, operating, or completing a water well.[210] To receive a permit, a person must submit an application to the appropriate district with the name and mailing address of the applicant, proof of authority to construct and operate the water well, the nature and amount of the proposed use, a water conservation plan, the location of the well, and a drought contingency plan.[211]

Before granting or denying a permit, the district may hold a public hearing at the district office or other regular meeting location.[212] If a district schedules a public hearing to consider a permit application, notice must be provided no later than ten days before the date of the hearing.[213] Notice of the time, date, location, and an explanation of the reason for the hearing must be provided at the district's office, the county clerk's office, and by mail, fax, or e-mail to any person who has specifically requested notice in writing of a permit application hearing.[214] Irrespective of a public hearing, a district is obligated to consider whether the application (i) unreasonably affects existing groundwater users, (ii) uses groundwater beneficially, (iii) avoids waste, (iv) achieves conservation, and (v) is consistent with the district's management plan, which includes the desired future condition.[215] As such, a district has a duty to only "issue permits up to the point that the total volume of exempt and permitted groundwater production will achieve an applicable desired future condition."[216] In carrying out this duty, a district is required to consider modeled available groundwater; estimated total exempt usage, permitted usage, and actual usage; production patterns, such as the seasonal use; and yearly precipitation.[217] After making these considerations, a district may limit the production of groundwater to minimize the drawdown on the water table[218] or the reduction of artesian pressure[219] by setting production limits on wells or limiting the amount of water produced based on acreage or tract size.[220] Notwithstanding judicially and statutorily recognized private property rights in groundwater, rules limiting groundwater production may "preserve historic or existing use" and consider "the service needs or service area of a retail public utility."[221]

Once a permit is issued, it can be amended or automatically renewed.[222] Following the enactment of Senate Bill 854 in 2015, an operating permit is automatically renewed without a hearing before its expiration date, if there is no amendment to the permit, the applicant is in good

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[209] Tex. Water Code § 36.101(d)(1)-(4).
[210] Tex. Water Code § 36.113(a).
[211] Tex. Water Code § 36.113(b), (c)(1)-(7).
[212] Tex. Water Code § 36.403(a).
[213] Tex. Water Code § 36.404(c).
[214] Tex. Water Code § 36.404(b)(3)-(4), (c)(1)-(3).
[215] Tex. Water Code § 36.113(d)(1)-(7).
[216] Tex. Water Code § 36.1132(a).
[217] Tex. Water Code § 36.1132(b)(1)-(5).
[218] The water table is the level below which the ground is saturated with water.
[219] Artesian pressure is the positive pressure found in a confined aquifer that in some cases is great enough to transport groundwater to the surface following the drilling of a water well.
[220] Tex. Water Code § 36.116(a), (a)(2)(A)-(B).
[221] Tex. Water Code § 36.116(b), (c).
[222] *See generally* Tex. Water Code § 36.114 and § 36.1145.

standing with the district, the renewal application is timely, and accompanied by the correct fee. District rules determine whether a permit amendment application, such as changing the amount or use of groundwater allowed by the permit, is required.[223] If required, districts must "promptly consider" the application within 60 days or the applicant can petition a district court to issue a writ of mandamus compelling the district to consider the permit amendment.[224]

While requiring a permit to lawfully drill, equip, operate, or complete a groundwater well is the general rule, there are exemptions to this rule and a permit may not always be necessary.[225] Certain groundwater users, such as homeowners, cattle raisers, chicken farmers, or oil and gas producers, may not have to receive a permit.[226] For example, a permit is not required for a groundwater well used solely for domestic, livestock, or poultry use, if the well is incapable of producing more than 25,000 gallons of water per day and is located on a non-platted parcel of land greater than 10 acres.[227] Additionally, a person may drill and operate a groundwater well without a permit as long as the well is only used to supply water to a rig actively engaged in drilling or exploration operations permitted by the Railroad Commission.[228] However, an exempt groundwater well may not retain that status forever.[229] A district can cancel a previously granted exemption, require an operating permit, limit production, and assess fees if an exempt well is no longer solely used for domestic, livestock, poultry, or oil and gas exploration.[230] Regardless of whether a permit is necessary, a groundwater well must be registered with the applicable district; follow any casing, pipe and fitting requirements to prevent groundwater pollution; and comply with district's well spacing requirements, which regulate how closely wells can be drilled to each other to protect private property rights and artesian pressure.[231] A person who violates a district's well spacing, registration, production, permitting, or other rules may be enjoined from continuing their violation and/or assessed a civil fine not to exceed $10,000 per day for each violation.[232]

A person dissatisfied with a district's permitting decision can appeal the decision to the district or, in some cases, a district may contract with the State Office of Administrative Hearing to handle appeals on its behalf.[233] After receiving a request for an appeal, a preliminary hearing must be conducted by a quorum of the district's board to determine whether the person requesting the contested case has raised a justiciable issue related to the permit application and has standing to appeal.[234] If the person who requested the appeal raised a justiciable issue and has standing, a contested case hearing or series of hearings must be conducted by a quorum of the district's board to consider evidence relevant to the permit application.[235] Not more than thirty days after the final evidentiary hearing, the district must submit a proposal for decision that

[223] Tex. Water Code § 36.114(b).
[224] Tex. Water Code § 36.114(d), (e).
[225] *See generally* Tex. Water Code § 36.117.
[226] *Id*.
[227] Tex. Water Code § 36.117(b)(1)(A)-(B), § 36.117(j).
[228] Tex. Water Code § 36.117(b)(2).
[229] Tex. Water Code § 36.117(d).
[230] Tex. Water Code §36.117(d)(1)-(2).
[231] Tex. Water Code § 36.117(f), (h)(1)-(2).
[232] Tex. Water Code § 36.102(a), (b).
[233] Tex. Water Code, Chapter 36, Subchapter M.
[234] Tex. Water Code § 36.4051(c).
[235] Tex. Water Code § 36.406(1), (3).

summarizes the subject matter of the hearing, recaps the evidence presented by the parties, and recommends a course of action for the district.[236] At a "final hearing," the district considers the proposal for decision, exceptions to the proposal, and final legal arguments.[237] Within sixty days following the conclusion of the final hearing, the district must act on the permit or permit amendment application.[238] If a person is dissatisfied with the action taken by the district following the final hearing, he or she can further administratively appeal by requesting written findings, conclusions, and a rehearing.[239] A request for written findings and conclusions must be made no later than twenty days following the district's decision, and a request for a rehearing must be made within twenty days following receipt of the district's findings and conclusions.[240] The district is required to provide its written findings and conclusions, but is not required to grant a rehearing.[241] A district's action on a permit or permit amendment application is final if the request for rehearing is not filed on time or the district denies the request for rehearing.[242]

Similar to a permitting decision, a district's adopted desired future condition can be administratively challenged.[243] An "affected person" can appeal a desired future condition no later than 120 days following its adoption by filing a petition that "provide[s] evidence the district did not establish a reasonable desired future condition of the groundwater resources in the management area."[244] Shortly after receiving the petition, a district must contract with the State Office of Administrative Hearing to conduct a contested case hearing to examine the reasonableness of the district's adopted desired future condition.[245] Before a contested case hearing is conducted, however, the State Office of Administrative Hearing is required to hold a prehearing conference to determine whether the petition should be dismissed for failure to be brought by an affected person or state a claim on which relief can be granted.[246] If the State Office of Administrative Hearing determines an affected person has brought a claim on which relief can be granted, a contested case hearing is conducted in accordance with chapter 2001 of the Government Code, which allows for the trial-like presentation of evidence before an administrative law judge.[247] Following the contested case hearing, an administrative law judge submits a proposal for decision containing findings of fact, conclusions of law, and recommendations for decision to the district for its consideration.[248]

Upon receipt of the proposal for decision, the district must "issue a final order stating the district's final decision" on the desired future condition.[249] The district may change a finding of fact, conclusion of law, or recommendation for decision made by the administrative law judge in

[236] Tex. Water Code § 36.410(a), (b).
[237] Tex. Water Code § 36.410(f).
[238] Tex. Water Code § 36.411.
[239] Tex. Water Code § 36.412(a), (b).
[240] *Id*.
[241] Tex. Water Code § 36.412(b), (d).
[242] Tex. Water Code § 36.413(1), (2)(A).
[243] Tex. Water Code § 36.1083(b).
[244] Tex. Water Code § 36.1083(b).
[245] Tex. Water Code § 36.1083(h)(1).
[246] Tex. Water Code § 36.1083(l)(1), (2).
[247] Tex. Water Code § 36.1083(i)(2).
[248] *Id*.
[249] *Id*.

the proposal for decision, but any alteration of a proposal for decision in a final decision requires the district to issue a report describing in detail the policy, scientific, and technical reasons it disagrees with the administrative law judge.[250] A district that concludes a desired future condition is unreasonable in its final order, has sixty days to convene with other districts in its management area to revise the desired future condition.[251] However, supposing that a district does not conclude its desired future condition is unreasonable in its final order, a person dissatisfied with that decision has forty-five days to appeal the order to a district court that will reexamine the order using the "substantial evidence" standard of review.[252] Under the substantial evidence standard of review, a court may not substitute its own judgment for judgment of the district, unless the district's judgment was unconstitutional, in excess of its statutory authority, made through unlawful procedure, not supported by substantial evidence, or is arbitrary and capricious.[253] The substantial evidence standard is a "highly deferential" to the district's judgment, but if a court nonetheless finds that a desired future condition is unreasonable the court is required by law to strike the desired future condition and order the districts to reconvene to revise it.[254]

After all administrative remedies have been exhausted, "a person…affected by and dissatisfied with any rule or order made by a district…is entitled to file a suit against the district or its directors to challenge the validity of the law, rule, or order."[255] Only the district, the applicant, and the parties to a contested case hearing can participate in the appeal, which must be filed in a court in the county where the district is located.[256] Texas law requires that a suit brought against a district "be advanced for trial and determined as expeditiously as possible." Although, some cases have taken more than ten years to resolve.[257] At trial, the challenged law, rule, order, or act is presumed to be legal and the burden of proof is on the person who filed the lawsuit ("petitioner") to prove otherwise under the substantial evidence standard of review.[258] Upon conclusion of the trial, a victorious district is entitled to recover "attorney's fees, expert witness expenses, and other costs incurred before the court" from the petitioner.[259] That recovery is limited, however, to attorney's fees and costs incurred for only those issues on which the district prevailed.[260] Attorney's fees and other expenses are not awarded to a district for issues on which it did not prevail at trial.[261] Currently, a court is not required to award attorney's fees or other expenses to a petitioner.[262] For example, a petitioner could prevail on every issue at trial

[250] Tex. Water Code § 36.1083(n), (o).
[251] Tex. Water Code § 36.1083(p).
[252] Tex. Water Code § 36.10835(a).
[253] Tex. Gov't Code § 2001.174(2)(A)-(F).
[254] Standard of Review, Wikipedia, https://en.wikipedia.org/wiki/Standard_of_review#Substantial_evidence (last visited Sept. 14, 2016).
[255] Tex. Water Code § 36.251(a).
[256] Tex. Water Code § 36.251(b), (c).
[257] Senate Committee on Agriculture, Water & Rural Affairs, July 25, 2016 (Written testimony of Paul Terrill).
[258] Tex. Water Code § 36.253.
[259] Tex. Water Code § 36.066(g).
[260] Tex. Water Code § 36.066(h).
[261] *Id*.
[262] *See generally* Tex. Water Code § 36.066.

and not recover any of its attorney's fees, expert witnesses expenses, or other costs incurred before the court.[263]

Texas has "numerous robust, prolific and drought-proof aquifers."[264] An aquifer is a geologic formation of dirt and rocks that has economically usable amounts of water.[265] Aquifers can be either "major" or "minor".[266] A major aquifer contains "large amounts of water over large areas," while minor aquifers contain "minor amounts of water over large areas or large amounts of water over small areas."[267] There are nine major aquifers and twenty-one minor aquifers that have blessed Texas "with vast groundwater resources."[268] There are "approximately 2.7 billion acre-feet of usable brackish groundwater" and "twice that much fresh water" in aquifers across the state.[269] That equals roughly 2.6 quadrillion (*i.e.*, 2,600 trillion) gallons of water or enough to fill Lake Michigan two times. Additionally, "the amount of fresh water stored in our groundwater aquifers is thousands of times greater than the total amount of water stored in all the surface water reservoirs in the state."[270] Using the median of the "total estimated recoverable storage" (*e.g.*, 50 percent) of Texas aquifers and assuming the historic groundwater use growth rate of approximately one percent, a report recently concluded that six of Texas' nine major aquifers have unlimited years of supply.[271] One aquifer, the Trinity Aquifer, has more than 2,000 years of supply.[272] Total estimated recoverable storage is an estimate by the Board that "represents the technical maximum amount of groundwater that is recoverable from an aquifer."[273]

Despite the findings of the report, the 2017 State Water Plan expects groundwater availability to decrease twenty percent from 12.3 million acre-feet in 2020 to 9.8 million acre-feet in 2070.[274] The state water plan is an aggregation of sixteen regional water plans created by regional water planning groups.[275] Every five years, each regional group adopts a plan that identifies ways to increase water supplies over the next fifty years to meet future water needs that are calculated based on the "drought of record," projected population growth, and existing water supplies.[276] In the opinion of some, the amount of groundwater that physically exists underneath Texas differs greatly with the amount of groundwater that is considered available for production

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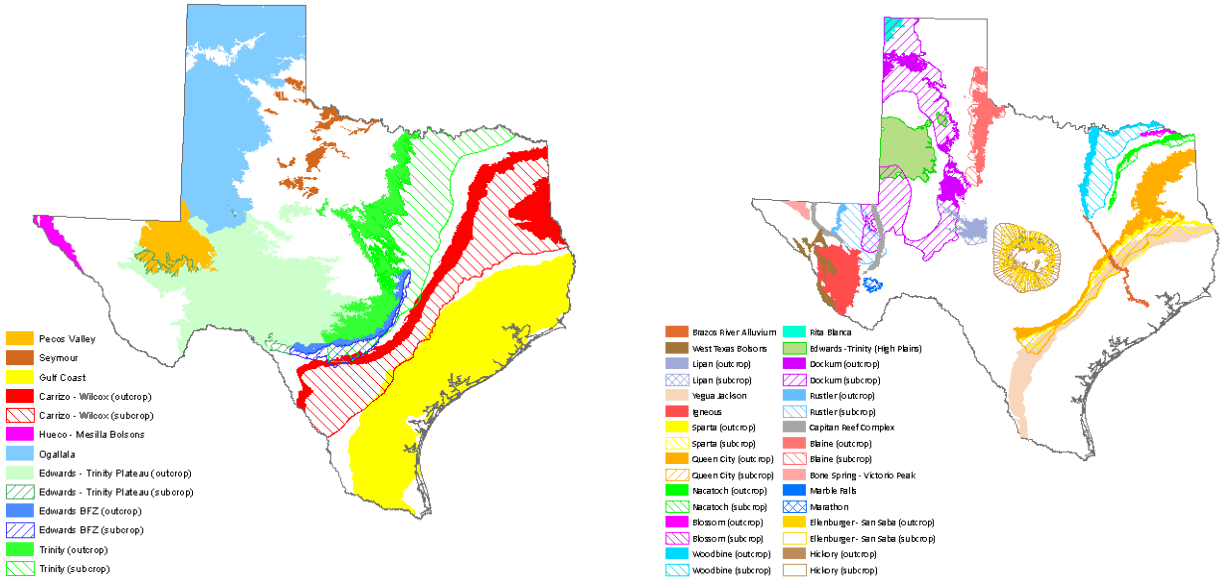
[263] *See generally* Tex. Water Code § 36.066.
[264] Senate Committee on Agriculture, Water & Rural Affairs, July 25, 2016 (Written testimony of Michael Thornhill).
[265] Texas Aquifers, Texas Water Development Board, https://www.twdb.texas.gov/groundwater/aquifer/ (last visited Sept. 16, 2016).
[266] *Id*.
[267] *Id*.
[268] Senate Committee on Agriculture, Water & Rural Affairs, July 25, 2016 (Written testimony of Michael Thornhill).
[269] *Id*.
[270] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Russell Johnson).
[271] Brady et al., *Reorganizing Groundwater Regulation in Texas*, Texas A&M University (May 2016).
[272] *Id*.
[273] *Id*.
[274] 2017 State Water Plan, Texas Water Development Board, http://www.twdb.texas.gov/waterplanning/swp/2017/doc/2017_SWP_Adopted.pdf (last visited Sept. 16, 2016).
[275] *Id*.
[276] *Id*.

in the state water plan. This may, at least partially, be a result of district permitting rules that are intended to meet a desired future condition.[277] Some stakeholders, however, believe district permitting rules are unjustifiably restrictive, unscientific, and undermine private property rights in groundwater.[278] According to the 2012 State Water Plan, groundwater supplies "represent the amount of groundwater that can be produced with current permits and existing infrastructure. Because permits and infrastructure limit how much groundwater can be produced, existing groundwater supply can be - and often is - less than the total amount that can be physically produced from an aquifer."[279]



Major (left) and Minor (right) Aquifers of Texas
Source: Texas Water Development Board

A large number of stakeholders think that many of the districts across the state are not serving their statutory purpose to protect private property rights and balance conservation and development of groundwater to meet the growing water needs of the state.[280] Instead, they think that districts consider it their mission to do the opposite; namely, to "protect local historic and future use, and prevent development of water resources for any need or use outside the district boundaries."[281] For this reason, these stakeholders often criticize the performance of groundwater conservation districts, especially those created after passage of Senate Bill 1 in 1997, which "was

[277] 2012 State Water Plan, Texas Water Development Board, https://www.twdb.texas.gov/publications/state_water_plan/2012/2012_SWP.pdf (last visited Sept. 17, 2016).
[278] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Russell Johnson).
[279] 2012 State Water Plan, Texas Water Development Board, https://www.twdb.texas.gov/publications/state_water_plan/2012/2012_SWP.pdf (last visited Sept. 17, 2016) (emphasis added).
[280] Tex. Water Code § 36.0015(b).
[281] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Russell Johnson).

the first legislation to grant real power to permit and regulate groundwater production."[282] Before enactment of that bill, "the primary goal of management of [groundwater] was to insure [its] development to benefit the economy of the region and the state" and only recently "has the focus shifted to curtailing or preventing increased groundwater production [for] the protection of local historic users."[283] Stakeholder criticism of district performance fall into two broad categories: estimates of groundwater available for production and permitting methodology. Where groundwater supplies are plentiful in Texas and might be developed for the future needs of the state, these "problems…nearly universally exist."[284]

A district must determine how much water is available for permitting before issuing permits.[285] Thus, stakeholders' first criticism regarding the performance of districts is often the alleged fallacious estimates of the amount of groundwater available for permitting and production.[286] A stakeholder offers the following hypothetical as an example.[287]

> *[T]he Lost Pines District will allow just .08% of the total recoverable storage to be recovered per year. To put this in perspective, assume that the total projected need from all sources for the City of Austin over the next 50 years will be 10.7 million acre-feet. In other words, 10.7 million acre-feet of water will be consumed in the City of Austin over the next 50 years. If 100% of Austin's use came just from the Carrizo-Wilcox Aquifer, in just the Lost Pines District over the next 50 years and you assume zero recharge and zero lateral in-flow, there would still be 217 million acre-feet of stored groundwater available in the Carrizo-Wilcox Aquifer, after 50 years. In other words, using this ridiculous assumption that 100% of Austin's water use is supplied just from the Simsboro in this one district, 96.3% of the water within that district that is available for recovery would still be in place after 50 years.*[288]

Stakeholders claim that calculations, such as this one, "reveal a misconception about the state's availability of groundwater" and have led some stakeholders to ask whether districts have created a regulatory-induced shortage of groundwater in Texas.[289] As evidence, stakeholders note that there appears to be a "strong disconnect between projected pumping rates" and total estimated recoverable storage.[290] For instance, the Neches-Trinity Groundwater Conservation District's production limit could be increased 1,500 percent based on allowing production of .01% of the total estimated recoverable storage and a recharge rate of more than 18,000 acre-feet per year. Likewise, the Evergreen Groundwater Conservation District's production limit could be increased 150 percent assuming a recharge rate of 20,850 acre-feet and the Bluebonnet

[282] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Russell Johnson).
[283] *Id*.
[284] *Id*.
[285] Tex. Water Code § 36.1132(a).
[286] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Russell Johnson).
[287] *Id*.
[288] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Russell Johnson).
[289] Brady et al., *Reorganizing Groundwater Regulation in Texas*, Texas A&M University (May 2016).
[290] *Id*.

Groundwater Conservation District's limit could be raised 300 percent assuming a recharge rate of a little more than 54,000 acre-feet.[291] In Lee and Bastrop counties, the total estimated recoverable storage of the Carrizo-Wilcox is 228 million acre-feet.[292] Assuming only twenty-five percent of this is economically recoverable, 57 million acre-feet of groundwater could be produced from these two counties while leaving seventy-five percent of the groundwater stored in the aquifer.[293] The district, however, considers only 42,000 and 59,000 acre-feet available for production in any given year.[294] As further evidence, stakeholders assert that "most district management plans call for either constant or declining pumping."[295] Only three districts expect increased pumping.[296]

According to stakeholders, disagreement regarding estimates of how much groundwater is available for production originates from the "reverse-engineering" of desired future conditions and modeled available groundwater.[297] As discussed above, a desired future condition is the desired condition of groundwater resources at a specified future time[298] and modeled available groundwater is an estimate of the maximum amount of groundwater that can be produced under a desired future condition.[299] Stakeholders say that the legislative intent of Senate Bill 1 was for districts to adopt a desired future condition based on good science, receive a scientifically-based modeled available groundwater figure from the Board, and then use that figure to permit groundwater production in a manner that encourages development of the resource and protects private property rights.[300] What has instead happened, according to stakeholders, is districts have reversed the process, first deciding how much groundwater should be produced, then going to the Board to receive a politically-based modeled available groundwater figure, and finishing by adopting a politically-driven desired future condition.[301] Put differently, "districts are deciding how much [ground]water should be producible to meet local needs, running the model with that assumed outcome – and using the result to set their desired future condition."[302] This has made desired future conditions, to some stakeholders, "a pseudo-scientific bright line that limits future pumping" and which is "designed to protect local historical pumpers and prevent water from leaving the district."[303] Other stakeholders feel similarly, stating that "while this process has the trappings of being scientific (*e.g.*, using hydrological models and setting drawdown rates), the

[291] Brady et al., *Reorganizing Groundwater Regulation in Texas*, Texas A&M University (May 2016).
[292] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Russell Johnson).
[293] *Id*.
[294] *Id*.
[295] Brady et al., *Reorganizing Groundwater Regulation in Texas*, Texas A&M University (May 2016).
[296] *Id*.
[297] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Russell Johnson).
[298] Tex. Water Code § 36.001(30).
[299] Tex. Water Code § 36.001(25).
[300] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Russell Johnson).
[301] *Id*.
[302] *Id*.
[303] Brady et al., *Reorganizing Groundwater Regulation in Texas*, Texas A&M University (May 2016).

fundamental result was based on the initial assumption of what the groundwater conservation district projects its future pumping needs would be."[304] Another stakeholder stated the following:

> *Instead of science being used to inform and advise decision-makers on what policies to adopt, the decision on how much water should be allowed to be produced is made and the model is then used to support the decision. This has had the effect of putting vast quantities of producible groundwater off limits and serves as justification for telling landowners who have historically conserved their groundwater by not using it that they are now severely restricted in their right to use their groundwater. This then allows historic local users who have not conserved the resource to continue to use it.*[305]

Stakeholders claim that "emotion, fear, and concern about production of water for non-local use" motivate districts to reverse-engineer desired future conditions and modeled available groundwater.[306] They assert that districts ignore the facts, such as recharge rates, to avoid any decrease in the water table, which is automatically viewed as a negative impact to the aquifer.[307] The result of this, stakeholders say, "is that you get an answer to the question of how much groundwater can be produced based on fear and a desire to prevent use from outside the district, not by science."[308]

The second category of criticism that stakeholders share regarding groundwater district performance is the methodology many districts use to issue groundwater production permits.[309] Broadly, there are two permitting methodologies currently used by districts: property-based and user-based.[310] Districts that have user-based permitting rules have the discretion to grant or deny a permit based on the type of user the permit applicant is, such as agricultural, municipal, or commercial.[311] A user-based permitting methodology, in the opinion of stakeholders, treats groundwater similar to surface water, which is owned by the state, and can be allocated or appropriated to users with the "highest" or "best" use, as determined by the district.[312] In a user-based system, "a landowner could own thousands of acres of groundwater and have little right to produce groundwater, while a historic user, who owns only a few acres, has all the production rights…"[313] Such a system does not "recognize that the right to produce groundwater is vested in ownership of private property."[314] User-based rules often cause lengthy permitting delays, as districts resolve the conflict between their user-based rules and the judicially and legislatively

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[304] Brady et al., *Reorganizing Groundwater Regulation in Texas*, Texas A&M University (May 2016).
[305] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Russell Johnson).
[306] *Id*.
[307] *Id*.
[308] *Id*.
[309] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Bob Harden).
[310] *Id*.
[311] *Id*.
[312] *Id*.
[313] *Id*.
[314] *Id*.

recognized private property rights of permit applicants.[315] For example, a company named "End Op" leased nearly 15,000 acres of land and applied for a permit in 2007 to produce 56,000 acre-feet of groundwater annually.[316] In August 2016, nine years and six million dollars after submitting a permit application, End Op settled with the Lost Pines Groundwater Conservation District for a permit allowing production of 46,000 acre-feet per year, an eighteen percent reduction from what they requested in their original permit application.[317] Alternatively, a property-based permitting methodology uses private property ownership, not use, to issue permits and determine the amount of groundwater production those permits authorize.[318] This methodology "afford[s] large property owners…a larger, but proportional, production right [compared to] small property owners."[319] Other states, such as Oklahoma, use the property-based rules to permit groundwater, which is owned by private landowners like it is in Texas.[320] In Oklahoma, however, a landowner can visit the Oklahoma Water Resources Board website to determine the amount of water that can be produced from the property based upon acreage owned, by looking at a chart.[321] As one stakeholder quipped, "Oklahoma apparently recognizes that it is managing privately owned groundwater. Texas groundwater conservation districts do not."[322]

Overall, however, "Texas has some groundwater conservation districts that are performing admirably.[323] They "provide valuable services, and demonstrate proper and effective management that truly honors property rights, provides fair and impartial treatment, and demonstrates administrative clarity and permit certainty."[324] These well-performing districts "apply the same standards to every groundwater owner in their district" and use a property-based methodology to issue groundwater production permits.[325] However, as discussed above, stakeholders believe many districts are not performing well.[326] These "under-performing" districts typically have similar policies and policy outcomes to each other.[327] They often have user-based or needs-based permitting rules, engage in the reverse-engineering of desired future conditions and modeled available groundwater, and believe they have broad discretion in their permit decision-making.[328] Frequently, this leads to confusion, uncertainty, "false water

[315] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Russell Johnson).
[316] *Id*.
[317] *Id*.
[318] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Bob Harden).
[319] *Id*.
[320] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Russell Johnson).
[321] *Id*.
[322] *Id*.
[323] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Bob Harden).
[324] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Michael Thornhill).
[325] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Bob Harden).
[326] *Id*.
[327] *Id*.
[328] *Id*.

shortages," dysfunction, bad or premature water projects, lawsuits, and considerable legal expenses for landowners.[329] This has been called by at least one stakeholder as "hydro-political gridlock".[330] In the view of another, "the legislature has created 98 different jurisdictional boundaries, which represent a substantial impediment to the development of existing, usable groundwater resources for meeting the state's future water needs."[331]

Stakeholders critical of districts "submit to this committee that this problem deserves a legislative remedy."[332] They "believe it is time for the legislature to take a hard look at modifying the regulatory authority of local districts and either require districts' decisions on planning to be reviewed and confirmed by the state or adopt legislation requiring issuance of permits based upon some consideration by districts of the amount of water 'owned' by the landowner."[333] Additionally, they call for groundwater to be managed "based on aquifer...boundaries, *not* political subdivisions or arbitrarily gerrymandered management zones." Stakeholders claim that if the Legislature revises Chapter 36 of the Texas Water Code "such that all users and owners can have more fair, impartial, and predictable regulatory experiences" then the state "will best ensure freedom, liberty, and the protection of the constitution."[334]

However, not all stakeholders criticize district performance. According to these stakeholders, which are mostly districts, locally-controlled groundwater management in Texas is working well.[335] They state that districts efficiently and effectively manage groundwater on the local level by using sound science to accurately estimate the amount of groundwater beneath the surface and then, in the vast majority of cases, properly exercise their permitting authority based on the law and the facts of each individual application.[336] Districts believe they are serving their statutory purpose and refute the assertion that they are purposely reverse-engineering their desired future conditions to serve a political purpose.[337] Instead, they argue that their desired future conditions are based entirely on science and are used in accordance with the law.[338] These scientifically-based desired future conditions, they say, necessarily restrict the amount of groundwater that can be produced in order to achieve the desired future condition.[339] This is why, in the view of districts, allowing districts the discretion to treat permit applicants differently dependent upon the use of the groundwater stated in the permit (*i.e.*, a user-based permit methodology) is necessary.[340] To districts, user-based permitting rules must be allowed to,

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[329] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Bob Harden).
[330] *Id*.
[331] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Russell Johnson).
[332] *Id*.
[333] *Id*.
[334] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Bob Harden).
[335] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (*See generally* testimony of groundwater conservation districts).
[336] *Id*.
[337] *Id*.
[338] *Id*.
[339] *Id*.
[340] *Id*.

regardless of private property rights, account for historic use permits and differences in hydrological conditions that can vary greatly within the portion of the aquifer over which the district has jurisdiction.[341] This local control, they say, is a hallmark characteristic of Texas groundwater law that must be preserved for districts to continue effectively and efficiently managing groundwater.[342] Additionally, districts note that the law, in their opinion, adequately provides for the protection of private property rights by establishing the right to and procedures for administrative and judicial appeals of district policy and permitting decisions.[343]

Private Property Rights and Regulatory Takings

No person shall be… deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.

- *Fifth Amendment to the United States Constitution*

No person's property shall be taken, damaged, or destroyed for or applied to public use without adequate compensation being made…

- *Article 1, Section 17(a) of the Texas Constitution*

A private property right is a legally sanctioned and enforceable privilege to exclusively determine the use, possession, control, enjoyment, and exchange of property.[344] For hundreds of years, "private property [rights have] been recognized as an indispensable pillar in supporting a free and prosperous society."[345] They are an economic expression of liberty, a foundational principle of constitutional governance, and a necessary prerequisite of a capitalist, free market economy.[346] Friedrich Hayek once said, "[t]he system of private property is the most important guaranty of freedom, not only for those who own property, but scarcely less for those who do not."[347] At one point in time, according to John Locke, the preservation and protection of private property rights was the "chief end" and sole reason for "men putting themselves under government."[348] Agreeing with Locke and Hayek, President Calvin Coolidge has said that, "ultimately, property rights and personal rights are the same thing."[349] Expanding on that, Justice Potter Stewart claimed "the right to enjoy property without unlawful deprivation, no less than the right to speak or the right to travel, is in truth a 'personal' right, whether the 'property' in question be a welfare check, a home, or a savings account."[350]

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[341] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (*See generally* testimony of groundwater conservation districts).
[342] *Id*.
[343] *Id*.
[344] Kathleen Hunker, *Private Property Interrupted: Protecting Texas Property Owners from Regulatory Takings Abuse*, Texas Public Policy Foundation, July 2014.
[345] *Id*.
[346] *Id*.
[347] *Id*.
[348] *Id*.
[349] *Id*.
[350] *Id*.

As a fundamental element of our economy, system of government, and concept of freedom, private property rights are constitutionally protected. The Fifth Amendment to the United States Constitution and Article 1, Section 17(a) of the Texas Constitution protect private property from being taken for public use without compensation.[351] Despite these protections, however, private property is sometimes taken by government regulation.[352] When a government regulation "takes" private property without compensation there has been a regulatory taking.[353] Government regulation "takes" private property when, short of physical occupation or divestment of title, the regulation limits the use of the property to such a degree that the property owner is effectively deprived of any economically reasonable use, value, or utility.[354]

In *Penn Central Transportation Co. v. New York City*, the Supreme Court described the factors used to determine the degree at which a government regulation is a regulatory taking.[355] In that case, Penn Central Transportation Co. ("Penn Central") owned the Grand Central Terminal and wanted to construct a 50-story office building on top of it.[356] At the time, New York City required that owners of historical landmarks receive a "certificate of appropriateness" before altering their exterior.[357] Penn Central applied for a certificate, but was denied by the Commission of Landmarks Preservation because the Grand Central Terminal had been designated a landmark under the city's Landmarks Preservation Law of 1965.[358] Penn Central brought suit alleging that the denial of the certificate under the landmark preservation law constituted a regulatory taking.[359] Arriving at the Supreme Court, the issue was whether the landmark preservation law as applied to Penn Central violated the Fifth Amendment to the United States Constitution.[360] To resolve this issue, the Court identified "several factors that have particular significance" in evaluating regulatory takings: (i) the economic impact of the regulation on the private property owner, (ii) the degree to which the regulation interferes with the private property owner's investment-backed expectations, and (iii) the character of the government action.[361] Weighing these factors, the Court held that the application of the landmark preservation law to the Grand Central Terminal did not constitute a "taking" of Penn Central's property under the Fifth Amendment.[362] The government may enact, implement, and enforce laws that adversely affect the economic value of property without its action constituting a "taking," the Court explained.[363] Additionally, the Court stated that:

> *Its designation as a landmark not only permits, but contemplates, that appellants may continue to use the property precisely as it has been used for the past 65 years: as a railroad terminal containing office space and concessions. So the law does not interfere*

[351] U.S. CONST. amend. V, T.X. Const. art. I, § 17(a).
[352] *Penn Central Transportation Co. v. New York City*, 438 U.S. 104 (1978).
[353] *Id*. at 123, 124.
[354] *Id*. at 123, 124.
[355] *Id*. at 124.
[356] *Id*. at 104.
[357] *Id*. at 112.
[358] *Id*. at 117.
[359] *Id*. at 119.
[360] *Id*. at 122.
[361] *Id*. at 124.
[362] *Id*. at 138.
[363] *Id*. at 124.

with what must be regarded as Penn Central's primary expectation concerning the use of the parcel. More importantly, on this record, we must regard the New York City law as permitting Penn Central not only to profit from the Terminal but also to obtain a "reasonable return" on its investment. [364]

The Fourth Court of Appeals in Texas used the *Penn Central* factors to reach its decision in *Edwards Aquifer Authority v. Bragg*.[365] In 1979, the Braggs bought, cleared, and planted more than 1,800 pecan seedlings on the sixty acre Home Place Orchard.[366] The following year, they drilled a groundwater well located on the property to irrigate the young pecan trees.[367] A couple of years later, in 1983, the Braggs bought the D'Hanis Orchard, a forty-acre pecan orchard that had been planted with 1,500 pecan trees since 1979.[368] Initially, the trees on the D'Hanis Orchard were irrigated using a groundwater well from a neighboring property, but in 1995 the Braggs completed a properly permitted groundwater well located on the D'Hanis Orchard.[369]

"To deprive an owner of all economically beneficial use of land is tantamount to depriving him of the land itself." - Lucas v. S.C. Coastal Council

While the Braggs were busy operating their pecan orchards, the Legislature enacted the Edwards Aquifer Act ("Act") that created the Edwards Aquifer Authority ("Authority") to "manage the aquifer and sustain the diverse economic and social interests dependent on" it.[370] For that purpose, the Act "directed the Authority to manage groundwater withdrawals from the aquifer by a permit system."[371] The permitting system gave a preference to "existing users," entitling them to a permit allowing withdrawals in an amount of water equal to the maximum beneficially used during any one calendar year of the historical period from 1972 to 1993.[372] However, if the maximum amount of water beneficially used by all existing users during the historical period exceeded 450,000 acre-feet, the Act required the Authority to proportionally reduce the amount of water each existing user's permit allowed them to produce, unless the existing user was using the water for irrigation or had operated a well for three or more years.[373] An existing irrigation user was guaranteed to receive not less than two acre-feet of water per year for each acre of land the user irrigated during any one calendar year during the historical period.[374] Similarly, an existing user who operated a well for three or more years during the historical period was entitled to receive a permit for at least the average amount of water withdrawn annually during that time.[375]

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[364] *Penn Central Transportation Co. v. New York City*, 438 U.S. 104, 136 (1978).
[365] *Edwards Aquifer Authority v. Bragg*, 421 S.W.3d 118 (2013).
[366] *Id*. at 140.
[367] *Id*. at 140.
[368] *Id*. at 140.
[369] *Id*. at 140.
[370] *Id*. at 124.
[371] *Id*. at 125.
[372] *Id*. at 125.
[373] *Id*. at 125.
[374] *Id*. at 125.
[375] *Id*. at 125.

The Act was passed in 1993, but did not become effective until 1996 due to lawsuits.[376] So in 1996 the Braggs applied for permits from the Authority for the groundwater wells located on the Home Place Orchard and D'Hanis Orchard, both of which were drilled into the Edwards Aquifer.[377] For the Home Place Orchard, the Braggs claimed 228.85 acre-feet as their maximum beneficial use of water and for the D'Hanis Orchard they claimed 193.12 acre-feet.[378] The total amount of groundwater the Braggs sought in their permits was 421.97 acre-feet.[379] The Authority granted the Braggs a permit for 120.2 acre-feet for the Home Place Orchard groundwater well and denied their permit application for the groundwater well on the D'Hanis Orchard.[380] The total amount of groundwater the Authority permitted the Braggs was 28.5 percent of what was requested.[381] As a result, the Braggs sued the Authority for an alleged taking of their property in violation of Article 1, Section 17(a) of the Texas Constitution.[382]

Similar to *Penn Central*, the issue before the court in *Bragg* was "whether the Act went so far in restricting the Braggs' use of their water beneath their land that the restriction amounts to a taking" requiring compensation.[383] Whether a government regulation that diminishes the value private property constitutes a "taking" of that property depends on several factors, including the economic impact of the regulation, the interference with reasonable investment-backed expectations, and the character of the governmental action.[384] Applying the first *Penn Central* factor, the economic impact the government regulation had on the Bragg's, the court concluded "this factor weighs heavily in favor of finding a compensable taking," because "the result of the regulation forced the Braggs to purchase or lease what they had prior to the regulation – and unrestricted right to the use of water beneath their land."[385] On the second *Penn Central* factor, the interference with reasonable investment-backed expectations, the court in *Bragg* recognized that "the purpose of the investment-backed expectation requirement is to assess whether the landowner has taken legitimate risks with the reasonable expectation of being able to use the property, which, in fairness and justice, would entitle him or her to compensation."[386] With that in mind, the court wrote "the Braggs' investment-backed expectations…were reasonable because Mr. Bragg had an extensive understanding of pecan crops, no permit was required when they drilled their well, they correctly understood that they owned the water under the land, and no regulatory entity existed that governed the use of their water."[387] The court also concluded that " this factor weighs heavily in favor of a finding of a compensable taking."[388] After application of the third *Penn Central* factor and other considerations, the court in *Bragg* found that the "record supports the conclusion that the permitting system imposed under the Act resulted in a regulatory taking of both the Home Place

[376] *Edwards Aquifer Authority v. Bragg,* 421 S.W.3d 118, 126 (2013).
[377] *Id*. at 126.
[378] *Id*. at 126.
[379] *Id*. at 126.
[380] *Id*. at 126.
[381] *Id*. at 126.
[382] *Id*. at 126.
[383] *Id*. at 138.
[384] *Penn Central Transportation Co. v. New York City*, 438 U.S. 104, 124 (1978).
[385] *Edwards Aquifer Authority v. Bragg,* 421 S.W.3d 118, 141 (2013).
[386] *Id*. at 142.
[387] *Id*. at 144.
[388] *Id*. at 144.

Orchard and the D'Hanis Orchard."[389] A jury has since awarded the Braggs more than $2.5 million in compensation and the Edwards Aquifer Authority has approved a payment, including interest, of $4.56 million.[390] *Bragg* is the first case "in Texas history in which a landowner has successfully sued a government entity for limiting their access to groundwater without compensation."[391]

While the outcome in *Bragg* was historic, it was not the first time a landowner's groundwater had been taken by a district without compensation, according to stakeholders, who claim that a legislative solution is needed if the Texas Legislature truly "recognizes that a landowner owns the groundwater below the surface of the landowner's land as real property."[392] Stakeholders assert the Legislature needs to address venue, evidentiary, subject matter, standard of review, and litigation expense issues related to regulatory taking legal proceedings.[393] Addressing these issues is necessary, in the view of stakeholders, to decrease and possibly avoid regulatory takings in the future.[394]

The first issue that concerns stakeholders is venue.[395] They argue that administrative hearings should be "convened and conducted in the county of the district's main office." In *Edwards Aquifer Authority v. Day*, the landowners were required to travel to Austin, Texas to participate in their administrative hearing despite the location of the land, the witnesses, and the Edwards Aquifer Authority in San Antonio.[396] After traveling, possibly a great distance, to an administrative hearing, stakeholders claim that districts have the authority to unilaterally restrict the proceeding's subject matter. For instance, the Authority in *Day* "restricted the issues to be decided" at the administrative hearing and "purposefully refused to have the issues raised by Day" heard by the administrative law judge.[397] According to Day's attorney, "had this not been the case, there was the possibility the decision of the hearing examiner provided by the State Office of Administrative Hearing could have brought the parties closer to resolution."[398]

Evidentiary fairness issues raised during regulatory taking litigation also frustrates stakeholders. They contend that it is "grossly unfair to require a landowner to prove what amount of water was used on the land during a period of time, when no records were required, and water was generally unregulated…" In *Day*, the burden was on the landowner "to prove entitlement to present-day water based upon his ability to procure records of use as much as twenty years before." Even if landowners are able to obtain documents that authenticate their groundwater use, the administrative law judge and Texas courts are required by law to analyze regulatory

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[389] *Edwards Aquifer Authority v. Bragg,* 421 S.W.3d 118, 146 (2013).
[390] Brenda Gibbons, *Pecan farmers to get more than $4.5 million payment*, San Antonio Express News, July 22, 2016, http://www.expressnews.com/news/local/article/Pecan-farmers-to-get-more-than-4-5-million-8404218.php
[391] *Id*.
[392] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Tom Joseph).
[393] *Id*.
[394] *Id*.
[395] *Id*.
[396] *Id*.
[397] *Id*.
[398] *Id*.

taking cases using the substantial evidence standard of review.[399] As mentioned above, the substantial evidence standard of review prohibits a court from substituting its own judgment for the judgment of the district, unless the district's judgment was (i) unconstitutional, (ii) in excess of its statutory authority, (iii) made through unlawful procedure, (iv) not supported by substantial evidence, or (v) is arbitrary and capricious.[400] This standard of review is "highly deferential" to the district's judgment. Additionally, this standard of review "excludes…any evidence which was not introduced at the administrative hearing."[401] Combined with the evidentiary issues mentioned above, the substantial evidence standard of review creates a "catch 22" for landowners, in the opinion of stakeholders.[402] A landowner "could not have their issues heard at the administrative hearing by direction of the [district] and therefore not introduce any evidence regarding" those issues at the hearing.[403] As a result of not presenting that evidence at the administrative hearing, the landowner cannot introduce evidence on those issues on appeal due to the substantial evidence standard of review, which excludes any evidence which was not introduced at an administrative hearing.[404] Because of the substantial evidence standard of review, the Authority "never had to evaluate the *Day* case in any meaningful legal way."[405] Stakeholders suggest that Texas law be changed in a way that "allows administrative consideration of all issues."[406]

Lastly, stakeholders are most concerned about the uneven playing field created by unfair litigation reimbursement rules.[407] On such rules, once stakeholder said:

> *Among the several provisions of the Water Code and the Edwards Aquifer Act as they existed during the Day/McDaniel case; foremost and most agonizing for myself and my clients was the provision of both the Code and the Act, that though we may prevail in our case, attorney's fees could <u>not</u> be awarded. However, should the Agency prevail, attorney's fees <u>must</u> be awarded. Innocuous, perhaps, at its reading, but when it is determined that the Agency's attorney's fees for the litigation exceeded $400,000 as the appeal approached, the rule came <u>close to muting the citizen's outcry</u>.*[408]

The stakeholders' view is that "the [groundwater] conservation district should have no greater entitlement to reimbursement of litigation costs than the citizens regulated."[409] To them, "the citizen should be entitled to some form of reimbursement should the citizen prevail."[410]

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[399] Tex. Water Code § 36.10835(a).
[400] Tex. Gov't Code § 2001.174(2)(A)-(F).
[401] Standard of Review, Wikipedia, https://en.wikipedia.org/wiki/Standard_of_review#Substantial_evidence (last visited Sept. 14, 2016).
[402] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Tom Joseph).
[403] *Id*.
[404] *Id*.
[405] *Id*.
[406] *Id*.
[407] *Id*.
[408] *Id*. (emphasis added).
[409] *Id*.
[410] *Id*.

Application of Oil and Gas Law to Groundwater

Oil and gas production in Texas began on January 10, 1901 when the Lucas No. 1 well spewed mud, oil, and gas more than 100 feet into the air.[411] More than a century later, over one billion barrels of oil[412] and nearly six trillion cubic feet of gas[413] have been extracted from the Texas soil in 2015. Oil and gas law broadly refers to the area of law that governs the lease, drilling, production, transportation, refinement, and retail of these commodities. The Texas Supreme Court has twice used oil and gas case law to resolve a conflict that arose within groundwater law.[414] Stakeholders claim that the application of oil and gas law to groundwater would stop districts from discriminating "between different owners in the same aquifer" and enforcing "different rules on owners based solely on… arbitrary lines."[415] In the right case, stakeholders think Texas courts should apply precedent from *Edwards Aquifer Authority v. Day*, *Coyote Lake Ranch LLC v. City of Lubbock*, and *Marrs v. Railroad Commission* to "either strike down the regulatory scheme of a groundwater district or impose a crippling judgment against the district for a taking."[416]

In the first Texas Supreme Court case, *Edwards Aquifer Authority v. Day*, R. Burrell Day and Joel McDaniel ("Day") bought a little more than 380 acres of land overlying the Edwards Aquifer to grow oats, produce peanuts, and raise cattle.[417] There was a groundwater well drilled on the property in 1956 that was used for irrigation until it collapsed, after which the well continued to flow under artesian pressure down a ditch to a 50-acre lake on the property.[418] The landowners before Day pumped water from the lake for irrigation.[419] Like the Braggs, Day was affected by enactment of the Edwards Aquifer Authority Act in 1993, the year before Day bought the property.[420] As mentioned above, the Act "prohibits withdrawals of water from the aquifer without a permit issued by the Authority."[421] Before the December 30, 1996 deadline, Day applied for authorization to pump 700 acre-feet of water annually from the Edwards Aquifer for irrigation.[422] They included in their application a statement from the previous owners, Billy and Bret Mitchell, that the collapsed well had been used to "irrigate approximately 300 acres of

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[411] Oil and Texas: A Cultural History, Texas Almanac, available at http://texasalmanac.com/topics/business/oil-and-texas-cultural-history (last visited Sept. 12, 2016).
[412] Crude Oil Production and Well Counts, Railroad Commission of Texas, available at http://www.rrc.state.tx.us/oil-gas/research-and-statistics/production-data/historical-production-data/crude-oil-production-and-well-counts-since-1935/ (last visited Sept. 12, 2016).
[413] History of Texas Initial Natural Gas, Annual Production and Producing Wells, Railroad Commission of Texas, available at http://www.rrc.state.tx.us/oil-gas/research-and-statistics/production-data/historical-production-data/natural-gas-production-and-well-counts-since-1935/ (last visited Sept. 12, 2016).
[414] Josie Musico, *Texas Supreme Court: Oil and gas law can apply to water dispute for Muleshoe ranch*, Lubbock Avalanche-Journal, May 31, 2016, http://lubbockonline.com/filed-online/2016-05-31/texas-supreme-court-oil-and-gas-law-can-apply-water-dispute-muleshoe-ranch
[415] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Brantley Jones).
[416] *Id*.
[417] *Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814, 818 (Tex. 2012).
[418] *Id*. at 818.
[419] *Id*. at 818.
[420] *Id*. at 814.
[421] *Id*. at 818.
[422] *Id*. at 820.

Coastal Bermuda grass from this well during the drought years of 1983 and 1984."[423] The amount of groundwater production sought in the permit was "based on two acre-feet for the total beneficial use of irrigated the 300 acres plus the recreational use of the 50 acre lake."[424]

Nearly four years later, the Authority notified Day that their application would be denied because the withdrawals from the well during the historical period were not placed to a beneficial use.[425] Day challenged the Authority's decision to an administrative law judge at the State Office of Administrative Hearing.[426] In the proposal for decision, the administrative law judge "concluded that water from the lake, including the well water that had flowed into it, was state surface water, the use of which could not support Day's application for groundwater."[427] Relying on that conclusion, the administrative law judge found that Day's maximum beneficial use of groundwater during the historical period was fourteen acre-feet for the irrigation of seven acres of grass.[428] The Authority agreed and granted Day a permit for fourteen acre-feet.[429]

Day further appealed the Authority's decision to district court "and…sued the Authority for taking his property without compensation in violation of article I, Section 17(a) of the Texas Constitution."[430] The district court reversed the decision of the administrative law judge, finding that the "water from the well-fed lake used to irrigate 150 acres during the historical period was groundwater."[431] The district court also ruled in Day's favor on all their constitutional claims, including the takings claim.[432] The Authority appealed the district court's ruling.[433] There, the appellate court reversed the district court and affirmed the Authority's decision to grant Day a permit for fourteen acre-feet stating, "groundwater from the well became state surface water in the lake and could not be considered in determining the amount of Day's" permit.[434] Following the appellate court decision, the Authority, Day, and the State of Texas petitioned the Texas Supreme Court for review and the court granted all three petitions.[435]

One of the issues before the court was "whether groundwater can be owned in place," like oil, gas, and other minerals.[436] To reach its decision, the court reviewed the rule of capture, application of that rule to oil and gas, and the similarities between oil, gas, and groundwater.[437] For more than 100 years, Texas courts "have adhered to the common-law rule of capture in allocating the respective rights and liabilities of neighboring landowners for use of groundwater

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[423] *Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814, 820 (Tex. 2012).
[424] *Id*. at 820.
[425] *Id*. at 820-821.
[426] *Id*. at 821.
[427] *Id*. at 821.
[428] *Id*. at 821.
[429] *Id*. at 821.
[430] *Id*. at 821.
[431] *Id*. at 821.
[432] *Id*. at 821.
[433] *Id*. at 821.
[434] *Id*. at 821.
[435] *Id*. at 822.
[436] *Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814, 823 (Tex. 2012).
[437] *Id*. at 823.

flowing beneath their property."[438] The rule "essentially allows, with some limited exceptions, a landowner to pump as much groundwater as the landowner chooses, without liability to neighbors who claim that the pumping has depleted their wells."[439] Examining *Houston & T.C. Railway v. East*, the case which adopted the rule of capture, the court concluded that "while the rule of capture does not [require] ownership of groundwater in place, neither does it preclude such ownership."[440] The court then recognized that it "held long ago that oil and gas are owned in place," noting that a landowner's "right to the oil and gas beneath his land is an exclusive and private property right, inhering in virtue of his proprietorship of the land, and of which he may not be deprived without a taking of private property."[441] Finishing its reasoning on this issue, the court compared the physical characteristics of oil and gas to groundwater saying, "groundwater, like oil and gas, often exists in subterranean reservoirs in which it is fugacious."[442] Ultimately, the court saw "no basis…to conclude that the common law allows ownership of oil and gas in place but not groundwater" and held that this "correctly states the common law regarding the ownership of groundwater in place:"[443]

> *In our state the landowner is regarded as having absolute title in severalty to the ~~oil and gas~~ [groundwater] in place beneath his land. The only qualification of that rule of ownership is that it must be considered in connection with the law of capture and is subject to police regulations. The ~~oil and gas~~ [groundwater] beneath the soil ~~are~~ [is] considered a part of the realty. Each owner of land owns separately, distinctly and exclusively all the ~~oil and gas~~ [groundwater] under his land and is accorded the usual remedies against trespassers who appropriate the ~~minerals~~ [water] or destroy ~~their~~ [its] market value.*[444]

The Texas Supreme Court also applied oil and gas law to groundwater in *Coyote Lake Ranch LLC v. City of Lubbock*. Coyote Lake Ranch ("Ranch") is a 26,600 acre piece of property located about 90 miles southeast of the City of Lubbock ("City") in Bailey County, Texas.[445] In 1953, the City "bought the Ranch's groundwater to help supply its residents and those of other towns" during one of the most devastating droughts in six hundred years.[446] The Ranch deeded its groundwater to the City, reserving groundwater for domestic use, ranching operations, oil and gas production, and agricultural irrigation.[447] The deed granted the City the right to use all of the surface necessary or incidental to the taking, production, treating, transmission, and delivery of groundwater, as well as the right to construct certain specified facilities, including water lines, fuel lines, power lines, communication lines, barricades, and access roads.[448] In 2012, the City announced plans to increase groundwater production on the Ranch by drilling as many as eighty

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[438] *Sipriano v. Great Spring Waters of Am., Inc.*, 1 S.W.3d 75 (Tex. 1999).
[439] *Id*.
[440] *Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814, 828 (Tex. 2012).
[441] *Id*. at 829.
[442] *Id*. at 829.
[443] *Id*. at 832.
[444] *Elliff v. Texon Drilling Co.*, 210 S.W.2d 558, 561 (Tex .1948) (emphasis added).
[445] *Coyote Lake Ranch LLC v. City of Lubbock*, ___ S.W.3d __ (Tex. 2016).
[446] *Id*.
[447] *Id*.
[448] *Id*.

more wells, which required the City to mow extensive paths through native grass to build additional access roads and elevated power lines.[449] The Ranch objected on the grounds that the cut grass would not grow back due to wind, drought, and cattle grazing; that the mowing and access road construction would increase erosion and unnecessarily damage the surface; and that the elevated power line construction would allow hawks to roost and prey on the Lesser Prairie Chicken – a threatened species for which the Ranch is a natural habitat.[450] The district court ruled for the Ranch and enjoined the City from any further mowing, drilling, or power line construction.[451] On appeal, the City argued that the accommodation doctrine doesn't apply to groundwater.[452] The Ranch countered that the "decision in *Day* supports an extension of the [accommodation] doctrine."[453] However, the court of appeals rejected the Ranch's argument, finding no authority to support it.[454] As a result, the Ranch petitioned the Texas Supreme Court for review and the court granted its petition.[455]

In *Coyote*, the court had to decide whether the accommodation doctrine applied "as between a landowner and the owner of an interest in groundwater."[456] Texas law has always recognized that a landowner may sever, or separate, ownership of minerals such as oil or gas (*i.e.*, the mineral estate) from the surface of the land (*i.e.*, the surface estate).[457] The separation of the mineral estate and surface estate is common. It often occurs when a landowner sells the oil or gas beneath his land to a company, but retains ownership of the surface so the landowner can continue using the surface to farm, ranch, or live in their home. The separation of a mineral estate and surface estate creates an "implied right to use as much of the surface estate as reasonably necessary to produce and remove" the oil or gas.[458] This implied right protects the rights of the severed mineral estate and without it "a grant or reservation of minerals would be wholly worthless [because] the grantee or reserver could not enter upon the land in order to explore for and extract the minerals granted or reserved."[459] However, "the mineral and surface estates must exercise their respective rights with due regard for the other's."[460]

Therefore, the accommodation doctrine requires a mineral estate owner to only use the land as reasonably necessary to produce and remove the minerals and exercise that right with due regard for the landowner's rights.[461] To be accommodated, a surface owner must prove that (i) the groundwater owner's use of the surface completely precludes or substantially impairs the existing use, (ii) the surface owner has no reasonable alternative to continue the existing use, and (iii) the groundwater owner has a reasonable and industry-accepted method to access and

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[449] *Coyote Lake Ranch LLC v. City of Lubbock, ___ S.W.3d __ (Tex. 2016).*
[450] *Id.*
[451] *Id.*
[452] *Id.*
[453] *Id.*
[454] *Id.*
[455] *Id.*
[456] *Id.*
[457] *Id.*
[458] *Id.*
[459] *Id.*
[460] *Id.*
[461] *Id.*

produce the water that does not substantially impair existing surface use.[462] The accommodation doctrine was first recognized by the Court in 1971 in *Getty Oil Co. v. Jones*.[463] In that case, the surface estate owner *(i.e.*, Jones) sued to stop the mineral estate owner (*i.e.*, Getty) from erecting oil-well pumps in the path of several center-pivot irrigation systems already in place on the land, thus preventing their use.[464] With the burden to prove that Getty's use of the surface was not reasonably necessary, Jones argued that Getty should be required to bury the pumps or use smaller pumps that would not obstruct the irrigation systems.[465] Getty argued that it had the right under its lease and as owner of the dominant estate (the mineral estate is "dominant" to the surface estate when severed) to set the pumps where it chose.[466] The Court held that when there is an existing use by the surface owner that would be impaired and where there are industry-accepted alternatives that would not impair the surface use, the estate owner may be required to adopt such an alternative to avoid impairment of the surface use.[467]

Arguing before the Texas Supreme Court in *Coyote*, the Ranch argued that the City has a contractual and common law responsibility to use only that amount of surface that is reasonably necessary to its operations and a duty to conduct its operations with due regard for the rights of the surface owners.[468] According to the Ranch, wind, drought, and grazing cattle prevent grass from growing back, and as such the mowing, drilling, and power line construction proposed by the City is without due regard for the Ranch's right to the surface.[469] The Ranch supported its argument by noting the Court's decision in *Day*, where the Court held that groundwater is owned in place by the landowner by analogizing groundwater to oil and gas.[470] The City, however, argued that it has full rights under the deed to pursue its plans and that the law imposes no duty on groundwater estate owners to accommodate the surface owner.[471] The City supported its argument by noting that a groundwater estate has never been held to be dominant and suggested that a better rule would be to imply terms, such as a requirement of reasonable use, into the deed.[472] According to the City, applying the accommodation doctrine to groundwater would be a momentous change in groundwater law.[473]

In the court's opinion the accommodation doctrine has provided a sound and workable basis for resolving conflicts between ownership interests when a contractual agreement doesn't clearly solve them, which the court found to be the case in *Coyote*.[474] To the court, the deed left unclear whether the City can do everything necessary or incidental to drill wherever it wanted or only what is necessary or incidental to fully access the groundwater.[475] The issue then was

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[462] *Coyote Lake Ranch LLC v. City of Lubbock*, ___ *S.W.3d* __ *(Tex. 2016).*
[463] *Getty Oil v. Jones*, 470 S.W.2d 618 (Tex. 1971).
[464] *Id*. at 619.
[465] *Id*. at 621.
[466] *Id*. at 621.
[467] *Id*. at 623.
[468] *Coyote Lake Ranch LLC v. City of Lubbock*, ___ S.W.3d __ (Tex. 2016).
[469] *Id*.
[470] *Id*.
[471] *Id*.
[472] *Id*.
[473] *Id*.
[474] *Id*.
[475] *Id*.

whether to apply the accommodation doctrine to groundwater.[476] In deciding that question, the court found similarities between groundwater and oil and gas, such as they both exist fugaciously in subterranean reservoirs, can be severed from the land as a separate estate, are subject to the rule of capture, and are protected by law against waste.[477] Furthermore, the court noted that these similarities led the Court in *Day* to apply the oil and gas doctrine of ownership in place to groundwater.[478] Based on the lack of clarity in the deed, the workability of the accommodation doctrine, and the similarities between groundwater and oil and gas, the court held that the accommodation doctrine applies to conflicts between a severed groundwater estate and the surface estate that are not governed by the express terms of a parties' agreement.[479]

Against the backdrop of *Day* and *Coyote*, stakeholders have expressed concerns about the efficient production and movement of groundwater "from places where it exists in abundance to places where it is needed."[480] They claim that "one of the greatest impediments" to the efficient movement of groundwater "is the patchwork quilt of single-county districts with their varying permit and production requirements."[481] For example, Groundwater Management Area 7 has twenty-one single-county districts regulating the Edwards-Trinity Aquifer, each with its own rules, permit application requirements, and production limits.[482] The widely disparate rules among districts have resulted in "discrimination and confiscation," according to stakeholders.[483] It is their opinion that Texas courts should continue to "apply specific oil and gas principles to the groundwater arena in a way that will remove impediments to effectively meeting the growing water needs" of the state.[484]

Stakeholders concerned by the effect singe-county districts are having on groundwater management think the Supreme Court "took an important first step toward dismantling the current patchwork quilt of regulatory impediments" with its decision in *Day*.[485] As discussed above, the court in *Day* held that groundwater can be owned in place like oil and gas, but stakeholders claim that the court also held "that landowners have 'correlative' rights in groundwater" that affords each groundwater owner an "opportunity to produce his fair share."[486] The fair share doctrine and correlative rights are the settled law of oil and gas.[487] They give a mineral owner the fair chance to produce a fair share of oil and gas in a common reservoir without the "unjust, unreasonable, or arbitrary discrimination between different oil fields, or between different owners in the same field."[488] In *Marrs v. Railroad Commission*, the court stated that "every owner or lessee is entitled to a fair chance to recover the oil or gas in or under

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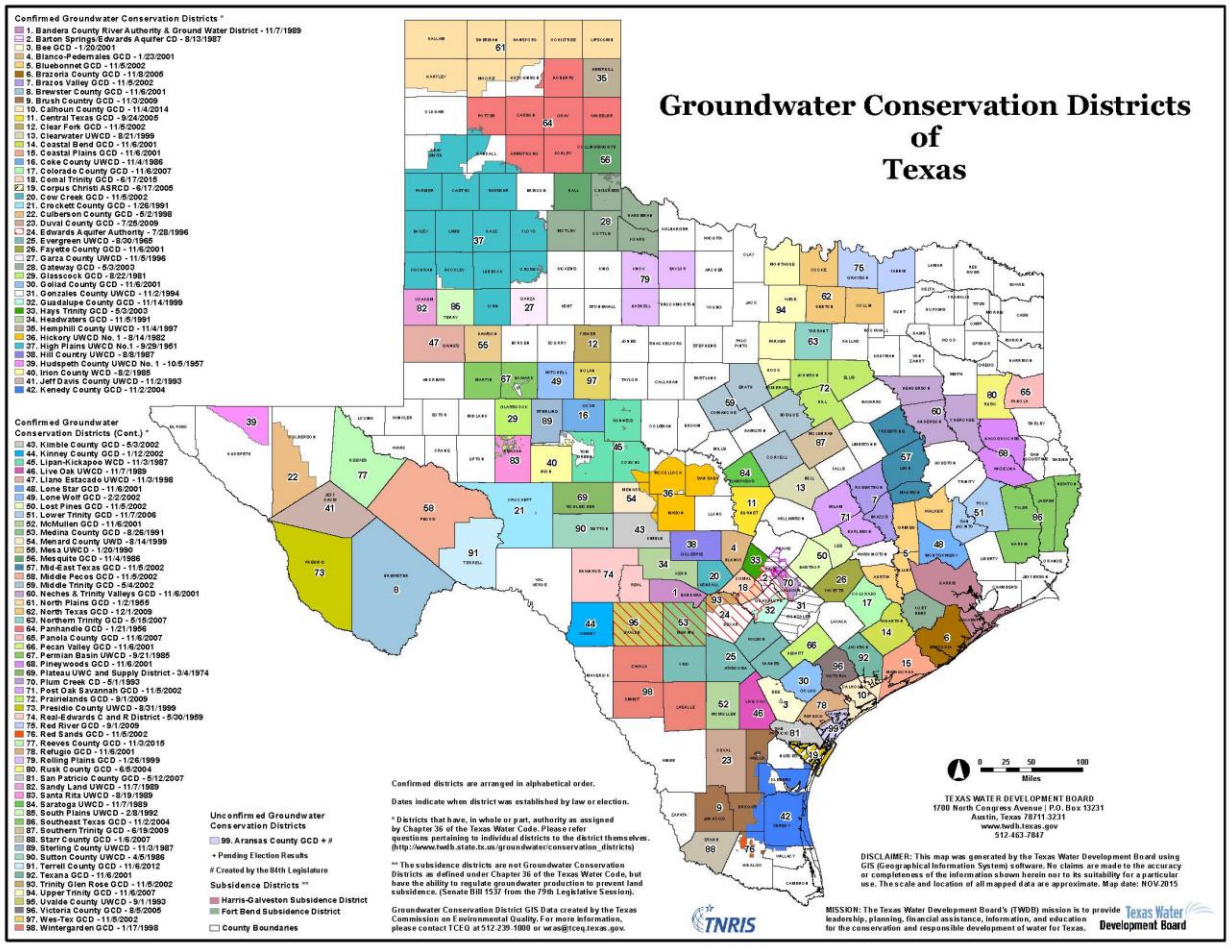
[476] *Coyote Lake Ranch LLC v. City of Lubbock*, ___ S.W.3d __ (Tex. 2016).
[477] *Id*.
[478] *Id*.
[479] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Brantley Jones).
[480] *Id*.
[481] *Id*.
[482] *Id*.
[483] *Id*.
[484] *Id*.
[485] *Id*.
[486] *Id*.
[487] *Id*.
[488] *Id*.

his land, or their equivalent in kind, and any denial of such fair chance amounts to confiscation."[489] For the law to not provide a fair chance at a fair share "is the taking of one man's property and the giving it to another."[490]



There are ninety-nine groundwater conservation districts in Texas, each with its own rules. Source: Texas Water Development Board.

If Texas courts applied oil and gas principles to groundwater, stakeholders claim this would stop districts from discriminating "between different owners in the same aquifer" and enforcing "different rules on owners based solely on… arbitrary lines."[491] Districts would, according to stakeholders, have to respect ownership principles, treat all groundwater owners in the same aquifer equally, and could only "justify disparate treatment of adjoining groundwater owners if there was some rational basis [such as a peculiar geological formation] that justifies different treatment."[492] If there is no peculiar geological formation, however, "there can be no differentiation in treatment without violating the equal rights and equal protection clauses of the

[489] *Marrs v. Railroad Commission*, 77 S.W.2d 941, 948 (Tex. 1944).
[490] *Id.*
[491] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Brantley Jones).
[492] *Id.*

United States and Texas Constitutions."[493] In a proper case, stakeholders think Texas courts should apply *Day*, *Coyote*, and *Marrs* to "either strike down the regulatory scheme of a groundwater district or impose a crippling judgment against the district for a taking."[494] At that point, these stakeholders think the fair chance, fair share, and correlative rights question "begs a legislative solution" that codifies a fair chance to produce a fair share of groundwater.[495]

Recommendations

The committee makes the following recommendations to the 85th Legislature regarding the ownership, production, and transfer of surface water and groundwater in the state of Texas:

- The Legislature should continue to monitor surface water permitting issues to improve the timeliness and accuracy of surface water permitting decisions.

- The Legislature should continue to monitor the effects of Section 11.085 of the Texas Water Code on the transfer of state-owned surface water from one basin to another and make any necessary changes to encourage the movement of surface water to areas of need, but only after identifying and including adequate protections for the basin of origin.

- The Legislature should:
  - Acknowledge that Texas is uniquely susceptible to storm water flooding because of its size, geographic diversity, and climatic diversity;
  - Recognize that storm water flooding, particularly flash flooding, causes severe hardship, economic loss, and death;
  - Instruct the Board to conduct a comprehensive study on controlling storm water flooding by determining risk areas and identifying potential solutions;
  - Prioritize the creation of the first State Flood Plan by using the study conducted by the Board; and
  - Enact provisions that provide for the regular creation of additional, updated versions of the State Flood Plan.

- The Legislature should continue to monitor the performance of groundwater conservation districts and make any necessary changes to improve their performance.

- The Legislature should continue to monitor judicial application of oil and gas law to groundwater law and, if necessary and appropriate, codify those judicial applications.

[493] Senate Committee on Agriculture, Water & Rural Affairs hearing, July 25, 2016 (Written testimony of Brantley Jones).
[494] *Id*.
[495] *Id*.

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Charge No. 2

Study and make recommendations on improving the process of developing and executing the state water plan.

The committee held a public hearing on June 20, 2016 where it received testimony on issues related to improving the process of developing and executing the State Water Plan, such as how frequently it is updated, desired future conditions, and modeled available groundwater.

State Water Plan Background

The state water plan is an aggregation of sixteen regional water plans created by regional water planning groups.[496] Every five years, each group officially adopts a plan that identifies ways to increase water supplies over the next fifty years to meet future water needs that are calculated based on the "drought of record," projected population growth, and existing water supplies.[497] The purpose of the state water plan is to "ensure that we have adequate water supplies in time of drought," and therefore is "based on future conditions that would exist in the event of a recurrence of the worst recorded drought in Texas' history – known as the "drought of record" – a time when, generally, water supplies are lowest and water demands are highest."[498] Water planning is necessary because "Texas has a long history of droughts, and there is no sign of that pattern changing..."[499] In fact, the state has "experienced periods of drought in every decade of the 20th Century."[500] Attempting to mitigate the effects of drought, the 2017 State Water Plan is the tenth and latest version of the state water plan, which has been produced since 1961 when the first plan was created and published by the Texas Board of Water Engineers, following the worst drought in Texas history (*i.e.*, the drought of record) from 1950-1957.[501] In 1961, the state was confronted with "inadequate facilities to meet municipal and industrial water needs," uneven distribution of water resources east to west, flooding, poor natural surface water quality, and depletion of groundwater resources.[502] Stakeholders continue to express many of these concerns today.

More than fifty years after publication of the first state water plan, Texas continues to "plan so that [we] will have enough water in the future to sustain our cities and rural communities, our farms and ranches, and our homes and businesses…"[503] While we still plan, we plan differently.[504] The 1961 State Water plan was produced by a state government agency using

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[496] 2017 State Water Plan, Texas Water Development Board, http://www.twdb.texas.gov/waterplanning/swp/2017/doc/2017_SWP_Adopted.pdf (last visited Sept. 21, 2016).
[497] *Id*.
[498] *Id*.
[499] *Id*.
[500] *Id*.
[501] *Id*.
[502] 1961 State Water Plan, Texas Water Development Board, https://www.twdb.texas.gov/publications/State_Water_Plan/1961/1961.pdf (last visited Sept. 21, 2016).
[503] 2017 State Water Plan, Texas Water Development Board, http://www.twdb.texas.gov/waterplanning/swp/2017/doc/2017_SWP_Adopted.pdf (last visited Sept. 21, 2016).
[504] *Id*.

a "top down" methodology in which the "top" of government in the state (*i.e.*, a state government agency) tells local communities (*i.e.*, the "bottom" of government) their water needs.[505] Water planning in Texas today, however, is "bottom up," in which statutorily created local groups called regional water planning groups are responsible for performing water planning by creating a new water plan for their region every five years.[506] The state is divided into sixteen of these groups with each group consisting of, on average, twenty-three members that represent various interests ranging from industry to agriculture to business.[507] During each five year planning cycle, regional water planning groups evaluate population projections, water demand projections, and existing water supplies to identify, recommend, and prioritize water supply strategies, such as a surface water reservoir or a groundwater production well, to cost-effectively meet water needs during a drought of record.[508] Following adoption by the regional water planning groups, the regional water plans are sent to the Board for approval and aggregated into the state water plan.[509] This process, according to some, has made Texas "a national model for water planning."[510]

In the latest version of the state water plan, adopted earlier this year, regional water planning groups considered the most recent population forecasts, future water need projections, and existing water supply estimates, which are those supplies that can presently be relied upon in the event of a drought.[511] Over the next fifty years, Texas' population is expected to increase seventy-three percent from 29.5 million to 51 million people.[512] Most of this growth is expected in only thirty of Texas' 254 counties, with more than half of statewide population growth expected to occur in the counties comprising the Dallas-Fort Worth and Houston metropolitan areas.[513] While the population in Texas is expected to increase seventy-three percent over the next fifty years, water demand is projected to increase by only seventeen percent from 18.4 million acre-feet in 2020 to 21.6 million acre-feet in 2070.[514] The last major data point regional water planning groups considered in adopting their regional water plans was existing water supplies, which are projected to decrease approximately eleven percent statewide from 15.2 million acre-feet in 2020 to 13.6 million acre-feet in 2070.[515] Existing water supplies, for planning purposes, "represents water supplies that are physically and legally available to be produced and delivered with current permits, current contracts, and existing infrastructure during drought of record conditions."[516] The decrease in existing groundwater supplies is especially pronounced with an expected reduction of twenty-four percent from 7.2 million acre-feet in 2020

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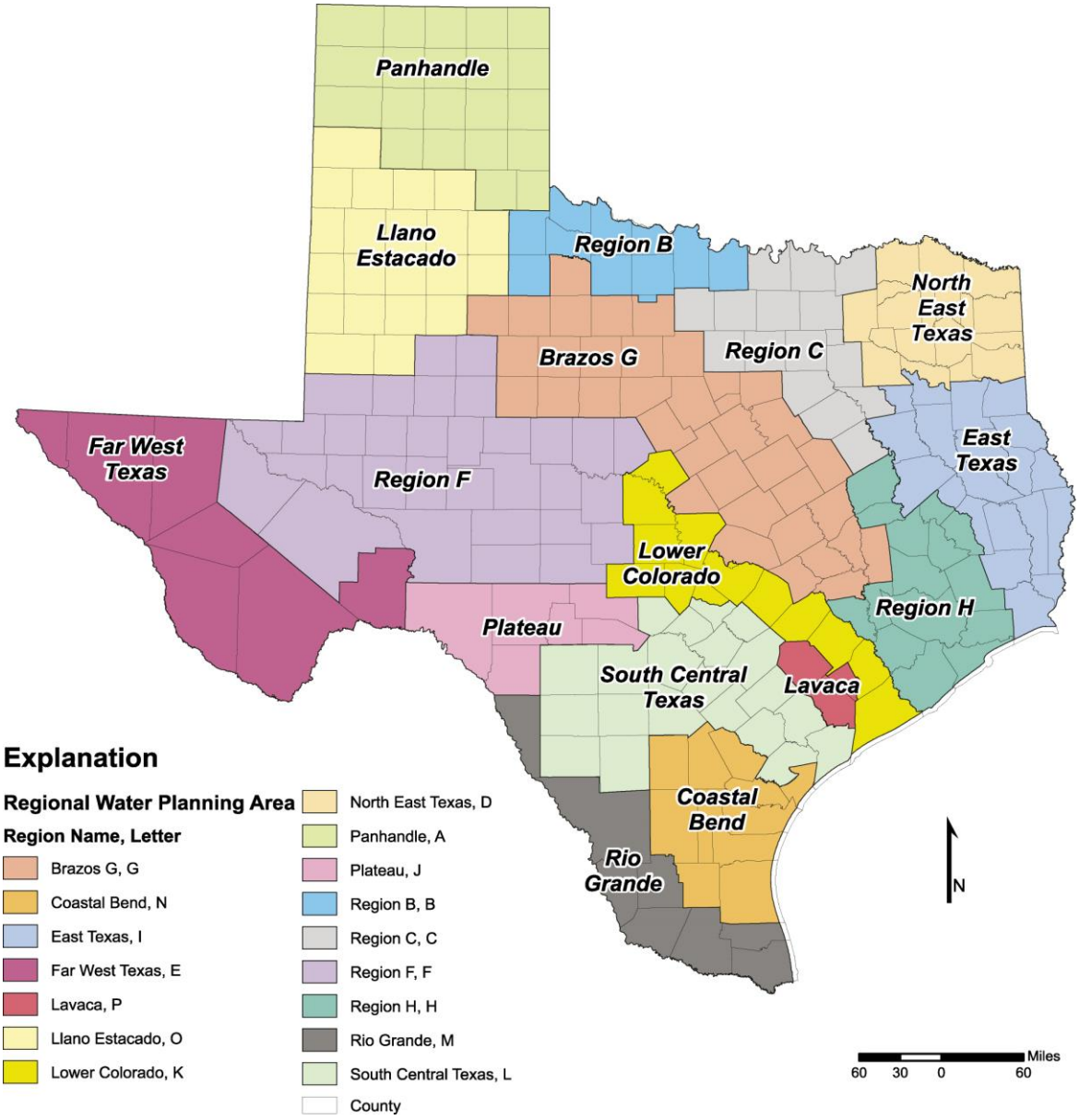
[505] 2017 State Water Plan, Texas Water Development Board, http://www.twdb.texas.gov/waterplanning/swp/2017/doc/2017_SWP_Adopted.pdf (last visited Sept. 21, 2016).
[506] *Id*.
[507] *Id*.
[508] *Id*.
[509] *Id*.
[510] Senate Committee on Agriculture, Water & Rural Affairs hearing, June 20, 2016 (Written testimony of Steve Kosub).
[511] 2017 State Water Plan, Texas Water Development Board, http://www.twdb.texas.gov/waterplanning/swp/2017/doc/2017_SWP_Adopted.pdf (last visited Sept. 21, 2016).
[512] *Id*.
[513] *Id*.
[514] *Id*.
[515] *Id*.
[516] *Id*.

to 5.4 million acre-feet in 2070.[517] The plan attributes this reduction not to the physical availability of the resource, but to "policy decisions made by groundwater conservation districts through the groundwater management area joint planning process…"[518]



Source: Texas Water Development Board

[517] 2017 State Water Plan, Texas Water Development Board, http://www.twdb.texas.gov/waterplanning/swp/2017/doc/2017_SWP_Adopted.pdf (last visited Sept. 21, 2016).
[517] *Id*.
[518] *Id*.

Comparing projected future water demand (*i.e.*, 21.6 million acre-feet) and forecasted existing water supply (*i.e.*, 13.6 million acre-feet), Texas does not currently have enough water supply to meet the state's water needs during a reoccurrence of the drought of record in 2070.[519] The state needs an estimated additional 8.9 million acre-feet of water supply in order to meet forecasted water demand in 2070, if the worst drought in state history were to occur that year.[520] To develop that additional water supply, regional water planning groups identify and "recommend water management strategies…to either provide additional water supply or reduce water demand."[521] Conservation efforts, new surface water reservoirs, groundwater production wells, water recycling, and brackish groundwater desalination are examples of water management strategies (*i.e.*, ways to increase water supply).[522] There are more than 5,500 water management strategies recommended by regional water planning groups in the 2017 State Water Plan.[523] However, regional water planning groups are not always able to identify water management strategies that meet all projected future water needs.[524] In fact, "only one planning group (Region P) was able to recommend water management strategies capable of meeting the needs for all water user groups" in the 2017 State Water Plan.[525] Statewide, the majority of municipal, manufacturing, and electricity generation water needs are met by the plan in 2070. Irrigation represents the vast majority (ninety to ninety-six percent) of unmet needs.[526]

Although many may take it for granted, providing high quality water to homes and businesses across Texas is not free.[527] The estimated cost to implement the more than 5,500 water management strategies recommended in the 2017 State Water Plan is $62.6 billion, which includes the cost to permit, design, acquire land, and construct these strategies.[528] While costly, the cost of doing nothing could be more, as Texas could "suffer significant economic losses" if none of the water management strategies recommended in the latest state water plan are implemented.[529] Economic models show that failure to implement any of the state water plan could cost the Texas economy approximately $73 billion annually in 2020 and $151 billion annually by 2070 due to water shortages.[530] Similarly, water shortages could cause job losses of 424,000 in 2020 and 1.3 million in 2070.[531] Additionally, if none of the recommended water management strategies are implemented "approximately eighty-two percent of Texans would face at least a 10 percent water shortage in their cities and residences by 2070, and

[519] 2017 State Water Plan, Texas Water Development Board, http://www.twdb.texas.gov/waterplanning/swp/2017/doc/2017_SWP_Adopted.pdf (last visited Sept. 21, 2016).
[520] *Id*.
[521] *Id*.
[522] *Id*.
[523] *Id*.
[524] *Id*.
[525] *Id*.
[526] *Id*.
[527] *Id*.
[528] *Id*.
[529] *Id*.
[530] *Id*.
[531] *Id*.

approximately one-third of Texas' municipal water users would have less than half of the water supplies that they require to live and work by 2070."[532]

To avoid these water shortage-induced scenarios and during the second worst drought in state history from 2010-2014, the Texas Legislature in 2013 "created the State Water Implementation Fund for Texas (SWIFT) and the State Water Implementation Revenue Fund for Texas (SWIRFT) to provide affordable, ongoing state financial assistance for projects in the state water plan."[533] The program provides low-interest loans, extended repayment terms, deferred loan repayments, and incremental repurchase terms for projects with state ownership.[534] Over the last five years, the Board has approved more than $1.9 billion in financial assistance to implement more than sixty state water plan projects that are expected to yield approximately one million acre-feet of additional water supply.[535]

Frequency of the State Water Plan

Currently, regional water plans are updated every five years.[536] Some stakeholders argue that the five-year water planning cycle in Texas is too short.[537] They "believe reauthorization every five years burdens regional and local taxpayers with an overabundance of cost that is unnecessary, based upon little to moderate population growth estimates…"[538] Additionally, they argue that "if you truly want to plan for long-term future use of water, a longer authorization period must be implemented."[539] These stakeholders recommend changes to how frequently regional water planning groups are required to update their regional water plans.[540] They suggest that regional water planning groups in regions with projected population growth of less than 10 percent be given the option to reauthorize their plan once every ten years instead of requiring a reauthorization once every five years.[541] Making that change will better align the timing of regional water plan updates with the U.S. Census, which is a significant input into regional water planning population growth projections.[542] Furthermore, providing the option to revise a regional water plan only once every ten years allows for the more accurate accounting of weather and rainfall patterns that can be sued to better project water demand and existing water supply.[543] When asked whether they prefer a five or ten year regional water planning process, nearly seventy percent of groundwater conservation districts said they supported a ten year regional

[532] 2017 State Water Plan, Texas Water Development Board, http://www.twdb.texas.gov/waterplanning/swp/2017/doc/2017_SWP_Adopted.pdf (last visited Sept. 21, 2016).
[533] *Id*.
[534] *Id*.
[535] *Id*.
[536] *Id*.
[537] *Id*.
[538] *Id*.
[539] *Id*.
[540] *Id*.
[541] *Id*.
[542] *Id*.
[543] *Id*.

water planning cycle.[544] Districts cited cost, minimal change in population growth estimates, and a greater opportunity for evaluation as their reasoning for supporting such a change.[545]

Desired Future Conditions, Modeled Available Groundwater, and Regional Water Planning

No matter how frequently the plans are updated**,** desired future conditions and modeled available groundwater are used as part of the regional water planning process in Texas. Section 16.053 of the Texas Water Code requires regional water plans to be consistent with adopted desired future conditions.[546] To ensure this statutorily-mandated consistency, the Board has "adopted rules requiring planning groups to use modeled available groundwater as a hard cap on allowable production in the regional plan."[547] However, stakeholders say that using modeled available groundwater as a cap on groundwater availability "may unnecessarily limit or exclude potentially viable [groundwater] supply projects from regional plans."[548] This potentially unnecessary exclusion "deprives the State of essential water development and is inconsistent with the purpose of the regional water planning groups," stakeholders say.[549] Using modeled available groundwater as a cap on groundwater availability for planning purposes, transforms regional water planning groups into regulatory bodies.[550] In their opinion, it "imposes a new regulatory role on regional planning groups by applying a hard cap on groundwater availability for the purpose of selecting recommended water supply strategies."[551] When asked whether the groundwater management area planning process is effective, sixty-two percent of groundwater conservation districts replied "no," citing that modeled available groundwater is used as a regulatory cap rather than its intended use as a planning tool.[552] Stakeholders believe that no potentially feasible water management strategy should be excluded from a regional plan because of the artificial limitation created by the law.[553] These stakeholders call on the Legislature to restore "planning flexibility" by modifying Section 16.053 of the Texas Water Code.[554]

Recommendations

The committee makes the following recommendations to the 85th Legislature on improving the process of developing and executing the state water plan:

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[544] Senate Committee on Agriculture, Water & Rural Affairs hearing, June 20, 2016 (Written testimony of Sarah Roundtree Schlessinger).
[545] *Id*.
[546] Tex. Water Code § 16.053(e)(2-a).
[547] Senate Committee on Agriculture, Water & Rural Affairs hearing, June 20, 2016 (Written testimony of Steve Kosub).
[548] *Id*.
[549] *Id*.
[550] *Id*.
[551] *Id*.
[552] Senate Committee on Agriculture, Water & Rural Affairs hearing, June 20, 2016 (Written testimony of Sarah Roundtree Schlessinger).
[553] Senate Committee on Agriculture, Water & Rural Affairs hearing, June 20, 2016 (Written testimony of Steve Kosub).
[554] *Id*.

- The Legislature should consider providing certain regional water planning groups the option to reauthorize or update their regional water plan once every ten years.

- The Legislature should modify Section 16.053, Texas Water Code, and other sections of state law or state rule, so that modeled available groundwater is no longer required to operate as a hard cap that prevents viable water management strategies from being included in regional water plans.

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Charge No. 3

Study and make recommendations on improving the law in this state regarding agricultural liens under Chapter 70, Agricultural Code. The study should include whether sufficient safeguards exist to protect the financial interest agricultural producers have in their product.

Agricultural Lien Background

The committee held a public hearing on December 8, 2015 during which it received testimony on improving the law in Texas regarding agricultural liens. Following the growth and harvest of an agricultural crop, it is common practice for an agricultural producer, such as a farmer, to contractually sell the harvested crop to a purchaser, or store the harvested crop in a warehouse, elevator, or other storage facility where the crop is kept until it is sold, often after an increase in the market price of the crop. In the past, grain producers that stored their crop in a warehouse or elevator were unsecured creditors and warehouse or elevator creditors were secured creditors.[555] This meant that, in the event a warehouse or elevator declared bankruptcy and its assets were liquidated into cash, a warehouse or elevator creditor was paid with that cash before an agricultural producer, because the creditor was a secured creditor and the agricultural producer was not.[556] A "secured creditor" is a person who made a loan that was "secured" by the provision of "collateral" by the loan recipient.[557] Alternatively, an "unsecured creditor" is a person that does has not secured the loan with collateral.[558] When a debtor that has secured multiple loans with the same or similar collateral, which is common practice, the collateral is converted into cash to pay back the debtor's creditors.[559] Often, the market value of the collateral is not greater than the total amount of the outstanding loan balance.[560] In that case, the collateral is used to pay back creditors who registered their security interest first.[561] This is how a security interest can be superior and inferior: superior interests get paid first while inferior interests get paid last, if at all.[562] This created a situation in Texas where, if a warehouse or elevator declared bankruptcy while an agricultural producer's crop was being stored at the facility, the crop could be sold to pay the facility's creditors.[563] As unsecured creditors, agricultural producers were merely "in line" for payment on their own crop, and their place in line was behind secured creditors of the warehouse and elevator. In the last ten years, at least twenty agricultural crop storage facilities have been foreclosed upon or have filed bankruptcy.[564]

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[555] Senate Committee on Agriculture, Water & Rural Affairs hearing, March 30, 2015 (Written testimony of Marissa Patton, Texas Farm Bureau).
[556] *Id*.
[557] Tex. Bus. & Com. Code § 9.102(73)(A)-(B).
[558] *Id*.
[559] Senate Committee on Agriculture, Water & Rural Affairs hearing, Dec. 8, 2015 (*See generally* testimony on Interim Charge No. 3).
[560] *Id*.
[561] *Id*.
[562] *Id*.
[563] Senate Committee on Agriculture, Water & Rural Affairs hearing, March 30, 2015 (Written testimony of Marissa Patton, Texas Farm Bureau).
[564] Senate Committee on Agriculture, Water & Rural Affairs hearing, December 8, 2015 (Written Testimony of Walt Hagood, Texas Farm Bureau).

Type of Lien / Claimant	Lien Claimant	Attached Property	Possession Required	Filing Required	Date Lien Attaches	Express Statutory Priority
Lien on Citrus Fruit. Texas Agriculture Code 72.025, 72.042-72.043	Texas Department of Agriculture	Citrus fruit growing or standing on premises which the Department sanitizes for Mexican fruit fly infestation.	No.	No, but the lien is fixed by filing a lien statement with the Clerk of the County in which the sanitized premises are located.	Not specified.	None.
Lien on Cotton. Texas Agriculture Code 74.115	Cotton Growers' Boll Weevil Eradication Foundation	Cotton produced and harvested from land subject to a boll weevil eradication assessment which is due and unpaid.	No.	No.	60 Days after the date the foundation mails notice of assessment.	Same priority as security interested created by the seller.
Warehouse Lien. Texas Business & Commerce Code 7.209 to 7.210	Warehouse	Goods covered by a warehouse receipt or storage agreement or on the proceeds thereof.	Yes.	Enforceable by commercially reasonable sale.	Enforceable by commercially reasonable sale.	Enforceable by commercially reasonable sale.
Agricultural Chemical and Seed Liens. Texas Agriculture Code 128.001 to 128.048	Person who provides an agricultural chemical, agricultural seed, or labor	Proceeds from the crop to which the agricultural chemical, agricultural seed or labor applied.	No.	Perfected by filing with office of Secretary of State.	Attaches on the first day agricultural chemicals, labor or both are furnished.	Same priority as a security interested perfected by the filing of a financing statement on the same date. Subordinate to labor claims for wages and salaries in connection with the production of Agriculture products.
Agricultural Liens. Texas Property Code 70.401 to 70.410	Agricultural producer who receives consideration for selling an agricultural crop grown, produced, or harvested by the producer.	Every crop, in raw, or processed form, that has been transferred or delivered by the agricultural producer and is in possession of the contract purchaser.	No.	Perfected by filing with office of Secretary of State.	Date on which physical possessions of the crop is delivered or transferred by the producer to the purchaser.	Not specified.

The rules for agricultural liens are different for each crop. Source: Texas Agriculture Code.

Agricultural Lien Legislation

In 2001, Senate Bill 779 added Subchapter E to Chapter 70 of the Property Code to allow agricultural producers to obtain a lien on crops that they had grown, produced, or harvested.[565] An "agricultural producer" is a person who is engaged in the business of growing, producing, or harvesting an "agricultural crop," which is a "plant product that is grown, produced, or harvested as a result of an agricultural producer's farm operation."[566] The agricultural lien would apply to every crop delivered by the agricultural producer to a "contract purchaser," defined by the statute as a person who, before the planting of an agricultural crop, has agreed under a written contract to purchase the crop or otherwise pay the agricultural producer for growing, producing, or harvesting the agricultural crop.[567] However, a contract purchaser does not include a person who is licensed and bonded under Chapter 14 of the Texas Agriculture Code, or the United States

[565] H. Research Org., *Bill Analysis C.S.S.B. 779*, available at http://www.hro.house.state.tx.us/pdf/ba77r/sb0779.pdf#navpanes=0 (2001).
[566] Tex. Prop. Code § 70.401(1), (2).
[567] Tex. Prop. Code § 70.401(4).

Warehouse Act (7 U.S.C. Section 241 et seq.)[568] Consequently, the statutory lien is not applicable to purchases by, or deliveries to, licensed and bonded warehouses and elevators. Opponents of Senate Bill 779 argued it did not go far enough in protecting agricultural producers.[569] They argued that not only should agricultural producers be allowed to obtain liens on their products, but that those liens should be superior to all other liens.[570]

Fourteen years later, Senate Bill 1339 was enacted to address these issues by providing better financial protection for agricultural producers.[571] The bill ensured that liens obtained by agricultural producers would be superior to the liens held by warehouse and elevator creditors.[572] Senate Bill 1339 give agricultural producers the option to obtain a perfected agricultural liens on the date of the first delivery of their crop rather than on the date of the last delivery.[573] Specifically, the bill gives the farmer ninety days to file a Uniform Commercial Code (UCC) Financing Statement with the Secretary of State in order to retroactively perfect his lien upon delivery of the crop to the warehouse or processor.[574]

Senate Bill 1339 better defines the ownership of an agricultural crop between harvest and sale and guarantees full credit and payment to the farmer for their crop. However, if a producer fails to timely file a U.C.C. financing statement the lien will not be perfected and the producer will lose his or her priority over the secured creditors of the warehouse, elevator or contract purchaser.[575] Senate Bill 1339 gave agricultural producers the option to obtain a perfected agricultural lien on the date of the first delivery of their crop rather than the date of last delivery.[576] A "perfected" agricultural lien assures the agricultural producer that no other party, such as a creditor of a warehouse or elevator, will be able to claim the producer's crop as collateral in the event that the warehouse or elevator declares bankruptcy. To perfect the lien, a farmer is required to file a Uniform Commercial Code Financing Statement with the Texas secretary of State within ninety days of the last delivery of the crop.[577] Senate Bill 1339 also eliminated language that restricted the application of the agricultural lien to only those crops grown pursuant to a written contract entered into before the crops were planted. As a result, the lien now applies to all contracts for the purchase of crops, regardless of its timing.[578] Agricultural liens also apply to loans for the growing, producing, or harvesting of crops.[579] Furthermore, the

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[568] Tex. Agric. Code § 14.001.
[569] H. Research Org., *Bill Analysis C.S.S.B. 779*, available at http://www.hro.house.state.tx.us/pdf/ba77r/sb0779.pdf#navpanes=0 (2001).
[570] *Id*.
[571] S.B. 1339, 84th Leg., Regular Sess. (Tex. 2015).
[572] Senate Committee on Agriculture, Water & Rural Affairs hearing, March 30, 2015 (Written testimony of Marissa Patton, Texas Farm Bureau).
[573] S.B. 1339, 84th Leg., Regular Sess. (Tex. 2015).
[574] *Id*.
[575] Senate Committee on Agriculture, Water & Rural Affairs hearing, March 30, 2015 (Written testimony of Marissa Patton, Texas Farm Bureau).
[576] S.B. 1339, 84th Leg., Regular Sess. (Tex. 2015).
[577] *Id*.
[578] *Id*.
[579] *Id*.

bill extended the application of the lien to the proceeds of the sale of the crop to protect the agricultural producer in the event the crop is sold.[580]

Licensed and Bonded Warehouses

Senate Bill 1339 exempts warehouses licensed and bonded under Chapter 14 of the Texas Agriculture Code from the bill's lien priority provisions.[581] Licensed and bonded warehouses support this exemption, arguing that adequate protections for producers who use their facilities existed prior to the enactment of Senate Bill 1339. First, random and regular inspections by Texas Department of Agriculture (department) ensure that their inventory and financials are accurate.[582] Second, these warehouses are required to maintain insurance on the stored grain for its full market value.[583] Third, they are required to maintain a minimum amount of accessible capital. Finally, the department requires them to post a bond to secure payment to the producers in the event the warehouse declares bankruptcy.[584] The bond is ten cents per bushel, but no less than $35,000 and no more than $500,000.[585] Agricultural producers counter, however, that the $500,000 limit on the bond is historically insufficient to fully reimburse them, as the value of the crops producers store in licensed and bonded warehouses typically exceeds $500,000.[586]

According to licensed and bonded warehouses, inbound tickets, outbound tickets, and warehouse receipts further justify their exemption from the provisions of Senate Bill 1339. In the opinion of these warehouse operators, another way producers can protect themselves and their grain is by receiving an inbound scale ticket, outbound scale ticket, and a warehouse receipt.[587] An inbound scale ticket is a document a grain producer receives for the grain when it is physically deposited inside the warehouse.[588] An outbound scale ticket is a document the producer receives when the grain is physically removed from the warehouse and a warehouse receipt is the document the producer receives to transfer his grain to a third party.[589] The Department recommends that producers receive an inbound scale ticket, outbound scale ticket, or a warehouse recipient to increase the likelihood there is an understanding of the terms of the receipt, storage, and reimbursement.[590] Below is an example of a warehouse statement of ownership and encumbrances that a producer typically receives on delivery of crop to the warehouse.

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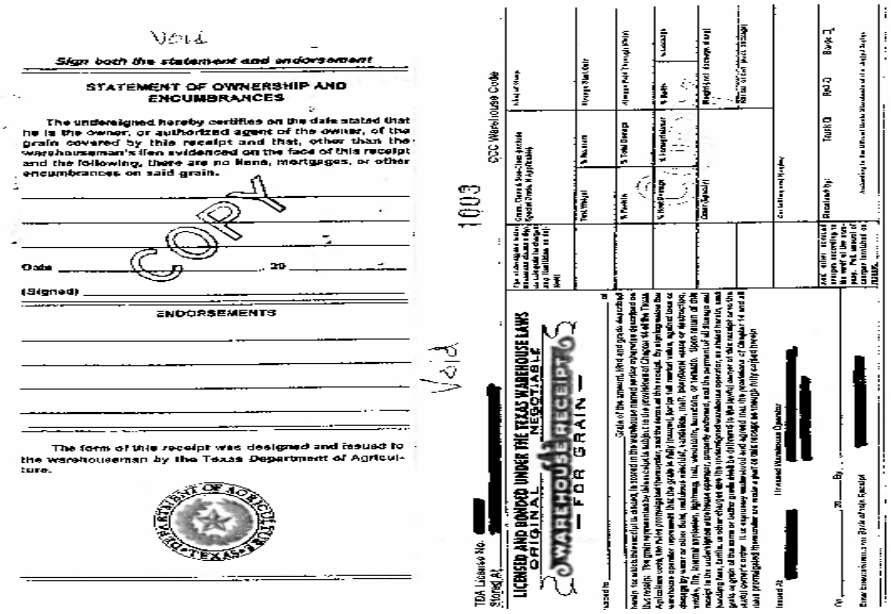
[580] S.B. 1339, 84th Leg., Regular Sess. (Tex. 2015).
[581] Tex. Prop. Code § 70.401(4).
[582] Texas Department of Agriculture, *Storing Your Grain at Licensed Public Grain Warehouse*, available at https://texasagriculture.gov/Portals/0/Publications/REG/Grain/Brochure%20-%20Grain%20Warehouse.pdf (last visited Oct. 17, 2016).
[583] *Id*.
[584] *Id*.
[585] *Id*.
[586] Senate Committee on Agriculture, Water & Rural Affairs hearing, Dec. 8, 2015 (Written testimony of Walt Hagood, Texas Farm Bureau).
[587] Texas Department of Agriculture, *Storing Your Grain at Licensed Public Grain Warehouse*, available at https://texasagriculture.gov/Portals/0/Publications/REG/Grain/Brochure%20-%20Grain%20Warehouse.pdf (last visited Oct. 17, 2016).
[588] *Id*.
[589] *Id*.
[590] *Id*.



Crop Production: Cash Flow Life Cycle

Under current law, a producer receives a lien on any crop transferred or delivered to a warehouse, elevator, or contract purchaser automatically on delivery.[591] The lien automatically attaches on delivery and perfects at the time of attachment.[592] The lien also extends to any proceeds a contract purchaser receives in consideration for those crops and if the contract purchaser mixes the crops of two or more producers, each producer obtains a lien on the proportional percentage of the combined crops.[593] By law, the lien expires after ninety days unless the producer files a financing statement with the Texas Secretary of State.[594] Filing a financing statement extends the duration of the lien by one year.[595] While effective, the lien is superior to all other liens, except for liens held by a cotton ginner or the producer's own creditor.[596] Liens held by a cotton ginner or an agricultural producer's creditor are discharged when the lienholder either receives full payment or the tender of full payment deferred.[597]

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[591] Texas Department of Agriculture, *Storing Your Grain at Licensed Public Grain Warehouse*, available at https://texasagriculture.gov/Portals/0/Publications/REG/Grain/Brochure%20-%20Grain%20Warehouse.pdf (last visited Oct. 17, 2016).
[592] *Id*.
[593] *Id*.
[594] *Id*.
[595] *Id*.
[596] *Id*.
[597] *Id*.

Stakeholders argue that, while Texas law on agricultural liens has improved in recent years, producers still experience difficulties receiving payment for their crops when storage facilities declare bankruptcy.[598] Similar problems arise when producers store crops in open storage facilities or when a producer stores grain in a warehouse while holding a warehouse receipt.[599] These difficulties and problems would be solved, according to stakeholders, if current law were changed so that licensed and bonded warehouses were included within the definition of a contract purchaser. This would have the desirable effect, in the view of some stakeholders, of making an agricultural producer's lien superior to the liens held by the creditors of licensed and bonded warehouses, elevators, and contract purchasers.[600]

To pay producers, many licensed and bonded warehouses obtain lines of credit from a lender, who currently holds a lien superior in priority to producers on the warehouses' inventory, accounts receivable, and other assets.[601] The borrowing base of these warehouses is calculated using the accounts payable aging report, the gross value of the grain, and the lien rights of producers.[602] This value is then discounted based on the borrower's creditworthiness.[603] If licensed and bonded warehouses were no longer be exempted from the producer's liens, the borrowing base of licensed and bonded warehouses would be severely reduced due to the uncertainty of secured producer's claims.[604] If a licensed and bonded warehouse filed bankruptcy, its lender's liens would be inferior to those of a producer.[605] This could make obtaining working lines of credit much more expensive or eliminate them altogether.[606] Lenders could also find it difficult, if not impossible, to satisfy their regulatory requirements under federal law.[607] The flow chart on the next page is an example of the cash flow cycle for crop production.

It is the opinion of some stakeholders that this problem may be addressed in other ways, such as requiring producers to perform due diligence during contract negotiations to identify contract purchasers who offer inflated pricing that is unlikely to be fully satisfied.[608] Producers, these stakeholders argue, can better manage their risk by storing and selling only with licensed and bonded warehouses.[609] Alternatively, they can demand a substantial payment or full payment at the outset.[610] Stakeholders argue that adopting the suggested proposal will slow the flow of

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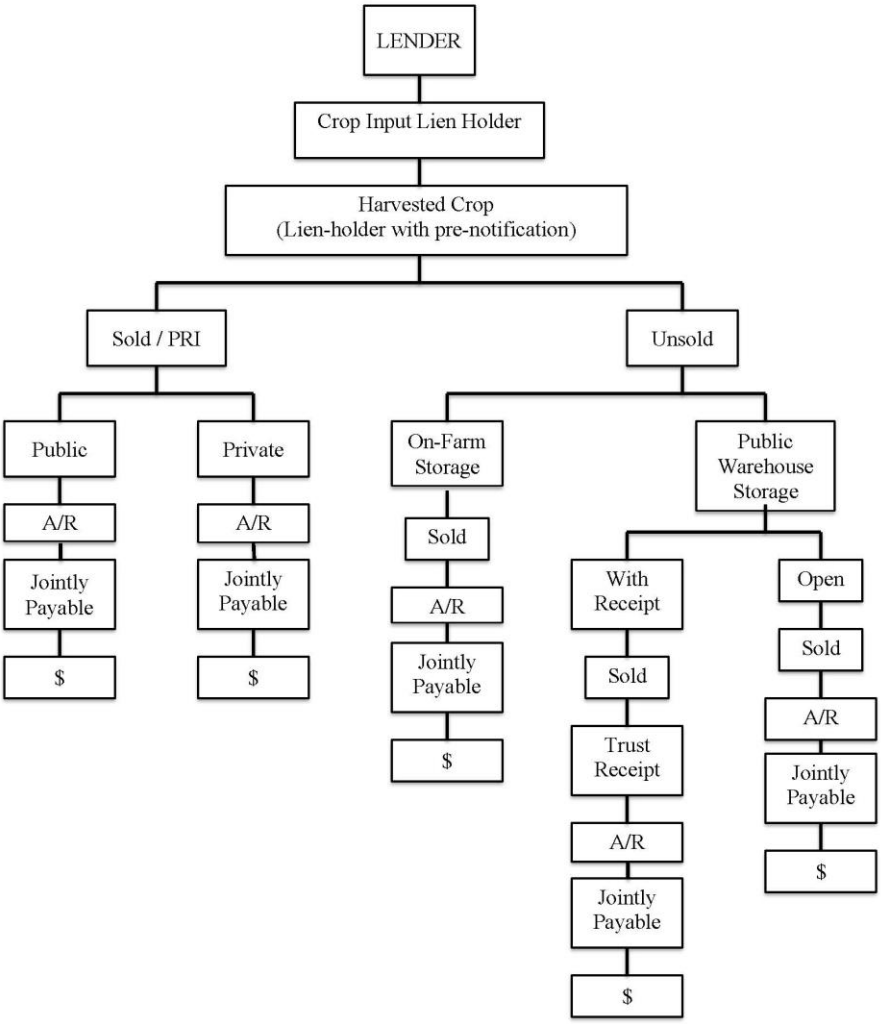
[598] Texas Department of Agriculture, *Storing Your Grain at Licensed Public Grain Warehouse*, available at https://texasagriculture.gov/Portals/0/Publications/REG/Grain/Brochure%20-%20Grain%20Warehouse.pdf (last visited Oct. 17, 2016).
[599] *Id*.
[600] *Id*.
[601] *Id*.
[602] *Id*.
[603] *Id*.
[604] *Id*.
[605] Senate Committee on Agriculture, Water, & Rural Affairs hearing, Dec. 8, 2015 (Written testimony by Karen Neely, Independent Bankers Association of Texas).
[606] *Id*.
[607] *Id*.
[608] *Id*.
[609] *Id*.
[610] *Id*.

credit to licensed and bonded warehouses without addressing the harmful conduct of some contract purchasers.[611]



West Texas Guar

In 2012, the price of guar, a legume used to thicken products used in fracking, rose to record highs.[612] Agricultural producers in Texas signed contracts to sell their guar crops to West

[611] Senate Committee on Agriculture, Water, & Rural Affairs hearing, Dec. 8, 2015 (Written testimony by Karen Neely, Independent Bankers Association of Texas).

Texas Guar, Inc., a company located in Brownfield, Texas.[613] Relying on those contracts, the agricultural producers obtained loans and bought specialized equipment to produce guar.[614] It was never disclosed to the agricultural producers that West Texas Guar was financially unstable.[615] When it became evident West Texas Guar would not be able to pay the agricultural producers for their guar crops, a New York hedge fund, Scopia Windmill Fund, made a $6 million loan to West Texas Guar to pay the agricultural producers.[616] Scopia Windmill Fund defaulted on its obligations to pay the agricultural producers $23 million.[617] West Texas Guar also violated its obligation to pay Scopia Windmill Fund $7.5 million.[618] In 2014, Scopia Windmill Fund filed a lawsuit in federal bankruptcy court against West Texas Guar and its former managers, as well as 285 agricultural producers who had not been paid for their crop.[619] The agricultural producers filed a petition to place West Texas Guar into involuntary bankruptcy under Chapter 11 of the federal bankruptcy law.[620] The struggle between Scopia Windmill Fund and the agricultural producer for the assets of West Texas Guar became an issue during the 84th Legislature, as it was feared that many West Texas farmers would be negatively impacted by this case because their claims were inferior to the creditors of West Texas Guar. Fortunately, a bankruptcy judge froze and pooled assets before West Texas Guar's creditors were paid, which allowed liquated assets to pay farmers for their guar crop.[621] Ultimately, the reorganization plan for West Texas Guar resulted in the sale of the company to a New York investment firm, who renamed it Guar Resources, L.L.C.[622] The agricultural producers overwhelming approved a plan in which they were given the option of being paid seventy-five percent of their claim within two weeks, or 100 percent over the course of five years.[623]

Dorchester Grain

Dorchester Grain Co. is a licensed and bonded warehouse that was investigated by the Department in November 2009. The Department suspended the company's business operations after discovering it issued fraudulent grain receipts and interfered with an inspection, which are second and third degree felonies. These violations involved corn, wheat, and milo owned by approximately 140 agricultural producers and stored in Dorchester facilities in Grayson, Fannin,

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[612] Ryan Dezember, *Legume Used in Fracking Causes Problems for Investor, Farmers*, The Wall Street Journal, Oct. 1, 2014, available at http://www.wsj.com/articles/legume-used-in-fracking-causes-problems-for-investor-farmers-1412205141
[613] *Id*.
[614] *Id*.
[615] *Id*.
[616] *Id*.
[617] Josie Musico, *West Texas Guar shareholder sues company, unpaid farmers*, Lubbock Avalanche-Journal, July 18, 2014 available at http://lubbockonline.com/local-news/2014-07-18/former-west-texas-guar-shareholder-sues-company-unpaid-farmers
[618] *Id*.
[619] *Id*.
[620] Andrew Scurria, *Scopia fails to move guar plant Ch. 11 Coverage Row*, Law 360, Dec. 1, 2015, available at http://www.law360.com/articles/623801/scopia-fails-to-move-guar-plant-ch-11-coverage-row
[621] *Id*.
[622] *Id*.
[623] Josie Musico, *West Texas Guar shareholder sues company, unpaid farmers*, Lubbock Avalanche-Journal, July 18, 2014 available at http://lubbockonline.com/local-news/2014-07-18/former-west-texas-guar-shareholder-sues-company-unpaid-farmers

and Collin counties.[624] The Department's investigation also revealed a shortage of 648,000 bushels of grain worth an estimated $4.9 million.[625] The investigation, which was assisted by the Grayson County Sheriff and the Texas Attorney General, concluded that the collapse of Dorchester Grain was the result of poor business practices and bad market conditions.[626] John Chumbley, the principal of Dorchester Grain, pled guilty to a second-degree felony for issuing fraudulent warehouse receipts and a third-degree felony for interfering with an inspection by the Department. Warehouse receipts are issued to agricultural producers when they deliver their crop to the warehouse or elevator.[627] The written receipts can be traded as an asset or used as collateral, and are typically treated as commercial paper (*e.g.*, short term debt instruments issued by a corporation).[628] Chumbley paid $400,000 in restitution to the effected agricultural producers as part of the plea agreement with the Grayson County district attorney.[629] The plea agreement also deferred any criminal charges in Fannin and Collin counties.[630] Following the settlement, the Grayson County District Attorney issued a press release stating his belief that the settlement was advantageous to the farmers since Dorchester was in bankruptcy and Chumbley's expenses in trying the case would have consumed much, if not all, the amount he paid in restitution, leaving the agricultural producers with little or nothing.[631] The payment was divided proportionally among the agricultural producers based on their percentage of the grain stored.[632] The remaining grain and other assets of Dorchester Grain were sold to satisfy creditor claims.[633]

Recommendations

The committee makes the following recommendation to the 85th Legislature regarding agricultural liens:

- The Legislature should continue to recognize the importance of an agricultural producer's financial security and protect an agricultural producer's right to file an agricultural lien.
- The Legislature should monitor the effect of Senate Bill 1339, with a specific focus on activity at licensed and bonded storage warehouses, and, if necessary, make any appropriate changes.

[624] Michelle Gillespie, *Farmers worried about future in Dorchester Grain investigation*, KTEN.com, Dec. 1, 2015, available at http://www.kten.com/story/11697520/farmers-worried-about-future-in-dorchester-grain-investigation.
[625] Jerrie Whiteley, *Dorchester Grain owner pleads to criminal charges, pays $400,000*, Herald Democrat, Feb. 8, 2011, available at http://news.heralddemocrat.com/hd/SiteSearchResults/2-9-11-Dorchester-Grain-owner-pleads-to-criminal-charges-pays-400000
[626] *Id*.
[627] *Id*.
[628] *Id*.
[629] *Id*.
[630] *Id*.
[631] *Id*.
[632] *Id*.
[633] *Id*.

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Charge No. 4

Study and make recommendations on the effects of windblown and waterborne litter. The study should include an analysis of the economic effects of litter, any necessary methods to prevent and remediate litter, and an assessment of state and local programs to reduce litter.

Windborne and Waterborne Litter Background

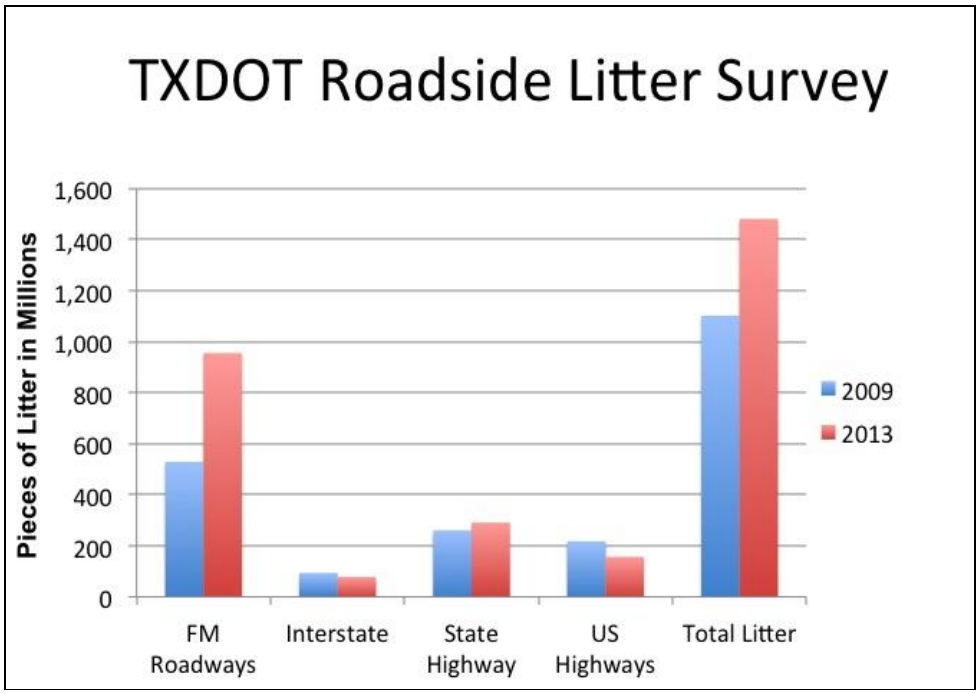
The committee held a public hearing on December 8, 2015, during which it received testimony on issues related to the aesthetic, educational, and economic effects of windblown and waterborne litter. The cost for communities to cleanup windblown and waterborne litter can range from $10 thousand to $10 million, depending on the community.[634] While intentional littering has been on the decline since the 1990s, windblown and waterborne litter continue to be a social, economic, health, and safety nuisance in many communities across Texas.[635] In 2012, the Texas Department of Transportation spent $47 million to cleanup roadside litter in Texas.[636] Results of the 2013 Visible Litter Study indicate that 434,509,848 items of visible litter accumulate annually on Texas roads.[637] Even with the decline in intentional littering, the total number of littered items has increased by thirty-four percent between 2009 and 2013.[638]

TXDOT Roadside Litter Survey

Roadway Type	Centerline Miles	Number of Littered Items			% Change 2009-2013
		2005	2009	2013	
FM Roads	40,965	430,709,842	528,823,879	954,821,303	81%
Interstates	3,233	72,971,697	94,121,255	77,614,712	-18%
State Highways	16,331	170,488,104	260,656,708	291,159,745	12%
U.S. Highways	12,104	153,035,881	218,168,944	157,019,311	-28%
TOTAL:	**72,633**	**827,205,524**	**1,101,770,786**	**1,480,615,070**	**34%**

2013 TxDot Litter Survey[639]

[634] Senate Committee on Agriculture, Water, & Rural Affairs hearing, Dec. 8, 2015 (Testimony of Warren Oakley, City of Fort Stockton).
[635] 2013 TxDot Litter Survey, Environmental Recourses Planning L.L.C., (Aug. 2013).
[636] *Id*.
[637] *Id*.
[638] *Id*.
[639] *Id*.



2013 TxDot Litter Survey

During the 67th Regular Session of the Texas Legislature, the House Committee on Environmental Affairs identified seven sources of litter: commercial and household refuse products, construction sites, loading or unloading operations, uncovered trucks, motorists, and pedestrians.[640] Wild animals are arguably the most negatively impacted by litter generated from these sources.[641] They are often hurt after becoming entangled in plastic and metal litter.[642] Dogs and cats, for example, can easily entangle themselves in six-pack soda plastic rings that in rare cases can cause death.[643] Additionally, aluminum has been used by small animals trying to find shade.[644] However, after finding shade the animal is unable to leave the can or cuts itself trying to exit.[645] Furthermore, wild animals frequently confuse litter for food, consume it, and become ill or die when they are unable to digest it properly.[646] For example, large amounts of plastic litter has been found in cattle, where it can fatally disrupt the digestive tract.[647] Additionally, a large part of a sea turtle's diet is jellyfish and sea turtles often mistake floating plastic bags for jellyfish, which can lead to death when ingested.[648]

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[640] House Committee on Environmental Affairs, Interim Report to the 67th Legislature (Nov. 1980).
[641] *What are the Effects of Littering*, Reference.com, https://www.reference.com/science/effects-littering-11d7422b6c5c456e (last visited on Oct. 17, 2016).
[642] *Id*.
[643] *Id*.
[644] *Mysterious Cattle Deaths?*, International Texas Longhorn Association, http://www.itla.com/Plastic-Disease (last visited Oct. 17, 2016).
[645] *Id*.
[646] *Id*.
[647] *Id*.
[648] *Id*.

Litter also affects our rivers and streams, impeding its flow and polluting the ecosystem for fish, turtles, and other forms of aquatic life.[649] It clogs storm water infrastructure, which exacerbates flooding and drainage issues.[650] Moreover, windblown and waterborne litter and illegal tire dumping pose a significant threat to water quality, watercourses, canals, and drainage systems by contaminating drinking water, making treatment of that water more expensive for ratepayers.[651] In addition, litter is often a fuel source for wildfires that can destroy vast swaths of forest and grassland, not to mention homes, buildings, animals, and people.[652] The fact that most litter does not dissolve immediately causes additional problems.[653] For example, cigarette butts decompose approximately twelve years after being thrown on the ground, during which their decomposition releases cadmium, lead, arsenic, and other toxic elements into the soil and groundwater.[654] Soil contamination may affect humans who breathe the dust of contaminated soil, and people may become ill from ingesting plants grown in contaminated soil.[655] Littering affects humans by increasing their risk of injury.[656] Children are particularly susceptible to injury by bottles or other discarded items that do not decompose quickly or easily.[657]

Waterborne Litter Abatement Efforts

Waterborne litter has become such a nuisance that state government agencies are using limited resources to abate it. The Texas Parks and Wildlife Department's Inland Fisheries division distributed 5,000 river cleanup bags to twenty Texas-based fly fishing clubs associated with the Texas Council of the International Federation of Fly Fishers.[658] The U.S. Department of Agriculture's Voluntary Public Access and Habitat Incentive Program provided a grant to conduct river cleanups during routine club fishing trips throughout the state.[659] The department also recently formed a partnership with the non-profit, "Keep Texas Beautiful," which receives financial support from the U.S. Department of Agriculture's Voluntary Public Access and Habitat Incentive Program.[660] Keep Texas Beautiful is expected to receive $50,000 from the Inland Fisheries division of Texas Parks and Wildlife to assist in ten cleanup events of the Brazos, Colorado, Neches, and Guadalupe rivers over a two-year period.[661]

Local Waterborne Litter Abatement Efforts

Waterborne litter abatement efforts in Texas are not limited to the state and federal government. At least twenty-four counties and cities in the state have developed, funded, and

[649] House Committee on Environmental Affairs, Interim Report to the 67th Legislature (Nov. 1980).
[650] *General Policy Statement*, Texas Water Conservation Association (Oct. 2016).
[651] *Id*.
[652] *Id*.
[653] *Id*.
[654] *Id*.
[655] House Committee on Environmental Affairs, Interim Report to the 67th Legislature (Nov. 1980).
[656] *Id*.
[657] *Id*.
[658] *Water Litter Abatement Efforts*, Texas Parks and Wildlife Department Inland Fisheries (Nov. 2015).
[659] *Id*.
[660] *Id*.
[661] *Id*.

implemented programs to control waterborne litter.[662] For instance, Martin Creek has implemented a rewards program that waives the canoe fee for all customers that return a full trash bag.[663] This tactic has helped recover litter from the river, and also encouraged participants to keep their trash in their canoe until the end of the float.[664] As another example, Galveston Island and Goose Island routinely cleanup the beach and shoreline to ensure litter does not pollute local waterways.[665] The residents of these two islands have placed recycling stations along the shoreline and at piers to make the proper discarding of litter more convenient.[666] Garner State Park also has an interesting approach to waterborne litter control.[667] They have created an annual "Frio River Cleanup" and often invite the "Friends of Garner" to participate by collecting trash along the Frio River near the park.[668] Additionally, Boy Scouts go out every month to conduct cleanup projects for merit badges at Guadalupe River, Inks Lake, and Palmetto State Parks.[669] According to stakeholders, these types of cleanup events are important because if litter is not controlled at its source, then it becomes more difficult to capture.[670] The least effective solution of litter capture is after it reaches local waterways.[671] Once in the waterways, retrieving litter becomes much more challenging and expensive.[672]

Stakeholder Perspective

Some stakeholders are concerned about the amount, location, and source of waterborne litter in Texas. They say that while litter ends up in bayous and basins maintained by local governments, such as the Harris County Flood District, local government has limited authority to regulate or participate in water quality activities like litter abatement.[673] According to some stakeholders, a significant portion of waterborne litter is the result of out-of-county visitors recreationally using local creeks, streams, and rivers. The City of New Braunfels, for instance, experiences significant litter problems from tourists floating down the Comal and Guadalupe Rivers.[674] These tourists travel the rivers in tubes with coolers of food and beverages.[675] Unfortunately, many of the beverage containers (*e.g.*, aluminum cans) litter the river.[676]

The city has tried several approaches to solve this problem.[677] First, it started an educational program to raise awareness of the benefits of not littering, such as preserving the

[662] *Water Litter Abatement Efforts*, Texas Parks and Wildlife Department Inland Fisheries (Nov. 2015).
[663] *Id*.
[664] *Id*.
[665] *Id*.
[666] *Id*.
[667] *Id*.
[668] *Id*.
[669] *Id*.
[670] *Id*.
[671] *Id*.
[672] *Id*.
[673] *Id*.
[674] Senate Committee on Agriculture, Water & Rural Affairs hearing, Dec. 8, 2015 (Written testimony of Kristi Aday, City of New Braunfels).
[675] *Id*.
[676] *Id*.
[677] Senate Committee on Agriculture, Water & Rural Affairs hearing, Dec. 8, 2015 (Written testimony of Kristi Aday, City of New Braunfels).

beauty of the rivers.[678] Second, in 2014, the city spent $56,000 providing visitors with mesh bags to properly dispose of litter.[679] Third, the city charges a "River Management Fee" to recover the cost of river cleanup.[680] However, this fee is politically unpopular with businesses dependent on river tourism and has failed to fully recover the cost of litter removal.[681] Furthermore, in the past five regular sessions of the Texas Legislature, bills have been filed on behalf of the city to allow a portion of the hotel tax to be used to defray the cost of maintaining the Comal and Guadalupe rivers.[682] While South Padre Island and Galveston are allowed to use a portion of the hotel tax for litter abatement, New Braunfels's efforts have thus far been unsuccessful.[683] Finally, the city banned single-use containers, which according to some stakeholders has reduced river litter by seventy-eight percent.[684] It is unclear, however, how long the ban on single-use containers will stay in effect, as a lawsuit has been filed by business interests to enjoin its enforcement.[685] Following an injunction issued by a district court, the suit is awaiting a decision by the Texas Third Court of Appeals.[686]

Recommendation

The committee makes the following recommendation to the 85th Legislature regarding the effects of windblown and waterborne litter:

- The Legislature should continue to monitor the environmental and economic effects of windborne and waterborne litter, and study state and local programs to reduce litter.

[678] Senate Committee on Agriculture, Water & Rural Affairs hearing, Dec. 8, 2015 (Written testimony of Kristi Aday, City of New Braunfels).
[679] *Id*.
[680] *Id*.
[681] *Id*.
[682] *Id*.
[683] *Id*.
[684] *Id*.
[685] *City of New Braunfels v. Tourist Associated Businesses of Comal County, et al*, Cause No. 03-14-00198-CV; Texas Third Court of Appeals.
[686] Senate Committee on Agriculture, Water & Rural Affairs hearing, Dec. 8, 2015 (Written testimony of Kristi Aday, City of New Braunfels).

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Charge No. 5

Study and make recommendations on improving the laws regarding the management of game animals, production of domestic fowl, and development of agricultural products in the State to reduce the occurrence and spread of disease and harmful pests

Chronic Wasting Disease Background

The committee held a public hearing on December 8, 2015, during which it received testimony on chronic wasting disease. Chronic wasting disease is a member of a family of diseases known as transmissible spongiform encephalopathies (TSEs) and is a disease of the nervous system caused by the presence of prions.[687] A prion is an abnormal protein associated with numerous brain diseases.[688] When prions interact with normal proteins in the brain, more prions are formed, which create microscopic holes that change the contours and function of the infected animal's brain.[689] This gives the brain the appearance of a sponge.[690] Prions accumulate in the nervous system tissue, lymphoid tissues, retina, and spleen. They cause slowly progressive weight loss, a decreased ability to fight inflammation, an altered mental status, and eventually death.[691] Once a deer is infected, there is a one hundred percent mortality rate.[692]

The disease is contagious, easily transmittable, and can spread quickly. It affects cervids, such as mule deer, and is transmitted by direct animal-to-animal contact or through prion-contaminated feces, urine, saliva, blood, or soft-antler material.[693] Once an environment is contaminated with the disease, it is nearly impossible to eradicate the disease from the area, leaving the environment infectious for years.[694] Typically, the animal will shed infected prions from sixteen to thirty-six months following contraction of the disease,[695] during which time an infected animal may appear healthy but actually be infected and actively spreading the disease.[696] There is no scientific research on the incubation period for chronic wasting disease, but historically an individual animal will present symptoms within five years after being infected.[697] The infected animal's life span decreases dramatically as soon as externally visible symptoms appear.[698] However, the disease cannot be transmitted to noncervid hosts, such as humans and domestic livestock, even if a portion of a contaminated animal is consumed.[699] The primary concern regarding the disease is direct and indirect economic loss to deer breeder operations.

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[687] *A Guide to Chronic Wasting Disease in Texas Cervids*, Texas A&M Agrilife Extension (Nov. 2015).
[688] *Id.*
[689] *What is CWD?*, Chronic Wasting Disease Alliance, http://cwd-info.org/what-is-CWD/ (last visited Oct. 17, 2016).
[690] *Id.*
[691] *A Guide to Chronic Wasting Disease in Texas Cervids*, Texas A&M Agrilife Extension (Nov. 2015).
[692] *Id.*
[693] *Id.*
[694] *Id.*
[695] *Id.*
[696] *Id.*
[697] *Comprehensive Chronic Wasting Disease Management Rules Adoption Preamble*, Texas Parks and Wildlife Department (2016).
[698] *Id.*
[699] *Id.*

Twenty-three states and two Canadian provinces are currently reporting chronic wasting disease in elk, white-tailed deer, moose, red deer, and black-tailed deer.[700] The first case of chronic wasting disease was identified by research conducted on mule deer in Colorado in 1967[701] and was confirmed as transmissible spongiform encephalopathy in 1978.[702] Chronic wasting disease was discovered in captive mule deer, black-tailed deer, and elk in Colorado and Wyoming in the late 1970s.[703] Wild elk tested positive in Wyoming and Colorado in 1981, mule deer in 1985, and white-tailed deer in 1990.[704] By 1990, an endemic zone, defined as an area in which a condition is regularly found, was established for the disease in Wyoming and Colorado.[705] There was no further detection outside the endemic zone until 1996 when captive herds were affected in Oklahoma, Nebraska, and Saskatchewan (Canada).[706] In 2001, the disease was detected in wild white-tailed deer in South Dakota and in a captive herd in Nebraska.[707] The disease spread rapidly in the early 2000s across Alberta (Canada), Illinois, Kansas, New Mexico, New York, Utah, and Wisconsin.[708] By 2010, the disease had spread into Virginia, Missouri, Minnesota, Texas, Iowa, Ohio, and Pennsylvania.[709] In 2012, the disease was detected in free-range mule deer in the Hueco Mountains in El Paso County and Hudspeth County in West Texas. To date, there have been seven reported cases of mule deer with the disease in the Hueco Mountains area.[710]

The Texas Parks and Wildlife Department (Department) has attempted to contain the disease by preventing any unnatural movement of animals and conducting mandatory sampling of hunter-harvested animals in areas where infected cervids have been found.[711] In 2015, the Department and the Texas Animal Health Commission (Commission) combined resources to stop the spread of the disease in Texas after it was detected in a captive white-tailed deer in Medina County.[712] The case in Medina County was the first Texas case involving a captive white-tailed deer.[713] After extensive testing, three more cases were found in the same captive herd.[714] When it was determined that a deer had been moved from this breeder facility to another facility, the Commission tested the deer at the second facility. In the second facility, the Commission found five more deer infected with chronic wasting disease.[715] The Department worked with the index facility to devise a deer management strategy to determine the source of

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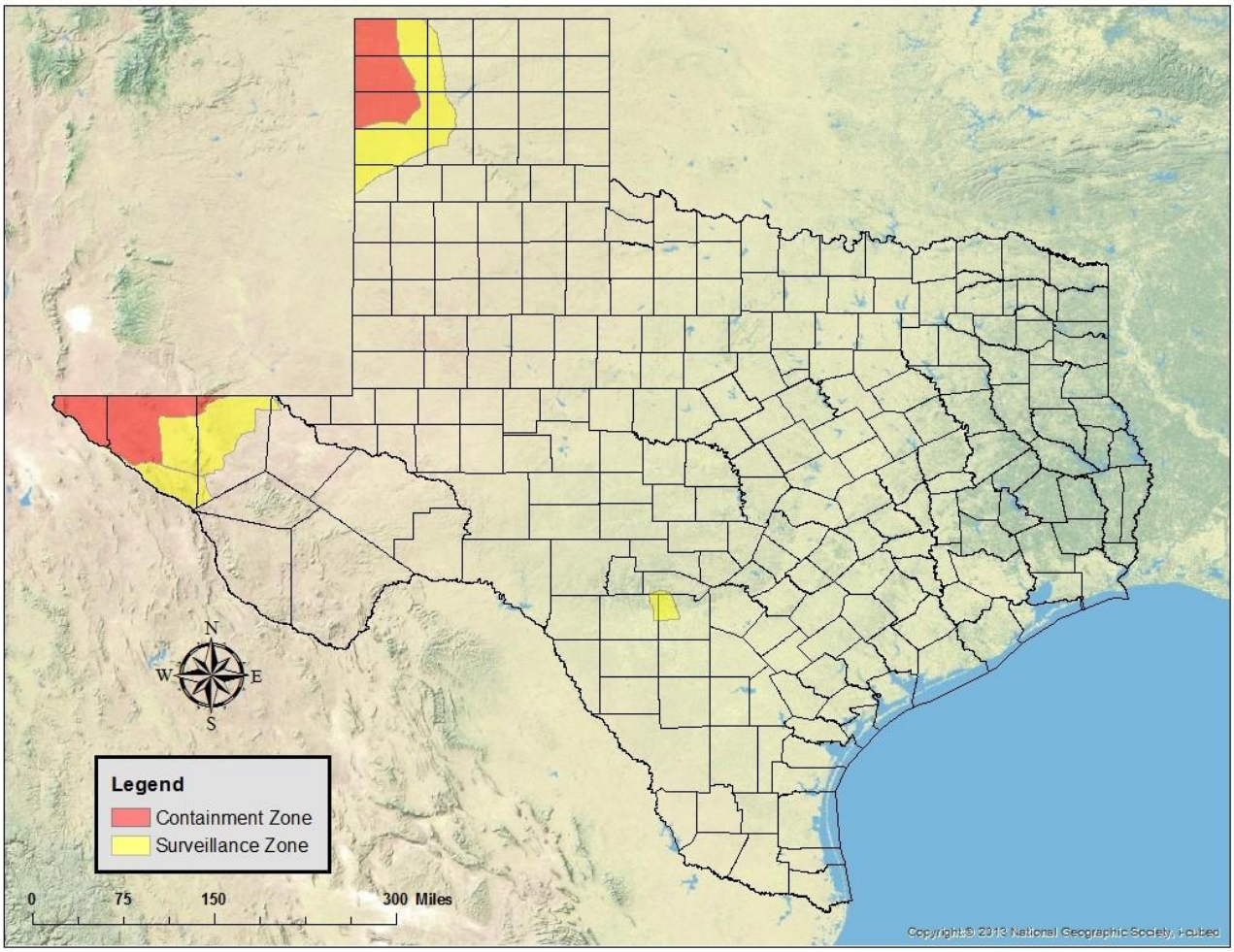
[700] *Comprehensive Chronic Wasting Disease Management Rules Adoption Preamble*, Texas Parks and Wildlife Department (2016).
[701] *Id*.
[702] *Id*.
[703] *Id*.
[704] *Id*.
[705] *Id*.
[706] *Id*.
[707] *Id*.
[708] *Id*.
[709] *Id*.
[710] *A Guide to Chronic Wasting Disease in Texas Cervids*, Texas A&M Agrilife Extension (Nov. 2015).
[711] *Id*.
[712] *Id*.
[713] *Id*.
[714] *Id*.
[715] *Id*.

the disease.[716] At the same time, the Department increased surveillance of free-range deer throughout Texas.[717]



Chronic wasting disease contamination zones. Source: Texas Parks and Wildlife Department

Deer Management Permits

Deer management permit rules were implemented on August 15, 2016, to manage and regulate chronic wasting disease in deer management permit facilities.[718] A deer management permit facility can maintain level 1 status if they accept breeder deer from a transfer category 1 breeding facility, or do not receive any breeder deer.[719] The status of a transfer category 1 facility will be lowered if it accepts breeder deer from a facility with a lower status.[720] If a deer

[716] *A Guide to Chronic Wasting Disease in Texas Cervids*, Texas A&M Agrilife Extension (Nov. 2015).
[717] *Id*.
[718] Deer Management Permits, Texas Parks and Wildlife Department, http://tpwd.texas.gov/business/permits/land/wildlife_management/deer_management/index.phtml (last visited Oct. 17, 2016).
[719] *Id*.
[720] *Id*.

management permit facility falls to a class II facility, it must satisfy the following requirements for a class II facility during the next hunting season. First, the class II release site must submit the first fifteen deer harvested "not-detected" for chronic wasting disease test results.[721] Second, they must annually submit to the Department a harvest log prior to April 1.[722] If all testing requirements are not satisfied, adherence to chronic wasting disease rules will be required beyond 2019.[723]

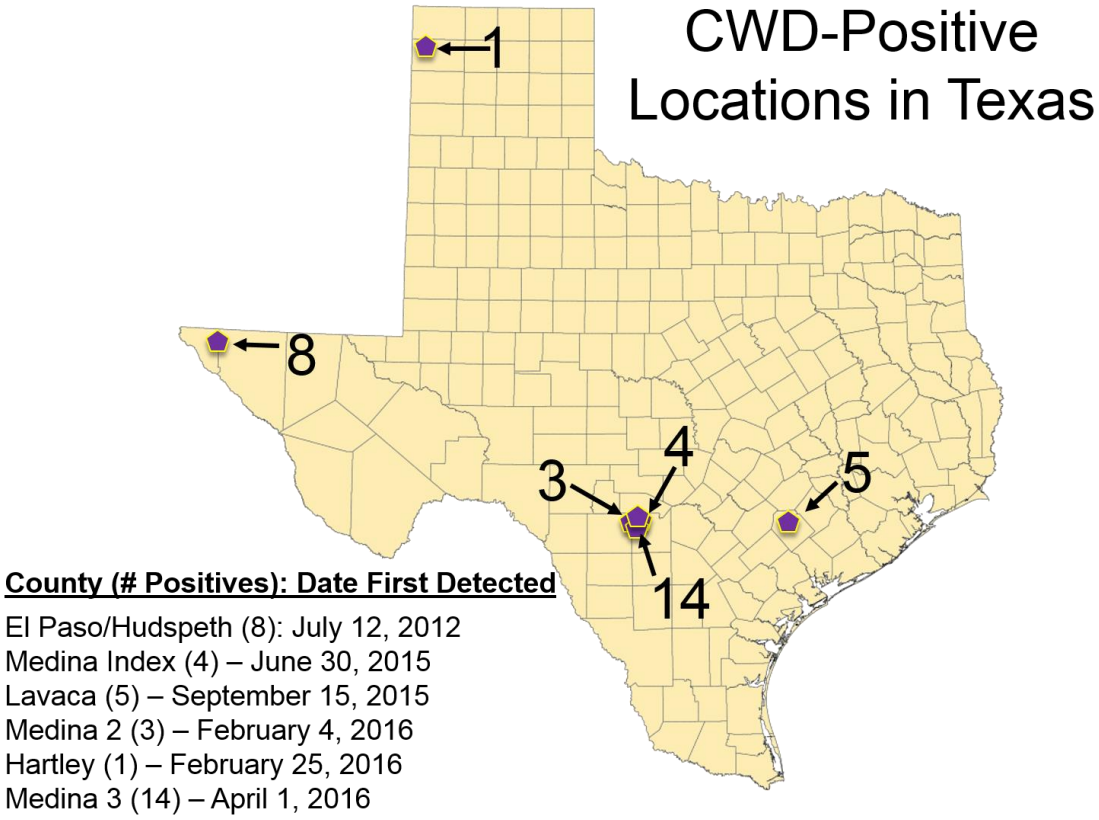
Ante-mortem Testing

In light of the spread of chronic wasting disease across the United States, ante-mortem testing has been extensively researched as a potentially effective method to detect the presence of chronic wasting disease in cervids.[724] The decision to administer an ante-mortem test is situational and each live animal test has varying degrees of accuracy.[725] Although Texas allows some ante-mortem testing, the United States Department of Agriculture does not recognize it as an official method of diagnosis.[726] There is no ante-mortem testing method for chronic wasting disease that is universally accepted as highly accurate in the vast majority of cases. [727] There are currently five prominent testing methods used to diagnose chronic wasting disease. All five ante-mortem test methods have different strengths and weaknesses.[728]

The tonsil biopsy was developed to help detect chronic wasting disease in 1999 and 2000.[729] Its advantages are early detection, high accuracy, good target size, and reusable instruments.[730] Its disadvantages are a smaller biopsy size, the cost of the instruments, and need to immobilize the animal.[731] In 2006-2007, the rectal biopsy was discovered and is a simple way to collect chronic wasting disease samples.[732] The problem with this method is that its accuracy varies depending on when the sample is collected. An ante-mortem rectal biopsy test is only twenty-five percent accurate if collected soon after infection or relatively early in the incubation cycle. If, however, the rectal sample is collected late in the incubation cycle or near death, a rectal biopsy ante-mortem test is one hundred percent accurate at detecting the presence of chronic wasting disease.[733] With a rectal biopsy, the suspected animals do not have to be immobilized, tools are disposable, and there is a good biopsy size to test.[734] The use of

[721] Deer Management Permits, Texas Parks and Wildlife Department, http://tpwd.texas.gov/business/permits/land/wildlife_management/deer_management/index.phtml (last visited Oct. 17, 2016).
[722] *Id*.
[723] *Id*.
[724] *Id*.
[725] *Id*.
[726] Texas Parks and Wildlife & Texas Animal Health Commission Symposium (January 2016).
[727] *Id*.
[728] *Id*.
[729] *Id*.
[730] Id.
[731] *Id*.
[732] *Id*.
[733] *Id*.
[734] *Id*.

disposable tools eliminates the risk of transmitting the disease between animals.[735] Third, nasal brushing to detect chronic wasting disease was improved in 2014. The two benefits of nasal brushing are that it is inexpensive and does not require sedation.[736] However, nasal brushing has less than twenty percent accuracy. It is also severely affected by genotype, meaning the results can vary widely depending on the genetic makeup of the animal tested and thus is highly unreliable.[737] Since 2007, blood tests to detect chronic wasting disease have continued to progress.[738] A blood test is simple, inexpensive to collect, and does not require sedation.[739] A disadvantage of blood testing is that the sensitivity, genotype, and sample size remains unclear in determining the test's effectiveness.[740] Finally, an experiment using a lymph node biopsy was conducted in 2015. It allows for the earliest detection and there is a good sample size and area to test. Conversely, it is an expensive and invasive procedure.[741] Although the biopsy can be taken from the obex, doing so has been found to have twenty percent lower detection rates than conducting the biopsy on the lymph nodes.[742]



Source: Texas Parks and Wildlife Department

[735] Texas Parks and Wildlife & Texas Animal Health Commission Symposium (January 2016).
[736] *Id.*
[737] *Id.*
[738] *Id.*
[739] *Id.*
[740] *Id.*
[741] *Id.*
[742] *Id.*

Emergency Rules and Interim Rules

On August 18, 2015, in cooperation with the Commission, the Department filed emergency rules that were immediately effective.[743] According to the Texas Administrative Code, emergency rules remain effective for 120 days, but can be extended for sixty days.[744] The intent of the emergency rules was to prevent the further spread of chronic wasting disease in the state by imposing testing requirements, implementing movement restrictions for mule and white-tailed breeder deer, and allowing the Commission to conduct epidemiological investigations.[745] As the emergency rules were set to expire before the end of deer season, temporary interim rules on deer breeder movement were adopted by the Department on November 5, 2015. The rules adopted by the Department in 2015 were meant to allow Department and Commission employees to continue responding to chronic wasting disease in certain areas of the state.[746] These interim rules were set to expire on August 31, 2016. Consequently, the Department and the Commission met with various stakeholders over the course of a few months in early 2016 to gather input on the development of the Department's comprehensive chronic wasting disease management plan and form new rules.[747]

The 2015 emergency rules and regulations related to chronic wasting disease were considered, by some, to be insufficient to contain and prevent the disease from spreading throughout the state.[748] Stakeholders argued that, prior to the 2016 interim rules, the testing requirements for chronic wasting disease were sporadically enforced and rarely collected from captive deer.[749] Once the 2015 interim rules were adopted, there was no option for ante-mortem chronic wasting disease testing, only post-mortem testing.[750] Part of the 2015 interim rules required Texas breeders to test at least 4.5 percent of the average population in their facility over the previous two years in order to release deer, which could only be released on high fence release sites.[751] At the breeder's discretion, they could voluntarily slaughter animals for testing to meet the 4.5 percent standard.[752] All release sites were required to test except for fifth-year and Commission certified-herds.[753]

Chronic Wasting Disease Working Group

In the first half of 2016, the Department hosted numerous stakeholder meetings to obtain consensus on the proposed 2016 chronic wasting disease rules and their implementation.[754] The

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[743] Emergency Adoption Preamble, Deer Breeder/CWD Permit Rules, Texas Parks and Wildlife Department (2015).
[744] *Id*.
[745] *Id*.
[746] *Id*.
[747] *Id*.
[748] Senate Committee on Agriculture, Water & Rural Affairs hearing, Dec. 8, 2015 (Testimony of Clayton Wolf, Texas Parks and Wildlife Department).
[749] *Id*.
[750] *Id*.
[751] *Id*.
[752] *Id*.
[753] *Id*.
[754] Susan Schultz, *Chronic Wasting Disease Stakeholder Facilitated Negotiations Final Report*, the Center for Public Policy Dispute Resolution (April 19, 2016).

Department asked the Center for Public Policy Dispute Resolution at the University of Texas-Austin School of Law to facilitate the discussion regarding the adoption of the new 2016 rules.[755] The stakeholders that participated in the negotiation process included deer breeders, landowners, veterinarians, hunters, wildlife enthusiasts, the Commission, and the Department.[756] On February 17, 2016, some deer breeder trade associations presented an outline for "consensus recommendations" that were approved by Texas Wildlife Association and Deer Breeder Corporation, but opposed by the Texas Deer Association.[757] The consensus recommendations described four different pathways for deer breeders to avoid testing of animals harvested by hunters in the pasture, explained in detail the integration of live animal testing for deer held in breeder pens, and introduced live animal testing options to significantly enhance the ability to detect chronic wasting disease.[758] The following are the four options deer breeders were given under the consensus rules to avoid release site testing:[759]

A. Operate for five continuous years or obtain certified status in the Commission's Herd Certification Program;
B. Test eighty percent of eligible mortalities annually for five consecutive years, and test eighty percent of eligible mortalities each year thereafter;
C. Provide valid ante-mortem test results on eighty percent of the eligible-aged deer in inventory at the time of testing (one-time test), and test eighty percent of eligible-aged mortalities on an annual basis each year thereafter; or
D. Provide valid ante-mortem test results on twenty-five percent of eligible-aged deer in inventory annually and also test fifty percent of eligible-aged mortalities on an annual basis.

The consensus recommendations allow ante-mortem tests to be substituted for post-mortem tests to meet post-mortem testing requirements on a limited basis.[760] If a deer breeder fails to obtain a test from an eligible mortality, the deer breeder may substitute ante-mortem tests for post-mortem tests at a two-to-one ratio to meet testing requirements, provided that post-mortem tests make up at least fifty percent of the annual testing requirement.[761] The consensus recommendations increase the new minimum testing requirement for a herd to be "movement qualified" to fifty percent of eligible mortalities.[762] The release site testing requirements will be in effect for five years following the last release of deer.[763] All trap, transport, transplant deer will be required to have a radio frequency identification device attached to their body prior to being moved.[764] Radio frequency identification device tracking allows for deer to be traced back to their origin.[765] All trap, transport, transplant trapping will be prohibited from any breeder deer

[755] Susan Schultz, *Chronic Wasting Disease Stakeholder Facilitated Negotiations Final Report*, the Center for Public Policy Dispute Resolution (April 19, 2016).
[756] *Id.*
[757] *Id.*
[758] *Id.*
[759] *Id.*
[760] *Id.*
[761] *Id.*
[762] *Id.*
[763] *Id.*
[764] *Id.*
[765] *Id.*

release sites.[766] All interested stakeholder parties agreed to the consensus recommendations, except one deer breeder association group.[767]

In order to resolve an unintended conflict between two components of the stakeholder consensus decision, the Department suggested an option that all release sites test the first fifteen harvested deer.[768] On average last deer season, a class II release site harvested twenty-six deer, which means the sites test an average of roughly fifty to sixty percent of harvested deer.[769] A deer breeder association came back with a counter proposal that would require every breeder to test eighty percent of eligible mortalities, and if they do not meet the requirement that they not be authorized to transport deer.[770] The eighty percent of eligible mortalities would provide the confidence level to meet the concerns of all interested parties.[771] This proposal would be industry-wide and be followed every year moving forward.[772] It would require that fifty percent of that eighty percent must be actual mortalities.[773] The remainder can be made up of live animal testing, but at a ratio of two to one.[774] For example, if a breeder needed four samples then the deer breeder will have to live test eight deer.[775] If the deer breeding facility does not have any deaths, the deer breeder will be required to test 3.6 percent of their live herd. [776]

Two interested parties stated that the proposal offered by the deer breeder association would not be acceptable unless, in the first year of the transition period, all class II release sites test the first fifteen deer harvested to make up for low number of tests from eligible mortalities in pens.[777] After consideration, interested parties concluded that release site testing should be increased from one year to as many as four years to mitigate risk of spreading the disease.[778] Interested parties want to be more diligent in the short-term with the emerging nature of this disease.[779] They also argue that eighty percent testing in the pens becomes very reliable the longer it is in place, but is not suitable in the first few years.[780] Their concern is in allowing deer breeders to avoid hunter harvest testing with only one year of previous testing.[781] The probability of detection is much lower on the front end of the testing period.[782] The proposal included two options: allowing deer breeders to live animal test twenty-five percent of the pen inventory for one year or exempt any deer breeder who has tested eighty percent of the pen mortalities in the

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[766] Susan Schultz, *Chronic Wasting Disease Stakeholder Facilitated Negotiations Final Report*, the Center for Public Policy Dispute Resolution (April 19, 2016).
[767] *Id*.
[768] *Id*.
[769] Chronic Wasting Disease Stakeholder Meeting, Texas Parks and Wildlife Department (2016).
[770] *Id*.
[771] *Id*.
[772] *Id*.
[773] *Id*.
[774] *Id*.
[775] *Id*.
[776] *Id*.
[777] Texas Deer Association Counter Proposal, Chronic Wasting Disease Stakeholder Meeting (May 6, 2016).
[778] Chronic Wasting Disease Stakeholder Meeting, Texas Parks and Wildlife Department (2016).
[779] *Id*.
[780] *Id*.
[781] *Id*.
[782] Chronic Wasting Disease Stakeholder Meeting, Texas Parks and Wildlife Department (2016).

last year.[783] Deer breeders are overwhelmingly opposed to release site testing. The biggest conflict with the deer breeder association proposal is the number of years a breeder will be required to release site test and/or live animal test.[784]

Final Chronic Wasting Disease Rules

In June 2016, the Department adopted amended deer movement regulations for the artificial movement of deer by permit as part of the chronic wasting disease statewide management plan.[785] The approved rules included some major changes from the interim rules.[786] Live animal testing was introduced as an option to detect chronic wasting disease and significantly enhance the ability to detect the disease emerging in nature.[787]

In the interim rules, only fifth-year and certified status Texas Animal Health Commission herds were exempt from no release site testing.[788] The amended rules exempt breeders if the breeder: (i) tests eighty percent of eligible mortalities annually for five consecutive years, and tests eighty percent of eligible mortalities each year thereafter, (ii) submits valid ante-mortem test results on eighty percent of the eligible-aged (at least sixteen months of age or older) deer in inventory at the time of testing as a one-time test, and tests eighty percent of eligible-aged mortalities on an annual basis each year thereafter, or (iii) provides valid ante-mortem test results on twenty-five percent of eligible-aged deer in inventory and tests fifty percent of eligible-aged mortalities on an annual basis.[789]The rules state that the same animal cannot be used for an ante-mortem test within a three-year span.[790] The amended rules also allow ante-mortem tests to be substituted for post-mortem tests to meet testing requirements, but only on a limited basis.[791] If a deer breeder is substituting ante-mortem tests for post-mortem tests it must be on a two-to-one ratio, and post-mortem tests have to at least make up fifty percent of the annual post-mortem testing requisite.[792]

Previously, a herd could be movement qualified as long as twenty percent of eligible mortalities were tested. In the amended rules, the testing requirement increased to fifty percent of eligible mortalities for a herd to be qualified for movement.[793] The release site testing requirements remain in effect for five consecutive hunting seasons following the last release of transfer category two deer.[794] Trap, transport, and transplant sites require a flat rate of fifteen chronic wasting disease samples while the previous requirement was ten percent of the total

[783] Chronic Wasting Disease Stakeholder Meeting, Texas Parks and Wildlife Department (2016).
[784] *Id*.
[785] Emergency Adoption Preamble, Deer Breeder/CWD Permit Rules, Texas Parks and Wildlife Department (2015).
[786] *Id*.
[787] *Id*.
[788] *Id*.
[789] Texas Parks and Wildlife Overview of Chronic Wasting Disease Rules with Amendments, Texas Parks and Wildlife (June 20, 2016).
[790] *Id*.
[791] *Id*.
[792] *Id*.
[793] *Id*.
[794] *Id*.

number moved.[795] All deer that are trap, transport, and transplant must have a radio frequency identification device tag prior to being trapped, transported, and transplanted.[796] Trap, transport and transplant is not prohibited from any deer breeder release site.[797] For a breeding facility to acquire the transfer category two status, it must test fifty percent of eligible-aged mortalities annually.[798] In addition, the class II release site owner is required to test fifty percent of liberated deer in the harvest.[799] If the release site does not have any liberated deer, then the owner is required to test fifty percent of hunter-harvested deer.[800]

A herd that has a trace of the disease or has been exposed to chronic wasting disease is a transfer category three facility.[801] Transfer category three facilities are required to test 100 percent of mortalities according to the Commission's Herd Plan.[802] Consequently, all deer moved from the transfer category three facilities must be tagged with radio frequency identification device tags.[803] The class III release site testing requirements are very restrictive.[804] First, the release site is required to harvest, at a minimum, the number of breeder deer released on that site in that year.[805] Second, the release site owner must test one hundred percent of hunter-harvested deer.[806] Third, the site will retain this categorization until released from the Commission's hold order.[807] Finally, all deer released on a class III release site must be tagged with a radio frequency identification device tag.[808]

The last complete reporting year that allowed for low fence release was 2014.[809] In that reporting year, 1.5 percent of all breeder deer released in 2014 went to low fence release sites.[810] There are an average of approximately 1,300 deer breeders per year, so collectively all sites release between 25,000 and 30,000 deer annually.[811] As conveyed, the percentage of breeder deer actually liberated on low-fence property is fairly low, and most deer breeders will not be affected, as most want to be able to control the deer in their pens, pastures, and release sites.[812]

There was a difference of opinion between the stakeholders regarding the "new" restrictions on movement in connection with contiguous acreage and the prohibition on low-

[795] Texas Parks and Wildlife Overview of Chronic Wasting Disease Rules with Amendments, Texas Parks and Wildlife (June 20, 2016).
[796] *Id*.
[797] *Id*.
[798] *Id*.
[799] *Id*.
[800] *Id*.
[801] *Id*.
[802] *Id*.
[803] *Id*.
[804] *Id*.
[805] *Id*.
[806] *Id*.
[807] *Id*.
[808] *Id*.
[809] *Id*.
[810] *Id*.
[811] *Id*.
[812] *Id*.

fence movement.[813] One stakeholder's opposition to releasing on low-fence sites centers on the risk of spreading the disease.[814] Other interested parties believe a certified herd should be able to release on low-fence since they have the lowest risk of spreading disease.[815] One stakeholder wants as much liberation as possible and opposes the imposition of limits.[816] The newly adopted rules require reporting to the Department if acreage is expanded or fences opened, but movement is not prohibited.[817] The Department wants to insure traceability for release site testing so that the origin of infected deer can be determined.[818] Also, the Department does not prohibit deer breeders from expanding or modifying their acreage, nor does it limit the number of times they may do so.[819] One option that was discussed was whether certified operators that want to release tested deer on low-fence sites should be required to liberate the deer with a radio frequency identification device tag.[820] Stakeholders note, for example, that if a deer is shot on a property in the vicinity of a breeder's property and tests positive for the disease, it is important to be able to trace that deer back to its origin.

CHRONIC WASTING DISEASE RULES SUMMARY

BREEDER TESTING REQUIREMENTS			RELEASE SITE TESTING REQUIREMENTS		
Transfer Category 1	**Transfer Category 2**	**Transfer Category 3**	**CLASS I**	**CLASS II**	**CLASS III**
			TYPE	**TYPE**	**TYPE**
• Texas Animal Health Commission 5th Year/Certified; or • 80% post-mortem testing over last 5 years (minimum of 3.6% of eligible population tested over 5 years); or • --ante-mortem tested 50% of adults (16+ months of age) in herd; **may achieve Transfer Category 1 status once "Not Detected" results are submitted for 25% of the herd, and may maintain Transfer category 1 status if remaining 25% are submitted by May 15, 2017.*	• Not a chronic wasting disease exposed herd, but does not meet Transfer Category 1 requirements.	• Chronic wasting disease exposed herd: testing as provided in Texas Animal Health Commission Herd Plan.	• Received deer only from Transfer Category 1 facilities. • No harvest reporting or testing requirements.	• Received deer from a Transfer Category 2 facility (and did not receive from a Transfer Category 3 facility). • Test first 15 deer harvested each season through the 2018-2019 hunting season. No harvest is required. • Harvest reporting required.	• Test 100% of hunter-harvest. • All deer released must be tagged with Radio Frequency Identification Tag. • Harvest reporting required.

*A deer breeder may substitute ante-mortem tests for required post-mortem tests on a 3:1 basis to meet testing requirements.
*2015/2016 Class II Release Sites will be reset back to Class I if they complied with all interim release site requirements.
*2016/2017 Class II Release Sites that are in compliance with all release site requirements will be reset back to Class I if all Transfer Category 2 facilities that contributed deer during 2016/2017 "test up" to Transfer Category 1 status by ante-mortem testing 50% of the herd by May 15, 2017.
*2016/2017 Class II Release Sites will be reset back to Class I if all the breeder deer liberated after the effective date of the rule (approximately August 15, 2016) and prior to October 1, 2016 are harvested and CWD-tested during the 2016-2017 hunting season, and no additional deer are released from a Transfer Category 2 or Transfer Category 3 facility after October 1, 2016.
*Transfer Categories cease to exist on 4/1/2019. Facilities will either be movement qualified (Movement Qualified) or not movement qualified (Not Movement Qualified); all facilities must test 80% of eligible-aged mortalities occurring each report year to maintain Movement Qualified status as of 4/1/2017.
*Release site testing requirements cease to exist on 4/1/2019, except for sites operating under a Texas Animal Health Commission herd plan and sites where there had been noncompliance with these rules.

[813] Texas Parks and Wildlife Overview of Chronic Wasting Disease Rules with Amendments, Texas Parks and Wildlife (June 20, 2016).
[814] Chronic Wasting Disease Stakeholder Meeting, Texas Parks and Wildlife Department (2016).
[815] *Id*.
[816] *Id*.
[817] Texas Parks and Wildlife Overview of Chronic Wasting Disease Rules with Amendments, Texas Parks and Wildlife (June 20, 2016).
[818] *Id*.
[819] *Id*.
[820] *Id*.

Soft Release Option

The 10-day rule states that breeders are allowed to release their captive bucks at least ten days prior to the beginning of hunting season without having to devalue their antlers.[821] There is a "soft release option" where deer are released from their pens into a "pasture release".[822] Prior to the rise of chronic wasting disease, some breeders would skirt this requirement by using the pasture release site for breeding purposes and to hold deer until they were released for hunts.[823] Once chronic wasting disease became a more serious problem, this practice became problematic as it made tracing deer more difficult.[824]

A ranch often has multiple enclosed pastures (there is no minimum limit to the size) for different purposes in managing deer. They may be used in combination with trap, transport, transplant, and deer management permits. The Department's purpose is to try to address this issue by closing a loophole. Again, the amended rules state that a release site owner may notify the Department of a modification to the acreage of a registered release site and the release site requirements will expand to the new acreage.[825] A breeder can open gates and take down fences as long as he notifies the Department of the change in the configuration of the release site.[826]

There are legitimate reasons for pasture release sites, such as allowing deer that have never lived outside a pen to learn to live in the wild, find food and water, and avoid predators. Pasture release sites are used by breeders to keep an eye on their deer, protect them from predators, prevent bucks' antlers from being broken by other deer, and to allow their release in an orderly manner during hunting season. However, this is a practice that can complicate disease traceability. The Department pointed out that deer breeders have the authority to amend their release sites and can, for example, remove or adjust a fence so that their entire property is within their release site.[827] Whatever action a deer breeder takes, the permit must accurately describe the actual release site.[828] The Department does not prohibit breeders from opening gates, but if they are moving deer, there has to be some confirmation of traceability.[829] The release site provisions outlined six rules:

1. A harvest log must be maintained on site and each deer harvested must be entered in the log the day of harvest – applies to Class II and Class III release sites, and deer management permit sites that receive transfer category two deer.
2. All breeder deer release sites must be surrounded by a seven foot high fence, and the landowner must ensure all deer remain on the release site.

[821] Texas Parks and Wildlife Overview of Chronic Wasting Disease Rules with Amendments, Texas Parks and Wildlife (June 20, 2016).
[822] *Id*.
[823] *Id*.
[824] *Id*.
[825] *Id*.
[826] *Id*.
[827] *Id*.
[828] *Id*.
[829] *Id*.

3. Failure to comply with release site testing requirements will result in release site testing requirements carrying forward until testing requirements are fulfilled.
4. Failure to comply with release site testing requirements will make the release site ineligible to receive a deer management permit or additional breeder deer for release until testing requirements are fulfilled.
5. Liberated deer must have access to the entire acreage listed on the release site registration form, except that deer may be excluded from areas for safety reasons, or for the purpose of protecting crops, orchards, ornamental plants, lawns, etc.
6. A release site owner may notify the Department to modify the acreage of a registered release site and the release site requirements will expand to the new acreage.[830]

Stakeholders point out that deer are a public resource and the breeding, transporting, and hunting permits issued by the Department grant a revocable privilege, not a right. These stakeholders claim that the Department has the responsibility to ensure the health of this public resource and does so through its issuance of permits and the enforcement of its rules, while giving due regard to deer breeders to pursue their business interests.

Recommendation

The committee makes the following recommendation to the 85th Legislature regarding chronic wasting disease:

- The Legislature should:
  - Monitor the effects of the rules adopted by the Texas Parks and Wildlife Department regarding chronic wasting disease and, if necessary, make changes to those rules by statute;
  - Acknowledge that early detection and prevention will help mitigate the spread of chronic wasting disease, which is still relatively new to the state; and
  - Recognize that deer are a public resource that when destroyed by disease causes hardship and economic loss.

[830] Texas Parks and Wildlife Overview of Chronic Wasting Disease Rules with Amendments, Texas Parks and Wildlife (June 20, 2016).

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Charge No. 6

Study the economic benefits the Texas Department of Agriculture's Market Development Services provide to the state through promoting Texas Agricultural products. Review the current marketing services and strategies available to Texas producers and determine additional resources necessary to increase the Market Development Services capabilities. Make recommendations for legislative action, if needed.

The committee took no action on this charge.

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Charge No. 7

Monitor the implementation of legislation addressed by the Senate Committee on Agriculture, Water & Rural Affairs during the 84th Legislature, Regular Session, and make recommendations for any legislation needed to improve, enhance, and/or complete implementation. Specifically monitor the Texas Water Development Board's process in the identification and designation of brackish groundwater zones.

The committee took no action on this charge.