Groundwater in Texas:

Policy Recommendations for the

83rd Legislative Session

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Executive Summary

As the 2013 legislative session opens, water is on the minds of policymakers, media and the public. Drought continues to haunt many areas of Texas, water battles between municipal and agricultural interests are heating up, and discussion about allocating state funding to water supply projects is intensifying. Declining lake levels and dry riverbeds are obvious to everyone, and thus much of the attention has been focused on the state's surface water resources. But, looming in the background are difficult legal and management issues regarding groundwater.

Groundwater already accounts for about 60 % of total water use in Texas. Sensible management of this resource is critical to the present and future economy. Moreover, flows out of groundwater aquifers—through seeps and springs—sustain the flow of rivers and help fill reservoirs in many parts of the state. Withdrawal of groundwater for use by cities, farms, and industries must be balanced against the need to maintain suitable aquifer levels and protect the contribution of groundwater to surface water bodies.

Recent court rulings, however, pose new challenges for efficient and sustainable groundwater management in Texas. In *Edwards Aquifer Authority v. Day*, the Texas Supreme Court held that landowners have an absolute right of ownership in groundwater beneath their land. This ruling raised as many questions as it answered, though it did clearly leave room for management of groundwater resources by local groundwater districts or other government entities. *Day* is not the only case with major potential ramifications for groundwater management. In *Edwards Aquifer Authority v. Bragg,* which is currently on appeal to the 4th Circuit Court of Appeals in San Antonio, a district court found that pecan farmers were entitled to over $ 730,000 in compensation for regulatory "takings" when the Edwards Aquifer Authority limited the amount of water the farmers could pump.

The full ramifications of these two important legal cases may not be known for some years. In the meantime, however, there are a number of actions that the legislature should consider in 2013 to ensure that groundwater resources in Texas can be managed sustainably and in coordination with the state's surface water resources. Seven recommendations are discussed in this report:

1. **Enact a 2-year delay in the current round of regional water planning**. This delay would allow time for groundwater management areas (GMAs) to develop revised "desired future conditions" (DFCs) that can then be fully integrated into the planning process.

2. **Establish a Groundwater District Enhancement Fund**. This fund could be established with additional funds currently being proposed for the next two years of the regional water planning process. It could be managed by the Texas Water Development Board and used to assist groundwater districts with developing the science needed for development of DFCs and revisions of district management plans.

3. **Direct state agencies to significantly expand their efforts to characterize and model the interconnection of groundwater and surface water areas of the state with significant known interconnection**. While some research and model development has been carried out by the Texas

Water Development Board to characterize ground water and surface water interaction, much more needs to be done to equip decision-makers with the appropriate tools for scientifically sound management of our limited water resources.

4. **Ensure that existing surface water rights are protected in decisions regarding groundwater management and permitting**. While the Texas Water Code does currently provide groundwater managers with some discretion to consider the effects of their decisions on surface water resources in general, there are few provisions that ensure ground water management districts will consider the potential adverse effects of their decisions on existing surface water rights and minimize those effects. As groundwater use increases, protection of surface water rights that depend on flows from springs and seeps will become increasingly important. Through amendments to Sections 36.1071(a)(4), 36.108(d)(4) and 36.113(d)(2), the Legislature should direct groundwater conservation districts located in areas where there is significant contribution of seeps and springs to surface flow to avoid adverse effects on surface water rights when developing management plans and desired future conditions and when issuing new groundwater pumping permits.

5. **Protect current groundwater district management authority**. In light of the potential increase in "takings" actions against groundwater districts that may be generated by the holdings in the *Day* and *Bragg* cases, the Legislature should ensure that groundwater districts maintain their current statutory authority against attack from entities that may seek to pump and export large amounts of groundwater from rural areas to cities. The key elements of that authority, especially after *Day*, are: (1) the ability of districts to issue pumping permits for limited terms, subject to review and renewal and (2) the ability to adjust conditions on existing permits as new pumping permits have to be issued. In addition, current law appropriately provides that groundwater districts may recover attorneys' fees when they win a lawsuit brought against them.

6. **Protect groundwater recharge**. Aquifers in some areas of the state are recharged via surface water flows. While current law requires the Texas Commission on Environmental Quality (TCEQ) to consider the impact on groundwater when issuing a new or amended surface water right, TCEQ rarely has the information it needs to do a meaningful evaluation. Section 11.151 of Texas Water Code should be amended to require that any application for significant new or amended surface water right permits or for an inter-basin transfer include a study of the potential impacts on groundwater recharge.

7. **Clarify the distinction between underflow and groundwater.** Chapter 11 of the Water Code defines state water to include the "underflow . . . of every flowing river, natural stream and lake . . ." However, current law and TCEQ rules should be clarified to ensure that the public interest in underflow is not adversely affected by groundwater permitting decisions and to enhance coordination between TCEQ and groundwater districts in dealing with underflow.

Introduction

As many recent reports, media articles and first-hand accounts have demonstrated, severe drought and population increases have combined to place significant stress on surface water and groundwater resources in Texas, particularly the central, southern and western portions of the state. The evolving picture of Texas groundwater resources is troubling: some aquifers are being mined (pumping exceeding recharge on an annual basis), threatening their future stability; farm and ranch wells are going dry; low reservoir levels are pushing more communities to turn to groundwater; and groundwater pumping in some aquifers is reducing the surface water flows in springs, streams and rivers. Overlying these issues are significant debates about aquifer condition and water availability, interaction of groundwater and surface water and other scientific and legal issues.

A few examples help illustrate the urgency of the situation:

- The Simsboro Aquifer in the region between Bastrop and College Station (in Bastrop, Lee, Milam, and Burleson counties) has been eyed for substantial increased pumping and inter-basin piping of groundwater to the growing I-35 corridor between Austin and San Antonio. Some segments of the Colorado and Brazos rivers in this region and gain recharge water (base flows) from the aquifer. There is significant scientific dispute over how much groundwater may be pumped on a sustained basis without harming local communities, existing groundwater permittees, or reducing base flows to the rivers, which could impair the reliability of surface water right holders in the Colorado and Brazos basins.
- The Edwards-Trinity Aquifer in Kinney and Val Verde counties is the target of proposals for major increases in groundwater pumping for export to the San Antonio metropolitan region. Proponents of the exports have argued that more than 80,000 acre-feet of groundwater is available for annual pumping in Kinney County. However, in defending its "desired future conditions" for this aquifer, Groundwater Management Area 10 presented evidence that only 16,000 acre-feet could be pumped on an annual basis without drying up Las Moras and other springs essential to the region.
- During drought conditions, spring flows from Comal and San Marcos springs comprise a significant percent of flows in the Lower Guadalupe system, supporting endangered species and protecting surface water rights in the river. The *Edwards Aquifer Authority v. Day* Supreme Court decision now threatens to undermine what had been previously considered a reasoned and reliable approach to managing groundwater pumping from the Edwards Aquifer, even as indicator wells in that system have reached record lows.

- In far west Texas, where the once tremendously productive Comanche Springs is now largely dry, farmers and ranchers are battling proposals to export groundwater from the Fort Stockton area to Midland.

This report focuses on a number of actions that the legislature should consider in 2013 to ensure that groundwater resources in Texas can be managed sustainably and in coordination with the state's surface water resources, even in light of the significant legal uncertainties posed by the *Day* case and other pending litigation.

While this report focuses on groundwater policy recommendations, the above examples also serve to demonstrate that the state should recognize the inextricable links to our overall approach to water management and funding priorities in Texas. Improved water use efficiency in growing metropolitan areas is absolutely critical to avoiding rural/urban conflicts over groundwater. Water efficiency measures generally provide the most cost-effective method of meeting new demands, often at lower energy costs than long-distance pipeline transport projects. Increased efficiency helps cities avoid additional capital and operation and maintenance costs associated with expanding water and wastewater treatment plants, reducing the state's overall infrastructure funding burden.

In short, by prioritizing new investment in water efficiency measures the state can buy significant time to develop the science and groundwater management tools necessary to protect our urban *and* rural economies and maintain healthy springs, streams and rivers.

Implications of Recent Court Rulings

In February 2012, the Texas Supreme Court issued its long-awaited ruling in *Edwards Aquifer Authority v. Day.*[1] The case involved a challenge to the Edwards Aquifer Authority's (EAA) denial of a groundwater pumping permit to a landowner within the EAA boundaries. The landowner had requested a permit to pump 700 acre feet of groundwater per year for irrigation. The EAA denied the permit, relying on statutory provisions that limited permits to those who beneficially used groundwater during the period of June 1, 1972 to May 31, 1993. The *Day* plaintiffs did not meet this historical use criteria.

The statutory provisions relied on by the EAA form the cornerstone of the state's approach to "cap" overall Edwards Aquifer pumping, with the goal of ensuring that flows at San Marcos and Comal Springs are protected. Those flows both help fulfill substantial amounts of existing surface water rights in the San Marcos and Guadalupe River systems and support fish and wildlife, including endangered species.

Table 1 provides a very brief summary of what the Court held in *Day* and what it did not hold. As evidenced by this summary, there are many unanswered questions that will likely play out in future court cases, leaving a fairly high degree of uncertainty for the EAA and groundwater districts in many other areas of the state.

The *Day* case was remanded to the district court to determine whether the actions of the EAA did, in fact, result in a compensable regulatory "taking" and, if so, what level of compensation should be awarded to the landowner.

One district court has already decided in favor of a landowner plaintiff in another regulatory takings case against the EAA. In *Bragg v. Edwards Aquifer Authority*, the Medina County district court held that the Braggs were entitled to compensation of $ 732,493 for the EAA's failure to issue them requested ground water pumping permits.[2] The Braggs had requested permits for two pecan farms, totaling about 625 acre feet/year (and based generally on 6 acre feet per acre of irrigated land.) The EAA denied one permit because there had been no pumping within the statutory "historical use" period. For the other property, the EAA limited the permit to 120 acre feet per year, based on the 2 acre-feet/year standard allocation provided in its rules.

[1] *Edwards Aquifer Authority v. Day,* 369 SW3d 814 (Texas 2012). A full copy of the opinion can be found at http://caselaw.findlaw.com/tx-supreme-court/1595644.html .

[2] *Bragg v. Edwards Aquifer Authority,* Cause No. 06-11-18170-CV, 38th District Court, Medina County, Texas (May 7, 2010).

The EAA appealed the district court ruling, and the case is currently before the 4th Circuit state court of appeals in San Antonio.[3] The City of San Antonio has filed an amicus brief in support of the EAA, noting its strong dependence on the current system of management for the Edwards.

The outcome of *Bragg* (which is likely to go the Texas Supreme Court no matter how the court of appeals rules) and the *Day* remand results could both have significant implications for the future of groundwater management in Texas.

[3] *Edwards Aquifer Authority v. Bragg*, Case No. 04-11-00018-CV. Briefs available on-line at http://www.search.txcourts.gov/Case.aspx?cn=04-11-00018-CV.

Table 1. Edwards Aquifer Authority v. Day

What the Supreme Court Did (and Did Not) Say About Groundwater in Texas

Summary: In Texas, groundwater is owned in place by the overlying landowner, but it is subject to reasonable regulation by the state (through groundwater districts, for example). What is a reasonable regulation and what will constitute a "compensable taking" is still not clear. Eventual rulings in the remand of the *Day* case and the pending case in the court of appeals, *Bragg v. Edwards Aquifer Authority*, are likely to shed additional light on the unanswered questions about reasonable regulation vs. compensable taking.

What the Court Did Say

- The Court did hold that groundwater is owned in place by the overlying landowner. "*Each owner of land owns separately, distinctly and exclusively all the oil and gas under his land and is accorded the usual remedies against trespassers who appropriate the minerals or destroy their market value…We now hold that this correctly states the common law regarding the ownership of groundwater in place."*
- The Court did hold that, despite this private ownership of groundwater, the state, through groundwater districts like the EAA and others, has the power to regulate groundwater use. *"In our state the landowner is regarded as having absolute title…to the oil and gas 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….We now hold that this correctly states the common law regarding ownership of groundwater in place." The Court also extensively discussed the legislatively-conferred groundwater district powers emanating from Section 59 of the Texas Constitution (the Conservation Amendment).*
- The Court did hold that state regulation to limit groundwater use based *solely* on historical use such as that applied in the Edwards Aquifer is not valid. (i.e. Districts cannot limit groundwater pumping permits to only those who can demonstrate prior beneficial use during some specific time period). "*…a landowner cannot be deprived of all beneficial use of the groundwater below his property merely because he did not use it during an historical period and supply is limited."*

What the Court Did Not Say

- The Court did not say that groundwater districts have no power to regulate groundwater use and production. Rather, the court identified the question as whether the exercise of those powers results in a compensable taking. *"Today we have decided that landowners do have a constitutionally compensable interest in groundwater, and we come at last to the issue not presented [in a previous case]: whether the EAAA's [Edwards Aquifer Authority Act] regulatory scheme has resulted in a taking of that interest." "…groundwater regulation need not result in a takings liability. The Legislature's general approach to such regulation has been to require that all relevant factors be taken into account. The Legislature can discharge its responsibility under the Conservation Amendment without triggering the Takings Clause."*
- The Court did not find that the EAA regulation of Day was a compensable taking. Instead, the court agreed that summary judgment against Day's takings claims was improper and required remand of the case to the district court for further evidentiary proceedings. "*A full development of the record may demonstrate that EAAA regulation is too restrictive of Day's groundwater rights and without justification it the overall regulatory scheme."*
- The Court did not provide clear standards for determining how much groundwater a particular landowner may own. This is one of the major unanswered questions post-Day and its resolution may be different in different aquifers.
- The Court did not provide detailed guidance on how to determine when a regulation is a "taking" because of "interference with reasonable investment backed expectations." For example, in assessing whether a groundwater district regulation constitutes a taking, the *Day* opinion did not indicate whether the analysis of the damages should be based on the change in value of the *groundwater alone* or on the change in value of the entire property (*land plus groundwater*).

Recommendations

Enact a 2-year Delay in the Regional Water Planning Process to Ensure Coordination with New Groundwater "desired future conditions"

Under current law, the state water plan is to be updated every five years. Essentially a compilation of 16 regional water plans, the state plan projects demand for and supply of groundwater and surface water. Regional water planning groups (RWPGs) must now use the desired future conditions (DFCs) developed by the groundwater management areas (GMAs) as one consideration in the planning process. [4] The DFCs can be used in determining how much groundwater will be available to meet future needs ("modeled available groundwater" or MAG). In areas of the state where groundwater pumping may affect surface water flows, the DFCs may also affect the amount of surface water projected to be available for existing and projected new uses.

Unfortunately, the schedules for development of regional water plans/state water plan and new DFCs are disconnected. The current law and timeframe would result in the following:

March 2015: "Initially prepared plans" due from regional water planning groups.
September 2015: Planning groups adopt and submit final plans to TWDB
September 2015: New DFCs must be proposed by GMAs
Fall 2015: TWDB reviews regional plans
January 2017: New state water plan due to Legislature

Given the expense and effort involved in updating the regional water plans and the state plan, relying on the existing DFCs, which are likely to change soon, is an inefficient use of time and resources.

If the due date for the next set of regional plans were to be delayed to 2017 (2-year delay), the RWPGs would instead have the opportunity use the new DFCs currently being developed. This should result in a much more realistic view of groundwater supply and demand. The revised schedule would be:

September 2015: New DFCs must be proposed
March 2017: "Initially prepared plans" due from regional water planning groups
September 2017: Planning groups adopt and submit final regional plans to TWDB
Fall 2017: TWDB reviews regional plans
January 2019: New state water plan due to legislature

[4] See, e.g., Carolyn Brittin, "State Water Plan and Regional Water Planning Group Updates from the Groundwater Perspective," presented at the Texas Groundwater Summit, September 10, 2012.

A two-year delay in the deadline for the revised state plan does not mean the RWPGs would halt work over the next two years. Instead they could continue work with the funding already available under current appropriations ($ 9.1 million).[5] The RWPGs could use the next two years to focus on the new statutory requirements that RWPGs report on implementation of proposed projects *and to* look at other important issues, including how to incorporate environmental flow standards and strategies arising out of the Senate Bill 3 process. Once the RWPGs receive the new DFCs (in the fall of 2015) they could prepare updated plans. The Legislature could award any additional funds needed by the RWPGs in the 2015 session.

Create a Groundwater District Enhancement Fund[6]

While local districts are Texas' "preferred method" of managing groundwater,[7] they do not receive general state funding. Instead, districts use a variety of mechanisms to fund their operations, depending on their authorizing legislation. Some districts may impose ad valorem taxes on property within the district. Others have to depend on permitting fees for new wells or "production fees" (a small amount per acre foot of groundwater pumped from a regulated well within the district).

However, many districts struggle to raise sufficient revenue to cover their vital, day-to-day operations. Now, they are faced with a fairly arduous and scientifically complex process of developing new desired future conditions.[8] At the same time, the Texas Water Development Board had to cut funding for its groundwater science support operations.[9]

To remedy this problem and ensure that local districts have sufficient resources to develop scientifically sound DFCs, the legislature should create a Groundwater District Enhancement Fund. This fund could be managed by the Texas Water Development Board or other appropriate state agency, likely without requiring new state full-time employees (FTEs). It could be set up to accept proposals for funding from groundwater management areas or individual districts that need assistance with developing the data, models or other information necessary to set scientifically sound DFCs.

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[5] Memo from TWDB staff to Board, July 11, 2012. TWDB **awarded $ 3.6 million** to the RWPGs for this next round of planning. It also issued a **"request for applications" for an additional $ 5.5 million in appropriated FY 12-13 funds**, to be divided among the different regions according to need and issues.

[6] This idea was originally put forth in a 2009 report from the Environmental Defense Fund, Down to the Last Drop.

[7] Texas Water Code, Section 36.0015.

[8] See, e.g. Stacey A. Steinbach, "Groundwater Management Update," presented at Texas Water Conservation Association Annual Meeting, March 2012.

[9] Texas Water Development Board, FY 2014-2015 Legislative Appropriations Request, August 2012 (budget cuts required the elimination of 19 full time employees in the groundwater resource area, "significantly hindering the agency's ability to provide data and technical assistance for water planning and management of groundwater.")

The TWDB has proposed that an extra $ 4 million in FY 14-15 be appropriated to the regional water planning process, on top of the $ 9 million in appropriated funds.[10] This requested appropriation could go instead to set up the Groundwater District Enhancement Fund.

Direct Agencies to Develop Better Characterization of Groundwater and Surface Water Interconnections

A 2005 report prepared for the Texas Commission on Environmental Quality found that, based on available data, most large streams in Texas gain, rather than lose, water during low flow conditions.[11] The report concluded that discharge of groundwater from aquifers through seeps and springs provided more than half of river flows throughout most of Texas during dry times.[12] Examples of areas of the state with high groundwater/surface water interconnectivity include the Hill County and Edwards-Trinity Plateau (encompassing the headwaters of the Pecos, Devils, Nueces, Frio, Sabinal, Medina, Guadalupe, Llano, San Saba, Pedernales and Blanco rivers); the lower Brazos River; the lower Colorado River and the Canadian River in Hemphill County.[13]

Despite the evidence of important interconnections, many areas of Texas lack sufficient data and modeling tools to carefully consider such interconnection in planning, permitting and management decisions. In 2007, TWDB staff recommended that the state focus on three areas of necessary improvement:

> *Measuring streamflow gains and losses; identifying better ways to consider surface water-groundwater interaction in the groundwater availability models; and identifying appropriate ways to connect [surface] water availability and groundwater availability models.*[14]

The groundwater availability models (GAMs) are used to determine the DFCs for groundwater. The surface water availability models (WAMs) are used in evaluating surface water right permit requests, regional water planning and the Senate Bill 3 environmental flows process. Unfortunately, these models are generally not linked and thus there are substantial

[10] Memo from TWDB staff to Board, July 11, 2012, supra n. 5 and TWDB LAR, supra n. 9, Exceptional Item No. 4C, p. 111.
[11] Scanlon, B.R. et al Groundwater-Surface Water Interactions in Texas, Bureau of Economic Geology, University of Texas, August 2005.
[12] During times of rainfall, surface runoff dominates flows.
[13] See Down to the Last Drop, supra, n. 6, for more detailed discussion of these interconnectivity hot spots.
[14] Mace, Robert, et al, *Surface Water and Groundwater—Together Again?* Presented at the State Bar of Texas 8th Annual Changing Face of Water Rights in Texas, June 28-29, 2007; see also Down to the Last Drop, which made a number of similar recommendations before the 2009 legislative session.

uncertainties about the reliability of the models in areas of the state where there is significant surface water/groundwater interconnection.[15]

As use of both surface and groundwater increases, and with the persistence of drought, there is a much more pressing need to better understand these interconnections and reduce uncertainties in the models used for planning, permitting and management decisions.

The legislature should direct TWDB and TCEQ to develop and execute a clear plan for characterizing groundwater/surface water interactions in key areas of the state (i.e. those with known significant degree of interconnection and increasing use of either surface or groundwater), as well as for improving the connection between GAMs and WAMs. The agencies should be directed to consult with the Texas Parks and Wildlife Department, regional water management entities such as river authorities and groundwater districts, university researchers and interested stakeholders in formulating a draft plan. The draft plan should be presented for public comment by mid-fall 2013, with implementation beginning in early 2014.

Ensure that Existing Surface Water Rights are Protected in Decisions regarding Groundwater Management and Permitting

Chapter 36 of the Texas Water Code currently provides avenues by which groundwater managers have discretion to consider the effects of their actions on surface water resources and some obligations to consider surface water rights.[16] However, further clarifications may be necessary to ensure that groundwater permitting decisions do not adversely affect existing surface water rights.

There are at least three ways that existing law should be strengthened to better protect existing surface water rights:

Section 36.1071(a)(4) requires a groundwater district to "coordinate with surface water management entities on a regional basis" in developing the district's management plan. It also requires that the management plan's goals "[address] conjunctive surface water management issues." Protection of existing surface water rights should be enhanced by requiring that district management plans also "ensure the reliability of surface water rights that depend, in whole or part, on groundwater that is interconnected with stream flow."

[15] Mace, et al, supra, n. 14. An exception is the Edwards Aquifer area and contribution of flows to the San Marcos and Guadalupe Rivers due to the high level of effort to manage that system in light of federal endangered species restrictions.

[16] See Mace, et al, supra n. 14 and Miller, Andrew, "New Lawsuit Against TWDB Highlights Physical and Legal Relationship between Groundwater and Surface Water", Newsletter of the Texas Water Conservation Association, October 2012.

Section 36.108(d)(4) provides that DFCs must be developed considering "other environmental impacts, including impacts on spring flow and other interactions between groundwater and surface water." This section should be amended to include consideration of impacts on "surface water rights dependent in whole or in part on spring flows."

Section 36.113(d)(2) provides that when considering a request for a groundwater pumping permit a district shall consider whether "the proposed use of water unreasonably affects existing groundwater and surface water resources or existing permit holders…" This language could be clarified to make it clear that a district should consider the effects on both existing groundwater *and* surface water right holders. Moreover, the "unreasonably affects" standard is vague. The language should be strengthened to protect the historical reliability of the existing surface water rights, to the extent that reliability depended on groundwater inflow to the surface water body. Given the uncertainty in modeling and the lack of extensive data on groundwater/surface water interconnections in many areas of the state, the statute might be structured in such a way that a surface water right holder would have the burden to raise the reliability issue in a permitting action at the district and provide some threshold of evidence to show potential adverse effect of the proposed groundwater pumping.

Protect Current Groundwater District Management Authority

As discussed above, the *Day* case poses a number of uncertainties for groundwater districts beyond the EAA. The *Day* case throws enormous doubt on the ability of a district to regulate solely on the basis of historic use. Some districts are responding to this uncertainty by issuing permits to all who request them, but either limiting the term of the permit or allowing the permit to be periodically reviewed and changed by the district as necessary to achieve legitimate management goals. The district then monitors the effect of the permits on aquifer levels and/or desired future conditions. If the pumping causes water levels to drop too low, the district will revise the permit terms, either in line with permit conditions or in an across-the-board reduction for all permit holders.[17]

The Legislature should fully preserve the ability of groundwater districts to use these "adaptive management" approaches. If the districts lost this tool, there is little they could do to effectively manage groundwater in light of the holding in *Day.*

Another important aspect of groundwater district authority is their ability to recover attorneys' fees if they prevail in a lawsuit brought against them. (Texas Water Code Section 36.066(g)). This provision helps minimize the possibility that districts would be bankrupted by lawsuits, whether from those alleging "takings" as a result of permit restrictions or from affected parties

[17] For a discussion of this type of approach in one district, see Gary Westbrook, "Management of Groundwater Resources in the Central Carrizo-Wilcox Area," presented at the Texas Groundwater Summit, August 29, 2012.

that do not believe the district is doing enough. Given the precarious financial situation of most districts, the legislature should maintain this important provision.

Protect Groundwater Recharge

Section 11.151 of the Texas Water Code provides that the TCEQ is required to "consider the effects on groundwater and groundwater recharge" in evaluating applications for new or amended surface water rights permits.[18] This provision is a clear recognition by the Legislature that surface water flows can contribute water to underlying aquifers. However, the TCEQ rarely has sufficient information to conduct a useful evaluation. TCEQ regulations do not require the surface water right applicant to provide information on the interconnection of surface and groundwater, the extent to which the surface water sought in the permit currently contributes to aquifer recharge, or any other information that might be relevant to TCEQ's implementation of this statutory directive.

Section 11.151 of Texas Water Code should be amended to require that any application for a new or amended surface water right permit for a significant amount of water or for an inter-basin transfer must include a study of the potential effects of granting the permit on groundwater recharge.

Define "Underflow"

Section 11.021(a) of the Texas Water Code defines state water to include "underflow…of every flowing river, natural stream, and lake…" However, neither Chapter 11 nor Chapter 36 of the Water Code defines "underflow."

The TCEQ does define underflow in its rules, for purposes of regulating the use of surface water. It does not have a definition for use by groundwater districts, however, or a process to assist districts in resolving questions of whether water that is a subject of a pumping permit application is groundwater or underflow.

Current law and TCEQ rules should be clarified to ensure that the public interest in underflow is not adversely affected by groundwater permitting decisions and to enhance coordination between TCEQ and groundwater districts in dealing with underflow.

[18] This provision was added by Senate Bill 1 in 1997.