



Research Report

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Open markets will meet Texas' water needs

Executive Summary

The Texas Water Development Board (TWDB) 2007 State Water Plan calls for the construction of 16 reservoirs across Texas in order to help meet the state's increasing demand for water. This demand, TWDB argues, will have increased by 2060 such that 8.8 million additional acre-feet of water will be required annually. This represents a 50% increase from the 17 million acre-feet that are currently consumed each year. Senate Bills 3 (80R) and 675 (80R) designate 19 sites which would be suitable for reservoir construction.

However, TWDB's projection for Texas' water needs is unlikely to be definitive. In 1968, for example, TWDB estimated that Texas would require 21 million acre-feet of water per year by 1990. Actual water use in 1990 was 15.7 million acre-feet, and, at 17 million acre-feet, current usage is still well short of the 1968 estimate.

Therefore, large-scale reservoir construction in response to TWDB's projections should be treated cautiously. A construction project of this enormity will cost billions of dollars and presents a significant threat to private property rights because it requires the condemnation of nearly 250,000 acres (an area the size of the City of Dallas).

Instead of tying the state to such a large and costly project, legislators should seek to create a free market for water in Texas that could meet Texas' growing water needs without an enormous taxpayer investment. This report includes a range of specific recommendations to achieve that end, including reforming groundwater conservation districts, creating incentives for regional water projects, and requiring that municipalities consider unsolicited bids for water projects.

Recommendations

Before Texas embarks on a massive reservoir-building plan as envisioned by Senate Bill 3, lawmakers should consider three things:

1. Texas Water Development Board (TWDB) estimates of water usage have been consistently overstated. They are not a reliable guide for water demand.
2. Permitting private investment in the acquisition and delivery of water would increase gross state product (GSP) while not adding to the state debt burden.
3. The reservoir plan would require the acquisition of 244,000 acres, which is the equivalent of condemning the entire City of Dallas.

The Legislature should amend the Water Code to ensure that future water needs can be met by creating a less-restricted environment for the use of private capital and investment in the water market. This can be facilitated by including a statement of legislative intent in the Water Code, as well as other recommendations detailed in this paper (starting on page 12.)

Background

Between 1950 and 2000, the population of Texas grew from 13 to 21 million. Projections show that the state's population is expected to more than double to 46 million by 2060. According to TWDB, Texas currently consumes around 17 million acre-feet of water per year. TWDB projects that 8.8 million acre-feet of additional water will be required by 2060.¹ Given that this projected increase accounts for a reduction in available supply due to "accumulation of sediments in reservoirs and the depletion of aquifers," TWDB predicts that the state will require 21.6 million acre-feet of water in 2060.²

TWDB's 2007 State Water Plan calculates that without appropriate steps being taken to increase the supply of water,

Texas businesses and workers could lose approximately \$9.1 billion in 2010. By 2060, this figure increases to roughly \$98.4 billion. Forgone state and local business taxes associated with lost commerce could amount to \$466 million in 2010 and \$5.4 billion in 2060. Lost jobs total approximately 119,000 in 2010 and 1.2 million in 2060.³

In short, over the coming 50 years demand for water in Texas is going to exceed currently available supply. However, legislators should be wary of the scale of these long-term projections; they should be read critically and considered skeptically.

¹ Texas Water Development Board, 2007 State Water Plan, November 2006.

² Ibid.

³ Ibid.

TWDB’s 1984 State Water Plan predicted that the amount of water required in the year 2000 would range from 17.3 million to 25.4 million acre-feet.⁴ In fact, water use in 2000 was just 16.9 million acre-feet.⁵ TWDB’s latest projection that the state will require 21.6 million acre-feet of water by 2060 is still less than the maximum it predicted for the year 2000. Indeed, in 1968, TWDB’s report projected that the state would need 21 million acre-feet by 1990. Almost two decades later, Texas is still well short of this prediction.

TWDB Projections⁶

Projection	For	Estimated Use*	Actual Use*
1968	1990	21.0	15.7
1984	2000	17.3-25.4	16.9
2007	2060	21.6	TBD

**Millions of acre-feet per year*

It is clear that as the state’s population and manufacturing base grows, demand for water will also increase. However, as an analysis of previous state water plans shows, the magnitude of the increased water demand as projected by TWDB has never been definitive, or, for that matter, close to the mark.

This record should be borne in mind as legislators seek to address ways to meet the state’s growing demand for water.

Water policy in Texas also highlights a tension between the generally water-rich rural regions of the state and the drier, more populous urban areas. Then-Agriculture Commissioner Susan Combs pointed out in 2006 that:

[T]here is a tension between the growing urban need for water and rural landowner rights...this tension is going to get worse until a rational market system is found, a rational system that does not leave the rural guy without water.⁷

The way in which the Water Code governs use of surface and groundwater is the central factor explaining the discord between urban and rural regions. Many of the rules governing the extraction, transfer, and use of surface and groundwater in the Water Code obstruct the operation of a market system as described by Commissioner Combs.

New Reservoir Construction

TWDB published its “Reservoir Site Acquisition Study” draft report in December 2006. The report assesses how the growing demand for water in Texas could be met through the

⁴ Texas Water Development Board, 1984 State Water Plan.

⁵ Minutes to June 20, 2001 TWDB Board Meeting; http://www.twdb.state.tx.us/publications/agenda/2001%20Minutes/06_20_01minutes1.htm

⁶ Texas Water Development Board, “Summary Historical Water Use 2000” (2003); and Texas Water Development Board, Water For Texas 2002 (January 2003).

⁷ Texas Water Resources Institute, “Champions of Texas Water,” 2006.

construction of new reservoirs. Specifically, TWDB recommends 16 sites the Legislature could designate as “unique reservoir sites.”⁸ Under Section 16.051 of the Water Code, this designation prevents “a state agency or political subdivision of the state [from obtaining] a fee title or an easement that would significantly prevent the construction of a reservoir” in the area.

Two bills filed by Sen. Kip Averitt (R-Waco) in the current legislative session, Senate Bill 3 (80R) and Senate Bill 675 (80R), take up TWDB’s reservoir site recommendations. S.B. 3 includes the reservoir designations as part of a broad range of reforms to the state’s water policy, while S.B. 675 deals exclusively with the designation of 19 unique reservoir sites (three more than recommended by TWDB).

Large-scale reservoir construction projects are problematic. Reservoirs are extremely costly, take many years to complete, and present a considerable threat to private property rights.

TWDB’s analysis reveals that site acquisition alone for the 16 reservoirs it recommends would cost around \$412.6 million.⁹ This figure does not include:

- the actual cost of reservoir construction;
- the costs of mitigation for negative environmental effects;
- the cost of “transmission from the source reservoir to the ultimate user; nor,
- treatment to drinking-water standards.”¹⁰

TWDB calculates that the annual cost of reservoir acquisition will amount to \$27.4 million, assuming a 40-year debt-service period.¹¹

The regional summaries in the 2007 State Water Plan include cost estimates for the construction of seven of the 19 reservoirs planned by S.B. 3 and S.B. 675. Particularly notable is the \$2.2 billion that construction of the Marvin Nichols reservoir in North East Texas is projected to cost. The seven reservoirs for which construction costs have been projected will total \$3.62 billion. Implementation of the Marvin Nichols reservoir project is expected to be complete by 2030, while completion of many of the other reservoirs is scheduled for 2040 or even 2050.

In addition to the cost of site acquisition, the sheer amount of land to be acquired under TWDB’s plan is also of concern. The draft report indicates that 244,166 acres (381 sq. miles) would be required—nearly the size of the City of Dallas. Plans of this magnitude should be approached cautiously, as demonstrated by experience with the Trans Texas Corridor project (TTC).

⁸ See Appendix for map showing location of the proposed sites.

⁹ TWDB Reservoir Site Acquisition Study draft report (4-5). Amount is in weighted 2005 dollars.

¹⁰ TWDB Reservoir Site Acquisition Study draft report.

¹¹ TWDB Reservoir Site Acquisition Study draft report (4-5).

Although this land could be acquired through private easements and direct negotiations with property owners, in practice it is likely that tens of thousands of acres of private property would be condemned under the eminent domain provisions in Chapter 11 of the Water Code (or other statutory provisions). For example, the North Texas Municipal Water District (NTMWD), which is likely to coordinate construction of the Lower Bois d'Arc Creek Reservoir in Fannin County¹², has indicated that:

[F]or the normal pool of the reservoir 16,526 acres will be needed. An additional 5,574 acres will be purchased for the flood pool...if negotiations [to acquire land privately] are unsuccessful, the NTMWD must acquire the property required for the project through eminent domain proceedings.¹³

However, with the knowledge that eminent domain proceedings can be initiated, the incentive for condemning entities to engage in meaningful negotiations with landowners is non-existent, particularly since “good faith” negotiations were undermined by the Texas Supreme Court in its *Hubenak* (2004) decision.¹⁴

The Applewhite Reservoir project in San Antonio serves as an example of the damage to private property rights inflicted by eminent domain condemnations for reservoir construction. In the late 1980s, the City of San Antonio condemned a portion of Balous Miller's farmland to facilitate the construction of a reservoir to meet the city's water demands. However, construction of the reservoir stalled and was eventually ended by San Antonio voters in August 1994.¹⁵ In 2003, the land was sold to car manufacturer Toyota Motor Company, without Mr. Miller being given the opportunity to repurchase his property, nor to benefit from the sale of his land to Toyota.¹⁶

The construction of new reservoirs would significantly threaten private property rights, particularly because a program requiring at least 244,000 acres would likely coincide with the TTC, which could itself require the condemnation of around 1.5 million acres of land.¹⁷ These two projects would send a firm message to Texans that their right to own property comes a distant second to massive public-works projects.

Creating Water Markets

Legislators must therefore strive to protect both property rights and taxpayers' interests by resisting attempts to mandate a large-scale reservoir construction program since reasonable and cost-effective alternatives exist. Instead, efforts must focus on creating water markets. Water markets will shift the burden of maintaining and developing water

¹² The Lower Bois d'Arc Creek site is one identified by both TWDB and S.B. 675 as being of unique value for the construction of a reservoir.

¹³ North Texas Municipal Water District, “The Lower Bois d'Arc Creek Reservoir: Land for New Reservoir;” http://www.ntmwd.com/bois_dArc.html

¹⁴ *Hubenak v. San Jacinto Gas Transmission Co.*, 141 S.W.3d 172,184.

¹⁵ Edwards Aquifer Management Chronology, 1994; <http://edwardsaquifer.org/pages/chrono1994.htm>

¹⁶ Bill Peacock, “Recent Examples of Eminent Domain Abuse in Texas,” Texas Public Policy Foundation, April 2006.

¹⁷ “A Trans-Texas Horror,” *The Daily Texan*, July 25, 2006.

infrastructure in the state from taxpayers to the specific utilities needing additional water resources and the private sector.

Proposals to market the state's water more effectively have already been made by companies such as Mesa Water Inc., WaterTexas, Brazos Valley Water Alliance, L.P., Sustainable Water Resources, LLC, and Rio Nuevo L.L.P. (discussed below). The state should not forgo these opportunities to involve the private sector which could meet the state's demand for water more quickly and at less taxpayer expense. The 16 reservoirs planned by TWDB will have a total annual firm yield of around 1.5 million acre feet.¹⁸ This falls well short of the 8.8 million additional acre feet that TWDB says will be required by 2060, and therefore raises questions about the benefits of undertaking such a large-scale construction effort. Additional concerns center on the fact that the scheduled completion dates for many of the reservoir projects outlined by TWDB are in 2030, 2040, and even 2050. By contrast, Mesa Water's plan to pump groundwater from the Ogallala Aquifer beneath the Panhandle promises to deliver water to other areas of the state within 5 years and WaterTexas and Sustainable Water Resources, LLC are proposing projects with an estimated completion date of 2015.

However, the effectiveness with which private investors can meet the state's demand for water is restricted by excessive regulation of the water market. Central to understanding how the state can create a water market is an explanation of how current water regulations impede the functioning of such a market. Embodied in the Water Code are many far-reaching and extensive regulations governing surface water and groundwater, as well as how this water can be acquired and used.

Surface Water and Junior Water-Rights

The fundamental problem with state water policy is that it rests on the incorrect premise of state ownership. The Water Code (Section 11.021) declares that surface water is "the property of the state" and that "the waters of the state are held in trust for the public" (Section 11.0235). In practice and effect, this means that the state owns surface waters, and, by extension, water rights are essentially the right to use that water. This approach is anachronistic and must change.

Section 11.021, Water Code defines surface waters as:

The ordinary flow, underflow, and tides of every flowing river, natural stream and lake and every bay or arm of the Gulf of Mexico, and storm water, flood water and rainwater of every river, natural stream, canyon, ravine, depression and watershed in the state.

Simply put, permission from the state is necessary to exercise property rights. This permission is given in the form of a water permit issued by the Texas Commission on Environmental Quality (TCEQ). When a permit is issued, the holder is obliged to abide by a number of provisions. The first of these is the "seniority rule," which stipulates that

¹⁸ TWDB Reservoir Site Acquisition Study draft report (4-2).

the earlier a water right was granted, the higher the priority of that water right in times of shortage. A permit will usually also entitle the holder to a certain amount of water (measured flow or volume), although there is no guarantee that this quantity of water will be available. Water permits can also be transferred (with approval by TCEQ) which creates a limited market for water rights. TCEQ can also revoke surface water rights if they have not been used for a 10-year period.¹⁹

Surface water can be transferred from one basin to another. Inter-basin transfers are most common in the Panhandle, northeast Texas, and along the Gulf Coast and are permitted provided there is no “significant injury” to other water-rights holders in the basin of origin.²⁰

Senate Bill 1 (75R), passed in 1997, amended the Water Code to regulate inter-basin transfers. While S.B. 1 dealt extensively with drought planning and response, one of its most significant reforms asserted that inter-basin transfers would assume a water right that was junior to every other water right in the basin to which water was transferred.²¹ This created a conspicuous disincentive to transfer water from one basin to another. Having incurred the costs of transferring water, an investor may not derive any benefit if he is unable to use the water he has transferred.

Although the intention of this change was to protect rural areas from the ever-growing demand for water from urban parts of the state, junior water-rights constitute an impediment to the effective functioning of a water market in Texas:

Labeled as the “junior rights” problem, the water code stipulates that when surface water is transferred from one basin to another, the transferred right assumes the most junior water right in the basin of transfer...the transferred water right can be utilized only if any water remains after all other more senior water rights can be met.²²

However, far from protecting the water rights of rural areas, junior water-rights have forced urban areas to turn to the state’s groundwater supplies in order to meet their residential, commercial, and manufacturing needs. However, the majority of the state’s groundwater is also located in rural areas.²³ In a free water market, there would be no arbitrary impediments to voluntary water transfers.

¹⁹ Ronald A. Kaiser, “Solving the Texas Water Puzzle: Market-Based Allocation of Water,” Texas Public Policy Foundation, March 2005.

²⁰ Ibid.

²¹ The Honorable Susan Combs “The Future of Texas Water,” published in “Choppy Waters: Understanding the Challenges to Texas Water Policy,” Texas Public Policy Foundation, August 2004.

²² Kathleen Hartnett White, “The New Value of Water,” published in “Choppy Waters: Understanding the Challenges to Texas Water Policy,” Texas Public Policy Foundation, August 2004.

²³ Ronald A. Kaiser, “Handbook of Texas Water Law Problems and Needs,” 2002.

Groundwater and the Rule of Capture

According to Ronald A. Kaiser, professor and chairman of Texas A&M University's Water Program, groundwater exists in 23 aquifers that underlie Texas. These aquifers hold approximately 430 million acre-feet, ninety percent of which is in the Ogallala aquifer beneath the Panhandle. Aquifers supply slightly more than 60 percent of Texas' annual water consumption, but more than 80 percent of agricultural water consumption. Kaiser points out that:

[M]anagement of groundwater quality and quantity is one of the state's biggest water problems. While surface water is state-owned and allocated, groundwater basically belongs to the person who can capture it. It is nominally owned by the owner of the land above the aquifer, but is subject to the rule of capture and use by adjoining landowners.²⁴

The rule of capture has governed the use of groundwater in Texas for more than 100 years and has been repeatedly affirmed by the Texas Supreme Court, most recently in *Sipriano v. Great Spring Waters of America Inc.* (1 S.W.3d 75), also known as the Ozarka decision. Derivative of the common law rule that the owner of the land has absolute ownership of the surface and everything below it, the rule of capture gives landowners:

[T]he right to capture all the water under their land and use it or sell it even if their groundwater use deprives their neighbor of his or her groundwater use. Unless groundwater is pumped with a malicious intention to harm or is willfully wasted, under Texas law the landowner is not liable to a neighbor.²⁵

S.B. 2 (77R), passed by the Legislature in 2001, sought to address similar concerns to those contemplated by S.B. 1 (75R):

It was primarily directed at certain groundwater conservation districts, because by that time fears were being felt across the state about cities or other entities "grabbing" water by water ranching, which would hurt the neighbors of the water ranch. Groundwater districts were seen as a way to hold the line against unreasonable withdrawals and subsequent transfers of water from an area.²⁶

S.B. 2 gave groundwater conservation districts greater control over the groundwater within their jurisdiction. As a result, the authority groundwater districts exercise under Chapter 36 of the Water Code allows them to:

²⁴ Ronald A. Kaiser, "Handbook of Texas Water Law Problems and Needs," 2002 (pg.11); http://texaswater.tamu.edu/Resources/2002-037_waterlaw.pdf

²⁵ Kathleen Hartnett White, "The New Value of Water," published in "Choppy Waters: Understanding the Challenges to Texas Water Policy," Texas Public Policy Foundation, August 2004.

²⁶ The Honorable Susan Combs "The Future of Texas Water," published in "Choppy Waters: Understanding the Challenges to Texas Water Policy," Texas Public Policy Foundation, August 2004.

- Buy, sell, transport, and distribute groundwater or surface water;
- Acquire land by eminent domain;
- Provide for the spacing of water wells and regulate the production of wells;
- Exempt wells from the requirements to obtain a drilling permit or operating permit;
- Require a person to obtain a permit to transfer groundwater out of the district;
- Engage in projects to recharge aquifers; and,
- Levy taxes and set fees.²⁷

The way in which groundwater districts operate creates significant inefficiency in the management of groundwater in Texas. According to the conservation advocacy organization Environmental Defense:

When there are multiple management systems covering a shared resource such [as] an aquifer, they must work collaboratively to be effective. Of the 87 districts confirmed and pending confirmation, 59 (68 percent) are single-county districts. While this level of local control works for some of the heterogeneous aquifers, it constitutes a piecemeal approach to aquifers that exhibit regional flow patterns.²⁸

Reforming groundwater districts into aquifer-specific rather than county-specific operations would improve the management of groundwater. At minimum, the pooling of resources to manage the same area of groundwater creates economies of scale. Examples of this type of regional groundwater alliance include the South Texas Regional Groundwater Alliance, the Southern Ogallala Groundwater Alliance, and the Far West Texas Alliance of Groundwater Districts.

Further, despite the far-reaching consequences of their decisions and rulings for the development of the state's groundwater resources, groundwater districts are not subject to Administrative Procedures Act provisions applicable to other agencies and instrumentalities of the state. While attempting to address the lack of resources of many single county districts, this omission severely compromises the due process rights of water rights owners before the district. Compounding this grievance is the considerable judicial deference given to groundwater district decisions on factual matters in any appeal by a private citizen of a groundwater district's decisions.

Water Markets: Exercising Property Rights

In a study of the functioning of water markets across the nation, Professor Terry L. Anderson and Pamela Snyder of the Political Economy Research Center in Montana concluded that the Edwards Aquifer (which lies beneath much of central Texas) could be privatized by:

²⁷ Bruce Lesikar et al, "Questions About Groundwater Conservation Districts in Texas," Texas A&M University, 2002.

²⁸ Laura Marbury & Mary Kelly, "Spotlight on Groundwater Conservation Districts in Texas," Environmental Defense, 2005; http://www.texaswatermatters.org/pdfs/articles/conservation_districts.pdf

[A]djudicating and quantifying ground-water rights based on average use over a relatively long time period, such as 20 years. Rights would not encompass an actual amount of water, but rather a proportion of the Edwards's annual safe yield. The annual yield is measurable because of the tight relationship between the aquifer's stock and its flow at its springs. Given seasonal rainfall, recharge, and pumping patterns, the U.S. Geological Survey can predict the Edwards's minimum safe yield before spring planting each year.²⁹

While the privatization of an aquifer is a big-picture reform, legislators should be mindful of the role that market forces can play in the state's water market. Referring specifically to Texas, Anderson and Snyder's research also concluded that:

[T]he evidence from the Tehachapi and Mojave Basins in California suggests that privatization has improved allocation at reasonable costs. Yet bureaucratic restrictions on pumping from stocks and on transfers continue to thwart further efficiency gains.³⁰

It is clear that many of the restrictions placed by statute on the use of water hinder the efficient operation of Texas' water market. There are many incremental reforms that can address these obstructions and bring the state closer to a less-regulated water market with the economic incentives necessary to meet the state's thirst.

Proposals from two private-sector organizations demonstrate the potential role of the water market. For example, Mesa Water Inc. was formed to:

[P]urchase the right to withdraw water from the Ogallala Aquifer in the Texas Panhandle...the company has proposed constructing a pipeline to supply water to river basins that could transfer the water to municipal customers such as Dallas, Fort Worth, or San Antonio.³¹

While critics of the Mesa plan have stressed their concerns that over-use of the Ogallala Aquifer could threaten agricultural and residential interests in West Texas, its supporters point out that "any withdrawals from the land in question would be subject to Panhandle Groundwater Conservation District regulations...such that 50 percent of the water currently in the aquifer must remain in place in 2048."³² The House Research Organization also points out that groundwater in the Panhandle is currently underutilized, and that the amount of capital investment that will be required to meet the water needs of Texas' growing population means that "public-private partnerships such as Mesa increasingly will be needed."³³

²⁹ "Terry Anderson & Pamela Snyder, "Water Markets: Priming the Invisible Pump," The Cato Institute, 1997.

³⁰ Ibid.

³¹ House Research Organization, "Groundwater Management Issues in Texas," June 6, 2006.

³² Ibid.

³³ Ibid.

Similarly, WaterTexas, another private sector organization is involved with a pipeline project to bring additional water supplies to growing areas in northern Williamson County and southern Bell County along the IH-35 corridor, one of the state's major arteries.³⁴ According to Derek Saunders, CEO of WaterTexas, the fast growth that is predicted for that area of the state makes investment in its water infrastructure timely:

The bottom line is it's a hot area for future development, [with] very few local water-supply options that can handle large growth...they're getting out ahead of the curve and figuring out their long-term water-supply future.³⁵

Underscoring the importance of this injection of private capital, Jim Schwertner, chairman of Jarrell-Schwertner Water Supply, points out that "the problem we've got in Williamson County isn't a lack of water; it's getting it piped to the county." WaterTexas' pipeline addresses this problem directly. The source for this project would be the Carrizo-Wilcox aquifer group, specifically the Simsboro Aquifer, which has been extensively studied and shown to be able to support large water supply projects.³⁶

Finally, a third private sector group, Rio Nuevo, L.L.C., reached an agreement with the General Land Office (GLO) in 2002 to lease land from the agency in order to capture and market the underlying groundwater. Pursuing an approach akin to that adopted by Mesa Water, Rio Nuevo plans to pump groundwater from four counties in West Texas (Hudspeth, Jeff Davis, Culberson, and Presidio) and pipe it to various municipal users.

A further aspect of creating a water market in the state will be to consider ways in which water could be imported from other states. Notably, Louisiana has water resources which could be marketed in Texas. While the vast majority of water used in Texas is groundwater, Louisiana relies on surface water for around 84% of its water use. Studies have demonstrated that the four major aquifers that underlie Louisiana—the Chicot aquifer system, the Mississippi River alluvial aquifer, the Sparta aquifer, and the Southern Hills aquifer system—account for less than 16% of annual water use in the state.³⁷ Furthermore, the current use of surface water in Louisiana was lower in 2000 than it had been in 1980. In short, while Texas is struggling with declining water resources, according to its Department of Transportation and Development, Louisiana "has abundant supplies of fresh ground and surface water."³⁸

³⁴ "\$170 million pipeline on tap," *Austin Business Journal*, February 17, 2006.

³⁵ *Ibid.*

³⁶ "Groundwater Resources of the Carrizo-Wilcox Aquifer in the Central Texas Region," Texas Water Development Board, 1991; Report of Investigations No. 256, "Groundwater Availability in the Carrizo-Wilcox Aquifer in Central Texas - Numerical Simulations of 2000 through 2050 Withdrawal Projections," Bureau of Economic Geology, 1999.

³⁷ "Water Withdrawals and Trends in Groundwater Levels and Stream Discharge in Louisiana," Louisiana Department of Transportation and Development, 2002; "Groundwater Use for Louisiana," National Ground Water Association, 2004.

³⁸ "Water Withdrawals and Trends in Groundwater Levels and Stream Discharge in Louisiana," Louisiana Department of Transportation and Development, 2002.

Creation of an effective water market should take into account all of the water that is potentially available to Texas. This includes water that can be pumped from within the state and water that can be imported from elsewhere. Aquifer and surface water systems frequently extend across several states. For example, the Ogallala Aquifer underlies land beneath Texas, Oklahoma, New Mexico, Kansas, Colorado, Nebraska, Wyoming, and South Dakota, while the Mississippi River—Louisiana’s largest source of surface water—flows through Mississippi, Arkansas, Tennessee, Kentucky, Missouri, Illinois, Iowa, Wisconsin, and Minnesota, as well as Louisiana. Given this multi-state nature of aquifer and surface water systems, it is evident that attempting to successfully meet Texas’ water needs by addressing only the water supply that exists within the state’s boundaries is akin to groundwater districts attempting to operate on county-specific rather than aquifer-specific bases. Effective water market reform will look beyond the state’s borders to sources of ground and surface water that exist in neighboring states.

Constructing pipelines to transport water from Louisiana to urban areas of Texas will not necessarily be any more costly than transporting water from within Texas. In the Texas Panhandle, for example, Amarillo lies 375 miles from the Dallas-Fort Worth metroplex. Pumping water from the Ogallala aquifer beneath the Panhandle would therefore require pipe networks approaching 400 miles in length. However, the City of Monroe, Louisiana, which sits above the Sparta Aquifer, lies just 273 miles from Dallas-Fort Worth. These distances mean that drawing water from other states is a realistic proposition that will complement the development of an effective water market in Texas.

The state has a role to play ensuring that water supplies are neither over-used nor unnecessarily wasted. However, allowing the demand for water to be met as fully as possible through a competitive market is more efficient than large-scale public works projects. Therefore, a range of recommendations are suggested which will help ensure that the regulatory and statutory impediments to meeting Texas’ water needs are addressed.

Recommendations

1. Encourage private development by including a statement of legislative intent in the Water Code.

Water Code (Section 1.003) should be amended to read as follows:

§ 1.003. PUBLIC POLICY. It is the public policy of the state that the use of private capital in water projects to create a genuine water market is necessary if the state’s future water needs are to be met. The state and the private sector should work to provide for the conservation and development of the state’s water ~~natural~~ resources, including:

(1) The development of a free, open, and competitive water market in the state;

~~(2)~~ ~~(1)~~ the control, storage, preservation, and distribution of the state's storm and floodwaters and the waters of its rivers and streams for irrigation, power, and other useful purposes;

~~(3)~~ ~~(2)~~ the reclamation and irrigation of the state's arid, semiarid, and other land needing irrigation;

~~(4)~~ ~~(3)~~ the reclamation and drainage of the state's overflowed land and other land needing drainage;

~~(5)~~ ~~(4)~~ the conservation and development of its forest, water, and hydroelectric power;

~~(6)~~ ~~(5)~~ the navigation of the state's inland and coastal waters; and

~~(7)~~ ~~(6)~~ the maintenance of a proper ecological environment of the bays and estuaries of Texas and the health of related living marine resources.

2. Create incentives for regional water projects.

The Legislature should create incentives for regions to cooperate with each other on water projects. There are many ways to do this. The Water Development Fund (Texas Constitution Article III, Section 49-d-8) could be used to provide incentives for regions to cooperate. Funds could also be withheld from regions or projects that remain insular.

A range of water assistance programs exists under Chapter 15 of the Water Code, such as the Water Infrastructure Fund and the Water Loan Assistance Fund. These programs should be used to foster regional cooperation. The Rural Water Assistance Fund (Water Code 15.991), which exists to assist the construction and maintenance of water infrastructure in sparsely populated rural areas, could be used to provide an incentive for these regions to market their often-ample supply of water to other areas of the state, while at the same time providing assurance to exporting regions that their own water needs will be provided for in the future, if necessary.

The state could also consider providing gross margins tax exemptions to companies that facilitate the transportation and supply of water from one region of the state to another.

3. a) Improve the responsiveness of groundwater conservation districts.

Individuals should be provided with a method by which they can appeal or otherwise redress the decisions of groundwater districts, both during and upon the conclusion of a permitting or management plan decision. A section should be added to Chapter 36 of the Water Code so that:

(a) Any party adversely affected or aggrieved by any decision or act of a groundwater conservation district, including a grant or denial of a permit, adoption or amendment of a management plan, or adoption or amendment of a "desired future condition" under Section 36.108 of the Texas Water Code, may

appeal to the district court in any county wherein any part of the water rights involved are situated.

(b) The notice of such appeal shall be served by the appellant on the groundwater conservation district within 60 days after the notice of such decision or act, and, unless such appeal is taken within said time, the action or decision of the groundwater conservation district shall be final and conclusive.

(c) Notice of such appeal and docketing of the appeal in the district court shall be accomplished in the same manner as any other civil suit originally commenced in the district courts of this state. Costs shall be charged to the appellant as in any other civil suit.

(d) Proceedings upon appeal shall be *de novo*; except that evidence taken in any administrative proceeding appealed from may be considered as original evidence, subject to legal objection, as if said evidence were originally offered in such district court.

(e) It is the duty of the commission or the state engineer, on being served with a notice of appeal pursuant to this section, to transmit to the district court to which the appeal is taken the papers, maps, plats, field notes, orders, decisions, and other available data affecting the matter in controversy or certified copies thereof, which certified copies shall be admitted in evidence as of equal validity with the originals.

(f) For the purpose of maximizing continuity in the disposition of designated groundwater cases, on or before January 10 of each year, the state supreme court shall designate or redesignate a groundwater judge for each designated groundwater basin, who shall be selected from a judicial district within which some part of that designated groundwater basin lies, and any vacancy that occurs during such year shall be filled by designation of the supreme court. The services of each designated groundwater judge shall be in addition to such judge's regular duties as a district judge but shall take priority over such regular duties, and the schedules of the district judges in each such judicial district shall be arranged and adjusted so that the designated groundwater judge shall be free to hear designated ground water cases. All cases relating to designated groundwater which are filed in each judicial district shall be assigned to the designated groundwater judge, and all proceedings regarding said cases shall be heard by the designated groundwater judge. If it becomes necessary during any year for the proper handling of designated groundwater cases in any judicial district, the Supreme Court shall designate one or more additional designated groundwater judges from that judicial district or may make temporary assignments of other judges to hear such cases.³⁹

b) Re-organize groundwater conservation districts.

To improve water planning, groundwater districts should be reorganized so that they are aquifer-specific, rather than county-specific. Section 36.012, Water Code should be amended to read as follows:

³⁹ Adapted from the Colorado Water and Irrigation Code 37-90-155 (Section 4).

§ 36.012. COMPOSITION OF DISTRICT. (a) A district may include all or part of one or more counties, cities, districts, or other political subdivisions.

~~(b) A district may not include territory located in more than one county except on a majority vote of the voters residing within the territory in each county sought to be included in the district at an election called for that purpose.~~

~~(b)(e)~~ The boundaries of a district must be coterminous with or inside the boundaries of a management area or a priority groundwater management area such as an aquifer or other source of water regulated by the district.

~~(c)(d)~~ A district may consist of separate bodies of land separated by land not included in the district.

~~(d)(e)~~ A majority of the voters in a segregated area must approve the creation of the district before that area may be included in the district.

~~(f) This section does not apply to districts created under Section 36.0151.~~⁴⁰

Existing groundwater districts should be reorganized to reflect the nature of aquifers.

Additionally, Sections 35.008 and 35.012 should be amended so that in the process of designating a groundwater management district, the Texas Water Commission is required to recognize the importance of creating districts on an aquifer, rather than county-specific basis.

c) Tie water permits to the duration of water projects.

The duration of a permit issued for a water project should last for as long as the maturity period of bonds issued for the project. Water Code (Section 36.114) should be amended to read as follows:

§ 36.114. PERMIT; PERMIT AMENDMENT; APPLICATION AND HEARING. (a) The district by rule shall determine each activity regulated by the district for which a permit or permit amendment is required.

(b) For each activity for which the district determines a permit or permit amendment is required under Subsection (a), the district by rule shall determine whether a hearing on the permit or permit amendment application is required.

(c) For all applications for which a hearing is not required under Subsection (b), the board shall act on the application at a meeting, as defined by Section 551.001, Government Code, unless the board by rule has delegated to the general manager the authority to act on the application.

(d) The district shall promptly consider and act on each administratively complete application for a permit or permit amendment as provided by Subsection (c) or Subchapter M.

(e) If, within 60 days after the date an administratively complete application is submitted, the application has not been acted on or set for a hearing on a specific date, the applicant may petition the district court of the county where

⁴⁰ Water Code Section 36.0151 refers to the creation of a district for a priority groundwater management area by the Texas Water Commission.

the land is located for a writ of mandamus to compel the district to act on the application or set a date for a hearing on the application, as appropriate.

(f) For applications requiring a hearing, the initial hearing shall be held within 35 days after the setting of the date, and the district shall act on the application within 60 days after the date the final hearing on the application is concluded.

(g) The district may by rule set a time when an application will expire if the information requested in the application is not provided to the district.

(h) The district shall provide that a permit issued under Section 36.113 or Section 36.1132 continues in effect for the period of any water supply contract with a public utility for which such permit is issued or until any bonds or other indebtedness issued for the project, any refunding issued for those bonds or other indebtedness, are paid, or any other contractual commitments or obligations directly related to the financing of infrastructure for any water supply contract for which such permit is issued, has been satisfied and released.

(h) An administratively complete application requires information set forth in accordance with Sections 36.113 and 36.1131.

d) Limit condemnation powers.

To reflect the importance of private property rights, the Legislature should take steps to limit the circumstances in which eminent domain condemnation proceedings can be instigated in order to facilitate the construction of a reservoir. The planned reservoir construction in TWDB's Reservoir Site Acquisition Study draft report and S.B. 3 and S.B. 675 will take many years to complete, which presents a problem because land can easily be condemned for a project that is never completed.

The Applewhite Reservoir case (discussed above) serves as an example of this problem. A range of eminent domain reforms are presented in TCCRI's Property Rights and Land Use Task Force report "Protecting Private Property Rights: Reforming Eminent Domain in Texas." These recommendations include authorizing landowners to repurchase land that was condemned but not used by a government entity.

To further address the threat that reservoir construction will pose to private property rights, a statement of intent should be added to Chapter 11 of the Water Code to encourage use of privately brokered easements between property owners and private-sector companies engaging in water projects. The Legislature should also consider amending Sections 11.033 to 11.035 of the Water Code so that private property cannot be condemned for the purpose of constructing a reservoir. The Legislature has already addressed the problems of eminent domain condemnation of water rights in Section 21.0121 of the Texas Property Code, and it should consider adding similar burdens on the condemning entity for private property intended for a reservoir, which include making a bona fide good faith effort to obtain practicable alternative water supplies, making a bona fide good faith effort to acquire the land by voluntary purchase or lease, and demonstrating that the political subdivision needs the water.

4. Examine the effect that junior water-rights have on water markets.

The full effect of junior water-rights on the transfer of surface water should be examined in order to determine how it impacts the development of the state's water market.

The Legislature should direct the Office of the Comptroller to conduct a study as described above. The findings of the report should be made available before the 81st Legislature convenes in January 2009.

5. Require municipalities to consider unsolicited bids for water rights.

Municipalities that are involved in the distribution of water, such as cities, counties, and Municipal Utility Districts (MUDs) should be required to consider unsolicited bids to provide water, sewage, drainage, or other services from a third party, which would trigger a request for proposal to consider competing bids for meeting water needs.

For example, Chapter 54 of the Water Code governs MUDs. Chapter 54 requires a MUD to provide water, sewage, drainage and certain other services within its boundaries. MUDs derive their revenue from taxes levied on properties within the district. In order to foster the development of a competitive water market in Texas, a section should be added to Chapter 54 of the Water Code requiring MUDs to consider unsolicited bids to provide water and water-related services.

A similar requirement should be added to other sections of statute governing cities, counties, and any other political subdivisions that are involved in the distribution of water.

6. Provide that groundwater can be exported.

The Legislature should expressly provide that groundwater can be exported. It should also avoid reforms that would interfere with landowners' rights to use water.

Amending Section 36.122 (d)-(h) of the Water Code is suggested. This section governs the transfer of groundwater out of a district. Subsections (a)-(c) outline groundwater districts' authority over such transfers, and indicate that a district can enforce restrictions on such transactions. Importantly, these conditions cannot be more restrictive than those imposed by the district on in-district transfers.

To allow for greater freedom in the export of groundwater, Section 36.122 (d)-(h) should be amended as follows:

(d) The district may impose a ~~reasonable~~ fee for processing an application under this section that does not. ~~The fee may not exceed the~~ fees that the district

imposes for processing other applications under Section 36.113. An application filed to comply with this section shall be considered and processed under the same procedures as other applications for permits under Section 36.113 and shall be combined with applications filed to obtain a permit for in-district water use under Section 36.113 from the same applicant.

~~(e) The district may impose a reasonable fee or surcharge for an export fee using one of the following methods:~~

- ~~_____ (1) a fee negotiated between the district and the transporter;~~
- ~~_____ (2) a rate not to exceed the equivalent of the district's tax rate per hundred dollars of valuation for each thousand gallons of water transferred out of the district or 2.5 cents per thousand gallons of water, if the district assesses a tax rate of less than 2.5 cents per hundred dollars of valuation; or~~
- ~~_____ (3) for a fee based district, a 50 percent export surcharge, in addition to the district's production fee, for water transferred out of the district.~~

~~(e)(f) In reviewing a proposed transfer of groundwater out of the district, the district shall consider:~~

- ~~(1) the availability of water in the district and in the proposed receiving area during the period for which the water supply is requested;~~
- ~~_____ (2) the projected effect of the proposed transfer on aquifer conditions, depletion, subsidence, or effects on existing permit holders or other groundwater users within the district; and~~

~~(1)(3) the approved regional water plan and certified district management plan.~~

~~(f)(g) The district may not deny a permit based on the fact that the applicant seeks to transfer groundwater outside of the district, nor may the district adopt any rule or management plan, or provision thereof, that acts as an indirect prohibition on transfers of groundwater outside of the district, unless the district can show a material adverse affect on aquifer conditions with such rule or management plan, or provision thereof, that cannot be reasonably addressed through any other means, but may limit a permit issued under this section if conditions in Subsection (f) warrant the limitation, subject to Subsection (e).~~

~~(g)(h) In addition to conditions provided by Section 36.1131, the permit shall specify: continue in effect until any bonds issued for the project, and any refunding issued for those bonds, are paid.~~

- ~~(1) the amount of water that may be transferred out of the district; and~~
- ~~_____ (2) the period for which the water may be transferred.~~

With the exception of subsection (q), the remaining subsections in this section should be removed as they relate to the deleted subsection (e) above.

Conclusion

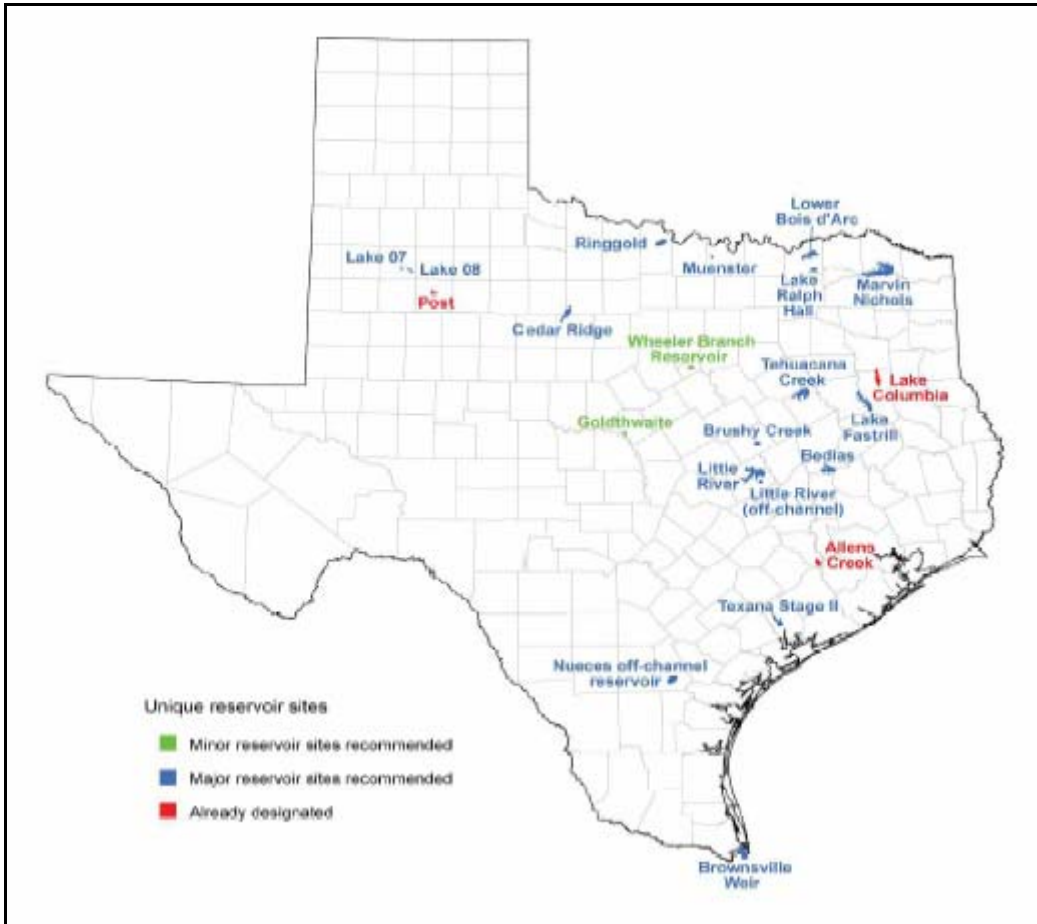
The Water Code currently impedes the functioning of a competitive water market in the state. Excessive regulation of extraction, transfer, and use of ground and surface water exacerbates the tensions between rural and urban regions. By definition, urban parts of

the state are more densely populated and require more water for municipal consumption than do rural regions, where agricultural demand for water is highest.

As part of its response to these problems, TWDB recommends the construction of 16 new reservoirs. These costly reservoirs will require the condemnation of many thousands of acres of private land, and are therefore an imprudent alternative to enacting reforms that facilitate the development of a water market in the state.

The reforms outlined above will allow water to be transferred more easily between rural and urban regions, and water-rich and water-poor regions, so that the water needs of all areas of the state can be better-met without having to resort to large-scale reservoir construction.

Appendix: TWDB Proposed Reservoir Sites



*Source: Texas Water Development Board,
"2007 State Water Plan Finance and Policy Recommendations."*