
**HOUSE COMMITTEE ON NATURAL RESOURCES
TEXAS HOUSE OF REPRESENTATIVES
INTERIM REPORT 2006**

**A REPORT TO THE
HOUSE OF REPRESENTATIVES
80TH TEXAS LEGISLATURE**

**ROBERT R. PUENTE
CHAIRMAN**

**COMMITTEE CLERK/GENERAL COUNSEL
HOPE E. WELLS**

**ASSISTANT COMMITTEE CLERK
BLAIRE D. PARKER**



Committee On
Natural Resources

November 29, 2006

Robert R. Puente
Chairman

P.O. Box 2910
Austin, Texas 78768-2910

The Honorable Tom Craddick
Speaker, Texas House of Representatives
Members of the Texas House of Representatives
Texas State Capitol, Rm. 2W.13
Austin, Texas 78701

Dear Mr. Speaker and Fellow Members:

The Committee on Natural Resources of the Seventy-Ninth Legislature hereby submits its interim report including recommendations for consideration by the Eightieth Legislature.

Respectfully submitted,

A handwritten signature in cursive script that reads "Robert R. Puente".

Robert R. Puente

A handwritten signature in cursive script that reads "Bill Callegari".

William A. "Bill" Callegari

A handwritten signature in cursive script that reads "Pete Laney".

James "Pete" Laney

A handwritten signature in cursive script that reads "Ruben Hope Jr.".

Ruben Hope Jr.

A handwritten signature in cursive script that reads "Charlie Geren".

Charlie Geren

A handwritten signature in cursive script that reads "Rick Hardcastle".

Richard "Rick" Hardcastle

A handwritten signature in cursive script that reads "Harvey Hilderbran".

Harvey Hilderbran

A handwritten signature in cursive script that reads "Dennis Bonnen".

Dennis Bonnen

A handwritten signature in cursive script that reads "Scott Campbell".

Scott Campbell

William A. "Bill" Callagari
Vice-Chairman

Members: James "Pete" Laney, Ruben Hope, Jr. Charlie Geren, Richard "Rick" Hardcastle, Harvey Hilderbran, Dennis Bonnen, Scott Campbell

TABLE OF CONTENTS

INTRODUCTION.....	1
INTERIM STUDY CHARGES AND SUBCOMMITTEE ASSIGNMENTS	2
MUNICIPAL UTILITY DISTRICTS	4
History	4
Special Districts.....	4
Municipal Utility Districts (MUDs).....	5
Testimony.....	7
Public Hearings	11
Findings.....	11
Recommendations	12
LANDSCAPE WATER CONSERVATION	13
History.....	13
Landscape Conservation Programs - El Paso Water Utilities & San Antonio Water Systems .	13
Conservation Ordinances	16
Voluntary Participation	16
Education.....	17
Other Testimony.....	18
Texas Water Development Board Municipal Conservation Programs	18
Public Hearings	22
Findings.....	22
Recommendations	22
WASTEWATER RE-USE.....	24
History	24
Testimony and Texas Water Conservation Association Reuse Paper.....	26
Direct Reuse - Chapter 210, Water Quality Regulations	26
Indirect Reuse.....	26
Water Code Section 11.042 and Water Code Section 11.046.....	27
State Water Plan	29
Proposals Offered in Testimony.....	30
TWCA Reuse Paper	30
Public Hearings	31
Findings.....	31
Recommendation.....	32
ENVIRONMENTAL FLOWS	33
History	33
Environmental Flows Advisory Committee.....	33
SOIL AND WATER CONSERVATION	35
Background	35
Texas State Soil and Water Conservation Board	35
Texas Water Development Board	35
Comprehensive Water Conservation Program Needs Assessment.....	36
Water Decline Issues.....	36
Conservation Implementation Task Force	36

Current Water Conservation Programs at TSSWCB	37
TSSWCB Suggestions for a Comprehensive Water Conservation Program	38
Public Hearings	39
Recommendations of the Committees.....	40
EXHIBITS.....	41
Exhibit A - History of Water Districts	41
Exhibit B - District Powers	44
Exhibit C - Title 30	45
Exhibit D - Notice to Purchaser	47
Exhibit E - Texas Water Rights and Wastewater Reuse Prepared by the Reuse Committee of the Texas Water Conservation Association	51
ENDNOTES.....	61

INTRODUCTION

At the beginning of the 79th Legislature, the Honorable Tom Craddick, Speaker of the Texas House of Representatives, appointed nine members to the House Committee on Natural Resources (the committee). The committee membership included the following: Representatives Robert R. Puente (Chairman), William A. "Bill" Callegari (Vice-Chairman), James "Pete" Laney, Ruben Hope Jr., Charlie Geren, Richard "Rick" Hardcastle, Harvey Hilderbran, Dennis Bonnen, and Scott Campbell.

During the interim, the committee was assigned six charges by the speaker:

1. Explore the benefits and concerns associated with Municipal Utility Districts (MUDs), including an assessment of the appropriateness of granting districts the additional powers of other special districts. Evaluate the impact of MUDs on economic growth and development, as well as the overall tax implications, including an evaluation of the provision of municipal and county services on residents living in MUDs. Review public disclosure and notification requirements associated with MUDs, as well as bonding authority of some districts.
2. Consider the potential for increased outdoor water savings through landscape water conservation, including irrigation audit requirements, turf replacement programs and the provision of certain landscape options for prospective home buyers.
3. Examine state wastewater re-use policies, including an assessment of potential changes or clarifications to the Texas Water Code.
4. Continue the study of the Commission on Water for Environmental Flows, and further evaluate options for providing adequate environmental flows.
5. Determine if a new comprehensive water conservation program is needed within the Texas State Soil and Water Conservation Board, focusing on water conservation and water supply enhancement. (Joint Interim Charge with the House Committee on Agriculture and Livestock)
6. Monitor the agencies and programs under the committee's jurisdiction.

HOUSE COMMITTEE ON NATURAL RESOURCES

INTERIM STUDY CHARGES AND SUBCOMMITTEE ASSIGNMENTS

COMMITTEE ON THE WHOLE

CHARGE #1: Explore the benefits and concerns associated with Municipal Utility Districts (MUDs), including as assessment of the appropriateness of granting districts the additional powers of other special districts. Evaluate the impact of MUDs on economic growth and development, as well as the overall tax implications, including an evaluation of the provision of municipal and county services on residents living in MUDs. Review public disclosure and notification requirements associated with MUDs, as well as bonding authority of some districts.

**Robert R. Puente, Chairman
William A. "Bill" Callegari, Vice-Chairman
James "Pete" Laney
Ruben Hope Jr.
Charlie Geren
Richard "Rick" Hardcastle
Harvey Hilderbran
Dennis Bonnen
Scott Campbell**

COMMITTEE ON THE WHOLE

CHARGE #2: Consider the potential for increased outdoor water savings through landscape water conservation, including irrigation audit requirements, turf replacement programs and the provision of certain landscape options for prospective home buyers.

**Robert R. Puente, Chairman
William A. "Bill" Callegari, Vice-Chairman
James "Pete" Laney
Ruben Hope Jr.
Charlie Geren
Richard "Rick" Hardcastle
Harvey Hilderbran
Dennis Bonnen
Scott Campbell**

COMMITTEE ON THE WHOLE

Charge #3: Examine state wastewater re-use policies, including an assessment of potential changes or clarifications to the Texas Water Code.

Robert R. Puente, Chairman
William A. "Bill" Callegari, Vice-Chairman
James "Pete" Laney
Ruben Hope Jr.
Charlie Geren
Richard "Rick" Hardcastle
Harvey Hilderbran
Dennis Bonnen
Scott Campbell

COMMITTEE ON THE WHOLE

Charge #4: Continue the study of the Commission on Water for Environmental Flows, and further evaluate options for providing adequate environmental flows.

Robert R. Puente, Chairman
William A. "Bill" Callegari, Vice-Chairman
James "Pete" Laney
Ruben Hope Jr.
Charlie Geren
Richard "Rick" Hardcastle
Harvey Hilderbran
Dennis Bonnen
Scott Campbell

COMMITTEE ON THE WHOLE

Charge #5: Determine if a new comprehensive water conservation program is needed within the Texas State Soil and Water Conservation Board, focusing on water conservation and water supply enhancement. (Joint Interim Charge with the House Committee on Agriculture and Livestock)

Robert R. Puente, Chairman
William A. "Bill" Callegari, Vice-Chairman
James "Pete" Laney
Ruben Hope Jr.
Charlie Geren
Richard "Rick" Hardcastle
Harvey Hilderbran
Dennis Bonnen
Scott Campbell

MUNICIPAL UTILITY DISTRICTS

Charge #1

History

Special Districts

"Special improvement districts, usually associated with water in some fashion, have the same stature as political entities or subdivisions as school districts, counties, and cities. They are independent forms of local government . . ." ¹ The majority of districts have the power to issue general obligation tax bonds with voter approval. The board of the special district may levy taxes to retire these bonds and often may levy an operation or maintenance tax. Unlike the taxing authority for cities and counties, the Constitution does not place a ceiling on the taxes that can be assessed by a special water improvement district. ²

Special districts in Texas are usually established as a means of developing areas not initially within the boundary of a city or relate to particular services that other local governments cannot or will not provide. "In addition, groups may form special districts because their local governments do not anticipate the need for a service or are not receptive to additional debt burden."³ The large capital requirements necessary to provide water, sewer, drainage and other municipal, commercial and industrial services to these areas or developments have resulted in the use of special district governments as a means to finance the needed infrastructure and facilities.⁴

Among the types of special districts include hospital, school, water, irrigation, drainage and flood control, urban renewal districts, river authorities and developmental districts.⁵ In Texas, the Legislature, the Texas Commission on Environmental Quality, county commissioners courts, and municipal governments can authorize the creation of special districts.⁶

Special districts were first authorized in 1904 through the adoption of Article III, Section 52, of the Texas Constitution, authorizing the Legislature to pass laws permitting special districts. The first water districts were established in 1904 to provide irrigation services. The legislature authorized the creation of drainage districts in 1905, and levee improvement districts and navigation districts in 1909. In 1917, Texas adopted Article XVI, Section 59, of the Texas Constitution allowing water districts to operate with no limitation on tax authority and bond indebtedness.

See attached Exhibit A, describing the constitutional and statutory history of water districts, including amendments to the municipal utility district law relating to the provision of additional powers such as street lighting, roads and parks and recreation.

Water District Count Report

District Type	Active	Inactive	Dissolved
Drainage District	43	5	58
Fresh Water Supply District	54	12	89
Groundwater Conservation District	92	1	19
Irrigation District	24	1	3
Levee Improvement District	31	15	78
Municipal Management District	14	27	4
Municipal Utility District	650	290	449
Navigation District	24	2	8
Other	49	26	52
Regional District	0	2	1
River Authority	31	0	1
Soil and Water Conservation District ⁷	1	0	0
Special Utility District	38	16	2
Stormwater Control District	0	1	0
Water Control and Improvement District	173	44	500
Water Improvement District	17	0	40
Total by Activity Status	1241	442	1304

See also Exhibit B - Common General Law District Powers, provided by Texas Commission on Environmental Quality.

Water districts were initially used to develop the state's agricultural resources. After the use of water districts to further urban residential development increased in the 1950s and 1960s, Texas adopted Chapter 54 of the Water Code in 1971 authorizing the creation of municipal utility districts (MUDs).⁸ In 1995, Chapter 49 was added, standardizing the administrative provisions for various districts. In some areas of the state, MUDs are the primary financing tool used for new development and the most popular form of water district.⁹

Municipal Utility Districts (MUDs)

MUDs are generally created to provide services such as water, sewer, and drainage to certain areas where municipal services are not available. A MUD also has the ability to construct parks, street lighting, fire prevention facilities, and certain types of roads. The funds used to construct the MUD's facilities are obtained through the public sale of tax-exempt municipal bonds. The MUD provides for the payment of principal and interest on the bonds through its unlimited power to levy and collect ad valorem on all taxable property in the MUD.

MUDs are created under general law by the Texas Commission on Environmental Quality, or through a special law creation by the Legislature. For TCEQ creation, a petition must be filed with

executive director and be signed by persons holding a majority of the land value within the proposed district.¹⁰ TCEQ regulations also require plats and a preliminary engineering report with anticipated use, projected tax and water rates, and impacts on water quality.¹¹ See *Exhibit C, excerpts from Title 30, Texas Administrative Code, Section 293.11.*

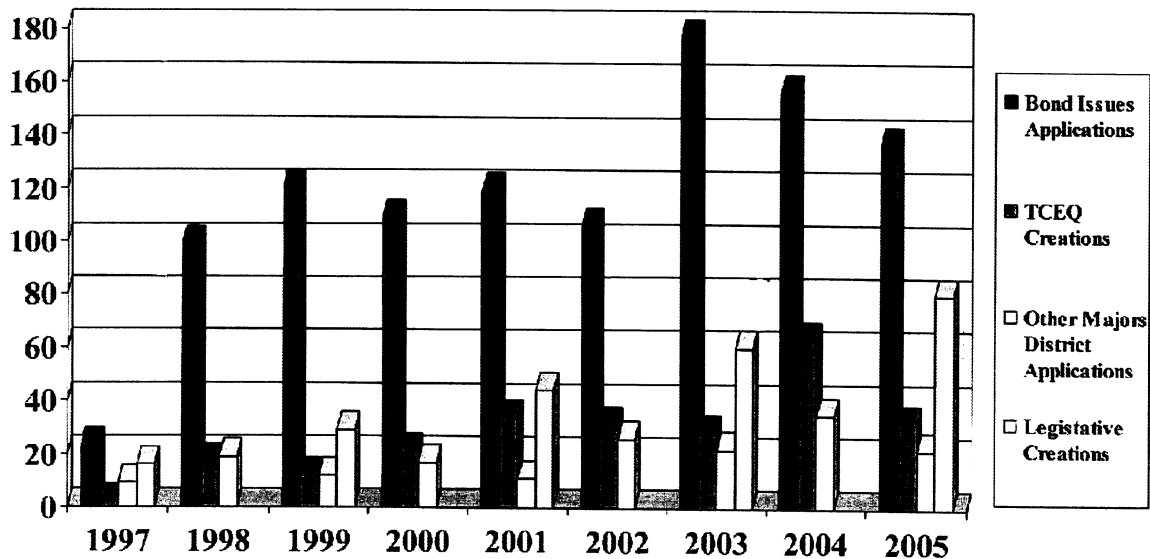
"The consent of the city is required to be obtained for a MUD within its corporate limits or within the extraterritorial jurisdiction of the city. In its consent, the city may require the MUD to submit all plans for its infrastructure for approval and limit the length of maturity and interest rate of the MUD bonds. ... The city has the legal option to annex the MUD, acquire all the assets and assume the debt, subject to certain procedural steps."¹²

If any part of a MUD is located outside the extraterritorial jurisdiction of any city, the commissioners court of the county is entitled to review the petition for creation. Although the commissioners court does not have the authority to withhold consent for the creation of the MUD, the TCEQ is required to consider the county's opinion.¹³

Once a MUD has been created either through the TCEQ or the Legislature, the TCEQ retains oversight over the MUD in that there are considerable engineering and feasibility requirements to apply for a bond issuance. There are also other district applications that must be approved for impact fees or additional powers, e.g. road powers, and significant audit requirements.



Water District Applications Received by Fiscal Year



Notes: Fiscal Year = September 1 through August 31.

LAWS APPLICABLE TO MUDS

Article XVI, Section 59, Texas Constitution	Election Code
Chapter 54, Water Code	U. S. Voting Rights Act
Chapter 49, Water Code	All laws relating to environmental quality
TCEQ Rules: Chapter 293, 30 Texas	Property Tax Code
Administrative Code	Public Funds Investment Act
Attorney General approval of Bond issues	Public Funds Collateral Act
Open Meetings Act	Public Securities Procedures Act
Public Information Act	Professional Services Procurement Act
Management and Preservation of Records	Public Works Payment and Performance
Conflicts of interest provisions for local	Bonds
governments	Prevailing Wage Rates
Disclosure of certain relationships with	City consent and development standards
contractors and vendors	County development standards
Statutes prohibiting bribery and corrupt	Legislature meets every two years
influence	

Testimony

At a public hearing in August 2006, the committee heard testimony relating to the MUD charge described above. Doug Holcomb, Manager of the Utilities and Districts Section of TCEQ, and Joe B. Allen of Allen Boone Humphries Robinson LLP, presented the background information discussed in previous paragraphs and provided the charts reproduced in this report as background for the committee.

Joe B. Allen also testified regarding the impact of MUDs in the greater Houston area, noting that there are 511 active MUDs covering 550 square miles, 470,000 single family residences, 1.9 million residents, \$9.2 billion in commercial improvements and 52,000 acres of commercial property.¹⁴ According to Mr. Allen, the MUD system has worked well in the Houston area because in the past, the City of Houston has been unable and unwilling to extend services that were needed to address growth in certain areas. At the same time, however, the City of Houston did not want other cities created around it. MUDs provided a mechanism whereby the City of Houston could ensure that needed infrastructure and development occurred through the creation of publicly-owned utilities. In the event of annexation, the City of Houston has been able to develop a standard consent with certain uniform requirements for facilities and other services such as parks and fire protection. Mr. Allen went on to describe the history of MUDs in Houston, stating that in the 1970s, the city embarked on an aggressive annexation campaign that slowed significantly in the 1980s. According to Mr. Allen, the last significant annexation by the City of Houston was the Kingwood area in 1997. After changes to the Municipal Annexation Act in 1999, the City of Houston has entered into strategic partnership agreements with at least 80 MUDs outside its corporate boundaries. Through these agreements, the city can levy a one-cent sales tax in the commercial areas of the district. The proceeds are then split between the city and the district. According to Mr. Allen, districts can use its portion of the sales tax for any

purpose for which the city can use the money. Most districts use the revenue to reduce ad valorem taxes, for maintenance or rehabilitation of facilities, or other services it has been unable to provide in the past.

As for the tax structure, Mr. Allen stated that as MUD facilities are funded and bonds paid off, the MUD tax rate will steadily decline. According to Dr. Ron Welch of the Houston Center for Public Policy, in 2005 the average MUD tax rate in the Greater Houston Area has declined by approximately 27 cents over 15 years. In the Greater Houston Area, a fully developed MUD may end up with a tax rate of about 25 or 30 cents after starting at or near \$1.50.¹⁵

Michael Page of Schwartz, Page and Harding LLP, also testified regarding the MUD system in the Houston area, particularly with respect to development of MUDs in the Woodlands, just north of Houston. Mr. Page detailed the various public disclosure requirements relating to MUDs.

See attached Exhibit D, "Notice to Purchaser" And Other Public Disclosure Requirements of Municipal Utility Districts (MUDs) prepared by Allen, Boone, Humphries, Robinson, LLP..

Mr. Page also discussed TCEQ requirements for bond issuance with respect to both TCEQ and legislatively created districts, including rules relating to build-out of the development as well as feasibility. Specifically, Mr. Page described the 30 percent rule, which provides that a developer must contribute and not recover 30 percent of the costs of certain water district facilities, thereby ensuring there are joint financial commitments of both the developer and district. The feasibility rules include engineering and construction requirements, as well as an economic soundness review. The district's cash-flow is reviewed with respect to its ability to meet its debt service and operational needs. There is an analysis of market demand in the area as well as an on-site inspection of completed facilities. There are certain tax rate requirements and assessment of cost-sharing equity with other local governments, including a requirement that the tax rate does not exceed an established norm in the area. Mr. Page stated that in the Houston area, that rate was initially set at \$1.50 per \$100.00.

According to Mr. Page, the combined effect of TCEQ's 30 percent rule and various feasibility rules is to effectively require developers to expend funds in advance of full development. The rules have also created an incentive for rapid development, so that the developer can be reimbursed in a timely manner. Mr. Page also stated that the rules have produced a high level of confidence among those in the industry and has resulted in a steadily declining tax rate for most MUD residents.

Mr. Page also discussed the provision of additional powers of districts, particularly noting that the more powers a district may employ, the more debt and taxes imposed on district residents which can work at cross purposes with the goal of a steadily declining tax rate. Essentially, the \$1.50 tax rate should be a maximum rate, not a target rate, in the Houston area. Over the past 30 years, the Legislature has carefully considered the need for additional powers in legislatively created districts, allowing such powers in situations where there is a special need and a citizen desire and willingness to pay for certain services - parks and recreation being a good example.

Mr. Page urged that before the Legislature grant any additional or exotic powers beyond the current array of powers in statute, there should be careful consideration of the integrity of the MUD system in general and the bond market that has, thus far, provided reasonable tax debt levels, a declining tax rate and superior service.

During the course of testimony, several committee members posed the question to witnesses whether districts were more appropriately created at the Legislature or at TCEQ, bearing in mind the more stringent feasibility requirements at the agency?

Joe B. Allen responded that he would like to preserve the discretion of the Legislature and noted that while creation of a district is important, the real detail is in the financial and technical review required for bond issuance. In response to the same question, Michael Page discussed the practicalities of district creation. Mr. Page stated that the TCEQ creation process can be lengthy and expensive, taking up to one year to complete at a cost of \$100,000 or more. Granted the technical and engineering requirements are more stringent, but in the grand scheme of things, if it is near the start of a session, it is faster, less burdensome and less expensive to go through legislative creation, particularly when the district will go through a very extensive bond-review process at the TCEQ. According to Mr. Page, legislative creation can work well, particularly with a standardized process and a clear demarcation between what is standard and what is nonstandard language.

Mr. Ted Nelson, President of Newland - Texas, a developer of large master planned communities, testified before the committee regarding the benefit that MUDs bring to the state. The population of Texas is expected to increase from 23 million to 51 million by 2040, placing an overwhelming demand on infrastructure with 70% of the growth in and around El Paso, the Rio Grande Valley, San Antonio, Dallas and Houston. According to Mr. Newland, MUDs are a tool that will provide vital infrastructure and will allow the private sector to meet the demand when the cities can not. Through the development of a MUD and the issuance of tax-free debt, the developer can offer more affordable housing because the cost of borrowing is less than traditional finance.

Other testimony provided by Donna Howe with the Capitol Area Suburban Exchange and Douglas Jordan with the Association of Water Board Directors further reinforced the value of MUDs by emphasizing that the development of MUDs produces grass-roots government. MUD board members represent the lowest form of elected officials and handle fiduciary responsibilities of government at a district level. In many cases, because the government is closer to the people, they are able to provide services that are specific to the citizens needs.

Andy Icken, Deputy Director of Public Works with the City of Houston, provided information regarding the City of Houston's experience with MUDs. Specifically, there are 13 in-city MUDs and 483 within the city's extra-territorial jurisdiction. Mr. Icken discussed the importance of MUDs to the city in terms of their particular course of development, economic growth and the creation of affordable housing. Mr. Icken also stressed the city's interest in ensuring consistency with city standards, laying out standard consent procedures for MUD creation including bond requirements and design and construction standards.

Laura Huffman, Assistant City Manager with the City of Austin, offered a contrasting opinion with respect to the use of MUDs as a means of growth and development. According to Ms. Huffman, in recent years, Austin's tax base has tripled, the population has almost doubled and there have been nearly 150,000 new jobs, all without significant reliance on MUDs. With respect to its relationship with existing MUDs, Ms. Huffman also discussed growth and governance problems they have encountered. Governance has also proven to be an issue in that a piecemeal approach to MUD creation can cause confusion in the provision of local government services. MUDs are unique developments and do not look at growth patterns or jointly plan along corridors. Ms. Huffman further stated that the City of Austin does not use MUDs as a growth tool because they are unconvinced of the cost savings and the affordability that is passed on to home buyers.

Don Lee, Executive Director of the Conference of Urban Counties, testified that, because half of the projected growth in Texas will take place outside of the jurisdiction of cities, his organization is also concerned about increasing urbanization and governance issues that will arise. According to Mr. Lee, MUDs are part of a growth pattern that counties are often ill-equipped to deal with under their historical policy structure and resource structure in the state of Texas. At the same time, growth and economic development are key and the state must find ways to sustain it. In addition, Mr. Lee stated that The Conference of Urban Counties would not support any legislation that would exempt MUDs and other development from the counties existing regulatory authority.

Tom Morgan, Vice President of Legal Affairs with the Texas Association of Realtors (TAR) testified regarding compliance with the seller's disclosure requirements discussed above. According to Mr. Morgan, TAR has found that often sellers don't know which of the several forms they are supposed to provide to the buyer and do not know how to obtain the information required in the notice. In addition, obtaining the information from the relevant MUD is often difficult. According to Mr. Morgan, TAR members have expressed concern, that even though the MUDs are required to file the information in the county property records and with the TCEQ, there is a lack of compliance. Even if the information is filed, it is often difficult and costly for the seller to search the county property records to obtain the required information. It is possible to locate some of the required information on TCEQ's water utilities database, but not all of the information is posted there.

TAR also made several proposals. First, TCEQ could be required to post on its website all of the information mandated by Water Code Section 49.452; however, it is cost prohibitive to do so. The second suggestion was to amend the current statute to require the seller to direct the buyer to the TCEQ website, or require the seller to print off the information from the TCEQ website to give to the buyer, which would provide the buyer with the current tax rate and the MUD's outstanding debt.¹⁶

Finally, Jimmy Schindewolf General Manager of the North Harris County Regional Water Authority, testified regarding regional efforts by MUDs in the Houston area to address local subsidence issues. The Authority was created to provide a means for large groundwater users in

the area to comply with the Harris Galveston County Subsidence District mandates to reduce groundwater pumping and convert to surface water. The Authority's role is to develop an integrated delivery system and act as a wholesaler, while the MUDs will continue their role as retailers. Mr. Schindewolf noted that the legislature has also created the West Harris County Regional Water Authority consisting of 114 MUDs and also the Central Authority made up of 11 districts, essentially for the same purposes.

Public Hearings

The House Committee on Natural Resources met in a public hearing on the municipal utility districts charge on August 3, 2006 at 11:00 am at the Houston City Council Chambers. The following persons testified on the charge:

Joe B. Allen, Self
Phil Haag, Self
Allen Hodges, Hodges/Leonard Family
Doug Holcomb, Texas Commission on Environmental Quality
Donna Howe, Capital Area Suburban Exchange
Laura Huffman, City of Austin
Ellen Hughes, Self
Andrew Icken, City of Houston
Douglas Jordan, Association of Water Board Directors Texas & Harris County MUD 102
Donald Lee, Texas Conference of Urban Counties
Tom Morgan, Texas Association of Realtors
W.F. "Ted" Nelson, Self
Scott Norman, Texas Association of Builders
Michael G. Page, Self
Donna Parrish, Self
Noe E. Perez, Self
Jimmie Schindewolf, North Harris County Regional Water Authority
Robert G. "Bob" West, Self
Connie White, Self
Jeffrey C. Wiley, Herbert W. Appel; Greater Fort Bend Economic Development Council

Findings

The use of MUDs has been an important tool in some areas of the state in terms of producing needed economic growth and development in areas outside the corporate boundaries of cities. With the population of Texas expected to increase substantially in the next 50 years, MUDs provide a mechanism to develop more affordable housing and allow the private sector to help meet needs that cities and other local governments can not. MUDs also provide an important grass-roots government that is accountable to the citizens at a district level.

While MUDs can be created at the Legislature or at TCEQ, commission rules for district creation include certain requirements relating to feasibility. TCEQ rules for both legislatively and

commission created districts contain stringent requirements relating to bond issuance, particularly with respect to tax structure, build-out and economic soundness.

While there are extensive rules for district creation at TCEQ, there is no standard process or language relating to MUD creation at the Legislature. At the same time, over the last several legislative sessions, the number of bills referred to the House Natural Resources Committee proposing the creation of a MUD has increased.

Recommendations

A standard process should be developed for MUD creation by the Legislature. Consideration should be given to the following issues:

1. A template for district creation that includes a clear demarcation between standard and non standard bill language.
2. Additional requirements with respect to engineering and feasibility.
3. Notice requirements for purchasers and other public disclosure requirements relating to MUDs
4. City and county participation in the process of MUD creation, including an assessment of land and infrastructure planning on a regional basis.
5. The appropriateness of expanding such process to other types of special district creation by the Legislature.

LANDSCAPE WATER CONSERVATION

Charge #2

History

The Water Conservation Implementation Task Force (Task Force) was created during the 78th Legislative Session via enactment of SB 1094. The Task Force was designed to review and evaluate optimum levels of water-use efficiency and conservation in this state and make recommendations based on that review and evaluation.¹⁷ In addition, pursuant to SB 1094, the Task Force developed a best-management practices guide (BMP Guide) for use by regional planning groups and utilities responsible for water supply and delivery.¹⁸

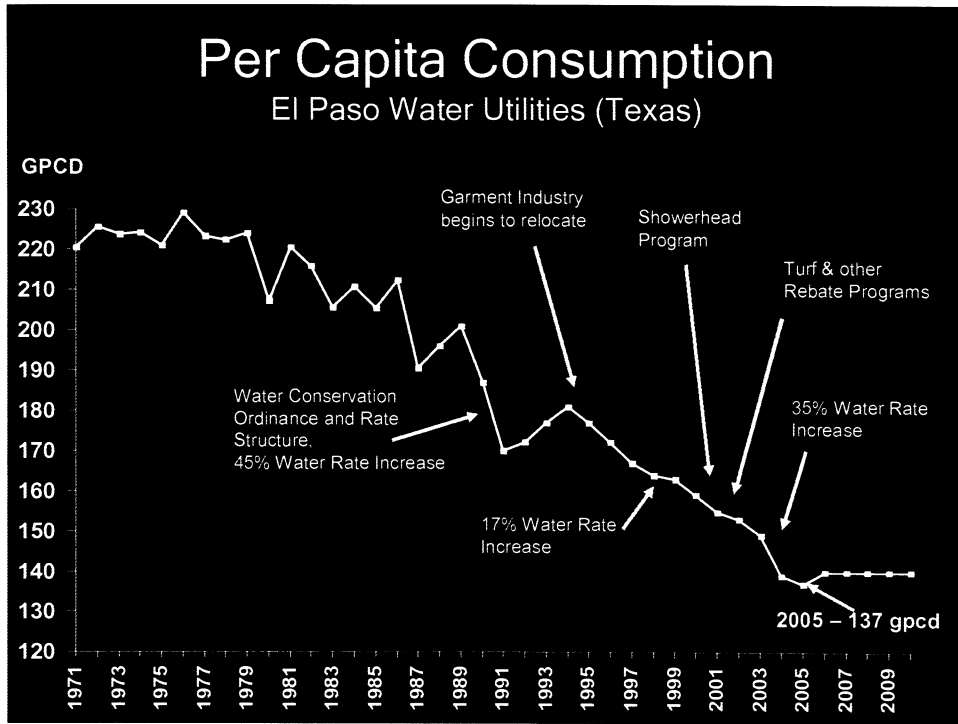
The Task Force completed its work and produced a report to the Legislature and the required BMP Guide prior to the start of the 79th Legislative Session. Because of the importance of outdoor water savings, the BMP Guide included measures related to landscape irrigation conservation and incentives, and landscape design and conversion programs.¹⁹

For most utilities, outdoor water use is one of the primary sources of peak demand during the summer months. Consequently, utilities must plan for and build the capacity necessary to meet that peak demand. At the same time, growing residential development and the use of automatic irrigation systems can potentially result in excessive outdoor water use.

With this charge, the House Natural Resources Committee has evaluated the utilization of measures like those described in the BMP Guide by various sectors of the state, including utilities, and the turf irrigation, and homebuilding industries.

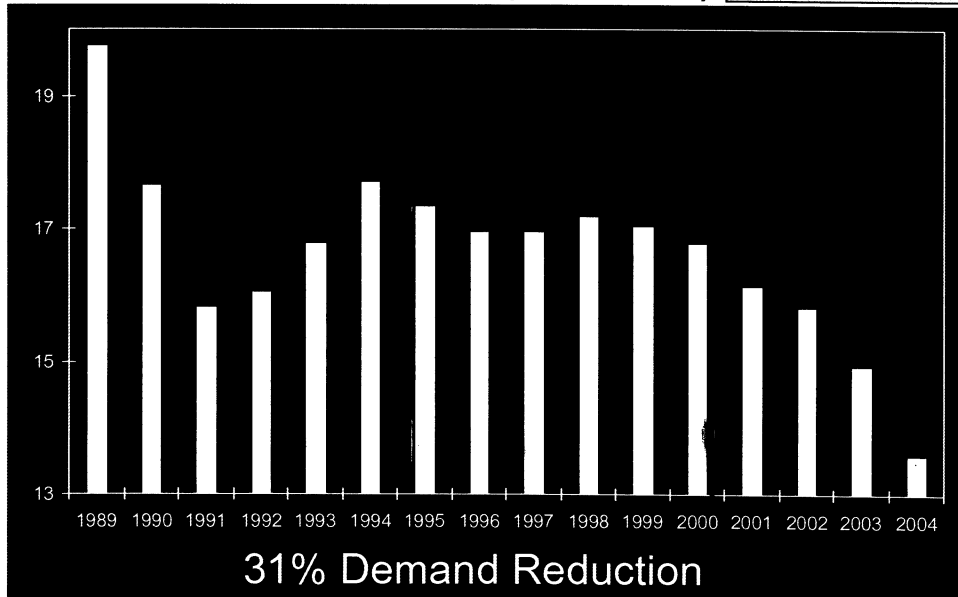
Landscape Conservation Programs - El Paso Water Utilities & San Antonio Water Systems

At a hearing on this charge in April, the committee took testimony from Karen Guz with the San Antonio Water System (SAWS) and Anai Padilla with the El Paso Water Utilities (EPWU) regarding their landscape conservation programs. Both cities have comprehensive conservation programs and have seen large per capita reductions in recent years – El Paso from 220 gpcd in 1971 to 137 gpcd in 2005 and San Antonio from 213 gpcd in 1984 to 130 gpcd in 2005. (see tables below)²⁰

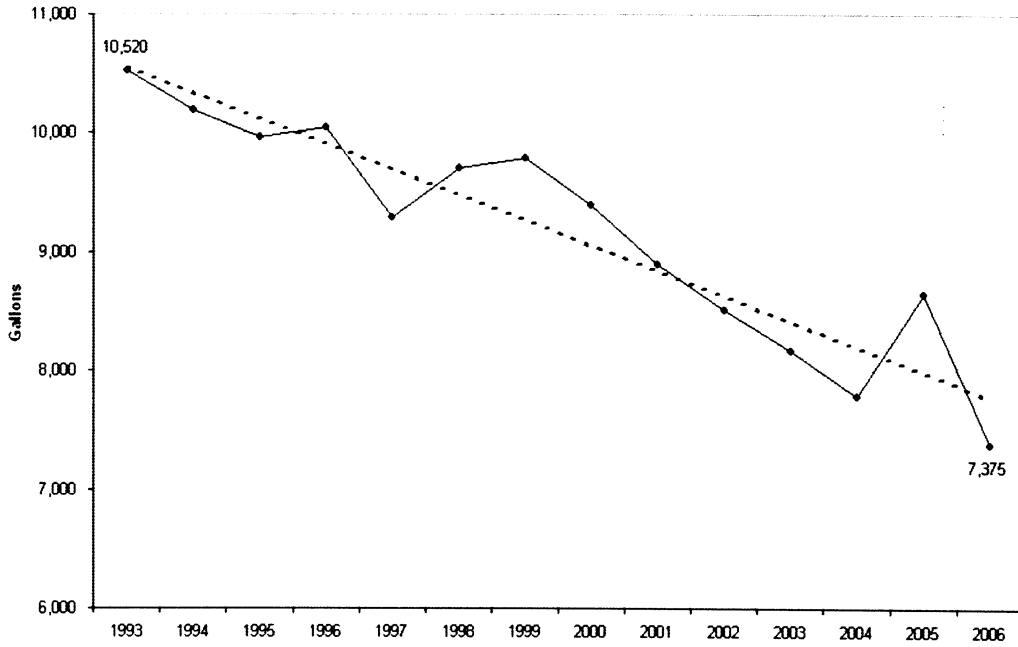


Average Monthly Consumption per Household (in CCF's)

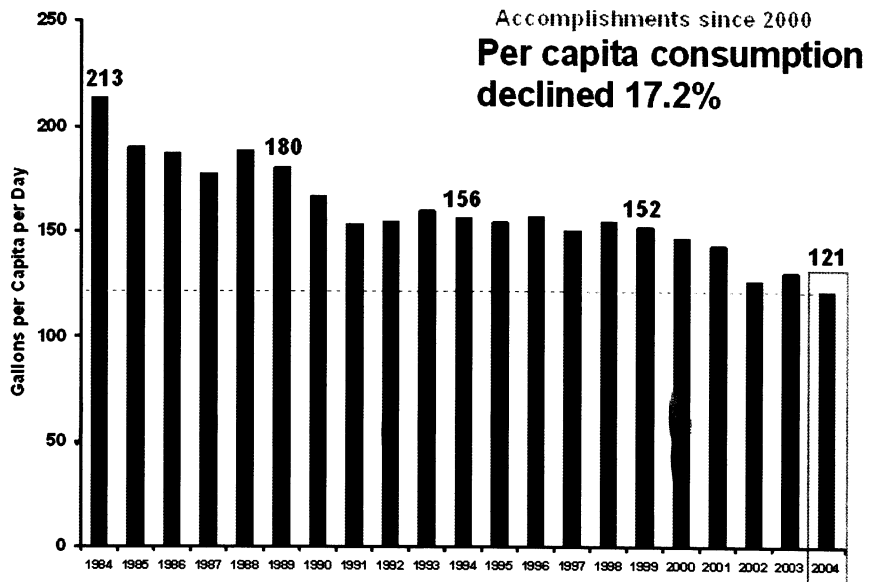
El Paso Water Utilities



San Antonio Residential Use Trends



San Antonio Water System



The landscape conservation programs that these two cities have implemented include conservation ordinances, rebate incentives, and educational outreach programs.

Conservation Ordinances²¹

EPWU's landscape ordinance establishes landscape regulations for commercial properties and requires licensed irrigators for the design and installation of irrigation systems. The ordinance also sets limits for at-home car washing. Residents must use either a bucket and/or a hand-held hose with a shut-off nozzle and during drought conditions car washing will only be allowed at commercial establishments that have the necessary treatment and recycling systems and have been approved by the EPWU. The ordinance designates landscape watering days according to even and odd numbered addresses and gives time restrictions for watering. Individual permits may be granted for a 30-day period to residents and businesses that have newly sodded lawns that require more water to become established. One-day permits may also be granted for the use of fertilizers and other chemicals on the lawn. Violations of the ordinance may result in a Class C misdemeanor citation and a fine of \$50-\$500. Violations are defined as landscape watering on the wrong day or at the wrong time, allowing excess water to flow into public right of way and failure to repair a leak within five days of discovering the leak.

SAWS conservation ordinance includes analysis or audit of athletic fields, golf courses and other large properties. Properties that are over 5 acres and have in-ground irrigation systems must submit an annual irrigation check-up to the San Antonio Water System Conservation Department by May 1 of each year. The intent of the irrigation check-up is to ensure that a minimum standard of maintenance is performed. A typical commercial irrigation system uses on average 20,000 gallons each time the irrigation system is run. A poorly maintained system can use upwards of 60,000 gallons for each run. Also in an effort to raise higher standards, both commercial and residential irrigation systems (i.e. in-ground sprinklers) must be equipped with rain sensors which allow systems to run only when needed. Other provisions of the ordinance mandate that charity car washes take place at permanent car wash businesses, and that individuals who commercially use a power washer be certified and registered with SAWS. It is estimated that these provisions could provide a savings of 1.3 billion gallons of water annually.

Voluntary Participation

Rebate and incentive programs encourage homeowners and business owners to participate in conservation measures by saving them money in reduced bills, and by paying them in credits and rebates when upgrades are made toward more water efficient plant materials, appliances and practices. Both EPWU and SAWS have several rebate and incentive programs that get their communities involved. To further reinforce these programs, both utilities have established unique conservation rate structures to reward those that participate.

EPWU²²

- Turf Rebate Program that pays \$1.00 per square foot of difficult-to-maintain established grass that is replaced with water smart landscape plants and shrubs.

-
- The Clothes Washing Machine Rebate offers \$200-\$300 per machine for residential and commercial customers respectively.
 - The Refrigeration System Rebate is a joint effort with the Electric Company that pays \$300 for the installation of central refrigeration units.
 - The toilet program is the oldest rebate program and to date more than 49,000 toilets have been rebated.
 - Two free programs: the distribution of showerheads and evaporative air conditioner clamps to reduce the bleed-off flow to a drip.
 - The distribution of waterless urinals to schools, government offices, bars and nightclubs and the leak assistance program for low-income customers.

SAWS²³

- \$150 rebate on a SAWS-approved hot-water-on-demand system that can save 10,000 gallons of water a year by making hot water 80% faster.
- \$100 rebate on water bill when a high-efficiency washing machine is installed for residential and commercial use. A high-efficiency washing machine reduces energy use by up to 70% and water use by up to 50%.
- The Kick the Can Program will give up to two new water-efficient toilets free.
- Large-Scale Retrofit Rebate Program for commercial, institutional and industrial water users who convert to water saving equipment and practices such as replacing water-cooled equipment with new air-cooled equipment, improving cleaning processes, and eliminating water intensive phases of industrial processes.
- The Golf Fore SA program helps golf courses develop conservation and community-oriented practices and provides certification for their achievement.
- \$100- \$525 rebate on water bill for planting a water saver landscape based on the SAWS requirements and using drought tolerant plants selected from the approved list.

Education

As the shift is made to more water saving landscapes, homeowners and other users must also be educated regarding proper care and watering. Both EPWU and SAWS have education outreach programs that target the problem of people over-watering by nearly 200%.²⁴

EPWU reaches their community by making presentations at city events, civic organizations and school groups with hands-on programs and tools such as Desert Blooms: A SunScape Guide to Plants for a Water-Scarce Region. They also offer indoor and outdoor audits for residential customers and include monthly conservation messages as bill stuffers.

In an effort to educate people on proper watering techniques, SAWS has distributed over 5,000 copies in 2006 of their publication, The San Antonio Landscape Care Guide, and through the use of volunteers from Master Gardeners and Gardening Volunteers of South Texas, they have reached over 2,000 people with an outdoor landscape conservation presentation. SAWS has also implemented the Seasonal Irrigation Program (SIP) based on a concept called "Evapotranspiration" which measures the amount of moisture a plant loses through its leaves and soil. It determines how much water a plant needs to thrive according to weather data each day, type of grass, and sun exposure. This

information is available in the Saturday edition of the Home and Garden section of the San Antonio Express-News. Residents can also register to receive a weekly email or phone call with SIP advice.

Other Testimony

In addition to the utilities, the committee also heard testimony from industry representatives regarding changes that have occurred in the irrigation, turf and homebuilding industries in response to conservation needs – such as the shift to use of plants adapted for the region, and current testing on which variety of turf can withstand prolonged dry periods. In addition, the San Antonio Builders Association testified regarding their cooperative role in crafting SAWS conservation ordinance that includes requirements for xeriscape options and models in new subdivisions, minimum soil requirements for turf grass on new construction and a requirement that turf grass with summer dormancy capabilities be installed on new construction beginning in January 2007.

Written remarks submitted by the Texas Nursery and Landscape Association stated that while plant selection strategies play a role, landscape water conservation solutions should also be based on more site specific considerations, such as irrigation audits and user education.

Texas Water Development Board Municipal Conservation Programs

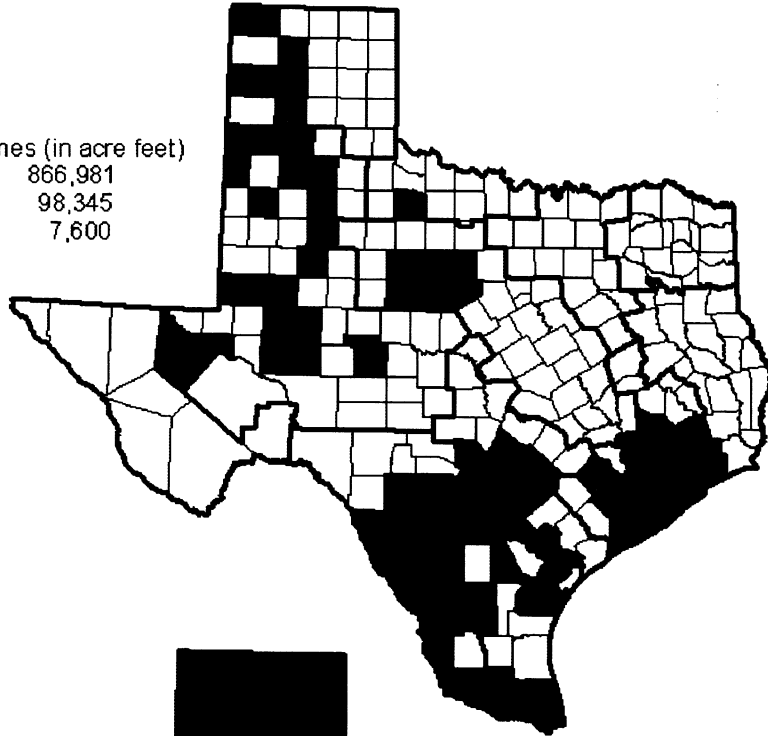
The committee heard testimony from the Texas Water Development Board (TWDB) regarding their current municipal conservation funding and the need for assistance to small utilities that want to implement water conservation practices like those discussed above, but do not have the local resources or rate-payer base to provide these services by themselves.

As conservation management strategies become more prevalent in Texas' regional planning efforts as shown by the comparison charts below, it is even more important that TWDB have funds available to assist communities to implement the conservation measures set out in local and regional plans.

Regional Water Plans with Conservation Management Strategies

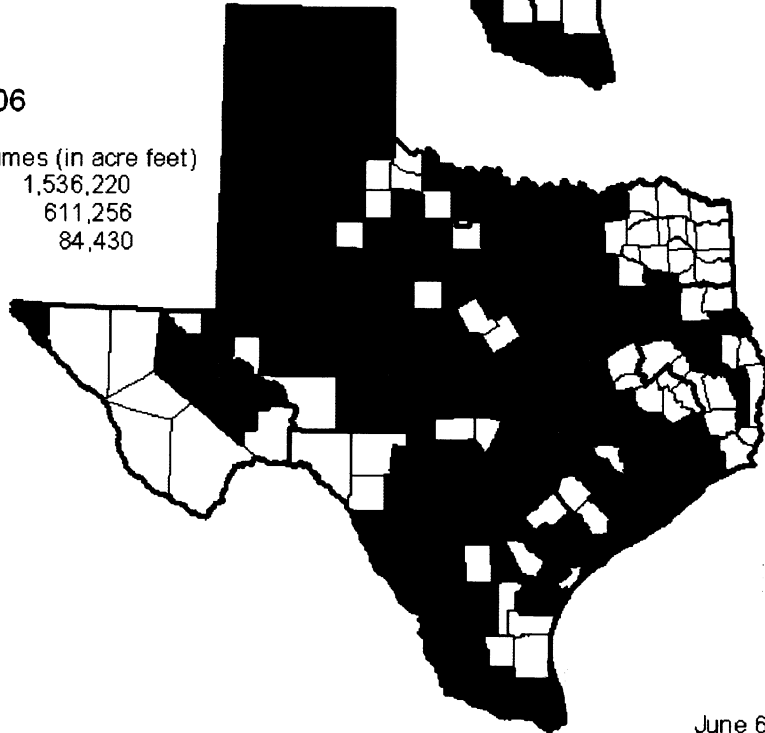
2001

2050 Strategy Volumes (in acre feet)
Agricultural 866,981
Municipal 98,345
Industrial 7,600



2006

2060 Strategy Volumes (in acre feet)
Agricultural 1,536,220
Municipal 611,256
Industrial 84,430



June 6, 2006

TWDB has provided assistance to utilities through municipal water conservation programs including the following:

- Water conservation plans required for TWDB financial assistance since 1984.
 - Over 480 entities have developed water conservation plans as part of financial assistance programs to date. These plans must be reviewed/approved by TWDB. In addition, TWDB reviews required annual conservation reports.
- Assist utilities in developing municipal water conservation programs
 - TWDB Report 362-Water Conservation Best Management Practices Guide contains 22 BMPs for municipal water conservation, including 5 BMPs related to outdoor water use.
 - The TWDB works closely with associations such as the Texas Nursery and Landscape Association and the Texas WaterWise Council in developing educational information regarding efficient outdoor water use. TWDB offers training and workshops for entities developing conservation plans.
- Retail water utility systems water loss program
 - As required in HB 3338, 78th Legislature, TWDB conducted a 2005 survey of 4,200 retail public water suppliers (replies due 3/31/06).
 - In FY 06, staff has provided training or assistance to 47 entities on water audit/leak detector programs.
- Water conservation education and literature
 - In FY 06, distributed 114,700 pieces of literature to fill 156 requests.
 - In 2005, distributed 753 Major Rivers teacher kits, and 1,337 classroom materials sets to a total of 55 water entities.
 - In FY 06, completed development of a 6th grade level water education curriculum, K-3 coloring/activity book, and an interactive “Kids Page” for 4th-6th grade. These resources can be accessed at <http://www.twdb.state.tx.us/kids>.
- Regional and State Water Plan Activities
 - Reviewed water conservation strategies in the 2006 Regional Water Plans which required consideration of water conservation strategies to meet identified needs.
 - Providing input to the development of 2007 State Water Plan.

Legislative Appropriations:

In fiscal year 2006, TWDB made a Legislative Appropriations Request for municipal conservation in the amount of \$373,000 consisting of \$296,000 from General Revenue and \$77,000 from State Revolving Funds. A similar request was made for fiscal year 2007. During the last legislative session, due to budget constraints, the Appropriations Act did not provide general revenue funding for TWDB’s Water Conservation Strategy. To satisfy several required statutory and Board rule requirements for water conservation activities, in September 2005, the TWDB approved a one-time fix using funds from other programs to fund a revised, reduced municipal water conservation program in FY 06 using \$169,000 in General Revenue funds and \$95,700 in Federal State Revolving Funds. According to TWDB, current funding for the TWDB Municipal Water Conservation program is not sustainable, and either general revenue or some alternative source of funding will be needed to sustain this program in FY 08-09. TWDB has

submitted an Exceptional Item for inclusion in the TWDB FY 08-09 Legislative Appropriations Request. The request will restore TWDB's municipal water conservation program to 2004-05 levels (in addition to federal funding that was not previously reduced). Without restoration of funding for municipal conservation, other conservation activities could provide only about 25% of the target for TWDB water conservation performance measures.²⁵

Additional funding would be needed to more adequately support municipalities as they more clearly see the benefits of conservation. In addition, initiatives developed by the Water Conservation Implementation Task Force did not receive state funding. TWDB continues coordination and development of programs such as Water IQ, a statewide water conservation public awareness campaign, despite a lack of funding.²⁶

The "Water IQ: Know Your Water" campaign is a product of the Conservation Implementation Task Force as described above. The Task Force recommended that the state create and fund a statewide public-awareness program for water conservation. The program consisting of a design, scope, and budget comparable to that of the highly successful *Don't Mess with Texas* highway antilitter campaign, would have primary statewide goals of making "individual Texans aware of the importance of water conservation, including water reuse, to their future as residents of the state and to complement and reinforce other local and regional water conservation and water-reuse public-awareness programs and activities."²⁷

According to research by the Texas Water Development Board, four out of five Texans don't know the natural source of their water. But when they raise their water awareness and learn where their water comes from, they're more likely to save it.²⁸

While Water IQ has not been fully funded by the state, in order to develop the program and gather valuable data before the next session regarding the effect of awareness levels and media relations on consumption habits of water users in this state, various pilot programs have been implemented through local funds and partnerships among regional providers.

During our hearing on conservation, the committee heard that while private funding has played an important role in these pilot programs, in order to take Water IQ statewide, particularly to those smaller utilities and water providers that lack resources, state matching funds will be needed.²⁹

The following pilot projects are currently underway:

- *North Texas Municipal Water District* - The North Texas Municipal Water District (NTMWD) is a wholesale water provider serving 1.5 million people in the North Texas area. As the first in Texas to implement the "Water IQ: Know Your Water" campaign, NTMWD's program utilizes radio, outdoor, print and gas pump advertising and an experimental marketing outreach tour. The campaign, initiated in June 2006, challenges people to reduce consumption by 5 percent.³⁰

-
- *Lower Colorado River Authority and the City of Austin* - The Lower Colorado River Authority and the City of Austin partnered in this campaign that is aimed at more than one million Central Texans in the combined service areas. Announced in July 2006, the campaign will use television, radio and newspaper ads, outdoor billboards, gas pump advertising, a Web site, media relations and face-to-face outreach. The campaign calls for water users to reduce water use by 10 percent.³¹
 - *City of Lubbock and the High Plains Underground Water Conservation District No. 1* - Through a partnership between Lubbock Water Utilities and the High Plains District, initiated in September 2006, the Water IQ public education campaign will include television, print, radio ads and conservation workshops at home improvement stores. Lubbock Water Utilities is focusing its educational efforts within Lubbock, while the High Plains District includes Lubbock County and all or part of 14 other counties in its service area. The two agencies are asking water users in the region to voluntarily reduce water use by 10 percent.³²

Public Hearings

The House Committee on Natural Resources held a public hearing on landscape water conservation charge on April 18, 2006, at 2:00 pm in Capitol Extension, E2.028. The following persons testified on the charge:

Carole D. Baker, The Subsidence District
Ken Blaker, Greater Austin Home Builders Association & Association of Builders
John Cosper, Turfgrass Producers of Texas
Karen Guz, San Antonio Water Systems
Michael Moore, Greater San Antonio Builders Association
William F. Mullican, Texas Water Development Board
Becky Oliver, Greater San Antonio Builders Association
Anai Padilla, El Paso Water Utilities
Don Weiss, Self

Findings

Conservation strategies are often the most cost-effective means of providing additional water supplies, delaying the need for more costly projects and ensuring the viability of water rights in this state. It is important to ensure that all areas of the state are promoting practices that account for and appropriately reduce outdoor water use.

At the state level, the challenge lies in finding ways to support local and regional communities in their efforts to adopt and implement conservation programs.

Recommendations

The State should support efforts by the TWDB to provide assistance for municipal conservation, especially with respect to small utilities and other water users that lack the resources necessary to

implement conservation measures on their own. In particular, the Legislature should consider restoring funding to the Municipal Water Conservation Program as part of the TWDB's FY 08-09 legislative appropriations.

WASTEWATER RE-USE

Charge #3

History

As water planning efforts have accelerated statewide, so have the number of municipalities and utilities hoping to use treated effluent as an additional water source.

Generally, about sixty (60%) of all water diverted from Texas' rivers and streams or groundwater pumped for municipal purposes enters the state's watercourses as discharges of treated effluent from wastewater treatment plants. Once considered a threat to surface water supplies, due in part to actual or perceived water quality concerns, the value of this treated effluent is now clearly recognized. This is evidenced by a much heightened interest in reuse projects to meet current and future increased municipal demands. Further, the concept of reuse is included in nearly every SB 1 regional plan. Treated wastewater effluent discharged into Texas' rivers also helps meet downstream water needs, including those of the environment and agriculture.³³

There are two types of reuse - direct and indirect. Direct reuse contemplates the reuse of water before it is returned to the watercourse - meaning the water is piped directly to a place of use from the wastewater treatment plant. With indirect reuse, the discharger will subsequently divert and withdraw effluent already returned to the watercourse to use again - essentially making the river or stream a mode of transport for the water.

*Direct Reuse*³⁴

Direct reuse is the use of wastewater effluent that involves delivery of effluent via pipelines, storage tanks and other necessary infrastructure directly from the wastewater treatment plant to others before discharging the effluent into a watercourse.

In Texas today, it is undisputed that a surface water right holder may directly reuse and fully consume effluent, subject only to the limitations contained in the underlying water right from which the effluent was derived. Where contracts or other laws have clearly transferred ownership of that effluent to another, such as the wastewater treatment provider, the direct reuse rights may lie with the owner of the effluent. This approach is generally consistent with a water right holder's right to fully consume the water granted under its water right, subject only to the limitations expressed within the "four corners" of the water right. This approach is also generally consistent with how wastewater treatment providers operate today. Owners of wastewater treatment plants generally have a wastewater discharge (TPDES) permit from the state that allows them to discharge treated effluent to a watercourse. TPDES permits are not viewed as imposing a "duty" or obligation on the wastewater treatment plant owners/operator to continue to discharge effluent at a particular location or in a particular quantity. Rather, these permits restrict the circumstances under which *any* discharge *may* occur, if at all.

Obtaining authorization for direct reuse under today's regulatory scheme is fairly streamlined. Typically, only certain water quality authorizations must be obtained from the Texas Commission on Environmental Quality (TCEQ) to do this kind of reuse. A water right holder may directly reuse the unconsumed water in a relatively unfettered manner so long as the reuse is accomplished for the purposes and in the location of use provided in the underlying water right from which the effluent is derived. Although the direct reuse of effluent reduces the amount of flow in the watercourse that is available downstream for use by other water rights holders and the environment, additional water rights authorizations are typically not required and thus, these impacts to other water rights and the environment are not addressed.

Some owners of wastewater treatment plants have relied on existing law and invested considerable funds in implementing and planning for expanded direct reuse projects. In some cases, wastewater treatment operators are required or have chosen to operate under a "no discharge" permit, which requires them to directly reuse all of the effluent. In most instances, however, direct reuse projects are relatively small in scale. Moreover, there remain practical, technical, political, and fiscal limitations on the ability to implement large direct reuse projects. Human consumption of treated wastewater effluent has yet to gain widespread social acceptance in Texas. The use of treated wastewater for landscape irrigation in areas of heavier human use (e.g. parks and school grounds) has been met with resistance in some areas even though the effluent must be treated to a high standard. Thus, in some cases, high quality potable water is still used for some purposes even though treated effluent could be used under today's rules. This limited implementation of direct reuse projects means that the availability of return flows to meet downstream needs has not yet been significantly impacted. However, it is believed that as treatment technology advances and treatment costs decrease, and as water becomes more scarce and the cost of developing and delivering new supplies increases, direct reuse of treated effluent (even for human consumption) will become more attractive and feasible over time.

*Indirect Reuse*³⁵

Treated wastewater that is not directly reused and is instead discharged to a watercourse is "return flow." The subsequent downstream diversion and use of wastewater return flows is commonly referred to as "indirect reuse." Indirect reuse substitutes transportation via a state watercourse for the pipeline, and accompanying capital cost, associated with traditional direct reuse projects. The ability to use the stream as the "pipeline" may also provide the added benefit of reducing costs of treating the diverted water, as the mixing and transportation process in the watercourse actually provides additional natural treatment. Like direct reuse, indirect reuse ultimately reduces the amount of flow in the watercourse that is available for use by other water rights holders and the environment. This effect, of course, is most evident downstream of the point where the indirect reuse occurs. Upstream of the indirect reuse point, the return flows continue to provide some instream flow benefit. In contrast to the clear authority to engage in direct reuse without water rights permitting implications, the ability to engage in indirect reuse is less clear. There are currently pending before TCEQ a large number of water rights applications seeking indirect reuse authorization, nearly all of which have been protested. In some cases, these permits applications derive from projects contained in regional water plans.

Testimony and Texas Water Conservation Association Reuse Paper

Direct Reuse - Chapter 210, Water Quality Regulations

With respect to direct reuse issues, the committee heard testimony from the Texas Section of the American WaterWorks Association, Water Environment Association of Texas and the City of Austin regarding the need for rule revisions at TCEQ relating to their Chapter 210 water quality regulations for direct reuse projects, contained in Title 30 of the Texas Administrative Code. The rules were last updated in 1997 and with technological and operational changes that have occurred since, these particular witnesses discussed the need to streamline the current rules and make them more consistent with the regional planning process.

For example, Roger Schenk, chair of the Rules Revision Committee of the American WaterWorks Association - Texas Section (TAWWA), discussed the committee's development of a comprehensive set of rules changes designed to accomplish the following objectives:

1. Make the best use of the Texas' precious water resources by encouraging the most efficient and effective use of direct water reuse applications as possible.
2. Devise a rule that is consistent with the legislatively-mandated regional water plans and that promotes water conservation, reuse, and encourages smart resource planning.
3. Streamline the regulatory process so that direct water reuse supplies can be used immediately to meet our current and future Texas Water Plan needs.³⁶

In addition, the Texas WaterReuse Association testified regarding the importance of reuse in meeting our state's future water demands, as well as funding needs for additional research, development and assessment of new treatment technologies with respect to direct reuse.³⁷

Indirect Reuse

The committee took testimony from various witnesses regarding a potential conflict between Sections 11.042 and 11.046 of the Water Code. Section 11.042 expressly provides for a bed and banks authorization from TCEQ to persons wishing to discharge and subsequently divert and reuse existing return flows using the watercourse to transport water in the river or stream. Section 11.046 of the Water Code, however, states that once surface water diverted under a permit is returned to the stream, it becomes state water again and is subject to permitting requirements.

The committee heard testimony from the Chairman of the TCEQ, Kathleen Hartnett White, regarding the impact such ambiguity has had on the agency and its ability to establish commission policy regarding pending applications. The commission has issued 46 permits for indirect reuse. Of those 46 permits, only one has been contested. Of the 19 pending applications, most are contested by downstream water right holders.³⁸

Todd Chenoweth, Manager of the Water Rights Permitting and Availability Section at the TCEQ, discussed some of the particular questions before the agency involving the legal status of indirect reuse permits. While Section 11.042 clearly states that the agency, in issuing indirect reuse permits,

must protect downstream water rights holders and the environment, harmonizing its provisions with those contained in Section 11.046 has proven contentious among stakeholders. Specifically, questions have been raised regarding the legal status of bed and banks permits in terms of the nature of the authorization. For example, is the permit a new appropriation, does it carry a new priority date, and depending on the nature of the authorization (i.e. new appropriation or not), what type of water availability determination must be made under Section 11.134?³⁹ In addition, under current law, how does the analysis change when the effluent is derived from different sources of water?

Water Code Section 11.042 and Water Code Section 11.046

Bed and Banks Authorization of Reuse⁴⁰

Those who advocate that wastewater return flows are not subject to the permitting requirements that apply to new appropriations focus on Texas Water Code § 11.042 – the “Bed and Banks” statute. These applicants argue that section 11.042 changed preexisting law to provide an independent basis for granting indirect reuse authorizations outside the established prior appropriations permitting scheme.

Section 11.042 contemplates the issuance of permits for the delivery of certain waters down the bed and banks of a watercourse under three separate circumstances. Subsection (a) provides the statutory guidelines for delivery of stored waters from reservoirs using the bed and banks of a watercourse and is not at issue here. Subsection (b) provides a statutory basis for delivery of effluent derived from groundwater.... Many argue that subsection (c) provides the basis for indirect reuse authorizations of surface-water derived effluent. It states:

Except as otherwise provided in Subsection (a) of this section, a person who wishes to convey and subsequently divert water in a watercourse or stream must obtain the prior approval of the commission through a bed and banks authorization. The authorization shall allow to be diverted only the amount of water put into a watercourse or stream, less carriage losses and subject to any special conditions that may address the impact of the discharge, conveyance, and diversion on existing permits, certified filings, or certificates of adjudication, instream uses, and freshwater inflows to bays and estuaries. Water discharged into a watercourse or stream under this chapter shall not cause a degradation of water quality to the extent that the stream segment's classification would be lowered. ...

Many applicants for indirect reuse authorization argue that “water” in Section 11.042(c) includes all types of water (including surface-water derived effluent) except those specifically addressed in other sections of Section 11.042 and that Section 11.042(c) removes indirect reuse from the process for permitting new appropriations. They further argue that no priority date should attach to indirect reuse, or that, if a priority date must be assigned, it should be the same priority date that is associated with the underlying water right from which the return flows derive. Applicants also argue that the protections embedded in Section 11.042(c) are sufficient to protect the environment and all existing water rights holders. Others argue that Section 11.042(c) actually represents a limitation on one’s private property right to reuse effluent that did not previously exist.

Further, because a water right holder is entitled to consumptively use or directly reuse 100% of the water granted under an appropriative right (unless otherwise expressly limited in the permit), and because all requests for new appropriations in recent years have been evaluated assuming that the waters under these existing rights will be fully consumed (i.e. there will be no return flows), many argue that a bed and banks permit is the proper mechanism for granting legal rights to indirect reuse of effluent.

Indirect Reuse Permits As New Appropriations ⁴¹

Those arguing that any legal claim to wastewater return flows must be sought through the ordinary water rights permitting process largely rely on preexisting law and Water Code § 11.046. This statute, which also provides the clear authority for direct reuse, provides in pertinent part that:

Once water has been diverted under a [water right] and then returned to a watercourse or stream ... it is considered surplus water and therefore subject to reservation for instream uses or beneficial inflows or to appropriation by others unless expressly provided otherwise in the permit, certified filing, or certificate of adjudication.

Supporters of this position argue that this language codifies the common law, which held that an appropriator had no claim to water that had escaped his land, particularly once it drained into a natural watercourse. They argue that wastewater return flows are “considered surplus water” under Section 11.046(c) and thus should be treated as available for use by other downstream water rights holders or subject to permitting only as a new appropriation.

Since Section 11.042(c) uses the term “water” and not “effluent” or “return flows,” some offer that this section applies to other sources of water proposed to be transferred through state watercourses, such as groundwater or imported surface water (often referred to as “developed water”). This interpretation, they contend, gives meaning to the term “water” used in Section 11.042(c) without the apparent conflict between this section and the provisions of Section 11.046(c), and without requiring a dual permitting requirement to secure a new appropriation under Section 11.046(c) and a bed and banks authorization under Section 11.042(c).

Groundwater-based effluent ⁴²

Section 11.042(b), also enacted in 1997, provides a separate mechanism for addressing the indirect reuse of effluent derived from groundwater. Specifically, section 11.042(b) reads:

A person who wishes to discharge and then subsequently divert and reuse the person's existing return flows derived from privately owned groundwater must obtain prior authorization from the commission for the diversion and the reuse of these return flows. The authorization may allow for the diversion and reuse by the discharger of existing return flows, less carriage losses, and shall be subject to special conditions if necessary to protect an existing water right that was granted based on the use or availability of these return flows. Special conditions may also be provided to help maintain instream uses and freshwater inflows to bays and estuaries. A

person wishing to divert and reuse future increases of return flows derived from privately owned groundwater must obtain authorization to reuse increases in return flows before the increase.

Effluent derived from Imported or Stored Waters⁴³

While section 11.042(b) singles out groundwater-derived effluent for specific regulatory treatment, Section 11.042(c) does not identify the source(s) of the “water” to which it refers, thereby leaving open for argument the issue of whether or how effluent derived from other water supplies is to be treated, if at all, under Section 11.042(c).

Because imported waters from another basin, and the effluent derived from them, are sources of supply that would not have ordinarily been available to meet downstream environmental needs or those of downstream water rights holders in the receiving basin, some argue different and perhaps less onerous treatment is appropriate, especially in light of already existing barriers to interbasin transfers.

A few have also argued that effluent derived from waters that are first stored in an in-basin reservoir are waters that would not have been available to the environment or downstream water rights but for the initial efforts of the entity that constructed the reservoir to capture and store the source water. Others suggest that there is no difference between reuse of effluent derived from in-basin surface water previously stored in a reservoir and effluent derived from in-basin surface water diverted under a run-of-river permit.

As discussed above ...many generally recognize there may be a valid basis for distinguishing between supplies that are derived in-basin versus out-of-basin supplies or groundwater. This may be particularly appropriate for new or increased levels of return flows from these water supplies, where no existing water right holder or the environment has come to rely upon those return flows. Indeed, because imported waters are required to go through a rigorous interbasin transfer permitting process that in part addresses impacts to environmental flows and senior rights in the basin of origin, it is arguably already burdened by significant restrictions. Many argue that imposing additional requirements to meet environmental needs in the receiving basin on top of these other requirements represent a punitive requirement on interbasin transfers that have been identified as necessary to meet growing water supply needs.

State Water Plan

The Texas Water Development Board (TWDB) provided testimony regarding the expected role of reuse in the updated regional water plans. According to the Board, 14 of the 16 regions use reuse as a recommended water management strategy. The largest amount of reuse, by far, will be in Region C (including the Dallas/Ft. Worth Metroplex area) - 282,000 ac. ft. in 2010, projected to increase to 725,000 ac. ft. by 2060. By 2050, the 2002 State Water Plan projected 279,000 acre-feet of reuse. By comparison, the 2007 State Water Plan will project approximately 1,300,000 acre-feet by 2060. Another noteworthy comparison is that the 2002 State Water Plan projected an 18 percent reduction in reuse between 2000 and 2050, whereas the 2007 State Water Plan will project an increase in reuse of over 200 percent between 2010 and 2060.⁴⁴

Proposals Offered in Testimony

The committee heard testimony from Mary E. Kelly, Co-Director of the Ecosystems Program at Environmental Defense. Ms. Kelly discussed the effects of reuse on environmental flows and the need to take into account flows necessary for fish, wildlife and the productivity of our bays and estuaries. According to Ms. Kelly's testimony, most of the existing permits do not have specific requirements to return flows to the stream, yet many recently issued water rights rely on the availability of return flows from older municipal permits. There are now applications for over 1.7 million acre feet of indirect re-use.⁴⁵ To address these concerns, Environmental Defense suggests the following:

1. TCEQ should treat all applications for indirect reuse (whether historically discharged, to be discharged in the future, from groundwater or inter-basin transfer) as a new appropriation with a corresponding new priority date.
2. The legislature could enhance protection for instream uses and bays and estuaries by amending the law to establish a presumption that indirect reuse applications over a certain threshold and located close to the coast should not be granted.
3. The legislature should ask TCEQ, before processing pending reuse applications over a certain threshold (say 100,000 acre feet), to produce a cumulative, basin specific analysis of all pending applications for new appropriations and reuse, assuming full use of existing permits, under drought conditions.
4. The legislature should act as soon as possible to pass the environmental flows legislation in the 79th session regular session and to encourage rapid progress in the agencies' instream flow studies.
5. As recommended by the Science Advisory Committee to the Environmental Flows Commission established by the 78th legislature, the legislature could explore whether an across-the-board dedication or reservation of return flows to instream/freshwater flow needs would be appropriate.⁴⁶

TWCA Reuse Paper

In May 2006, The Reuse Committee of the Texas Water Conservation Association (TWCA) issued a white paper that summarizes the different views of current law with respect to reuse, discusses the policy considerations and provides information on the consequences of the various approaches. *While portions of the paper have been reproduced in prior paragraphs, the entire report has been attached as Exhibit E for reference.*

As described in the text, the purpose of producing the white paper is to:

- (1) provide some basic legal background and context concerning reuse of wastewater under current Texas law;
- (2) identify disputed issues with existing law in Texas that may warrant legislative clarification;
- (3) summarize the various arguments offered on both sides of these issues, without offering an opinion as to the merits of these arguments;
- (4) and discuss potential consequences of various policy alternatives.

The issues discussed in the paper include:

- (1) Under current law, is the use of wastewater effluent after discharge to a stream a use of "state water" subject to the laws of prior appropriation or is it subject to a different regulatory scheme?
- (2) Does current law allow effluent derived from different sources of water to be treated differently for purposes of evaluating a request to reuse this effluent?
- (3) Does current law provide for different treatment of effluent derived from "future" and "existing" return flows, regardless of the source?
- (4) Who can obtain indirect reuse rights?
- (5) To what extent should protection be afforded to the environment in reuse permitting decisions?⁴⁷

The Reuse Committee goes on to stress that, "[w]hile this paper attempts to identify discrete issues for discussion, it must be stressed that few of the issues identified above can be handled discretely. Indeed, many of these issues are so intertwined that resolution of one issue can and will impact how other issues will need to be considered and resolved."⁴⁸

Public Hearings

The House Committee on Natural Resources held a public hearing on the reuse charge on April 18, 2006 at 2:00 pm in Capitol Extension, E2.028. The following persons testified on the charge:

Roger Schenk, Texas Section - American Water Works Association
Carol Batterton, Water Environmental Association of Texas
Todd Chenoweth, Texas Commission on Environmental Quality
Kathleen Hartnett White, Texas Commission on Environmental Quality
Mary E. Kelly, Environmental Defense
William F. Mullican, Texas Water Development Board
Dan Pedersen, City of Austin - Austin Water Utility
Dean Robbins, Texas Water Conservation Association
Martin Rochelle, Texas WaterReuse Association
Ben Vaughan, Coastal Conservation Association

Findings

As Texas' water planning efforts have increased, so have the number of municipalities seeking to use effluent as an additional water resource. In the past, effluent was seen as a liability in terms of its discharge, but is fast becoming a valuable asset. According to the draft 2007 State Water Plan, reuse

is an important component in many regions of the state.

While there are two types of reuse - direct and indirect - the use of a watercourse for transporting effluent in indirect reuse projects poses a particular challenge for the TCEQ in terms of permitting such use through a bed and banks authorization contained in Section 11.042 of the Water Code. Such authorizations can potentially provide a cost-effective method of moving water without the need for pipelines or other infrastructure involved in direct reuse projects, however, significant questions exist with respect to the regulatory scheme provided in current law.

In addition, certain permits have been issued based on the existence of return flows in the river; historically discharged flows that are now potentially reclaimed by municipalities and river authorities making reuse applications at TCEQ. In addition, another important issue is the consideration of any reuse proposal's effect on environmental flow needs and protection of bays and estuaries.

Recommendation

As the state continues to grow and competition for new supplies increases, ensuring a legal framework that provides consistency and ease of administration in processing indirect reuse applications is important to our state's overall planning efforts. Based on the above findings, the committee recommends that potential legislation be developed through a significant stakeholder-driven process. Because the implications of any legislative change with respect to indirect reuse impacts so many other issues, including water rights administration and environmental flows, the process should involve a wide variety of interest groups and disciplines. In addition, the TWCA white paper, particularly the issues discussion, should be used as a guide in formulating any recommendations.

ENVIRONMENTAL FLOWS

Charge #4

History

Introduced during the 79th Legislative Session, SB 3 would have made comprehensive changes in state water policies regarding the provision of environmental flows. The language stemmed from the recommendations of the Study Commission on Water for Environmental Flows (Study Commission) before the start of the 79th Legislature. The Study Commission was formed through legislation enacted during the 78th Legislative Session in 2003, after the Texas Commission on Environmental Quality (TCEQ) found that the agency did not have jurisdiction to consider permits for environmental flows as a means of providing for instream and bay and estuary needs.⁴⁹

The Study Commission along with its Science Advisory Committee concluded that continuation of a case-by-case consideration of individual water permits in each basin does not provide the certainty necessary for both the environment and water planners across the state. Rather, a long-term science-based adaptive management approach was recommended, based not on individual permits, but basin-by-basin.⁵⁰

The proposal calls for a basin-wide stakeholder process, including a technical evaluation to determine the amount of water needed for the environment. The recommendations derived from this process would be the basis for rulemaking to determine a set-aside for each individual basin, if sufficient unappropriated water is available, and standards for environmental flows for each bay and basin.⁵¹

While the Study Commission expired in September 2005, Governor Rick Perry issued an executive order in October 2005 establishing an Environmental Flows Advisory Committee to fill the gap left by the sunset of the Flows Commission and to continue work on addressing environmental flow requirements.

Environmental Flows Advisory Committee

The advisory committee was charged with developing recommendations to establish a process that will achieve a consensus-based, regional approach to integrate environmental flow protection into the water allocation process while assuring that human water needs are satisfied. The committee examined relevant issues and made recommendations for action and legislation concerning flow allocation to meet human and environmental needs at all times, including during drought conditions.⁵²

The advisory committee consists of nine members appointed by the Governor. Three members are the respective presiding officers of the Texas Commission on Environmental Quality, Texas Water Development Board, and Texas Parks and Wildlife Commission with the other six members chosen from among river authorities; municipalities; environmental, agricultural,

industrial, and hunting and fishing interests or others with expertise in environmental flows issues; and the public.

The Governor's Advisory Committee has heard testimony from various interest groups and has made proposed revisions to the language contained in SB 3 as well as other water policy recommendations relating to environmental flows. A full report shall be submitted, including findings and legislative recommendations, to the Governor, Lieutenant Governor, and Speaker of the House of Representatives no later than December 31, 2006.

The House Natural Resources Committee was given a charge relating to environmental flows. The charge states: *Continue the study of the Commission on Water for Environmental Flows, and further evaluate options for providing adequate environmental flows.* In light of the work done by the Governor's Advisory Committee, however, the House Natural Resources Committee will not issue findings and recommendations. Rather, the committee will review the Governor's Advisory report in preparation for the next legislative session.

SOIL AND WATER CONSERVATION

Charge #5

Background

In researching the need for a new comprehensive water conservation program, the Committees relied heavily on input from both the Texas State Soil & Water Conservation Board and the Texas Water Development Board, both of which are involved in numerous agricultural conservation efforts around the state.

*Texas State Soil and Water Conservation Board*⁵³

The Texas State Soil and Water Conservation Board (TSSWCB) is a state agency that administers Texas' soil and water conservation law and coordinates conservation and pollution abatement programs throughout the state.

TSSWCB offers technical assistance to the state's 217 soil and water conservation districts (SWCDs). The TSSWCB is the lead Texas agency for planning, implementing, and managing programs and practices for abating agricultural and silvicultural nonpoint source (NPS) pollution. The TSSWCB also administers Technical Assistance and Cost-Share Assistance Programs for natural resource conservation land improvement measures.

The TSSWCB fulfills its responsibilities as the lead agency through its Total Maximum Daily Load, NPS Coastal Management Plan, and Water Quality Management Plan (WQMP) Programs, as well as the Clean Water Act Grant Program funded by the Environmental Protection Agency. The TSSWCB also administers a NPS complaint resolution process, a Poultry WQMP Initiative, and the Texas Brush Control Program. The TSSWCB maintains regional offices in strategic locations in the state to help carry out the agency's water quality responsibilities.

*Texas Water Development Board*⁵⁴

The Texas Water Development Board's (TWDB) mission is to provide leadership, planning, financial assistance, information, and education for the conservation and responsible development of water for Texas.

The TWDB provides loans to local governments for water supply projects; water quality projects including wastewater treatment, municipal solid waste management and nonpoint source pollution control; flood control projects; agricultural water conservation projects; and groundwater district creation expenses. The TWDB also provides grants and loans for the water and wastewater needs of the state's economically distressed areas. They provide agricultural water conservation funding and water-related research and planning grants.

The TWDB supports regions in developing their regional water plans that will be incorporated into a statewide water plan for the orderly development, management and conservation of the state's water resources by studying Texas' surface and groundwater resources. The TWDB

collects data and conducts studies concerning the fresh-water needs of the state's bays and estuaries. They also administer the Texas Water Bank, which facilitates the transfer, sale or lease of water and water rights throughout the state, and administers the Texas Water Trust, where water rights are held for environmental flow maintenance purposes.

The TWDB further maintains a centralized data bank of information on the state's natural resources called the Texas Natural Resources Information System and manages the Strategic Mapping Program, a Texas-based public and private sector cost-sharing program to develop consistent, large-scale computerized base maps describing basic geographic features of Texas.

Comprehensive Water Conservation Program Needs Assessment

Water Decline Issues

Factors reducing the amount of available surface and groundwater in the state include but are not limited to the following; underground aquifer depletion through agricultural irrigation, less than optimum irrigation systems which use excess surface water, proliferation of brush species, and sedimentation of drinking water reservoirs.⁵⁵

Rural areas of Texas contain only 15 percent of the state's population, but account for 80 percent of the land area. Currently agriculture (and more specifically irrigated agriculture) in these rural areas uses the majority of the freshwater in the state. The value of irrigated crops accounts for more than half of the total value of crops grown in Texas. Groundwater resources provide approximately 75 percent of the water used in irrigation, with surface water supplies accounting for the remaining 25 percent.⁵⁶

The 2007 Draft State Water Plan states that reservoir sedimentation is the primary reason for the decline in surface water availability. Surface water supplies are projected to decrease about 7 percent, from about 9.0 million acre-feet in 2010 to about 8.4 million acre-feet in 2060.⁵⁷

Conservation Implementation Task Force

In the past there has been a significant amount of effort expended by the state in water conservation planning. The TWDB developed a State Water Plan in 2002, and in 2003 the Legislature established the Water Conservation Implementation Task Force (Task Force).⁵⁸

The Task Force was established to review, evaluate, and recommend optimum levels of water use efficiency and conservation for the state of Texas. The Task Force produced a report to the Legislature and developed and published a manual of Best Management Practices (BMPs) that focuses strictly on water conservation.

In its report, the Task Force recommended that, for on-farm best management practices, the Legislature consider funding a cost-share program to implement water conservation plans (WCPs) on irrigated lands through the State Soil and Water Conservation Board. These plans would be similar to water-quality management plans but would require only those BMPs that

have a water conservation component. The Task Force recommendations state that a WCP is a management plan that comprises a collection of BMPs that are appropriate to the agricultural operation. The plan would be developed by the farmer or rancher in cooperation with a planner or technician employed by either the TSSWCB, a soil and water conservation district (SWCD), or the Natural Resource Conservation Service (NRCS). If the WCP were to meet all technical criteria, it would be certified by TSSWCB. For practices that have a cost to implement, farmers and ranchers may be eligible for cost-share assistance if the farmer or rancher agreed to implement and maintain the plan for the expected life of the practices. After an eligible practice is implemented and implementation is certified by the SWCD, the producer may be eligible to receive cost-share assistance for that practice. To be eligible for cost-share assistance, a plan would need to show verifiable potential water savings.⁵⁹

These plans would be developed and implemented through existing TSSWCB regional offices and SWCDs that currently work with farmers to implement water-quality management plans and administer water-quality cost-share programs. The Task Force estimated that Conservation Plan cost would average \$10,000 per plan. They recommended that the maximum state cost-share rate would be 75 percent, with a cost-share cap of \$25,000 per plan.⁶⁰

Current Agricultural Conservation Programs at the TWDB⁶¹

The TWDB administers a program for agricultural water conservation funded through the Agricultural Conservation Fund. Through the Agricultural Water Conservation Loan, Grant and Linked Deposit Program, the TWDB provides agricultural water conservation loans to political subdivisions to use for improvements on their facilities or as loans to individuals. The TWDB also provides a linked deposit program for individuals to access TWDB funds through local state depository banks. Through this program, the TWDB may also provide grants to state agencies and political subdivisions for agricultural water conservation programs, including demonstration projects, technology transfers and educational programs.

As part of its grant program, the TWDB administers the Agricultural Water Conservation Demonstration Initiatives. In 2004, the TWDB initiated this program to implement Agricultural Water Conservation Demonstration Initiative projects in several major irrigated areas of the state. The purpose of the Agricultural Water Conservation Demonstration Initiative projects is to evaluate and demonstrate - on a multi-year, long-term basis - the integration of enhanced irrigation water management techniques and diversified farming systems to advance water conservation while maintaining or increasing farm profitability.

Funds available through the Agricultural Conservation Fund are expected to be sufficient to meet only the existing agricultural demonstration initiatives and current annual grant levels.

Current Water Conservation Programs at TSSWCB⁶²

The focus of existing programs at the TSSWCB has primarily been on environmental issues targeting water quality, not quantity. These programs include the USDA-NRCS, Environmental Quality Incentives Program (EQIP) as well as the TSSWCB, Water Quality Management Plan

Program.

When BMPs have been used by TSSWCB affiliated projects, it has been on a case-by-case basis and never consolidated into a comprehensive and coordinated conservation plan. If a plan has been developed, it was with water quality as the target rather than water quantity. Many BMPs improve both water quality and water quantity, but existing programs limit implementation due to their water quality priorities. There is no built-in measuring mechanism in current programs that allows for quantifying water savings on the individual farm scale.

The only current water conservation program conducted by the TSSWCB is the Texas Brush Control Program which is funded under the Water Conservation and Enhancement strategy of TSSWCB's budget. The Brush Control Program is a voluntary program in which landowners may contract with the state for cost-share assistance. Working through local soil and water conservation districts, landowners develop resource management system plans addressing brush control, soil erosion, water quality, wildlife habitat and other natural resource issues.

TSSWCB Suggestions for a Comprehensive Water Conservation Program⁶³.

The TSSWCB provided many recommendations to the committees for the development of a new comprehensive statewide agricultural water conservation program based on the Task Force Report described above. These recommendations are summarized below.

According to TSSWCB, a cost-share program to assist water users in the implementation of BMPs is an important component to any voluntary water conservation program. Conservation management decisions, based on economic factors and technical planning advice, once assimilated and coordinated into an overall conservation plan, can result in water savings. BMPs can be more effective in the case of water quantity savings when they are incorporated into a plan, rather than just implemented on an individual basis.

There is currently no coordinated means for agriculture water users to voluntarily implement conservation measures. There is no agricultural water conservation program which includes technical planning assistance and allows for BMPs to be coordinated in a manner that targets water quantity. There is also no built-in mechanism for quantifying water savings in the agriculture sector.

The development of such a program would allow agricultural and rural areas to achieve and demonstrate water savings, as well as afford opportunities for water rights negotiating.

TSSWCB also suggests that the BMP manual published by the Task Force could serve as the foundation for a coordinated water quantity program. They also suggest that the knowledge gained from the research, education and demonstrations of the TWDB agricultural water conservation programs should be leveraged in any comprehensive water conservation program development.

TSSWCB maintains that the Texas Soil and Water Conservation Districts (SWCDs) possess a

system which could serve as the delivery mechanism to deliver the technological support and planning assistance needed by agricultural producers to implement such a comprehensive plan. Currently Texas' Water Quality Management Plan Program makes use of this delivery system, and the network could be easily adapted to serve a complimentary water quantity program.

TSSWCB further maintains that the content of any individual plan would need to be determined by the nature of the land and the activities taking place on that land. The TSSWCB could certify that each plan results in a decrease in water usage, consumption, and/or waste if properly implemented. In a similar manner, TSSWCB currently certifies plans to ensure they are consistent with State Water Quality Standards. The TSSWCB also currently conducts status reviews to ensure that water quality plans are being followed, and these same status reviews could be performed on water conservation plans as a built-in control mechanism.

TSSWCB has stressed the need for partnerships to make such a water conservation plan possible. They believe that these partnerships are vital in identifying appropriate BMPs as well as how best to assemble those practices into a coherent and effective plan. Partnerships would also be vital in educating water users on the benefits of the program to the state as well as assisting in the delivery of the program to potential participants.

TSSWCB would recommend partnerships with the following entities in the following capacities:

1. Determining Technical Criteria Development
 - USDA-NRCS
 - Universities
 - Texas Agricultural Experiment Station
 - Texas Cooperative Extension
2. Strategic Planning and Resource Allocation
 - Texas Water Development Board
 - Texas Department of Agriculture
 - Texas Commission on Environmental Quality
 - Texas Water Resources Institute
 - Texas Parks and Wildlife Department
 - Regional water planning groups
 - Groundwater and irrigation districts
3. Stakeholder Involvement
 - Water Conservation Implementation Task Force

The TSSWCB suggests that funding for such a comprehensive water conservation program could fall under the Water Conservation and Enhancement funding strategy of TSSWCB's budget. Currently, the Texas Brush Control Program is the only program funded under this strategy, but the purpose of the strategy is much more broad and could accommodate additional programs that target water conservation and overall enhancement of water supplies.

Public Hearings

The House Committee on Natural Resources and the House Committee on Agriculture and

Livestock held a public hearing on the soil and water conservation charge on May 3, 2006 at 1:00 pm in Capitol Extension, E2.028. The following persons testified on the charge:

Lloyd Arthur, Texas Farm Bureau
John Foster, Texas State Soil and Water Conservation Board
Rex Isom, Texas State Soil and Water Conservation Board
Charles Allen Jones, Texas Water Resources Institute/Texas Ag. Experiment Station
David K. Langford, Self and Texas Wildlife Association
William F. Mullican, Texas Water Development Board
Johnny Oswald, Texas State Soil and Water Conservation Board

Recommendations of the Committees

The Committees recommend that the Texas State Soil and Water Conservation Board (TSSWCB) along with the Texas Water Development Board (TWDB) collaborate together in order to further study and develop a proposed water conservation program based on the Task Force's recommendation regarding on-farm BMP implementation cost-share. In studying and developing a proposed program, TSSWCB and TWDB may seek assistance from the following entities:

- USDA-NRCS
- Universities
- Texas Agricultural Experiment Station
- Texas Cooperative Extension
- Texas Department of Agriculture
- Texas Commission on Environmental Quality
- Texas Water Resources Institute
- Texas Parks and Wildlife Department
- Regional water planning groups
- Groundwater and irrigation districts
- Water Conservation Implementation Task Force

The Committees recommend that TSSWCB and TWDB work together to determine what the best delivery structure would be for such a program. Consideration should also be given to the cost of set up of such a program as well as ongoing biennial implementation costs. Specific cost information should include the estimated cost per plan as well as the estimated number of plans to be implemented per year. The possibility of federal matching funds should also be explored.

Pursuant to provisions contained in the Texas Water Code, Chapter 16, Subchapter B, Section 16.022, regarding joint study between the TSSWCB and TWDB on the expansion of conservation efforts, the Committees request that TSSWCB and TWDB report back to the Committees by December 31, 2007.

EXHIBITS

Exhibit A - History of Water Districts

Constitutional and Statutory History of Water Districts in Texas

Year	Change in Law
1876	Art. 3, Sec. 52 - Constitutional provision addressing lending of credit for state, counties, cities/towns
1904	Art. 3, Sec. 52 - Constitutional amendment, adding provisions for the issuance of debt by districts and limitation on amount of debt issued by specified political subdivisions (1/4 of assessed valuation)
Pre-1911	General Law creating Navigation Districts (minimal powers, see 1921 legislation)
1911	General Law creating Drainage Districts
1913	General Law creating Irrigation Districts
1915	General Law creating Levee Improvement Districts
1917	Art. 16, Sec. 59 - Constitutional amendment, adding provisions regarding conservation and reclamation districts
1917	General Law creating Water Improvement Districts (superseding prior law regarding Irrigation Districts)
1918 Special Session	General Law creating Conservation and Reclamation Districts, providing that any Water Improvement District, Drainage District or Levee Improvement District previously created may avail itself of the provisions of Article 16, Sec. 59 (Canales Act)
1918 Special Session	General Law creating Water Control & Preservation Districts
1919	General Law creating Fresh Water Supply Districts
1921	General Law creating Navigation Districts
1925	General Law creating Water Control & Improvement Districts
1954	Texas Supreme Court ruling confirming constitutionality of exercise of sewer powers by water districts under Art. 3, Sec. 52 and/or Art. 16, Sec. 59

1955	Creation of Harris County Improvement District No. 1 – first District used as a financing mechanism for development purposes
1963	Passage of Municipal Annexation Act, setting forth procedures for annexation and creating concept of extraterritorial jurisdiction (ETJ)
1970	Art. 3, Sec. 52 – Constitutional Amendment, adding subsection (c) regarding road bonds
1971	Codification of prior water district law from Vernon’s Texas Civil Statutes to Water Code
1971	General Law creating Municipal Utility Districts (Chapter 54, Water Code), powers include authority to dispose of solid waste
1977	General Law creating Irrigation Districts
1978	Art. 3, Sec. 52 and Art. 16, Sec. 59 – Constitutional Amendments, adding subsections (d) and (f) respectively regarding fire-fighting authority
1983	General Law creating Special Utility Districts, powers include authority to dispose of solid waste
1985	Amendment to MUD law – adding power for MUDs to use surplus revenue for parks and recreational facilities
1985	Amendment to MUD law – adding power for certain MUDs to acquire road utility district powers
1987	Amendment to FWSD law – adding power for certain FWSDs to acquire road district powers
1987 to 1989	Amendments to Water Code and TCEQ rules regarding financial feasibility requirements for issuance of water district debt
1991	Amendment to MUD law – adding authority to operate and maintain street lighting and authority to enforce deed restrictions
1995	Chapter 49, Water Code adopted to provide standard administrative provisions for all water districts, powers include authority for all districts to dispose of solid waste
1995	Amendment to MUD law – adding authority to contract with law enforcement officers
1995	Amendment to Local Government Code, authorizing municipalities to enter into Strategic Partnership Agreements with districts

1997	Amendment to MUD law - adding authority for certain MUDs to perform street repairs
1999	Amendment to Municipal Annexation Act - significant revisions to annexation procedures, including requirement for municipal annexation plan
2003	Art. 16, Sec. 59 - Constitutional Amendment, amending subsection (a) and adding (c-1) allowing districts in certain counties to issue tax-supported debt for parks and recreational facilities
2003	Amendment to Chapter 49, Water Code (general water districts) - allowing districts in certain counties to issue tax-supported debt for parks and recreational facilities

Exhibit B - District Powers

Common General Law District Powers
 This Chart Does Not Apply to Districts That Have Been Either Created by or Altered by
 A Specific Legislative Act—commonly called a "Special Law District"

District Type	Statute ¹	Creation of Authority ²	Creating Entity	Supply Raw Water	Supply Wastewater	Supply Wastewater (Sewer) Service ³	Outage	Flood Control	Street Lighting	Road Powers	Ingestion	Navigation	Recreation	Hydro-electric	Security	Enlight Domain	Lien ⁴ Operation & Maintenance Tax	Issue Revenue Bonds	Tax Bond Authority	Comments
GCD	Chs. 35, 36 & 52	XVI, 59	TCEQ	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	A
WCID	Ch. 51	XVI, 59	CC or TCEQ	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	B C
WCID	Ch. 51	III, 52	CC or TCEQ	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	B
FMSD	Ch. 53	XVI, 59	CC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
MUD	Ch. 54	XVI, 59	TCEQ	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
WID	Ch. 55	XVI, 59	CC or TCEQ	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
WID	Ch. 55	III, 52	CC or TCEQ	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
DD	Ch. 56	Both	CC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
LID	Ch. 57	XVI, 59	CC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
ID	Ch. 58	Both	CC or TCEQ	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
RD	Ch. 59	XVI, 59	TCEQ	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
ND	Chs. 60 & 61	III, 52	CC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	D
ND	Chs. 60 & 62	XVI, 59	CC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	D
SLND	Ch. 63	XVI, 59	CC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	D
SUD	Ch. 65	XVI, 59	TCEQ	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
SCD	Ch. 66	XVI, 59	TCEQ	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
MMD	Ch. 375	Both	TCEQ	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

NOTES:
 This chart contains only those powers which are common across the general law district types. Please refer to each district's governing statutes to determine its additional powers. The powers of a general law district may be limited under a given category. The powers of a special law district are established by that district's legislative acts.
 A district name cannot be used to determine which statute the district primarily operates under. For example, Willow Fork Drainage District actually operates as a WCID under Texas Water Code Chapter 51.
 All general law districts have regional waste disposal (including sewage) powers if the facilities are revenue-financed—Texas Water Code Sections 30.021, 30.030, and 30.051. Specific types of districts may have additional waste/sewage authority. General law districts that provide wastewater or potable water services to household users have the power to provide fire fighting services—Texas Water Code Section 49.351.
District Types:
 GCD=Groundwater Conservation District; WCID=Water Control & Improvement District; FMSD=Fresh Water Supply District; MUD=Metropolitan Utility District; WID=Water Utility District; RD=Regional District; ND=Navigation District; SLND=Self-Liquidating Navigation District; SUD=Special Utility District; SCD=Stormwater Control District; and MMD=Municipal Management District.
 Under the column heading Statute, the chapter reference refers to the Texas Water Code, except for district type MMD which refers instead to a chapter of the Local Government Code.
 Under the column heading Constitutional Authority, the phrase "Both" means that both Article XVI, Section 59 and Article III, Section 52 of the Texas Constitution apply.
 Under the column heading Creating Entity, the phrase "CC" refers to the local county commissioners court.
 Under the column heading Supply Wastewater (Sewer) Service, "disposal system" includes sewer systems and treatment facilities—TWC Section 30.021.
 A—Regulate groundwater and well spacing and production.
 B—Except as noted herein for revenue-financed wastewater facilities, have wastewater and drainage powers only if created by the TCEQ or if the TCEQ approves the addition of these powers.
 C—Voter approval required for revenue bonds.
 D—Port operation and regulation.
 December 2004

Exhibit C - Title 30

Municipal Utility District Creation by TCEQ Title 30, TAC, Section 293.11 (a) and (d)

(a) Creation applications for all types of districts, excluding groundwater conservation districts, shall contain the following:

- (1) \$700 nonrefundable application fee;
- (2) if a proposed district's purpose is to supply fresh water for domestic or commercial use or to provide wastewater services, roadways, or drainage, a certified copy of the action of the governing body of any municipality in whose extraterritorial jurisdiction the proposed district is located, consenting to the creation of the proposed district, under Local Government Code, §42.042. If the governing body of any such municipality fails or refuses to grant consent, the petitioners must show that the provisions of Local Government Code, §42.042, have been followed;
- (3) if city consent was obtained under paragraph (2) of this subsection, provide the following:
 - (A) evidence that the application conforms substantially to the city consent; provided, however, that nothing herein shall prevent the commission from creating a district with less land than included in the city consent;
 - (B) evidence that the city consent does not place any conditions or restrictions on a district other than those permitted by Texas Water Code (TWC), §54.016(e);
- (4) a statement by the appropriate secretary or clerk that a copy of the petition for creation of the proposed district was received by any city in whose corporate limits any part of the proposed district is located;
- (5) evidence of submitting a creation petition and report to the appropriate commission regional office;
- (6) if substantial development is proposed, a market study and a developer's financial statement;
- (7) if the petitioner is a corporation, trust, partnership, or joint venture, a certificate of corporate authorization to sign the petition, a certificate of the trustee's authorization to sign the petition, a copy of the partnership agreement or a copy of the joint venture agreement, as appropriate, to evidence that the person signing the petition is authorized to sign the petition on behalf of the corporation, trust, partnership, or joint venture;
- (8) a vicinity map;
- (9) unless waived by the executive director, for districts where substantial development is proposed, a certification by the petitioning landowners that those lien holders who signed the petition or a separate document consenting to the petition, or who were notified by certified mail, are the only persons holding liens on the land described in the petition;
- (10) if the petitioner anticipates recreational facilities being an intended purpose, a detailed summary of the proposed recreational facility projects, projects' estimated costs, and proposed financing methods for the projects as part of the preliminary engineering report; and
- (11) other related information as required by the executive director.

(d) Creation applications for TWC, Chapter 54, Municipal Utility Districts, shall contain items listed in subsection (a) of this section and the following:

- (1) a petition containing the matters required by TWC, §54.014 and §54.015, signed by persons holding title to land representing a total value of more than 50% of the value of all land in the proposed district as indicated by tax rolls of the central appraisal district. If there are more than 50 persons holding title to land in the proposed district, the petition can be signed by 50 of them. The petition shall include the following:
 - (A) name of district;
 - (B) area and boundaries of district described by metes and bounds or lot and block number, if there is a recorded map or plat and survey of the area;
 - (C) necessity for the work;
 - (D) statement of the general nature of work proposed; and
 - (E) statement of estimated cost of project;
- (2) evidence that the petition was filed with the office of the county clerk of the county(ies) in which the district or portions of the district are located;
- (3) a map showing the district boundaries in metes and bounds, area, physical culture, and computation sheet for survey closure;
- (4) a preliminary plan (22 - 24 inches by 36 inches or digital data in electronic format) showing the location of existing facilities including highways, roads, and other improvements, together with the location of proposed utility

mains and sizing, general drainage patterns, principal drainage ditches and structures, utility plant sites, recreational areas, commercial and school sites, areas within the 100-year flood plain and 100-year floodway, and any other information pertinent to the project including an inventory of any existing water, wastewater, or drainage facilities;

(5) a preliminary engineering report including as appropriate:

(A) a description of existing area, conditions, topography, and proposed improvements;

(B) land use plan;

(C) 100-year flood computations or source of information;

(D) existing and projected populations;

(E) tentative itemized cost estimates of the proposed capital improvements and itemized cost summary for anticipated bond issue requirement;

(F) projected tax rate and water and wastewater rates;

(G) an investigation and evaluation of the availability of comparable service from other systems including, but not limited to, water districts, municipalities, and regional authorities;

(H) an evaluation of the effect the district and its systems and subsequent development within the district will have on the following:

- (i) land elevation;
- (ii) subsidence;
- (iii) groundwater level within the region;
- (iv) recharge capability of a groundwater source;
- (v) natural run-off rates and drainage; and
- (vi) water quality;

(I) a table summarizing overlapping taxing entities and the most recent tax rates by those entities; and

(J) complete justification for creation of the district supported by evidence that the project is feasible, practicable, necessary, and will benefit all of the land to be included in the district;

(6) a certificate by the central appraisal district indicating the owners and tax valuation of land within the proposed district as reflected on the county tax rolls as of the date of the petition. If the tax rolls do not show the petitioner(s) to be the owners of the majority of value of the land within the proposed district, then the petitioner(s) shall submit to the executive director a certified copy of the deed(s) tracing title from the person(s) listed on the central appraisal district certificate as owners of the land to the petitioner(s) and any additional information required by the executive director necessary to show accurately the ownership of the land to be included in the district;

(7) a certified copy of the action of the governing body of any municipality in whose corporate limits or extraterritorial jurisdiction that the proposed district is located, consenting to the creation of the proposed district under TWC, §54.016. For districts to be located in the extraterritorial jurisdiction of any municipality, if the governing body of any such municipality fails or refuses to grant consent, the petitioners must show that the provisions of TWC, §54.016 have been followed;

(8) for districts proposed to be created within the corporate boundaries of a municipality, evidence that the city will rebate to the district an equitable portion of city taxes to be derived from the residents of the area proposed to be included in the district if such taxes are used by the city to finance elsewhere in the city services of the type the district proposes to provide. If like services are not to be provided, then an agreement regarding a rebate of city taxes is not necessary. Nothing in this subsection is intended to restrict the contracting authorization provided in Local Government Code, §402.014;

(9) affidavits by those persons desiring appointment by the commission as temporary directors, showing compliance with applicable statutory requirements of qualifications and eligibility for temporary directors, in accordance with TWC, §49.052 and §54.102;

(10) if the application includes a request for approval of a fire plan, information meeting the requirements of §293.123 of this title, except for a certified copy of a district board resolution, references to a district board having adopted a plan, and the additional \$100 filing fee; and

(11) other data and information as the executive director may require.

Exhibit D - Notice to Purchaser

"NOTICE TO PURCHASER" AND OTHER PUBLIC DISCLOSURE REQUIREMENTS OF MUNICIPAL UTILITY DISTRICTS (MUDs)

- Sellers of property within a MUD are required to provide "Notices to Purchasers" to prospective purchasers. (Section 49.452, Water Code.)
 - The statute provides several different forms of Notices to Purchaser based upon whether or not the MUD is located within a city or a city's ETJ.
 - A sample Notice to Purchaser for a MUD located in a city's ETJ is attached. Among other information, the notice contains information regarding:
 - the current rate of MUD taxes or, if the MUD has not yet levied taxes, the most recent projected rate of MUD taxes;
 - the total amount of tax bonds approved by the voters that may be issued by the MUD; and
 - the total amount of tax bonds issued by the MUD.
 - The statute requires a Notice to Purchaser to be given to any prospective purchaser prior to the execution of a binding contract of sale and purchase. The Notice to Purchaser is commonly attached as an addendum to a purchase contract.
 - A purchaser is required to sign the Notice to Purchaser to evidence its receipt.
 - In the event a contract of purchase and sale is entered into without the seller providing the Notice to Purchaser, the purchaser shall be entitled to terminate the contract.
 - However, the purchaser may elect to close if the seller furnishes the Notice to Purchaser at or prior to closing.
 - At closing, a separate copy of the Notice to Purchaser with current information shall be executed by the seller and the purchaser and recorded in the county deed records.
 - If any sale or conveyance of real property within a MUD is not made in compliance with Section 49.452, Water Code, the purchaser may institute a suit to either:
 - reconvey the property back to the seller and have the seller pay damages in the amount of all costs relative to the purchase of the property plus interest and reasonable attorney's fees; or
 - seek damages in an amount not to exceed \$5,000, plus reasonable attorney's fees.
- Every MUD is required to keep and make available current information necessary for sellers to give Notices to Purchasers. (Section 49.453, Water Code.)

-
- Every MUD is required to file with the county clerk an “Information Form.” (Section 49.455, Water Code.) The Information Form includes, among other things:
 - the name of the MUD;
 - the complete and accurate legal description and a map or plat of the boundaries of the MUD;
 - the most recent rate of MUD taxes;
 - the total amount of tax bonds that have been approved by the voters;
 - the amount of tax bonds that have been previously issued by the MUD; and
 - the particular form of Notice to Purchasers to be used by sellers, completed by the MUD with all required information.

 - In addition to these legal requirements, many developers and builders, as part of their routine marketing materials, clearly explain the MUD taxes to potential purchasers. Developers and builders want satisfied customers who can afford to live in the homes they have purchased.

 - In the Greater Houston Area, buying a new home in a MUD is the norm – it is what purchasers expect.

 - A MUD is required to post signs indicating the existence of the MUD at two principal entrances to the MUD. (Section 49.451, Water Code.)

 - MUD tax rates are set to avoid any tax increases and to avoid any surprises to new or existing homeowners.
 - The MUD determines its highest anticipated tax rate and notifies all potential purchasers of that tax rate.
 - The MUD then sets its initial tax rate at its highest anticipated tax rate.
 - Generally, a MUD tries to levy its first tax before there are any homeowners. This gives accurate information to mortgage companies to determine amounts to escrow for property taxes.
 - Thus, homeowners move into the community prepared to pay the highest anticipated tax rate.
 - As MUD facilities are funded and MUD bonds are paid off, the MUD tax rate will steadily decline.
 - Approximately 80% of a MUD tax rate is debt service, i.e. supporting bonds used to finance utility infrastructure. As facilities are fully paid and bonds are retired, MUD tax rates steadily decline.
 - In the Greater Houston Area, tax rates for MUDs in a city’s ETJ may start at or near \$1.50.
 - According to Dr. Ron Welch of the Houston Center for Public Policy, in 2005 the average MUD tax rate in the Greater Houston Area had declined by approximately 27 cents over 15 years.

-
- In the Greater Houston Area, a fully developed MUD may end up with a tax rate of about 25 or 30 cents.
 - MUDs are one of the only forms of government in the State of Texas with a declining tax rate.

NOTICE TO PURCHASERS

The real property, described below, that you are about to purchase is located in the Fort Bend County Municipal Utility District No. 141 (the District). The District has taxing authority separate from any other taxing authority, and may, subject to voter approval, issue an unlimited amount of bonds and levy an unlimited rate of tax in payment of such bonds. As of this date, the rate of taxes levied by the District on real property located in the District is \$1.39 on each \$100 of assessed valuation. The total amount of bonds, excluding refunding bonds and any bonds or any portion of bonds issued that are payable solely from the revenues received or expected to be received under a contract with a governmental entity, approved by the voters and which have been or may, at this date, be issued is \$85,630,000, and the aggregate initial principal amounts of all bonds issued for one or more of the specified facilities of the District and payable in whole or in part from property taxes is \$ 0 .

The District is located in whole or in part in the extraterritorial jurisdiction of the City of Arcola, Texas. By law, a district located in the extraterritorial jurisdiction of a municipality may be annexed without the consent of the district or the voters of the district. When a district is annexed, the district is dissolved.

The purpose of this District is to provide water, sewer, drainage, or flood control facilities and services within the District through the issuance of bonds payable in whole or in part from property taxes. The cost of these utility facilities is not included in the purchase price of your property, and these utility facilities are owned or to be owned by the District.

The legal description of the property you are acquiring is as follows:

(description of property)

SELLER:

(Date) Signature of Seller

PURCHASER IS ADVISED THAT THE INFORMATION SHOWN ON THIS FORM IS SUBJECT TO CHANGE BY THE DISTRICT AT ANY TIME. THE DISTRICT ROUTINELY ESTABLISHES TAX RATES DURING THE MONTHS OF SEPTEMBER THROUGH DECEMBER OF EACH YEAR, EFFECTIVE FOR THE YEAR IN WHICH THE TAX RATES ARE APPROVED BY THE DISTRICT. PURCHASER IS ADVISED TO CONTACT THE DISTRICT TO DETERMINE THE STATUS OF ANY CURRENT OR PROPOSED CHANGES TO THE INFORMATION SHOWN ON THIS FORM.

The undersigned purchaser hereby acknowledges receipt of the foregoing notice at or prior to execution of a binding contract for the purchase of the real property described in such notice or at

closing of purchase of the real property.

PURCHASER:

(Date) Signature of Purchaser

(APPROPRIATE ACKNOWLEDGMENTS)

NOTE: After recording, please return to: .

Exhibit E - Texas Water Rights and Wastewater Reuse Prepared by the Reuse Committee of the Texas Water Conservation Association

Introduction

Generally, about sixty percent (60%) of all water diverted from Texas' rivers and streams or groundwater pumped for municipal purposes enters the state's watercourses as discharges of treated effluent from wastewater treatments plants. Once considered a threat to surface water supplies, due in part to actual or perceived water quality concerns, the value of this treated effluent is now clearly recognized. This is evidenced by a much heightened interest in reuse projects to meet current and future increased municipal demands. Further, the concept of reuse is included in nearly every SB1 regional plan. Treated wastewater effluent discharged into Texas' rivers also helps meet downstream water needs, including those of the environment and agriculture. These competing interests in return flows have crystallized the need to resolve many legal issues involving reuse.

The purpose of this white paper is to: (1) provide some basic legal background and context concerning reuse of wastewater under current Texas law; (2) identify disputed issues with existing law in Texas that may warrant legislative clarification; (3) summarize the various arguments offered on both sides of these issues, without offering an opinion as to the merits of these arguments; (4) and discuss potential consequences of various policy alternatives. The issues discussed in this paper include:

- (1) Under current law, is the use of wastewater effluent after discharge to a stream a use of "state water" subject to the laws of prior appropriation or is it subject to a different regulatory scheme?
- (2) Does current law allow effluent derived from different sources of water to be treated differently for purposes of evaluating a request to reuse this effluent?
- (3) Does current law provide for different treatment of effluent derived from "future" and "existing" return flows, regardless of the source?
- (4) Who can obtain indirect reuse rights?
- (5) To what extent should protection be afforded to the environment in reuse permitting decisions?

While this paper attempts to identify discrete issues for discussion, it must be stressed that few of the issues identified above can be handled discretely. Indeed, many of these issues are so intertwined that resolution of one issue can and will impact how other issues will need to be considered and resolved. Moreover, while the disputes over indirect reuse are often characterized as a fight between municipalities or dischargers versus senior water rights holders and the environment, the reality is much more complex. Ownership, geographic distribution, sources of water supply, historical reliance on return flows in water rights permitting, and priority of water rights within each river basin vary greatly statewide. Thus, any decisions on the issues set forth in this paper are certain to result in different impacts, "winners," and "losers," depending on the specific facts of each basin and the

interests involved. The question is often not whether reuse will occur, but by whom. The ability to engage in indirect or direct reuse translates directly to an ability by some water providers to delay development of additional water supplies while at the same time forcing others to look for alternative water supplies sooner rather than later when the availability of return flows for their use is diminished.

Background – The difference between direct and indirect reuse

Direct reuse

Direct reuse is the use of wastewater effluent that involves delivery of effluent via pipelines, storage tanks and other necessary infrastructure directly from the wastewater treatment plant to others before discharging the effluent into a watercourse.¹

In Texas today, it is undisputed that a surface water right holder may directly reuse and fully consume effluent, subject only to the limitations contained in the underlying water right from which the effluent was derived.² Where contracts or other laws have clearly transferred ownership of that effluent to another, such as the wastewater treatment provider, the direct reuse rights may lie with the owner of the effluent. This approach is generally consistent with a water right holder's right to fully consume the water granted under its water right, subject only to the limitations expressed within the "four corners" of the water right. This approach is also generally consistent with how wastewater treatment providers operate today. Owners of wastewater treatment plants generally have a wastewater discharge (TPDES) permit from the state that allows them to discharge treated effluent to a watercourse. TPDES permits are not viewed as imposing a "duty" or obligation on the wastewater treatment plant owners/operator to continue to discharge effluent at a particular location or in a particular quantity. Rather, these permits restrict the circumstances under which *any* discharge *may* occur, if at all.

Obtaining authorization for direct reuse under today's regulatory scheme is fairly streamlined. Typically, only certain water quality authorizations must be obtained from TCEQ to do this kind of reuse.³ A water right holder may directly reuse the unconsumed water in a relatively unfettered manner so long as the reuse is accomplished for the purposes and in the location of use provided in the underlying water right from which the effluent is derived. Although the direct reuse of effluent reduces the amount of flow in the watercourse that is available downstream for use by other water rights holders and the environment, additional water rights authorizations are typically not required and thus, these impacts to other water rights and the environment are not addressed.

Some owners of wastewater treatment plants have relied on existing law and invested considerable funds in implementing and planning for expanded direct reuse projects. In some cases, wastewater treatment operators are required or have chosen to operate under a "no discharge" permit, which requires them to directly reuse all of the effluent. In most instances,

¹ See 30 TEX. ADMIN. CODE § 297.1(44).

² TEX. WATER CODE § 11.046(c).

³ See TEX. ADMIN. CODE ch. 210.

however, direct reuse projects are relatively small in scale. Moreover, there remain practical, technical, political, and fiscal limitations on the ability to implement large direct reuse projects. Human consumption of treated wastewater effluent has yet to gain widespread social acceptance in Texas. The use of treated wastewater for landscape irrigation in areas of heavier human use (e.g. parks and school grounds) has been met with resistance in some areas even though the effluent must be treated to a high standard. Thus, in some cases, high quality potable water is still used for some purposes even though treated effluent could be used under today's rules. This limited implementation of direct reuse projects means that the availability of return flows to meet downstream needs has not yet been significantly impacted. However, it is believed that, as treatment technology advances and treatment costs decrease, and as water becomes more scarce and the cost of developing and delivering new supplies increases, direct reuse of treated effluent (even for human consumption) will become more attractive and feasible over time.

Indirect Reuse

Treated wastewater that is not directly reused and is instead discharged to a watercourse is "return flow."⁴ The subsequent downstream diversion and use of wastewater return flows is commonly referred to as "indirect reuse." Indirect reuse substitutes transportation via a state watercourse for the pipeline, and accompanying capital cost, associated with traditional direct reuse projects. The ability to use the stream as the "pipeline" may also provide the added benefit of reducing costs of treating the diverted water, as the mixing and transportation process in the watercourse actually provides additional natural treatment. Like direct reuse, indirect reuse ultimately reduces the amount of flow in the watercourse that is available for use by other water rights holders and the environment. This effect, of course, is most evident downstream of the point where the indirect reuse occurs. Upstream of the indirect reuse point, the return flows continue to provide some instream flow benefit. In contrast to the clear authority to engage in direct reuse without water rights permitting implications, the ability to engage in indirect reuse is less clear. There are currently pending before TCEQ a large number of water rights applications seeking indirect reuse authorization, nearly all of which have been protested. In some cases, these permits applications derive from projects contained in regional water plans. Many of the issues posed in those protests are more fully discussed in the following Issues section of this paper.

ISSUES DISCUSSION

- (1) Under current law, is the use of wastewater effluent after discharge to a stream "state water" subject to the laws of prior appropriation or is it subject to a different regulatory scheme?**

With regard to surface waters, Texas generally follows the prior appropriation doctrine to authorize use of this state water. Under this principal, available water is permitted for use on a "first in time, first in right" basis. Except in very limited circumstances, a permit is required to use state water. One aim of this permitting process is to ensure that available water supplies are not overcommitted.

⁴ 30 TEX. ADMIN. CODE § 297.1(43).

Indeed, an application for a new appropriation may only be granted upon a finding that: (a) the application meets the statutory requirements, (b) water is available, and (c) the proposed appropriation is for a beneficial purpose, does not impair existing water rights, is not detrimental to the public welfare, is consistent with the state and regional water plans, addresses water conservation concerns, and includes proper consideration of environmental needs.⁵

One of the most basic disputes in the fight over indirect reuse is whether wastewater return flows are subject to this or some other regulatory scheme. As discussed below, the source of this dispute is rooted in language contained in two statutes, both of which were modified in 1997 by Senate Bill 1: Water Code § 11.046 and Water Code § 11.042.

Bed and Banks Authorization of Reuse

Those who advocate that wastewater return flows are not subject to the permitting requirements that apply to new appropriations focus on Texas Water Code § 11.0426 – the “Bed and Banks” statute. These applicants argue that section 11.042 changed preexisting law to provide an independent basis for granting indirect reuse authorizations outside the established prior appropriations permitting scheme.

Section 11.042 contemplates the issuance of permits for the delivery of certain waters down the bed and banks of a watercourse under three separate circumstances. Subsection (a) provides the statutory guidelines for delivery of stored waters from reservoirs using the bed and banks of a watercourse and is not at issue here. Subsection (b) provides a statutory basis for delivery of effluent derived from groundwater, and is discussed more fully under Issue (2) in this paper. Many argue that subsection (c) provides the basis for indirect reuse authorizations of surface-water derived effluent. It states:

Except as otherwise provided in Subsection (a) of this section, a person who wishes to convey and subsequently divert water in a watercourse or stream must obtain the prior approval of the commission through a bed and banks authorization. The authorization shall allow to be diverted only the amount of water put into a watercourse or stream, less carriage losses and subject to any special conditions that may address the impact of the discharge, conveyance, and diversion on existing permits, certified filings, or certificates of adjudication, instream uses, and freshwater inflows to bays and estuaries. Water discharged into a watercourse or stream under this chapter shall not cause a degradation of water quality to the extent that the stream segment's classification would be lowered. . . .

Many applicants for indirect reuse authorization argue that “water” in section 11.042(c) includes all types of water (including surface-water derived effluent) except those specifically addressed in other sections of section 11.042 and that section 11.042(c) removes indirect reuse from the process for permitting new appropriations. They further argue that no priority date should attach to indirect reuse, or that, if a priority date must be assigned, it should be the same priority date that is associated with the underlying water right from which the return flows derive. Applicants also argue that the

⁵ See TEX. WATER CODE ANN. § 11.134(b).

⁶ See also 30 TEX. ADMIN. CODE § 297.16.

protections embedded in section 11.042(c) are sufficient to protect the environment and all existing water rights holders. Others argue that section 11.042(c) actually represents a limitation on one's private property right to reuse effluent that did not previously exist.

Further, because a water right holder is entitled to consumptively use or directly reuse 100% of the water granted under an appropriative right (unless otherwise expressly limited in the permit⁷), and because all requests for new appropriations in recent years have been evaluated assuming that the waters under these existing rights will be fully consumed (i.e. there will be no return flows), many argue that a bed and banks permit is the proper mechanism for granting legal rights to indirect reuse of effluent.

Indirect Reuse Permits As New Appropriations

Those arguing that any legal claim to wastewater return flows must be sought through the ordinary water rights permitting process largely rely on preexisting law and Water Code § 11.046. This statute, which also provides the clear authority for direct reuse, provides in pertinent part that:

Once water has been diverted under a [water right] and then returned to a watercourse or stream ... it is considered surplus water⁸ and therefore subject to reservation for instream uses or beneficial inflows or to appropriation by others unless expressly provided otherwise in the permit, certified filing, or certificate of adjudication.

Supporters of this position argue that this language codifies the common law, which held that an appropriator had no claim to water that had escaped his land, particularly once it drained into a natural watercourse.⁹ They argue that wastewater return flows are "considered surplus water" under section 11.046(c) and thus should be treated as available for use by other downstream water rights holders or subject to permitting only as a new appropriation.

Since section 11.042(c) uses the term "water" and not "effluent" or "return flows," some offer that this section applies to other sources of water proposed to be transferred through state watercourses, such as groundwater or imported surface water (often referred to as "developed water"). This interpretation, they contend, gives meaning to the term "water" used in section 11.042(c) without the apparent conflict between this section and the provisions of section 11.046(c), and without requiring a dual permitting requirement to secure a new appropriation under section 11.046(c) and a bed and banks authorization under section 11.042(c).

⁷ See TEX. WATER CODE ANN. § 11.046.

⁸ See TEX. WATER CODE § 11.002(10); 30 TEX. ADMIN. CODE § 297.1(53).

⁹ In *City of San Marcos v. Texas Comm'n on Env't'l Quality*, 128 S.W.3d 264 (Tex. App. – Austin 2004, pet. denied), the court ruled that, prior to Senate Bill 1 amendments to the Water Code, no common law right existing by which a city might claim ownership of its wastewater effluent following its discharge into a state watercourse. Instead, a new appropriation was required. See also WELLS A. HUTCHINS, *THE TEXAS LAW OF WATER RIGHTS* 155 (1961). See also Ronald A. Kaiser, *Texas Water Marketing in the Next Millennium: A Conceptual and Legal Analysis*, 27 TEX. TECH L. REV. 181 (1996); *South Texas Water Co. v. Bieri*, 247 S.W.2d 268, 272-73 (Tex. Civ. App. – Galveston 1952, writ ref'd n.r.e.).

Consequences of Different Approaches to Permitting Indirect Reuse

The implications of how indirect reuse of surface water-derived effluent is permitted, if at all, could have enormous implications with regard to who might ultimately obtain such rights, the value of those rights for providing a quantifiable, reliable water supply that can be appropriately protected from use by others, and how potential impacts on other water users and the environment might be addressed. As mentioned earlier, this choice is not always between cities and river authorities or upstream and downstream interests. If anything, the choice may best be characterized as one between: (1) entities seeking to increase their legally available water supply beyond that which they currently hold by contract or water right in a manner that, in many cases, may be more cost-effective or politically acceptable (or both) than a new water supply contract, reservoir project, or costly pipeline, and (2) existing water rights holders or environmental interests who have relied upon or wish to preserve future availability of return flows to meet their own needs, environmental flow needs, or the needs of downstream senior rights who would otherwise make calls upstream to junior rights for the passage of inflows.

Some of the more specific consequences of a “bed and banks” approach to indirect reuse of surface water-based effluent under section 11.042 include:

- (1) Protections afforded existing water rights and environmental needs may be less than that statutorily required for a new appropriation. For example, assignment of no priority date or a priority date of the underlying water right renders off-limits those return flows from claims by existing water rights that may have relied on the availability of those return flows to improve reliability of their rights.
- (2) Use of section 11.042 as an indirect reuse authorization mechanism would require development of a detailed accounting system to track discharges and diversions of return flows that fall outside the priority system of allocating waters in a watercourse;
- (3) Removing return flows from the available “pool” of water available to satisfy determined environmental needs, if any, could result in an inability to meet any such needs, cause the burden to be borne by other water rights holders, or increase the cost of meeting any such needs.
- (4) Indirect reuse could significantly extend the water supply available to the entity receiving the authorization.
- (5) The State retains some right to evaluate and address the impact of indirect reuse on the environment and other water rights. (The extent of this right is the subject of other issues discussed in this paper.)

By comparison, the types of specific consequences that some suggest result if indirect reuse is treated as a new appropriation under section 11.046 include:

- (1) In many basins, the water in the watercourses, even after including return flows, can be fully allocated to existing water rights (at least up to the reliability standard

required to permit such use). In these and other cases, determined environmental water needs of the stream or bay systems may exceed the amount of water remaining for appropriation. New permits for indirect reuse could probably not be issued in these basins.

- (2) Even if water is found to be available, the water right will receive a junior priority date. Under the “first in time, first in right” approach, this means that these water rights are more likely to be reduced or cut off in times of severe drought.
- (3) Increased development of direct reuse projects is likely to occur if other water supply strategies cannot be identified.

- (2) **Does current law allow effluent derived from different sources of water to be treated differently for purposes of evaluating a request to reuse this effluent?**

Groundwater-based effluent

Section 11.042(b), also enacted in 1997, provides a separate mechanism for addressing the indirect reuse of effluent derived from groundwater. Specifically, section 11.042(b) reads:

A person who wishes to discharge and then subsequently divert and reuse the person's existing return flows derived from privately owned groundwater must obtain prior authorization from the commission for the diversion and the reuse of these return flows. The authorization may allow for the diversion and reuse by the discharger of existing return flows, less carriage losses, and shall be subject to special conditions if necessary to protect an existing water right that was granted based on the use or availability of these return flows. Special conditions may also be provided to help maintain instream uses and freshwater inflows to bays and estuaries. A person wishing to divert and reuse future increases of return flows derived from privately owned groundwater must obtain authorization to reuse increases in return flows before the increase.[10]

Effluent derived from Imported or Stored Waters

While section 11.042(b) singles out groundwater-derived effluent for specific regulatory treatment, section 11.042(c) does not identify the source(s) of the “water” to which it refers, thereby leaving open for argument the issue of whether or how effluent derived from other water supplies is to be treated, if at all, under section 11.042(c).

10 This language essentially tracks the decision by Texas Natural Resource Conservation Commission (TNRCC) (predecessor to the TCEQ) in the *City of San Marcos* case, in which the City of San Marcos sought a bed and banks authorization to convey groundwater-derived effluent for subsequent diversion and use downstream under the statutes that existed prior to the adoption of SB 1 and section 11.042(c).

Because imported waters from another basin, and the effluent derived from them, are sources of supply that would not have ordinarily been available to meet downstream environmental needs or those of downstream water rights holders in the receiving basin, some argue different and perhaps less onerous treatment is appropriate, especially in light of already existing barriers to interbasin transfers.

A few have also argued that effluent derived from waters that are first stored in an in-basin reservoir are waters that would not have been available to the environment or downstream water rights but for the initial efforts of the entity that constructed the reservoir to capture and store the source water. Others suggest that there is no difference between reuse of effluent derived from in-basin surface water previously stored in a reservoir and effluent derived from in-basin surface water diverted under a run-of-river permit.

As discussed above under issue (1), many generally recognize there may be a valid basis for distinguishing between supplies that are derived in-basin versus out-of-basin supplies or groundwater. This may be particularly appropriate for new or increased levels of return flows from these water supplies, where no existing water right holder or the environment has come to rely upon those return flows. Indeed, because imported waters are required to go through a rigorous interbasin transfer permitting process that in part addresses impacts to environmental flows and senior rights in the basin of origin, it is arguably already burdened by significant restrictions. Many argue that imposing additional requirements to meet environmental needs in the receiving basin on top of these other requirements represent a punitive requirement on interbasin transfers that have been identified as necessary to meet growing water supply needs.

(3) Does current law provide for different treatment of effluent derived from “future” and “existing” or “historical” return flows, regardless of the source?

While the terms “existing return flows” and “future increases in return flows” are terms that are only contained within the statute that deals with groundwater-based return flows (section 11.042(b)), both the nature of the distinction to be made with regard to groundwater-based return flows and whether any such a distinction can or should be made by regulators when other sources of supply are involved continues to foster considerable debate. Confusion seems to arise around the use of the terms “existing” and “future” return flows, which contributes to the debate. The term “historical” is used by many as synonymous with “existing” return flows. Some use the term “historical” or “existing” return flows to mean only those return flows that have been actually discharged, whereas others use the term to include return flows that derive from existing water rights whether or not they have ever actually been discharged. Similarly, to some, the term “future” return flows means return flows that have never actually been discharged regardless of whether the return flows derive from an existing permitted in-basin or imported surface water supply or groundwater. Lastly, others use this term to refer only to return flows that derive from water supply sources that have yet to be permitted or, in the case of groundwater, developed.

Regardless of the terminology, the issue comes down to whether increases in actual discharges of return flows above current or historical levels is “new” water to the system that could or should be treated as outside the prior appropriation system. The argument in support of this approach is

that no water right holder or the environment has ever relied on the actual presence of return flows to satisfy their day-to-day needs. Others dispute this contention, arguing that such assumptions have underlain significant investments in the purchase of water rights, execution of contracts, and construction of infrastructure. Moreover, some argue that past water rights permitting decisions have included express or implicit assumptions about future increases of return flows derived from existing water rights and that this type of reliance on predicted return flow levels should be respected. It is important to recognize that definitive proof of these kinds of assumptions is often elusive. While those assumptions, if any, have only occasionally been stated expressly in agency orders, permits, or other contemporaneous documents, in many (if not most) other instances, any such assumptions may have been included in the evaluation of the water right or contract requirements in accordance with the common practices of the experts at that time and may not be fully documented, if at all. In some cases, certain existing water rights holders have undoubtedly enjoyed an increase in the reliability of their water rights due to the presence of return flows, but clear reliance on the presence of these return flows in the permitting process is often difficult to document. If past permitting reliance is to be honored, defining the appropriate level of proof and the assignment of the burden of proof on this issue is something the Legislature may want to address. These concerns seem to be present not only where in-basin return flows are at issue, but also in situations where the discharge of effluent derived from either groundwater or imported surface water has already occurred for some time and is projected to increase over time.

(4) Who can obtain indirect reuse rights?

Disputes also arise over whether existing law allows TCEQ to give preference to particular types of applicants for indirect reuse authorizations. Some have suggested that holding the underlying water right should provide some preference under current law, whereas others have argued that ownership of the wastewater treatment plant confers a preference under current law. Others have argued that current law does not necessarily establish any preference but that good policy would support giving preference to the water right holder or the discharger, but not third parties with no identifiable ownership interest in the wastewater or underlying water right. As set forth below, the approach *may* depend on the statute under which indirect reuse applications are considered. As such, clarification of the Legislature's intent on this issue may be necessary.

If surface-water derived return flows are treated as “surplus water” under section 11.046(c), available for appropriation by “others,” then it appears fairly clear that *anyone* may file such an application, regardless whether the applicant has any ownership interest in the facilities that are discharging the effluent or whether the applicant has an ownership interest in the underlying water right or contract for the water supply from which the effluent was derived. In that instance, TCEQ would presumably evaluate competing applications for the same water based on the type of use and merit of each application.

Subsection 11.042(c), which some argue provides the sole basis for allowing the indirect reuse of surface-water derived return flows, refers to granting a “person” the right to “convey and subsequently divert water,” without regard to whether the “person” also needs to be the discharger of the water, the owner of the underlying surface water right from which the return flows are derived, or

a person with a contract to either purchase the return flows from the discharger or the underlying surface water from which the effluent is derived. Indeed, some have suggested that *any* person or entity can seek a right under section 11.042(c) even if no contractual or ownership interest with respect to the return flows or underlying water supply exists.

Section 11.042(b), which addresses indirect reuse of groundwater-based effluent, allows that “a person who wishes to discharge and then subsequently reuse the person’s existing return flows...” to obtain a permit. This suggests that only the discharger of the return flows may obtain such authorization. By contrast, with regard to future increases in return flows derived from groundwater-based effluent, the same subsection (11.042(b)) provides only that “a person who wishes to divert and reuse” these return flows needs a permit, perhaps suggesting that the same person seeking the permit need not also be the discharger, since the same phrase “discharge and...reuse” is not used. As with section 11.042(c), some point to this different terminology for future increases in return flows to contend that any person can obtain indirect reuse rights to future groundwater-derived return flows even if no contractual or ownership interest with respect to the return flows or underlying groundwater exists.

(5) To what extent should protections be afforded to the environment in reuse permitting decisions?

The benefits that return flows may offer in supplying water to help meet environmental needs in many river basins is undisputed. The ongoing debate of how best to provide water to meet environmental needs of our rivers and bay systems has been further highlighted as the potential and need for the full use, and reuse, of water rights increases over time. Regardless of the permitting approach used - whether through a new appropriation or a bed and banks authorization, or both - the effect of reuse on the environment is a significant issue. Indeed, these approaches generally allow TCEQ to consider environmental flow needs in their assessment of the proposed reuse and include appropriately protective conditions. The question then is the level of protection that is appropriate where reuse is concerned. One factor to consider in incorporating appropriate limitations in any reuse authorization may be the extent to which return flows are or may be relied upon to meet identified environmental flow needs when considered along with the responsibility of other water rights holders in the basin to provide for environmental flows. Actual discharges of effluent and past assumptions with respect to expected increases in return flows over time, if any, may be relevant. Additionally, the extent to which artificially created environments made possible by historical return flows should be protected, should be considered. Prior to the growth of cities and their resulting wastewater discharges, many streams in Texas, including some that were not considered perennial streams, had historical low flows well below current low flows. Fully protecting these artificial baseflows by limiting the amount of return flows that can be reused may not be prudent in light of the state's needs for additional water supplies. On the other hand, if an environment has been created, even through artificial means, the counterargument that many perennial streams in the state have been dammed up and diverted in a manner that did not take into account water for environmental flows suggests that some trade-off is appropriate. Future return flows that have not been relied upon to meet environmental needs may warrant different treatment.

ENDNOTES

- ¹ Brooks, David B., County and Special Districts Law, *Texas Practice*, 36A, Ch 46.1, p. 113,(2002).
- ² Id.
- ³ Report of the E-Texas Commission, Recommendations of the Texas Comptroller, Chapter 1, (December 2000).
- ⁴ See *Texas Municipal Utility Districts: An Infrastructure Financing System* by Joe B. Allen and David M. Oliver, Jr.
- ⁵ Id.
- ⁶ See Report of the E-Texas Commission, Recommendations of the Texas Comptroller, Chapter 1, (December 2000).
- ⁷ The Soil and Water Conservation District listed in the Water District Count Report is a special law district. The Commerce Water District was created by the legislature in 1973 and is subject to the jurisdiction of the TCEQ. Oversight of the state's other soil and water conservation districts is vested in the Soil and Water Conservation Board, therefore the TCEQ does not have jurisdiction over these districts.
- ⁸ See *Texas Municipal Utility Districts: An Infrastructure Financing System* by Joe B. Allen and David M. Oliver, Jr.
- ⁹ See Brooks, David B., County and Special Districts Law, *Texas Practice*, 36A, Ch. 46.71, p. 227, (2002).
- ¹⁰ Id. p. 228.
- ¹¹ Id.
- ¹² See *Texas Municipal Utility Districts: An Infrastructure Financing System* by Joe B. Allen and David M. Oliver, Jr.
- ¹³ Brooks, David B., County and Special Districts Law, *Texas Practice*, 36A, Ch. 46.72, p.229, (2002).
- ¹⁴ See testimony by Joe B. Allen of Allen Boone Humphries Robinson, LLP., Public Hearing of the House Committee on Natural Resources, August 3, 2006 (Houston).
- ¹⁵ See Exhibit D.
- ¹⁶ See testimony by Tom Morgan of the Texas Realtors Association of Realtors, Public Hearing of the House Committee on Natural Resources, August 3, 2006 (Houston).
- ¹⁷ Texas Water Development Board Special Report, *Water Conservation Implementation Task Force, Report to the 79th Legislature*, November 2004, p. 1-2.
- ¹⁸ Id. at 2.
- ¹⁹ Id. at 54-65.
- ²⁰ See "Outdoor Water Conservation Programs San Antonio Experience" testimony by Karen Guz of San Antonio Water Systems and "Water Conservation Programs El Paso, Texas" PowerPoint presentation testimony by Anai Padilla of El Paso Water Utilities, Public Hearing of the House Committee on Natural Resources, April 18, 2006 (Austin).
- ²¹ See San Antonio Water Systems website <http://www.saws.org/conservation/ordinance/> , El Paso Water Utilities website <http://www.epwu.org/conservation/ordinances.html>, and "Outdoor Water Conservation Programs San Antonio Experience" testimony by Karen Guz of San Antonio Water Systems, Public Hearing of the House Committee on Natural Resources, April 18, 2006 (Austin).
- ²² See "Water Conservation Programs El Paso, Texas" testimony by Anai Padilla of El Paso Water Utilities, Public Hearing of the House Committee on Natural Resources, April 18, 2006 (Austin).
- ²³ See San Antonio Water System website <http://www.saws.org/conservation/programs/>.
- ²⁴ See "Outdoor Water Conservation Programs San Antonio Experience" testimony by Karen Guz of San Antonio Water Systems, Public Hearing of the House Committee on Natural Resources, April 18, 2006 (Austin).
- ²⁵ See "Texas Water Development Board Municipal Water Conservation Programs", testimony by Bill Mullican of Texas Water Development Board, Public Hearing of House Committee on Natural Resources, April 18, 2006 (Austin).
- ²⁶ Id.
- ²⁷ Texas Water Development Board Special Report, *Water Conservation Implementation Task Force, Report to the 79th Legislature*, November 2004, p.23.
- ²⁸ See Texas Water Development Board News Release, "Majority of Texans Want More Government Support of Water Conservation", January 25, 2005.
- ²⁹ See "Water IQ Know Your Water", testimony by Carole Baker of The Subsidence District, Public Hearing of

House Committee on Natural Resources, April 18, 2006 (Austin).

³⁰ See North Texas Municipal Water District website www.ntmwd.com.

³¹ See City of Austin website www.ci.austin.tx.us.

³² See High Plains Underground Water Conservation District No. 1 website www.hpwd.com.

³³ *Texas Water Rights and Wastewater Reuse*, Prepared by the Reuse Committee of the Texas Water Conservation Association, p.1 (May 2006).

³⁴ Direct Reuse Section from: *Texas Water Rights and Wastewater Reuse*, Prepared by the Reuse Committee of the Texas Water Conservation Association, p. 2-3 (May 2006) (Excerpt includes entire section).

³⁵ Indirect Reuse Section from: *Texas Water Rights and Wastewater Reuse*, Prepared by the Reuse Committee of the Texas Water Conservation Association, p. 3 (May 2006) (Excerpt includes entire section).

³⁶ See "Facilitating Reuse to Meet Texas' Future Water Needs", testimony by Roger Schenk of American WaterWorks Association - Texas Section, Public Hearing of House Committee on Natural Resources, April 18, 2006 (Austin).

³⁷ See "Water Reuse" testimony by Texas Water Reuse Association, Public Hearing of House Committee on Natural Resources, April 18, 2006 (Austin).

³⁸ *Pending Water Rights Indirect Reuse Applications 4/13/2006* provided as written testimony by the Texas Commission on Environmental Quality in the House Natural Resources Committee interim charge hearing on 4/18/2006.

³⁹ See Water Code Section 11.134 providing the conditions under which the Texas Commission on Environmental Quality may grant an application for new appropriation of surface water.

⁴⁰ Bed and Banks Authorization of Reuse Section from: *Texas Water Rights and Wastewater Reuse*, Prepared by the Reuse Committee of the Texas Water Conservation Association, p. 4 (May 2006) (Excerpt includes entire section).

⁴¹ Indirect Reuse Permits As New Appropriations Section from: *Texas Water Rights and Wastewater Reuse*, Prepared by the Reuse Committee of the Texas Water Conservation Association, p. 5 (May 2006) (Excerpt includes entire section).

⁴² Groundwater-based effluent Section from: *Texas Water Rights and Wastewater Reuse*, Prepared by the Reuse Committee of the Texas Water Conservation Association, p. 7 (May 2006) (Excerpt includes entire section).

⁴³ Effluent derived from Imported or Stored Waters Section from: *Texas Water Rights and Wastewater Reuse*, Prepared by the Reuse Committee of the Texas Water Conservation Association, p.7 (May 2006) (Excerpt includes entire section).

⁴⁴ See "Water Reuse in the 2006 Regional Water Plans and the 2007 State Water Plan" testimony by Bill Mullican of the Texas Water Development Board, Public Hearing of the House Committee on Natural Resources, April 18, 2006 (Austin) and the Texas Water Development Board, *Draft State Water Plan, Water for Texas 2007, Volume 1*, p.24 (August 2006).

⁴⁵ See Mary E. Kelly, Co-Director, Ecosystems Program testimony by Environmental Defense, Public Hearing of House Committee on Natural Resources, April 18, 2006 (Austin).

⁴⁶ Id.

⁴⁷ *Texas Water Rights and Wastewater Reuse*, Prepared by the Reuse Committee of the Texas Water Conservation Association, p. 1 (May 2006).

⁴⁸ Id.

⁴⁹ See *Caddo Lake Institute, Inc. v. TCEQ (Cause No. GN4-00132)*, *Galveston Bay Conservation and Preservation Association, et al. v. TCEQ (Cause No. GN4-00160)*, *San Marcus River Foundation v. TCEQ (Cause No. GN3-01251)*, 261st Judicial Court, Travis County, Texas.

⁵⁰ Final Report of the Study Commission on Water for Environmental Flows, December 2004.

⁵¹ Senate Bill 3 by Armbrister/Puente (79th, Regular Session).

⁵² Executive Order RP-50 - October 28, 2005.

⁵³ See Texas State Soil and Water Conservation Board website www.tsswcb.state.tx.us/.

⁵⁴ See Texas Water Development Board website www.twdb.state.tx.us/.

⁵⁵ See "Comprehensive Water Conservation Program for Water Conservation and Water Supply Enhancement" testimony by the Texas State Soil and Water Conservation Board, Joint Public Hearing of House Committee on Natural Resources and House Committee on Agriculture and Livestock, May 3, 2006 (Austin).

⁵⁶ Id.

⁵⁷ See Texas Water Development Board, *Draft State Water Plan, Water for Texas 2007, Volume 1*, p.4 (August

2006)

⁵⁸ Senate Bill 1094 by Duncan/Puente (78th, Regular Session).

⁵⁹ Texas Water Development Board Special Report, *Water Conservation Implementation Task Force, Report to the 79th Legislature*, November 2004, p.29

⁶⁰ Id. at p.29

⁶¹ See "Agriculture Water Conservation Demonstration Initiatives" testimony by the Texas Water Development Board, Joint Public Hearing of House Committee on Natural Resources and House Committee on Agriculture and Livestock, May3, 2006 (Austin).

⁶² See "Comprehensive Water Conservation Program for Water Conservation and Water Supply Enhancement", testimony by the Texas State Soil and Water Conservation Board, Joint Public Hearing of House Committee on Natural Resources and House Committee on Agriculture and Livestock, May 3, 2006 (Austin).

⁶³ Id.

