

IN THIS ISSUE

THE EVOLUTION OF SURFACE WATER INTERBASIN TRANSFER POLICY IN TEXAS: VIABLE OPTIONS FOR FUTURE WATER, WATER GRABS, OR JUST PIPE DREAMS?

This article presents a detailed analysis of the history and development of interbasin transfer law and policy in Texas. The article follows the droughts of record and the subsequent legislation that followed, as well as exploring case studies in interbasin transfers. Finally, the authors offer ideas and solutions that set aside some of the fear and confusion surrounding the movement of water across basins.

by *Todd Votteler, Kathy Alexander and the late Joe Moore* 125

STUDENT NOTE

THE ENDANGERED SPECIES ACT “IN DANGER OF EXTINCTION”: A CLOSE LOOK AT GDF REALTY INVESTMENTS, LTD. V. NORTON UNDER THE COMMERCE CLAUSE

This note examines the 5th Circuit’s decision in *GDF Realty Investments, Ltd. v. Norton* and its impact on the interplay between the Endangered Species Act and the United States Supreme Court’s modern Commerce Clause jurisprudence.

by *Christine Toriz* 164

DEPARTMENTS

Officer and Committee Information	122
From the Editors	125
Recent Developments	
Air Quality	185
Federal Casenotes	186
Natural Resources	187
Publications	189
Solid Waste	191
State Casenotes	193
Washington Update	194
Water Quality & Water Utilities	196
Water Rights	198
Future Events	201
Changes in the Environment	203
Membership Application	207

STATE BAR OF TEXAS

UNIVERSITY OF TEXAS
SCHOOL OF LAW

ENVIRONMENTAL AND NATURAL RESOURCES LAW SECTION

25 Waters Edge Circle, #217
Georgetown, Texas 78626-5561
www.texenrls.org

Editor-in-Chief

Jimmy Alan Hall
25 Waters Edge Circle, #217
Georgetown, Texas 78626-5561
(512) 796-0334

**Recent Developments and
Special Projects Associate Editor**

Lyn Dean
P.O. Box 220
Austin, Texas 78767-0220
(512) 473-3378

Text Editor

Meitra Farhadi
300 West Sixth, #1500
Austin, Texas 78701
(512) 472-8800

Production Associate Editor

Randall B. Wilburn
7408 Rain Creek Pkwy.
Austin, Texas 78759
(512) 535-1661

Solicitations Associate Editor

Lauren Kalisek
P.O. Box 1725
Austin, Texas 78767-1725
(512) 322-5800

RECENT DEVELOPMENT COLUMNISTS

Air

John B. Turney
816 Congress Ave., Suite 1200
Austin, Texas 78701
(512) 476-0005

Casenotes—Federal

Deborah Clarke Trejo
816 Congress Ave., #1150
Austin, Texas 78701
(512) 320-5466

Casenotes—State

Howard S. Slobodin
810 West 10th Street
Austin, TX 78701
(512) 474-9100

Natural Resources

Aileen M. Hooks
98 San Jacinto Blvd., #1600
Austin, Texas 78701
(512) 322-2616

Publications

Timothy A. Wilkins
711 Louisiana St., #2900
Houston, TX 77002-2781
(713) 221-1136

Solid Waste

Rebecca L. Fink
816 Congress Ave., Suite 1900
Austin, TX 78701
(512) 322-5800

Washington Update

Laura LaValle
98 San Jacinto Blvd., #1420
Austin, Texas 78701-4039
(512) 391-8020

Water Quality and Water Utilities

Robin Smith
P.O. Box 13087
Austin, Texas 78701
(512) 239-0463

Water Rights

Emily Rogers
816 Congress Ave., #1700
Austin, Texas 78701
(512) 472-8021

TEXAS ENVIRONMENTAL
LAW JOURNAL

727 East Dean Keeton St.
Austin, Texas 78705
(512) 471-0299
telj@mail.law.utexas.edu

Editor-In-Chief

Andrew Abrameit

Managing Editor

Chris Smith

Lead Articles Editor

Michael Agnese

Student Notes Co-Editors

Andrew Hawkins
KartaPurkh Khalsa

Recent Developments Editor

E. Adina Opalek
Nima Aghili

Production Consultant

Susan Williamson

Staff

Humberto Aguilera
Brantley Boyett
Susana Canseco
Kevin Cruser
Amy Emerson
Amber Gosney
Greg Graml
E. Joyce Iyamu
Tom Linney
Suzie Loonam
Oscar Marrero
Richard T. McMillan, Jr.
Aron Potash
Vanessa Puig Williams
Happy Rahman
Nelia Robbi
Zachary Sakas
Julie Street
Peipey Tang
Abby Wells Raines

**STATE BAR OF TEXAS
ENVIRONMENTAL AND NATURAL RESOURCES LAW SECTION**

EXECUTIVE COMMITTEE OFFICERS (2005-2006)

Chair

Mary Mendoza
600 Congress Ave., Suite 1600
Austin, Texas 78701
(512) 867-8418

Vice Chair

Kerry Haliburton
P.O. Box 1470
Waco, Texas 76703
(254) 755-4100

Treasurer

Mary Koks
Bank of America Center
700 Louisiana St., Suite 4600
Houston, Texas 77380
(281) 681-5914

Chair Elect

Andrew "Drew" S. Miller
816 Congress Ave., Suite 1150
Austin, Texas 78701
(512) 320-5466

Secretary

Karen W. Kornell
Capitol Station
P.O. Box 12548
Austin, Texas 78711-2548
(512) 463-2012

Immediate Past Chair

Charles Jordan
200 Crescent Court, Suite 1500
Dallas, Texas 75201
(214) 855-3021

EXECUTIVE COMMITTEE MEMBERS

Terms Expire 2006

David Cooney
(512) 463-6977

Stephanie Hall
(210) 370-2149

Andrew Strong
(713) 425-7377

Terms Expire 2007

Lisa B. Gossett
(281) 283-3257

Peter T. Gregg
(713) 420-4518

Ragan S. Tate
(214) 665-8022

Terms Expire 2008

Cindy Bishop
(214) 999-4506

Carol Lear
(832) 854-6397

Cindy Smiley
(512) 495-6441

COMMITTEE CHAIRS

Bar Association Outreach

Constance Courtney Westfall
(214) 657-2351

Law School

Michael Gershon
(512) 322-5800

Publications

Jimmy Alan Hall
(512) 796-0334

Finance

Andrew "Drew" S. Miller
(512) 320-5466

Professional Education Programs

Mike Nasi
(512) 322-5800

Technology & Website

Andrew Strong
(713) 662-9083

The State Bar of Texas Environmental Law Journal (Journal) (ISSN: 0163-545X) is published quarterly by the Environmental and Natural Resources Law Section of the State Bar of Texas. The purpose of the Journal is to provide Section members with current legal articles and recent developments and information pertaining to environmental and natural resources law, as well as news of Section activities and other events pertaining to this area of law.

In 1990, the Environmental and Natural Resources Law Section of the State Bar of Texas reached an agreement with a student group at The University of Texas School of Law for the students to coproduce the Journal as the Texas Environmental Law Journal. The students' involvement began with the summer issue of 1990.

Anyone interested in submitting a manuscript for publication should contact either the Solicitation Editor or the Editor-in-Chief of the Journal as listed on the facing page. Manuscripts for publication must be typed double-spaced with footnotes placed at the end of the manuscripts as endnotes. Manuscripts must be provided electronically in MS Word. (PC-compatible floppy disks are appreciated).

FROM THE EDITORS

Dear Readers,

Welcome to Issue Number Three of the 2005-06 publication year!

In this issue, Todd Votteler, Kathy Alexander Martin and the late Joe Moore present a detailed article about the development of interbasin transfer law and policy in Texas. The article follows the droughts of record and the subsequent legislation that followed, as well as exploring case studies in interbasin transfers. Finally, the authors offer ideas and solutions that set aside some of the fear and confusion surrounding the movement of water across basins.

Christine Toriz, a 2005 graduate of Texas Tech University School of Law, and former member of the Texas Tech Law Review, writes our student note. Christine examines the 5th Circuit's decision in *GDF Realty Investments, Ltd. v. Norton* and its impact on the interplay between the Endangered Species Act and the United States Supreme Court's modern Commerce Clause jurisprudence.

Enjoy Issue Number Three, and we look forward to shortly bringing you the final issue of Volume 36!

Andrew M. Abrameit
Student Editor-in-Chief

Jimmy Alan Hall
Editor-in-Chief

THE EVOLUTION OF SURFACE WATER INTERBASIN TRANSFER POLICY IN TEXAS: VIABLE OPTIONS FOR FUTURE WATER, WATER GRABS, OR JUST PIPE DREAMS?

BY TODD VOTTELER, KATHY ALEXANDER AND THE LATE JOE MOORE

I. INTRODUCTION

Percival Lowell, astronomer and wealthy gentleman, studied Mars extensively during the late 1800s and early 1900s using the great reflector telescope of Arizona's Flagstaff Observatory.¹ In the course of his observations, Lowell, like other astronomers of his day, sketched images of what he perceived to be canals created to bring water from the Martian polar ice caps across dry landscapes to oases and other areas of what he thought was a dying desert planet. As Lowell explained in 1895, "[t]o account for these phenomena, the explanation that at once suggests itself is, that a direct transference of water takes place over the face of the planet, and that the canals are so many waterways."² Alas, Lowell's imagination was more fertile than the frozen, arid plains of Mars upon which he gazed. Back in Texas, it would only be a few years later, in 1900, when the first interbasin transfer was authorized allowing 168,000 acre-feet of surface water from the Colorado River Basin for use in the Lavaca River Basin.³

Yet even after 100 years of interbasin transfers in Texas, the existence of canals and pipelines transferring surface water across portions of the state seems almost as alien to much of the populace of Texas as the Martian "canals" appeared to Lowell. The premise appears to be simple—transport available surface water to the areas that need it. However, the reality is much more complex. The possibility of the movement of large volumes of water from wetter areas of the state to drier ones, like an unwanted invasion from a distant world, has become a matter of fear and confusion for the citizenry of the basins of origin in Texas. This article attempts to remove some of the fear and confusion by shining a light on the development of Texas interbasin transfer policy. The history of this policy

is examined and information regarding current and future interbasin transfers is provided.⁴

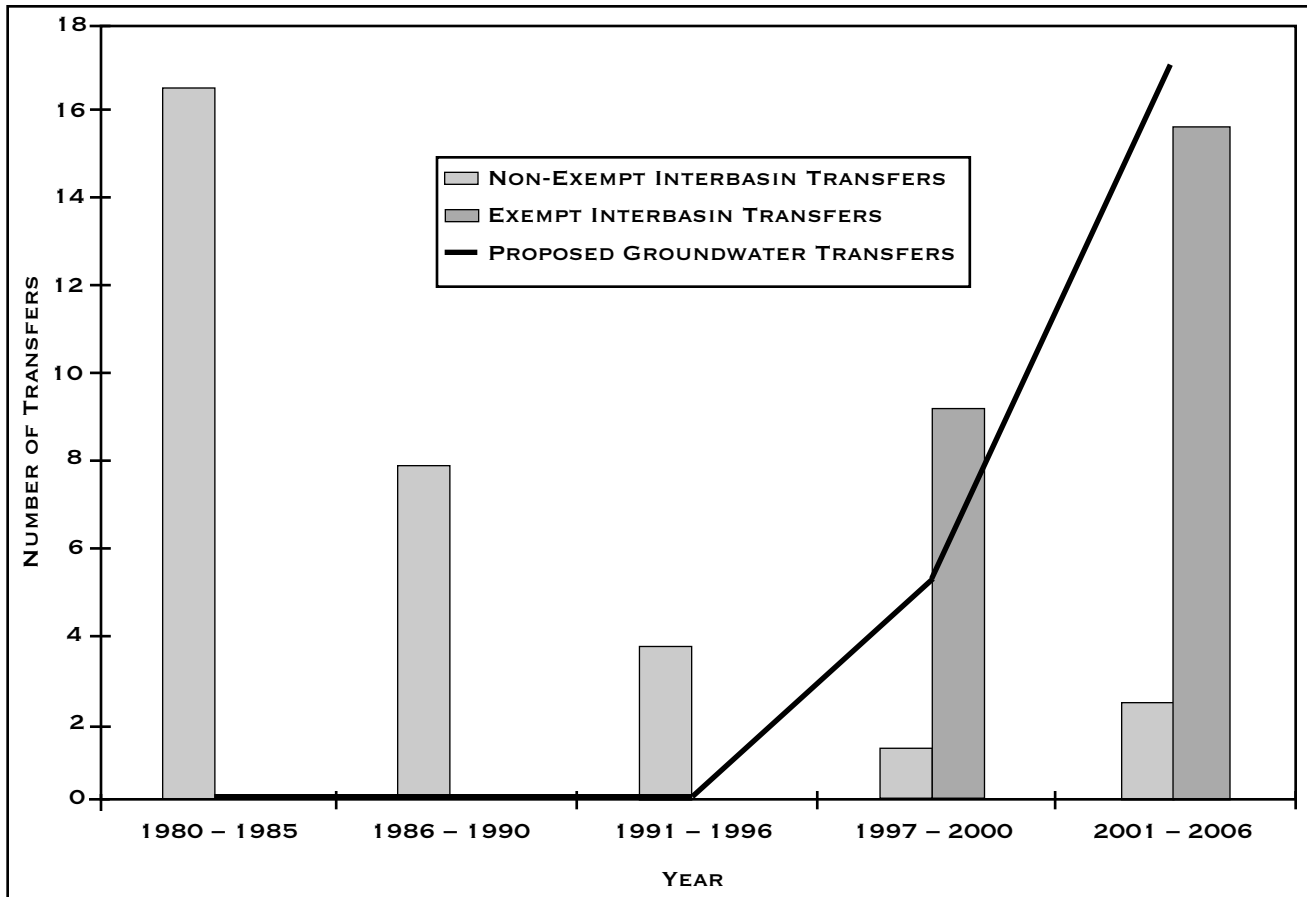
A. WHAT IS AN INTERBASIN TRANSFER OF WATER IN TEXAS?

The sources of water in Texas do not always align with its population. The greatest amount of water is found in the east, especially the Sabine and Sulphur basins. These areas are sparsely populated. For these reasons, interbasin transfers (IBTs) – or the movement of water from one river basin to another river basin – have historically been an important way to provide water throughout Texas.⁵

An interbasin transfer, or transbasin diversion, is an artificial withdrawal of water from one drainage basin, the basin of origin, to another, the receiving basin, for a beneficial use.⁶ The Texas Commission on Environmental Quality (TCEQ), the state agency responsible for water rights administration in Texas, does not specifically define "interbasin transfer," but infers that it is the transfer of state-owned water (surface water) from one river basin to another.⁷ The Texas Water Development Board (TWDB), the water-planning agency for the State of Texas, designates river basins, for the purposes of the interbasin transfer provisions of the TCEQ rules, pursuant to Section 16.051(c) of the Texas Water Code.⁸ As interpreted under the Texas Administrative Code, an interbasin transfer applies only to surface water, thus excluding groundwater transfers from the rules applicable to surface water transfers.⁹

Generally, two types of transfers are used. Open transfer systems that use canals, reservoirs, and rivers, and closed transfer systems that use pipelines and tunnels. East Texas is often considered

FIGURE 1. COMPARISON OF INTERBASIN TRANSFERS OF SURFACE WATER AND GROUNDWATER EXPORT



the source for interbasin transfers, because rainfall rates are highest, and the topography is best suited for dam construction. However, Appendix A lists numerous interbasin transfers where the basin of origin is in the western half of the state, such as Lake Meredith in the Panhandle.

B. INTERBASIN TRANSFERS:

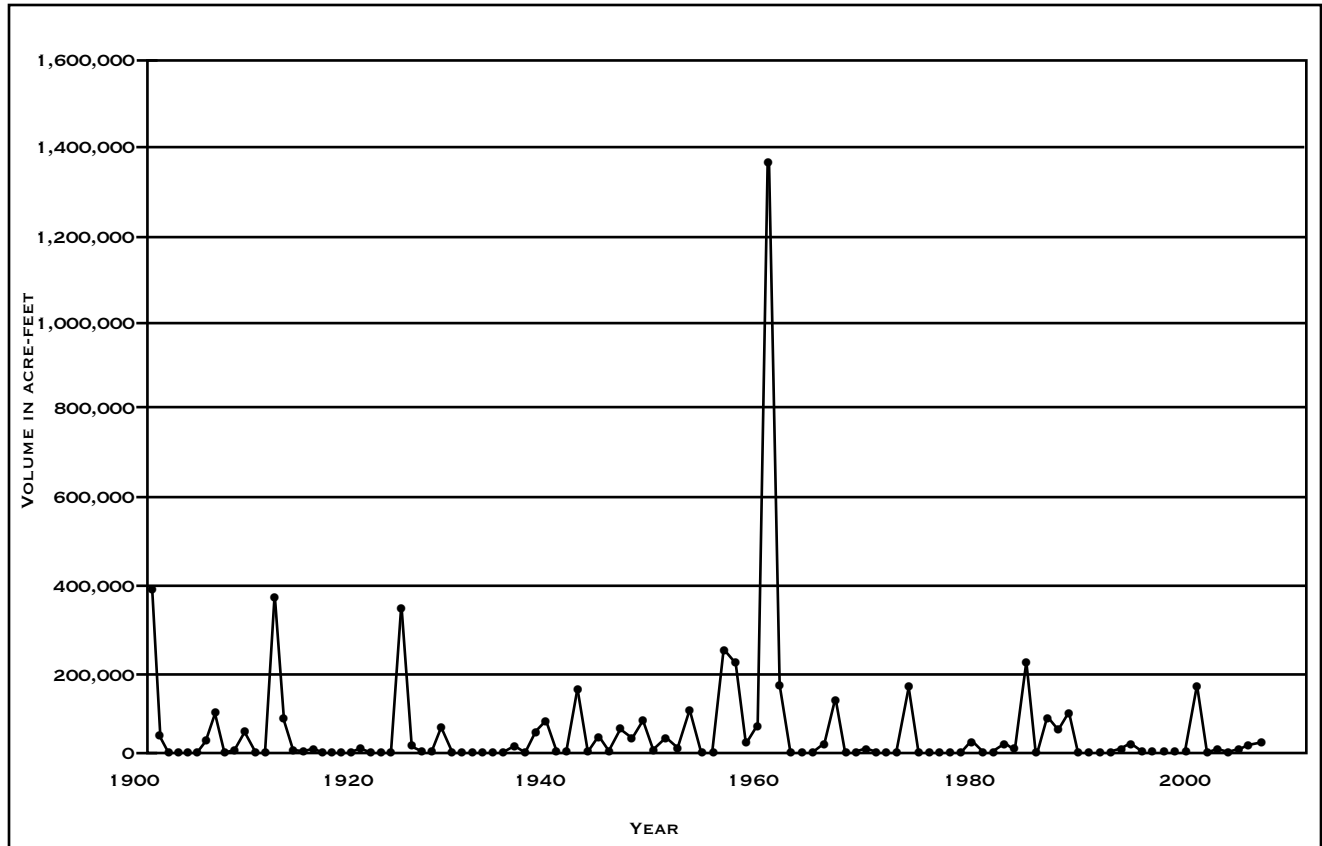
ADVANTAGES AND DISADVANTAGES

Diverted water supports economic development through municipal use, irrigation, industrial use, and power generation. The TWDB lists potential benefits for interbasin transfers: avoiding the time, expense, and environmental impacts of constructing new reservoirs in water short areas that are near basins with surpluses, providing for emergency needs during droughts when local supplies may be unavailable, and increasing the flexibility to meet instream flow needs by making water available from multiple basins.¹⁰ These advantages focus on the planning flexibility offered by interbasin transfers for managing surface water across large geographic

areas, which exhibit significantly different hydrologic conditions. With regard to groundwater, Appendix B lists proposed groundwater supply projects, and projects that are in various stages of implementation, since 1980. As Figure 1 indicates, the majority of these groundwater projects came into play after Senate Bill 1 placed additional restrictions on surface water interbasin transfers in 1997.

However, interbasin transfers can have adverse social and environmental consequences such as the loss of return flows needed by appropriators in the basin of origin, water quality issues, the potential for the introduction of undesirable non-native species and pathogens, and unmet needs for human and environmental uses in the basin of origin. Evidence from worldwide environmental studies suggests that interbasin transfers may cause significant impacts on ecosystems due to alterations of streamflows and freshwater inflows to bays and estuaries, changes in water quality, habitat modification, and the introduction of non-native aquatic organisms.¹¹

FIGURE 2. VOLUME OF WATER AUTHORIZED FOR INTERBASIN TRANSFER BASED ON THE PRIORITY DATE OF THE WATER



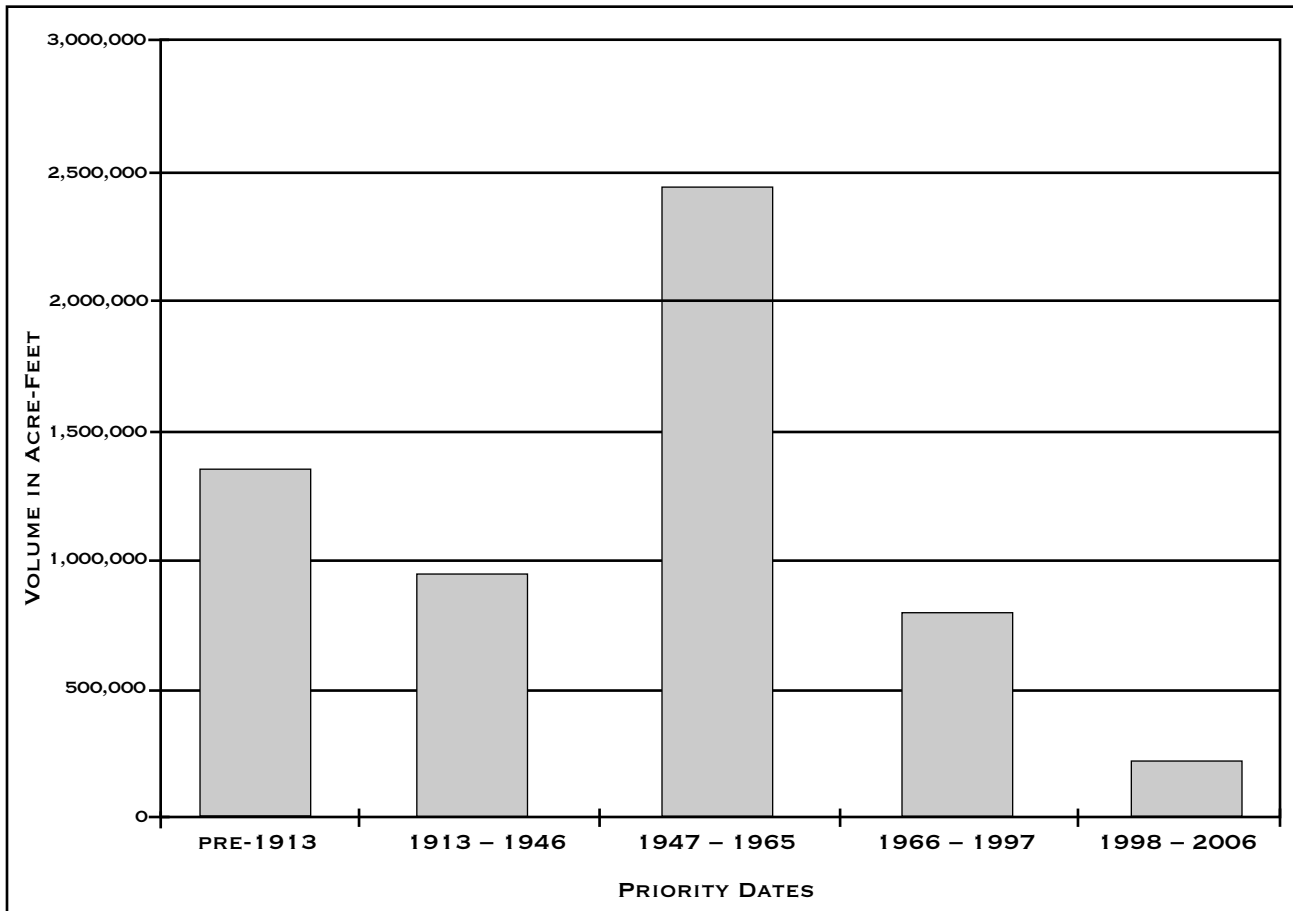
The potential for introduction of non-native species is significant when major drainage basins are involved, particularly when the two basins contain significantly different types of aquatic ecosystems. Open transfer systems have a higher potential for causing significant environmental impacts because of the lack of checks to prevent the introduction, dispersal, and establishment of non-native aquatic species.¹² On the other hand, the design of closed systems can more easily reduce potential impacts that the introduction of non-native species cause.¹³ Often, the most economically feasible option for interbasin transfer projects is to discharge the transferred water into a stream in the receiving basin and use the bed and banks of that stream to transport the water to its point of use. This option may reduce the need for costly pipelines.

Today, in Texas, surface water may be considered for an interbasin transfer if it is generally projected to be available in a basin for the next fifty years.¹⁴ Nonetheless, proposals to transfer water

from one river basin to another generate conflict. The conflicts are transboundary water disputes, or conflicts between differing systems of water law arising when different political jurisdictions share a common source of water.

Two types of transboundary disputes are particularly relevant to interbasin transfers. The first type is the sequential power dispute, which is a dispute between political jurisdictions over water that flows from one political jurisdiction to another.¹⁵ The jurisdiction from which the water flows can come into conflict with the jurisdiction into which the water flows often because of the diminishing quantity or quality of water. The second type is the exclusionary power dispute, a dispute over the movement of water across boundaries as articles of commerce that involve government's ability to give preferences to, or discriminate among, users. In an exclusionary power dispute, the government regulates the users, instead of the resource.¹⁶

FIGURE 3. VOLUME OF WATER AUTHORIZED FOR INTERBASIN TRANSFER BASED ON THE PRIORITY DATE OF THE WATER AND ACCUMULATED FOR PERIODS



II. CHRONOLOGY: INTERBASIN TRANSFER LAW FROM 1900 TO 1946

How many interbasin transfers are in Texas? The answer is “it depends.” The number of interbasin transfers depends on whether the discussion is on raw water, treated water, or both. The number also depends on whether a municipality’s diversion of surface water from one basin for use within a portion of the municipality’s service area in another basin constitutes an interbasin transfer.¹⁷ Furthermore, the result changes if the use of surface water for irrigation on coastal lands located within one or more river basins (and coastal basins) constitutes an interbasin transfer. Excluding the Rio Grande, currently thirty water permits, authorizing forty-five interbasin transfers, do not expressly mention the interbasin transfer, even though the authorized

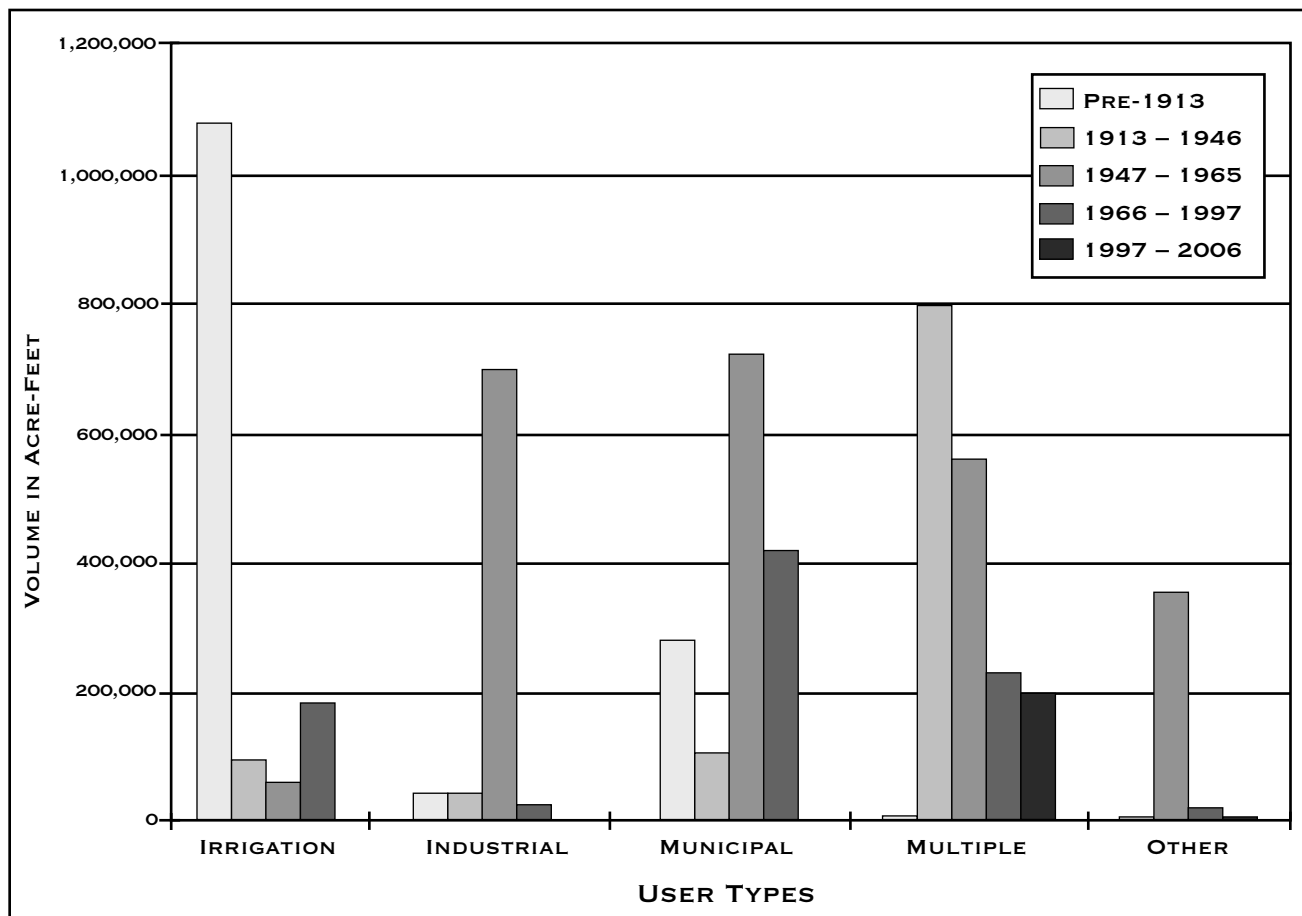
place of use is in another basin.¹⁸ These forty-five interbasin transfers include rights that authorize discharge of return flows into another basin. Excluding the Rio Grande, across the state, 103 water rights authorize 156 separate interbasin transfers.¹⁹

Figure 2 depicts the amount of water authorized for interbasin transfer based on the priority date of the water. Figure 3 depicts the volume of interbasin transfers based on the priority date of the water accumulated for periods that are divided into the following categories; pre-1913 (certified filings), 1913-1946 (post 1913 Burgess – Glasscock Act and pre Drought of Record), 1947-1965 (Drought of Record and pre-1965 Planning Act), 1966-1997 (post-1965 Planning Act, post 1967 Water Rights Adjudication Act, and pre Senate Bill 1) and 1998-2006 (post Senate Bill 1).²⁰

A. INTERBASIN TRANSFER LAW

Although interbasin transfers in Texas have existed since 1900, the statutory basis for interbasin

FIGURE 4. INTERBASIN TRANSFERS BY YEAR AND USE TYPE



transfers derives from the Burgess – Glasscock Act or 1913 Irrigation Act (1913 Act).²¹ The 1913 Act was the precursor for many of the provisions found in the current Texas Water Code. Specifically, the major changes brought by the 1913 Act were prior appropriation applied statewide—all unappropriated waters in the state were the property of the State, preexisting riparian rights were preserved but riparian rights did not apply to lands acquired from the State after 1895, and a Board of Water Engineers was established to administer a statewide water permitting system.²²

The 1913 Act prohibited diversions from one watershed to another “to the prejudice of any person or property situated within the watershed from which such water is proposed to be taken or diverted,” and required a permit for any interbasin transfer.²³ The “terrific floods during 1913 and 1914” revealed the shortcomings of a 1904 amendment allowing the creation of districts with limited taxing authority and provided the impetus for a 1917 constitutional

amendment.²⁴ The current authority for a state agency to manage water within Texas derives from a constitutional amendment that the Legislature proposed and the voters of Texas adopted in an election on August 21, 1917.²⁵

The 1917 amendment removed the limits on indebtedness for the districts.²⁶ Article 16, Section 59, provides that “the Legislature shall pass all such laws as may be appropriate ... [to] the declared public rights and duties ... [for] the conservation and development of ... the control, storing, preservation and distribution of its storm and flood waters, the waters of its rivers and streams ... [.]”²⁷ Although the amendment includes words such as “conservation” and “preservation,” it is clear that the intent of the amendment was to conserve and preserve water for use in water supply. The Texas Constitution does contain a stated limitation upon the “distribution” of the state’s waters. The 1917 constitutional amendment, replaced and repealed the 1913 Act, yet

it retained the essential features of the 1913 Act as it related to interbasin transfers.

B. INTERBASIN TRANSFERS: 1900-1946

Early interbasin transfers in Texas generally authorized water for irrigation use. Figure 4 depicts interbasin transfers by year and use type.²⁸ These early transfers were based on certified filings made pursuant to a series of statutes, specifically the Acts of 1889, 1895, and 1913.²⁹ Prior to 1913, the prospective water user specified the diversion amount (or the intent to construct works for the appropriation of water), the place of use and/or the lands to be irrigated, and the counties in which those lands were located. Because of the absence of statutory requirements for interbasin transfers, the original certified filings did not expressly mention the transfer of water from one watershed to another. Furthermore, the certificates of adjudication, based on these certified filings, and issued pursuant to the Water Rights Adjudication Act of 1967,³⁰ reflected this absence by detailing only the counties in which water could be used. An exception is the authorization issued to the City of Austin, based on Certified Filing 330, which authorizes the transfer of treated water out of the Colorado River Basin for municipal use in areas outside the Colorado River Basin.³¹

From 1913 to 1946, most interbasin transfer water was authorized for municipal and industrial use. As with the pre-1913 interbasin transfers, many of the authorizations in this period did not expressly state that the authorization was an interbasin transfer. However, it can be inferred that these permits allow interbasin transfers by analyzing the authorized places of use in one or more counties that straddle basin boundaries. Because of the large volume authorized to the City of Austin by the City's Certificate of Adjudication 14-5471 with a 1913 priority date, it appears that authorizations for municipal use declined during the period from 1913 to 1946 (Figure 4); however, much of the municipal water authorized for interbasin transfer during this period was also authorized for either industrial or industrial and irrigation use.

III. THE DROUGHT OF RECORD

INSPIRES A NEW GENERATION OF

INTERBASIN TRANSFERS: 1947-1997

A. THE DROUGHT OF RECORD

Drought, a normal, recurrent feature for nearly all climatic regimes, has fostered a desire to move water in Texas from places of availability to places of need.³² As the most damaging of all weather related natural hazards, drought has been the primary motivation for the creation of an ever-evolving system of water regulation and management across the United States.³³ In contrast to other weather events, typified by sudden onset and immediate consequences, "... droughts materialize so slowly and the effects are so long delayed that the damage is usually done by the time it is realized that a drought is being experienced."³⁴

A review of droughts from 1931 to 1985 by the Texas Water Commission found that a three-month drought is likely to occur in at least one Texas climatic region every nine months.³⁵ In Texas, a drought is more likely to occur than a six month period of average to above average precipitation.³⁶ Droughts lasting six months or longer are likely once every sixteen months, and yearlong droughts are likely once every thirty-three months.³⁷

The "Drought of Record," or "Drought of the 1950s," is typically referenced as the catalyst for comprehensive water planning in the State of Texas. According to the Geological Survey (now known as the United States Geological Survey) "...Texas had the greatest precipitation deficiencies in the Nation during the 1947 - 1957 drought."³⁸ Although the drought was underway in portions of Texas by 1947, the onset of the drought occurred in other areas of the state in the 1950s. The late Robert L. Lowry, Jr., a consulting surface water hydrologist for Texas Board of Water Engineers (TBWE, which was combined into the Texas Water Development Board) studied droughts in Texas for the period 1889-1957 and found that Texas experienced a number of drought periods extending from one to four years in duration.

In terms of the effect of this drought on municipal supplies, Lowry reported that a number of municipalities used emergency sources, rationed

water, hauled water, or otherwise supplemented their supplies.³⁹ A number of municipal water supply reservoirs also experienced drastic reductions in storage.⁴⁰ The Red Bluff Water Power Control District near Pecos experienced a 100% shortage in irrigation supplies in 1953.⁴¹ Hydroelectric power generation was affected in operations dependant on floodwaters with related reservoir storage with reductions ranging from twenty-five percent to fifty percent of pre-drought generation.⁴² Lowry also notes that in the Guadalupe River, "...reductions in energy production are directly related to reductions in spring flow...during the drought."⁴³ Comal Springs, the largest complex of springs west of the Mississippi River, ceased to flow for 144 days in 1956.⁴⁴ By the end of 1956, about ninety-four percent of Texas' 254 counties were classified as disaster areas.⁴⁵ Regionally, other droughts have exceeded the 1950s drought in duration and severity, yet statewide the 1947 - 1957 drought retains the title as the Drought of Record.

B. FEDERAL PLANNING IN TEXAS FROM THE 1940S THROUGH THE 1960S

Federal surface water planning and development activities in Texas have historically proceeded under the auspices of three U.S. government agencies: The United States Army Corps of Engineers (USACE) in the Department of the Army under the Department of Defense, the Natural Resource Conservation Service (NRCS, formerly the Soil Conservation Service) in the Department of Agriculture, and the Bureau of Reclamation (USBR) in the Department of the Interior. While the USACE has U.S. constitutional jurisdiction over navigation projects and statutory responsibility for water supply and flood control, the USBR has primary statutory responsibility for developing and constructing federal irrigation projects, which in recent years have included water supply. The NRCS constructs flood retardation and sediment retention reservoirs, which may contain limited water supply (not to exceed 5,000 acre-feet of storage) in cooperation with landowners and local soil and water conservation districts. While the USACE operates throughout all of the states, USBR's geographic jurisdiction is limited to the twelve western contiguous states, including only that portion of Texas west of the 100th meridian.⁴⁶ Thus, Texas has often been a battleground among the three construction

agencies (USACE, USBR, and NRCS), with all three vying for the support of local entities interested in securing federal financial assistance for water supply projects.

USBR began the first federal effort at planning the development of Texas surface water resources in 1949 with "[r]esults ... summarized in 'Water Supply and the Texas Economy, January 1953, ... published as Senate Document No. 57, 83rd Congress, 1st Session."⁴⁷ The USBR Report "included construction of a large water supply canal from the Sabine River to the Lower Rio Grande Valley, together with related reservoirs and other facilities."⁴⁸

In 1958, Senator Lyndon B. Johnson amended a bill authorizing the Cordell Hull Dam and Reservoir in Tennessee to include the creation of the United States Study Commission for the Neches, Trinity, Brazos, Colorado, Guadalupe, San Antonio, Nueces, and San Jacinto River Basins, and intervening areas.⁴⁹ In his comments in the Congressional Record, Senator Johnson noted:

We need to make our inland rivers navigable. We need to control floods and contain floodwaters, for future use. We need to prepare for the vastly increased demand for water that will come with continued industrial growth. There is so much that needs to be done, and so much that can be realized if we do these things, that it is a wonder all of us are not staggering under the alternating emotional extremes of dejection and elation ...[.] The Study Commission to be created by Senate bill 4266 is not intended to, and will not be, a substitute for any existing federal, State, or local water agency. It will aid and abet—it will not supplant—our board of water engineers and the concerned river authorities.⁵⁰

Among the study commission's goals and objectives was the creation of a plan to meet projected water needs "insofar as that objective may be practicable."⁵¹ The plan was intended as a framework "that will be compatible with the best interests of the State of Texas and the Nation."⁵² Most importantly, the goals of the Commission did not include creation of a plan that provided for involuntary transfer of water from one river basin to another.⁵³

While admitting that “[c]hanges in the economy and in national goals make it impossible to look ahead 50 years with any accuracy, ... the Commission selected two specific years in the future, 1975 and 2010 ...[.]”⁵⁴ “Copies of the three-volume proposed report were transmitted by the Board of Water Engineers to seven State agencies and nineteen river authorities and conservation districts...[and the Board] met with representatives of the State agencies and held seventeen separate informal conferences with representatives of river authorities and conservation districts to obtain ... views and comments ...[.]”⁵⁵ Several entities responded. One resolution from East Texas Chamber of Commerce, headquartered in Longview, transmitted December 4, 1961, stated the Chamber “reiterates its previous position that it is unalterably opposed at this time to large scale proposals and plans for the involuntary diversion of water from East Texas to other areas of the state such as that proposed in ... [this report] ... or to the designation of any East Texas water as ‘surplus’.”⁵⁶

The Guadalupe-Blanco River Authority, in a letter dated November 12, 1961, responded that it “takes exception to ... the implication that the Guadalupe Basin will have water supplies surplus to 2010 needs within its dependant area ... [and stated it is] ... opposed to plans for diverting water outside the service area of the Authority ...[.]”⁵⁷ A report attached to the letter from the Authority’s consulting engineering firm warned “once any form of authorization is given by the Federal Government pursuant to the report, that the inevitable result would be Federal control of the water resources in the basins and with a probable extension of such control to the Sabine River Basin in the east ...[.]”⁵⁸ The TBWE objected that “[t]he proposed report does not provide data to demonstrate that a need for additional agricultural production presently exists...” and that the plan “...would require the State of Texas to reserve for the aqueduct a large portion of the surface-water resources of Eastern Texas, and withhold this reserved water from other development.” While recognizing that “transbasin diversion of water is an accomplished fact in Texas, and under certain limitations is provided for in Texas statutes, [t]he Board does not approve of the reservation of a major supply of water at this time for a project of undetermined feasibility to supply a need which does not exist, and which may not exist for generations.”⁵⁹

Minimal evidence exists to indicate that the comments substantially influenced the Commis-

sion’s final report. Stating its reported “[w]ater requirements for municipalities, industries and irrigation in each segment of the study area have been projected 50 years,” it concluded that “[w]ater is available to supply ... [these] ... needs.”⁶⁰ The Commission report recognized the “novel and very different economic, political, and legal problems” inherent in proposals for interbasin transfer of water and declared that public policy required meeting the requirements of both the originating and receiving basins and that this requirement was “in the interest of the best utilization of available resources.”⁶¹ The Commission report also concluded that interbasin transfers of water should not constitute a permanent demand against supplies in the basin of origin and that users in the receiving basin should make provisions to replace water temporarily available to them because of the transfer.⁶²

Three major water plans, encompassing most of the state, were completed in 1949 (study published in 1953), 1962, and 1964 under legislation adopted by the United States Congress.⁶³ All of these plans proposed the interbasin transfer of surface water. The 1962 plan included agreements between the Study Commissioners for the Departments of Agriculture, Army, and the Interior, as to which entity would be responsible for construction of proposed projects, and the state agencies agreed to this division.⁶⁴

“[U]nder the general authority of the Federal Reclamation Laws (Act of June 17, 1902, 32 Stat. 388, and acts amendatory thereof or supplementary thereto) ... [the U.S. Bureau of Reclamation] transmitted [a report on January 24, 1964] as the basis for securing Congressional approval of the project plan and authorization of the Interbasin Canal and associated reservoirs and irrigation units.”⁶⁵ Claiming that “the investigation on which this report is based were started in 1955,” the USBR gave two primary objectives “(1) formulation of a physical plan acceptable to the State of Texas ... and (2) completion of a report on features of that plan that would be appropriate for construction under the Federal Reclamation Laws.” The Texas Basins Project covered about two-thirds of Texas, and supplying 1,487,000 acre-feet per year for municipal and industrial water use and 1,365,000 acre-feet per year for irrigation “[t]he Interbasin Canal would divert stream flow and yields of associated project and non-project reservoirs in the Sabine Neches, Trinity, Lavaca-Navidad, and Guadalupe-San Antonio River Basins that otherwise would waste into the Gulf of Mexico.”⁶⁶

C. IBTS AND IBT PLANS AND STUDIES FROM 1947-1965

At the same time that the federal entities were developing plans to meet Texas' future water needs, interbasin transfer projects continued to be proposed and authorized. During the period between 1947 and 1965, (during and immediately following the Drought of Record), the total amount of water authorized for interbasin transfer exceeded the total amount in any other period (Figure 3). As Figure 4 indicates, the amount of interbasin transfer water authorized for municipal use during this period exceeded the amount authorized during any other period, including the decades after passage of the 1965 Texas planning statute.

These transfers did not proceed without conflict. For example, after the Drought of Record, Lake Livingston, impounding Trinity River water in the lower basin, was a controversial strategy proposed for supplying current and future needs of the City of Houston in the San Jacinto River Basin. The Trinity River Authority (TRA), pursuant to a requirement of its enabling statute, prepared a Master Plan for the Trinity Basin that included Lake Livingston, creating a potential conflict between water users in the two basins:

TRA and its Master Plan became the vehicle of the Trinity basin interests to ensure that the lake did not damage their interests in the river. The result was that the TRA became a partner with the city of Houston in the development of the lake, which became Lake Livingston, and many assurances were incorporated into its operation to provide water to the mid- and lower- Trinity basin and protect upstream supplies as well.⁶⁷

This agreement resulted in authorization to use water from Lake Livingston being issued to both the TRA and the City of Houston to serve future needs in the Trinity River Basin and the San Jacinto Basin, respectively.

D. THE STATE WATER PLANS

Responding to the fear of a repeat of the Drought of Record or the consequences of extensive flooding, several water plans covering all, or substantially all, of the surface water available within the state were generated after 1957. The various state agencies fully developed and formally adopted

five plans between 1961 and 2002. The TWDB produced, but never continued to the final stages of approval, a 1977 draft comprehensive Texas Water Plan.⁶⁸ The TWDB adopted and published two abbreviated plans- in 1990 and 1992.⁶⁹

In May 1961, the TBWE prepared A Plan for Meeting the 1980 Water Requirements of Texas. The objective of the plan was "to determine the location and amount of future water needs and to show how these needs may be supplied."⁷⁰ However, the report did not reference objections to transfers of water from one river basin to another in its enumeration of water supply requirements and how they are, or will be, supplied, via interbasin deliveries. The report noted the various geographical sources of water and the destination of its final use. Of particular interest, were the comments made on supplying Houston and San Antonio: "[t]he Lower Trinity River Basin "will supply industrial water to the Houston industrial complex ..." in the San Jacinto River Basin⁷¹ and "[s]upplying a part of the San Antonio water needs from the Guadalupe River Basin may be possible ...[.]"⁷²

Controversy over interbasin transfers of surface water arose again in the 1965 Legislative Session, during consideration of the water resource-planning act of that date, and a constitutional amendment to expand the purposes of use for the Water Development Fund. The proposals were the subject of intense political, protectionist maneuvering by interested parties, split both along geographic lines and between rural and urban interests. When the Senate bill reached the House, further discussion ensued relating to how to protect rural interests in water rich areas from "water grabs" to meet future needs of growing metropolitan areas.

Despite attempts at compromise between the geographical factions, several weeks passed before the legislators reached an agreement. By May 20, 1965, conference committees were meeting to work out differences between House and Senate versions of the planning legislation. East Texas representatives were threatening to torpedo Senate Joint Resolution 19 in an effort to ensure that basin of origin protections were included in the planning statutes.⁷³ Eventually, after meeting with Governor Connally, the conference committee reached agreements incorporating protection for basins of origin into both planning and financing of state water projects.⁷⁴ Professor Corwin Johnson described the basin of origin protection language as a "product of sectional

conflict” and that “[S]ections well-endowed with water were large enough and powerful enough to get preferences for themselves written into the law.”⁷⁵

E. INTERBASIN TRANSFERS FACED HURDLES BEFORE SENATE BILL 1

After the record drought of the 1950s, the voters added Article 3, Section 49-c, to the Texas Constitution creating the Texas Water Development Fund, with the TWDB responsible for the administration of the fund.⁷⁶ Faced with repeated droughts and the prospect of federal domination of water resource development in Texas, Texas voters added Article 3, Section 49-d to the Texas Constitution in 1967, specifically to allow the TWDB to use the Texas Water Development Fund for “acquiring and developing storage facilities, and any system of works necessary for the filtration, treatment and transportation of water or wastewater, or for any one or more of such purposes or methods.”⁷⁷ This language gave the State, via the TWDB, greater influence in water development in an attempt to keep pace with the USACE and the USBR. The intent of the amendment was to encourage development of water resources.⁷⁸ Moreover, the amendment does contain a limitation on interbasin transfers.⁷⁹

Legislation passed in 1965 reflected the constitutional language and controlled the TWDB’s use of interbasin transfers in water planning.⁸⁰ However, some commentators still considered this limitation too restrictive.⁸¹ The loss of reservoir sites to other land uses or the underdevelopment of those sites (because local or regional interests could not finance reservoirs at optimum size), as well as the fear of federal preemption of reservoir sites, provided the impetus for authorizing the State to construct reservoirs and other water facilities or own storage space in reservoirs that others constructed.⁸²

A 1985 constitutional amendment authorizing the creation of special funds “[F]or or in aid of water conservation, water development, water quality enhancement, flood control, drainage, subsidence control, recharge, chloride control, agricultural soil and water conservation, desalinization or any combination of these purposes....” included the same protection as the 1965 amendment, for the basins of origin.⁸³ “Money deposited in a special fund under this section may not be used to finance or aid any project that contemplates or results in the removal from the basin of origin of any surface water necessary to supply the reasonably foreseeable water

requirements for the next ensuing 50-year period within the river basin of origin, except on a temporary, interim basis.”⁸⁴ The statutory provision in the 1965 planning statute, which protected the basins of origins, was repealed effective September 1, 1991.⁸⁵ However, the limitation on the use of these funds remains intact.

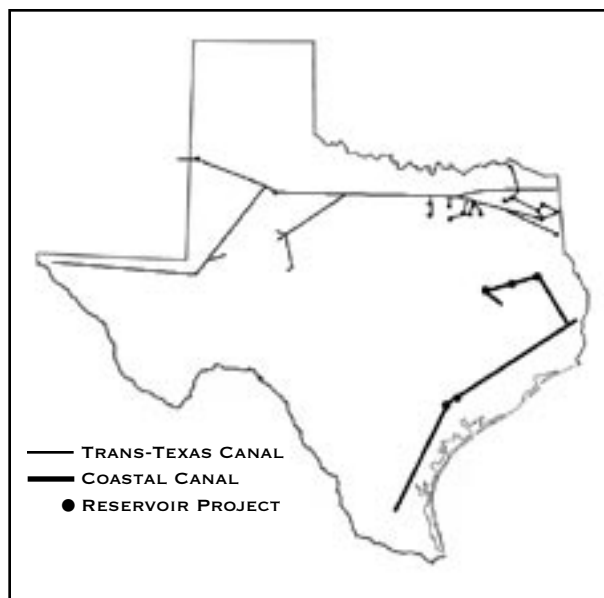
The combined intent of the 1965 constitutional and statutory language was to protect the water needs of the citizens of basins of origin in two ways. First, the State was prevented from constructing or owning storage in a river basin to the detriment of water-dependent economic development of the basin of origin for fifty years into the future. Secondly, the TWDB could not plan surface water redistribution to deprive basins of origin of water supplies necessary to meet their water needs for the next fifty years. Because the legislative intent was to periodically revise the statewide water plan, the fifty-year restriction constituted a rolling limitation extending indefinitely into the future as each subsequent fifty-year plan developed. Removal of the statutory language in 1991 eliminated this requirement for basins of origin.

The 1968 Water Plan, the first adopted after enactment of the 1965 planning statute, recognized that “[b]y far the bulk of the water resources remaining available for development in Texas is found in the East Texas river basins ... [b]y contrast, large future water needs will be felt in areas to the west and southwest, several hundred miles distant....”⁸⁶ To re-allocate water resources to meet demands in areas of the state with insufficient water resources, the 1968 plan proposed a massive series of interbasin transfers known as the Texas Water System.

The Texas Water System comprises the dams, reservoirs, pumping plants, conduits, and other facilities, which will be necessary to manage an imported water supply and the water resources of basins with interim or long term surpluses to meet intrabasin needs and to make the surpluses available for conveyance to areas of deficiency elsewhere in the state.⁸⁷

The Texas Water System’s Trans-Texas Division included conveyance of 10,034,000 acre-feet per year of water originating in Northeast Texas basins such as the Cypress, Red, Sulphur, and Sabine and transported through the Trans-Texas Canal for

**FIGURE 5. 1968 STATE WATER PLAN
PROPOSED MAJOR CONVEYANCES**



Dallas, North Central Texas, the High Plains, the Trans Pecos, El Paso, and New Mexico. The Coastal Division planned for 4,845,000 acre-feet of water from the Neches, Lower Trinity, Guadalupe, and San Antonio River Basins to supply water for municipal, industrial, irrigation, bay and estuary augmentation, and wildlife requirements from the Sabine River to the Lower Rio Grande Valley.⁸⁸ The Texas Water System (Figure 5) also contemplated an Eastern Division, which included works to move water imported from out of state into the Trans-Texas and Coastal Division Systems.⁸⁹

Designated as the Gulf Basins Project, the U.S. Bureau of Reclamation proposed a canal from Beaumont to Corpus Christi and into the Rio Grande Valley, collecting river flows to meet coastal needs and increased irrigation in the Valley and Coastal Bend areas. This canal came to be known as “Burleigh’s Ditch” in honor of Harry P. Burleigh of the Austin USBR office.⁹⁰ The 1968 Texas Water Plan is probably the most extensive and ambitious water supply plan ever seriously considered for Texas. The plan consisted of two significant elements: (1) the Trans-Texas Division allocating 7.5 million acre-feet to West Texas for irrigation; 1 million acre-feet for municipal and industrial use, and 1.5 million acre-feet to New Mexico, for a total of 10 million acre-feet; and (2) the Coastal Division allocating 1.8 million

acre-feet for irrigation, 0.5 million acre-feet for municipal and industrial use, and 2.5 million acre-feet for fish, wildlife, and freshwater inflows to Texas bays and estuaries, for a total of 4.8 million acre-feet.⁹¹ Of the 14.8 million acre-feet to be transported in the two divisions, 12 to 13 million acre-feet were required from the Mississippi River, with only 1.8 – 2.8 million acre-feet coming from interbasin transfers within Texas.⁹²

For the 1968 Texas Water Plan to proceed, an amendment to the Texas Constitution was necessary for the State to finance its share of the project. The constitutional amendment failed during a statewide election by some 6,600 votes on August 6, 1969. Despite this setback, residents and the political leadership of the Texas High Plains continued to advocate the development of a water supply to replace the anticipated depletion of the Ogallala Aquifer.⁹³ The Public Works Appropriation Act of 1967 authorized the USBR, the USACE, and the Mississippi River Commission to analyze a project to divert water from the Mississippi River to West Texas and Eastern New Mexico.⁹⁴ With regard to the \$20.49 billion project the final report concluded that “nevertheless the disparity between primary benefits and costs is so great that there is no reasonable prospect that any other plan for transporting Mississippi River water to west Texas and eastern New Mexico would have a favorable ratio of primary benefits to costs.”⁹⁵

F. CITY OF SAN ANTONIO V. TEXAS WATER COMMISSION

In an historic ruling in 1966 relating to Canyon Reservoir, the Supreme Court of Texas recognized the separate designations of the Guadalupe River Basin and San Antonio River Basin, and the requirement for an interbasin transfer permit to move water between any two river basins in Texas. The ruling instituted a balancing process that survives today.

[W]e have also concluded that as to any water in the originating basin found to be in excess of that amount required to protect existing rights, the Legislature intended that the Commission should, in a balancing process, take into consideration future benefits and detriments expected to result from a proposed trans-basin diversion and that there would be “prejudice” only if the ben-

efits from the diversion were outweighed by the detriments to the originating basin.⁹⁶

The Texas Supreme Court interpreted the fifty-year water planning limitation to limit the planning function of the TWDB, not the Texas Water Commission.⁹⁷ Therefore, the TWC was not required to study the “fifty-year reasonably foreseeable needs” for the basin of origin before deciding to grant or deny an interbasin transfer application.⁹⁸

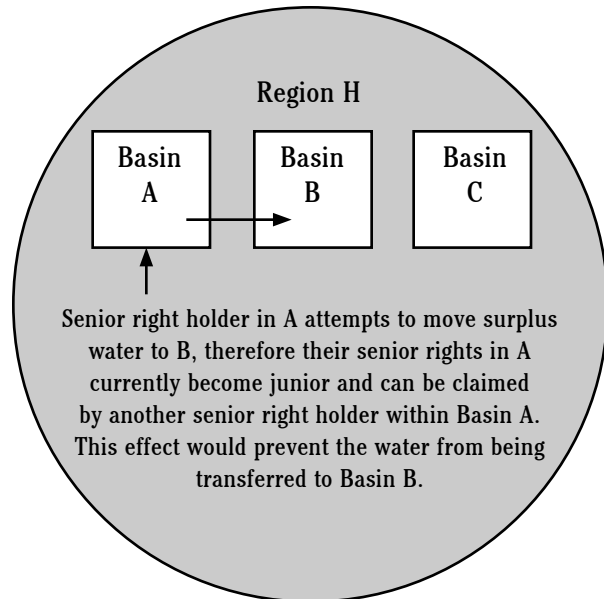
IV. INTERBASIN TRANSFERS AFTER SENATE BILL 1: 1998-PRESENT

A. SENATE BILL 1 AND THE NEW ERA OF WATER PLANNING

Senate Bill 1 substantially changed the requirements for applications for interbasin transfers in a number of areas. Since the passage of Senate Bill 1, notice of an interbasin transfer application must be given to all water right holders, county judges, and mayors of cities with populations greater than 1,000, and all groundwater districts in the basin of origin as well as each state senator in both basins.⁹⁹ Prior to taking action on an interbasin transfer application, the TCEQ must hold a public meeting in both the basin of origin and the receiving basin.¹⁰⁰ The applicant must include the contract price of the water, proposed users, uses, the costs of the project, and the effect on ratepayers.¹⁰¹

In considering whether to grant an application for interbasin transfer of water, the TCEQ must examine the effects of the proposed transfer by considering needs in both the basin of origin and the receiving basin, elements of the applicable Regional Water Plan that detail feasible and practicable alternatives to the transfer, conservation of water, and beneficial use.¹⁰² The TCEQ must also evaluate the impacts of the transfer on the economy and environment of both basins and any proposed mitigation of these impacts.¹⁰³ The TCEQ can grant the application only if the detriments to the basin of origin are less than the benefits to the receiving basin - the balancing test established in *City of San Antonio v. Texas Water Commission*.¹⁰⁴

**FIGURE 6. JUNIOR WATER RIGHTS
DIAGRAM**



B. INTERBASIN TRANSFERS FACE A HIGHER BURDEN

Even as Senate Bill 1 became law, concerns about its impact on future interbasin transfers were raising questions. During a joint hearing by the House and Senate Natural Resources Committees on the passage of Senate Bill 1, Professor Moore expressed concerns about the draft legislation that the Legislature ultimately adopted with few changes.¹⁰⁵

In 1997, the Senate Bill 1 water planning statute modified the Texas Water Code making the waters rights associated with interbasin transfers junior in priority to all other water rights in the basin of origin.¹⁰⁶ In 2004, the TWDB has observed that since the passage of Senate Bill 1, the impact of the junior priority for potential interbasin transfers has resulted in only one new IBT.¹⁰⁷ The TWDB cites the issue of junior priority as making IBTs an unreliable water supply.¹⁰⁸ The TWDB also notes that, historically, the TCEQ and its predecessor agencies have been inconsistent in the assignment of priority dates to interbasin transfer requests.¹⁰⁹ The reaction to Section 11.085(s) has been favorable in some basins of origin and unfavorable in potential receiving basins that look to interbasin transfers as one way to meet the projected demands identified through the regional water planning process that Senate Bill 1 created.¹¹⁰

The potential for such an interruptible water supply is not acceptable for highly populated municipalities and heavy industrial areas, as noted by the Greater Houston Partnership in 2004.¹¹¹ Currently, the rule of “first in time, first in rights” exists for surface water in Texas,¹¹² and thus, during a time of drought, the junior interbasin transfer rights will not get water because senior right holders in the basin of origin may use up all of the available water.

One commentator anticipates that the junior water rights provision will reduce the interest in interbasin transfers by those outside of the basin of origin, allows water to remain “locked up” in basins where the resources are unlikely to be developed; and finally, arguably results in a “taking” by the Legislature that may be unconstitutional.¹¹³ The potential for rendering surface water diversions impractical because of the junior water rights provision has, at the very least, discouraged new interbasin transfers as the 2004 TWDB memo noted (Figure 1).

However, it has encouraged an explosion in large-scale proposals for groundwater transfer (see Appendix B). As Figure 1 indicates, after the passage of Senate Bill 1, permit applications for the use of water now classified as non-exempt surface water interbasin transfers have diminished, while interbasin basin transfers classified as exempt and proposed groundwater transfers have accelerated. However, it should be noted that the annual total number of interbasin transfers recorded prior to 1997 include what we would classify as exempt and non-exempt today. Appendix B also includes groundwater projects that range in size up to the 500,000 acre-feet per year, like the development project that American PureTex has proposed.¹¹⁴

After the adoption of the junior water rights provision in Senate Bill 1, the bill’s author in the Senate, Chairman Buster Brown, noted the potential for Senate Bill 1 to accelerate the development of groundwater to meet municipal, commercial, and industrial water needs.¹¹⁵ “As a result of that provision, the pressure has now moved to groundwater,” Brown, former chairman of the Senate Natural Resources Committee, said at a Texas Farm Bureau legislative Conference.¹¹⁶

So the people who are in need of water are seeking it. And, those people who are in the business of moving water are turning to

acquisition of land to get the rights to the water below the surface to market that water. Therein comes the next problem. How do the people who are dependent upon that water for their living, keep that water from being moved to another part of the state? When you start setting artificial obstacles in the path of a normal development, which is a water market, then you cause different things to happen that are not expected.¹¹⁷

Representative Robert Puente of San Antonio offered similar sentiments regarding the junior rights provision, lamenting, “[i]t put a tremendous, tremendous amount of pressure on groundwater ... since we cannot get interbasin transfers anymore, we are looking at groundwater supplies.¹¹⁸

C. BASIN DELINEATION PLAYS A ROLE IN WHETHER A TRANSFER IS AN INTERBASIN TRANSFER: IS TRANSFERRING SURFACE WATER FROM THE GUADALUPE RIVER WATERSHED TO THE SAN ANTONIO RIVER WATERSHED AN INTERBASIN TRANSFER?

While Senate Bill 1 places many requirements upon potential physical interbasin transfers, these burdens are also placed upon transfers that the TWDB classifies as interbasin transfers, but in which the water is proposed to be moved within watersheds that are physically within the same river basin. Surprisingly, the number of Texas river basins has varied over the last 100 years even though no major physical alterations of the rivers have occurred to account for this variation. For example, a joint state and federal report in 1958 delineated eleven basins, while the first state water plan in 1961 reported fifteen basins.¹¹⁹

On May 10, 2001, the Guadalupe-Blanco River Authority (GBRA), the San Antonio Water System (SAWS), and the San Antonio River Authority (SARA) signed an agreement to bring large amounts of surface water to the San Antonio area.¹²⁰ The Lower Guadalupe Water Supply Project (LGWSP), known as option SCTN-16c in the 2001 South Central Texas Regional Water Planning Group (Region L) water plan, was a conjunctive use water management strategy that diverted surface water from the short segment of the Guadalupe River downstream

of the confluence of the Guadalupe and San Antonio Rivers near Tivoli, Texas, along with lesser amounts of groundwater from the Gulf Coast Aquifer.¹²¹ The surface water was scheduled to reach San Antonio beginning in 2010, relieving some of the demand on the Edwards Aquifer, thereby providing the City of San Antonio with a supplemental supply of surface water, as well as some protection for the springflow from Comal and San Marcos Springs, instream flows, and bay and estuary inflows for San Antonio Bay.¹²²

The surface water would have come primarily from existing water rights.¹²³ Approximately, the project would have diverted 70,000 acre-feet of existing surface water.¹²⁴ This diversion would have given San Antonio a large surface water supply in the short-run, while allowing the region to develop a long-term water supply utilizing sources such as desalination, which in the future could have used the same pipeline for delivery to San Antonio. The requirements for new interbasin transfers under Senate Bill 1, including the junior water rights provision, do not apply to the transfer of desalinated seawater across river basins.

Despite the fact that the San Antonio River merges with the larger Guadalupe, and is therefore, in the same physical basin, the TCEQ might have eventually declared the project an interbasin transfer because the TWDB considers the rivers as separate basins for management purposes.¹²⁵ In the 2002 State Water Plan, the LGWSP was presented as both an interbasin transfer and not an interbasin transfer.¹²⁶ The TWDB commented that “the [Region L] plan is in error in its representation of the Lower Guadalupe River Diversions as a non [interbasin transfers].”¹²⁷ A review of documents from the USGS and the TWDB (and its predecessors) shows that the Guadalupe River and San Antonio River are alternately shown as being in the same basin and separate basins. While one of the first references for separate basins is a 1937 USGS report, the 1961 State Water Plan also shows the basins as separate.¹²⁸ However, a 1939 USGS report shows the San Antonio River as part of the Guadalupe River Basin.¹²⁹ If the TCEQ considered the Lower Guadalupe Supply Project an interbasin transfer, an interbasin transfer permit would be required from the TCEQ and would have reduced the reliability of the surface water rights proposed for use in the LGWSP.¹³⁰

An interbasin transfer designation would have made the senior water rights identified for the project junior for the purposes of their use in San Antonio. In 2004, the TWDB staff recommended that the Texas Legislature eliminate the artificial distinction between the Guadalupe and San Antonio Rivers.¹³¹ However, the Legislature did not follow through on the recommendation of the TWDB staff, and on August 16, 2005, the SAWS Board of Directors officially withdrew from the LGWSP.¹³² In a letter beforehand to Representative Carter Casteel explaining the discontinuation of SAWS’s participation in the project, SAWS Chairman James M. Mayor cited the junior water rights provision as one of the primary reasons for the decision.¹³³

D. EXEMPT INTERBASIN TRANSFERS

Even though most interbasin transfers must meet an increased burden under the Senate Bill 1 requirements, Senate Bill 1 also amended Section 11.085 of the Texas Water Code to exempt certain interbasin transfers from all of the new requirements.¹³⁴ With the exception of subsection (a), the provisions of Section 11.085 do not apply to a transfer of less than 3,000 acre-feet per year from the same permit, certified filing, or certificate of adjudication, an emergency transfer of water, a transfer from a basin to its adjoining coastal basin, or a “transfer from a basin to a county or municipality or the municipality’s retail service area that is partially within the basin for use in that part of the county or municipality and the municipality’s retail service area not within the basin.”¹³⁵ The idea that these sorts of transfers should be given some preference is not new; they have been implicitly authorized since Texas began regulating diversion and storage of water.

In a 1959 speech, John McCall, while discussing Texas river flows that terminate in the Gulf of Mexico, notes that “[i]n all of these instances the watershed near the mouth of the river is very narrow and frequently there is not enough land near the mouth to afford an adequate market for available water. Hence, to avoid the waste of water it is natural that some of it be diverted to an adjoining watershed or to certain parts of the Gulf Coast that are not in a river watershed.”¹³⁶ One effect of separating the coastal basins is felt during the determination of both availability and need during the planning process. The coastal areas often include “major met-

ropolitan and industrial areas” with “greater needs and limited availability.”¹³⁷ If the coastal areas are excluded from the major river basins, more water becomes available in those basins for both diversion to the coastal areas and diversion to other basins.¹³⁸

An interesting, and perhaps unintended, consequence of Section 11.085(v) is the application of this section of the statute in relation to the amount of water authorized for exempt interbasin transfers. In the past, interbasin transfers were typically granted for the amount of water that could actually be used in the receiving basin, and under the current statute, non-exempt interbasin transfer applications must provide “[a] statement of each general category of proposed use of the water to be transferred and a detailed description of the proposed uses and users under each category.”¹³⁹

For exempt interbasin transfers, the applicant can request that the interbasin transfer apply to the water right’s total authorized diversion amount, even if not all of the water can be used to fill an identified need in the receiving basin.¹⁴⁰ A conservation review, including assessment of consistency with the State and Regional Water Plans, is not required for these applications.¹⁴¹

Since the passage of Senate Bill 1, the TCEQ has approved twenty-four exempt interbasin transfers while approving only three nonexempt transfers.¹⁴² Figure 1 illustrates the decline in the number of non-exempt transfers and the rise in the number of exempt transfers. This dichotomy would seem to contradict the assertion that the junior provision has the practical effect of preventing all interbasin transfers of water, but is instead designed to prevent specific transfers.

E. PROPOSED INTERBASIN TRANSFERS FROM 2002 STATE AND 2006 REGIONAL WATER PLANS

Appendix C shows the location of existing interbasin transfers in Texas. Appendix D shows the location of proposed interbasin transfers in Water for Texas—2002. In 2001, four of the sixteen water planning regions recommended major interbasin transfers that would generate additional surface water supplies of 2,444,000 acre-feet by 2050.¹⁴³ The proposed transfers include transfer of both groundwater and surface water.¹⁴⁴ Some of the proposed major surface water transfers would be considered a

new appropriation of water and the junior provisions of Senate Bill 1 would not apply, as a new appropriation of water, the transferred water would be junior anyway.¹⁴⁵ One strategy included in the 2002 Plan is the “Voluntary East Texas Surface Water Transfers.”¹⁴⁶ Due to an expected supply shortfall by 2050 in Regions G and H not expected to be met from construction of additional storage reservoirs, the TWDB suggested the use of uncommitted East Texas water that would not be needed in the near future.¹⁴⁷ The TWDB proposed that the transfer of water from sources in the Neches River Basin (the Lower Neches Valley Authority and Lake Eastex) and the Sabine River Basin (Sabine River Authority, Toledo Bend Reservoir) be crafted to meet local needs and to provide compensation for the originating basins.¹⁴⁸ These proposed transfers would be subject to the new requirements for interbasin transfers, including the junior provision. Additionally, any of these transfers would have to mitigate for effects on the Sabine Lake bay and estuary system, identified as a concern in the East Texas Plan.¹⁴⁹

The 2006 Adopted Regional Water Plans propose a number of interbasin transfers as strategies to meet the needs of populations that are expected to double in some areas over the next fifty years. Region C, which includes the Dallas-Fort Worth Metroplex and surrounding communities, recommends a number of strategies that would require authorizations for interbasin transfers.¹⁵⁰ Of Region C’s fifteen recommended strategies, ten require interbasin transfer authorizations. Of those ten, two already have authorization for interbasin transfers; six would require a new authorization, but would be junior because they are new appropriations of water. One Region C strategy is to import water from Oklahoma.

Whether the final strategy (transfer of water from Toledo Bend Reservoir) requires that the water right becomes junior depends on whether the strategy contemplates interbasin transfer of currently authorized water from Toledo Bend, or whether the strategy contemplates use of water potentially authorized under an amendment application for additional firm yield currently pending at the TCEQ.¹⁵¹ If the strategy contemplates the latter, the water would be junior because it is a new appropriation of water.

Despite the passage of Senate Bill 1, and increased protections for basins of origin, conflicts between basins of origin and receiving basins still

exist. One example is the debate over the proposed Marvin Nichols Reservoir, located in the Sulphur River Basin and recommended as a water supply strategy for the Dallas Metroplex area in the Trinity River Basin.¹⁵² Two of the sixteen Regional Water Plans developed under Senate Bill 1 contain conflicting recommendations over this reservoir and the potential interbasin transfer of its water. Region C recommends the construction of the reservoir as a strategy to meet future water needs, while Region D opposes the inclusion of this strategy. The Region D Plan states, “[i]t is the position of the North East Texas Regional Water Planning Group that Marvin Nichols 1 Reservoir should not be included in any 2006 regional plan as a water management strategy and should not be included in the 2007 State Water Plan as a water management strategy.”¹⁵³ As the TWDB has yet to complete the 2007 State Water Plan, resolution of the conflict between the two regions is unknown at this time.

The 2006 Plan for Region H recommends several interbasin transfers, noting that Region H’s dependency upon the interbasin transfer of water. The Region H Plan also notes that reliability of the transferred water is dependant on the priority date and that transfers from a basin to its adjoining coastal basin are not considered an interbasin transfer.¹⁵⁴ This latter statement is inconsistent with the provisions of Section 11.085(v) of the Texas Water Code, which exempt interbasin transfers from a basin to its adjoining coastal basin from some permitting requirements, but still requires a permit for those transfers.¹⁵⁵

Two of the potentially non-exempt transfers proposed in the Region H Plan are the transfer of Trinity River water from the City of Houston to Gulf Coast Water Authority (Galveston County) in the San Jacinto-Brazos Coastal Basin, and the transfer of unused Trinity River Authority (TRA) supplies in Lake Livingston (Trinity River Basin) for use in Harris County. Because the San Jacinto Brazos Coastal Basin is not an adjacent coastal basin to the Trinity River, Region H notes that the transfer to Gulf Coast Water Authority could be subject to the junior provisions.¹⁵⁶ Although not identified as an interbasin transfer in the Region H Plan, the TRA’s authorization in Lake Livingston allows only for interbasin transfer to the TRA’s service area in the San Jacinto and Neches River Basins and the Trinity-Neches Coastal Basin.¹⁵⁷ The list of authorized counties in

TRA’s service area, as detailed in the amended certificate, does not include Harris County in the San Jacinto River Basin. This water (200,000 acre-feet) may also be subject to the junior provisions.

V. IS THERE A FEDERAL ROLE

LOOMING IN TEXAS INTERBASIN

TRANSFERS?

A. *SPORHASE V. NEBRASKA*

Adversely affected parties may challenge unduly burdensome limitations on an interbasin transfer of surface water, specifically for industrial and agricultural purposes, under the Commerce Clause. In 1982, the U.S. Supreme Court held that the reciprocity requirement of Nebraska statutory restriction on withdrawal of groundwater from any well within Nebraska intended for use in adjoining state violated the Commerce Clause by imposing impermissible burden on interstate commerce.¹⁵⁸ The Court stated that the multi-state character of the Ogallala Aquifer confirmed the view that the federal government has a significant interest in conservation as well as in the fair allocation of this diminishing resource.¹⁵⁹ Furthermore, the Court found that Nebraska groundwater is an article of commerce and holding otherwise would eliminate Congress’ power to legislate in the area.¹⁶⁰

While the dispute in this case related to the use of groundwater pumped in Nebraska to land owned in Colorado, the stated conclusion may easily be extended to water from Texas’ interstate rivers—the Rio Grande, the Pecos, the Canadian, the Red, the Sulfur, Cypress Creek and the Sabine. The interstate character of agricultural water use is clearly stated; little may be required to extend the application to industrial use. Because municipal water supply is commingled with water for industrial facilities, extension of the interstate reach is also probable.

Additionally, all Texas’ intrastate rivers flow into coastal waters of the Gulf of Mexico, affecting the productivity of fish, shellfish and wildlife, all of which enter interstate commerce. Read expansively, the Court’s decision may apply to all waters within a state that contribute to interstate commerce through, for example, the production of agricultural products sold across state lines. Thus, a challenger of severe

restrictions might establish a connection between those restrictions and the burden on interstate commerce.

B. MICCOSUKEE TRIBE V. SOUTH FLORIDA MANAGEMENT DISTRICT, CATSKILLS MOUNTAIN CHAPTER OF TROUT UNLIMITED V. CITY OF NEW YORK, AND FRIENDS OF THE EVERGLADES V. SOUTH FLORIDA WATER MANAGEMENT DISTRICT

While state law has historically been the domain of interbasin transfer regulation in Texas, developments with regard to the Federal Clean Water Act (CWA) in New York and Florida suggest that federal regulation may be looming. The Catskill Mountains Chapter of Trout Unlimited (Catskill) sued the City of New York (City) on March 31, 2000 alleging that the City's use of Shandaken Tunnel (Tunnel) without a permit violated the CWA.¹⁶¹ The City uses the Tunnel as part of its water management system that delivers drinking water to New York City and the surrounding area.¹⁶² Catskill alleged that the diversion was a discharge of pollutants in the form of suspended solids, turbidity, and heat into Esopus Creek.¹⁶³

In *Catskill I*, the court of appeals determined that a State Pollutant Discharge Elimination System (SPDES) permit was necessary for this point source discharge and remanded the case back to the district court for further proceedings.¹⁶⁴ On remand, the U.S. District Court issued an order requiring New York State Department of Environmental Conservation (NYSDEC) to make a determination on New York City Department of Environmental Protection's (NYCDEP) application for a SPDES permit.¹⁶⁵ In addition, the district court imposed a fine of over \$5,000,000 for unreasonable delay in filing an application for a permit.¹⁶⁶ The NYCDEP appealed the district court's ruling, asserting that the water quality impacts from local government transfers of untreated, natural water do not require National Pollutant Discharge Elimination System (NPDES) permits.¹⁶⁷ In its most recent decision on the case, the Second Circuit upheld its earlier decision that the discharge requires a NPDES permit. However, the court remanded the case once again to the district court for a recalculation of the amount of damages.¹⁶⁸

A similar case that could ultimately result in a federal role in intrastate interbasin transfers is *Miccosukee Tribe v. South Florida Water Management*

District.¹⁶⁹ The issue in this case is whether a pumping station in South Florida must obtain a NPDES permit to pump storm water runoff into the Florida Everglades through a pipe that would constitute a point source.¹⁷⁰ The Florida Miccosukee Indian Tribe argued that an NPDES permit is needed to protect the wetlands from runoff that may contain contaminants from agriculture areas such as phosphorus from fertilizers.¹⁷¹

The South Florida Water Management District (SFWMD), which operates the pumping station, disagreed, explained that the pumping operation is not the actual source of the pollutants, and that it is only transferring water from one side of a levee to another.¹⁷² Therefore, the management district argued that although it conveys the water, it is not a discharger of polluted water subject to regulation under the CWA.¹⁷³ In 2003, the Eleventh Circuit Court of Appeals upheld a district court ruling in favor of the Miccosukee Tribe, holding that the pumping operators needed an NPDES permit because they were piping water with various pollutants into the Everglades.¹⁷⁴ The SFWMD appealed the court of appeals decision to the Supreme Court.¹⁷⁵

A Supreme Court decision favoring the tribe could have set in motion a ripple effect, with implications to water managers throughout the nation, especially in western states where moving water to supply urban and other needs is a common practice. A broad court decision for the tribal position could add expense and complications to the process of transferring water. The Attorney General for the State of Colorado summarized the concern that the *Miccosukee* case has created in the West in an *amicus* brief filed with the Supreme Court: "At risk ... is the continued ability to divert freely water from one basin for delivery in another basin in order to meet municipal, agricultural, and industrial demands."¹⁷⁶ Colorado is particularly concerned that NPDES permits could be required to transfer Colorado River water, which is naturally high in salinity and sediments, to receiving bodies.¹⁷⁷

In an opinion delivered by Justice Sandra Day O'Connor, the Supreme Court remanded the case to the district court to consider whether the water conservation area and the canal used to transport the water are distinct.¹⁷⁸ The Court explained that the point source does not to be the original source of the pollutant; rather it need only convey the pollutant to navigable waters.¹⁷⁹

The Supreme Court rejected the water district's argument that the CWA covers a point source only when pollutants originate from that source, not when pollutants originating elsewhere pass through the point source.¹⁸⁰ If the district court decides the two are not distinct, then the water district will not need an NPDES permit.¹⁸¹ A third case has also been filed in Florida, *Friends of the Everglades vs. South Florida Water Management District*, (*Friends*) and is analogous to the *Miccosukee* case.¹⁸²

Because of the *Catskill*, *Miccosukee*, and *Friends* cases, the U.S. Environmental Protection Agency (EPA) issued an agency interpretation on whether the movement of pollutants by a water transfer from one navigable water to a separate one is the "addition" of a pollutant requiring an NPDES permit.¹⁸³ According to the EPA, several provisions of the CWA indicate Congress' intent that the states regulate these transfers outside of the federal NPDES program.¹⁸⁴

VI. CONCLUSIONS

Who wins and who loses, with regard to interbasin transfers in Texas? Historically, a significant portion of the state's population has not chosen to settle and live in those regions in East Texas where water is most abundant. The availability of water has not produced unusually rapid growth in the immediate vicinities of reservoirs with surpluses. People tend to congregate where jobs and a wide range of possible life styles are available. The survival and growth of Texas' major population centers—Dallas, Fort Worth, Houston, and San Antonio—as well as other concentrations of people, such as El Paso, Lubbock, and Corpus Christi, require these cities to seek water from sources outside their immediate geographic areas.

The possibility of water shortages during droughts less severe than the Drought of Record, potentially affecting supplies for Dallas-Fort Worth, Houston, and San Antonio, has been known for at least forty years and has not reduced the populations in these areas. Without access to available supplies of surface water in other basins, these major cities will be pitted against their smaller neighbors in the competition for water. The limited political and financial resources of these smaller neighbors cannot match the ability of the major cities to compete for finite regional surface and groundwater

resources over the long-term. Although safeguards prevent water-rich areas from becoming water-short areas for new interbasin transfers, existing interbasin transfers should also be cognizant of this issue. Additionally, the least expensive source of additional water for the major cities of Texas is increasingly less likely to be the source that balances the needs of the environment with human needs. The State's approach should be even-handed in these matters and benefit the public as a whole.

Water, like food, clothing, energy, building materials, and practically everything else used within cities, must be obtained from outside of cities. However, when it comes to water, the reaction is often emotional, which transcends cultures, and this does not occur with the free exchange of other commodities. A study of Chinese water transfers indicated, the concerns felt in many basins of origin across Texas are not unique: "public sentiment, for whatever reasons, often seems to be strongly against water exports and this concern, not surprisingly, is reflected in the political process. This may perhaps be explained by the 'water is different' syndrome and in all probability is unlikely to change in the near future."¹⁸⁵

A total of six million acre-feet of surface water has been authorized for transfer from one basin to another in Texas (Appendix A), although the actual amount being transferred is much less. According to the Texas Water Development Board in 1997, 20-25% of total surface water use in Texas was supplied through interbasin transfers, primarily to major metropolitan areas.¹⁸⁶ Therefore, the existing water needs of many Texans are not met without at least the current diversions of surface water from one basin to another.

Senate Bill 1 has created impediments to many potential new surface water interbasin transfers thereby resulting in growing pressures to make up for the lack of access to surface water by transfers of groundwater. In response to this pressure, groundwater policy is undergoing a rapid evolution. Meanwhile, because of the recommendation of projects involving interbasin transfers in Water for Texas-2002, instream flow and bay and estuary inflow policy is undergoing its own rapid evolution, progressing from the days when such flows were characterized by as "unused" or "waste."

While 1900 - 1985 could be described as the period of water development in Texas, 1985 to the present may be described as the period of water

reallocation (Appendix E). The major differences between the two eras are the decline in funding for new supplies of water, the shift in water once used for agriculture to municipal and industrial water use, and the rise of the environmental movement. The regional concerns regarding the transport of surface water, (and now more frequently groundwater) across the state are persistent. However, even as funding for the development of new water supplies has waned, interbasin transfers of surface water are likely to continue to play a role in water supply in Texas. How great a role interbasin transfers play will be dependent upon the degree of interregional cooperation within Texas on water issues, the growing concentration of political power in urban areas, and of course, money. Ultimately, it is the return of cyclical drought to Texas, which will decide how interbasin transfer policy continues to evolve.

VII. APPENDICES

A. DETAILS OF APPROVED INTERBASIN TRANSFERS IN TEXAS

B. MAJOR TEXAS GROUNDWATER TRANSFER PROJECTS AND PROPOSED PROJECTS OVER 10,000 ACRE-FEET/YR

C. MAP OF EXISTING INTERBASIN TRANSFERS IN TEXAS

D. MAP OF PROPOSED INTERBASIN TRANSFERS IN TEXAS

E. CHRONOLOGY OF EVENTS REGARDING TEXAS INTERBASIN TRANSFERS

Todd Votteler serves as Executive Manager of Governmental Relations and Policy for the Guadalupe-Blanco River Authority. He received his Ph.D. from Southwest Texas State University, now Texas State University—San Marcos in 2000. The opinions expressed in this article are wholly his own, and those of the other authors, and do not represent the positions or policies of the Guadalupe-Blanco River Authority.

Kathy Alexander Martin is a doctoral student in Aquatic Resources in the Department of Biology at Texas State University—San Marcos. Kathy is also a member of the Water Availability and Interstate Compact Team inside the Water Supply Division at the Texas Commission on Environmental Quality. The opinions expressed in this article are wholly her own, and those of the other authors, and do not represent the positions or policies of the Guadalupe-Blanco River Authority.

*The late Joe G. Moore, Jr. served as Distinguished Professor in the Department of Biology, Texas State University—San Marcos. Among his other professional accomplishments Professor Moore served as Executive Director of the Texas Water Development Board (1965 – 1968), Chairman of the Texas Water Quality Board (1965 – 1968), Commissioner of the Federal Water Pollution Control Administration (1968 – 1969), Program Director of the National Commission on Water Quality (1973 – 1976), and Monitor of the lawsuit involving endangered species and groundwater withdrawals in the Edwards Aquifer, *Sierra Club v. Bruce Babbitt, et al* (1994 – 1996). Professor Moore passed away shortly after drafting part of his contribution to this article. The remainder of his contribution is taken from excerpts from his March 6, 1997 statement on Senate Bill 1 and House Bill 5 of the 75th Texas Legislature before the Senate and House Natural Resources Committees.*

APPENDIX A: DETAILS OF APPROVED INTERBASIN TRANSFERS IN TEXAS

WR	OWNER	BASIN FROM	SOURCE	BASIN TO	AMOUNT	PRIORITY	USE
3782	Canadian River Municipal Water Authority	CANADIAN	Lake Meredith	Red, Brazos, Colorado	151,200	1956	municipal/ industrial
3985	City of Lubbock	CANADIAN	Lake Meredith	Brazos	22,910	1983	industrial/ irrigation
4301	Greater Texoma Utility Authority	RED	Lake Texoma	Trinity, Sabine	25,000	2006	multiple
4898	Red River Authority of Texas	RED	Lake Texoma	Trinity	2,000	1974	multiple
4899	Red River Authority of Texas	RED	Lake Texoma	Trinity	250	1967	municipal
4881	City of Gainesville	RED	Fish Creek	Trinity	4,500	1962	municipal
					3,240	2006	
4940	City of Paris	RED	Pat Mayse Lake	Sulphur	21,115	1964	municipal/ industrial
4943	City of Paris	RED	Lake Crook	Sulphur	12,000	1922	municipal
4961	City of Texarkana	RED	Bringle Lake	Sulphur	2,220	1928	municipal
5003	North Texas Municipal Water District	RED	Lake Texoma	Sabine, Trinity	84,000	1985	municipal
5144	City of Wichita Falls	RED	Lake Kickapoo	Brazos	1,120	1984	municipal
5145	City of Megargel	RED	Megargel Creek Lake	Brazos	70	1962	municipal
5146	City of Olney	RED	Olney Lake, Lake Cooper	Brazos	450	1935	municipal
					810	1953	municipal
					35	1980	irrigation
5211	MacKenzie Municipal Water Authority	RED	Lake MacKenzie	Brazos	2,600	1982	municipal/ industrial

WR	OWNER	BASIN FROM	SOURCE	BASIN TO	AMOUNT	PRIORITY	USE
4797	Sulphur River Municipal Water District (Upper Trinity Regional Water District)	SULPHUR	Lake Chapman	Trinity	16,106	1965	municipal/ industrial
	North Texas Municipal Water District			Sabine, Trinity	3,214	1965	municipal
4798	North Texas Municipal Water District	SULPHUR	Lake Chapman	Sabine, Trinity	54,000	1965	municipal
4799	City of Irving	SULPHUR	Lake Chapman	Trinity	54,000	1965	municipal/ industrial
4811	Sulphur Springs Water District	SULPHUR	Lake Sulphur Springs	Sabine	2,000	1951	municipal
					7,800	1968	municipal/ industrial
4836	City of Texarkana	SULPHUR	Lake Wright Patman	Cypress	9,000	1981	municipal/ industrial
				Red	11,500	1981	municipal/ industrial
4560	Franklin County Water District	CYPRESS	Lake Cypress Springs	Sulphur, Sabine	4,000	1970	municipal
					173	1980	
					2,012	1980	
					2,200	1980	
			1,000	1966			
4590	Northeast Texas Municipal Water District	CYPRESS	Lake O' the Pines	Sabine	20,000	1957	municipal/ industrial
4614	City of Marshall	CYPRESS	Cypress Creek	Sabine	7,558	1947	municipal/ industrial
					8,442	1956	municipal/ industrial
4658	Sabine River Authority of Texas	SABINE	Sabine River	Neches	80,000	1958	municipal/ industrial

WR	OWNER	BASIN FROM	SOURCE	BASIN TO	AMOUNT	PRIORITY	USE
4662	Sabine River Authority of Texas	SABINE	Sabine River	Neches	30,000	1946	multiple
4669	Sabine River Authority of Texas	SABINE	Lake Fork	Trinity	120,000	1983	municipal
					5,048	1992	
4670	Sabine River Authority of Texas	SABINE	Lake Tawakoni	Trinity	207,765	1955	municipal
				Sulphur	8,396	1986	
				Trinity	20,000	1986	
4693	City of Van	SABINE	Van Lake	Neches	150	1949	municipal
					250	1976	
4724	Hide-Away-Lake Club	SABINE		Neches	180	1970	irrigation
					179.42	1994	
3254	Upper Neches River Municipal Water Authority	NECHES	Lake Palestine	Sabine, Trinity	114,337	1972	municipal/ industrial
					18,000	1983	
3256	Athens Municipal Water Authority	NECHES	Lake Athens	Trinity	8,500	1955	municipal
3879	Texaco	NECHES	Neches River	Neches-Trinity	12,900	1982	industrial
4404	City of Center	NECHES		Sabine	Authorizes return flows to Sabine River Basin		
4411	Lower Neches Valley Authority	NECHES	Sam Rayburn Reservoir, Neches River and Pine Island Bayou	Neches-Trinity	219,252	1913	irrigation
					107,108		
					820,000	1963	multiple
4415	City of Beaumont	NECHES	Neches River	Neches-Trinity	6,570	1915	municipal
					49,897	1925	
4228	Angelina and Neches River Authority	NECHES	Lake Columbia	Sabine	2,200	1985	municipal

WR	OWNER	BASIN FROM	SOURCE	BASIN TO	AMOUNT	PRIORITY	USE
4853	City of Tyler	NECHES	Lake Tyler	Sabine	40,325	1947	municipal/ industrial
2319	City of Saint Jo	TRINITY	Elm Fork Trinity River	Red	330	1957	municipal
3356	City of Weatherford	TRINITY	Lake Weatherford	Brazos	5,220	1954	municipal/ industrial
4248	Trinity River Authority	TRINITY	Lake Livingston	Neches, Neches-Trinity, San Jacinto	351,600	1959	industrial/ irrigation
4261	City of Houston	TRINITY	Lake Livingston	Trinity-San Jacinto, San Jacinto, Neches-Trinity, San Jacinto-Brazos	31,600	1913	industrial
					13,400		irrigation
					28,000	1959	industrial
					444,000		municipal
					458,800		industrial
10,000	municipal						
4279	Chambers-Liberty Counties Navigation District	TRINITY	Trinity River Lake Anahuac, Trinity River	Neches-Trinity	36,667	1906	irrigation
					36,667		
					36,666	1914	
5271	San Jacinto River Authority	TRINITY	Trinity River	Neches-Trinity Trinity- San Jacinto San Jacinto	7,500	1917	irrigation
					20,000	1926	
					17,500	1929	
					11,000	1936	
5809	San Jacinto River Authority	SAN JACINTO	San Jacinto River	Neches-Trinity Trinity-San Jacinto	2,500	1929	irrigation
					14,944	2004	municipal/ industrial

WR	OWNER	BASIN FROM	SOURCE	BASIN TO	AMOUNT	PRIORITY	USE
5169	Brazos River Authority	SAN JACINTO-BRAZOS	Oyster and Jones Creek	San Jacinto, Brazos	12,000	1948	multiple
5338	Texas Department of Corrections	SAN JACINTO-BRAZOS	Oyster Creek	Brazos	300	1985	irrigation
2925	TWDB, City of Houston, Brazos River Authority	BRAZOS	Allen's Creek Reservoir	San Jacinto, San Jacinto-Brazos	99,650	1999	multiple
2971	City of Lampasas	BRAZOS	Sulphur Creek	Colorado	180	1986	municipal
5155	Brazos River Authority	BRAZOS	Possum Kingdom Reservoir	Trinity	5,240	1986	municipal
5156	Brazos River Authority	BRAZOS	Lake Granbury	Trinity	2,600 17,400	1986	municipal
5167	Brazos River Authority	BRAZOS	Brazos River	San Jacinto-Brazos	200,000	Non-priority	municipal/ industrial
5168	Gulf Coast Water Authority	BRAZOS	Brazos River	San Jacinto-Brazos	99,932	1926	multiple
5171	Brazos River Authority	BRAZOS	Brazos River	San Jacinto-Brazos	75,000 50,000	1939 1950	multiple municipal/ industrial
5287	Bi-Stone Municipal Water Supply District	BRAZOS	Lake Mexia	Trinity	2,952	1957	municipal
5291	City of Teague	BRAZOS	Teague City Lake	San Jacinto-Brazos	605	1952	municipal
5322	Chocolate Bayou Water Company	BRAZOS	Brazos River	San Jacinto, San Jacinto-Brazos	40,000 40,000 75,000	1929 1955 1983	irrigation

WR	OWNER	BASIN FROM	SOURCE	BASIN TO	AMOUNT	PRIORITY	USE
5328	Dow Chemical Company	BRAZOS	Brazos River	San Jacinto-Brazos	20,000	1929	industrial
					150,000	1942	municipal/ industrial
5366	Brazosport Water Authority	BRAZOS	Brazos River	San Jacinto-Brazos, Brazos-Colorado	110,000	1960	industrial
					3,136	1976	municipal
1002	Colorado River Municipal Water District	COLORADO	Lake J.B. Thomas	Brazos	30,000	1946	multiple
1031	City of Sweetwater	COLORADO	Oak Creek Reservoir	Brazos	9,328	1949	municipal/ industrial
1660	City of Clyde	COLORADO	Lake Clyde	Brazos	200	1985	municipal
3676	Colorado River Municipal Water District	COLORADO	O.H. Ivie Reservoir	Brazos	15,000	1978	municipal
4007	City of Cedar Park	COLORADO	Lake Travis	Brazos	18,000	1938	municipal
5434	City of Corpus Christi	COLORADO	Colorado River	Brazos-Colorado, Colorado-Lavaca, Lavaca Colorado-Lavaca, Lavaca, San Antonio, Nueces, Lavaca-Guadalupe, San Antonio-Nueces, Nueces-Rio Grande	133,000	1900	multiple
					35,000		
5437	Lower Colorado River Authority and STPNOC	COLORADO	Colorado River	Colorado-Lavaca	102,000	1974	industrial
5471	City of Austin	COLORADO	Lake Austin	Brazos, Guadalupe	249,000	1913	municipal
			Town Lake		22,403	1914	

WR	OWNER	BASIN FROM	SOURCE	BASIN TO	AMOUNT	PRIORITY	USE
5475	Lower Colorado River Authority	COLORADO	Eagle Lake	Brazos-Colorado, Colorado-Lavaca	52,500	1901	irrigation
					78,750	1987	
5476	Lower Colorado River Authority	COLORADO	Colorado River	Brazos-Colorado, Colorado-Lavaca	228,570	1900	irrigation
					33,930	1987	
5477	Lower Colorado River Authority	COLORADO	Colorado River	Brazos-Colorado, Colorado-Lavaca	110,000	1907	irrigation
5677	Lower Colorado River Authority	COLORADO	Lake Travis	Brazos	6,400	1938	municipal
5715	Lower Colorado River Authority	COLORADO	Colorado River (Loma Reservoir)	Brazos	476	1938	municipal
5730	Brazos River Authority	COLORADO	Colorado River and Lake Travis	Brazos	25,000	1938	multiple
3978	J.H. Robinson	LAVACA	Lavaca River	Lavaca-Guadalupe	1,800	1983	irrigation
2095	Lavaca Navidad River Authority	LAVACA	Lake Texana	San Antonio, Nueces, San Antonio-Nueces, Nueces-Rio Grande	46,518	1972	municipal
					7,500	2003	multiple
5584	County of Jackson	LAVACA and LAVACA-GUADALUPE	Lavaca River, Garcitas Creek, Venado Creek, Dry Creek	Lavaca, Lavaca-Guadalupe	2	1997	industrial
2074	Guadalupe-Blanco River Authority	GUADALUPE	Canyon Lake	Colorado, Colorado-Lavaca, Lavaca, Lavaca-Guadalupe, San Antonio, San Antonio-Nueces	62,900	1956	multiple
					57,100	1999	
3606	Gulf Oil Chemicals	GUADALUPE	Guadalupe River	Lavaca-Guadalupe	9,676	1978	industrial
3860	City of Victoria	GUADALUPE	Guadalupe River	Lavaca-Guadalupe	260	1951	municipal

WR	OWNER	BASIN FROM	SOURCE	BASIN TO	AMOUNT	PRIORITY	USE
3861	E.I. Du Pont de Nemours and Company	GUADALUPE	Guadalupe River	Lavaca-Guadalupe	60,000	1948	industrial
3863	Guadalupe-Blanco River Authority	GUADALUPE	Guadalupe River	Lavaca, Lavaca-Guadalupe, San Antonio, San Antonio-Nueces	3,000	1951	irrigation
4276	Del Williams	GUADALUPE	Guadalupe River	Lavaca-Guadalupe	272	1985	industrial
5012	Joe D. Hawes	GUADALUPE	Elm Bayou	San Antonio	140	1985	industrial
5173	Guadalupe-Blanco River Authority	GUADALUPE	Guadalupe River	Lavaca-Guadalupe	2,500	1941	industrial/ irrigation
5174	Guadalupe-Blanco River Authority	GUADALUPE	Guadalupe River	Lavaca-Guadalupe	1,870	1944	industrial/ irrigation
5175	Guadalupe-Blanco River Authority	GUADALUPE	Guadalupe River	Lavaca-Guadalupe	940	1951	industrial/ irrigation
5176	Guadalupe-Blanco River Authority	GUADALUPE	Guadalupe River	Lavaca-Guadalupe	9,944	1951	multiple
5177	Guadalupe-Blanco River Authority	GUADALUPE	Guadalupe River	Lavaca-Guadalupe	42,615	1944	multiple
					8,632	1948	irrigation
5178	Guadalupe-Blanco River Authority	GUADALUPE	Guadalupe River	Lavaca-Guadalupe	106,000	1952	multiple
5466	City of Victoria	GUADALUPE	Guadalupe River	Lavaca-Guadalupe	20,000	1993	municipal
2130	BMA WCID	SAN ANTONIO	Medina Lake	Nueces	65,830	1910	irrigation
2131	BMA WCID	SAN ANTONIO	Medina Lake	Nueces	2,000	1912	irrigation
5489	Jess Womack	SAN ANTONIO	Elm Bayou	Guadalupe	750	1994	wetland

WR	OWNER	BASIN FROM	SOURCE	BASIN TO	AMOUNT	PRIORITY	USE
2466	Nueces County WCID #3	NUECES	Nueces River	Nueces-Rio Grande	8,606	1909	municipal/ irrigation
					2,940	1921	
2464	City of Corpus Christi	NUECES	Lake Corpus Christi	Nueces-Rio Grande	675	1913	municipal
					4,054	1914	municipal
4092	City of Taft	NUECES	Taft Drainage Ditch	San Antonio-Nueces	300,026	1925	municipal/ industrial
5736	City of Corpus Christi	NUECES	Nueces River	San Antonio-Nueces	600	1983	irrigation
					8,000	2001	wetland

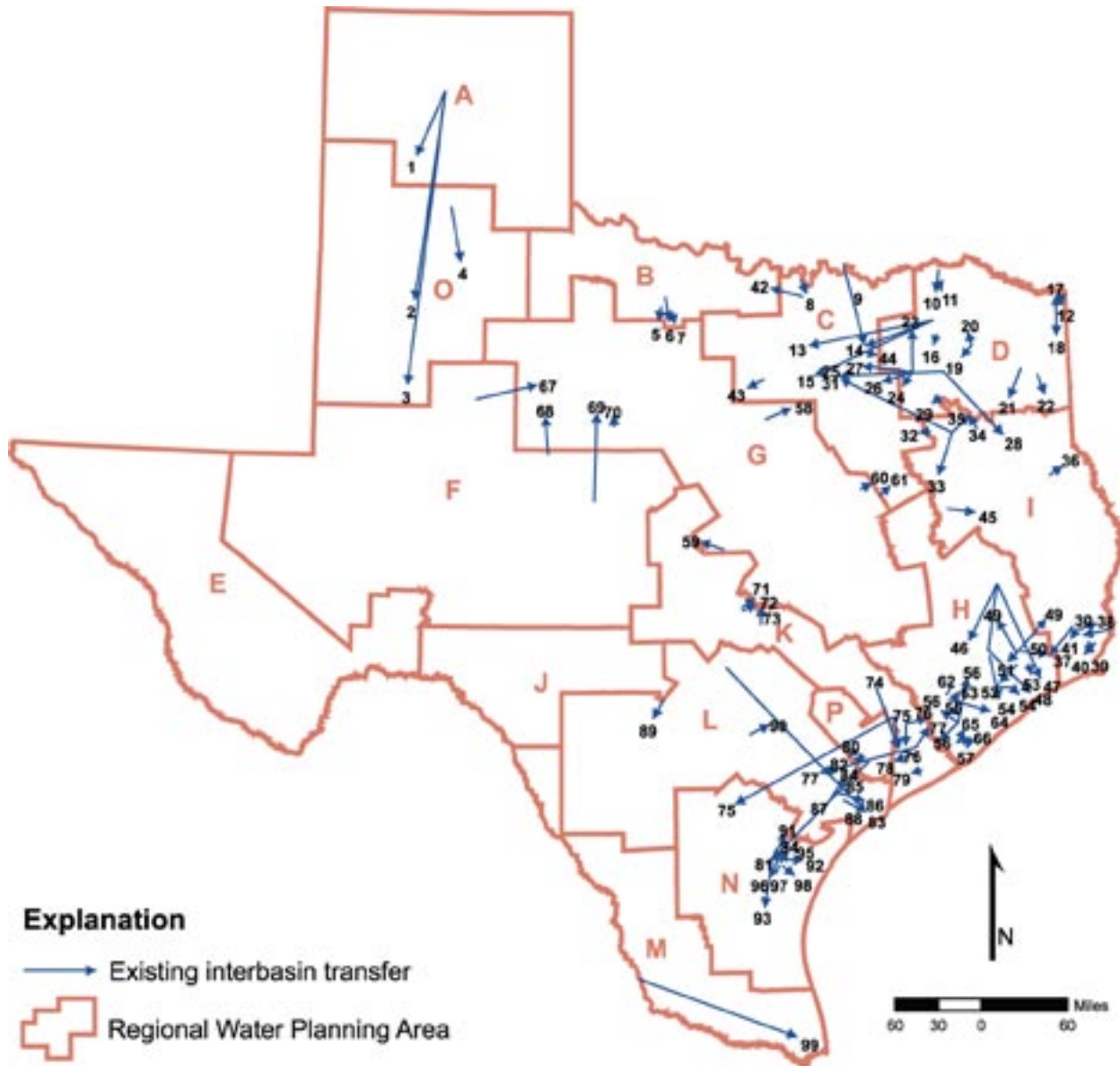
1. The owner of the water right is the owner listed on the authorizations as available December 31, 2004.
2. Some use types may have changed as a result of amendments granted after SB1 1997.
3. It should be noted that many water rights include authorization for interbasin transfer where the amount to be transferred is not specified. If the amount was not specified in the water right, it was assumed that the entire amount would be transferred.
4. This table does not include 9 of the 11 water rights owned by the Brazos River Authority that are authorized to release water to be diverted downstream for subsequent interbasin transfer pursuant to the System Operations Order.

❖

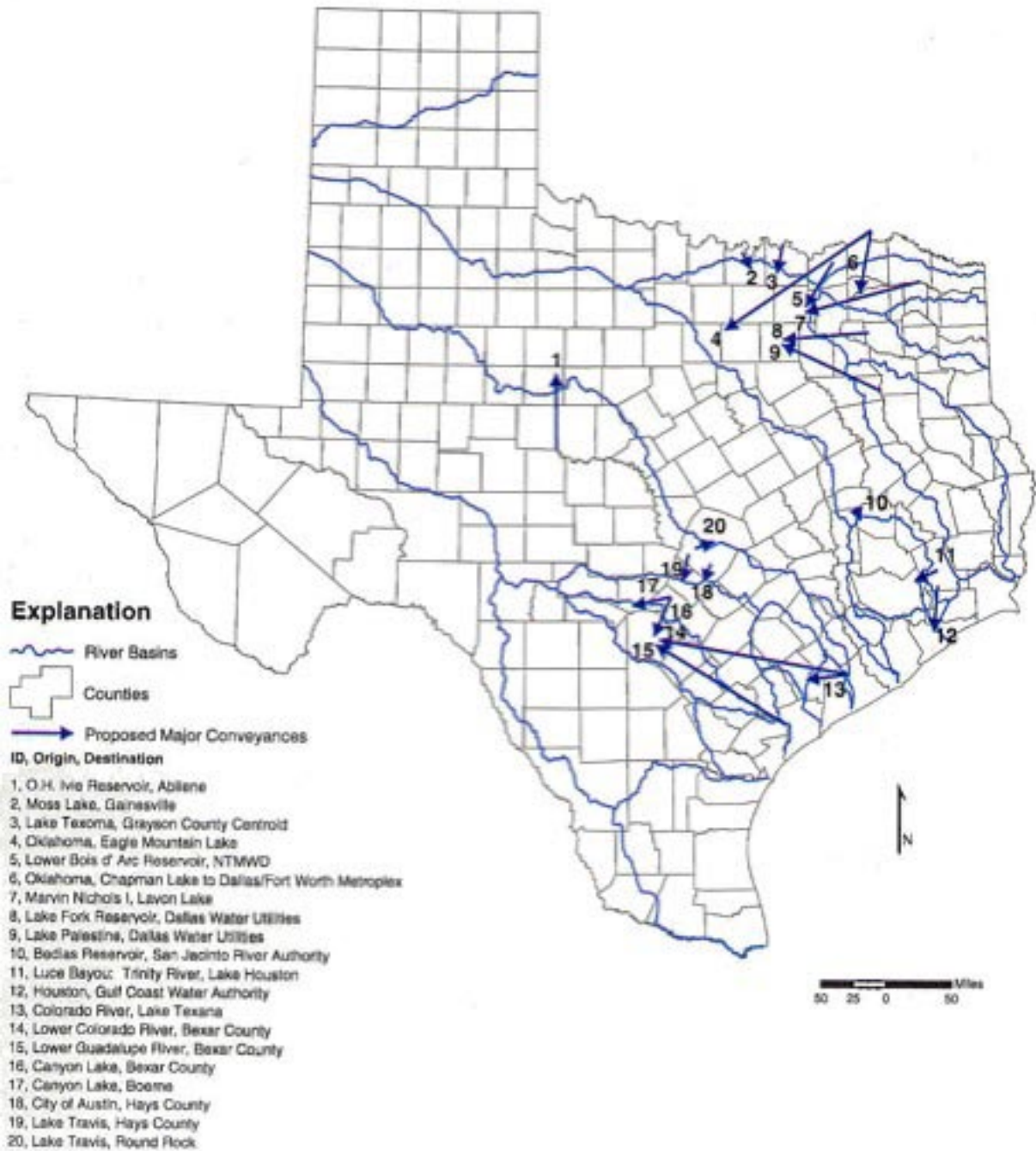
**APPENDIX B: MAJOR TEXAS GROUNDWATER TRANSFER PROJECTS AND PROPOSED
PROJECTS OVER 3,000 ACRE-FEET/YR (POTENTIAL DESTINATION OR END USER,
VOLUMES AND INITIATION DATE FOR PROJECT ARE NOTED IF AVAILABLE)**

1. Mesa Water, Inc. transfer from Ogallala Aquifer in Roberts County to El Paso, San Antonio, or Dallas - 200,000 acre-feet per year (acft/yr) (1999).
2. City of Amarillo from Ogallala Aquifer in Roberts County (1999).
3. Layne Water Development from Burleson, Lee and Milam Counties - 31,000 – 50,000 acft/yr (2003, started with Metropolitan Water Company in 1999).
4. Alcoa and San Antonio Water System (SAWS) from Simsboro Aquifer (a unit of Carrizo-Wilcox Aquifer) in Bastrop, Lee and Milam Counties to Bexar County – 90,000 acft/yr. (1999).
5. Schertz-Seguin Local Government Corporation transfer to Guadalupe County from Guadalupe and Gonzales County from the Carrizo-Wilcox Aquifer – eventually 25,000 acft/yr (1999).
6. Edwards Aquifer in Uvalde County transfer to the SAWS in Bexar County – 80,000 acft/yr (2001).
7. Grass Valley Partners in Eastern Kinney County transfer from Edwards Aquifer to Bexar County or Laredo – 30,000 acft/yr (2001).
8. Native Valley Alliance (via WaterTexas) Edwards – Edwards-Trinity Aquifer transfer from Kinney County to San Antonio, Laredo, or Eagle Pass - 31,000 to 45,000 acft/yr originally, but now 20,000 acft/yr (2001).
9. American PureTex Water Corp from Brazos River Alluvium in Austin, Colorado, and Wharton Counties to Houston and San Antonio – 500,000 acft/yr, although information the company website previously indicated that the total could be 784,000 acft/yr (2002).
10. Brazos Valley Water Alliance from Simsboro Aquifer in Milam, Burleson, Robertson and Brazos Counties – 100,000 acft/yr (2002).
11. Magellan Water Company from Carrizo-Wilcox Aquifer to Williamson County - amount unspecified (2002).
12. Rio Nuevo from West Texas Bolsons beneath General Land Office lands in Far West Texas - 50,000 acft/yr (2002).
13. El Paso Water Utilities from Capitan Reef Aquifer in Hudspeth County - 15,000 acft/yr (2003).
14. Goliad Sands Ltd. from Refugio and Bee Counties to San Patricio County – 11,200 acft/yr (2003).
15. Sustainable Water Resources LLC (formerly WaterTexas) from Simsboro portion of Carrizo-Wilcox Aquifer north of Interstate Highway (IH) 10 and east of IH 35 to the IH 35 and State Highway 130 corridors – at least 30,000 acft/yr (2003).
16. Dell Valley Water Rights Owners from Bone Spring-Victorio Peak Aquifer to El Paso Water Utilities – 63,000 acft/yr (2004).
17. Texas Mountain Canyon Water Association from “Hovey Trough” southwest of Fort Stockton - 41,000 to 110,000 acft/yr (2004).
18. Hays-Caldwell Carrizo Water Supply Project consisting of Cities of San Marcos, Kyle, Lockhart and the Canyon Regional Water Authority from the Carrizo-Wilcox Aquifer in Gonzales, Guadalupe, Bastrop and Fayette Counties – 30,000 acft/yr (2004).
19. Canadian River Municipal Water Authority to Amarillo, Lubbock and other cities in the Panhandle – 50,000 acft/yr (pre-1999, project online in 2001, more water purchased in 2005).
20. SAWS from Carrizo-Wilcox Aquifer in Wilson County to Bexar County – 11,000 acft/yr (2005).
21. SAWS from Carrizo-Wilcox Aquifer in Gonzales County to Bexar County – 30,000 acft/yr (2005).
22. SAWS brackish groundwater desalination of the Carrizo-Wilcox and Edwards Aquifer in Atascosa County - 10,000 acft/yr (2005).

APPENDIX C: 2002 MAP OF EXISTING INTERBASIN TRANSFERS AND REGIONAL WATER PLANNING AREAS IN TEXAS



APPENDIX D: WATER FOR TEXAS 2002: PROPOSED INTERBASIN TRANSFERS



❖

APPENDIX E: CHRONOLOGY OF EVENTS REGARDING INTERBASIN TRANSFERS

- 1900 First interbasin transfer occurs when 168,000 acre-feet/year is transferred from the Colorado River Basin to the Lavaca River Basin
- 1904 Constitutional amendment authorizes public development of water resources
- 1913 Burgess Glasscock Act recognizes interbasin transfers of water
- 1917 Constitutional amendment makes conservation and development of natural resources a public right and duty
- 1949 U.S. Bureau of Reclamation (USBR) began the first federal effort to plan development of Texas water resources
- 1953 “Water Supply and the Texas Economy” published by the USBR as a result of a 1949 study, recommended construction of a water supply canal from the Sabine River to the Lower Rio Grande Valley
- 1947 – 1957 Statewide Drought of Record
- 1955 Due to favorable reception of “Water Supply and the Texas Economy”, the USBR begins an investigation to formulate a plan acceptable to Texas and identify features of the plan that could be constructed under federal reclamation laws (Texas Basins Project)
- 1957 Texas Water Development Board (TWDB) created, constitutional amendment authorizes TWDB to administer Water Development Fund
- 1958 Senator Lyndon Johnson creates the United States Study Commission
- 1961 U.S. Study Commission draft report published, water rich areas oppose transfers to water poor areas
- 1961 TWDB publishes A Plan for Meeting the 1980 Water Requirements of Texas
- 1962 U.S. Study Commission Plan adopted, included interbasin transfers
- 1964 Texas Basins Project study completed, included interbasin transfers
- 1965 State water planning bill and constitutional amendment increasing Water Development Fund passed both included 50 year protection for basins of origin (SJR No. 19, 59th Regular Session of the Texas Legislature)
- 1966 City of San Antonio vs. Texas Water Commission, Texas Supreme Court addressed transbasin diversions (interbasin transfers) and created a balancing test
- 1966 Voters approve constitutional amendment to increase Water Development Fund including the limitation on Interbasin transfers
- 1967 Water Rights Adjudication Act passed

-
- 1968 TWDB publishes The Texas Water Plan that includes massive interbasin transfers through the Texas Water System
- 1977 TWDB water plan published but not adopted
- 1982 Sporhase v. Nebraska, state imposed restrictions on interbasin transfers could be invalid based on the Commerce Clause of the U.S. Constitution
- 1984 TWDB publishes Water for Texas, a Comprehensive Plan for the Future
- 1985 Constitutional amendment adding a Water Development Special Fund, included 50 year protection for basins of origin
- 1990 TWDB publishes Water for Texas, Today and Tomorrow
- 1991 Legislation passed removing 50-year protection for basins of origin from the planning statute
- 1992 TWDB publishes Water for Texas, Today and Tomorrow, Recommendations for the 1992 Update of the Texas Water Plan
- 1992 – 1998 TWDB begins Trans-Texas Water Program “to identify the most cost-effective and environmentally sensitive strategies for meeting the current and future water needs of Southeast, South-Central, and West-Central Texas”
- 1997 TWDB publishes Water for Texas, the last plan compiled solely by the TWDB
- Senate Bill 1 passes significantly increasing the requirements for interbasin transfer applications and adding the junior water rights provision
- 1999 – 2005 Numerous attempts to repeal or modify junior water rights provision through the Texas Legislature
- 2000 – 2005 Federal litigation in Florida and New York seek to require Clean Water Act Sec. 402 National Pollution Discharge Elimination System (NPDES) permits for water transfers
- 2001 Guadalupe – Blanco River Authority (GBRA), San Antonio Water System (SAWS), San Antonio River Authority (SARA) sign agreement to bring Guadalupe River water to San Antonio through the Lower Guadalupe Water Supply Project (LGWSP)
- Regional Water Plans based on Senate Bill 1 published
- TWDB publishes Water for Texas 2002 compiling the 2001 Regional Water Plans into a statewide plan
- 2004 Conflict between Regional planning groups over interbasin transfers from East Texas to Dallas Metroplex
- 2005 SAWS withdrawal from LGWSP, in part because of issues relating to whether or not the project contemplated an interbasin transfer
- 2005 Second round of draft regional water plans completed

ENDNOTES

- 1 LOWELL, PERCIVAL, MARS 15 (Kessinger Publishing LLC 2004) (Houghton-Mifflin 1895).
- 2 *Id.* at 42.
- 3 GEO-MARINE, INC., FINAL REPORT: POTENTIAL AQUATIC ECOLOGICAL IMPACTS OF INTERBASIN WATER TRANSFERS IN THE SOUTHEAST, WEST-CENTRAL, AND SOUTH-CENTRAL STUDY AREAS at p. II-3 (1996). (Prepared for the Texas Water Development Board, Texas Parks and Wildlife Department, Texas Natural Resource Conservation Commission, and the U.S. Army Corps of Engineers)(herinafter GEO-MARINE, INC.).
- 4 Interbasin transfers to and from the Rio Grande Basin are excluded from this analysis. In general, water rights in the Rio Grande Basin are not administered in accordance with the prior appropriation doctrine but are allocated based in part on equitable apportionment pursuant to *State of Texas v. Hidalgo County WCID No. 18*, 443 S.W. 2d 728 (Tex. Civ. App.—Corpus Christi, 1969, writ ref'd n.r.e) and are also subject to treaties between the United States and Mexico.
- 5 Memorandum from Suzanne Schwartz & Bill Mullican, Texas Water Development Board, Briefing and Discussion on Interbasin Transfer Issues (Nov. 9, 2004) at 1 (herinafer Schwartz & Mullican Memo).
- 6 GEO-MARINE, INC., *see supra* note 3, at II-2.
- 7 30 TEX. ADMIN. CODE § 295.13 (West 2005) (Interbasin Transfers)(herinafter Interbasin Rules).
- 8 TEX. WATER CODE ANN. § 16.051(c) (Vernon 2005).
- 9 *See* Interbasin Rules, *supra* note 7.
- 10 TEXAS WATER DEVELOPMENT BOARD, WATER FOR TEXAS, 14 Trans-Texas Water Program. Questions and Answers Trans-Texas Water Program (1996).
- 11 GEO-MARINE, INC., *supra* note 3, at xix.
- 12 *Id.* at xxviii.
- 13 *Id.*
- 14 *See* TEXAS WATER DEVELOPMENT BOARD, WATER FOR TEXAS 2002 13 (2002).
- 15 OLEN PAUL MATTHEWS, JUDICIAL RESOLUTION OF TRANSBOUNDARY WATER CONFLICTS, 30 WATER RESOURCES BULLETIN No. 3, 375-383 (June 1994).
- 16 *Id.*
- 17 *See* TEX. WATER CODE ANN. § 11.085(v) (Vernon 2005).
- 18 Tex. Comm'n Env'tl. Quality, Water Rights Permitting Section http://www.tceq.state.tx.us/permitting/water_supply/water_rights/permits.html (last visited Aug. 31, 2006) (herinafter TCEQ Water Rights Website). Information regarding the numbers of interbasin transfers and the specific authorizations is based on a compilation of all permits authorizing interbasin transfers. This same information is also contained in an excel spreadsheet created and maintained by the TCEQ.
- 19 These numbers include 11 rights owned by the Brazos River Authority (BRA) that authorize use in the San Jacinto-Brazos Coastal Basin of Brazos River water released from BRA's system reservoirs. The diversion from the Brazos River of a specified maximum amount of released water from all system reservoirs is then authorized under a separate certificate.
- 20 KATHY ALEXANDER MARTIN, TEX. COMM'N ON ENVTL. QUALITY, WATER SUPPLY DIVISION. The figures presented in this paper are based on a database created by Kathy Alexander Martin using the TCEQ spreadsheet referenced *supra* note 18. It should be noted that the 1913 Act included provisions that allowed for existing water users to record a certified filing for one year after the date of the act (which was later extended another year). Therefore, water amounts included in the pre-certified filing category include some with priority dates subsequent to 1913, but based on certified filings. These figures do not include 4,209,000 acre-feet of water authorized for municipal and industrial use by Certificate of Adjudication 11-5334, as amended. The authorized diversion points for this water right, owned by Dow Chemical Company, lie on a bay of the Gulf of Mexico and even though the amendment, granted in 2004 authorizes use of the water in two basins and two coastal basins, this is not considered an interbasin transfer of water because the bay is not part of a defined river basin.
- 21 Act of April 9, 1913, 33rd Leg., R.S., ch. 171, 1913 Tex. Gen. Laws 358, *amended by* Act of June 19, 1997, 75th Leg., R.S., ch. 1010, § 2.08, 1997 Tex. Gen. Laws 3621.
- 22 *Id.*
- 23 *Id.*
- 24 TEX. CONST. art. XVI, § 59 interp. commentary (Vernon 2003).
- 25 TEX. CONST. art. XVI, § 59.
- 26 *Id.*
- 27 *Id.*
- 28 The volume of water by use type was based on the actual use of the water when the interbasin transfer was authorized. After the passage of Senate Bill 1 of 1997,

- some water rights were amended to authorize multiple uses of the authorized amount of water. For purposes of this analysis, any authorization for multiple purposes of use that included municipal use as a purpose of use was included in the category "multiple." The category "other" includes water authorized for irrigation and industrial use and for wetland enhancement. *See also supra* note 20 for a discussion of how certified filings were counted for purposes of this analysis.
- 29 Act of March 19, 1889, 21st Leg., ch. 88, 1889 Tex. Gen. Laws 100; Act of March 9, 1895, 24th Leg., ch. 21, Tex. Gen. Laws 21; Act of April 9, 1913, 33th Leg., ch. 171, Tex. Gen. Laws 358.
- 30 *See* TEX. WATER CODE ANN. § 11.301-02 (Vernon 2005).
- 31 Modified Findings and Conclusions Defining the City of Austin's Water Rights. Attachment No. 2 to Judgment in Cause No. 115, 414-A-1.
- 32 DONALD A. WILHITE, A METHODOLOGY FOR DROUGHT PREPAREDNESS, 13 NATURAL HAZARDS 229-252 (1996). Variations in drought magnitude and duration result from differences in the large-scale patterns of atmospheric circulation, and interactions between the atmosphere and oceans which alter regional precipitation patterns from decades to centuries; *See also* CONNIE WOODHOUSE & JONATHAN OVERPECK, 2000 YEARS OF DROUGHT VARIABILITY IN THE CENTRAL UNITED STATES, 79 BULLETIN OF THE AMERICAN METEOROLOGICAL SOCIETY no. 12, 2708 (1998).
- 33 FELIX KOGAN, ADVANCES IN USING NOAA POLAR-ORBITING SATELLITES FOR GLOBAL DROUGHT WATCH, 7 DROUGHT NETWORK NEWS no. 3, 15-20 (1995); *See also* G.O.P Obasi, *WMO's role in the International Decade for Natural Disaster Reduction*, 75 BULLETIN OF THE AMERICAN METEOROLOGICAL SOCIETY 1661 (1994).
- 34 ROBERT L. LOWRY, JR., A STUDY OF DROUGHTS IN TEXAS, TEXAS BOARD OF WATER ENGINEERS BULLETIN 5914, 1 (1959).
- 35 ROBERT RIGGIO, GEORGE BOMAR & THOMAS LARKIN, TEXAS DROUGHT: ITS RECENT HISTORY 58 (Texas Water Commission 1987).
- 36 *Id.* at 61.
- 37 *Id.*
- 38 R.L. NACE & E.J. PLUHOWSKI, DROUGHT OF THE 1950's WITH SPECIAL REFERENCE TO THE MIDCONTINENT 81, Geological Survey Water-Supply Paper 1084, (Geological Survey, United States Department of the Interior, United States Government Printing Office 1965).
- 39 *See* LOWRY, *supra* note 34 at 46-48. (Data collected from the State Health Department is included in Tables 11, 12 and 14).
- 40 *See* LOWRY, *supra* note 34 at 42. (Table 9, figures based on a comparison of maximum storage preceding the drought to the minimum storage after the drought. For example, storage in Bridgeport/Eagle Mountain was reduced 87%, Possum Kingdom 61% and Lakes Travis and Buchanan 62%).
- 41 *See* LOWRY, *supra* note 34 at 49.
- 42 *Id.* at 49-50.
- 43 *Id.* at 53.
- 44 TODD H. VOTTELER, WATER FROM A STONE: THE LIMITS OF THE SUSTAINABLE DEVELOPMENT OF THE TEXAS EDWARDS AQUIFER (May 2000) (unpublished Ph.D. Dissertation, Southwest Texas State University) (on file with author).
- 45 TEXAS DEP'T OF WATER RESOURCES, GP-4-1, WATER FOR TEXAS 1984: Technical Appendix, Volume 2, II-1, (1984).
- 46 Bureau of Reclamation, U.S. Dep't of the Interior, History of Reclamation Power, <http://www.usbr.gov/power/WHO/history.html> (Revised October 5, 2004) (last visited August 21, 2006).
- 47 U.S. BUREAU OF RECLAMATION, U.S. DEP'T OF THE INTERIOR, TEXAS BASINS PROJECT 2, (1964).
- 48 *Id.* at 2-3.
- 49 Pub. L. No. 85-843, 72 Stat. 1058 (1958).
- 50 85 CONG. REC. S14,18061 (daily ed. Mon. Aug. 18, 1958) (Statement of Senator Johnson).
- 51 U.S. STUDY COMMISSION, A REPORT TO THE PRESIDENT AND TO CONGRESS BY THE UNITED STATES STUDY COMMISSION ON THE NECHES, TRINITY, BRAZOS, COLORADO, GUADALUPE, SAN ANTONIO, NUECES, AND SAN JACINTO RIVER BASINS AND INTERVENING AREAS, Part I, 2-3 (1962).
- 52 *Id.*
- 53 *Id.*
- 54 U.S. STUDY COMMISSION, A REPORT TO THE PRESIDENT AND TO THE CONGRESS, Report of the Commissioner, Part I, 5 (1961).
- 55 Letter from Price Daniel, Governor of Texas, to George Brown, Dec. 12, 1961. (Views, Comments, and Recommendations of the Board of Water Engineers on the Proposed Report of the U.S. Study Commission-Texas, Submitted to Governor Price Daniel, December 4, 1961, p. 1. These views were transmitted by the Governor to George Brown under letter dated December 12, 1961, with the statement, "I hereby adopt these as my views and comments on the proposed report.")

- 56 Board of Water Engineers, Comments of the State Agencies, Political Subdivisions (River Authorities and Conservation Districts) and others on the Proposed Report of the U.S. Study Commission-Texas 16b-16c (1961).
- 57 *Id.* at 21.
- 58 *Id.* at 27.
- 59 *Id.* at 6.
- 60 *Id.*
- 61 *Id.*
- 62 *Id.*
- 63 U.S. BUREAU OF RECLAMATION, U.S. DEP'T OF THE INTERIOR, THE REPORT OF THE U.S. STUDY COMMISSION-TEXAS, PART I, THE COMMISSION PLAN, A REPORT TO THE PRESIDENT AND TO CONGRESS BY THE UNITED STATES STUDY COMMISSION ON THE NECHES, TRINITY, BRAZOS, COLORADO, GUADALUPE, SAN ANTONIO, NUECES, AND SAN JACINTO RIVER BASINS AND INTERVENING AREAS 2-3 (1962); *see also*, U.S. Bureau of Reclamation, U.S. Dep't of the Interior, Texas Basins Project 2 (1964).
- 64 U.S. BUREAU OF RECLAMATION, U.S. DEP'T OF THE INTERIOR, THE REPORT OF THE U.S. STUDY COMMISSION-TEXAS, PART I, THE COMMISSION PLAN, A REPORT TO THE PRESIDENT AND TO CONGRESS BY THE UNITED STATES STUDY COMMISSION ON THE NECHES, TRINITY, BRAZOS, COLORADO, GUADALUPE, SAN ANTONIO, NUECES, AND SAN JACINTO RIVER BASINS AND INTERVENING AREAS 2-3 (1962).
- 65 *Id.* at 1, 3.
- 66 *Id.* at 1, 9.
- 67 TRINITY RIVER AUTHORITY OF TEXAS, TRINITY RIVER BASIN MASTER PLAN 10 (2003).
- 68 TEXAS WATER DEVELOPMENT BOARD, TEXAS WATER PLAN (1977).
- 69 TEXAS BOARD OF WATER ENGINEERS. A PLAN FOR MEETING THE 1980 WATER REQUIREMENTS OF TEXAS (1961); TEXAS WATER DEVELOPMENT BOARD, WATER FOR TEXAS, A COMPREHENSIVE PLAN FOR THE FUTURE (1984); TEXAS WATER DEVELOPMENT BOARD, WATER FOR TEXAS TODAY AND TOMORROW (1990); TEXAS WATER DEVELOPMENT BOARD, WATER FOR TEXAS TODAY AND TOMORROW, RECOMMENDATIONS FOR THE 1992 UPDATE OF THE TEXAS WATER PLAN (1992); TEXAS WATER DEVELOPMENT BOARD, WATER FOR TEXAS (1997); TEXAS WATER DEVELOPMENT BOARD, WATER FOR TEXAS-2002 (2002).
- 70 TEXAS BOARD OF WATER ENGINEERS. A PLAN FOR MEETING THE 1980 WATER REQUIREMENTS OF TEXAS 19 (1961).
- 71 *Id.* at 24.
- 72 *Id.* at 26.
- 73 GOLD V. SANDERS & STUART LONG, 12 TEXAS WATER REPORT, no. 30 (1965).
- 74 Joe G. Moore, Jr., unpublished draft manuscript, on file with authors.
- 75 CORWIN W. JOHNSON, TRANSBASIN DIVERSIONS. The University of Texas School of Law, Water Law Conference at 117 (1966).
- 76 TEX. CONST. art. III, § 49-c.
- 77 TEX. CONST. art. III, § 49-d.
- 78 *See id.*
- 79 *Id.*
- 80 Act of June 1, 1965, 59th Leg., R.S. ch. 297, § 2, 1965 Tex. Gen. Laws 587, 588, *repealed by* Act of August 31, 1981, 67th Leg. R.S., ch. 606, § 2, 1981 Tex. Gen. Laws 2399, 2400. ([The TWDB] shall not prepare or formulate a plan which contemplates or results in the removal of surface water from the river basin of origin if the water supply involved will be required for reasonably foreseeable water supply requirements within the river basin of origin during the next ensuing 50-year period, except on a temporary, interim basis).
- 81 JOHN GRONOUSKI, & ERNEST T. SMERDON, TEXAS WATER MANAGEMENT ISSUES, POLICY RESEARCH PROJECT REPORT NO. 77 205 (Lyndon B. Johnson School of Public Affairs, The University of Texas at Austin 1987).
- The present prohibition against the export of water from a basin of origin when its fifty-year future needs are not assured needs to be modified to provide more flexibility. Management schemes that involve adjacent basins operating cooperatively will lead to transfers of water both ways at different times, depending on which basin's supply is suffering the most in a given year. Over time both basins will benefit. The flexibility that will permit adoption of such measures should be available. As indicated in Chapter II, the Sabine River Authority states that such transfers are feasible and could be beneficial in its area.
- 82 Statement by Joe G. Moore, Jr., Concerning Senate Bill 1 and House Bill 5, 75th Legislature, Regular Session, (on file with authors), March 6, 1997, pp. at 3-4. Professor Moore was intimately involved in negotiating the 1965 constitutional and statutory language in both the Senate and the House.
- 83 TEX. CONST. art III, § 49(d)(3).
- 84 *Id.*

- 85 Act of June 17, 1965, 59th Leg., R.S., ch. 569, § 3, 1965 Tex. Gen. Laws 1246-7 (Tex. Rev. Civ. Stat. Ann. Art. 8290-9), *Repealed by* Act of June 15, 1991, 72nd Leg., R.S., ch. 516, § 10, 1991 Tex. Gen. Laws 1797.
- 86 TEXAS WATER DEVELOPMENT BOARD. THE TEXAS WATER PLAN 1 (1968).
- 87 *Id.* at 13.
- 88 *Id.* at 14.
- 89 *Id.*
- 90 Joe G. Moore, Jr., *Texas Water Resource Policy and Planning, 1965–2000* at 8, Conference, *Water for Texas: 2000 & Beyond* (2000).
- 91 TEXAS WATER DEVELOPMENT BOARD. THE TEXAS WATER PLAN I-9 through I-14 (1968); Joe G. Moore, Jr., *Texas Water Resource Policy and Planning, 1965–2000* at 11-12, Conference, *Water for Texas: 2000 & Beyond* (2000) (hereinafter Moore).
- 92 *See Moore, supra* note 91 at 12.
- 93 *See id.* at 13.
- 94 *See id.* at 13.
- 95 *See id.* at 13; BUREAU OF RECLAMATION, U.S. DEPARTMENT OF THE INTERIOR, WEST TEXAS AND EASTERN NEW MEXICO IMPORT PROJECT: EXECUTIVE SUMMARY 154, 156 (1973).
- 96 *City of San Antonio v. Texas Water Comm'n*, 407 S.W.2d 752, 758 (Tex. 1966).
- 97 *Id.* at 757.
- 98 *See id.* at 759.
- 99 TEX. WATER CODE ANN. § 11.085(f) (Vernon 2005).
- 100 TEX. WATER CODE ANN. § 11.085(d) (Vernon 2005).
- 101 TEX. WATER CODE ANN. § 11.085(b) (Vernon 2005).
- 102 TEX. WATER CODE ANN. § 11.085(k)(1), (k)(2)(A-D) (Vernon 2005).
- 103 TEX. WATER CODE ANN. § 11.085 (k)(2)(E), (k)(2)(F)-(k)(3) (Vernon 2005); *see also*, Resource Economics, Inc., *Third Party Compensation for Interbasin Transfers of Water in Texas: Alternatives for Funding and Payment* (1999) *available at* http://www.twdb.state.tx.us/RWPG/rpgm_rpts/98483269.pdf.
- 104 *See* TEX WATER CODE ANN § 11.085(l) (Vernon 2005) (codification of the balancing test of *City of San Antonio v. Texas Water Commission*).
- 105 Statement by Joe G. Moore, Jr., Concerning Senate Bill 1 and House Bill 5, 75th Legislature, Regular Session, (on file with authors), March 6, 1997, p. 10-11.
- In the proposed amendment to Section 11.085 [Senate Bill 1] . . . the procedural and substantive requirements for interbasin transfers are so detailed . . . as to prevent or substantially restrict any such transfer. Almost certainly, any early applications for significant transfers will be in the courts for five to 10 years at a minimum. The factors to be considered by the Texas Natural Resource Conservation Commission [TCEQ] surpass those contained for environmental impact statements under the National Environmental Policy Act. For any transfers into, or out of, the interior river basins such as the Neches, Trinity, Brazos, Colorado, Guadalupe - Blanco, San Antonio and Nueces, the analysis encompasses massive stretches of geography and major metropolitan centers. Meeting these requirements will substantially enrich lawyers and consultants in a plethora of specializations just to generate the reports to comply with the analyses required. Double or multiple sets of lawyers and experts to represent those who favor, and those who oppose, the proposed transfer will create mountains of testimony if any applicant has the money and the fortitude to initiate the process.
- 106 TEX. WATER CODE ANN. § 11.085 (s-t) (Vernon Supp. 2005).
- 107 *See* Schwartz & Millican Memo, *supra* note 5.
- [P]rior to passage of Senate Bill 1 (S.B. 1) there were 155 approved interbasin transfer (IBT) permits. Since then, only one new IBT has been approved. This reduction is often attributed to S.B. 1's more stringent IBT review standards coupled with its imposition of junior priority dates on all but a limited number of exempt IBT amendments . . . The issue of priority is of importance because Texas uses a "first in time first in right," or prior appropriation doctrine for surface water allocation. This doctrine gives the person with the earliest priority date the right to call on the use of the water first. Thus all water rights granted before the IBT have a right to use the water first. The junior priority provision . . . may impact a water right holder seeking to amend an existing water right to add an IBT, since the junior priority provisions means the IBT could not obtain the priority date of the original right.

- 108 *Id.*
- 109 *Id.*
- 110 Letter from Walter Mischer, Chairman of the Transportation and Infrastructure Advisory Committee, Greater Houston Partnership at 2-4, (Apr. 17, 2004). (Support of State Legislation Regarding Interbasin Transfers).
- 111 *Id.*
- 112 TEX. WATER CODE ANN. § 11.027 (Vernon 2005).
- 113 Timothy Brown, *A Problem Resolved?* Texas Water Law Institute, at 15-17 (1997).
- 114 American PureTex Water, <http://www.puretexwater.com/press.html> (last visited August 21, 2006).
- 115 Mike Barnett, *Water: Interbasin Transfers a Difficult Issue* 1, TEXAS AGRICULTURE (2000).
- 116 *Id.*
- 117 *Id.* at 2.
- 118 *Id.* at 2.
- 119 Senate Document No. 111, Major Texas River Basins, 85th Congress, 2d Sess. 5 (1958); *see also* Texas Board of Water Engineers. A Plan for Meeting the 1980 Water Requirements of Texas (1961).
- 120 Guadalupe-Blanco River Authority, *GBRA Moves to Secure Water Supply to Region*, GUADALUPE-BLANCO RIVER AUTHORITY NEWS at 2 (2001); Guadalupe-Blanco River Authority, Water Supply and Delivery Agreement Among Guadalupe-Blanco River Authority, San Antonio Water System and San Antonio River Authority (May 10, 2001) (on file with author) [hereinafter *2001 Water Supply and Delivery Agreement*].
- 121 South Central Texas Regional Water Planning Group, South Central Texas Regional Water Plan, Vol. I, § 5.2.3 (Jan. 2001).
- 122 *Id.*
- 123 *2001 Water Supply and Delivery Agreement*; *see supra* note 123 § 5.2.3.
- 124 *Id.*
- 125 Letter from Tommy Knowles, Deputy Executive Administrator, TWDB, to Evelyn Bonavita, Chairwoman and Greg Rothe 3 (Mar. 28, 2001) (on file with author).
- 126 SOUTH CENTRAL TEXAS REGIONAL WATER PLANNING GROUP, SOUTH CENTRAL TEXAS REGIONAL WATER PLAN, Vol. I, (Jan. 2001) [hereinafter *Regional Water Plan*]. Attachment D, Discussion of Lower Guadalupe River Diversions (SCTN-16).
- 127 *Id.*
- 128 TATE DALRYMPLE ET AL., MAJOR TEXAS FLOODS OF 1936, Water Supply Paper 816, U.S. Geological Survey (1937), 1937; *see also* Texas Board of Water Engineers. A Plan for Meeting the 1980 Water Requirements of Texas 145, 151 (1961).
- 129 C.E ELLSWORTH, SUMMARY OF RECORDS OF SURFACE WATERS OF TEXAS, 1898-1937 116, 125 (U.S. Geological Survey 1939).
- 130 *See* Regional Water Plan, *supra* note 126 at 3.
- 131 *See* Schwartz & Millican Memo, *supra* note 5 at 3. (The memorandum stated that TWDB staff recommends TWDB acknowledge the hydrologic unity of the two basins, and be supportive of any change).
- 132 Jerry Needham, *SAWS won't dip deeper into the aquifer: 50-year plan also pulls plug on pair of pricey pipeline projects*, SAN ANTONIO EXPRESS-NEWS, Aug. 17, 2005, at 1A.
- 133 Letter from James M. Mayor, Chairman San Antonio Water System Board of Trustees, to Carter Casteel, Member Texas House of Representatives, District 73 at 2 (July 20, 2005).
- 134 TEX. WATER CODE ANN. § 11.085(v) (Vernon 2005).
- 135 *Id.*
- 136 John D. McCall, *Interbasin Transfers of Water*, The University of Texas School of Law, Water Law Conference at 130 (1959).
- 137 *See* Johnson, *supra* note 75. (Corwin W. Johnson, *Transbasin Diversions*. Proceedings Water Law Conference May 20-21, 1966 Sponsored by the University of Texas School of Law Austin, Texas, p. 117).
- 138 *Id.*
- 139 TEX. WATER CODE ANN. § 11.085(b)(2) (Vernon Supp. 2005).
- 140 *See* TEX. WATER CODE ANN. § 11.08(v) (Vernon Supp. 2005).
- 141 *Id.*
- 142 *See* TCEQ Water Rights Website, *supra* note 18; *see also* Figure 1.
- 143 *See* WATER FOR TEXAS, *supra* note 14 at 73.
- 144 *Id.* at 76.
- 145 *See e.g.* Marvin Nichols Reservoir, Lower Bois D'Arc Reservoir, Bedias Reservoir, Lower Colorado River, a portion of the water for the Lower Guadalupe Water Supply Project.

- 146 *See* WATER FOR TEXAS, *supra* note 14 at 83.
- 147 *Id.*
- 148 *Id.*
- 149 *Id.* at 102. (Summary of East Texas Region).
- 150 REGION C REGIONAL WATER PLANNING GROUP, REGION C 2006 REGIONAL WATER PLAN (2006), Table 4D.3, Recommended Major Water Management Strategies for Region C at p. 4D.23 (hereinafter Region C Plan).
- 151 Tex. Comm'n on Env'tl. Quality, *Water Rights Pending Applications 8/15/2005* (2005) http://www.tnrcc.state.tx.us/permitting/waterperm/wrpa/wr_pending.xls.
- 152 *See* Region C Plan, *supra* note 150.
- 153 THE NORTHEAST TEXAS REGIONAL WATER PLAN EXECUTIVE SUMMARY p. xiii.
- 154 REGION H WATER PLANNING GROUP 2006 REGIONAL WATER PLAN, Chapter 4, p. 4-6 (hereinafter Region H Plan).
- 155 TEX. WATER CODE ANN. § 11.085(v) (Vernon 2005).
- 156 *See* Region H Plan, *supra* note 154. (Appendix B to Chapter 4-Water Management Strategies. Region H Water Management Strategy Analysis Technical Memorandum. Strategy Title: Houston to Gulf Coast Water Authority Transfer, p. 4B7-1.)
- 157 *Id.* at 4B5-1 through 4B5-3.
- 158 *Sporhase v. Nebraska*, 458 U.S. 941, 960 (1982).
- 159 *Id.* at 953.
- 160 *Id.* at 953-54.
- 161 *Catskill Mountains Chapter of Trout Unlimited, Inc. v. City of New York (Catskills II)*, 451 F.3d 77, 78 (2d Cir. 2006).
- 162 *Id.*
- 163 *Id.*
- 164 *Catskill Mountains Chapter of Trout Unlimited v. City of New York (Catskills I)*, 273 F.3d 481, 484 (2d Cir. 2001).
- 165 *Catskill Mountains Chapter of Trout Unlimited v. City of New York*, 244 F. Supp. 2d 41 (NDNY 2003).
- 166 *Catskills II*, 451 F. 3d 77 at 80.
- 167 *Id.*
- 168 *Id.* at 89.
- 169 *Miccossukee Tribe v. South Florida Water Management District*, 541 U.S. 95, 98 (2004).
- 170 *Id.* at 98-99.
- 171 *Id.* at 99.
- 172 *Id.*
- 173 *Id.* at 103.
- 174 *Id.*
- 175 *Id.* at 104.
- 176 *Id.* at 108.
- 177 *Id.*
- 178 *Id.* at 111-12.
- 179 *Id.* at 105.
- 180 *Id.* at 104.
- 181 *Id.* at 110.
- 182 *Miccossukee Tribe v. United States*, 2006 WL 648055 (S.D. Fla.).
- 183 Memorandum from Ann R. Klee & Benjamin H. Grumbles, Agency Interpretation on Applicability of Section 402 of the Clean Water Act to Water Transfers, U.S. Environmental Protection Agency (2005).
- 184 *Id.*
- 185 ASIT K. BISWAS, ZUO DAKANG, JAMES E. NICKUM & LIU CHANG-MING, LONG-DISTANCE WATER TRANSFER: A CHINESE CASE STUDY AND INTERNATIONAL EXPERIENCES. (Water Resources Series, United Nations University 1983).
- 186 TEXAS WATER DEVELOPMENT BOARD, WATER FOR TEXAS 3 to 31 (1997).