Committee On
Natural Resources

September 22, 1992

Ron Lewis
Chair

The Honorable Gib Lewis,
Speaker, Texas House of Representatives
Members of the Texas House of Representatives
Texas State Capitol
Austin, Texas 78769

Dear Mr. Speaker and Fellow Members:

The Committee on Natural Resources of the Seventy-Second Legislature hereby submit its interim report including recommendations for consideration by the Seventy-Third Legislature.

Respectfully submitted,

Ron Lewis, Chairman
Chair

John Willy, Vice-Chair

Fred Bosse

Pat Haggerty

Robert Puente

Frank Collazo, Chairman B & O

Sherri Greenberg

Harvey Hilderbran

Jerry Yost

John Willy
Vice-Chairman

Members: Bosse, Collazo, Greenberg, Haggerty, Hilderbran, Puente, Yost
INTRODUCTION

At the beginning of the 72nd Legislature, the Honorable Gib Lewis, Speaker of the Texas House of Representatives, appointed nine members to the House Committee on Natural Resources. The committee membership included the following: Chairman Ron Lewis; Fred Bosse, Frank Collazo, Sherri Greenberg, Pat Haggerty, Harvey Hilderbran, Robert Puente, John Willy and Jerry Yost.

During the interim, the Committee was assigned charges by the Speaker. In order to undertake the charges efficiently and effectively, Chairman Lewis appointed subcommittees to study the charges.

The subcommittees have completed their hearings and investigations and have issued their respective reports. The Natural Resources Committee has adopted and approved all subcommittee reports, which are incorporated as the following final report for the entire committee.

Finally, the committee wishes to express appreciation to the Texas Water Commission, the Texas Water Development Board and the citizens who testified at the hearings for their time and efforts on behalf of the committee.
INTERIM STUDY CHARGES
AND
SUBCOMMITTEE ASSIGNMENTS

SUBCOMMITTEE ON LEGISLATIVE OVERSIGHT

Monitor/oversee legislation enacted during the 72nd Regular and Special Called Sessions that was considered by the Natural Resources Committee; Performance Audit Review Recommendations; and any agency-initiated changes.

Hilderbran, Chair
Collazo
Willy

SUBCOMMITTEE ON THE EDWARDS AQUIFER

Continue studies on the regulation/protection of the Edwards Aquifer.

Puente, Chair
Greenberg
Hilderbran
Lewis
Yost

SUBCOMMITTEE ON WATER CODE REVISIONS

Continue work on the revision of the Water Code.

Bosse, Chair
Greenberg
Yost
SUBCOMMITTEE ON WATER FINANCE

Investigate the best methods for financing water quality initiatives and other environmental protection programs. Include studying the cost of programs with respect to property taxes, fees or economic development.

Greenberg, Chair
Bosse
Haggerty

SUBCOMMITTEE ON SOLID WASTE MANAGEMENT DISTRICTS

Study the creation/role of solid waste management districts.

Yost, Chair
Bosse
Greenberg
Hilderbran
Puente
# TABLE OF CONTENTS

## LEGISLATIVE OVERSIGHT
- Introduction .................................................. 6
- Legislation from the 72nd Session
  - HB 1214 ...................................................... 6
  - HB 1648 ...................................................... 8
  - SB 818 ....................................................... 9
- Related Natural Resources Activity ....................... 11
- Governor's Transition Committee ........................... 11

## THE EDWARDS AQUIFER
- Introduction .................................................. 16
- Background to Texas Groundwater Law .................... 16
- The Edwards Aquifer ........................................ 17
- A Recent History ............................................ 19
- Testimony .................................................... 24
- Recommendations From Various Interested Parties ..... 25
  - South Texas Geological Society ......................... 25
  - Texas Water Commission .................................. 26
  - City of San Antonio ....................................... 26
  - 1990 State Water Plan .................................... 26
  - San Antonio River Authority .............................. 27
- Recommendation ............................................... 28

## WATER FINANCE
- Introduction .................................................. 30
- Federal Involvement ........................................ 30
  - The Clean Water Act ..................................... 30
  - The Safe Drinking Water Act ............................. 32
- The Burden of Cost .......................................... 32
- Alternative Financing Mechanisms ......................... 33
  - Fees ......................................................... 34
  - Texas’ Fee System ........................................ 36
  - Taxes ....................................................... 38
  - Bonds ....................................................... 40
  - Texas’ Bond Programs .................................... 41
  - Bond Insurance Program .................................. 44
  - State Revolving Loan Funds ............................... 44
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas' SRF</td>
<td>45</td>
</tr>
<tr>
<td>Additional Revenue Raisers</td>
<td>46</td>
</tr>
<tr>
<td>Conclusion</td>
<td>49</td>
</tr>
<tr>
<td>Recommendations</td>
<td>50</td>
</tr>
<tr>
<td>WATER CODE REVISIONS</td>
<td>54</td>
</tr>
<tr>
<td>Introduction</td>
<td>55</td>
</tr>
<tr>
<td>The Nature of Districts</td>
<td>55</td>
</tr>
<tr>
<td>Consolidation of District Chapters</td>
<td>55</td>
</tr>
<tr>
<td>Supportive Testimony</td>
<td>56</td>
</tr>
<tr>
<td>Concerns</td>
<td>58</td>
</tr>
<tr>
<td>Future Action</td>
<td>59</td>
</tr>
<tr>
<td>Conclusion</td>
<td>60</td>
</tr>
<tr>
<td>SOLID WASTE MANAGEMENT DISTRICTS</td>
<td>61</td>
</tr>
<tr>
<td>Introduction</td>
<td>62</td>
</tr>
<tr>
<td>The State of Things</td>
<td>62</td>
</tr>
<tr>
<td>Federal Mandates</td>
<td>62</td>
</tr>
<tr>
<td>State Action</td>
<td>63</td>
</tr>
<tr>
<td>Regional Control</td>
<td>64</td>
</tr>
<tr>
<td>North Central Texas Council of Governments</td>
<td>66</td>
</tr>
<tr>
<td>Houston-Galveston Council of Governments</td>
<td>66</td>
</tr>
<tr>
<td>Middle Rio Grande Development Council</td>
<td>67</td>
</tr>
<tr>
<td>Local Control</td>
<td>68</td>
</tr>
<tr>
<td>Testimony Regarding Special Districts</td>
<td>69</td>
</tr>
<tr>
<td>Conclusion</td>
<td>75</td>
</tr>
</tbody>
</table>
LEGISLATIVE OVERSIGHT
Introduction

The Committee on Natural Resources received 160 bills during the 72nd Legislature for consideration. Seventy-one were enacted into law. The work of the Committee in the interim has identified concerns which need to be addressed by the 73rd Legislature. This report will highlight the issues that were the subject of interim review and oversight by the Committee.

In addition, much work has gone into the transition of the environmental agencies into the consolidated Texas Natural Resource Conservation Commission. Although SB2, the consolidation bill, did not go through the Natural Resources Committee, the Legislative Oversight Subcommittee monitored the progress of the Governor’s Transition Committee which was charged to ensure the smooth and efficient transition of the agencies.

Legislation from the 72nd Session

HB 1214

In 1987, the 70th Legislature enacted SB 779, which directed the Texas Water Commission (TWC) to establish a statewide regulatory program for underground storage tanks. During the 71st Legislature, legislation expanded this program and created the Petroleum Storage Tank Remediation (PSTR) Fund dedicated to reimbursement expenses in the remediation of contamination from leaking petroleum storage tanks (PSTs). The PSTR Fund is administered by the TWC and operates like an insurance fund. The program is used to satisfy a PST owner’s financial responsibility obligation as required by state and federal law. The fund reimburses PST owners and state contractors for allowable costs associated with the remediation of PST sites. Tank owners must pay a small deductible for reimbursement and the maximum liability of the fund is limited to $1 million per occurrence.

Implementation of the PSTR Fund legislation highlighted several areas where the statute was either unclear or overly restrictive. First, tank owners who discovered leaks prior to May 31, 1989, and acted responsibly by cleaning up their sites, were not eligible to receive reimbursement funds. Also, landowners who discovered contamination from a leaking tank after the tank and piping were removed were ineligible for reimbursement.
Second, tank owners were responsible for the first $10,000 of the costs associated with a leaking underground storage tank, regardless of the size or number of tanks leaking on site. Small operations found this level of deductible to be a significant hardship and some were forced out of business. Finally, lenders had become reluctant to make loans using land as collateral if that land was going to be the location of a petroleum storage tank. The possibility of being held liable should a foreclosure occur severely reduced the value of the land as collateral.

During the 72nd Session, the Legislature sought to address these concerns through HB 1214. This bill amended the criteria for eligibility and the amount of the deductible for reimbursement of claims from the PSTR Fund. The bill allowed a sliding scale to be used for the deductible in lieu of the flat $10,000 deductible formerly in effect. The amount of the deductible rises with the number of tanks owned, beginning at $1,000 for persons owning 12 tanks or less and capped at $10,000 for persons owning 1,000 tanks or more. Additionally, the bill shifted the effective date for reimbursement eligibility to provide for action taken prior to May 31, 1989.

There are 161,260 registered tanks in Texas. Reported sites with leaking tanks total 11,938, or approximately 29,845 tanks. The TWC receives about 12 to 14 reports of sites with leaking tanks per day. The average site has 2.5 tanks which cost approximately $32,000 each to clean up. If all the reported leaks become PST clean-up sites, it will cost an estimated $955 million to clean-up the reported PST leaks. This figure could rise as high as $1.86 billion to $2.12 billion if all the suspected leaks become PST clean-up sites.

The fund, which is financed from a fee levied on the bulk delivery of petroleum products, is set by statute and generates approximately $60 million a year. Since the program began, tank owners have submitted 6,191 claims for reimbursement totaling $220,206,962. In FY 92, tank owners submitted 65% (4,010) of all claims made. During FY 92, the dollar amount claimed totaled $132,936,021, or 60.4% of the total value of all claims submitted during the program up until July 1992. Since tank owners often submit claims for expenses that are not eligible for reimbursement, claims are not always paid in full.

In November 1991, partly in reaction to pressure from Legislators to reduce the turn-around time for reimbursement from the fund, the agency formed a task force to expedite the processing of claims. The average reimbursement time was taking 15 months, sometimes longer. The TWC worked to reduce this time-frame to 3 months. This success posed serious implications for the ability of the agency to pay claims in fiscal year 1993. As of July 20, 1992, the PSTR Fund balance was $11,404,473. As of July 16, 1992, claims and contractual commitments totaled $96 million. Funds available through FY total only $87 million.
More prompt payments encouraged increased clean-up activity resulting in a dramatic increase in the number of claims. In the first 10 months of fiscal year 1992, the TWC received twice as many claims as in the previous two years combined. The claims totaled $133 million. The fund was estimated to be in the red $10 million by the end of the fiscal year.

The TWC concluded that it was faced with the choice of delaying reimbursements for work already done or slowing the rate at which costs were incurred by owners. The TWC chose to slow the rate at which costs were incurred by owners. The TWC began to require prior approval before remediation work could begin.

The TWC will consider requesting an increase in the tax that supports the fund in the next legislative session to more closely match revenue with expenditures. The Texas Oil Marketers Association is reported to support an increase in the tax.

HB 1648

Referring to the Well Pump Installers Act, HB 1648 was enacted during the 72nd Legislature to provide that no person may act as or offer to perform the services of an installer unless such person holds a license issued by the Texas Water Well Drillers Board. It was believed that if pump installers were licensed and aware of the rules governing the proper installation and maintenance of wells, the protection of groundwater from contamination would be greatly enhanced within the state. In 1989, the member agencies of the Ground Water Protection Committee designated water wells as the number one priority problem to solve in order to protect groundwater from nonpoint sources of pollution. Abandoned and/or poorly cased wells and wells that are not properly sealed at the surface allow surface and subsurface sources of pollution to directly enter the well and can result in contamination of drinking water supplies. It was believed that if pump installers were licensed, they would better be able to identify and remedy these problems or face the cancellation of their licenses.

The legislation directed the Board to develop rules to set fees, determine license expiration dates, and specify grounds for a waiver of a license requirement for an applicant with a valid license from another state. The statute also directed the Board to prepare licensing examinations and to issue and revoke licenses. The rules were adopted on June 19, 1992.

Before the adoption of the rules, several concerns were expressed by water conservation districts and a few Legislative members with regard to the implications for personal property rights, the costs involved, the role of the pump installer, the role of the water conservation district, the applicability of some of the provisions and an apparent inflexibility for a state the size of Texas with many different types of water users. Another
concern that was expressed was that the legislation only dealt with licensing pump installers and not with bringing existing wells into compliance. A concern mentioned by the Manager of the High Plains UWCD that was not addressed in the rules was requiring the pump installers to cover all wells safely whenever the pump is removed from the hole for any reason.

The rules originally required well owners to properly case and cement the wells. If this surface seal was not present, the licensed pump installers were required to inform the landowner and the TWC that the well was considered deteriorated and would have to be resealed. This requires excavating to a depth of four feet, cementing to land surface, and re-installing the pump, which the High Plains Underground Water Conservation District (UWCD) estimated to cost between $800 and $1,200 per well. In the High Plains UWCD, many homeowners with their own domestic well are elderly and are living on a limited income. For some, an expense of $800 would be a great financial hardship; for others, such an expense would be impossible to meet. For the owner of several irrigation wells, the expense could be quite considerable. In the area of the High Plains UWCD most irrigation wells were drilled on the high point of a field, and dirt was mounded up around the well. The soil is bonded tightly to the casing so there is little opportunity for runoff water running down the well. Any cave-in around the well usually results in quick repairs by the well owner in order to prevent the loss of the well.

As a result of discussions with the public and State Representatives, the rules that were adopted by the Water Well Drillers Board addressed only the licensing issues of pump installers and exemptions in certain circumstances. While the remaining issues fall under the authority of the TWC and rules have been drafted, action on the rules has been delayed in order to give the Legislature an opportunity to review them during the upcoming session.

**SB 818**

Enacted during the 72nd Legislature, SB 818 requires a comprehensive regional water quality assessment using data from the Texas Water Commission, river authorities, counties and cities, steering committee sources, and special studies. The commission is to assess historical, existing and projected water quality conditions with the object of developing a program to maintain and improve the quality of the state's waters.

The TWC rules for the regional assessments of water quality were passed on December 4, 1991. To finance the assessments, the commission adopted emergency fee assessment rules on December 4, 1991, and amended them February 5, 1992. The annual fees are charged to holders of wastewater permits and water rights. Bills for these fees were mailed out in February 1992. The fees of most of the municipal and industrial water users will be set based on usage under the wastewater permits. The fees for water users who do not also hold wastewater permits will are based on the amount of water
appropriated to them.

Municipalities, water districts and other permit holders will raise the money needed to finance the water quality evaluation through charges to their customers. Some of the proceeds will be used by the TWC to pay administrative costs and some will go to the water districts and river authorities which must conduct the regional water quality assessment. The fees are set by the TWC. The river authorities' and special districts' final work plans were due to the TWC on January 31, 1992. Upon review of the plans, the TWC met with the authorities to discuss what could be allocated to their respective basins. Contracting has begun with some of the authorities to do the assessments.

During discussion of the commission rules for SB 818, several concerns were raised, especially with regard to the equitable assessment of the fees. In the area of water rights, the irrigation farmers in Texas using surface water for irrigation are the only agriculture sector that is included in the fee assessment. Farmers using groundwater and farmers and ranchers that do not irrigate do not pay the cost. It was argued that the irrigators in the valley are paying a sizeable part of the overall assessment assigned to water right holders. Only .0076% of the state land is irrigated with surface water, yet these surface water users are assessed the entire cost for the agriculture sector. Two suggested options for addressing this concern were to base the fee assessment on actual use rather than water rights permitted, or to base the fee on the acres irrigated rather than permitted surface water rights.

The methodology to fund SB 818 provides a cap for very large municipal and industrial interests. Mid-size cities not qualifying for the benefits of the cap may pay almost the same funds as some of the largest cities. The same is true for industry that qualifies for the benefits of the cap. Much smaller interests not qualifying for the benefits of the cap pay almost as much as the largest industries in the state. Rationale for the cap is that large cities and industry promote regionalization and often already have water quality programs in place.

A major problem identified with the legislation is that a large number of people are not required to pay the fees for the water quality assessment, yet there is the potential that they will benefit from the improved water quality. Persons living in un-incorporated areas not including Municipal Utility Districts will not pay any fees. There are many areas that receive water from water supply corporations using groundwater and where households are on septic systems that will not pay any fees, yet everyone benefits from improved water quality throughout the state.

A task force was put together by Chairman John Hall of the TWC to devise a method of funding SB 818 equitably. The legislation addresses all the water of the state, even allowing for assessments on groundwater. Groundwater users are not charged the fees
that the surface users are and consequently cannot receive any funds for groundwater quality assessments. At the meetings of the fee task force the methodology for charging and collecting fees was agreed to by all surface water users. The irrigators were not entirely satisfied for the reasons cited in the preceding paragraphs and backed out of the agreement. The TWC then allowed the irrigators to develop their own methodology for collection with the understanding that the issue of the perceived inequity would be visited during the Legislative Session. The irrigators accepted the proposal and the fee bills are scheduled to go out on October 5, 1992 and are due November 5, 1992.

The TWC is proposing to set up a legislative task force to address the concerns that have been raised. The task force would be comprised of municipalities, industry, agricultural interests, environmentalists and State Representatives. The TWC feels that with continued public input the programs will be successful and the concerns expressed can be addressed.

Related Natural Resources Activity

Governor’s Transition Committee

The Environmental Agencies Transition Committee was established by executive order of the Governor to review the programs that will be consolidated into the Texas Natural Resource Conservation Commission September 1, 1993 pursuant to SB 2. The Committee was also charged with developing a reorganization plan and schedule that will ensure a smooth transition. John Hall, Chairman of the Texas Water Commission, chairs the Committee and Kirk Watson, Chairman of the Texas Air Control Board (TACB), serves as Vice-Chair.

The Committee divided into several subcommittees which met throughout the interim. The subcommittees include Budget and Legislation, Recycling, and Permitting. At the last meeting on September 11, 1992, the Transition Committee discussed the recommendations of the various subcommittees. Following is a summary of the work done by the Committee:

• Funding Issues

The TWC and the TACB are due to submit a joint budget request for the Texas Natural Resource Conservation Commission (TNRCC) to the Governor’s Budget Office by October 16, 1992. A draft of the joint request will be submitted to the Transition Committee for review. The appropriation request will not ask for increased funding from General Revenue (GR). Instead the TNRCC will seek more flexibility in using existing fee revenue and, in limited circumstances, the authority to increase fee revenue.
The Transition Committee will propose simplification of the complex financial structure of the TNRCC. The financial structure currently encompasses more than 20 dedicated funds and special accounts representing almost 50 individual fees, assessments and other sources of revenue. The Transition Committee hopes to accomplish this task through funds consolidation, revision of administrative procedures for the revenue sources, and adoption of accounting, reporting and budgeting systems.

The Committee also wants to ensure the availability of special revenue sources to environmental programs. This could be done by re-authorizing appropriate statutory dedication of fee revenues to those programs which generate the funds, maintaining balances in the funds to meet needs, and ensuring that funds collected to support remediation programs or grant programs are available to meet long-term commitments and future obligations. The Committee is examining feasibility of the following:

- Consolidation Issues

  Consolidating at the Texas Department of Health (TDH) the primary authority for managing asbestos. TDH and TNRCC would enter a memorandum of understanding allowing TNRCC to inspect landfills receiving asbestos waste.

  Transferring the TDH's responsibilities with regard to in-situ uranium mining to the TNRCC, which is responsible for regulating disposal of radioactive waste and sources of radiation.

  Authorizing the TNRCC to assess a fee to pay for administering the water hygiene program since that authority was not transferred from the TDH when the water hygiene program was.

  Authorizing the TNRCC to issue orders and to assess administrative penalties to enforce the water hygiene standards since this authority was not transferred from TDH.

  Creating a Recycling Interagency Advisory Board to coordinate the policies of the TWC, General Land Office, Texas Department of Commerce, and General Services Commission.

  Clarifying changes made to the Clean Air Act in SB 2 with regard to protecting confidential information; including concentrated animal feeding operations in the definition of "air contaminant"; deleting new language authorizing permit conditions by rule; dedicating operating fee permit fees required by the federal Clean Air Act to the Clean Air Fund enabling the state's program to receive federal approval; and clarifying ambiguous language in the legislation.
Assuring that notice and hearing requirements of the TNRCC and the statutory allocation of authority between TNRCC Commission and Executive Director are consistent across the air, water, and waste management programs.

Changing the name of the environmental agency to one that more accurately identifies its scope and mission.

- Permitting Issues

Texas Water Commission Goals

Eliminate permit application backlogs where they exist by redirecting existing staff resources and adding additional resources where possible.

Adopt a system of permit by rule for certain transactions, discharges, or waste management practices that present the lowest risk of harm to the environment.

Delegate authority to approve certain amendments and modifications to existing permits to the Executive Director or Division Director.

Provide technical assistance to the public and applicants to reduce the time needed to declare an application administratively complete and to clarify salient issues in the permitting process.

Establish firm processing time frames and make staff and management accountable for meeting those goals. Achieve a 40% to 50% reduction in the amount of time required to finalize permit actions.

Increase permit staff by 35% to 50% in the hazardous and solid waste programs.

Effectively manage the hearing process to avoid unnecessary delays.

Obtain NPDES delegation by October 1, 1993.

Texas Air Control Board Goals

Conduct early conferences to identify the parties, set discovery schedules, and set hearing schedule.

Conduct conferences among the parties to agree to facts and to narrow the scope of the contested issues.
Establish alternative dispute resolution procedures.

Discourage unnecessary contested hearing by assuring that persons requesting hearings actually are or could be affected by the proposed facility.

Hold public meetings in a community in place of an evidentiary, contested hearing when a meeting is an appropriate means of addressing local concerns.

Discourage unnecessary postponements of hearings by requiring parties to show the specific need for a postponement.

Prevent an applicant from refiling an application for 90 days if it is withdrawn solely to postpone a proceeding. Also, require the applicant to pay opponents' attorney's fees and expert fee.

Encourage the use of prefilled written testimony.

Establish deadlines for filing briefs and proposed decisions with the hearing examiner and the Board following the hearing.

The Transition Committee is scheduled to meet October 30, 1992, to take action on these recommendations.
THE EDWARDS AQUIFER
Introduction

An equitable solution to the management of the Edwards Aquifer has long been a source of divided opinions and wills. According to a report of the Technical Advisory Panel to the Special Committee on the Edwards Aquifer, the Edwards Aquifer is a "complex hydrological system that should be viewed as an integrated surface-water and ground-water resource". The aquifer is a large system that should be able to meet the needs of the competing uses if managed wisely. Current unmanaged use will most likely result in the periodic reduction or loss of spring flow with its impact on the associated habitats, somewhat higher pumpage costs, and periodic reductions in river flow downstream of the aquifer in drought conditions. All users of the aquifer may be impacted if equitable management is not provided.

Background to Texas Groundwater Law

While Texas surface water is considered property of the state and permits are required for its use, groundwater belongs to the owner of the land above it and may be used or sold as private property.

Development of groundwater resources in the state is based on the "rule of capture". Texas courts consistently rule that a landowner has the right to pump the groundwater beneath his land regardless of the effects on wells of adjacent landowners. The Texas Legislature in 1949 addressed groundwater management through the creation of underground water conservation districts which generally have the authority to promulgate rules for conserving, protecting, recharging, and preventing waste of underground water. There are two basic types of groundwater districts: Underground Water Conservation Districts and Subsidence Districts.

Legislation passed in 1949 authorized creation of underground water conservation districts upon petition of landowners in an area to the Texas Water Commission. A 1985 amendment allows the Texas Water Commission to designate certain areas as "critical groundwater areas" and to initiate the formation of a district. Voters can veto any proposed district, but if they do, state funding for water projects can be withheld. A third way for a special purpose district to be created is through the Legislature. Additionally, landowners in an area can petition to annex into an existing district. In most of these
actions, the district or annexation must be approved by the voters in the area.

The purpose of the underground water district is to provide for the conservation, preservation, recharge and protection of underground water, and in some cases, to control land subsidence. Districts have the authority and responsibility to monitor the groundwater supply through ensuring proper location or spacing of wells in order to prevent pumping wells from affecting neighboring wells and to promote the efficient development of the area’s groundwater resources. Districts can also require permits for new wells. Water conservation is promoted through public education, technical assistance, and research. Subsidence problems are addressed through monitoring, pumpage restrictions, and development of alternate water supplies.

Groundwater is defined in Section 52.001, Texas Water Code, as water percolating below the surface of the earth that is suitable for agricultural, gardening, domestic, or stock raising purposes. The definition does not include defined subterranean streams or the underflow of rivers. The percolating water is found filtering in porous and permeable subsurface geologic formations called aquifers. Underground water is categorized according to the nature and characteristics of the geological structures through which it flows, not on any inherent quality of water itself. Groundwater and surface water, under current Texas law, are not regulated under a unified regulatory scheme, but they are inextricably linked. Groundwater feeds springs and surface streams and conversely surface water acts to recharge groundwater reservoirs.

The Edwards Aquifer

When an aquifer spans a region with diverse interests, such as the Edwards Aquifer, how to manage the resource can spur conflicting opinions. The Edwards Aquifer is a limestone aquifer underlying parts of Kinney, Uvalde, Medina, Bexar, Comal and Hays Counties in south central Texas. In addition to natural spring flow at several sites, water is artificially discharged from the aquifer by hundreds of wells in these counties. The aquifer serves agricultural users in Uvalde and Medina Counties and municipal and industrial users in the central and eastern parts of the region. San Antonio, Uvalde, New Braunfels, San Marcos, and numerous other smaller cities rely solely on the aquifer for their water supply.

The portion of the annual Edwards recharge that is not pumped flows slowly eastward and eventually discharges from the aquifer through springs, such as those in New Braunfels and San Marcos. Flow from these springs in turn make up the base flow of the Guadalupe River, providing water for cities, agriculture and industries downstream. The close relation of groundwater to surface water is evident in the Edwards since the aquifer serves as a connection between the Nueces, San Antonio, and Guadalupe Rivers.
The Edwards Aquifer is unique among major Texas aquifers in that there is a high rate of recharge and a close interconnection to surface water. Water enters the aquifer through the recharge zone or zone of infiltration and moves generally in a south-southeast direction. Once in the deeper, artesian zone of the aquifer, the water begins to move in an east-northeast direction toward the large, natural discharge points of Comal and San Marcos Springs. Rates of recharge and discharge have varied greatly over the 50-plus years that the Edwards has been monitored. This hydrologic link between surface and groundwater highlights the need to develop mechanisms that allow for the conjunctive management of the surface and groundwater resources.

A major problem of addressing a regional approach to management of the Edwards Aquifer lies in its cavernous porosity and high permeability. The Edwards responds rapidly to recharge and heavy pumpage demands. Groundwater withdrawals from this aquifer have increased significantly since the drought of the 1950’s and continue to increase. Current groundwater withdrawals are far in excess of the average available recharge during the drought of record. Overdrafting of an aquifer occurs when the quantity of groundwater withdrawn exceeds the ability of the aquifer to recharge from rainfall. Consequences of this situation include increased pumping costs, degradation of groundwater quality, land subsidence, and in coastal areas seawater intrusion. None of these consequences have been observed in the Edwards. In the case of the Edwards, the major consequence of concern is spring flow diminishment in areas which have been designated endangered species habitat.

The general quality of water discharged from the Edwards continues to be good. Several agencies monitor water quality for contamination from either man-made or natural sources. The susceptibility of the Edwards to contamination is influenced by several factors such as population density, industrial development, agricultural development, pumpage, recharge from surface water that is of poor quality, areal extent of the formation outcrop, soil types at the land surface, and water quality differences between the Edwards and adjacent formations. Monitoring wells show no saline water or naturally occurring hydrogen sulfide encroachment into areas of heavy pumpage.

The "Edwards Issue" is characterized by competing interests represented principally by irrigation demands in the West, municipal pumpage demands in the central area, and recreational-based industries and other "down-stream users" in the East. The issue is further complicated by environmental and federal interests in the protection of endangered species dependent upon spring habitat. Lack of agreement among these disparate interests has prevented the development of a comprehensive management plan for the area.

The Edwards issue points out the need to address groundwater availability at the local and regional level. The importance of water supply concerns at those levels is evidenced by the significant level of legislative interest in the statutory framework for
district creation and by the number of new districts created in the last few legislative sessions. The concerns of local and regional interests are also evident in the increased activity of existing districts and the formation of the Texas Ground Water Conservation Districts Association.

Since the drought of the 1950’s, water withdrawals from the Edwards Aquifer have increased dramatically from an average of 220,000 acre-feet per year to approximately 538,000 acre-feet today. At present, withdrawals amount to more than 80% of the aquifer’s average annual recharge of 635,500 acre-feet. More notable is the fact that total average outflow from the aquifer, withdrawals plus spring flow, exceeds average annual recharge by approximately 50,000 acre-feet per year. At current levels of water use, the Edwards Aquifer has become highly vulnerable to drought.

A Recent History

The recent history of the controversy surrounding the Edwards Aquifer began in 1984-85 when regional interests, including downstream users, began intensive negotiations regarding an aquifer management plan. In 1987, the Legislature authorized the Edwards Underground Water District (EUWD) to develop a drought management plan, but by 1989, continuing discussions of pumping limits drove the western agricultural counties of Uvalde and Medina to withdraw from the EUWD. During the 1989 Legislative Session, various attempts to address the Edwards issue were unsuccessful and the Session ended without a solution.

In 1989, the Guadalupe-Blanco River Authority filed a lawsuit in state district court seeking to have the Edwards Aquifer declared an underground river and filed a citizen suit notice under the Endangered Species Act (ESA). Since state law provides that groundwater is private property unless it is an underground river or the underflow of a stream, a Court finding that the Edwards is an underground river would make the groundwater public property and subject to state regulation. The ESA has attracted substantially more attention because of the threat of federal intervention.

Activity surrounding the fate of the Edwards continued to grow as the Sierra Club filed a suit in 1991 under the ESA against the Secretary of the Interior and the U.S. Fish and Wildlife Service alleging that groundwater pumping threatens the endangered species in the springs and that the federal agencies have failed to enforce the Act against the groundwater users. The suit seeks to order the federal agencies to develop a management plan for the aquifer. In August and September 1991, the Texas Parks and Wildlife Department and the Texas Water Commission asked for representation in the suit by the Attorney General. The TPWD formally asked to be able to supply information and participate in a comprehensive solution and the TWC Chairman asked to be a neutral party. When the Attorney General requested intervention, however, he moved to intervene
as a plaintiff on the side of the Sierra Club. The pleadings filed on behalf of the state have been strongly objected to by municipal and agricultural interest. The outcome of the Court decision is expected by some in October, 1992.

Another source of controversy related to the Edwards issue, arose in September, 1991, when the Attorney General issued an Opinion in response to a request by the TWC, declaring that Section 28.011, Texas Water Code is not an unconstitutional delegation of legislative authority. Section 28.011 is a statute adopted in 1931 which gave the Board of Water Engineers the authority to "make and enforce rules and regulations for conserving, protecting, preserving, and distributing underground, subterranean, and percolating water located in this state and...do all other things necessary for these purposes." In 1941, an attorney general's opinion held that this statute conveyed the authority to regulate privately-owned wells. Five weeks later another opinion held that the statute failed to contain sufficient standards so as to be a constitutionally valid delegation of rule-making authority.

Upon receiving General Morales' opinion, the TWC stated its willingness to use the authority to intervene if necessary in the Edwards Aquifer if local interests were unable to reach a solution. At the request of Senator Montford, the Attorney General issued a clarification to his Opinion that said, "while I believe DM-54 is a correct interpretation of the law, the opinion would be insufficient legal authority for the Texas Water Commission to attempt to regulate the use of groundwater on the basis of Section 28.011."

In a continuing effort to encourage a solution to the Edwards issue, the TWC requested that Austin Mayor Bruce Todd mediate a series of meetings with Edwards users in search of an equitable solution. After numerous meetings, no agreement could be reached. The TWC then gave the users a deadline by which to come up with a management plan. Still no consensus was reached. The TWC then developed its own plan and asked that it be reviewed and accepted by a February, 1992 deadline. The TWC offered its concept paper for review in February, 1992.

The intent of the TWC in offering the concept paper was to provide guidelines for an acceptable and effective interim management plan for the Edwards Aquifer. The paper was also intended to provide a framework for the development and implementation of a long-range plan for management of the region's water resources.

The Commission sought to limit its own involvement to the following conditions:

- The aquifer is designated a "sole source" water supply with no effective management plan for an imminent and significant threat to public health, safety, welfare or water quality which may exist.
• In situations where the aquifer is not a sole source water supply, but the situation warrants state action, such action should be based on the following criteria:

There is an imminent and significant threat to public health, safety, welfare, or water quality; and

The area is not within an existing Chapter 52 underground water conservation district, or a district with the powers to regulate well spacing and water withdrawals; or

The Texas Legislature has given the Commission specific direction to manage groundwater in a particular area.

The key elements of the Commission’s proposed interim plan for management of the Edwards Aquifer were:

• Aggressive implementation of water conservation and water reuse programs resulting in an overall savings of 25% relative to current estimated water use;

• Emergency water conservation when the aquifer drops to a certain level;

• Determination of the feasibility of spring flow augmentation and enhancement strategies; and

• Accelerated acquisition of alternative water supplies, particularly by the City of San Antonio.

The plan further provided for development of a comprehensive long-range water management plan for the entire south-central region of Texas by the year 2002. The essential feature of the comprehensive plan is that it would provide for a higher degree of protection for aquifer levels and spring flow than that provided under an interim plan. Once again, there was not total agreement among the interested parties.

Finally, in the wake of the repeated failed attempts to negotiate a voluntary agreement for implementation of an interim management plan for the Edwards and for the development of a long-term regional water management plan, the commission issued and published emergency rules that redefined the Edwards Aquifer as an "underground river" subject to existing state law governing the allocation and use of state waters. The factors forming the basis for this action were:

• The southern portion of the Edwards Aquifer is the sole source of water for approximately 1.5 million Texans and supports a diverse regional economy that
provides 700,000 to 800,000 jobs and $13 to $15 billion in income each year. Because there is no comprehensive plan in place for the effective management of this resource, the State of Texas must act to protect the public health, safety, and economic well-being of its citizens.

• Under Chapter 26 of the Texas Water Code, the Water Commission has responsibility for the protecting the quality of the State's water resources. Commission staff have determined that the unfettered use of the Edwards Aquifer threatens the quality of state waters both within the aquifer itself and in the San Marcos and Guadalupe Rivers.

• The dispute over the proper management of the Edwards Aquifer is the subject of costly and protracted litigation in both the state and federal courts and the latter may result in the federal takeover of one of the State's most vital natural resources

Chairman Hall based his conclusion that the Edwards is an "underground river" on the physical and hydrogeological characteristics of the Edwards Aquifer. The following characteristics establish the Edwards as an underground river and subject to state regulation:

• It has well-known and defined boundaries;

• It has well-defined sources of water, approximately 80% of which is directly from surface water flows that enter the aquifer through recharge features associated with surface streams;

• The flow of water through the aquifer is relatively rapid and has a well-defined directional movement;

• The water flowing through the aquifer has well-known destinations in the form of natural discharge outlets at various springs;

• The flow of the Edwards Aquifer is of sufficient magnitude and volume to be serviceable to those whose land it flows under; and

• The aquifer provides habitat for fish and other aquatic wildlife both within the aquifer itself and in and near Comal and San Marcos Springs.

• The physical and hydrogeological characteristics of the Balcones Fault Zone portion of the Edwards Aquifer establish the fact that it is an underground stream and that the waters flowing throughout the Edwards Aquifer are therefore "state water" subject to Commission regulation under Chapter 11 of the water Code.
The TWC gave the following reasons as a defense for the action:

Reduction in spring flows caused by diversions from the Edwards Aquifer and/or insufficient "recharge" adversely affects the water quality, aquatic and wildlife habitat, and other instream uses of streams downstream of the Edwards Aquifer as well as bays and estuaries. A decrease in the quantity of water in a stream lessens its assimilative capacity for effluent discharges and other sources of pollution. Also, overdrafting the Edwards Aquifer itself may allow the intrusion of highly mineralized water from underground water adjacent to the Edwards Aquifer and otherwise held in check because of the hydrostatic pressure of the Aquifer. The aquifer under Chapter 26, Water Code in order to protect the quality of state waters within the aquifer and in related surface streams.

Commission regulation of the use of the Edwards Aquifer is not an unconstitutional taking of private property. Because waters of this underground river are unappropriated state waters, constitutional provisions relating to the taking of private property do not apply. Tex. Const., Art. XVI S. 59; Additionally, the regulation of the use of water from the Edwards Aquifer to protect water quality in accordance with Chapter 26 of the Texas Water Code is a valid exercise of the "police powers" of the state necessary to protect the public health, safety and welfare.

Reaction to the commission action was varied but universally excited. The GBRA sought declaratory judgement in its own lawsuit to declare the Edwards an underground river. Agricultural interests through the Texas Farm Bureau petitioned the Court for a temporary restraining order to stop the Commission. Some elected officials praised the action while others criticized it. High Plains officials in the Texas Panhandle over the Ogallalla Aquifer feared that a precedent was being set for aquifers to be declared underground rivers. Officials in the Guadalupe-Blanco River Basin area supported the Commission believing that the action would result in increased and stable water rights. Medina, Uvalde, Bexar County and San Antonio officials believed that withdrawals from the aquifer based on spring flows would dry up their economies. Others simply saw the Commission action as usurping the will and power of the Legislature. Public hearings were held throughout the state and Chairman Hall appeared to explain the commission action and to receive local responses.

In light of the failed attempts to encourage an agreement among the users of the Edwards Aquifer, the TWC pursued its own plan for management. Under the plan adopted by the TWC on September 9, 1992 total pumping from the aquifer would be limited to 450,000 acre-feet of water per year until 2008, when it would drop to 400,000. During dry periods, pumping would be reduced to 350,000 acre-feet per year. The TWC delayed implementation of the limits until June 1, 1993, in order to allow the Legislature to examine
the issue and possibly come up with a solution of its own. Users of Edwards Aquifer water must submit sworn statements to the commission detailing how much water they use. The deadline is November 1, 1992. The plan also extends a commission moratorium on most new wells until at least June, 1993. The commission also has the authority to allocate water use rights.

On September 11, 1992 State District Judge Pete Lowry of Austin ruled that the TWC rules are invalid halting the TWC attempt to regulate the aquifer as state water. On September 22, 1992 the TWC announced it would appeal Judge Lowry’s decision, but would delay implementation of the rules until the outcome of the appeal.

Testimony Before the Interim Subcommittee on the Edwards Aquifer

Testimony taken at a public hearing of the Subcommittee on the Edwards Aquifer soon after the commission’s designation of the Edward’s as an underground river included the following:

George Veni, a hydrogeologist specializing in karst aquifers, offered the following remarks about the Edwards: The Edwards is a karst aquifer and thus contains many underground rivers and streams, yet the underground river question addresses the status of the entire aquifer and not its component parts. Changing the name of the Edwards Aquifer to the Edwards Underground River would only add confusion to the literature on the Edwards Aquifer and is geologically unnecessary. Aquifers, by definition, are underground reservoirs of water contained in cracks, pores, crevices, and even rivers. Underground rivers are merely a type of aquifer.

Another point Mr. Veni made was that the key factor in the management of water withdrawal from any aquifer is that the aquifer’s average annual discharge cannot exceed its average annual recharge. The Texas Department of Water Resources Report 239, published in 1979, clearly illustrates that the springs in New Braunfels and San Marcos are simply indicators of the water balance for the Edwards Aquifer.

With regard to additional surface water supplies to supplement water needs of downstream users, Mr. Veni made the following points. Surface water dams will limit the amount of water available to surface water users since significant volumes would evaporate or be pumped up to San Antonio and other Edwards communities. Even if sufficient water is released for use downstream, dams trap tremendous amounts of sediments and nutrients vital to coastal fishing industries.

Karst aquifers contain large cavernous holds that allow for rapid recharge and discharge and consequently rapid contamination. Karst aquifers offer little or no filtration to their recharge. The primary reasons the Edwards Aquifer has been pure so far is
because first, until recently there has been no significant development of its recharge zone, and second, contaminants now entering the aquifer from these developments are being diluted by the massive amount of water in storage. This storage water is the same water that some people want to pump out of the aquifer for use, an act which would severely decrease aquifer effectiveness at diluting pollutants. TWC Report 89-01, published in 1989, lists the San Antonio segment of the Edwards Aquifer as Texas' second most sensitive aquifer to pollution. The most sensitive aquifer is the Barton Springs segment of the Edwards, which doesn't have the dilution capacity of the San Antonio segment. Like the issues of surface water and groundwater, issues involving water quality and water quantity are tightly intertwined.

Another factor identified by Mr. Veni in his presentation is recharge zone development which not only impacts aquifer water quality but also water quantity. Development of the recharge zone prevents recharge. In the late 1970's the City of San Antonio paid roughly $1 million for a study of the Edwards Aquifer. The results projected a year-2000 worse case scenario of the amount of development in Bexar County. By the mid-1980's, nearly twice the amount of that development was completed, in progress or planned. Rather than heed their own report and deal with the recharge zone cautiously, the City of San Antonio chose to encourage recharge zone urbanization through tax abatements and other incentives to developers.

Finally, Mr. Veni acknowledged that during the short term we will all have to adjust to the changes and improve efficiency in water use. However, for the long-term prosperity we must realize that a sustainable water management system is the only means of insuring personal and economic health. Management of a resource requires management of the entire resource. One agency, independent of municipal, agricultural and private interests, must be empowered to manage the equitable use of the interlinked surface and subsurface water resources of the entire Edwards region.

Recommendations From Various Interested Parties

I. Steering Subcommittee of the Edwards Aquifer Study Committee of the South Texas Geological Society; Steering committee formed in 1989

- A unified long-term master plan for management of the entire aquifer system should be developed and implemented.

- Surface and subsurface geological studies need to be supported and increased.

- The options of artificial recharge, reuse through reclamation and treatment, conservation techniques, and optimal reservoir utilization through development of well fields within localized fault blocks within the aquifer,
should be aggressively pursued.

- Technical studies of the augmentation of springflow by various means should be immediately undertaken and evaluated.

- There should be a publication of a nonpolitical newsletter to report all research contracts awarded, programs underway, and reports issued on the Aquifer from the active agencies.

- Legislation to provide for technical management of the aquifer in its entirety as one vast hydrogeologic system; to consist of technical people-geologists, engineers, hydrologists, and planners without conflicts of interest.

II. Texas Water Commission

The TWC urges legislation to re-constitute the Edwards Underground Water District as a new regional water authority that will manage the Edwards Aquifer. The district should have the power to administer Water Commission granted rights to use water from the Edwards Aquifer and should have the authority and financial means to implement regional programs for water conservation, water reuse, and water quality protection, as well as to acquire such alternative water supplies as may be necessary to meet future needs.

III. City of San Antonio

The City of San Antonio adopted a resolution requesting that the TWDB, TP&W, and TWC coordinate and seek funding for an indepth study to determine the environmental, economic and engineering and hydrogeologic feasibility of augmentation for springflow and/or downstream flow for the Comal and San Marcos Springs. The study should also include strategies for efficient management of the aquifer as a storage reservoir and a primary water source.

IV. 1990 State Water Plan Recommendations for Edwards Aquifer

- Recommends an aquifer pumping management policy but does not recommend a specific type of institutional approach. Recommends surface and groundwater conjunctive development/use strategy as solution to overall Edwards regional water supply problems.

- Using older Board model, recommends managed regional pumping to not exceed 425,999 acre-feet per year to protect spring flows at San Marcos Springs.
• Recommends statewide municipal conservation practices sufficient to result in overall 15% reduction in per capita daily use by year 2020. Application of this statewide percentage value would reduce regional municipal per capita use rate from 217 to about 185 gallons per capita daily.

• Recommends agricultural conservation practices sufficient to lower use per acre 20% by year 2020

• Recommends approximately 97,000 acre-feet/year reuse by year 2040.

• Recommends purchase and use of Lake Medina water as firm municipal supply. Also recommends study and potential acquisition of other existing surface water supplies in neighboring basins.

• Recommends study and potential acquisition of additional nearby groundwater supplies. Recommends need for aquifer recharge study.

• Recommends development of the Applewhite, Lindeneau, Cuero, Goliad, and possibly Cibolo reservoirs.

V. Components necessary for Edwards Legislation--San Antonio River Authority position

• A water management plan which will ensure that the San Marcos Springs will continue to flow and that any effects to Comal Springs will be minimized.

• Adopt current Drought Management Plan. Drought Management Plan may be modified, subject to approval of TWC, as necessary.

• Local administration by an expanded Regional District in Hays, Comal, Bexar, Medina, Uvalde and possibly other counties.

• The Regional District should have powers to tax, plan, educate, research, develop and broker water

• All Edwards wells should be registered. All Edwards wells should be metered except exempt domestic and livestock wells.

• Transfer of groundwater needs to be provided.
Recommendation

One of the most recurring proposals with regard to the Edwards is that the solution should be regional. The Committee recommends the creation of a regional district to provide day-to-day management of the aquifer. The district should have enforcement authority of its rules and regulations. Any legislation that addresses the Edwards Aquifer should also include components of recharge, conservation and drought management. In addition, the solution must be equitable and must respect private property rights.
WATER FINANCE
Introduction

Water is essential to the well-being of 17.6 million people in Texas and the thousands of businesses that provide jobs, yet a number of studies show that Texas currently spends very little on water infrastructure at the state level. Stiffer water quality standards, enforcement of pollution controls, fewer opportunities to develop new supplies and cutbacks in federal funding will drive up the cost for adequate, dependable supplies of clean water. In order to meet these rising costs and continue to fund the other pressing issues facing the state, Texas will be forced to identify and develop alternative funding measures.

Federal Involvement in Water Issues

In the past, most water-related projects in Texas have been funded by local and federal sources. Federal sources include the Soil Conservation Service, the Bureau of Reclamation, and the Corps of Engineers, the latter of which is involved in the construction of both major and minor surface water reservoirs. Financing of wastewater treatment facilities has been supplemented by funds from the Environmental Protection Agency, the Farmers Home Administration and the Department of Housing and Urban Development. The Farmers Home Administration and the Department of Housing and Urban Development have also helped in the development of water supply systems. However, federal financial assistance has been declining since the late 1970's and the trend is expected to continue.

The Clean Water Act

The Federal Clean Water Act (CWA), written in 1972, was amended in 1987 and is currently up for reauthorization, although it is not expected to pass this year. The amendments passed in 1987 created three major changes in the program. First, guidelines were established for the creation of the state revolving fund program (SRF). This program gradually shifts the financial burden from the federal government to the state governments for the construction of municipal wastewater systems. The program is funded by a series of yearly grants, based on population and needs, from the federal government. The grants gradually decrease until they are phased out entirely in 1994.
Between 1986 and 1990, $9.6 billion in direct federal grants was authorized to the states for the construction of wastewater treatment plants. During fiscal years 1989 through 1994, $8.4 billion was authorized to provide the states with seed money to establish SRFs to replace the federal grant programs. Funds destined for an SRF must receive 20% matching funds from the state. The SRFs are different from the federal programs they replace in the following two ways.

- Although subject to federal guidelines, they are administered by the states.
- They are loan programs, not grant programs, and require repayment of borrowed monies.

The CWA allows SRFs to be used for providing funding to address water pollution, such as nonpoint source pollution, groundwater, estuaries and wetlands, once a state fulfills the municipal wastewater treatment requirement.

A January, 1992 U.S. General Accounting office report, titled "State Revolving Funds Insufficient to Meet Wastewater Treatment Needs", indicated that the SRF program did not appear adequate to meet the future needs of states once federal funding for wastewater facilities stops. Among the reasons cited were the following:

- Few states expect to receive additional state appropriations when federal capitalization grants end in 1994.
- Most states are charging interest rates below inflation, thereby eroding the purchasing power of their SRFs.
- States that leverage their SRFs increase funds available in the short term but may have less capital available in the longer term.¹

The second major change created by the amendments to the CWA involves water pollution programs. Each state was required to prepare a nonpoint source pollution assessment and management plan to be eligible for any federal funds. These federal funds include grant funds for groundwater protection activities including research, planning, technical assistance, and groundwater assessments.

The third major change in the act is that stricter controls were placed on sources of water pollution such as sludge, toxics, stormwater, and nonpoint sources. This places an especially heavy burden on Texas, which, according to a 1989 EPA Report was responsible for 35.5% of toxic pollution nationwide.²
The Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was enacted in 1974 and subsequently amended in 1986. The act originally directed the EPA to develop, implement, and enforce national regulations to ensure the quality of public water supplies and protect the supply of drinking water from contaminants. A state can have its own drinking water program if the standards are at least as strict as those mandated by the EPA. To obtain approval, or "primacy", a state must adopt drinking water standards, regulations and other program elements that are at least as stringent as those developed by EPA, and have adequate enforcement authority. Texas has primacy. The amendments passed in 1986 required the EPA to establish drinking water quality standards for 83 contaminants. Previously, through its discretionary authority to establish standards for commonly found contaminants and set quality levels, the EPA identified and set standards for only 22 such contaminants.

The new standards and contaminants listed require more extensive testing and will undoubtedly require more expensive cleanup/treatment processes. Beginning in 1992, annual operating costs are expected to rise 58%, in addition to up front implementation costs, following the enactment of the new standards. The funding responsibility is approximately double the resources currently spent by states on drinking water programs. States also may be required to provide financial assistance to water supply systems without adequate revenue-raising abilities to bring them into compliance with the SWDA amendments.

The Burden of Cost

Since 1978, EPA’s operating budget and grants to states for air pollution, water pollution, and hazardous and solid waste control programs have dropped almost 37%. The cost of environmental protection is surpassing resources available to pay for it, thus widening the inevitable gap between program resources and program needs. According to a 1990 EPA study, the cost of environmental compliance with Federal environmental laws and regulations exceeds $100 million annually. Financial responsibility is increasingly falling to state and local governments who are faced with a myriad of other funding dilemmas such as education and prison reforms. Most states are struggling to meet the cost of existing environmental initiatives and will not be able to keep up with current trends of federal mandates without financial assistance.

Unfunded federal and state mandates tend to result in increased spending since the costs are not addressed. On average, state governments bear a relatively small share of the financial burden of environmental mandates, instead passing the costs on to private industry and local governments. These costs are passed on despite the fact that cities have access to fewer revenue sources and in some instances the municipal capacity to raise revenue has been restricted by higher levels of government. Cities must raise the additional funds by
imposing higher garbage fees, water rates and wastewater fees. In 1988, Texas spent less per person, approximately $6.76, than any other state on environmental programs.\(^6\) State aid to local governments in Texas for environmental quality amounted to approximately $3.09 per capita in 1990.\(^7\) Texas ranked 46th on the Green Index compiled by the Institute for Southern Studies, and 36th on water quality spending.

A recent survey done by the Texas Municipal League revealed that only 35% of Texans think that environmental programs should be undertaken regardless of cost, while 58% think costs should be considered. The survey also revealed that 53% of those surveyed would be willing to pay an additional 50 dollars every year in municipal utility fees to help clean up the environment. However, only 13% indicated they would be willing to pay $200 more per year for environmental cleanup, and the rate dropped to 5% when the additional yearly cost was raised to $500.\(^8\) These results indicate that while there is a general desire for a clean environment to live in, there is hesitancy about footing the bill beyond a certain level.

Similar sentiments were echoed by Austin Mayor Bruce Todd in a speech delivered to the Subcommittee on Water Finance in a public hearing. He stated that "push down laws" that place the financial burden on the municipalities would only work in the short-term. The municipalities will increase rates for services to pay for the new requirements mandated, but he believes it is unfair for federal and state environmental mandates to be unaccompanied by funding provisions. Municipalities are more and more often put in the position of having to raise local taxes and fees in order to meet the mandates and eventually the taxpayers will revolt.

Federal tax legislation, budget reductions, changes in cost-sharing requirements, and more stringent public health and environmental regulations are forcing state governments to turn to alternative financing approaches to supplement their environmental budgets in order to maintain current environmental quality standards and to implement new programs.

**Alternative Financing Mechanisms**

These alternative financing mechanisms (AFMs) provide revenues used to supplement federal monies and state general revenue to help fund state environmental programs and may include user and pollution discharge fees, environmental taxes, bonds and revolving loan funds among others. Although they are often successful sources of revenue, AFMs typically do not generate enough income to replace general revenues. A National Governor’s Association study sought to identify AFMs currently used by the states. Of 48 states and territories who responded, 44 identified 431 active programs:\(^9\)
<table>
<thead>
<tr>
<th>No. of programs/Percentage of programs reported</th>
<th>Type of program</th>
<th>Percentage of revenue raised</th>
</tr>
</thead>
<tbody>
<tr>
<td>272 (63.11%)</td>
<td>fee programs</td>
<td>7.5%</td>
</tr>
<tr>
<td>37 (8.58%)</td>
<td>tax programs</td>
<td>15.35%</td>
</tr>
<tr>
<td>32 (7.42%)</td>
<td>bond programs</td>
<td>39.23%</td>
</tr>
<tr>
<td>19 (4.41%)</td>
<td>revolving loan funds</td>
<td>18.67%</td>
</tr>
<tr>
<td>71 (16.47%)</td>
<td>other</td>
<td>19.25%</td>
</tr>
</tbody>
</table>

Through all the reported AFM programs, the total amount of funds raised annually was approximately $3.2 billion. Of these proceeds, approximately 92% were dedicated to a specific environmental program. According to the results of the survey, states reported that AFMs contribute 14-19% to their operating budgets for air pollution, water pollution, and hazardous and solid waste control. The principal sources of new money for water quality programs generally are fees, which are assessed primarily to offset program administrative costs, and bond proceeds, which are used to provide financial assistance to water systems for infrastructure improvement.

**Fees**

Fees are generally used in pollution control programs such as vehicle and facility permits, hazardous and solid waste permit and disposal fees, pollution discharges which include emissions, effluent, or waste generation fees, and consumption fees such as for water use. Fees work advantageously in the following ways:

- It is generally agreed that fees can be successful revenue sources when the revenue base is broad.

- Fees can raise revenues from the parties either responsible for an environmental problem or benefitting from a service funded by the fees.

- Substantial fees, especially discharge fees, can serve as an incentive to encourage environmentally responsible behavior.

However, there are disadvantages to fees as follows:

- Administration such as collection, budget estimates and allocation can be burdensome and costly.

- Fees tend to be a poor source of capital for infrastructure development because they generally cannot produce a large enough pool of money.
• Extensive use of fees may create competition between different government programs, as there is a limited amount of disposable income the public can afford to spend on fees.

• Fees may have unforeseen economic impacts. Companies may decide to locate plants outside the state’s borders if the fees are perceived as too burdensome.

Nearly all states impose fertilizer and/or pesticide registration fees on manufacturers, as well as license or permit fees for dealers and/or commercial applicators. Until recently these fees have been low and used primarily for administrative and regulatory costs. Taxes and fees enacted or considered by state legislatures generally fall into the following categories:

- Registration fee for each product/brand (flat fee or by sales volume)
- Registration fee per manufacturer by total sales volume
- Dealer permit fee
- Retailer registration fee
- Applicator certification fees and use permits
- Fertilizer inspection fees
- Sales taxes or surcharges on the product
- Permit fees for using chemigation systems
- Retailer registration fee
- Groundwater inspection fees
- Tax on specific pesticides

If fees are the primary revenue source for a state water program, they should be set high enough to cover the full costs of administering the program. Since public perception is that water is cheap and plentiful, it is often difficult to raise fees once they are established.¹¹ For drinking water, fees may be charged to review and certify water supply facility construction plans, monitor drinking water quality, and analyze water samples for presence of contaminants. The most commonly proposed fee options are based on water use, service connection, population, and cost of service.

Water use and service connection fees, while straightforward and easily collected through regular billing, may force large community systems to contribute more than the value of the services they receive from the state program. A population-based fee offers a simple, stable, annual source of revenue, but large systems are likely to pay more than the cost of services received since it is often difficult to determine the population served. With a cost-of-service fee every public water supply system pays the actual cost of services received, but, unfortunately, the fee is often costly for noncommunity and small community systems with fewer customers. Non-compliance fees may be assessed on public water systems that fail to comply with department regulation, but the amount of revenue raised is unpredictable.¹²
The NGA report revealed that the average water program fee generated approximately $536,000. These results were generated by survey data from 30 states with a total of 86 water program fees. The survey also revealed that of the total amount of fee revenue, 77% was generated by permit fees, water rights applications, and training and certification fees for water management personnel. Monies raised from training and certification fees generally help cover administration costs and revenues from water permit fees are used most often to fund groundwater protection and water quality improvements.  

Texas’ Fee System

The Texas Water Commission (TWC) maintains a fee system for various environmental activities. These fees range from water quality assessment fees to disposal fees for radioactive materials. Most of the fees have some form of unit maximum or dollar ceiling imposed on them by statute. A properly designed fee should afford the TWC the ability to monitor pollution and enforce its regulations. As the pollution volume drops, the need for monitoring will decrease just as the funds to support monitoring drop off due to less revenue from enforcement penalties. Currently the TWC administers 21 dedicated funds or special accounts.

The current funding sources in Texas specifically for water programs include General Revenue Appropriations, SB 818 (Rider 25), application fees (Rider 30), TWC Administrative Fund (041), Water Quality Fund (153), Water Rights Administration Fund (158), Water Utility Fund (172), Texas Spill Response Fund (452), Water Assistance Fund (480), Waste Treatment Facility Inspection Fund (519), Public Service Fee Fund (524), Hazardous Waste Disposal Fee Fund (550), Petroleum Storage Tank Remediation Fund (655) and federal funds. The federal funds are used to perform work for federal agencies, predominantly EPA, that complement the state water quality protection programs.

The General Revenue Fund (001) is funded by the following: Legislative appropriation; regional water quality assessments, levied under SB 818, 72nd Legislature; on-site wastewater research fees, permit fees and installer fees; residential water treatment fees; water supply system operator fees; plumbing fixture inspection fees; nuclear license and registration fees; miscellaneous application fees; municipal solid waste disposal fees, transporter registration fees, and solid waste training fees. Half of the revenue is dedicated to municipal solid waste permitting and enforcement programs and related support activities. The other half of the revenue is dedicated to pay for activities that will enhance the state’s solid waste management program such as providing for technical assistance, recycling, supplemental funding to local governments, public education, research, creation of state municipal solid waste Superfund for cleanup; and waste tire recycling fees and interest, the revenues of which may only be used for the waste tire program.
The Texas Water Commission Administrative Fund (041) receives monies from interagency contracts and reimbursement for reproduction services which is to be used for the specific purpose of the contract or to recover costs of the services provided.

Revenue sources for the Water Quality Fund (153) include district bond application fees and district bond proceeds fees, which are to be used to supplement other funds available to pay expenses of supervising bond and construction activities of water districts. The utility assessments collected from a district, water supply corporation, or public utility may be used solely to pay the costs of regulation of the respective entity. A portion of the assessments shall be used for on-site training and technical assistance to the service providers.

The Water Rights Administration Fund (158) is funded by the Rio Grande watermaster fees and the South Texas watermaster, whose assessment rates are established annually to recover revenue required to meet budgeted expenses of the Watermaster offices.

The Water Utility Fund (172) consists of utility regulatory assessments and penalties. The assessments are collected from districts, water supply corporations and public utilities and may be used solely to pay the costs of regulation of the respective entities.

The Texas Spill Response Fund (452) consists of money appropriated by the legislature and any fines, civil penalties or reimbursements authorized by the Water Code, Chapter 26, subchapter G. The money may be used only for the purpose of obtaining personnel, equipment, and supplies required in the cleanup of discharges and spills, including restoration of land and aquatic resources held in trust or owned by the state.

The Water Assistance Fund (480) monies are to be used to implement the provision of SB 1543, 72nd Legislature, regarding cost-sharing programs and federal flood control feasibility studies in the Trinity River Basin.

The Waste Treatment Facility Inspection Fund (519) derives its revenue from waste treatment inspection fees, wastewater operators certification fees and Edwards Aquifer fees. The fund is used to supplement any other funds available to pay expenses of the commission in inspecting waste treatment facilities, to pay for issuance and renewal of certificates of competency for wastewater operators, and pay for processing plans or amendments to plans and inspecting the construction of projects over the Edwards Aquifer.

The Public Health Service Fee Fund (524), which is funded by public health service fees, is used to recover the costs of providing specific services such as water hygiene and public drinking water programs. The Department of Health currently collects these fees on behalf of the Water Commission since that authority was not transferred under SB 2 with the water hygiene program.
The Hazardous and Solid Waste Remediation Fee Fund (550) generates money from hazardous waste management fees, lead acid battery fees, waste oil fees and interest. The money may be used for removal and remedial action at sites where solid waste or hazardous substances have been disposed if funds from other sources are not available; maintenance of removal or remedial action for the expected life of the actions if funds from other sources are not available; expenses concerning compliance with Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); expenses concerning the identification, enforcement and cleanup of sites representing an imminent and substantial endangerment to the public health and safety or the environment; expenses concerning the regulation of household and other hazardous substances; and expenses concerning the cleanup or removal of spills or releases of hazardous substances.

The Petroleum Storage Tank (655), funded by bulk delivery of petroleum products, was designed to pay the expenses associated with the investigation, cleanup or corrective measures performed in response to a release or threatened release from a petroleum storage tank, whether those expenses are incurred by the commission or pursuant to a contract between a contractor and an eligible owner or operator. Up to 3% of the incoming revenue may be used for administrative purposes.

Taxes

A tax is a broad based assessment designed to provide widespread benefits. Taxes can be assessed on income, sales, property, or production of a product. Due in part to a large base, taxes tend to generate significant amounts of revenues. Benefits of tax programs include the following:

- The potential to raise large amounts of revenue over a broad base of sources. Due to the widespread benefits of water supply and water quality programs, taxes serve as a good revenue generating mechanism.

- A framework generally already exists through which to levy and collect taxes.

- Taxes, like fees, have the ability to encourage environmentally responsible behavior.

The following are disadvantages to taxes:

- In some cases, the best revenue-generating tax may not have a direct link to the ultimate use of the revenue.

- New taxes require legislative approval and specific mandated limits may exist for taxing.
• Commodity taxes are regressive because they are not based on the ability to pay.

• In today's tight financial times, the public is very adverse to any type of new taxes. There may be substantial political consequences attached to any type of tax proposal.

The NGA report identified a total of 37 tax programs in 16 states, which were reported to generate $491 million, a majority of which goes to dedicated purposes.\textsuperscript{14} Of the states using taxes to fund environmental programs, 16\% of these taxes were employed in the funding of water programs. Five states reported that water program taxes generated about $88 million in annual revenues. The average water program tax generated about $15 million. Environmental taxes are usually levied on articles of pollution or the sale of products that contribute to pollution, hence an often narrow revenue base.

Taxes may also be levied on products not directly related to the environment in order to widen the revenue base and utilize existing tax collection mechanisms, thus reducing the administrative burden. Approximately 50\% of the revenues came from "sin taxes" levied against alcohol and cigarettes. These revenues are earmarked for a wide variety of programs, including water cleanup activities, litter control, and matching grants for local governments for water quality enhancement or facility improvements.\textsuperscript{15}

An April, 1991 survey by the State Comptroller's Office sought to identify revenue alternatives. One of the proposals in the report was to repeal the sales tax exemption on water. States tax water on one or a combination of levels: residential, commercial, agricultural and manufacturing. Currently, 12 states tax residential consumption and 23 tax industrial consumption.\textsuperscript{16} Based on data obtained from the TWC and TWDB on the number of water connections and consumption per connection, the physical volume of water sold was estimated. Using this estimate coupled with the Comptroller's economic forecast, the following estimates of generated revenue were developed.

Fiscal Impact, 1992-1996 \textsuperscript{17}

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1992</td>
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<td>$ 79,542,000</td>
<td>$ 40,797,000</td>
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<td>1995</td>
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<td>1996</td>
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39
<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Gain/(Loss) to General Revenue July 1992 Start</th>
<th>Gain/(Loss) to General Revenue October 1992 Start</th>
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<tr>
<td>1996</td>
<td>119,901,000</td>
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</tbody>
</table>

**Bonds**

Bonds are the major source of funds for large capital projects such as sewage treatment, water supply, and solid waste facilities. Bond proceeds are used primarily to provide financial assistance to local water and wastewater systems to finance infrastructure costs to ensure compliance with drinking water standards. Bonds have been traditionally used as a source of funds for bond banks or direct loan programs and have also been used for capitalizing revolving loan funds or providing grants. General obligation bonds are backed by the full faith and credit of the issuing entity. Revenue bonds are backed by the revenues generated by project operation. State and local governments repay this debt by levying taxes or fees on their citizens. State-issued bonds may offer lower interest rates than private-market financing and interest payments on general obligation bonds are generally exempt from federal taxes. General obligation bonds require legislative or voter approval in most cases and each time the state issues general obligation bonds, part of the state's total borrowing capacity is consumed. Revenue bonds do not require voter approval or count against the state's borrowing power but they often carry a higher interest rate than general obligation bonds. There are a number of advantages to bond financing as follows:

- A large amount of money is made available in a short period of time.
- The cost of paying for an asset with a long life is not just borne by today's users, but rather by the users who will benefit over a number of years.
- A state usually borrows money at a lower rate than a community and passes the savings on to the local taxpayer.
- A state can reduce administrative costs by floating one large bond issue that covers many local projects, instead of requiring every community to issue its own bonds.
- States assist communities by issuing bonds and offering a discounted loan to local governments.18
According to the NGA survey, twelve states authorized, but did not necessarily issue, more than $1.2 billion in general obligation and revenue bonds to fund environmental projects, the proceeds of which ranged from $20,000 to $150 million. A large portion of the bond proceeds is dedicated to provide seed money to set up a revolving loan fund. Other uses include cleanup activities, pollution control and waste resource recovery plants. The limitations and reporting requirements under the Tax Reform Act of 1986 have made tax-exempt bonds more difficult to issue for some purposes.

Texas has one of the oldest water assistance programs in the country. Involvement in financing local water infrastructure has been guided by legislative directive to assist hardship political subdivisions, such as communities that cannot sell bonds or cannot sell bonds at a reasonable rate in the public market. The Texas Water Development Fund was established in 1957 in response to the droughts suffered by Texans during the 1950's. In 1985, the Legislature expanded the policy purposes to be supported by State financing by adding conversion from ground water to surface water supplies, flood protection, and development of regional facilities. Financial eligibility was extended again by the Legislature in 1989 to include subsidized assistance to Economically Distressed Areas. The financing programs in place at the Texas Water Development Board cover a broad array of needs.

Texas’ Bond Programs

* Water Development Fund

The Texas Water Development Fund (Fund) was created in 1957 in reaction to the droughts of the 1950s. The Fund is used to finance various types of projects through sub-funds. Over the life of the Fund, its powers have been expanded to the point where it has received voter approved authorization to issue $2,680,000,000 in Water Development Bonds. These are general obligations of the state of Texas. To date, none of the $969,190,000 in projects have defaulted. The amount of general obligation bonds remaining that can be issued in the various sub-funds are listed below, as well as a brief description of the types of projects covered by each sub-fund.

<table>
<thead>
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<th>Sub-Fund</th>
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<tr>
<td>Water Development/Acquisition</td>
<td>$420,710,000</td>
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<td>Reservoirs</td>
<td>$ 0</td>
</tr>
<tr>
<td>Water Quality Enhancement</td>
<td>$449,405,000</td>
</tr>
<tr>
<td>Flood Control</td>
<td>$240,695,000</td>
</tr>
<tr>
<td>State Participation - Reservoirs</td>
<td>$400,000,000</td>
</tr>
<tr>
<td>Agricultural Water Conservation</td>
<td>$200,000,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,710,810,000</strong></td>
</tr>
</tbody>
</table>
A total of the $250 million from the 1989 authorized $500 million in the water development/acquisition and water quality enhancement projects funds is dedicated for the Economically Distressed Areas Program (EDAP).

The Water Supply Account finances such water related projects as water wells, retail distribution and wholesale transmission lines, storage tanks, and water treatment plants.

The Water Quality Enhancement Account finances such wastewater related facilities as sewage treatment plants and collection systems. It is also used to finance municipal solid waste disposal projects.

The Flood Control Account finances the following:

- construction of stormwater retention basins
- enlargement of stream channels
- modification or reconstruction of bridges
- acquisition of floodplain land for use as public open space
- acquisition and removal of buildings located in a floodplain
- relocation of residents of buildings from a flood plain, and
- development of floodplain management plans.

Through the State Participation Account, the Board also has the ability to participate in the acquisition and development of certain projects. The state may purchase an interest (not to exceed 50%) in a reservoir, regional water supply project, or regional wastewater treatment project. This will allow construction of the project to optimum size and the oversizing of transmission and collection lines to allow for some growth. The state's portion is to be purchased by the political subdivision from the state when it is used. The State Participation Account was established in 1985 and has not been used.

The Economically Distressed Areas Program account is used to fund construction, acquisition, or improvements to water supply and wastewater collection and treatment works, including all necessary engineering work. The program will not fund ongoing operation and maintenance expenses and applies only to areas of the state that meet the definition of an "economically distressed area."

* Water Assistance Fund

The Water Assistance Fund is funded through appropriations made by the Legislature and consists of the following subfunds listed below.
The Water Loan Assistance Fund provides loans to eligible political entities for water supply and treatment projects and wastewater treatment projects.

The Storage Acquisition Fund is used to purchase an interest in reservoirs.

The Research and Planning Fund provides 50 - 50 matching grants for water research, flood protection, and regional water supply and wastewater treatment facility plans. In order to be eligible to receive a grant, the TWDB must identify a problem area and solicit an application. The planning area project must involve more than one political subdivision.

* Agricultural Water Conservation Fund

Agriculture accounts for about 60 to 65% of the water used in Texas. In 1985 $200 million was authorized for the Agricultural Water Conservation Fund. The Fund, implemented in 1989 after evaluation of the Pilot Loan Program, can be used to make conservation loans directly to borrower districts and to lender districts for purchasing and installing more efficient irrigation equipment and for funding improvements to existing facilities. Lender districts in turn can make loans to individual borrowers for use on private property. However, due to IRS interpretation, bonds for this use have been declared "private activity" and therefore taxable which makes them unattractive to borrowers. The agricultural water conservation bonds have yet to be utilized. The Board has established a pilot loan program using cash proceeds from other sources for grants and low interest loans on agriculture conservation projects.

* Agricultural Trust Fund

The Legislature authorized the $10 million Agricultural Trust fund as a source of financial assistance to promote agricultural soil and water conservation. The Agricultural Trust Fund consists of money transferred to that fund from the Water Assistance Fund, money appropriated by the legislature, interest earned on the money in the Agricultural Trust Fund and other revenue required by law to be deposited in the Fund.

Money maintained as principal in the Agricultural Trust Fund may not be spent for any purpose. Half of any money earned as interest on money maintained as principal in the Fund shall be deposited to the credit of the Agricultural Soil and Water Conservation Fund.

* Agricultural Soil and Water Conservation Fund

The Agricultural Soil and Water Conservation Fund consists of funds transferred from the Agricultural Trust Fund, direct appropriations, and other revenues required by
law to be deposited in the fund. Funds are used for the 75% matching grant program to allow local conservation districts and irrigation districts to purchase equipment used to evaluate or demonstrate efficient agricultural water conservation practices and to escalate quality of water for agricultural uses.

This program provides funding for agricultural water conservation technical assistance programs, agricultural water conservation programs, education and demonstration programs, purchase of equipment, grants to underground water conservation districts, research, desalination, weather modification, programs for developing on farm soil and water conservation plans, research and demonstration of native and low water use plants and water efficient crops, low interest loans for the purchase of agricultural water conservation systems, and brush control research and education.

Bond Insurance Program

Texas has had a bond insurance program, backed by a $250 million general obligation pledge, since 1987. However, it has not yet been utilized because it has not proven to be cost effective.

State Revolving Loan Funds

The State Revolving Fund (SRF) can provide financial assistance to political subdivisions through loans, loan guarantees, interest buy-downs, and bond insurance. As borrowed funds are repaid, the SRF recycles the money into new loans for other projects. The SRF provides low-interest loans to eligible political subdivisions for the construction, improvement, or expansion of sewage treatment and collection facilities, non-point source pollution control projects and stormwater discharge management plans. It is funded through a combination of federal grants and state bond funds.

To be eligible for SRF financing, an applicant must be a political body with the authority to own and operate a sewage system. Entities repay the loans with revenue raised from user fees, tax assessments, and utility system rates. Loan repayments are used to maintain the ability of the fund to provide loans to future borrowers. The advantages of SRFs are 1) the potential for states to use the funds perpetually to provide funding for water quality needs which can eliminate the need for future federal assistance in the effort; 2) the federal government has allowed the states to develop the structure of their individual SRF to meet needs determined by the state; and 3) program administrative costs (currently limited to a cap amount) can be paid by the SRFs. Disadvantages to the SRF are that there has been extensive federal oversight in the start up period for the programs and the program by law can only be used to fund water quality needs.

Several changes have been suggested to make SRF programs better meet the needs
of communities throughout the nation. These include:

The loan term is now capped at 20 years. This term may or may not coincide with the life expectancy of the facility being constructed, depending on the type. Thus, current customers of a facility with a longer life expectancy pay off the loan. If the facility has a life expectancy of over 20 years, present customers, are paying for a facility that will benefit future customers.

The SRF funds cannot be used to purchase the land or easements for the construction of a facility. This can be a sizeable portion of the investment in a facility and may ultimately lead to a project being canceled if the political subdivision cannot secure the funds to acquire the land.

The U.S. EPA now limits administration cost of the SRF to an amount not to exceed 4% of the federal portion of the fund. If federal grant funds are reduced or eliminated in future years, there is no provision to allow states to help pay for reasonable administrative costs through their contributions to the fund. This limitation should be removed so that necessary and reasonable administrative costs can be paid from the fund.

Current eligible needs for the SRF program resulting from the 1987 CWA go far beyond the basic wastewater infrastructure compliance and maintenance programs on which estimates of capitalization needs were originally based. At the same time, Federal appropriations for SRF capitalization have fallen $1.9 billion short of authorized levels through FY 1991. At least $2 billion per year should be appropriated for FY 1992, 93 and 94 to achieve the full $18 billion authorization level and to recover money lost in earlier years as a result of reduced appropriations. Further, a commitment of $2 billion in SRF capitalization per year should be committed for a minimum of five years beyond FY 1994 to provide adequate loan assistance for needs created by the mandates of the 1987 Act.

Texas’ SRF

Since 1988, federal funds have flowed to Texas to capitalize its SRF loan fund for water quality projects. Texas expects to ultimately receive about $530 million for SRF capitalization. Although the State enabling legislation allows for the use of appropriated money to provide the 20% state match required to receive these federal grants, no appropriations bill designating state general revenues to be used to provide the match has been introduced to the Texas legislature. Instead, previously authorized state general obligation debt has been used to provide the match. However, repayments on loans made from the Texas SRF are being used to repay the general obligation debt. This practice drives up borrowing costs and effectively shifts the match requirement from the state to
program participants.

In addition to the use of general obligation bonds, the state is using revenue bonds secured by the SRF to provide loan funding. This method, known as leveraging enables the state to maintain a relatively constant amount of loan funds available to all borrowers, avoiding sharp drops in funding levels due to the projected end to federal funding in FY 1994. It also avoids encumbering the state for any more than the required 20% state match being provided by general obligation bonds.

In a survey used in preparing the GAO report, Texas initially indicated that its SRF would not be sufficient to meet the needs of disadvantaged communities. The introduction of the Economically Distressed Areas Program (EDAP) has relieved some of the pressure on the SRF to assist these disadvantaged communities. The EDAP uses general obligation bond proceeds to provide grants and loans to assist disadvantaged communities primarily along the border with Mexico. There currently is not a state-wide program that is able to meet the projected needs of disadvantaged communities outside the EDAP eligible areas.

Additional Revenue Raisers

Other revenue raising programs which do not fall under the above categories include special financing districts, such as road districts, sewer and water districts and other local service districts; fines and penalties imposed for violations of state laws; recoveries from responsible parties; private contributions; lottery proceeds; investment income; and loan repayments. Although a good source of additional funds, the above efforts do not provide a consistent or dependable source of revenue.

The issue of "green fees" on household chemical products such as chemicals, cleaners, solvents, pesticides, and fertilizers is an often discussed topic when looking at generating revenues. Fees on household chemical products and lawn and garden chemicals may be used as a means of educating consumers about potentially hazardous products, financing collection and disposal programs for such products, and financing at least part of several State environmental programs in nonpoint source management, hazardous waste regulation, air quality management, and pollution prevention plus assistance to local and regional entities. Revenue generated from a state fee on agricultural pesticides and fertilizers may be directed primarily to agricultural nonpoint source pollution and pesticide programs. This type of fee currently exists for products such as tires and car batteries and expansion of these fees is being studied by the Revenue Subcommittee of Task Force 21.

Container collection programs have been tested in several states. The idea here is one of prevention, rather than cleanup. A December 1991 GAO report, which highlighted the costs of protection versus the cost of cleanup, showed cleanup to be much more expensive.
The lottery may also be used to raise revenues. Environmental and "sin" taxes are attractive because they have the potential to raise significant revenue, but they are unpopular both publicly and politically because of inherent opposition to taxes in general and because they are already quite heavily taxed.

Fines and penalties should be of such a magnitude that they act as a deterrent to irresponsible behavior. There should be an economic disadvantage to having to pay the penalty. Not only must the fines and penalties exist, they must be widely publicized and vigorously enforced. Fines are strongly supported by the public and ideally encourage behavioral modification to reduce or eliminate pollution discharges. Unfortunately, fines are not a consistent source of revenue and collection may be difficult with small communities and districts in financial trouble.

A number of problems are associated with the use of AFMs. A reluctance to impose additional control costs on industries emerges out of the fear of discouraging industrial development or causing industries to leave the state, thus damaging the economy. AFMs generally lack political support. The risk that administrative costs to start up and manage AFM programs could exceed generated revenues also works against the use of AFMs. Also, fluctuations in annual revenues do not guarantee a steady or specific level of funding. Concern has been expressed that if dischargers pay a substantial portion of the program costs, they may assert greater influence in the state's environmental policy decision making process. Another argument is that tax dollar not user fees should be used to fund environmental programs because environmental protection benefits all. There is also the fear that revenues collected through AFMs may be offset by a reduction in GR.

Management of a state program's finances is important. Effective financial management can directly link revenues to specific program activities and can increase revenue levels between the time the money is collected and the time it is disbursed by accruing interest. Two such management mechanisms include the state budget process and independent financial management. The state budget process, the most commonly used mechanism, involves primarily the collection of fees. The Legislature allocates the funds to specific programs which are monitored on a yearly basis. Although the legislature enjoys close control over the funds, the process forces competition between water programs and other funding needs. Although the legislature loses some oversight and control through independent financial management, the state is saved from appropriating additional future funds when left over money remains with the account and generates interest. Three types of independent financial management mechanisms include trust funds, environmental endowments and SRFs.

Trust funds are established to manage funds derived from fees, fines and taxes and earmarked for specific purposes. The funds may be created constitutionally or legislatively. The main advantage to statutorily created funds is that the legislature has oversight
opportunities to ensure that the funds are collected and appropriated annually for the purposes identified in the legislation. Environmental endowments are independent legal entities, many of which grew out of large legal settlements for environmental violations. If large enough, the endowments can be a significant source of revenue. SRFs were discussed previously in this report. They can provide financial assistance to local communities through loans, loan guarantees, bond insurance, and interest buydowns. They are popular because they operate perpetually. Current grant and loan programs for water supply could be combined and used to capitalize a revolving fund to make low-interest loans to states and localities for use in expanding or rehabilitating water supply systems. Currently SRFs are only authorized to aid in wastewater treatment facility construction and pollution programs.

States can also consider reforming water price schedules to reflect seasons and peak water demands. Studies of urban water supply show that a 10% rise in price will cause consumption to fall between 3 and 11%. This action could also bring more capital to water utilities at a lower interest rate, in addition to possibly reducing demand.

States can establish bond pools or "bond banks" for local issues. The state purchases locally issued debt with the proceeds from bonds issued by the "bank". Local debt carries an interest rate equal to that paid by the bond bank to its lenders plus an amount to cover administrative costs. Bonds are backed with payments received on local bonds; by a lien on state-aid payments to localities; and with the presumption by the lender that the state has a "moral obligation" to repay the bond bank debt in case the localities default.

Water marketing is another method identified for making revenue available for water programs. Markets for trading water work well only if unambiguous, transferable and quantifiable. Testimony given at a public hearing of the subcommittee included the recommendation to examine the feasibility of establishing an Urban/Industrial Water Conservation Loan Program for Retrofits partially paid for by Industrial/Urban Expansion. New business and industry would pay into a fund to acquire "available water." Companies who use large quantities of water could get credit for a part of their retrofits in return for freeing up water for other users, thus encouraging water marketing on a local basis.

The role of states and local governments in water quality assurance has increased dramatically in recent years. The financing of water needs is one of the core requirements for Texas to continue to prosper in the future as it has in the past, but the best of intentions will fail if not backed by adequate, equitable financing. Therefore, the policies adopted for water resource management need to be complemented by a capable financing program. States must take into consideration equity, acceptability, administrative requirements, flexibility, revenue potential and impacts when considering a new funding source.
Conclusion

Financing water quality initiatives will be a vital question for the 73rd Legislature. The State of Texas has reached a critical point with regard to financing water quality initiatives. Federal assistance is declining, but federal mandates are not. Localities cannot bear the costs of environmental programs without state assistance. Given the tremendous importance of water resources for our economy and our quality of life, Texas cannot afford to stand idly by as our ability to finance water quality initiatives declines.

However, the State must also recognize fiscal constraints. Even with a successful lottery and moderate economic growth, the revenues to State Government fall well short of projected needs. Estimates of the deficit in "current services" budgets range in the billions of dollars. It is therefore not realistic to assume General Revenue will be available for water quality initiatives. In the absence of alternatives to federal and state general revenue funding, water quality programs will suffer.

At the request of the Governor's Transition Committee, the Revenue Subcommittee of Task Force 21 has been looking at the funding needs of the new environmental agency, the Natural Resources Conservation Commission. The subcommittee has been looking at strategic plans and priorities, agency productivity under existing revenue mechanisms, the potential for funding under existing authority, and possible alternative revenue sources.

Preliminary assessments indicate needs in remediation, pollution prevention, water quality, and air quality programs. Water quality programs are the major environmental programs which will require additional revenue. These programs, which include household and agricultural pesticide collection programs, water quality monitoring programs, and programs aimed at reducing or preventing non-point source pollution, currently depend largely on General Revenue and are underfunded.

The State has several avenues to help meet water quality needs. Alternative funding mechanisms, better management practices, and changes to promote more flexible programs will help our state meet the water quality demands of the future. Without these programs, the continued health and welfare of this state are in jeopardy.
Recommendations

1) The Legislature should work with the Office of State and Federal Relations and the Texas Congressional Delegation to take the following action on the federal level:

Expand the state revolving fund (SRF) loan terms from 20 to 30 years,

Allow the use of SRF funds to purchase land and easements which are substantial costs to capital projects,

Amend the Tax Reform Act of 1986 to allow for the issuance of tax exempt state bonds such as the Texas Agricultural Water Conservation Fund bonds,

Provide federal funding for federal mandates,

Expand SRF authority to authorize the use of SRFs for expanding or rehabilitating water supply systems.

2) The subcommittee should continue to work with Task Force 21 on an agenda for the next legislative session. The subcommittee shall set as its goal ensuring adequate funding for water quality initiatives which will otherwise be underfunded in the coming years. This work should include the following:

Utilization of existing revenue mechanisms to fund programs with additional needs where appropriate,

Funds consolidation to achieve greater efficiency,

Implementation of a broad-based product fee as a revenue source for household hazardous waste collection on the state and local level,

Examination of a repeal of the sales tax exemption on water,

Consolidation and additions to the bond programs to increase utilization rates. Outdated or unused programs should be considered for elimination or consolidation.

3) The State Comptroller should investigate independent financial management of water quality funds to maximize state revenue. The Comptroller should recommend the use of trust funds and environmental endowments where appropriate.
4) Water marketing should also be examined as another method for making revenue available for water programs. Markets for trading water work well only if unambiguous, transferable and quantifiable. Examine the feasibility of establishing an Urban/Industrial Water Conservation Loan Program for retrofits partially paid for by Urban/Industrial expansion. Companies that use large quantities of water could get credit for a part of their retrofits in return for freeing up water for other users, thus encouraging water marketing on a local basis.

5) Fines and penalties should be of such a magnitude that they act as a deterrent to irresponsible behavior. There should be an economic disadvantage to having to pay the penalty.
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3 National Conference of State Legislatures States as Water Quality Financiers: Legislative Options for the 1990s. Denver, CO May 1991


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7 Texas Municipal League Survey

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10 NGA report

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12 National Conference of State Legislatures Financing Clean Water.

14 NGA report

15 NGA report


17 Texas Revenue Alternatives A National Survey on Alternatives and Comparisons John Sharp, Texas Comptroller of Public Accounts, April 1991

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23 National Conference of State Legislatures States as Water Quality Financiers
WATER CODE REVISIONS
Introduction

During the interim prior to both the 71st and 72nd Legislatures, the House Committee on Natural Resources studied the operation of water districts. The Water District Subcommittee project began during the interim preceding the 71st Legislature with hearings held throughout the state to investigate organizational and financial problems with local water districts. During these discussions, the Subcommittee discovered confusion among citizens and within the water districts themselves as to which laws applied to them. This confusion arose in part because of the lack of procedural uniformity between the different types of districts in the Water Code. Not only are the numerous special law districts all governed by a variety of procedural requirements, but even the general law district chapters are not consistent.

The Nature of Districts

Water districts are political subdivisions established to provide water, sanitary sewage, drainage and other services throughout urban, suburban and rural Texas. The districts are generally either created by local legislation or through the authority granted the Texas Water Commission (TWC) and the local county commissioner's court in the Water Code, Chapters 50 through 65. General law provides for the creation of a variety of types of districts depending on the needs of the area.

Due to the number and variety of districts that have been or are being created, the Texas Water Code has become cumbersome and difficult for the general public to access. Residents and district officials are often uncertain of their district powers and administrative details, which vary from district to district. Chapters 50 through 66 of the Water Code govern the creation and operation of general law districts. Chapter 50 provides for laws generally applicable to all districts. The other chapters each govern the creation, operation and authority of a specific type of district, with only slightly varying powers. To further complicate matters, special law districts have never been codified and can only be found in the Session Laws.

Consolidation of District Chapters

During the interim following the 71st Legislature the Subcommittee on Water
Districts and the Subcommittee on Recodification jointly examined the feasibility of revising the water district chapters of the Water Code by consolidating certain like provisions of general law districts. With the aid of district representatives and TWC staff, the subcommittees developed legislation that moved to Chapter 50 the administration, election, powers, duties, and eminent domain provisions contained in the other water district chapters, and substantively amended those provisions to provide uniformity. Introduced late in the last session, HB 2093 made it no further than the House Floor for consideration. There was also some indication that a few concerns may not have been adequately addressed.

This year, the Subcommittee on Water Code Revisions met specifically to discuss the latest version of the legislation with the goal of considering any remaining concerns with regard to the legislation. The draft that was available for comment did the following in general:

- Moved the administration, election, powers, duties, and eminent domain provisions contained in the water district chapters to a new Chapter 49. Substantively amended these provisions to provide uniformity.

- Instead of rewriting guidelines, wherever possible, the legislation referenced existing codes such as the Property Code when discussing eminent domain, the Elections Code when defining election procedures and the Local Government Code when addressing records retention or conflicts of interest. By referencing other codes, districts are made to act uniformly with other local governments.

Supportive Testimony

Comments at the public hearing varied from support of the idea to consolidate the water district chapters of the Water Code to an expressed desire by some districts to continue as they have done in the past. Comments were offered by participants who have been involved in this project over the years.

Greg Ellis, an attorney who was instrumental in the development of the legislation, gave a brief overview of the origin of this idea. He characterized this legislation as an attempt to address the confusion and to place the operation of water districts under the same administrative provisions. CSSB 1617, the companion to HB 2093 which did not pass both Houses before the end of last Session, was the last version of this legislation, before being edited by Legislative Council. Council changes from that last version include creating a new Chapter 49 instead of Chapter 50. Since Subchapter H of Chapter 50 was not repealed by the bill, it was felt that creating a new Chapter 50 with a second Subchapter H would cause confusion. Additional changes by Council were strictly editorial. The bill attempts to take the administrative provisions, which provide for the operation, creation,
dissolution and elections of a district, details common to almost all districts, and to put them into one chapter of the Water Code so that the law is the same throughout the state. The bill does not seek to change the powers and duties of the districts. Mr. Ellis offered a few technical changes to the bill:

- The definition of "commission" would have to be changed for the Texas Water Commission to the new Natural Resource Conservation Commission.

- The effective date of the legislation would need to be changed accordingly.

- The numerous references to the "board", "secretary of the board" or the "chairman of the board", would be less confusing if references were to the "district" instead.

Jim Box, representing the Greater Houston Builders Association, offered continued support for the legislation, as did David Harper, former Director of the Association of Water Board Directors.

Glenn Jarvis, an attorney representing Texas Irrigation Council, offered continued support, but suggested some fine tuning. Mr. Jarvis expressed the desire to include a provision for excluding non-irrigated property from the boundaries of districts whose principal purpose is furnishing water for irrigation of agricultural lands. This provision would allow the conversion of water rights from irrigation to municipal use, and would provide a mechanism by which land can be taken out of the district and the irrigation water would then be converted to municipal use. The suggestion is one that the subcommittee will continue to look at and study the implications.

Becca Williams of the High Plains Underground Water Conservation District No. 1 expressed continued general support for the bill. However, she remarked that a number of provisions in Chapter 49 did not appear to apply to all districts. The following is a compilation of recommendations the High Plains District offered with respect to the draft legislation being discussed. The comments are focused on those provisions that have direct bearing on the operation of a Chapter 52 district:

- Separate out those provisions in Chapter 49 which do not apply to all districts and reassign to Chapter 48 as provisions applicable to water supply and wastewater districts; if the sections do apply to all districts except underground water conservation districts, then 52.005 should list these other non-applicable sections as has already been done with three provisions.

- The provisions which do not apply to Chapter 52 districts are as follows:
### Subchapter G. Powers and Duties

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>49.202</td>
<td>Fees and Charges</td>
</tr>
<tr>
<td>49.205</td>
<td>Service to Areas Outside the District</td>
</tr>
<tr>
<td>49.206</td>
<td>Enforcement by Peace Officers</td>
</tr>
<tr>
<td></td>
<td><em>(the above three sections are currently exempted in Section 52.005)</em></td>
</tr>
<tr>
<td>49.207</td>
<td>Operation of Certain Motor Vehicles On or Near</td>
</tr>
<tr>
<td></td>
<td>Public Facilities</td>
</tr>
<tr>
<td>49.214</td>
<td>Power to Condemn Cemeteries</td>
</tr>
<tr>
<td>49.220</td>
<td>Area-Wide Wastewater Treatment</td>
</tr>
<tr>
<td>49.221</td>
<td>Standby Fees</td>
</tr>
<tr>
<td>49.222</td>
<td>Impact Fees</td>
</tr>
</tbody>
</table>

### Subchapter M. Notices, Reports, and Bankruptcy

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>49.351</td>
<td>Fire Departments</td>
</tr>
<tr>
<td>49.452</td>
<td>Posting Signs in the District</td>
</tr>
<tr>
<td>49.453</td>
<td>Notice to Purchasers</td>
</tr>
<tr>
<td>49.454</td>
<td>Notice Form From District</td>
</tr>
<tr>
<td>49.455</td>
<td>Notice of Unpaid Standby Fees</td>
</tr>
<tr>
<td>49.456</td>
<td>Filing Information</td>
</tr>
</tbody>
</table>

Ms. Williams also commented on the individual provisions of the proposed Chapter 49 of the Water Code, questioning some provisions, offering suggestions on others, and expressing support for others. She suggested that Section 52.103 should not be repealed or substituted by Section 49.010 since filing boundaries with the County Clerks in every county within or partly within a district is a good idea. Ms. Williams also raised questions regarding the filing of sworn statements and oaths, the issuance of bonds, the added constrictions on free hiring and firing, provisions for monthly per diem versus annual per diem, the terms of office of directors, reporting travel outside the state at district expense, audits for the districts, adding land by petition of landowner, excluding land from the district, the authority of the TWC over issuance of district bonds, and penalties.

### Concerns

The majority of opposition or hesitation came from the underground water districts. Concern was expressed that consolidation would confuse the issue of administration rather than clarify it for the districts established to protect groundwater resources. The underground water districts have worked over the years to create a self-contained Chapter 52 to govern them, their own consolidation of their authority. Harvey Everheart, Manager of the Mesa Underground Water Conservation District, argued that the proposed changes were unnecessary and would make Code provision for the district’s authority too
cumbersome to refer to. Gary Walker, Manager of the Sandy Land Underground Water Conservation District, preferred to see a revision of each water district chapter separately instead of a combination of any provisions. Richard Bowers, Manager of the North Plains Groundwater District, testified that the underground water districts were not necessarily opposed to the language in the bill, but in referring back to a general administrative chapter had already proved confusing in the past. As a result, Chapter 52 has been rewritten over the years to consolidate the underground water districts' provisions into Chapter 52. Mr. Bowers expressed a willingness to continue working to resolve the concerns expressed.

Pat Cox, President of the Board, Barton Springs/Edwards Aquifer Conservation District, was unable to attend the hearing, but expressed the following concern in a letter to the Chairman of the Subcommittee:

The proposed revision would undo consolidation of all the regulations and provisions pertinent to the management of the groundwater resource in the state into Chapter 52, Water Code.

He instead encouraged an approach which would codify recommended changes into the appropriate relevant water districts authority under the existing Water Code method which has a Chapter for each type of district. Mr. Cox argued that by expanding the chapters to be all inclusive of general and specific authority, districts could reduce expenses of legal counsel necessary to interpret and identify specific regulation and information contained in Chapter 52.

Future Action

Joe B. Allen, an attorney also involved in this issue over the years, continued to support the idea of consolidation, but identified several issues that may need to be considered in the new draft:

- Last session a bill passed that was a source of some controversy between utility districts and realtors with regard to notice to purchasers that would need to be included in Chapter 49, but the substance of which would not need to be revisited.

- Some conflicts have emerged between political subdivisions with respect to the use of right-of-ways.

- Exclusion issues.

Mr. Allen recommended a series of drafting sessions in which the participants with concerns could bring their suggestions to the table for discussion. This format was very
productive during the last Session and the members agreed to proceed in this manner.

Conclusion

The Subcommittee has begun it’s series of drafting sessions by scheduling its first for September 22, 1992. It is anticipated that a revised version of the proposed legislation will emerge from these sessions and that the expressed concerns will be adequately addressed.
SOLID WASTE MANAGEMENT DISTRICTS
Introduction

During the last few regular and special sessions of the Legislature, several bills have been filed creating solid waste management districts. The general purpose of these districts is to provide a funding and management mechanism for the disposal of municipal nonhazardous wastes. Because the districts have been patterned after water districts, and are authorized under Article XVI, Section 59 of the Constitution, it is generally believed that they should operate in a similar fashion to water districts. However, without a general law chapter to guide the operation of the districts, each new entity would be governed by its own enabling statute, which would lead to a variety of special law districts and would also make the law difficult to find because it is only published in the Session Laws. During the 72nd Session, Representative Jerry Yost filed HB 2808 which provided a general law chapter governing the operations of solid waste management districts. The bill did not pass and an interim subcommittee was established to study the issue of solid waste management districts.

The State of Things

According to an article appearing in Fiscal Notes, a publication of the State Comptroller’s Office, Texans produce more than 17 million tons of garbage annually, or approximately a ton of garbage per person. Nearly 90% of this municipal solid waste is buried in the state’s 750-plus operating landfills. Estimates show that current statewide landfill capacity can meet Texas’ needs for approximately 19 more years.

Although, data shows solid waste burial in landfills has peaked and is declining due in part to recycling efforts, changes in EPA regulations and increased importation of waste from other states will put greater pressure on the state’s capacity. The new rules require more stringent groundwater protection and require landfill operators to monitor sites and correct problems for 30 years after closing. Although the new standards provide for better environmental protection, the cost of compliance could make it difficult for financially strapped local governments to keep landfills open.1

Federal Mandates

Growing concern for the environment has resulted in close scrutiny of and increased
regulations on the effects of human activity on the environment. Federal programs related to the environment are administered under the U.S. Environmental Protection Agency (EPA), which is responsible for air, water, pesticide, radiation, noise, toxic substance, energy and solid waste programs. The Resource Conservation and Recovery Act (RCRA) of 1976 established a separate "Office of Solid Waste" within the EPA. Through this office, RCRA regulates hazardous waste, prohibits open dumping and requires standards for landfills, encourages recovery of materials and energy from solid waste through technical assistance and grants for experimental projects and feasibility studies, and mandates state planning for solid waste management within EPA guidelines.

The need for better environmental control over landfills has led to more stringent state and federal standards. Recent Congressional amendments to RCRA affect state municipal solid waste programs. In October 1991, the U.S. EPA promulgated regulations to implement the amendments, commonly referred to as Subtitle D. The revised landfill criteria establish minimum Federal standards directed to owners and operators of municipal solid waste landfills (MSWLFs) to ensure that such facilities are designed and operated in a manner that is protective of human health and the environment. The revised criteria include location restrictions, standards for design, operation, groundwater monitoring, corrective action, closure and post-closure care and financial assurance of MSWLFs.

Implementation is primarily a state function. Under section 4005(c) of the 1984 Hazardous and Solid Waste amendments to RCRA, states are required to adopt and implement permitting, compliance and enforcement procedures to ensure that owners and operators of MSWLFs comply with the revised Federal criteria. State programs operate concurrently with the federal criteria, and therefore must be at least as stringent. States seeking approval to implement the flexible standards under Subtitle D must adopt new regulations that comply with the new federal laws and regulations by October 1, 1993. The EPA Regional Administrator determines whether each state has developed an adequate program. Subtitle D becomes effective October 9, 1993, with federal minimum design standards unless a state program for performance standards is approved. The TWC goal is to be approved for alternate designs under performance standards.

State Action

In Texas, primary state-level municipal solid waste management was formerly administered by the Texas Department of Health (TDH). The Solid Waste Disposal Act of 1969 identified 2 types of solid waste, municipal and industrial, and assigned regulatory jurisdiction for waste management to TDH and the Texas Water Commission (TWC). TDH regulated solid waste through the Bureau of Solid Waste Management (BSWM) and TDH regional offices. TWC regulates industrial, hazardous, agricultural and mining wastes. The 72nd Legislature, during the second Special Session, passed SB 2 which combined the environmental regulatory functions of various agencies into a single agency, the TWC, soon
to be the Natural Resource Conservation Commission. The BSWM of TDH moved to the TWC in March of 1992.

Dan Eden, Director of Municipal Solid Waste Division, TWC, presented to the Subcommittee on Solid Waste Management Districts a review of the state's solid waste program and how the state is responding to the federal regulations known as Subtitle D of RCRA. There is a concern throughout the state that the new landfill regulations will force many of existing local landfills to close down. A result of the closings will be a statewide trend towards regionalization. The development of Subtitle D regulations resulted from an estimation by EPA that Americans, by the year 2000, will produce almost 200 million tons of garbage per year and approximately 70% of this garbage will be deposited in landfills. The percentage of garbage to enter landfills is estimated to be even higher in Texas. Even with alternatives put in place by the Texas Legislature to reach 40% reduction through recycling, there will still be a need for landfills. EPA came up with Subtitle D in order to increase confidence in landfills and to decrease opposition to them through stricter controls. The goal of Subtitle D is to establish a framework for federal, state and local cooperation to handle solid waste.

There is an incentive for the state program to be approved since it would give the state additional flexibility in looking at alternative designs, site specific factors, and design requirements. However, the TWC issued a statement of its policy position to not exceed the new federal Subtitle D requirements unless such measures are necessary to protect key resources. TWC believes that implementation of Subtitle D regulations, in addition to prior legislative actions removing such materials as tires, batteries, waste oil and household hazardous waste from landfills, will contribute to the assurances that public health and safety and the environment are protected.

Regional Control

The more stringent regulations have made individual landfill operations too costly in many instances. Regionalization offers the best alternative to multiple small local governments facing long term solid waste management, particularly considering the rise in landfill costs, the difficulty in siting facilities, and the need for finding alternatives to landfilling as a means of waste management. At the regional level, Texas is divided into 24 state planning regions comprised of government officials from soil conservation districts, utility districts, cities, counties and other political units, economic development agencies and concerned citizens. Each of these councils derives its funds from federal, state and local governments.

Local member governments and organizations pay membership dues to provide local funds. Enabling legislation specifically prohibits a regional planning agency from levying any form of tax. Federal funds are transmitted to the regional planning agencies either
directly or through state agencies responsible for administering those funds.

The primary source of state funds for the agencies is the State of Texas Regional Planning Assistance Grant Program administered by the Governor’s Budget and Planning Office. Loans are also available through the Texas Water Development Board (TWDB). The TWDB is authorized by the Texas Water Code to provide loans to political subdivisions for planning, design, and construction of municipal solid waste projects including, but not limited to, physical facilities, improvements, and equipment. The interest rate on a municipal solid waste loan varies depending on market conditions and is set at approximately one-half of one percent above the TWDB’s borrowing cost. Any political subdivision in Texas either participating in a regional facility or meeting the TWDB’s criteria for "hardship" may apply for state loan assistance to finance a municipal solid waste facility. Everything necessary to construct and operate landfill, composting, transfer station, material recovery, and incinerator facilities for the management of municipal solid waste can be financed.

The regional planning agencies, referred to as "regional councils," "planning councils," "development councils," "associations of governments," or "councils of governments (COGs)," have been designated as the agencies responsible for regional municipal solid waste management planning and for the coordination of planning and implementation at the local level. SB 1519, 71st Legislature, mandated the development of regional and local solid waste management plans and specified that part of the new $.50 per ton state solid waste disposal fee would be provided to assist in the task. In June 1990, TDH distributed grant proposals to the state’s 24 regional planning agencies to develop regional plans. The state’s municipal solid waste management regulations specified that the regional plans include waste management priorities, inventory and assessment of present waste management systems and programs, identification of needs and alternatives, establishment of waste management goals and objectives, and specific recommendations regarding how solid waste should be managed in each region. Emphasis was placed on the need for local governments with common needs or problems to consider economy of scale, pooling of resources, and the importance of intergovernmental cooperation, in order to combine their resources into area-wide waste management systems.

By Fall 1991 all 24 COGs had begun planning. The COGs were encouraged to discuss public, private, and intergovernmental cooperation as well as procurement practices, market availability and facility siting and permitting. They were also asked to provide information on anticipated impact of regulatory changes, projections of the impact of future waste streams on current waste management systems, including facility capacities, current and future programs and facility needs, and identification of areas where improvements are needed or where barriers exist.
John Promise, Director of Environmental Resources for the North Central Texas Council of Governments, presented to the Subcommittee an overview of the progress of the NCTCOG's efforts with respect to solid waste management. The NCTCOG has been working for several years on the topic of solid waste management and adopted an interim solid waste management plan for the region last June. The interim plan was structured around six priorities: minimizing household trash, minimizing apartment and commercial trash, establishing recycling markets, assuring treatment and disposal capacity, stopping illegal dumping and coordinating state regional and local solid waste management. Mr. Promise focused on two of these objectives in his remarks to the Subcommittee: recycling and treatment and disposal capacity of waste.

In North Central Texas, there is currently plenty of landfill space at a cheap price and therefore recycling has not been a priority. This situation impedes the development of a regional plan that includes recycling incentives. NCTCOG has been exploring innovative markets that would allow local governments to cooperate together to develop recycling initiatives.

With regard to treatment and disposal, the NCTCOG is attempting to change the existing nearly absolute dependence on landfilling and to achieve over the long-term a more integrated approach to solid waste management in the region with waste minimization, recycling and disposal. The plan recommends addressing the need to conserve and maximize existing capacity; identify priority planning areas; obtain assurances of long-term capacity from the largest sites serving the urban core counties; and support the long-term goal towards self-sufficiency in solid waste management. The overall regional capacity for NCTCOG is 113 million tons. Although Dallas currently holds the largest amount, it is not considered a regional facility. The one regional authority is the North Texas Municipal Water District.

How do districts fit in? Within NCTCOG, there has been no move thus far towards special regional districts. A structure with board members elected or appointed independently from local government would not be supported by the members of NCTCOG. But, the ability of local government units to appoint members to serve on boards, to work collectively, to form partnerships in some creative way and to have bond authority to actually manage solid waste may be plausible. Counties in Texas have had extensive solid waste management authority, yet it is not utilized within the NCTCOG’s region.

The Houston-Galveston Council of Governments

The Houston-Galveston COG was the first COG to complete a regional solid waste management plan under the guidance of the state. Under that plan H-GAC is looking at
recycling and new landfill requirements under Subtitle D. The plan stresses an integrated approach to solid waste management and stresses the importance of creating waste reduction and recycling programs before creating new landfills. A subcommittee of H-GAC identified five basic options available to local governments once they start implementing solid waste programs: sole local responsibility, interlocal agreements, public/private partnerships, privatization, and solid waste management districts.

Ed Polasek, an environmental planner for H-GAC, testified that solid waste management districts can fill the role of many governmental units as one governmental entity, with a governing body drawn from the communities involved and may also remove local governments from many of the liability issues associated with solid waste management practices. Three types of districts are currently identified within the region: general law districts such as water control and improvement districts, regional special law districts such as waste disposal authorities or river authorities, and the new solid waste management districts. Mr. Polasek expressed the following concerns with regard to the new districts:

- The districts must be structured to provide integrated waste management systems including waste minimization, recycling, composting, and other alternative waste reduction programs.

- Options for flow controls must be outlined in legislation concerning the creation of the districts to ensure financial feasibility of facility construction and operation and to ensure that state recycling and waste reduction goals are being met.

- Flexibility to reflect the area being served through the composition of the board governing the district.

Other concerns that arose during the H-GAC’s discussion of solid waste management districts include the issue of integrating private operators, police authority for enforcement of illegal disposal, and resident compliance with programs, and condemnation of land for sites for waste management facilities.

The Middle Rio Grande Development Council

Paul Edwards, Deputy Director for Operations of the Middle Rio Grande Development Council, described at least two emerging sets of problems for rural communities: problems associated with the task and cost of managing the disposal of the wastes generated by the communities and the prospect of becoming targets for commercial ventures for the disposal of wastes to be imported from more populous regions of the state and nation. While the inter-local contracting provisions of the state statutes appear to offer some prospective relief to the local aspects of the problem, it was not felt that the statutes provided any vehicle for simultaneous resolution of the potential problems of managing the
Mr. Edwards expressed the desire to create a waste management district that would:

- create a mechanism to assure presumptive local input into the process for the permitting of all types of disposal facilities in the region;
- establish a means to create an ongoing regional role in the oversight and/or management of such facilities that were permitted or licensed in the region; and
- provide a mechanism for assuring that at least some of the economic value that derived from the operation of facilities licensed for the importation and disposal of wastes in the region accrued to the larger benefit of the region.

The idea was to accomplish the above by creating an exclusive franchise for a regional entity, making the regional role a function of the contracts for site development and operation between the region and the proposed operating entity. This would involve no taxing authority, no power of eminent domain and a board of directors appointed by the participating local governments. Mr. Edwards also suggested that any omnibus state law for the creation of solid waste management districts make provision for the establishment of a voluntary, non-taxing district through inter-local compact.

Local Control

Local governments often decide that they wish to retain control over waste management in their region and therefore control over rates, policy and long-term planning. County and city governments develop their own policies and procedures with respect to waste collection and disposal within legal constraints and TWC regulations. Cities and counties of 30,000 population or more are required by law to provide solid waste services, or see that services are provided by a public agency or private company. Texas counties have broad powers in the area of solid waste management. They can operate a solid waste disposal service, require the use of the service, assess and collect fees for the use of the service, exercise the power of eminent domain, sell bonds, make regulations controlling the solid waste management system, and have limited powers to control placement of disposal sites. The major source of county funding is ad valorem taxes. Cities, funded primarily through city-owned utilities, property taxes and city sales tax, are given the authority to offer solid waste disposal services within their boundaries, require the use of the service, and charge and collect fees for the service. Most cities in Texas either provide or have commercial solid waste collection and disposal. City waste disposal is usually the third highest local budget expense, after schools and roads. Multiple local governments who can't afford to continue a status quo operation of their landfill under new federal RCRA Subtitle D regulations are encouraged to combine resources and set up area-wide waste management systems. While some areas or municipalities have turned to interlocal contracts, others have
turned to the legislature for the creation of special districts to manage solid waste.

According to Glendon Eppler, Plans Team, Municipal Solid Waste Division, TWC, the TWC encourages multiple local governments who cannot afford to continue to operate their landfill status quo under new federal RCRA Subtitle D regulations to combine their resources and set up area-wide waste management systems. It is anticipated by staff that a number of regional solid waste management plans that will be submitted in the next six months to a year will contain either recommendations that local governments pursue further study of the option to form a solid waste district, or that they have decided to form a district and are proposing a timetable for creation of a district.

**Testimony Regarding Special Districts**

Most special districts require some form of voter approval within the area over which they will have jurisdiction. Many special districts have some form of taxing power, but usually this may be used only after voter approval. Types of taxing authority may include ad valorem taxes or special assessments. Some special districts may issue bonds supported either from taxes or by revenues from projects. There are currently three types of authorities or districts that can be utilized for solid waste management: general law districts; existing regional special districts; and new special law districts. General law districts include existing water control and improvement districts and municipal utility districts. They have the authority to provide solid waste services, tax residents, issue bonds, and finance projects.

River authorities are an example of regional special law districts. Mark Rose, General Manager of the Lower Colorado River Authority, testified at a hearing of the Subcommittee on Solid Waste Management Districts. He expressed the need to focus on the problem that needs to be solved by determining whether the private sector can adequately manage the waste stream or whether a solid waste district should be created. He offered the following points for consideration with regard to regional solid waste management:

- Focus should be on what the problem to be solved is.

- How can the problem best be solved to meet what the regulatory agency says must be done.

- If things are to be done on a regional basis, producing larger waste stream, first look at what type of regional entities already exist to address regional management.

- Regardless of which public entity steps forward to address the solid waste issue, all should have to play by the same rules; no exceptions ie: operational procedure,
permitting processes.

- Solution should be done by a public/private joint venture.

In light of the new regulations coming down from the federal government, LCRA approached its customers to hear their concerns. After speaking to customers, LCRA decided to become involved in the solid waste issue relative to the 43 counties that LCRA serves. Mr. Rose presented to the members of the subcommittee a resolution passed by LCRA that directed LCRA staff to explore options and alternatives in managing solid waste from a regional perspective to maximize efficiencies while promoting the protection of the environment. This directive is governed by the following goals:

- The solutions presented to the Board must be regional in scope.

- They must produce revenues sufficient to recover the costs of any approved program.

- Local governmental, regional governmental and private industry participation in each regional solution is preferred.

- The focus of the LCRA’s participation is to be wholesale in nature. It is preferred that the Authority provide research and developmental assistance and management services to regional associations of the LCRA’s customer cities and counties.

- The regional programs shall be based on waste minimization strategies and not just landfill technologies.

- The regional program should be part of a statewide initiative to solve Texas’ municipal solid waste crisis.

- Each regional proposal shall be submitted to the board for approval and must stand on its own and meet the criteria established in the resolution.

- The solid waste operations and activities contemplated by LCRA shall not subject LCRA or its electrical assets to uninsured risks, penalties or liabilities.

River authorities might have the power to provide solid waste services written into their enabling legislation. However, most river authorities have no taxing authority and their governmental board is appointed by the governor and not the affected communities.

Fran Coppinger, President of the Municipal Solid Waste Management and Resource Recovery Advisory Council, presented a summary of the Council’s activity. The two main
functions of the Council are to review and evaluate the effect of state policy programs with regard to solid waste management and to make recommendations to the TWC. The Council has recommended for the past few years the creation of districts within the COGs to manage a sub-regional area where, with proper regulation, the State and its citizens can take advantage of economies of scale created by managing large solid waste streams with an integrated management approach. Once again, emphasis was placed on an integrated system of solid waste management that would include source reduction or waste minimization, reuse or recycling, treatment to destroy or reprocess waste to recover energy and then land disposal.

In the past, several bills have been filed creating a new breed of special districts, solid waste management districts. The general purpose of these districts is to provide a funding and management mechanism for the disposal of municipal nonhazardous wastes. An example of a district which was created specifically to provide solid waste management authority by its enabling legislation is the Gulf Coast Waste Disposal Authority, formed in 1970, as a result of SB 225 of the 61st Legislature. The district was established to address the problem of pollution of the Houston Ship Channel and Galveston Bay. It is responsible for a regional water quality management program, including provision of waste disposal systems and regulation of disposal of wastes. More recently, the Van Zandt County Solid Waste disposal district was created by the Legislature in 1989 and the Gaines County Solid Waste Management District and the Upper Sabine Valley solid Waste Management District were both provided for by legislation during the 72nd Legislature. Other legislation introduced, but not passed, during the 72nd Legislature would have standardized the operations, administration, powers and duties of all solid waste management districts. This idea for defining standards for the creation of solid waste management districts is the basis for the interim study charged to the House Committee on Natural Resources and on which the Subcommittee on Solid Waste Management Districts heard testimony.

Jesus Garza, Executive Director, TWC, testified that as Subtitle D is adopted, there will be a necessity for a regional approach. The COGs have already begun to identify centers of waste streams which may be the best locations for regional facilities. In some of these instances districts may not be necessary. But, in areas where the resources aren’t there, creation of a district may be the solution. Mr. Garza also recommended that solid waste management be governed through a fee system rather than through taxation, in order to encourage recycling and conservation.

Glendon Eppler, TWC, also testified that formation of solid waste management districts is an alternative, but should be part of the overall planning process which allows local governments to weigh alternatives and determine if districts are a viable method of managing solid waste in their region. Legislation providing for solid waste management districts should apply specifically to solid waste management, provide for consistency among districts formed, produce districts that are regional in scope, provide for oversight of
districts formed, either by TWC or an appropriate agency.

Comments were offered by Lee Williams, County Judge of Wood County that general legislation should allow cities and counties and their private and public partners to create solid waste management districts of at least the following types:

• districts created by intergovernmental contract among local governments and, once created, provided the authority to finance projects through the pledging of revenues from their solid waste stream;

• districts created by local governments authorizing the board of their regional council of governments to serve as the board of a district or districts; and

• districts created and the boards selected by the commissioners courts and city councils of a region or subregion to carry out solid waste management activities.

It is felt that these approaches avoid the creation of new independent governments, keeping officials elected by the voters accountable and assuring that solid waste implementation is coordinated with existing city and county operations and with the regional solid waste management plans that have already been developed.

Other concerns raised regarding the proposed general law for the creation of solid waste management districts were those of industry. Representatives of Laidlaw responded with the following concerns and suggestions:

• There should be a minimum population of the district in order to prevent chopping up potential regions into such small sub-groups that it defeats the intent of fiscally possible regionalization;

• Rather than prohibit a district from contracting with a person outside the district to provide to that district solid waste management services, require any contractor providing solid waste management service to the district to establish an office within that district during the term of the contract; this would allow the district to get the best available contractor for the environmental and fiscal protection of the district’s citizens;

• Clarify that acquisition of existing facilities by a district refers to a mutually agreeable transaction and not to condemnation powers. If a district wants to control a facility, it should compensate for the investment.

Thomas L. Adams, City Administrator of Seminole, has been involved with the creation of the Gaines County Solid Waste Management District, whose enabling legislation
was passed during the 72nd Session. Mr. Adams offered his observations as to the need for alternatives to address solid waste problems. The City of Seminole is located 70 miles from any large city. Half of the population concentrated in the area is located in another state and the remaining half is split between two COGs. The creation of a solid waste management district provided an alternative for the area’s solid waste management.

Mr. Adams addressed the issue of taxes versus fees by commenting that if fees must be raised, the increased costs would encourage illegal dumping in the unoccupied lands near Seminole that can’t be effectively policed. There is no incentive to use the district’s service and the district would become defunct. A tax would give a basis of not charging inordinate amounts of fees for the garbage that is brought in, and would ensure the use of the district’s service. The districts also need taxing authority to raise funds to clean up pollution. Finally, Mr. Adams explained that the districts need time to comply with the new mandates that are coming into effect. Since the district is of a new breed, the Gaines County Solid Waste Management District has proceeded cautiously in order to ensure compliance with state and federal regulations while at the same time effectively carrying out the goals of the district.

John Vihinen, Project Director with Vermont Integrated Waste Solutions, a private venture company for waste management, offered a perspective from Vermont on solid waste districts. Vermont is typically a rural state with no county government. Mr. Vihinen served as Executive Director of the Rutland Regional Planning Commission which, along with its member towns, formed the first solid waste district over 10 years ago. Vermont enabling legislation provides for special district creation among cooperating towns.

In response to the mounting trash problem in Vermont in the late 1970s, the Rutland County Regional Planning Commission sought additional landfill sites that would pass muster. In 1980 Congress enacted President Carter’s Energy Initiatives which included and EPA solid waste grant program developed to bring waste to energy plants on line. The planning commission and its member towns agreed to the concept of building a waste to energy or resource recovery plant, and secured an EPA grant commitment to procure such a plant if feasible. The 90% contribution for procurement of resource recovery plant was a powerful incentive and underwrote the front end of the development costs associated with the procurement process as well as the operation and administrative costs of the solid waste management district. The commission signed 20 year waste disposal agreement in 1982 and 1983. The early 1980s saw the creation of additional solid waste districts by the regional commissions in light of the success of the Rutland County Solid Waste District.

In 1987 twelve jurisdictions were put in place for solid waste districts. Also in 1987 Vermont passed Act 78, Vermont’s Comprehensive Solid Waste Management Act. The law prioritized solid waste management along the guidelines set by EPA for reduction, reuse and recycling. To encourage participation the new law said that all unlined landfills must
be closed. Additionally, all towns must join in a solid waste district or participate in a regional planning process. The Legislature agreed to financially support the creation of solid waste districts and their solid waste planning process with a 100% grant with funds raised through bonded indebtedness. However, the districts have done little to solve solid waste problems. Districts have largely failed, with the exception of two or three, for a number of reasons.

Structural problems; the lines of responsibility between states, municipalities, solid waste districts were blurred by the new law; towns resent state mandates where they have always had global authority; some have used Act 78 to build a "Chinese Wall" between their responsibility to the state and their responsibility under the law;

State and regional districts don't have adequate experience with regard to solid waste management;

Vermont reneged on its commitment to allow private waste companies to have a clear operations role; solid waste districts were given absolute veto authority in the permitting process if a facility was not included in their solid waste plan;

Solid waste implementation plan approval is a tedious and slow process during the state’s review.

Most districts have emersed themselves in the planning process since that is where the grant money is. No tough decisions have been made such as siting and raising tax dollars needed to operate the regional facilities. All proposed new landfills are at existing landfill sites and the private companies are doing most of the work. Because of the enormous infrastructure costs faced by governments, Mr. Vihinen does not see the need to add solid waste facilities when private companies are willing to take the risks. Also, implementation has been stalled because closure provisions for unlined landfills has been extended twice by the Vermont Legislature.

An additional observation by Mr. Vihinen is that although recycling is very popular in America, the recycling loop must be closed. The process is extracting more from the waste stream than the markets are able to use and prices for recyclables are going down.

What is the fate of Vermont’s solid waste districts? One may disband soon. To some such as the State’s solid waste management division director, the years in the planning stage may seem like a long time, but the districts are beginning to make waste management decisions. Others perceive the process as rapid progression. There have been major political and philosophical changes in the past few years. The state is currently working on a rewrite of the Solid Waste Management Act. The outlook is uncertain. Mr. Vihinen offered the following recommendations in closing.
• Set environmental performance standards rather than explicit detailed regulations.

• Learn from Vermont’s decisions this Fall

• Identify priorities; Align and direct resources at highest priorities

• Stimulate demand side of recycling and resource recovery equation so financial burden and development costs are reduced for everybody.

• Law should be enabling but not a requirement—be sure clear lines of authority are established—do not create another layer of government if there is one in place that can do the job

• Assure a role for experienced private companies who know the business and may already have the capital assets in place.

Conclusion

As a result of Mr. Vihinen’s suggestion to observe Vermont’s efforts with regard to regional solid waste management, Representative Yost was scheduled to visit Vermont in mid-September. The return did not allow time for incorporating his findings into the above report but will be offered as an addendum at the committee hearing on September 22, 1992. Efforts with regard to the legislation to standardize the creation of solid waste management districts will be pursued.
Sources