Interim Report

to the 85th Texas Legislature

House Committee on Agriculture and Livestock

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HOUSE COMMITTEE ON AGRICULTURE AND LIVESTOCK
TEXAS HOUSE OF REPRESENTATIVES
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A REPORT TO THE
HOUSE OF REPRESENTATIVES
85TH TEXAS LEGISLATURE

TRACY O. KING
CHAIRMAN

COMMITTEE CLERK
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Committee On
Agriculture and Livestock

January 4, 2017

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Chairman

P.O. Box 2910
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The Honorable Joe Straus
Speaker, Texas House of Representatives
Members of the Texas House of Representatives
Texas State Capitol, Rm. 2W.13
Austin, Texas 78701

Dear Mr. Speaker and Fellow Members:

The Committee on Agriculture and Livestock of the Eighty-fourth Legislature hereby submits its interim report including recommendations for consideration by the Eighty-fifth Legislature. Also included in this report is an addendum from Representative David Simpson and Representative Matt Rinaldi which expresses some of their concerns on these topics.

Respectfully submitted,

Tracy O. King

Charles "Doc" Anderson

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Representative Charles "Doc" Anderson
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Evaluate policy challenges to the state's agriculture and livestock industry, including long-term impacts of price declines in oil and natural gas; the availability of natural resources, including water, necessary to operate the industries; and the mitigation of and preparation for potential future hazards to the industries caused by natural disaster, drought, or disease.

The availability of natural resources, including water, necessary to operate the industries

Agricultural irrigation is the largest user of water and is projected to have the largest unmet water needs over the next 50 years.

According to water use estimates from the Texas Water Development Board (TWDB), agriculture accounts for about 60 percent of all water use in the state, approximately 8.7 million acre feet in 2013. That breaks down to about 28 percent of all surface water and 79 percent of all groundwater. By far, the greatest share of agricultural water use, 97 percent, is for irrigation and 3 percent for livestock.

The state's water planning process established by the Legislature in 1997 is widely recognized as one of the best in the nation. It is a "bottom up" process incorporating plans from 16 water planning regions that projects water needs and recommends water management strategies for the next 50 years and is updated every five years.

The following are excerpts from the 2017 State Water Plan:

> Agricultural irrigation demand is expected to decrease, from 9.4 million acre-feet per year in 2020 to about 7.8 million in 2070, due to more efficient irrigation systems, reduced groundwater supplies, and the transfer of water rights from agricultural to municipal users.
>
> From 2020 to 2070, of the non-municipal water use categories, irrigation has the most water needs statewide and livestock has the least. Irrigation water needs remain above 3.5 million acre feet per year, continuing to exceed all other water use categories from 2020 through 2070.

Statewide, the majority of water needs associated with municipal, manufacturing, and steam-electric water user groups are met by the plan in 2070. Irrigation represents the vast majority (ranging from 90 percent to 96 percent) of unmet needs in all decades.

The main water management strategy for addressing irrigation needs in the State Water Plan is voluntary best practices and conservation efforts by agricultural producers.

In 2013, the Texas Legislature created the State Water Implementation Fund for Texas (SWIFT) and State Water Implementation Revenue Fund for Texas (SWIRFT) to provide affordable, ongoing state financial assistance for projects in the state water plan. Passed by the Legislature and approved by Texas voters through a constitutional amendment, the SWIFT program assists communities in developing and optimizing water supply projects at cost-effective rates. The program provides low-interest loans, extended repayment terms, deferral of loan repayments, and incremental repurchase terms for projects with state ownership aspects. To be eligible for the SWIFT program, a project and its associated capital costs must be included in the state water plan. In addition to SWIFT, the TWDB has several state and federally funded financial assistance programs that may be utilized to fund projects in the state water plan.

Financial assistance through the SWIFT program is best suited to conservation projects involving centralized surface water irrigation systems operated by an entity such as an irrigation district. TWDB has approved low interest SWIFT loans to two irrigation districts in Hidalgo County for conservation projects. However, the majority of agricultural irrigation involves the use of groundwater and irrigation systems owned and operated by individual farmers. Loans to finance conservation projects for these farmers using SWIFT loans to entities such as groundwater conservation districts cannot be offered at competitive interest rates.

While the requirements of the SWIFT program severely limit its applicability to groundwater irrigation conservation, TWDB has a long-standing agricultural conservation loan program that has provided over $79 million in loans for water conservation programs and projects in the last 30 years. For example, since 1992, TWDB has made 22 loans to Sandy Land Underground Water Conservation District for a total of over $15 million and 19 loans to Panhandle Groundwater Conservation District for a total of $11 million to provide loans to area farmers to purchase water-efficient center pivot irrigation systems, sprinkler package conversions, and drip irrigation systems to help area producers reduce their water use.

In addition, TWDB administers the Agricultural Water Conservation Grants Program that provides grants to state agencies and political subdivisions for technical assistance, demonstration, technology transfer, education, and metering projects that conserve water. TWDB can award grants totaling a maximum of $600,000 per fiscal year from the Agricultural Water Conservation Fund. The program has provided multi-year funding for agricultural

conservation demonstration projects operated by the Texas Alliance for Water Conservation through Texas Tech University and the Texas Project for Ag Water Efficiency through the Harlingen Irrigation District.

The Texas Water Development Board's voluntary irrigation metering program is a long-term collaborative effort with agricultural producers and other participating entities to measure the amount of applied water for irrigation. In 2013, the 83rd Texas Legislature appropriated $3,000,000 in funding to support the program through Senate Bill 1, Rider 25, which specified that TWDB make Agricultural Water Conservation Monitoring grants available to groundwater conservation districts with promulgated rules requiring metering.

The Texas State Soil and Water Conservation Board has several major programs that address agricultural water conservation issues. The Water Quality Management program implements agricultural best management practices that enhance both water quality and water quantity. The main objective of the Water Supply Enhancement Program is water conservation. The Flood Control Program contributes to water conservation by trapping sediment that would otherwise reduce the capacity of the state's major reservoirs. The Texas State Soil and Water Conservation Board also has education and outreach programs that support and recognize conservation.

The primary source of financial assistance to Texas farmers for water conservation is the U.S. Department of Agriculture--Natural Resources Conservation Service. Natural Resources Conservation Service's financial assistance can fund irrigation improvements such as high efficiency center pivots, micro irrigation systems, pipelines, irrigation water management, land leveling, and certain agronomic practices like reduced tillage or no-till that can reduce evaporation from the soil. The Service provided approximately $32 million in financial assistance through the Agricultural Water Enhancement Program and over $392 million through the Environmental Quality Incentives Program during the previous Farm Bill years of 2009 to 2013. The amount of private investment by agricultural producers participating in conservation programs of the USDA Natural Resources Conservation Service in the Texas High Plains was an estimated $140 million from 2009 to 2013.

The U.S. Department of Agriculture's Agricultural Research Service funded the on-going Ogallala Aquifer Program to focus research efforts on developing new water management technologies to sustain rural economies associated with this critical aquifer. It represents a combined effort of faculty, researchers, and specialists from Kansas State University, Texas A&M University, Texas Tech University, U.S. Department of Agriculture's Agricultural Research Service, and West Texas A&M University. The Ogallala Aquifer Program was established in 2003 to develop new water conservation technologies and practices. Research highlights to date include (1) economic assessment of various water conservation strategies, (2)

improved management strategies for subsurface drip and deficit irrigation, (3) improved irrigation scheduling techniques, (4) improved practices for dryland farming, and (5) technologies for water conservation in confined animal feeding operations and animal processing plants.

According to the TWDB Water Conservation Advisory Council's report to the 85th Legislature, agricultural producers continue to voluntarily adopt best management practices to improve irrigation efficiency; however, the data needed to fully assess and quantify the extent of this trend is not readily available. The last detailed statewide assessment of agricultural irrigation practices was conducted in 2001 and reported in TWDB Report 347: Surveys of Irrigation in Texas. The Census of Agriculture's Farm and Ranch Irrigation Survey (2013), currently the best source of information regarding trends in adoption of conservation practices, indicates significant progress by agricultural producers. Citing this lack of up-to-date data on irrigation conservation practices, the Water Conservation Advisory Council has recommended that the Legislature increase appropriations to the TWDB to enhance existing data collection, management, and accessibility efforts.

Recommendation:

The state's regional water planning process is the best means of monitoring and addressing the availability of water for the state's agriculture industry. The legislature and TWDB should explore ways to provide more state financial assistance to the voluntary water conservation efforts of agricultural producers by making SWIFT funding more accessible or expanding TWDB's existing agricultural loan and grant programs.

The mitigation of and preparation for potential future hazards to the industries caused by natural disaster, drought, or disease.

Texas agricultural producers have suffered significant losses in recent years due to winter storms, flooding, wild fires, drought and disease.

- The record-breaking drought of 2011-2012 was devastating to Texas agriculture. In 2011 alone, agricultural losses due to drought were estimated at $7.6 billion. By 2014, 240 counties in Texas had been declared disaster areas. Corn production in Texas in 2011 dropped by 55 percent from the previous year and production did not return to pre-drought levels until 2014. The price of hay increased by 200 percent during the drought. Direct losses by commodity include $3.23 billion for livestock, $750 million for hay, $2.2 billion for cotton, $736 million for corn, $314 million for wheat, and $385 million for sorghum.

- Winter Storm Goliath hit the Texas High Plains in December 2015, with sustained winds of 40 miles per hour and gusts up to 80 miles per hour and produced snow drifts as high as 20 feet. An estimated 25,000 to 30,000 head of livestock were killed by the storm. Particularly hard hit was the state's dairy industry which lost an estimated 15,000 dairy cows; approximately 2.8 million gallons of milk were lost. In the five dairy counties impacted by Goliath, milk production dropped 15 percent in January 2016 compared to the previous year. The storm also destroyed or buried fences allowing 2,000 to 3,000 head of cattle to stray onto highways and surrounding lands.

- In recent years, Texas producers have suffered large losses in income from outbreaks including Avian Influenza, Chronic Wasting Disease, Cattle Tuberculosis, Fever Tick, Equine Herpes Virus, Citrus Canker, Mexican Fruit Fly, Peirce's Disease and other pests and diseases.

The consistent theme in testimony heard by the committee was the need to ensure that state agencies have adequate resources to deal with threats to Texas agriculture from natural disasters and diseases. It is recognized that in cases of natural disasters that affect agriculture the leading relief agencies are usually the U.S. Department of Agriculture and the Federal Emergency Management Agency. However, disasters can also strain state agency resources. For example, the Texas Animal Health Commission was forced to divert a considerable amount of time and personnel from its day-to-day responsibilities to assist in the response to Winter Storm Goliath and especially for the monitoring and testing for Chronic Wasting Disease. The Animal Health Commission's contributions to both of those efforts were widely praised in testimony.

The increase in global commerce has benefitted Texas agricultural producers and Texas consumers but it has also increased the threat of animal and plant pathogens entering the state. Major concerns were raised, primarily from the livestock industry and the citrus industry, about maintaining the state's ability to detect and stop pests and diseases coming from other states and countries. Also, the trend toward much larger livestock operations increases the potential economic losses from quarantines.

On a more positive note, the committee heard examples of Texas leadership in science and research on animal and plant diseases. The importance of this research to our state and our nation cannot be overstated.

Recommendation:

The agriculture industry is of such great importance to the Texas economy that the Legislature must ensure that agencies have the resources necessary assist with the response to

and recovery from natural disasters as well as detecting and preventing the spread of animal and plant diseases that can cause devastating losses for agricultural producers. It is also vital to maintain funding for research on drought resistant crops and research on the causes and treatment of animal and plant diseases. Because there are considerable public benefits for all Texans from a healthy and expanding agriculture industry, the costs for providing these vital services should be shared by everyone. The concept of "cost recovery" can be counterproductive to agencies like the Texas Department of Agriculture and the Texas Animal Health Commission and should be applied with careful consideration of the economic burden placed on producers.

Soil health.

The committee received testimony from a number of witnesses related to soil health and the benefits of improving soil biology by increasing the amount of organic matter in top soil. One of the primary benefits is increasing the water storage capacity of soil. According to the USDA Natural Resources Conservation Service, increasing the amount of organic matter in the top six inches of soil by one percentage point (e.g., from 2 percent to 3 percent) would increase the storage capacity of land by approximately 27,000 gallons of water per acre or about one acre-inch of water. This fact indicates that improving soil health on agricultural lands could play a larger role in the state's efforts to provide adequate water resources for agriculture and the state's growing population in the future. In addition to increasing water storage capacity, improved soil health has other environmental benefits such as reducing soil erosion, reducing the amount of carbon in the atmosphere, increasing aquifer recharge and improving water quality by decreasing the amount of fertilizer and pesticides in runoff. It can also improve the drought resistance of crops and increase productivity. The significant potential benefits warrant discussion of whether the state should place additional focus on efforts to improve soil health on agricultural lands.

Recommendation:

The committee recommends the formation of a multi-agency working group including Texas Water Development Board, Texas Department of Agriculture, Texas AgriLife Extension Service, Texas Soil and Water Conservation Board and other relevant agencies to examine the extent to which soil health could have a role in the water planning process and recommend ways to increase state involvement in efforts to improve soil health.

Determine the sources of water used by Texans in the production of food and fiber, and examine current water delivery methods and water conservation goals for agricultural use. Evaluate whether there are more efficient and effective water-usage management practices that could be employed in the agricultural industry, and determine the impact of crop insurance requirements on producers. (Joint charge with the House Committee on Natural Resources)

The committee met jointly with the House Natural Resources Committee to receive testimony regarding water conservation strategies for agricultural water use.

I. Overview of the Agricultural Water Conservation Program

a. Provides grants and loans to political subdivisions
b. Provides grants to state agencies for conservation programs and conservation projects
c. Assists in the implementation of irrigation conservation strategies
d. Since 1985, TWDB has provided over $100 million in funding commitments to promote agricultural water conservation.
    i. Grants
        1. Up to $600,000 available on a competitive basis, annually
        2. Examples of projects:
            a. Equipment to monitor irrigation water use
            b. Irrigation efficiency improvements
            c. Education and technical assistance
            d. Demonstration of conservation practices
        3. Grant recipients reported 143,000 acre-feet of water savings (or water use efficiency improvements during FY 2011-2016)
            a. Five-year average cost of $65 per acre-foot
    ii. Loan projects
        1. Funding is subject to availability.
        2. Examples of projects:
            a. More efficient irrigation systems
            b. Political subdivisions may provide low-interest loans to individuals.

II. Irrigation Water Use and Efficiency

a. TWDB estimates irrigation water use
    i. Irrigation is currently the largest water use sector in the state.
    ii. On average, irrigation water use is about 8 or 9 million acre-feet per year.
        1. This represents about 50 to 60 percent of the total water use in the state across all sectors.
        2. About 75 to 80 percent of irrigation is from groundwater.
            a. Vast majority from the Ogallala Aquifer
b. Irrigation efficiency
    i. In 2000, 4 million acres--about 60 percent of the irrigated acres in Texas--were irrigated with sprinkler water
        1. 78 percent were irrigated with sprinkler systems in 2008
        2. 82 percent were irrigated with sprinkler systems in 2013
    ii. Estimated efficiency of sprinkler systems in 2000 was 55 to 90 percent; newer systems may achieve up to 98 percent efficiency.
    iii. Adoption of drip or trickle irrigation increased from 1 percent in 2000, to 6 percent in 2013.

III. Improvements and New Technologies

a. Drip Irrigation and Low Energy Precision Application (LEPA)
    i. Up to 98 percent application efficiency
    ii. New technologies for irrigation scheduling
        1. Improved data collection such as real-time soil moisture monitoring,
        2. Automation and telemetry to allow for remote management of irrigation systems,
        3. Remote sensing, soil-mapping, and precision applications, and/or
        4. Improved access to reliable local weather data.
b. TWDB Demonstration Projects
    i. Texas Alliance for Water Conservation
        1. Involves Texas Tech University, Texas A&M AgriLife Extension, High Plains Underground Water Conservation District, equipment dealers, private consultants, and agricultural producers
        2. Purpose: to identify and demonstrate cost-effective practices and technologies to reduce groundwater depletion while maintaining profitability.

A special report by the Texas Water Resources Institute provided to the committee offers detailed insight into the state of agriculture water use in Texas, conservation initiatives, and future goals. That report is presented below:

Importance of Groundwater to Agricultural Irrigation

Although both surface water and groundwater are used for agricultural irrigation, the source of most agricultural irrigation water is groundwater. In 2000, 86% of the irrigated acres in the state used groundwater, 11.6 used surface water, and the remaining 2.4% used a mix of groundwater and surface water (TWDB 2001).

Groundwater is the sole source of irrigation water in the Texas High Plains, while the Rio Grande Basin and upper portions of the Gulf Coast rely heavily on surface water. Combinations of sources provide irrigation water for the Winter Garden (predominantly groundwater) and middle Gulf Coast (predominantly surface water) regions (TWDB 2011).

Agricultural Irrigation Concentrated in Areas Far from Urban Growth

The state's irrigated acres are concentrated in those areas having both productive soils and available water. As shown in Figure 4, most agricultural irrigation is in West and South Texas, far from the state's major urban centers in Central, North, and Southeast Texas.

Annual estimated water in use in Texas totaled 16.2 million acre-feet in 2009, with about 57% used for agricultural irrigation (TWDB 2012). Total annual irrigation water use has remained steady, averaging approximately 9.5 million acre-feet, since the late 1970s.

On a per acre basis, the rate of irrigation application in Texas has averaged less than 18 inches annually since the 1950s (TWDB 2001). Although these rates vary by region and crop, on a statewide basis agricultural irrigation rates are comparable to or less than the rate of application by homeowners. On an annual basis, warm season turf grasses will use 40 to 60 inches of water per year. A 3-year study in College Station found average households supplemented rainfall by applying 22 inches of water annually to their lawns and landscapes (TWRI 2004)

Increasing Yields without Increasing Water Use

While statewide agricultural irrigation application rates have stayed relatively constant since the mid-1970s (TWDB 2001, 2011), agricultural yields have increased significantly as improvements in irrigation technology and management, crop management, and crop genetics have been developed and implemented. For example, average per-acre corn yields have increased by 62% since 1975 while cotton yields have more than doubled (USDA-NASS 2008)

Although crop genetics have helped increase productivity, improved genetics do little without water. In comparison to non-irrigated crops (dryland production) irrigation generally doubles crop production. Equally important, irrigation helps mitigate production risk in the state's semi-arid climate while also improving crop quality and value.

Water Supply and Demand Challenges

Water availability challenges the state's future more than any other natural resource issue. Demand already exceeds supplies in six of the 16 water planning regions. By 2060, demand will exceed supplies in all regions except two.

Declining aquifer levels, Especially in the Ogallala Aquifer

By 2060, statewide groundwater supplies are projected to decrease by 32% primarily because of declining Ogallala Aquifer levels and restricted pumping in the Gulf Coast Aquifer to prevent land subsidence (TWDB 2011).

Increasing Urbanization

Rapid development and expansion of urban areas are decreasing the amount of land available for irrigated agriculture, this is especially noticeable in Regions M and E. Many of these acres are being converted to residential areas with significant quantities of irrigated urban landscapes.

Further, surface water supplies available for agricultural irrigation are decreasing as water demands for municipal, industrial, and energy sectors increase. In Regions C, K, and M, municipal demand increases of more than 90% are expected by 2060. The tremendous pressure from urban growth is forcing many areas at look to obtaining water from other regions.

With the projected doubling of the population of Texas over the next 50 years, sustaining irrigated agriculture will become ever more challenging because of the competing interests generated by this growth. It will also become more important with the increasing food demands of this population and need for a secure food supply.

Mass Conversion to Efficient Irrigation Systems

Historically, most agricultural irrigation was applied using flood and furrow irrigation; however, most of the state has undergone a mass conversion from these systems to more efficient irrigation systems. Beginning in the late 1970s, center pivot irrigation systems became reasonably available, and by 1994 they had been adopted on nearly half of Texas' irrigated acres. During that time, center pivots evolved from high-pressure machines that sprayed water over the crop canopy to eminently more efficient, low-pressure systems that gently apply water at or below a crop's canopy.

Compared to traditional flood or furrow irrigation methods, modern center pivot sprinklers offer a tremendous improvement in application efficiency along with reduced labor requirements and usually large increases in yield. Both energy and water use efficiency are also greatly enhanced when low-pressure center pivot systems are used.

As of 2008, center pivot sprinklers are used on nearly 80% of Texas' irrigated acres, and 87% of those are acres using low-pressure center pivot sprinklers, furrow and flood irrigation accounts for less than 20% of irrigated acres today. Further, the highly efficient subsurface drip irrigation, in which there is minimal evaporative loss, is increasingly being adopted and now comprises almost 3% of irrigated acres.

Because of this adoption, irrigation efficiency has gone from 60% to 88-95% in much of the state today, allowing Texas to get much more value and agricultural output from its water.

Agricultural irrigation technology continues to progress and farmers are largely ready and willing to adopt more efficient operations that save water, energy, and money. The USDA-Natural Resources Conservation Service and Texas State Soil and Water Conservation Board report that through their programs alone, farmers in Texas have improved irrigation water management on over one million acres since 2008. This reflects only a portion of the improvements adopted.

Economic Impacts of Irrigated Agriculture

Many communities depend on irrigated agriculture for continued viability. The statewide economic value directly derived from irrigated agriculture was $4.7 billion in 2007 (TWDB and TSSWCB 2012).

However, impacts of irrigation vary by region. In the Texas High Plains, the total regional economic impact of converting all irrigated acres to non-irrigated dryland farming would be an annual net loss of over $1.6 billion of gross output, over $616 million of value added, and nearly 7,300 jobs (Yates et al. 2010). Loss of irrigation in the Winter Garden (Frio, Medina, Uvalde, and Zavala counties) would result in a loss of $55 million in vegetable and melon production, $22 million in additional economic activity, and 872 jobs (AgriLife Extension 2009). In Uvalde County alone, total economic impact of irrigated agriculture is estimated at $44 million and supports 600 jobs (AgriLife Extension 2009). Finally, in the rice producing middle Gulf Coast region (i.e Colorado, Matagorda, and Wharton counties), the irrigation-dependent rice industry contributed $441 million in annual output to the region and supported 3,900 jobs across all sectors (based on 2008-2010 data).

The economic costs of lost irrigation are due to not only reduced production and associated processing, but also to reduced demand for inputs such as fertilizer, chemicals, energy, and machinery. All these factors are linked throughout the state's economy (Yates et al. 2010).

Opportunities for Improving Agricultural Irrigation Efficiency

The agricultural sector responds to change, and farmers and ranchers have demonstrated a resiliency by adapting to changes in water supplies, costs, and regulations. Projections in the

1970s suggested that the Ogallala Aquifer would be exhausted by the early 2000s, but producers responded by using newly developed efficient technologies, and the projections did not come true. Opportunities remain for continued improvements in water use efficiency, including the following:

Improving Irrigation Scheduling

Using evapotranspiration (ET) networks and other tools for irrigation scheduling can significantly save irrigation water. ET networks typically consist of strategically placed weather stations that gather data, which is used to provide estimates of crop water needs. Irrigators can then use this information to determine optimum irrigation management on a daily basis. In the 2011 Region A water plan, irrigation scheduling through use of the North Plains ET network is projected to save over 1 million acre-feet cumulatively in the region over the 50-year planning horizon for less than $9/acre-foot. Multiple ET networks have been established in Texas, but the lack of dedicated funding sources often results in disputed data, limiting the networks' availability and sustainability.

Adopting Drought Tolerant Crop Varieties

Scientists from both the public and private sector are developing germplasm in crops that improves heat and drought tolerance. Some seed companies are currently releasing the first generation of "drought-tolerant" corn hybrids, with many more being developed. Adoption of these varieties may provide significantly more productivity under hot and dry conditions.

Developing Improved Irrigation Water Management Technologies

Continued development and integration of technologies focused on monitoring soil moisture and plant stress along with precision application systems are critical to improving water use efficiency. To provide irrigators the needed tools to help apply water only when it is needed and in the right amounts, evaluation of how to incorporate existing soil moisture technologies into production systems, continued development of plant stress monitoring, and precision application is necessary.

Continued adoption of Conservation Practices

Further adoption of on-farm conservation practices is also needed to meet conservation goals. These practices include conservation tillage, use of growth regulators and evaporation suppressants, rainfall capture and retention in the soil profile and runoff reduction from fields (TWDB 2001). Education and economic incentives are needed to encourage more rapid and widespread voluntary adoption of these technologies.

Improving Irrigation Conveyance Systems

Improvement is needed in irrigation water conveyance systems (e.g., canal lining, etc.) to increase their efficiency and reduce water losses.

Recommendation:

The Committee believes the legislature should encourage and foster efficient, cost-effective agricultural water conservation strategies by any means necessary. The opportunities detailed in the above report are an excellent starting point.

Study the impacts of windblown trash on agriculture and ranching.

The House Committee on Agriculture and Livestock met to receive testimony regarding the effect of windblown litter on the agriculture and livestock industry. While witnesses provided the committee assurance that litter does, in fact, have a substantive impact on certain sectors of the agricultural economy, a lack of scholastic research into the subject limits any ability to illustrate this effect in numbers or dollars. Certainties remain, however: the amount of litter in Texas is rapidly on the rise (particularly along FM roads), and a portion of that litter makes its way onto farms and ranches.

Both oral and written testimony provided to the committee offers a glimpse into two major ways windblown litter affects different agricultural industries: (1) ingestion by cattle and other ruminants and (2) contamination of cotton.

It is without a doubt that the ingestion of plastic and other contaminants can be lethal to ruminants. The pervasiveness of this problem is, however, unknown because there is no tracking of litter related deaths and, more often than not, such deaths go undiagnosed.

One of the few studies available on the ingestion of indigestible foreign materials by ruminants was done in Ethiopia and can offer Texas some insight. For starters, the most commonly encountered material found ingested by ruminants was plastic, notably plastic bags. Anecdotal evidence presented to the committee holds this to also be true for Texas. Ingestion of materials such as plastic bags can lead to a host of health issues including a reduced feed intake, a reduced rate of fattening, internal injury, and death due to blockage. Other complications caused by the ingestion of indigestible materials are rumenitis, impaction of the rumen, traumatic pericarditis, and traumatic reticuloperitonitis.

The study points out that contaminant ingestion in Ethiopia becomes more prevalent in periods of nutritional scarcity and when livestock is located near urban and suburban areas. As Texas experiences prolonged droughts and rapid urban and suburban expansion, one can expect the trends identified in Ethiopia to be mirrored in Texas. As the population urbanizes rural areas, more litter will find its way to where it shouldn't be. As drought reduces the availability of naturally occurring food sources, cattle and other ruminants will be determined to search out alternatives. The combined effect on livestock is cause for concern.

Because the ingestion of plastic and other discarded materials can lead to a dramatic loss in productivity and likely has a higher than realized mortality rate, the economic impact is presumably quite substantial. That being said, even an estimation in terms of dollars lost will be unavailable without more data and research.

Plastics and other discarded contaminates also negatively impact the cotton industry. Tony Williams, Executive Director of the Cotton Ginners Association, expressed to the

committee many of the industry's frustrations with windblown litter. Without advocating for a ban on plastic bags, he noted that plastic is cotton's number one contaminant and that it is indeed an issue with far reaching consequences.

Mr. Williams explained to the committee that ginning technology has not yet caught up to the issue and that current methods are unable to remove plastics from the cotton as it moves through the ginning process. Contaminated bales, in turn, get sold to textile mills creating a whole other set of potentially costly problems in that sector. Exacerbating this issue, and perhaps unique to cotton, each bale is assigned a permanent bale identification number, which enables a textile mill to track a contaminated bale back to its gin of origin. If bales are consistently contaminated, this tracking system enables cotton regions to develop a reputation for poor quality.

Beyond education, solutions to this issue were not offered during the course of the hearing, though it should be noted that efforts to remove contaminates in-stream during the ginning process are being explored by the USDA.

Recommendations:

A number of possible solutions to address litter related issues were submitted to the committee:

- The creation of a state advisory panel to assess and develop Best Management Practices for community litter prevention, mitigation, abatement, and funding mechanisms. This is an attractive legislative option because it has the potential for ongoing concentrated and coordinated efforts among appointed agencies and represented entities, providing a more comprehensive approach when crafting BMPs. The increased buy-in will facilitate implementation at the community level. The potential to utilize COG grants as a financial incentive for BMP adoption could be applied at the local government level with additional pass-through to private sector or NGO participants. SB 1094 (78R), which established the Water Conservation Implementation Task Force, is a model for crafting this legislation.

- County Environmental Crimes Task Force -- Each session, a House bill relates to the amounts, availability, and use of certain statutorily dedicated revenue and accounts. The past two sessions have seen HB 7 used to reduce the fund balance of the Solid Waste 5000 account. These funds are collected through a ‘tip fee’ added to each ton of municipal solid waste disposed of in a Texas landfill. Collected funds are appropriated to TCEQ solid waste priorities and Council of Government grants to local governments. This is the primary source of state solid waste funding for community litter, illegal dumping, and recycling programs. Due to funding allocation and appropriation process, the fund has a current balance of more than $120,000,000.

In the 85th Session, HB 7 can be used as a mechanism to appropriate one-time payments to county enforcement agencies wanting to form Environmental Crime Task Force units. Fines paid by violators would route back to the local Task Force units thereby sustaining the operations. This would assist existing law enforcement and alleviate the economic burden to communities for illegal dumpsite clean-up efforts. The deterrent of increased enforcement will lead to prevention of illegal dumping which is a more cost effective option than abatement. This example has succeeded for Ector County.

- Another appropriation potential that could be accomplished through HB 7 and utilize unspent balances would be funding the Rural Economic Development and Investment Program. Created in 2009 but never funded, this Department of Agriculture program would provide financial assistance to attract private business and improve waste disposal infrastructure to counties with less than 75,000 and cities less than 50,000 in population. This fund would augment the current COG grants only available to local government by supporting private sector investment.

- Require a convicted litterer to perform community service hours by picking up litter in the county of residence. This could be implemented by adding Litter Act statues to Title 1, Code of Criminal Procedure, 42A.304 Community Service, which currently mandates 60 hours of litter pick up for outdoor burning of household refuse (11 LGC 352.082).

Study the appraisal of agricultural land for taxation and related issues, including the change-of-use "rollback" provision. Examine the impact of the current appraisal system of agricultural land for taxation on rural economic development.

History of the Appraisal of Agricultural Land in Texas

The history of land taxation in Texas began when the 1st Republic Congress, 1st Session, 1836, enacted legislation in 1837 levying a direct tax of one half of one percent on all real, personal, or mixed property. The 1st Legislature, Regular Session, 1846, which convened after Texas' admission into the United States in 1845, enacted similar legislation levying a tax of 20 cents per $100 of value on all real and personal property. Following adoption of the Texas Constitution of 1876 (under which the state still operates), the 15th Legislature, Regular Session, 1876, enacted legislation subjecting all property, real and personal, to direct taxation. The legislation established that real property included the land itself and all rights and privileges belonging or pertaining to that land and required each parcel of land to be valued at its true and full value in money, excluding the value of any crops growing on that land. (The courts have since construed "true and full value in money" to mean "reasonable cash market value.")

Research yielded no substantive changes to the law governing the way land was valued or appraised from the mid-1870s until the 1960s, when, as the Comptroller's Manual for the Appraisal of Agricultural Land describes, increasing urbanization caused a concurrent increase in the value of certain farm and ranch land, which resulted in taxes high enough to threaten the continued farming and ranching of that land.

In response to this situation, the 59th Legislature, Regular Session, 1965, passed House Joint Resolution 79, which was approved by voters in the November 1966 election. H.J.R. 79 required all land owned by persons and designated for agricultural use to be assessed for all tax purposes on the consideration of only those factors related to such agricultural use. The resolution defined "agricultural use" as the raising of livestock or growing of crops, fruit, flowers, and other products of the soil under natural conditions as a business venture for profit, which business is the primary occupation and source of income of the owner. The resolution also included a rollback provision that subjected land designated for agricultural use that was sold or subsequently diverted to a purpose other than that of agricultural use to an additional tax in an amount equal to the difference between the taxes paid or payable under the resolution's provisions and the amount payable for the preceding three years had the land been otherwise assessed.

Four years later, following concerns raised by statewide agricultural interests that the provisions of H.J.R. 79 were unworkable, the 61st Legislature, Regular Session, 1969, enacted

Senate Joint Resolution 15, which proposed to amend the constitution to authorize the legislature to create a uniform method of assessing ranch, farm, and forest lands based on productive capability. Despite the support from agricultural interests, the amendment was defeated in the November 1970 election, in part due to opposition from urban interests. The defeat of S.J.R. 15 was followed by other failed legislative efforts over the next three sessions to extend use assessment to other types of land. That streak ended with the 65th Legislature, Regular Session, 1977, and the passage of House Bill 22, which was intended as the enabling legislation for Senate Joint Resolution 1.

H.B. 22 established a new system for valuing open-space land at productive value for purposes of property taxation, as opposed to market value. The bill defined "open-space land" in part as all land with a five-year history of use for farming, ranching, or timber production, plus land pledged by the owner for such use in the future, and included a rollback provision for land that is subsequently taken out of farming, ranching, or timber production that required the owner to pay taxes based on market value for the previous four years, plus five percent annual interest.

S.J.R. 1 was intended to give the legislature the power to implement the provisions of H.B. 22, but the legislature failed to adopt the resolution. Backers of H.B. 22 responded by changing the bill's effective date so that it was no longer contingent on passage of S.J.R. 1, but, without the constitutional amendment, H.B. 22 was declared unconstitutional by the attorney general in Op. Tex. Att'y Gen. No. H-1098 (1977). Thus, a constitutional amendment was proposed the next year by House Joint Resolution 1, 65th Legislature, 2nd Called Session, 1978, and approved by voters in the November 1978 election. H.J.R. 1 granted the legislature the power to implement H.B. 22 just as S.J.R. 1 proposed, but was more specific with regard to the basis on which open-space land would be taxed.

The following year, the 66th Legislature, Regular Session, 1979, passed Senate Bill 621, which codified existing civil statutes relating to property taxation into the Property Tax Code and increased the rollback period for the change of use of open-space land from four years to five years and the annual interest rate from five percent to seven percent.

The next two decades saw far fewer substantial changes to the law. Voters approved House Joint Resolution 72, 74th Legislature, Regular Session, 1995, in the November 1995 election to allow certain land devoted to wildlife management to qualify for tax appraisal in the same manner as open-space agricultural land, but rejected Senate Joint Resolution 16, 82nd Legislature, Regular Session, 2011, which proposed to make a similar allowance for land devoted to water stewardship, in the November 2011 election. Finally, the 82nd Legislature, 1st Called Session, 2011, passed Senate Bill 1, which expanded the definition of "agricultural use" to include use of land to raise or keep bees for pollination or for the production of tangible products having a commercial value, provided that the land used is not less than 5 or more than 20 acres.

Recommendation:

The open-space land valuation system containing a roll-back provision was implemented with the express purpose of maintaining land in agricultural production. Efforts to strike this provision in its entirety run against the spirit of the law and should be approached by the legislature with extreme caution. It should be made clear that this system is not a subsidy or a tax break in the traditional sense, but an incentivizing privilege meant to off-set the tax burden while land is held in certain uses. As such, it makes sense that when a change-in-use occurs some form of penalty or pay-back be prescribed. Furthermore, the committee is unaware of any evidence that this system is significantly hindering development and should therefore remain reasonably intact in order to preserve its purpose.

Addendum 1

DAVID SIMPSON
STATE REPRESENTATIVE
DISTRICT SEVEN

January 6, 2017

The Honorable Joe Straus
Speaker
Texas House of Representatives
P.O. Box 2910
Austin, TX 78768-2910

Speaker Straus,

As a member of the House Committee on Agriculture & Livestock it has been a pleasure to serve with my fellow committee members and Chairman King. Agriculture has always been a prominent part of Texas history and our economy, but as our committee has learned it certainly is not without its challenges.

Though I greatly appreciate the work done by Chairman King and his staff in preparing the interim report for our committee addressing and providing recommendations on the items you charged us with studying, I respectfully submit this letter to you outlining my objections to the report.

Interim Charge #1: Water continues to be a major issue in Texas and one that agriculture needs play a big part. Though I believe the regional water planning process has been beneficial in some areas, my objections to its abuses remain. We have spent billions of taxpayer dollars on financial programs through the TWDB and have relied heavily on debt to implement other loan and grant programs. As such, I am hesitant to recommend the state continue to expand these programs given the large investment that has already been made.

Interim Charge #2: I do believe we should encourage and foster efficient, cost-effective strategies. However, I do not believe it should be done by any means necessary. Incentive programs I believe have the potential, which we have seen, for abuse and can be a financial burden on both individuals and government. Free market principles are the greatest opportunity for those engaged in agriculture businesses to conserve. Government mandates or incentive programs undermine those principles.

DAVID SIMPSON
STATE REPRESENTATIVE
DISTRICT SEVEN

Interim Charge #4: The use of dedicated funds has been an issue of particular interest for me. I fully support using funds for the purpose for which they were dedicated and am adamantly opposed to those funds being used for any other reason. My concerns remain with economic development incentive programs that they perpetuate the undermining of the free market by picking winners and losers. Plastic bag litter is a legitimate concern for Texas ranchers, but we have to find solutions to this externality beyond the bag bans adopted by some municipalities - a measure the Texas Fourth Court of Appeals recently found preempted by state law - or excessive penalization by an Environmental Crime Task Force.

Interim Charge #5: Though I understand the reason the change-of-use "rollback" provision was implemented, I believe it is a provision that violates the principles of private property rights that we claim to hold in high regard here in Texas. Punishing an individual for changing the use of property they own is not an appropriate use of government force and is something I cannot support. Private property is just that — private; not a matter for government to be involved in so long as the activities on that property do not interfere with the rights of others.

I again want to reiterate my thanks and appreciate to Chairman King. His passion and knowledge on agricultural issues is obvious and expansive. It has truly been an honor to serve with him on this committee and to discuss these important issues.

For Texas and Liberty,

David Simpson

Matt Rinaldi