



2010 Annual Report

HB1437 Agricultural Water Conservation Program



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Abbreviations and Acronyms

Ag Fund	LCRA's Agricultural Water Conservation Fund
Brazos	Brazos River Authority
CTSUD	Chisholm Trail Special Utility District
EQIP	Environmental Quality Incentive Program
HB 1437	House bill 1437, passed by the Texas House in 1999
LCRA	Lower Colorado River Authority
NRCS	Natural Resources Conservation Service
TWDB	Texas Water Development Board
USBR	United States Bureau of Reclamation

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Executive Summary

This report summarizes activities of the House Bill 1437 (HB 1437) Agricultural Water Conservation Program in 2010 and is submitted in accordance with LCRA Board Policy 301. It presents the significant accomplishments of the program in 2010, summarizes the status of the Agricultural Water Conservation Fund and presents planned activities for LCRA fiscal year FY2012.

Background

HB 1437, passed by the Texas Legislature in 1999, authorizes the Lower Colorado River Authority to provide up to 25,000 acre-feet per year of surface water to Williamson County if there is “no net loss” to the lower Colorado River basin. The HB 1437 Agricultural Water Conservation Program provides funds for the development of water resources and water conservation projects to maintain no net loss when water is transferred to Williamson County. Projects are funded by a conservation charge on water reserved or transferred to Williamson County under the HB 1437 water contract with the Brazos River Authority (Brazos).

2010 Activities

The primary activities in 2010 included: implementation of a fifth year of grants to farmers for precision leveling projects; completion of Phase 2 construction of the Garwood Measurement Project; initiation of the Gulf Coast Gate Rehabilitation Project; and completion of an interim conservation verification report for the Lakeside Irrigation Division. A total of 33 grants were awarded to farmers to precision level approximately 3,217 acres of farmland. Grant awards totaled \$200,019.

A \$254,639 grant from the U.S. Bureau of Reclamation (USBR) was awarded to LCRA for the \$554,639 Gulf Coast Gate Rehabilitation Project. This project will rehabilitate and automate 11 gate structures in the Gulf Coast Irrigation Division. The grant is matched with \$278,262 from the HB 1437 Ag Fund.

Water Conserved and No Net Loss

In 2010, an estimated 8,443 acre-feet of water was conserved from HB 1437 funded projects. Water available for transfer under no net loss is 7,464 acre-feet and is computed as the average amount of water conserved over the three-year period of 2008 – 2010. No HB 1437 water was transferred to Williamson County during 2010. Water transfers are projected to begin in 2015.

Agricultural Water Conservation Fund

The balance in the fund as of Dec. 31, 2010, was \$668,717. Income to the fund totaled \$435,908, expenditures \$655,632. In December 2010, the LCRA Board authorized expenditures of \$625,000 for the 2011 grant program, the Garwood Measurement Project, initiation of the Gulf Coast Gate Rehabilitation Project and completion of the Lakeside conservation verification study. A financial audit of the grant program was conducted in 2010 and concluded that the financial controls and processes are effective and adequate.

Program Outlook for FY2012

The FY2012 program includes continuation of on-farm conservation grants, completion of the Garwood Measurement Project, completion of the Gulf Coast Gate Rehabilitation project and completion of the Lakeside Conservation Verification Study. The conservation charge remains unchanged at 25 percent. The proposed budget for FY2012 activities is \$860,000.

Section 1 - Introduction

1.1 Purpose of Report

This report summarizes activities of the HB 1437 Agricultural Water Conservation Program in 2010 and is submitted in accordance with LCRA Board Policy 301. The following are the objectives of this report:

- Document water savings to achieve no net loss;
- Quantify the volume of HB 1437 water available for transfer;
- Present statistics on how funds in the Agricultural Water Conservation Fund (Ag Fund) were spent;
- Present a program plan for 2011; and
- Recommend a conservation charge to support the recommended plan.

1.2 HB 1437 Legislation

House Bill (HB)1437, passed by the Texas Legislature in 1999, authorizes the Lower Colorado River Authority upon written consent of the Brazos River Authority (Brazos) to provide up to 25,000 acre-feet of surface water per year for use outside the Colorado River watershed in Williamson County under several conditions:

1. Water is transferred in a manner that assures “no net loss” of surface water to the Colorado River basin as determined by LCRA’s Board of Directors. A definition of “no net loss” was approved in March 2005 and incorporated into LCRA Board Policy 501 (now Board Policy 301);
2. LCRA adds a surcharge to the base rate for such transferred water. Proceeds from the surcharge are deposited in the Agricultural Water Conservation Fund (Ag Fund). The legislation set a minimum 10 percent conservation charge and authorized the LCRA Board to adjust the surcharge as necessary to mitigate any adverse effects of the transfer. The determination of the surcharge by the LCRA Board of Directors is not subject to review or modification by any regulatory agency or authority. This surcharge is defined as a “conservation charge” in Board Policy 301;
3. The Board may use money from the fund only for the development of water resources or other conservation strategies to replace or offset the amount of surface water to be transferred to Williamson County. These strategies may include the development and implementation of methods, programs, and strategies relating to groundwater resources, reuse, conservation, and other opportunities to reduce the reliance on surface water for agricultural irrigation. The methods, programs and strategies must take into consideration the surface

water and groundwater needs of the affected Colorado River basin users. Water resources developed or conserved may be acquired from any source inside or outside the Colorado River basin and shall be used to benefit the water service areas of LCRA's irrigation divisions; and

4. Prior to using any funds from the Agriculture Water Conservation Fund, LCRA must consult with an advisory committee comprised of representatives of agricultural interests appointed by the county judges of Colorado, Wharton and Matagorda counties.

1.3 Interbasin Permit and Water Contract

In October 2000, LCRA and Brazos signed a 50-year water sales agreement for 25,000 acre-feet of water. In addition to the standard contract provisions, the agreement included a 25 percent conservation charge for transferred and reserved water and a clause that allows Brazos to terminate the agreement no earlier than February 15, 2012.

In August 2001, the Texas Natural Resource Conservation Commission (now the Texas Commission on Environmental Quality, or TCEQ) issued the interbasin transfer permit to Brazos to transfer up to 25,000 acre-feet of water per year to Williamson County under the conditions authorized in HB 1437. Figure 1.1 presents a general location map of Williamson County and the LCRA irrigation divisions. As of December 31, 2010, no water transfers have occurred.

1.4 Background

During the development of the HB 1437 program a number of reports and policies were developed and are briefly summarized below. Complete versions of each can be found at the project web site: www.hb1437.com.

1.4.1 HB 1437 Implementation Study

In 2004, the LCRA Board authorized an engineering study and public meetings to gather feedback to use in developing a plan for implementing the HB 1437 program. Major goals of the study were to define the term "no net loss," evaluate potential conservation projects and develop an implementation plan to allow the water transfer to occur under the provisions of the HB 1437 legislation. The plan was developed after review and comment by Brazos, municipal customers, local producers, and members of the public. The plan defined "no net loss," outlined a seven-year plan through 2011 (the contract termination option) to meet projected water demands through on-farm and in-district conservation projects, established a 25 percent conservation surcharge on the water transferred to Williamson County customers, and presented additional recommendations for program implementation.

1.4.2 LCRA Board Policy

In March 2005, the LCRA Board adopted a revised LCRA Board Policy 501, Water Resources Management, and authorized implementation and funding of the HB 1437 Agricultural Water Conservation Program. The policy includes the definition of "no net

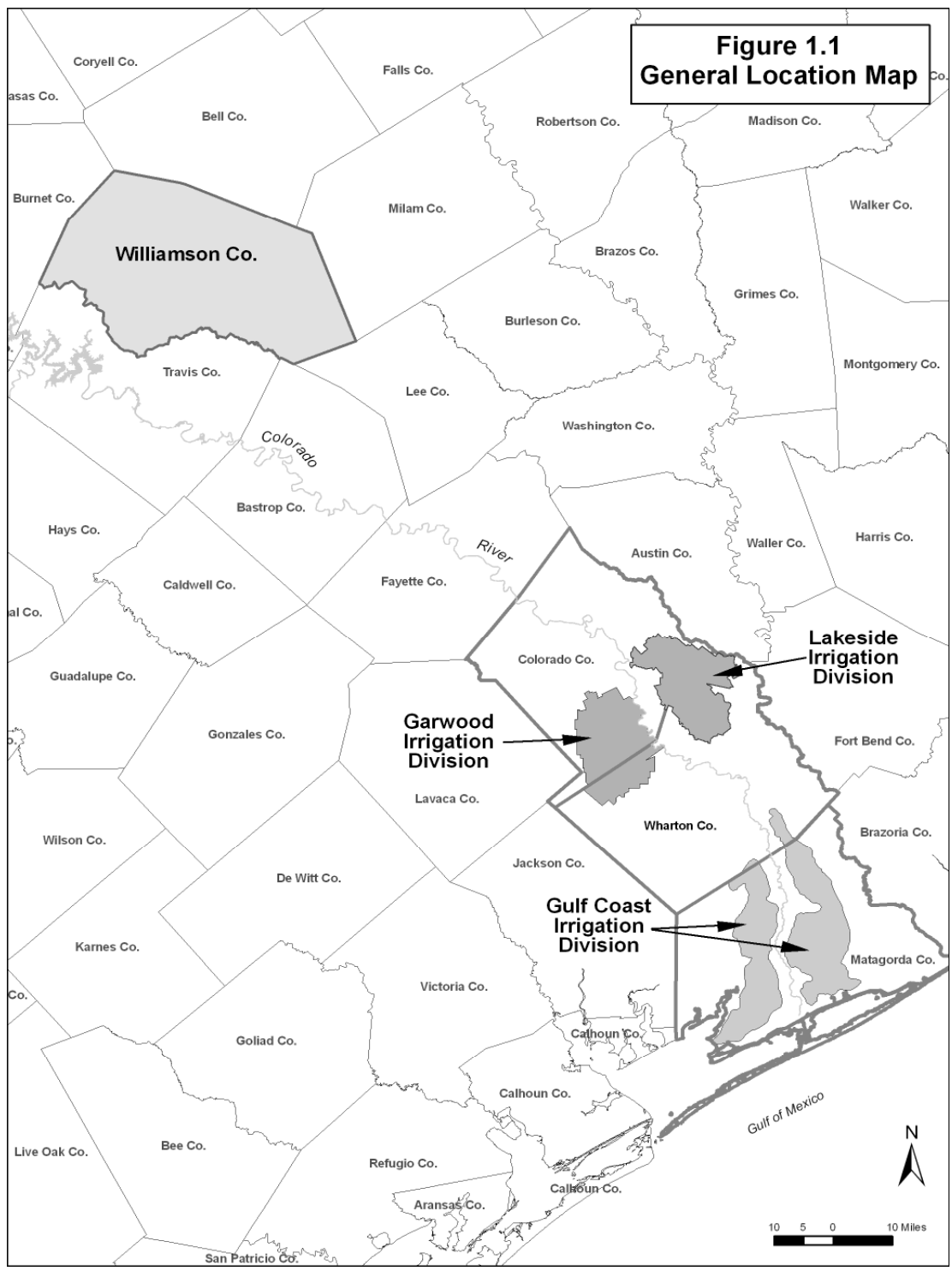
loss” used in this report. In December 2010, the LCRA Board consolidated the provisions of HB1437 into a revised version of LCRA Board Policy 301. A discussion of the change is presented in Section 3 of this report.

1.4.3 Short-Term Strategy Report

In 2009, a short-term strategy report ([HB1437 Short-Term Strategy Report Update](#), Alan Plummer Associates, Inc., October 2009) was issued and presented a five-year plan (Years 2009 – 2014) to meet the revised water demand projections for water transfers to Williamson County. This report outlines steps necessary to meet the short-term goal of providing up to 10,000 acre-feet a year of water available for transfer under HB1437. This five-year planning horizon also coincides with the LCRA 2009 Raw Water Conservation Plan goals and strategies for agricultural water conservation. A copy of the short-term strategies report is available on the project website: www.hb1437.com.

1.4.4 NRCS Memorandum of Understanding

In March 2007, the LCRA and the Natural Resources Conservation Service (NRCS) entered into an agreement to share technical information related to the NRCS’s Environmental Quality Incentives Program (EQIP). This federal grant reimburses producers 50 percent of the cost of specific on-farm conservation projects such as precision land leveling. In 2006, the LCRA Board adopted the application guidelines, eligibility rules and contract provisions for awarding cost sharing conservation grants from the Ag Fund. These guidelines integrated the NRCS technical specifications and payment certification processes into the requirements for the HB 1437 grant program. This agreement is important because, by adopting the NRCS standards and certifications, the verification and administrative costs for the HB 1437 grant program are significantly reduced.



Section 2 - Program Overview

The HB 1437 Agricultural Water Conservation Program is a major part of LCRA's conservation program for agricultural water uses. The program joins individual producers, local soil and water conservation districts, the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), the Texas Water Development Board and the U.S. Bureau of Reclamation in a collaborative effort to conserve water. The following are the goals of the HB 1437 program:

1. Reduce agricultural use of surface water;
2. Plan and implement conservation projects to fulfill obligations of the LCRA/Brazos contract for HB 1437 water;
3. Utilize and leverage funds from the Agricultural Water Conservation Fund to implement water conservation projects; and
4. Provide program performance information to the LCRA Board, Brazos water customers and the public.

2.1 Demand Projections for HB 1437 Water

Water demand projections for HB1437 water are developed and updated annually by the Brazos River Authority. In February, 2011, Brazos presented LCRA the revised water demand projections summarized in Table 2.1 Brazos plan to supply much of its reserved water to the City of Round rock and Liberty Hill Water Supply Corporation (WSC). These revised projection show HB 1437 water transfers to begin in 2015, three years later than predicted in the 2009 projections.

Table 2.1 Water Demand Projections for HB 1437 Water (acre-feet per year)

Year	2009 Demand Projection			2010 Demand Projection		
	City of Round Rock	Liberty Hill WSC	Total	City of Round Rock	Liberty Hill WSC	Total
2011	0	0	0	0	0	0
2012	0	500	500	0	0	0
2013	0	500	500	0	0	0
2014	200	500	700	0	0	0
2015	1200	600	1800	1120	0	1120
2016	2300	600	2900	1120	0	1120
2017	3400	600	4000	2240	0	2240
2018	4500	600	5100	3360	500	3860
2019	5700	600	6300	5040	500	5540
2020	6900	600	7500	6900	500	7400

Figure 2.1 compares the 2009 demand project with the latest information from Brazos. It shows that the 10,000 acre-feet a year developed in the five-year short-term plan will be adequate to meet Brazos’s projections.

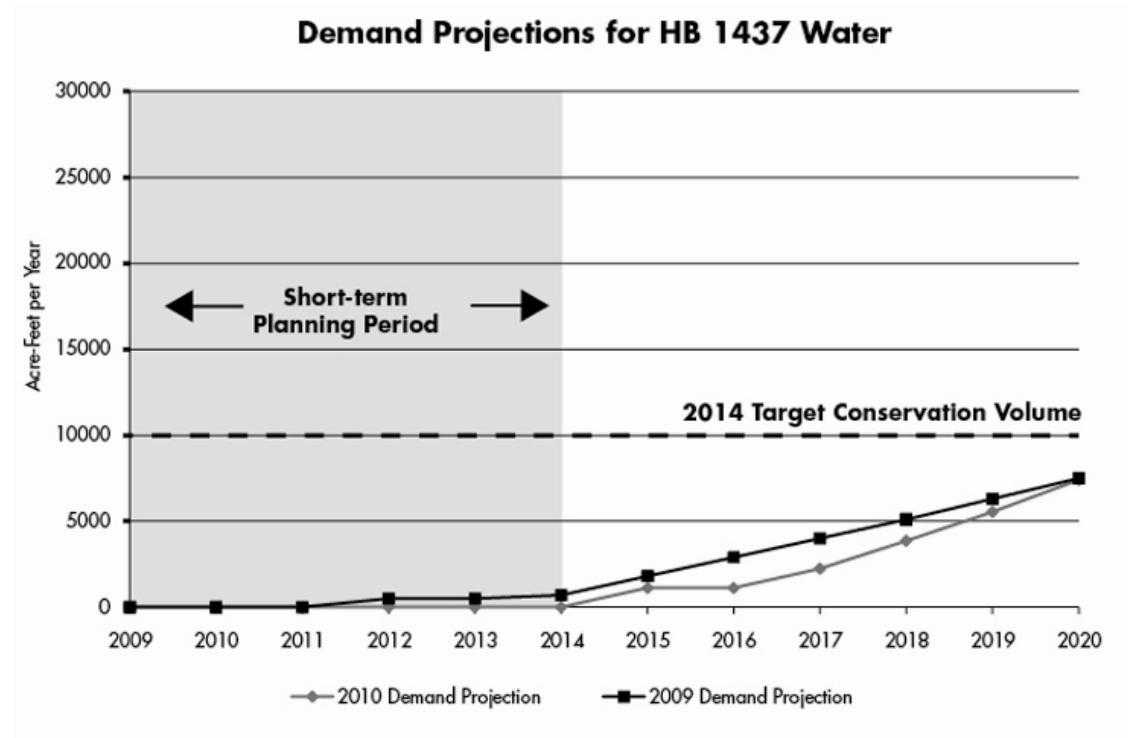


Figure 2.1 Demand Projections for HB 1437 Water

2.2 Overview of Short-Term Program Plan

The HB 1437 program plan was updated in 2010 (HB1437 Short-Term Strategy Report Update, Alan Plummer Associates, Inc., October 2010. Available on web site www.hb1437.com). It includes a series of projects and studies to be completed during the five-year period 2009 to 2014. The goal of this short-term plan is to develop the ability to transfer approximately 10,000 acre-feet per year to Williamson County by the year 2014.

The short-term target provides for development of conservation improvements four to six years ahead of their need while accounting for other uncertainties, such as reliability of conservation during drought. It also allows leverage of the HB 1437 funds to cost-share with grant programs that may not be available in the future. An overview of the plan and its status is presented below.

2.2.1 Plan Overview

The plan, initiated in 2005, updated in 2009, consists of three activity areas which are summarized below.

Program and Policy – These activities are the foundation of the program. Activities include development of Board policy to define no net loss, expansion of program oversight by customers and the public, and development of the program’s administrative processes and procedures. The current status of these activities is summarized below:

- Board policy defining no net loss and grant program administration and processes were completed in 2006. An administrative change to HB1437 policy was made in 2010 and is described in Section 3.
- The lottery selection system for grant awards was replaced with a pro rata distribution system in 2008. This system was successfully implemented in 2010.
- Public and customer oversight activities are ongoing. HB1437 Agricultural Conservation Fund Advisory Committee appointments expired but appointments were updated by local county judges in 2009. The committee held two meetings in 2010.

Contract and Financing – These activities develop the business practices to provide financial stability and accountability for the program. They include development of the procedures for requesting water for transfer, acquiring assurances for program water needs beyond 2012 and debt financing agreements for construction of conservation projects. Current status of these activities is summarized below:

- Grant contract documents and procedures were completed in 2006 and modified in 2008.
- Long-term debt financing and water transfer request protocols are not complete.

Projects and Studies – These activities plan, construct and operate the various conservation projects and include the engineering design, construction, technical studies and monitoring programs necessary to meet the water demands and legislative requirements. Current status of these activities is summarized below:

- On-farm precision leveling projects are in progress.
- Conservation verification studies are in progress.
- An update of the HB 1437 Program Plan was completed in 2009.
- Construction of the Garwood measurement project was initiated in 2009 and is expected to be complete in 2012.
- A gate rehabilitation project in the Gulf Coast Division was initiated in 2010 and is expected to be complete in 2012.

2.2.2 Plan Update

In 2009, LCRA completed the engineering study to update the short-term implementation plan for the HB1437 program. This update was necessary to reflect the knowledge gained from three years of program operation and changes and uncertainties in water demands and farming practices. Examples of these changes and uncertainties include the unknown timing of the expected water demand from Chisholm Trail Special Utility District (CTSUD), possible changes to the precision leveling conservation factor from the

ongoing conservation verification studies, a shift in many HB 1437 leveled fields from the assumed three-year rotation to a two-year field rotation schedule and the emergence of a one crop per year rice-seed growing business.

The new plan includes a more aggressive conservation program to maximize, within available funds, conserved water production to take advantage of the reauthorized EQIP funding. In addition, the funding plan includes an additional \$99,000 from the recently funded Agricultural Water Conservation grant from the TWDB.

Conserved water production under the updated plan will exceed the latest Brazos demand forecast. This provides a cushion for unexpected transfer needs. Details of the updated plan are presented in the study report which is available at www.hb1437.com.

The updated plan consists of a combination of on-farm and in-division conservation improvements summarized below.

- Water demand period – 2009-2014
- Conservation strategy elements:
 - Precision leveling of approximately 12,500 acres at 2,500 acres per year. These projects are a continuation of the grant program for precision land leveling. Approximately \$1.2 million (\$240,000 per year) in grants are included in the plan.
 - Retrofit of 11 existing check structures in the Gulf Coast Irrigation Division during the years 2012, 2013 and 2014. Check structures are in-canal devices that maintain water levels within canal segments. This project is funded in part by a \$254,000 grant from the USBR.
 - Implementation of volumetric measurement in the Garwood Division during 2010, 2011 and 2012.
- Conservation surcharge: 25 percent (from 2010 to 2014)
- Conserved water production goal: 10,000 acre-feet per year by the end of 2014.
- A summary of funding sources and distribution is presented in Table 2.2 below.

Table 2.2 Expected Expenditures for Short-Term Plan (2009 - 2014) *

Year	Precision Grading	Garwood Volumetric Measurement		Check Structure Retrofits		Total HB1437 Capital & O&M
		Capital	O&M	Capital	O&M	
2010	\$227,000	\$263,000	\$34,000	\$0	\$0	\$524,000
2011	\$233,000	\$271,000	\$70,000	\$0	\$0	\$574,000
2012	\$240,000	\$288,000	\$109,000	\$66,000	\$700	\$704,000
2013	\$248,000	\$0	\$113,000	\$90,000	\$1,600	\$453,000
2014	\$255,000	\$0	\$116,000	\$93,000	\$2,600	\$467,000
Total	\$1,203,000	\$822,000	\$442,000	\$249,000 **	\$4,900	\$2,722,000

* Note: These are planned total and annual expenditures. Actual annual expenditures will vary from year depending on work accomplished, on-farm grants awarded and success of grant funding.

** This does not include a \$254,000 grant from the USBR

Features of the funding plan include:

- On-farm precision land leveling projects:
 - o EQIP – 45 percent (may vary depending on adopted unit costs)
 - o Ag Fund – 20 percent (may vary from year to year)
 - o Farmer –35 percent (may vary from year to year)
- Implementation of in-division volumetric measurement:
 - o TWDB Grant– 9.5 percent
 - o Ag Fund –90.5 percent
- Retrofit of existing check structures:
 - o Ag Fund – 52 percent (\$278,000)
 - o USBR Grant – 48 percent (\$254,000)
- Total HB1437 funding is estimated at \$2,722,000, divided approximately 56 percent to in-division and 44 percent to on-farm projects. Cumulative costs over the five-year period are presented below:
 - On-farm conservation: \$1,203,000.
 - In-division conservation: \$1,518,000
 - Administration, conservation measurement and verification, and management: \$375,000 (\$75,000/year).

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Section 3 - 2010 Program Results

This section summarizes the significant program events for calendar year 2010.

3.1 Program and Policy

3.1.1 LCRA Board Policy

Two administrative changes to the HB1437 program policy were made in 2010. In December 2010, the LCRA Board moved the HB1437 fund policy from Policy 501 Water Resources to Policy 301 Financial Policy, Section 301.4 Special Funds. This move groups all special funds governed by the LCRA Board in to one Board Policy. Concurrently, the conditions regarding the definition of no net loss and requirements for water transfers were transferred from Policy 501 to the terms of the water supply contracts for Williamson County.

3.1.2 Cost Share

In 2010, the NRCS modified its cost share percentage and payment request processes which affected the HB1437 Grant Guidelines and Grant Contracts. Changes included: a) NRCS increased the percentage cost share goal from a fixed 50 percent to a statewide average of 60 percent ; b) NRCS now pays producers a fixed rate per cubic yard of material moved, for precision leveling, (previously NRCS paid a percentage of the total cost); c) NRCS no longer reports the total cost of the project. This later change had the greatest impact on the administration of the HB1437 grant program as the total cost value formed the basis for the 30 percent HB1437 grant share.

Because of these changes by NRCS and the HB1437 program goal to have producers pay 20 percent of the project cost, the grant percentage goal for HB1437 was reduced from 30 percent to 20 percent. This percentage change was approved by the LCRA Board in December 2010, and as shown in Table 3.1, it is similar to the program's current cost share percentage.

Table 3.1 HB1437 Cost Share 2008 - 2010

Year	Total Cost	HB1437 Paid	HB 1437 % Cost Share
2008	\$1,615,982	\$480,325	29.7%
2009	\$1,945,994	\$243,250	12.5%
2010	\$1,241,921	\$200,019	16.1%
Total	\$4,803,897	\$923,594	19.2%

The 2010 cost share percentage was adjusted using the pro-rata rules adopted by the LCRA Board in December 2008. The average cost share for 2010 was 19.2 percent.

3.1.3 Agricultural Conservation Fund Advisory Committee

In 2010, staff worked closely with the Ag Advisory Committee to implement the 2010 Lakeside farm survey for the conservation verification study. The committee met in March and December 2010. The committee was briefed on the status of the Garwood Measurement Gulf Coast Gate Rehabilitation projects and updated on the interim results of the conservation verification study with the LBJ School at the University of Texas at Austin (UT).

3.2 On-Farm Conservation Projects

3.2.1 On-Farm Conservation Projects - 2010

A summary of the program-funded on-farm conservation projects completed in 2010 is presented in Table 3.2. The program shared the cost of precision leveling for 33 fields totaling 3,217 acres. The largest acreage was located in the Lakeside Irrigation Division (about 80 percent), followed by Garwood (20 percent). There were no applications in Gulf Coast in 2010. Figures 3.1 and 3.2 show the locations of the leveled fields in the three irrigation divisions.

In 2010, the average cost share percentage was 16.1. The average field size was approximately 97 acres. The average cost of leveling was approximately \$386 per acre. Details about the awarded grants are available in Appendix A.

Table 3.2 2010 Acres Leveled and Grants Awarded

Division	Fields Leveled	Acres Leveled	Total Cost	HB 1437 Share
Lakeside	25	2,602	\$1,039,570	\$179,450
Garwood	8	616	\$202,351	\$20,569
Gulf Coast	0	0	\$0	\$0
Total	33	3,217	\$1,241,921	\$200,019

3.2.2 Program Conservation Projects - 2006-2010

The total on-farm conservation projects completed since program inception, 2006 through 2010 is presented in Table 3.3. The program shared the cost of precision leveling of 271 fields totaling 22,086 acres. The largest acreage is in the Lakeside Irrigation Division (55 percent), followed by Garwood (40 percent) and Gulf Coast (5 percent). Combined, HB1437 leveled fields represent approximately 28 percent of the total acreage in the LCRA irrigation divisions.

Since inception, the HB 1437 Ag Fund has contributed \$1,410,568 out of a total leveling cost of \$6,435,217 for an average 22 percent cost share. The average acreage of a leveled field is approximately 81 acres. The average total cost to precision level a field is approximately \$291 per acre.

Table 3.3 2006 - 2010 Acres Leveled and Grants Awarded

Division	Fields Leveled	Acres Leveled	Total Cost	HB 1437 Share
Lakeside	150	12,474	\$3,964,279	\$852,937
Garwood	109	8,682	\$2,225,887	\$503,213
Gulf Coast	12	930	\$245,051	\$54,418
Total	271	22,086	\$6,435,217	\$1,410,568

3.3 In-Division Conservation Projects

3.3.1 Garwood Measurement Project

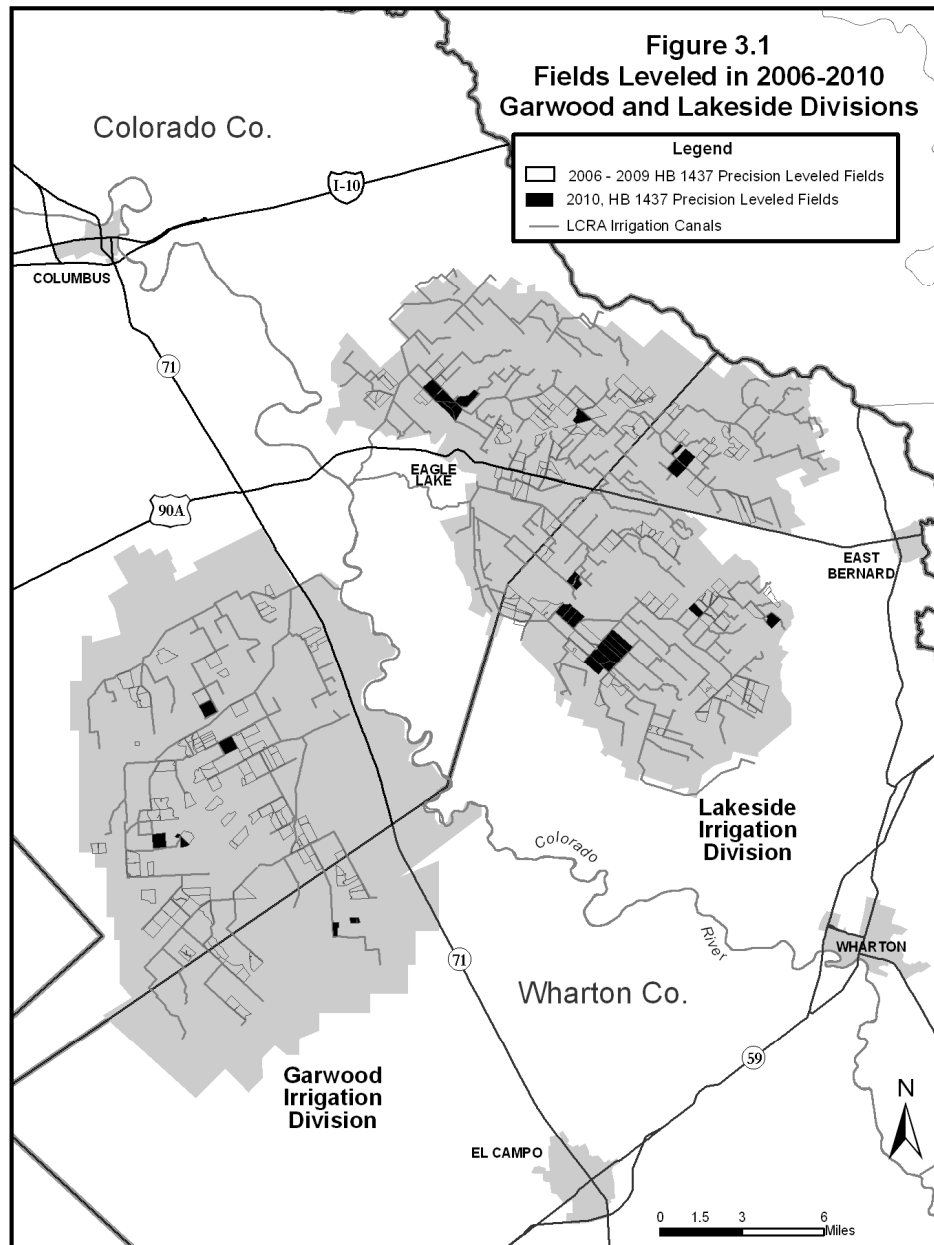
The Garwood Volumetric Measurement Project is a water conservation project that includes adding approximately 303 water measurement structures (delivery structures) and 128 check structures to existing canals and field laterals in the Garwood Irrigation Division. The project is projected to conserve approximately 3,400 acre-feet per year of water.

The project began in the fall of 2009 and is expected to be completed by 2012. The total project cost is estimated at \$1,043,177 and is funded by \$943,958 from the Ag Fund and \$99,219 from an Agricultural Water Conservation grant from the TWDB. As of December 2010, approximately 180 water measurement structures have been installed.

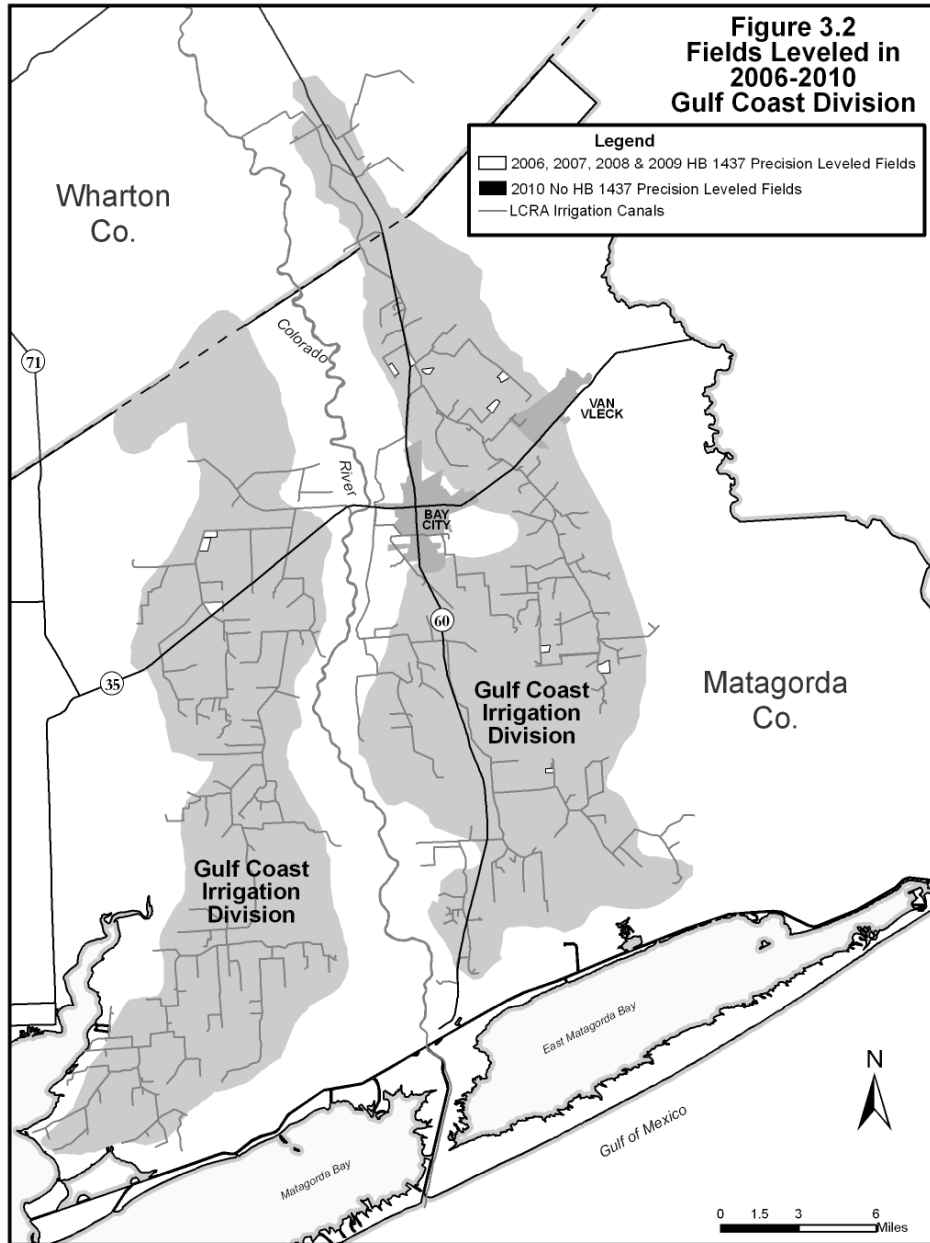
3.3.2 Gulf Coast Gate Rehabilitation and Control Project

In 2010, LCRA received a grant from the U.S. Bureau of Reclamation (USBR) to fund \$254,639 of the Gulf Coast Irrigation Division Canal Rehabilitation Project. The project will rehabilitate and automate 11 check structures in Gulf Coast. A cost share match of \$278,262 will be funded from the Ag Fund. The check structures to be rehabilitated are shown in Figure 3.3.

LCRA received official authorization for this project from USBR in the fall of 2010. A contract with URS for engineering design services was executed in November 2010. The environmental and cultural resources impact assessments are complete, and the USBR has authorized initiation of engineering and construction activities.



Map Document: (V:\WaterCo\Project\Irrigation\HB_1437\Figure_3_1_Lakeside_GarwoodB&W_2010.mxd)



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3.4 Conservation Monitoring and Measurement

Accurate water conservation estimates are critical to water availability estimates necessary to comply with the “no net loss” requirement for water transfers. A major goal for 2010 was to continue to refine a technically sound water conservation monitoring plan that could be integrated and implemented within the normal business practices of the LCRA irrigation divisions.

3.4.1 Lakeside Conservation Verification Study

In August 2009, LCRA signed an interlocal agreement with the University of Texas LBJ School of Public Affairs to develop a statistical model to estimate water conservation rates for a variety of conservation factors including precision land leveling. Previous studies by others identified a farmer’s age, education, dependence on off-farm work and size of farm operation as factors that affect the utilization of conservation technologies and water savings. A field’s ownership, quality of land leveling work and water costs have also been identified as water use factors.

The methodology to estimate water conservation factors for the HB 1437 program is based upon a statistical comparison of water use in fields leveled to EQIP standards versus water use in other non-leveled fields. This concept was verified by analyzing water use data from the Lakeside Irrigation Division for the four-year period 2006 through 2009.

To capture other contributing factors, a farmer survey was developed to acquire the additional field and farming data necessary for the statistical analysis. This survey effort was completed by summer 2010 and a report of the Lakeside study results is available online at <http://www.hb1437.com>.

Study results show that precision leveling has both direct and indirect effects on water use. Preliminary results indicate that precision leveling accounts for an average of 0.3 acre-feet/acre reduction in on-farm water use for the first crop when compared to water use in unleveled fields. The results also show that straight levees have an indirect effect on water savings because straight levees are more likely to be present with precision leveled fields. Results also show that fields with straight levees use less water than fields with contour levees, or fields with a mixture of levee types.

Thus far, preliminary results suggest that precision-leveled fields in combination with straight levees can save an average of 0.6 acre-feet/acre of water during the first crop. These water savings were statistically significant for the first crop but not so with the second crop because of the small data set. Extension of the analysis for the second crop will be addressed in the second phase of the study when the 2010 first and second crop water use data are added to the statistical model. A discussion of the second phase of the study is presented in Section 5 of this report.

3.4.2 Garwood Conservation Verification Study

Historically, the Garwood division has not measured water deliveries to individual fields, yet nearly half of the acreage in the HB 1437 grant program is in this division (40 percent of the acres leveled). The Garwood measurement project described above has enabled the measurement of water to fields in production starting in 2010. Eventually, as adequate data becomes available from Garwood, the UT statistical model developed for the Lakeside division will be applied in Garwood.

The interlocal agreement with UT was extended in 2010 and included the development of a conservation verification model for the Garwood Division. See Section 5 for a discussion of this Garwood work.

3.4.3 Field Mapping

During 2010, staff continued the yearly process of developing accurate field maps for the contracted acreage. The process includes using a geographic information system (GIS) to map the fields in production. The mapping identifies the fields that have been precision leveled through the grant program, their production status, and other water use information. Mapping status is summarized below:

- 2010 fields have been mapped for Lakeside.
- 2010 fields have been mapped for Garwood.

3.5 State and Federal Grant Applications

During 2010, staff submitted a Water for America Challenge grant proposal to the U.S. Bureau of Reclamation Grant (USBR) for the Gulf Coast Gate Rehabilitation and Control project. LCRA received notice that the proposal was selected for funding in July 2010. LCRA received official authorization for this project from USBR in the fall of 2010 to fund \$254,639 of this project. The HB1437 Fund cost share for the grant was \$278,262. The project is expected to be complete by July 2012.

Ongoing grant applications include the Texas Water Development Board (TWDB) 2009 agricultural water conservation grant for \$99,219 to help fund the Garwood measurement project.

3.6 Water Conserved and “No Net Loss”

“No net loss” occurs when the average annual volume of HB 1437 water transferred is equal to or less than the sum of the average annual volume of conserved water, returned or replaced water, and developed water. The current HB 1437 program plan relies exclusively on conserved water to achieve “no net loss”.

3.6.1 Water Conserved

The volume of conserved water produced is calculated by multiplying the number of acres leveled by the precision leveling conservation factor. Results from published field tests that support a conservation factor of 0.75 acre-feet of water conserved per acre leveled will be used until results from the precision leveling verification study are completed. Under HB 1437 rules, a leveled field must be in production to receive conservation credit; conservation credit for fallow fields is not allowed.

In 2010, a total of 3,217 acres were leveled plus an additional 6,562 acres of fields leveled previously under the HB1437 program were in production. In total, an estimated 9,779 acres of HB 1437 fields were in production in 2010, conserving an estimated 7,334 acre-feet of agricultural water ([9,779 acres in production] times [0.75 acre-ft of water conserved per acre leveled]). The first year of measurement in Garwood was completed in 2010, so one-third, or 1,109 acre-ft, of the total estimated savings of the project occurred in 2010. Combined, the total amount of agricultural water conserved in 2010 was 8,443 acre-feet

3.6.2 Developed Water

Developed Water may include any groundwater that is pumped into the irrigation division canals to offset surface water transfers. During 2006, LCRA irrigation division wells were tested and production capacity shown to meet the maximum allowable developed groundwater production goal of 600 acre-feet per year. No HB 1437 developed ground or surface water was produced during 2010.

3.6.3 Returned Water

Returned Water is defined as water that is returned to the lower Colorado River basin for credit under the HB 1437 program. There was no HB 1437 water returned during 2010.

3.6.4 Water Available for Transfer

The water available for transfer is based on a three-year rolling average. Based on data from the last three years, staff calculates there are 7,464 acre-feet of HB1437 water available for transfer to Williamson County.

3.6.5 Water Transferred

Transferred water is HB 1437 water transferred to Williamson County under the Brazos contract. In 2010, no HB 1437 water was transferred.

3.6.6 “No Net Loss” Status

Table 3.4 summarizes the 2010 “no net loss” volume statistics. It shows compliance with the definition of “no net loss” and that a 3-year rolling average of 7,464 acre-feet of HB 1437 water was available for transfer.

Table 3.4 No Net Loss Summary, acre-feet

Year	Annual Vol. Conserved	Vol. Developed	Vol. Returned	Vol. of HB 1437 Water			Net Loss
				Total Vol. Available	Forecasted Demand **	Actual Transferred	
2005	0	0	0	0	0	0	0
2006	2,077	0	0	2,077	0	0	0
2007	2,753	0	0	2,753	0	0	0
2008	5,960	0	0	3,597*	0	0	0
2009	7,989	0	0	5,567*	0	0	0
2010	8,443	0	0	7,464*	0	0	0

* Three-year rolling average

** Letter from Brazos River Authority to LCRA, March 14, 2011. Re: Projected Water Use – HB1437

Section 4 – Agricultural Water Conservation Fund

The HB 1437 Agricultural Water Conservation Fund (Ag Fund) was established by the HB 1437 legislation and pays for LCRA's portion of current water conservation projects. It is managed separately from LCRA funds in an interest-bearing account titled HB 1437 Agricultural Water Conservation Fund. The fund was started in February 2002. It is identified as LCRA project number 1005805.

Income to the fund is derived from the annual conservation charge provision incorporated into the HB 1437 water sales contract with Brazos. The current charge is 25 percent and is applied to both reserved water and delivered water. Conservation charge income is deposited into the Ag Fund in February of each year. The fund is reduced by HB 1437 program expenditures approved by the LCRA Board and replenished each year by the annual surcharge.

4.1 Audit

During 2010 LCRA Auditing Services conducted an audit of the HB1437 Grant Program Accounting processes and procedures. A final audit report was submitted to the LCRA Board in December 2010 and concluded that the processes and controls in place for the HB1437 grant program are effective and adequately designed. No additional actions related to this audit are required.

4.2 Expenditures

Table 4.1 summarizes the inception to current date Ag Fund expenditures authorized by the LCRA Board. In December 2010, the LCRA Board approved spending \$625,000 in 2011.

Table 4.2 summarizes 2010 expenditures by project. It shows total 2010 expenditures were \$655,633, of which \$200,019 (31 percent) was grants to farmers, \$389,389 (59 percent) was expenditures for the Garwood measurement project and \$12,117 was expenditures for the Gulf Coast gate rehabilitation project. Program administration and conservation verification expenditures were \$54,108 or 8 percent of total.

Table 4.1 HB 1437 Board Approvals

LCRA Board Meeting	Amount	Purpose
November 2003	\$250,000	Implementation Study
March 2005	\$75,000	Implementation Study
March 2006	\$350,000	Spring 2006 On-Farm Conservation Projects
November 2006	\$500,000	Spring 2007 On-Farm Conservation Projects
December 2007	\$500,000	Spring 2008 On-Farm Conservation Projects
December 2008	\$350,000	Spring 2009 On-Farm Conservation Projects
November 2009	\$450,000	Spring 2010 On-Farm Conservation Projects
		Phase 1 of Garwood Measurement Project
December 2010	\$625,000	Spring 2011 On-Farm Conservation Projects
		Phase 2 of Garwood Measurement Project
		Phase 1 of Gulf Coast Gate Rehabilitation Project
Total	\$3,100,000	

Table 4.2 HB 1437 Expenditures by Project

	Expenditures by Project			Total
	Leveling Grants and Verification ¹	Garwood Project ²	Gulf Coast Gate Rehab ³	
Previous Expenditures Yr 2003-2009	\$1,901,615	\$26,137	\$0	\$1,927,752
Expenditures in Yr 2010	\$254,127	\$389,389	\$12,117	\$655,633
Total	\$2,155,742	\$415,526	\$12,117	\$2,583,385

¹ Project No. 1005805. ² Project No. 1010246. ³ Project No. 1011555

4.3 Fund Balance

Table 4.3 presents the Ag Fund balance from its inception. Figure 4.1 presents the yearly income, expenditures and current balance. The fund balance on Dec. 31, 2010, was \$668,717; expenditures over the same reporting period total \$2,583,385.

Table 4.3 Ag Fund Accounting Summary

End of Year	Revenue	Expenditures	Interest	Balance
2002	\$118,664.39	\$0.00	\$4,799.04	\$ 123,463.43
2003	\$328,125.00	\$0.00	\$19,805.11	\$ 471,393.53
2004	\$328,125.00	\$234,790.47	\$27,608.57	\$ 592,336.64
2005	\$328,125.00	\$73,697.91	\$37,846.37	\$ 884,610.10
2006	\$359,375.00	\$330,642.10	\$40,397.78	\$1,005,753.51
2007	\$359,375.00	\$349,288.15	\$39,393.13	\$1,003,220.76
2008	\$393,750.00	\$555,771.73	\$30,232.17	\$871,431.20
2009	\$393,750.00	\$357,424.81	\$6,822.48	\$888,441.89
2010	\$431,250.00	\$655,632.94	\$4,658.39	\$668,717.33
TOTAL	\$3,040,539.39	\$2,583,385.10	\$211,563.05	-

Total program expenditures through 2010 are below the \$3,100,000 authorized to date by the LCRA Board.

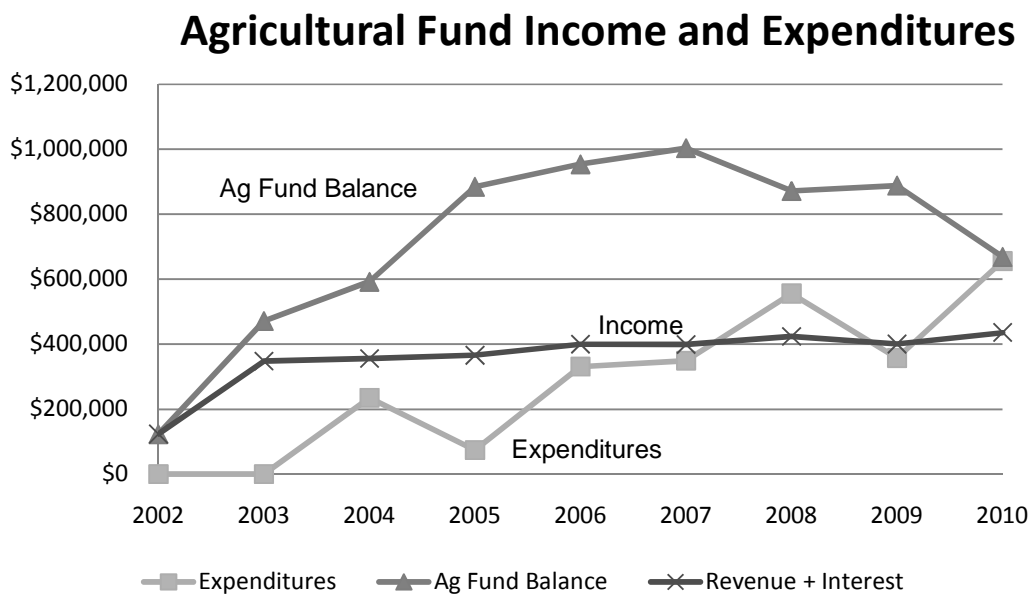


Figure 4.1 Agricultural Fund Income and Expenditures

4.4 Conservation Charge

The current conservation charge is 25 percent, set by the LCRA Board in December 1999. The current conservation charge is adequate to support current and planned program activities.

Section 5 - Program Outlook for FY 2012

In FY 2012 the program will continue with scheduled in-division projects while maintaining a moderate grant program for cost-sharing, on-farm conservation projects. This program considers the delivery schedule for HB 1437 water; passage of the 2008 Farm Bill with its continued funding of EQIP; and the revised schedule for the new Brushy Creek Regional Utility Authority water treatment plant, the expected treatment facility for HB1437 water. The FY2012 program consists of the following areas:

- Continue the cost-share grant program for on-farm conservation projects;
- Continue work with University of Texas to complete the Lakeside Conservation Verification study and develop a savings verification methodology for the Garwood Volumetric Measurement Project;
- Complete phase two of the Garwood Volumetric Measurement Project;
- Construct and operate the rehabilitated gate structures from the Gulf Coast Gate Rehabilitation Project;
- Consult with Brazos on contract termination. A clause in the LCRA/Brazos water contract allows Brazos to terminate the agreement after February 15, 2012;
- Continue program oversight and communication with the Agricultural Water Conservation Fund Advisory Committee; and
- Identify and respond to opportunities for grant funding.

A discussion of these activities and a proposed FY2012 (July 2011-July 2012) budget follows.

5.1 Program Activities

5.1.1 On-farm Conservation Projects

In FY2012, the on-farm conservation grant program for precision leveling projects will be continued but limited to approximately 2,400 acres or \$200,000 of HB 1437 funds. This level of funding is consistent with the five-year plan detailed in Section 2 and takes advantage of the continued EQIP funding authorized in the 2008 Farm Bill.

Based on discussions with local producers, staff estimates that the number of grant applications should be sufficient to reach the precision leveling target of 2,400 acres. Consistent with EQIP's revised cost share percentage, the cost share percentage for the HB1437 grant program is projected to be approximately 20 percent.

5.1.2 EQIP Contracts

Table 5.1 shows that, as of January 2011, NRCS is reporting that 85 percent of the awarded EQIP contracts have been completed, and since April 2005 over 50,000 acres of

EQIP contracts have been added. The remaining acreage to be leveled appears to be adequate to support the 2011 HB 1437 On-farm Conservation Projects grant program.

Table 5.1 Summary of Contracted and Applied EQIP Precision Leveling Acreage as of January 2011*

County	Contracted, acres	Installed, acres	Remaining, acres
Colorado	29,154	23,201	5,953
Wharton	19,452	18,266	1,186
Matagorda	1,890	1,703	187
Total	50,496	43,170	7,326

* NRCS data for the period April 2005 through January 2011

5.1.3 Conservation Verification Study

Accurate water conservation estimates are critical to evaluating compliance with the no net loss provision of the HB1437 water transfers. Currently, conserved water estimates for precision leveling are computed using a conservation factor of 0.75 acre-feet of water conserved per acre of land leveled. This conservation factor was developed from a limited number of field studies conducted by Texas A&M's Texas Agriculture Experiment Station. The goal of the HB 1437 conservation verification studies are to independently develop a conservation factor for each of the LCRA irrigation divisions.

The Lakeside study is in progress and a similar verification project for the Garwood Division will initiate in 2011. Significant progress was made in 2010 with the implementation of a rigorous HB 1437 water savings verification program for the Lakeside Division. In 2011, staff working with the University of Texas expects to add 2010 water use data to complete the conservation verification model for Lakeside, and will setup and initiate a verification study for Garwood.

For more details on the follow-up recommendations for 2011, see the interim report at <http://www.hb1437.com>. A final study report is expected to be issued by the end of 2011.

5.1.4 Garwood Measurement Project

The Garwood Measurement Project will convert the water delivery and billing system for the Garwood Division to a volumetric basis. The project is jointly funded by the HB1437 Ag Fund and a grant from the TWDB. The project is estimated to conserve approximately 3,400 acre-feet per year of water

When completed in 2012, water contracts in the Garwood Division will change from the existing flat rate per acre pricing to one that is based on a combination of a base acreage rate plus an additional fee for the volume of water delivered. Implementation of this project is expected to provide the necessary data for verification of the on-farm water conservation estimates for Garwood.

5.1.5 Gulf Coast Gate Rehabilitation Project

The Gulf Coast project will rehabilitate and automate 11 check structures on the main canal from the Lane City pump station. The project is expected to be in operation by July 2012 and will include 22 automated gate assemblies, 10 water level measurement sites, three spill monitoring sites and an integrated system control and data acquisition system (SCADA).

5.1.6 State and Federal Grant Applications

State and Federal grant announcements for agricultural water conservation projects are expected in FY 2012. These grants typically require some type of cost sharing and or matching funding for eligibility. The HB 1437 Ag Funds can provide the requisite cost sharing funds; however, the fund is nearly fully leveraged for on-going projects and no new grant applications are anticipated for FY 2012. However, staff will continue to evaluate and respond as appropriate to both Federal and State funding opportunities.

5.1.7 Program Oversight and Communication

Communication with the Agricultural Water Conservation Fund Advisory Committee (Ag Committee), customers and the public is an important component of the HB 1437 program. The committee continues to take an active interest in the program and has provided valuable feedback on the Lakeside farmer survey.

The committee is expected to meet at least twice in FY 2012 and will continue to provide advice on the savings verification study and on the development of a long-term plan to meet the full 25,000 acre-feet per year of HB 1437 water.

5.2 Budget

The budget period for HB 1437 has changed to conform to LCRA’s fiscal year (July 1 through June 30) budgeting process. The proposed FY 2012 budget for the HB 1437 program is summarized in Table 5.2 and shows a total estimated budget of \$860,000.

Table 5.2 HB 1437 Budget for FY 2012

Activity	Budget	Notes
1. On-Farm Conservation Grants for Precision Leveling Projects	\$200,000	20 percent cost share to precision level about 2,400 acres.
2. Conservation Verification Program and Measurement	\$50,000	Complete the Lakeside Conservation Verification Study and initiate the Garwood Verification Study. Includes \$30,000 for the UT statistical modeling effort.
3. Garwood Volumetric Measurement Project	\$200,000	Complete construction of delivery and check structures. Budget includes a TWDB grant of approximately \$99,000.
4. Gulf Coast Gate Rehabilitation Project	\$350,000	Complete construction of gates and initiate operation in 2012 crop year.
5. Public Oversight and Communication	\$10,000	Consult with the Ag Advisory Committee and the Brazos regarding ongoing projects.
6. Program Management and Oversight	\$50,000	Grant administration and preparation of annual report. Includes travel and printing expenses.
Total	\$860,000	

Appendixes

Attachment A: HB 1437 Grant Award Statistics 2010

Application ID	Acres	County	Priority	Actual Cost	LCRA Cost
Garwood Irrigation District					
GW HB1437 2010 001	54	Wharton	1	\$9,438.00	\$471.90
GW HB1437 2010 002	28	Wharton	1	\$5,865.00	\$293.25
GW HB1437 2010 003	14	Wharton	1	\$4,223.57	\$140.78
GW HB1437 2010 004	141	Colorado	1	\$35,150.00	\$7,068.67
GW HB1437 2010 005	155	Colorado	1	\$45,729.68	\$9,196.24
GW HB1437 2010 006	169	Colorado	1	\$69,308.04	\$2,310.27
GW HB1437 2010 007	11	Colorado	1	\$13,274.16	\$442.47
GW HB1437 2010 008	44	Colorado	1	\$19,362.66	\$645.42
Lakeside Irrigation District					
EL HB1437 2010 001	65	Wharton	1	\$25,046.86	\$5,036.92
EL HB1437 2010 002	60	Wharton	1	\$19,748.40	\$3,971.40
EL HB1437 2010 003	82	Wharton	1	\$28,608.76	\$5,753.22
EL HB1437 2010 004	110	Wharton	1	\$37,909.12	\$7,623.52
EL HB1437 2010 005	150	Wharton	1	\$99,527.30	\$20,014.94
EL HB1437 2010 006	150	Wharton	1	\$49,141.04	\$9,882.26
EL HB1437 2010 008	116	Colorado	1	\$28,734.40	\$5,778.49
EL HB1437 2010 009	148	Wharton	1	\$34,118.40	\$6,861.21
EL HB1437 2010 010	70	Wharton	1	\$25,774.40	\$5,183.23
EL HB1437 2010 011	170	Wharton	1	\$67,918.40	\$13,658.39
EL HB1437 2010 012	130	Wharton	1	\$48,078.40	\$9,668.57
EL HB1437 2010 013	140	Wharton	1	\$52,008.00	\$10,458.81
EL HB1437 2010 014	76	Wharton	1	\$28,267.20	\$5,684.53
EL HB1437 2010 015	134	Wharton	1	\$42,860.80	\$8,619.31
EL HB1437 2010 016	35	Colorado	1	\$14,998.40	\$3,016.18
EL HB1437 2010 018	39	Colorado	1	\$11,399.01	\$2,292.34
EL HB1437 2010 019	176	Colorado	1	\$77,155.72	\$15,516.02
EL HB1437 2010 020	75	Colorado	1	\$37,731.22	\$7,587.75
EL HB1437 2010 021	74	Colorado	1	\$33,289.62	\$6,694.54
EL HB1437 2010 022	35	Colorado	1	\$9,524.90	\$1,915.46
EL HB1437 2010 023	157	Colorado	1	\$95,174.94	\$3,172.50
EL HB1437 2010 024	124	Colorado	1	\$81,305.46	\$2,710.18
EL HB1437 2010 025	88	Wharton	1	\$36,402.90	\$7,320.62
EL HB1437 2010 026	92	Wharton	1	\$30,166.48	\$6,066.48
EL HB1437 2010 027	107	Wharton	1	\$24,679.66	\$4,963.08
Grand Total	3217			\$1,241,920.90	\$200,018.95
% HB1437					16.1%

About LCRA

The Lower Colorado River Authority (LCRA) provides public services that help protect people, property and the environment in Texas. LCRA serves customers and communities in the region by managing the lower Colorado River, generating and selling electric power, ensuring a clean, reliable water supply, operating parks and supporting local economic development initiatives. An affiliate also provides transmission services to help maintain electric reliability in Texas. LCRA, a nonprofit agency created by the Texas Legislature, cannot levy taxes or receive tax money.



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