

**Welcome to Public Meeting on**

***Water Transfer***

***from the Lower Colorado River to***

***Williamson County***

**conducted by the**

**LBJ School – University of Texas at Austin**

**August 2004**

# Recommendations

- **Definition of no net loss: (a) there should be no net loss of surface water to the Colorado River watershed and (b) water replaced or conserved should at least be equal to the water transferred in a 12-month year**
- **Recommended water replacement option: Laser level 2,500 acres of land during non-farming seasons of 2004-2005, 2005-2006, 2006-2007 (Close second choice: 2 sets of automated check structures and control systems)**
- **Recommended contingency option: Develop groundwater in Garwood to provide 500 acre feet of water as a contingency**
- **1,900 acre-feet of conservation water savings every year from 2005-2010**
- **Recommended surcharge rate: between 10 percent (laser leveling with EQIP funding and an existing working well) to 30 percent (without EQIP funding and a well)**

# **What should be the outcome of this meeting?**

**We seek your advice about:**

- The concept of “no net loss”**
- Criteria for selecting among water replacement alternatives**
- A recommendation for replacing water to the Colorado River in exchange for a water transfer to Williamson County**
- A process to implement that strategy**

# Meeting Schedule

- **Presentation**

- **Discussion**

# **LBJ School – Role**

**LBJ School's role is to:**

- convene public meetings**
- report your comments and advice**
- assist the project staff to make recommendations to the LCRA Board**

# **Project Participants**

## **Water Users**

**HB 1437-Designated Agricultural Water  
Conservation Fund Advisory  
Committee**

**LCRA**

# How can you communicate your views?

- Provide comments at the meetings
- Fill out the comment cards
- Send questions or comments via mail, e-mail, or the phone to the LBJ School – University of Texas at Austin  
Mailing Address: LBJ School of Public Affairs  
P.O. Box Y  
Austin, TX 78713-8925  
Phone number: (512) 471 8934  
Fax number: (512) 471 9686  
E-mail address: [stamur@mail.utexas.edu](mailto:stamur@mail.utexas.edu)
- Verbatim comments from all three meetings will be on the project website at [www.hb1437.com](http://www.hb1437.com)

# What is HB 1437?

- **Passed by Texas Legislature in 1999**
- **Allows inter-basin transfer of up to 25,000 acre feet water from the Lower Colorado River to Williamson County**
- **“No Net Loss” to the Colorado River watershed**
- **Water transfer is to be offset from other water sources**
- **Cost to replace the water added as surcharge to Williamson County water users**
- **Surcharge to be used to reduce the reliance on surface water in agricultural irrigation**

# **What is the LCRA Board's Responsibility?**

- **define “no net loss”**
- **select strategies for water replacement**
- **develop a process to implement the strategies**
- **identify methods to measure and report the water replaced and the water transferred**
- **estimate the cost of surcharge**
- **evaluate the impacts of the replacement strategies on all interested parties**

# **Accountability**

**The following should be made available for public review:**

- Board policy on choosing a water replacement strategy**
- Measurement and reporting of the amount of water saved**

# **Process within the LCRA**

- **1<sup>st</sup> set of public meetings – late June and early July – for advice about water replacement strategies**
- **2<sup>nd</sup> and final set of public meetings in late August to discuss a recommended strategy**
- **All public advice and comments to be provided to the LCRA**
- **Staff plans to brief the Water Committee of the LCRA Board in October 2004**
- **Staff plans to request action on a recommendation by the LCRA Board in November 2004**

# **Information for the LCRA Board's decision**

- **Agricultural Water Conservation Fund Advisory Committee recommendation**
- **Williamson County water customers' recommendation**
- **Recommendations of any groups that wish to make a proposal or suggestion**
- **Comments from Sierra Club and the City of Austin**
- **All views expressed at public meetings**
- **A record of any website, mail or phone questions and answers**
- **Consultant recommendation**
- **LCRA staff recommendation to the Board**

# **What did we learn from 1<sup>st</sup> set of public meetings?**

**Comments made at the 1<sup>st</sup> set of public meetings can be grouped in five categories. These are:**

- No net loss**
- Water replacement strategies**
- Decision criteria**
- Surcharge rate**
- Other comments that do not fall under any of the above-mentioned categories**

# **Inferences on No Net Loss**

- **No consistent guidance on how to define no net loss**
- **Comments mostly related to implementation of no net loss**
- **Preference for “12 months” as an appropriate period for assessing the balance between water replaced and water exported**

# **Inferences on Water Replacement Strategies**

- **No consistent insight can be drawn**
- **Comments emphasized on-farm water conservation strategies**
- **Strong farmer opposition to groundwater development as a water replacement strategy**
- **Three new water replacement strategies were recommended to add up to a total 18 water replacement strategies to be considered**

# **Water Replacement Strategies Considered**

- Balancing Reservoir in Garwood**
- Laser Land Leveling**
- Automated Check Structure and Data System in Garwood**
- Groundwater Development – Garwood**
- Conjunctive Use of Groundwater in Garwood Irrigation District**
- Groundwater Development – Lakeside**
- Groundwater Development – Gulf Coast**
- Groundwater from Alcoa**
- Brushy Creek Return Flow**
- San Bernard Reservoir**
- Purchase Unused Portion of Allen’s Creek Reservoir**
- Reducing Urban Outdoor Water Use**
- Adjoining Basin Irrigation Water Rights**
- Purchase Colorado River Irrigation Water Rights**
- Reduced Irrigation for Second Crop**
- Canal Lining**
- Conservation of Storm Water**
- Desalination**

# **Inferences on Decision Criteria**

- **The following decision criteria were emphasized to assure the balance between the water exported and the water replaced:**
  - **Ease of implementation**
  - **Impact of groundwater development**
  - **Cost**
- **Three new decision criteria were recommended at the public meetings and one decision criteria was added after the public meetings; they add up to a total of 15 decision criteria to be considered**

# Decision Criteria Considered

- Volume
- Reliability
- Quality
- Cost to the customer
- Risk
- Environmental impacts
- Location
- Timing
- Water levels in the Highland Lakes
- Equity
- Permits or other required procedural steps
- Soft versus hard water replacement
- Ease of implementation
- Phased implementation
- Reduce the reliance on surface water in agricultural irrigation

# **Inferences from other comments**

- **Some water users in the basin did not feel they were consulted on a regular basis by the LCRA**
- **Highland Lakes are vulnerable; absolute lake elevations and relative lake levels should be considered in choosing a water replacement strategy**

# **Inferences from Comments Received after the Meetings**

- **Comments mostly expressed concern about the impacts of some water replacement options**
  - **Brushy Creek return flow**
  - **Groundwater development strategies**
  - **On-farm water conservation strategies**
- **Some comments emphasized the following decision criteria for selecting among water replacement strategies:**
  - **ease of implementation**
  - **permit requirement**
  - **phased implementation**
  - **fair and reasonable timing of water transfer and replacement**
  - **low cost**

# **LBJ School Recommendations**

- **“No net loss” definition, outcome, and implementation**
- **Decision criteria for selecting among water replacement strategies**
- **Recommendation of water replacement strategies**
- **Implementation issues**
- **A reporting system for water transfer and savings**
- **Surcharge rate**
- **A recommended strategy and its implementation**

# **No Net Loss: Definition, Outcome, and Implementation**

- **The definition of no net loss is that: (a) there should be no net loss of surface water to the Colorado River watershed and (b) water replaced or conserved should at least be equal to the water transferred in a 12-month year**
- **No net loss will assure that:**
  - **water right holders can access their water rights without any change**
  - **water will remain available in the Colorado River basin to meet instream flows and freshwater inflows to the bay and estuary within the Colorado River basin consistent with LCRA's obligations under its Water Management Plan**

# **No Net Loss: Definition, Outcome, and Implementation (2)**

- **Implementation of “no net loss” requires a mitigation plan that provides replacement or conservation water to the Colorado River watershed sufficient for up to 25,000 acre feet per year**
- **Any investment for water replacement or conservation should be completed one year in advance of the expected demand**
- **The mitigation should compensate the Colorado River watershed for the volume of water exported**
- **The replacement or conservation strategy should include a monitoring and a reporting system**

# **Decision Criteria: Selecting a Water Replacement Strategy**

**Based on feedback from the public meetings, supplemental letters and project staff, five decision criteria were used for an initial screening of the water replacement strategies:**

- Phased Implementation**
- Implementation Time can be Accelerated (<5yrs)**
- Sustainable Yield**
- No Permit or Third Party Participation Required**
- Surcharge rate**

# Decision Criteria Used in Initial Screening

<b>Decision Criteria</b>	<b>Definition</b>
<b>Implementation Time can be Accelerated (&lt;5yrs)</b>	<b>Can the water replacement strategy be implemented within a five-year time frame?</b>
<b>Phased implementation</b>	<b>Can implementation of water replacement strategies proceed in phases, to reflect the volume of water transferred to Williamson County?</b>
<b>No permits or third party participation required</b>	<b>Are permits or third party agreements needed that could delay implementation of the water replacement?</b>
<b>Sustainable yield</b>	<b>Does the volume of water replaced at some future time differ from the volume replaced when the strategy is implemented?</b>
<b>Surcharge rate</b>	<b>What should be the cost per acre feet defined by the LCRA Board, to include capital, operation, maintenance, monitoring, and reporting costs associated with the water replacement strategy?</b>

# **Secondary Screening Criteria for Water Replacement Strategies**

- **Volume of water produced**
- **Reliability-- provides water in both wet and dry years**
- **Water quality--appropriate for intended use or similar to existing.**
- **Risk--may be subject to natural or regulatory limitations**
- **Environmental impact--damage to instream and estuary animals or plants**
- **Location--water source close to users**
- **Timing--delivered close to time of need**
- **Lake water levels**
- **Equity--do some users benefit? Are some users hurt?**
- **Reduced reliance on surface water in agricultural irrigation**

# **Process for Evaluation of Water Replacement Strategies**

- **Primary Screening Criteria Applied**
  - **First Tier Strategies Identified**
  - **Second Tier Strategies Identified**
  - **Some Strategies Eliminated from Consideration**
- **Secondary Screening Criteria Applied**
- **Detailed Evaluation of First and Second Tier Strategies**
- **Preferred Strategies Identified**

# **Screening Results**

**Water replacement strategies that are successful in the screening process can be grouped into two categories:**

- Water demand management best practices**
- Groundwater development**

# **First Tier Strategies**

**Six water replacement strategies satisfy or partially satisfy all decision criteria:**

- Laser land leveling**
- Automated check structure(s) and data system(s)**
- Balancing reservoir(s) in irrigation districts**
- Reduced irrigation for second crop**
- Groundwater development in Lakeside**
- Groundwater development in irrigation districts used as a supplement to surface water**

# **Second Tier Strategies**

**Two water replacement strategies required permits or participation by third parties, but satisfied the remaining criteria:**

- Groundwater development – Garwood**
- Groundwater development – Gulf Coast**

# **Strategies Eliminated from Consideration**

**Ten water replacement strategies did not satisfy two or more decision criteria and were eliminated from consideration:**

- Groundwater from Alcoa**
- Adjoining basin irrigation water rights**
- Purchase Colorado River irrigation water rights**
- San Bernard reservoir**
- Purchase unused portion of Allen's Creek reservoir**
- Capture of municipal stormwater**
- Desalination**
- Canal lining**
- Reduced urban outdoor water use**
- Brushy Creek return flow**

# **Recommended Strategies**

**The following on-farm or on-district strategies do well in terms of criteria. Any one can be used to generate 25,000 AF/year.**

- Laser land leveling**
- Automated check structure(s) and data system(s) in Garwood**
- Balancing reservoir(s) in Garwood irrigation district**
- Groundwater development in irrigation districts**
- Reduced irrigation for second crop or other voluntary conservation**
- A combination of all of the above**

# **How do the recommended strategies affect water users?**

- Farmers can farm the same acreage they could before the transfer**
- Persons who use Lakes for recreation can continue to do so**
- Water right holders can access their water rights without change**
- There should be no significant decrease in the average lake levels compared to levels before the transfer**
- The LCRA is required to meet instream flow and estuary requirements under its Water Management Plan and will continue to do so**

# **Pros of the Recommended Strategies**

- **LCRA and farmers can work together to implement**
- **Costs are shared among grants, Williamson County water customers, and farmers**
- **Water savings are from conservation and not importation**
- **Withdrawals are not likely to exceed replacement**
- **Environmental benefits**
- **Low cost**
- **Elevation of Highland Lakes may increase because investment in water conservation occurs before water diversions**

# **Cons of the Recommended Strategies**

**Water savings depend on the demand management by the farmers**

# How to mitigate the Cons?

- **Farmers will be involved in the implementation process of the recommended strategy**
- **Farmers have financial and water incentives to improve demand management**

# Implementation Issues

- **A contingent water replacement option**
- **Measurement, monitoring, and reporting of water savings**
- **Surcharge cost**
- **Adverse effects**

# **A Contingent Water Replacement Option**

- In order to assure that the volume of the water conserved is more than the volume of the water transferred, a “contingent” water replacement option should be developed**
- The LCRA should have available a contingent water replacement option to make up any shortfall**

# Monitoring and Measurement

- **A plan should address how to measure, monitor and report the water savings from on-farm and on-district water conservation options**
- **The LCRA may use two parallel sources of information to assure reliability of monitoring and measurement of water savings:**
  - **an estimate of water savings in each district through statistical analyses**
  - **experimental observation of water saved through on-farm and on-district water conservation best management practices**

# Reporting Process

- **The LCRA should develop an HB 1437 website**
- **By March 1 of each year, the LCRA should post on the HB 1437 website a statement of the water transferred and conserved during the previous year (January through December)**

# Surcharge

- **The surcharge rate at all times should pay for (a) water replacement or conservation and (b) costs to mitigate any adverse effects**
- **The Lower Colorado River basin users should not subsidize financially any water transfer or mitigation expenses**

## **Surcharge (2)**

**The level of the surcharge should be sufficient to pay for the capital, operating, administrative, measurement, and reporting costs associated with the on-farm and on-district water replacement investments**

# **Potential Adverse Effects**

**According to HB 1437 Section 1, the Williamson County water customers should:**

**“...pay both the districts applicable water rate and an additional charge to pay the costs of mitigating any adverse effects of the transfer of surface water to Williamson County..”**

# Recommendation Options

- **On-farm or on-district water conservation as a replacement strategy**
- **Groundwater development as a contingency for annual balancing**

# Implementation Options

- **Demand Schedule Implementation** – implement in phases to meet Williamson County’s projected water demand
- **Expedited Implementation** – complete implementation by 2010 to replace 25,000 acre-feet of water
- **Partial Implementation** – replace 1,900 acre-feet of water annually for the period 2005 to 2010; develop a plan for after 2010 by 2007

# **Implementation Uncertainties**

- **Availability of federal funding (EQIP)**
- **Performance of on-farm water conservation strategies in terms of water savings**
- **Williamson County's water demand**

# **Recommended Implementation Plan: Partial Implementation**

- **Laser level 2,500 acres of land during non-farming seasons of 2004-2005, 2005-2006, 2006-2007**
- **Develop groundwater in Garwood to provide 500 acre feet of water as a contingency**
- **Close second choice: 2 sets of automated check structures and control systems**
- **Plan for the period after 2010 to be developed by 2007**

# **Outcomes of Partial Implementation**

- **1,900 acre-feet of conservation water savings every year from 2005-2010**
- **Recommended surcharge rate: between 10 percent (laser leveling with EQIP funding and an existing working well) to 30 percent (without EQIP funding and a well)**

# Implementation Issues

- **Balancing water exports and replacements**
- **Partnerships with customers**

# **Balancing Water Exports vs. Replacement**

- **Investments in water conservation will precede expected water demands by 12 months**
- **There should always be a net balance of replacement in excess of water exports**
- **Any potential shortfall can be made up by groundwater contingency**

# Partnership Issues

- **Williamson County customers**
- **Farmers**

# **Williamson County Customers**

- **Water replacement investments triggered by planned Williamson County withdrawals**
- **Williamson County water customers have a cost incentive to be accurate in demand estimates**

# Farmers

- **Conservation investments will require contracts with farmers for on-farm conservation**
- **Farmers should have a cost incentive to document actual reduced demand**
- **Farmers have an incentive to avoid groundwater withdrawals by assuring that water conservation reduces surface water demand**

# **Components of LCRA – Farmer Conservation Contracts**

- **Laser land leveling on a first-come-first-served basis**
- **Farmers obligated to specific conservation outcomes**
- **Conservation goals tied to the farmers' historical water use pattern**
- **Excess use charge for failure to conserve**
- **On-field measurement and reporting implemented with laser land leveling**

# Advisory Committee

- **The LCRA may establish a committee to advise the LCRA on the implementation process of this recommendation**
- **The committee could consist of representatives from:**
  - **Each of the three rice-farming counties**
  - **Brazos River Authority and Williamson County retail customers**
  - **Highland Lakes**
  - **Environmental interests**
  - **Existing major LCRA wholesale water customers**

# Conclusions

**The definition of no net loss is that: (a) there should be no net loss of surface water to the Colorado River watershed and (b) water replaced or conserved should at least be equal to the water transferred in a 12-month year**

# Conclusions (2)

- **The LCRA Board may recommend the following implementation process:**
  - **the plan may address how to measure, monitor and report the water savings from on-farm and on-district water conservation options**
  - **the investment for replacement or conservation may be completed one year in advance of the expected demand**
  - **the LCRA may establish a committee to advise the LCRA on the implementation process of this recommendation**
  - **if the volume of water exported to Williamson County exceeds the volume of water saved in any year, a contingency plan may take effect**

# Conclusions (3)

## Recommended implementation: Partial Implementation

- **Laser level 2,500 acres of land during non-farming seasons of 2004-2005, 2005-2006, 2006-2007**
- **Develop groundwater in Garwood to provide 500 acre feet of water as a contingency**
- **Close second choice: 2 sets of automated check structures and control systems**
- **1,900 acre-feet of conservation water savings every year from 2005-2010**
- **Recommended surcharge rate: between 10 percent (laser leveling with EQIP funding and an existing working well) to 30 percent (without EQIP funding and a well)**

# Recommended Action

- **Explore partnerships with Williamson County water customers and irrigators to see whether uncertainties can be resolved**
- **Adopt a partial strategy for conserving 1,900 acre-feet through 2010 with contingency back-up**
- **Use period from 2005 to 2007 to measure and test on-farm water savings**
- **Decide on long-term implementation in 2007**

# How can you communicate your views?

- **Provide comments at the meetings**
- **Fill out the comment cards**
- **Send questions or comments via mail, e-mail, or phone to the LBJ School – University of Texas at Austin**

**Mailing Address: LBJ School of Public Affairs  
P.O. Box Y  
Austin, TX 78713-8925**

**Phone number: (512) 471 8934**

**Fax number: (512) 471 9686**

**E-mail address: [stamur@mail.utexas.edu](mailto:stamur@mail.utexas.edu)**

# **How will your comments reach the LCRA?**

**Any comment you make and any question you ask will be documented and delivered to the LCRA – without attribution**

# Discussion

- **Discussion is open to any question or comment from the audience**
- **There are professionals from the LCRA or CH2M Hill in the audience who can answer many questions**
- **If a question or comment arises and there is no one who knows the answer, it will be recorded and a response be obtained in writing within two weeks**