



Edwards Aquifer Habitat Conservation Plan

Report of the 2014 Regional Water Conservation Program
Work Group

DRAFT #4
November 26, 2014

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Commented [NP1]: Should this recommendation be combined with Recommendation #3

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Commented [NP2]: Still requires development

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Commented [NP3]: For this to be a viable recommendation, an increased funding source must be identified.

Commented [NP4]: Still requires development

To: EAHCP Implementing Committee

From: Regional Water Conservation Program Work Group

Date: January 15, 2015

At their September 18, 2014 meeting, the EAHCP Implementing Committee created the Regional Water Conservation Program (RWCP) Work Group appointing Colette Barron Bradsby, Tyson Broad, Karen Guz, Charlie Hickman, Rick Illgner, Randy Luensmann and Dianne Wassenich as its members. The Work Group held five meetings from October through December 2014 and elected Ms. Barron Bradsby as Chair and Ms. Wassenich as Vice-chair.

The EAHCP calls for the RWCP to conserve 20,000 acre-feet of permitted or exempt Edwards Aquifer withdrawals, where one-half or 10,000 acre-feet of the conserved water is to remain in the Aquifer, un-pumped, for 15 years. The purpose of the RWCP Work Group was to make recommendations on additional ideas and methods to secure this 10,000 acre-feet of permitted or exempt Edwards Aquifer water to meet the requirements of the EAHCP and the Incidental Take Permit.

Throughout their discussions, the Work Group identified problems in the Program that have created barriers for participation by all user groups. These include:

1. Drought Conditions and Required Commitment: Municipal water providers are pressured to maintain supply to meet peak demand during drought conditions. Because of these pressures, municipalities are reluctant to commit any water saved through conservation efforts to the Regional Water Conservation Program for 15-years.
2. Limited Amount of Funding: The amount of money available does not adequately reflect the market value of groundwater rights. The Program pays participants \$950/acre-ft for conservation initiatives, where participants commit one-half of their conserved water into the Groundwater Trust for 15 years. Also, this one-time fixed payment does not properly reflect long-term (more than 15 years) savings.
3. Lack of Administrative Resources in Small Municipalities: Also, many small municipalities have expressed the administrative burden to support the conservation initiatives if they participated in the program.
4.
- 3-5.

As an overall recommendation, the Work Group recommends opening program participation to all Edwards Aquifer users – municipal, industrial and irrigators - and providing them incentives other than financial incentives to garner their participation. Also, the Work Group recommends

Commented [NP5]: This originally listed only small municipalities, but the workgroup has had good discussion about all user groups.

Commented [NP6]: Need to explain this comment with more detail, possibly math.

Commented [NP7]: Need to list additional hurdles as identified for agriculture, industry, and exempt

Commented [NP8]: Additional overall recommendation that applies to all others - This paragraph should include a sentence about using the correct terminology, based on the audience the program is being pitched to. Example: "excess capacity evaluation" rather than "audit"

Commented [NP9]: Additional overall recommendation that applies to all others - This paragraph should identify that any participant could be nominated for an award by EAHCP staff.

1) Award Nomination: Provide nomination for conservation awards such as the TWDB's Blue Legacy Award. Either industry specific for state or national recognition. Focus nominations on scale of participation (or percentage of commitment).

adding flexibility in the Program in order to negotiate an agreement with potential program participants.

Commented [NP10]: Need to define flexibility – is it length of term, \$, all the above.....

Commented [NP11]: It needs to be made clear that flexibility still needs to result in assurance to USFWS that there is a guaranteed benefit, thus achieving compliance.

With this said, the Work Group recognizes that the RWCP must negotiate an agreement with an Edwards permittee to enroll their permitted water into the Groundwater Trust. Towards this end, the Work Group developed # recommendations to address the stated problems, resulting barriers and lack of participation.

These recommendations will be presented to the Implementing Committee at its January 15, 2015 meeting. Ultimately, with Implementing Committee approval, these recommendations developed by the Work Group will be provided to the Edwards Aquifer Authority for final consideration and potential implementation.

Sincerely,

Colette Barron Bradsby, Chair
2014 Regional Water Conservation Program Work Group

Recommendation #1 – Offer Incentives to Specific Business and Industries for their Excess Capacity

Summary:

To assist businesses and industries in determining their individual needs and excesses, the RWCP should provide excess water capacity services (water loss evaluations) to businesses and industries. Initial efforts and informational presentations should focus on the following specific industries and organizations that have individual Edwards permits:

- Texas Aggregate and Concrete Association (www.tx-taca.org)
- San Antonio Hotel and Lodging Association (www.sahla.org)
- San Antonio Manufacturers Association (www.sama-tx.org)
- St. Mary's University, University of the Incarnate Word

Additionally, participating businesses and industries should be offered assistance with positive public relations and staff/contractors should be sure to point out the reduction in aquifer management fees paid to EAA on enrolled conserved water. (See Recommendation #4).

Once an excess capacity evaluation is performed, ...

Pros:

- Commercial/industrial water use is generally independent of weather and increase in water use is not as common, making it possible to place one-half of the water conservation savings in the Groundwater Trust.

Cons:

- Difficult to quantify water saved; metering issues
- Evaluations by themselves do not equal conserved water. Infrastructure repairs or installation of new meters are needed for savings.
- RWCP staff will need to negotiate with each business one on one.
- Since most users on the list receive water from a municipality, getting water into the Trust requires dual negotiations. Except for quarries and cement plants with EAA permits, getting water into the Trust will be quite labor intensive.

Commented [NP12]: Need to include a step by step process for how the "water loss evaluation" results in water in the groundwater trust. Without this piece, the recommendation is not viable.

Recommendation #2 – Provide Settlement Opportunity for Permit Holders who over-pump their permit

Summary:

Permit holders who have over-pumped their Edwards permit and thus exceeded their annual allocated usage from the Edwards Aquifer, should have a vested interest in stretching their Edwards permit and thus be prime candidates for the RWCP. Therefore, the RWCP should determine at the end of each year, which permit holders have over pumped their permit by 10 ac-ft or greater and target them for enrollment in the RWCP the following year, with an upfront commitment to the RWCP groundwater trust to mitigate for the over-pumping.

Essentially, as mitigation for over-pumping, the Permittee should be offered the choice of placing an initial commitment of water in the RWCP groundwater trust and then participating in the RWCP, in lieu of following the normal EAA enforcement process.

Commented [NP13]: Amount should be reflective of the over-pumping

Commented [NP14]: Should be normal participation just like any other participant w/o enforcement action.

Specific Steps for Implementation:

1. In the beginning of the year a list of permittees who have exceeded their authorized withdrawal amount will be contacted.
2. The over-pumper will be offered the choice to place an initial commitment of water in the RWCP groundwater trust and participate in the RWCP or follow the normal EAA enforcement process.
3. RWCP participation can include, but are not limited to: leak detection, high-efficiency toilet distribution, water efficient landscape rebate programs, and/or enforcement and staff assistance to monitor conservation initiative.
4. Predicted savings will provide measurement of financial reimbursement from the RWCP (\$950/ac-ft conserved) and at the end of the year, conserved water, in addition to the initial commitment, will be committed to the groundwater trust for 15 years.
5. If the permittee still exceeds their authorized withdrawal amount in the following year, enforcement action from EAA will continue for the current and past year, and all moneys will be refunded to the RWCP, with potential additional enforcement action by the EAA Board for a repeat offender.

Pros:

- Positive public relations for a permittee that just over-pumped. Turn a negative into a positive.
- True meaning of conservation
- Motivated permit holder
- Permittees that over-pump will provide more benefit when remaining in compliance than those whom historically have excess.

Cons:

- Difficult to commit water to the Trust

- Must create a target value of water to not over allocate funds with limited return to the Trust.
- Risky use of limited funds
- Labor intensive; annual water use reports have until January 31 to submit and it will require diligent effort to analyze results and cull out prospects.
- Would require change in EAA rules and Board approval.

Recommendation #3 – Offer Incentives and Assistance to Encourage Municipalities to Promote Landscape Conservation, Especially During Peak Demand

Summary:

Water use during peak demand is mainly attributed to outdoor water use and weather patterns (drought). In order to curb water use during peak demand, this recommendation explores specific conservation practices that are geared towards outdoor water use. Outdoor water use can be quantified by the amount of increased water use in comparison to the winter average water use.

Incentives and Assistance

1. Offer administrative and enforcement assistance.
 - The RWCP should fund ~~hire~~ part-time staff to patrol for drought restriction violators (there would have to be cooperation by the courts to follow up with citations).
 - The RWCP should fund part-time staff to manage the administration of enforcement of citations, which requires additional record keeping and an ability to answer phone calls during the peak periods.
2. Consider working with a municipality concerned about staying within permit due to high summer consumption. The EAHCP should provide assistance in identifying and installing BMP's that reduce outdoor water usage.
3. An example would be that analysis shows -a permit holder -the end use customers with unusually high peak demand.
 - Is it a small number of residential customers or is it partially some large commercial customers with bigger irrigation systems? If the customers who increased usage were offered personalized conservation consultations and incentives, they would likely substantially reduce.
 - Then the permit holder could contribute half of the saved water to the trust.
 - As the water is saved during the peak the deal goes into effect and half of the saved water goes into the trust.
4. Encourage conservation during peak demand periods through incentives, rebates, alternate water sources, etc.
 - Incentives –
 - Develop creative ways to incentivize landscape irrigation customers to reduce or stop irrigation. Practices may include the reduction of landscape and turf areas.
 - Require or incentivize landscape and athletic field irrigation system checks in order to find problems and improve irrigation efficiency.
 - Assess recreational water use facilities and offer conservation incentives.
 - Offer participation in the RWCP as a settlement offer to municipalities that over pump.
 - Give a higher compensation agreement for very specific conditions such as a major retrofit for a golf course.
 - Disincentives

Commented [NP15]: Need to include a step by step process for how administrative and enforcement assistance results in water in the groundwater trust. Without this piece, the recommendation is not viable.

Commented [NP16]: Need to include a step by step process for how this analysis results in water in the groundwater trust. Without this piece, the recommendation is not viable

- Increase rates through conservation pricing during peak demand to cover increased water distribution energy costs.
- Drought Ordinances.
- Distribution System efficiency improvements – Increase leak detection efforts during peak demand.

Commented [NP17]: Need to include a step by step process for how increased rates result in water in the groundwater trust.

Possible Example

1.EAHCP funds rate study

2.City raises rates

3.Estimated water conservation is enrolled in the groundwater trust

Pros:

Cons:

- Municipalities do not want to change.
- Additional staffing needed.

Implementation and Funding:

- Assess the risk and work case analysis for municipalities to determine conservation potential.
- Partner with Master Gardener and Master Naturalist programs as potential resources for municipalities.
- Solicit citizen volunteers as administrative resources for municipalities.

Recommendation #4: Implement an Outreach Program to Ensure all Permit Holders are Informed about the RWCP

Summary:

Develop an outreach program to ensure all potential participants are aware of the RWCP.

- 1) Education/Outreach: Develop an education and outreach strategy to educate potential participants (irrigators, municipalities and businesses) on the Regional Water Conservation Program and the role of spring flow protection measures in the Edwards Aquifer Habitat Conservation Plan program.
 - a) Could produce a participant site that can profile each permit holder who has committed water.
- 2) Produce a regional mail-out to profile participants of the program: Provide a regional brochure to permit holders in the region to initiate interest and inform others of participation options. Monthly, quarterly, or annually.

It should be clearly recognized, that expenditure of funds associated with this recommendation will not equal water in the groundwater trust. However, the benefit should be overall increased participation in the RWCP.

Pros:

- Can provide incentive for participation - positive public relations
- Can make the RWCP better known and potentially provide us with more participation in the program.
- Low-cost strategy

Cons:

- Does not provide water into the trust directly.

Implementation and Funding:

- Contract with a Public Relations consultant with RWCP funds.

Recommendation #5 – Build Flexibility in the Participant Agreements with Municipal and Industrial Users

Summary:

It was identified that the current requirement to place one-half of the conserved water in the RWCP groundwater trust for 15 years is a concern for Edwards permit holders when considering participation to the RWCP. Therefore, the RWCP should offer shorter terms with funding based on a sliding scale for years of commitment (see funding table below).

Proposed Funding

<u>Term (yrs)</u>	<u>\$/ac-ft</u>
<u>3</u>	<u>\$190</u>
<u>5</u>	<u>\$317</u>
<u>7</u>	<u>\$443</u>
<u>10</u>	<u>\$633</u>
<u>15</u>	<u>\$950</u>

Pros:

- Decrease term lengths could be perceived as decrease in risk to a municipality and to an industrial user’s business model.

Cons:

- Could potentially create the need to amend the Initial Commitment Contracts with SAWS, City of San Marcos and Texas State University.

Recommendation # 6 - Explore Partnerships with Land Trusts

Summary:

“Land Trusts” operating in the Edwards Aquifer region are currently obtaining development rights and/or actual property in the Contributing, Recharge and Artesian Zones of the Edwards Aquifer. These properties may have water rights associated, that either have been deeded with the land (thus property of the Land Trust) or remain operational (used by landowner).

The RWCP should:

1. Contact currently operating Land Trusts to inform them about the RWCP and explore opportunities to partner.
2. Request a meeting with the City of San Antonio (COSA) Conservation Advisory Board (CAB) to discuss partnership opportunities (the CAB administers the COSA conservation program and Prop 1 funds).
3. Request that a Land Trust with deeded Edwards water permits, consider placing the water in the RWCP, either for no cost or with funding from the EAHCP.
4. Request that a Land Trust currently obtaining property with Edwards permits, consider utilizing RWCP funding to obtain the water permit at the same time as the development rights.
5. Contact land owners with property in Trusts that have retained their water permits, and explore their willingness to enroll water into the RWCP.

The following is a possible list of Land Trusts to contact:

- City of San Antonio: Edwards Aquifer Protection Program Conservation Easement – Water rights stay with the property and can only be used in direct support of grantor activities related to the easement.
- Texas Agricultural Land Trust
- Texas Land Conservancy
- Guadalupe Blanco River Authority Land Trust
- Texas Nature Conservancy

Pros:

- In initial research with the City of San Antonio, implementing this recommendation would not present any conflicts with their existing conservation easements.

Cons:

- Difficulty in documenting amount of water available for the Groundwater Trust.
- Identifying which conservation easements have Edwards Aquifer wells.
- Must be voluntary.

Recommendation # 7: Work with Utilities and other Permit Holders to Change Landscape Design Practices

Commented [NP18]: Should this recommendation be combined with #3.

Summary:

- In conjunction with landscape design professional associations, work with municipal utilities and other permit holders to encourage conservation practices for existing and future landscapes.
- Program would be based on commercial (or large residential property) participation within the distribution area of any municipal water supplier.
- Rebate programs would be provided to the customer of water purveyor and realized savings can be split between permittee and Groundwater Trust.
- Will be targeted towards existing conservation programs.
- Work with existing utilities – SAWS and New Braunfels Utilities.

How does excess capacity become water for the Groundwater Trust?

- Provides incentives to municipalities that could result in more agreements where conserved water will be committed to the Groundwater Trust.

Pros:

- Can drastically reduce outdoor irrigation use - 25% of annual municipal use. Where does this number come from? ri
- Can use existing RWCP funding.

Cons:

- Landscape conservation measures are expensive.
- Again, most likely will require dual negotiations with end user and permit holder that is labor intensive.
- Fundamental issues with realized savings with each conservation measure:
 - Rain Sensors- Sensors help if they work right because they were installed right and if it actually rains. They are a good investment but cannot guarantee savings during the worst drought.
 - Rainwater Harvesting- Rainwater harvesting has an excessive payback time and if there is any potable water back up to the systems, there is a very small chance of actual savings. Recommend for exempt permit sites because it is very appealing to people and there is not permit retirement needed for any length of time.
 - Xeriscaping - Changing plant material does not, by itself, save water. SAWS coupons are aimed at people with irrigation systems and require them to cap the irrigation heads. Saving water from landscape changes mostly comes from changing how water is applied to the landscape after the change in the plants. Xeriscaping should require little to no irrigation but if the irrigation method stays the same, water use is not likely to change much, if at all.

- With xeriscaping, any instillation must also be accompanied by education and/or removal of irrigation systems.
- Other programs that reduce the scope of spray irrigation. An example is that shopping centers are getting rid of grass in their islands in the parking lots. The grass is expensive to take care of on maintenance contracts and the spray gets them water waste tickets. They change to point source drip on the trees and a few plants and have less plant material competing within the islands. SAWS is doing a .5 cents per square foot if point source drip is still at the site and \$1 per square foot if all irrigation is gone.

Conservation Measure¹	Estimated Water Conserved Annually (Acre-Ft per participant)	Estimated First Year Cost (\$ Per Acre-Ft)
Rainwater Harvesting	.55	\$45,500
“Smart” Rain Sensors	.49	\$4,100 – \$12,250
Xeriscaping	.46	\$20,400 - \$86,950

*Information gathered from TWDB, U.S. National Climate Data Center, and Papers of the 2008 Applied Geography Conference

Implementation and Funding:

¹ Estimate water conserved and costs are based upon information from references above and assumed amounts of landscaped property.

Recommendation # 8 - Target Conservation Measures to Producers that Use Flood Irrigation

Summary:

Within the Edwards Aquifer region, 65 Irrigators reported furrow/flood irrigation in the San Antonio Pool (5,592 acres) and 8 Irrigators reported flood/furrow irrigation in Uvalde Pool (783 acres). Furrow/flood irrigation methods are only approximately 60% effective and an upgrade to Low Pressure in Canopy (LPIC), Low Energy Precision Application (LEPA) Center Pivots or linear type sprinkler irrigation systems can demonstrate an irrigation efficiency of 90%-95%.

The RWCP should:

- Contact permit holders still utilizing flood/furrow irrigation and offer to provide funding to install Low Pressure in Canopy (LPIC), Low Energy Precision Application (LEPA) Center Pivots or linear type sprinkler irrigation systems, in exchange for water being committed to the groundwater trust. Permit holders with the largest amount of acres irrigated by flood/furrow methods should be contacted first.
- Find matching funds to match EAHCP funds and install additional Low Pressure in Canopy (LPIC), Low Energy Precision Application (LEPA) Center Pivots or linear type sprinkler irrigation systems.

Pros:

- Saves in energy cost and labor.

Cons:

- 142 acre linear Irrigation System (Low Pressure in Canopy) costs approximately \$131,400 (\$925 per acre). At budget limit of \$950 per acre-foot the return must be 138 acre-ft. into the Groundwater Trust.
- 162 acre center pivot costs \$71,115 (\$440 per acre). At a budget limit of \$950 per acre-foot the return must be 75 acre-ft. into the Groundwater Trust.
- EAA has a base conversion program for irrigators which allows them to convert base water rights unto unrestricted after the installation of a center pivot, or any other water conservation equipment. After the conversion process an irrigator can place unrestricted water rights into the water market if they choose to do so.
- Reasons for not having a center pivot may vary due to irregular shape of field or possible utility line obstructions.
- There may not be many irrigators using these methods. Of those remaining, the incentive to increase efficiency may not be there.

Background

- 700 Irrigators total; 415 pumped water.
- 478 in the San Antonio Pool; 222 in the Uvalde Pool.
- 383 Irrigators pumped and are subject to Critical Period Management rules (32 irrigators not subject to CPM).

Recommendation # 9 – Create a Conservation Incentive Program for Exempt Well Owners

Summary

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The RWCP should:

- Utilize the EAA data base to build a mailing and/or email contact list of exempt well owners.
- Develop a program specifically for exempt well owners, targeting Hays and Comal counties.
- Encourage their participation because it provides an added value to their property.
- Provide exempt well owners a package deal that includes a number of conservation measures they could implement, such as Bathroom kits and rain sensors.
- The package deal could be marketed through non-profit groups, such as youth organizations, similar to the SAWS “Season to Save” program, which through 4-H and Future Farmers of America groups. These groups receive a payment for every exempt well owner they get to participate in the program.
- Provide conservation consultation services to exempt well owner participants to maximize indoor and outdoor water savings.

Pros:

- Exempt well owners do not give up any of their water.
- The Season to Save program doubled the toilet distribution for SAWS during the years when a marketing boost was needed. It was more cost-effective and had a better result than straight advertising. It was also very well received in the community.
- This outreach could result in excellent public relations for the EAHCP.

Cons:

- Identifying and locating exempt well owners.

Commented [NP19]: Need to add a summary that references the importance of exempt well owners to the program and explains that the RWCP gets a 1:1 benefit to the RWCP groundwater trust. Additionally that there is no municipality that would cover exempt well owners, so it is up to the program to reach out to them directly.

Recommendation #10 – Take or Pay contracts that discourage conservation

Commented [NP20]: Still requires development

Recommendation #11 – Additional Funding for the RWCP (additional \$/ac-ft)

Commented [NP21]: For this to be a viable recommendation, an increased funding source must be identified.

Commented [NP22]: Still requires development