Water Resources Management Strategy
Implementation

2024 Water Conservation Plan
Goal and Program Update
July 2013
Albuquerque Bernalillo County Water Utility Authority Board
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EXECUTIVE SUMMARY

When the Water Authority achieved its conservation goal of 150 gallons per person per day (GPCD) in 2012, evaluation began on establishing a new conservation goal. During the summer of 2012, water conservation staff met with area stakeholders to discuss ideas for future conservation programs. From November 2012 through January 2013, the Authority held focus group meetings to gather input on the proposed new programs. In February 2013, the new programs were posted on Authority website to allow customers who could not attend the meetings to comment online.

In designing the new programs, it was assumed that the water conservation budget may increase by 2% each year and that all new conservation programs should enhance, support and work conjunctively with all other Water Resource Management Strategy policy objectives.

From all the customer input, water conservation staff set a new water conservation goal of 135 GPCD by 2024. The proposed new programs are designed to target more outdoor savings and to focus on more programs for our non-residential customers, because residential customers have already made dramatic water usage reductions. Twelve programs were presented to the public, from those twelve the top six have been selected for implementation along with one program that is an easily implemented rebate program and one program to ensure that our low income customers have access to low water use fixtures to assist them in reducing their water use.

PROPOSED NEW PROGRAMS:

1) **Education** - expand education programs to serve the Middle Rio Grande region and a greater number of students in our service area. Offer our customers more opportunities for input with quarterly public meetings and quarterly field trips.

2) **Building Codes** - work with both State, municipal, and county agencies and area stakeholder groups to develop legislation to require updates to current building codes that will benefit conservation without being financially burdensome to new development.

3) **Test Your Toilet Month** - promote a month when all customers are encouraged to test their toilets for leaks and make repairs with particular emphasis on multi-family housing.

4) **Rebate Donation Program**. Customers will have the option to donate 10-100% of their water conservation rebate to help fund new conservation programs. Customers will be able to select the program they wish to help fund from a list of several options.

5) **Xeriscape Program Enhancement** – expand the flexibility of this program, make the forms easier to complete, ensure that all customers who participate understand the watering
needs of their new landscape and increase the amount of the rebate for non-residential customers where we particularly want to increase xeriscape efforts.

6) **Rainwater Harvesting** – develop a program to encourage installation of rainwater harvesting systems beyond the current rain barrel rebate program.

7) **Cooling Tower Rebate** – develop a rebate program for equipment to increase the cycles of concentration for cooling towers and for projects that would reuse cooling tower wastewater for landscape irrigation. This program was removed from discussion after the first round of public meetings because it is easily implemented and did not require further public comment to establish that it was a good idea.

8) **Low Income Credit Customer Audits and Retrofits** – develop a pilot program to assist new low-income credit customers with a free water audit and installation of low-flow fixtures to ensure that customers receiving the low-income credit are conserving as much as possible.

These changes are projected to reduce overall demand from 134,669 acre-feet in 2024 to 122,399 acre-feet and projected to save 59,157 acre-feet over the ten year period.
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Introduction and History of the Water Conservation Program

The Water Authority now supplies about 102,000 acre-feet/year of water to more than 600,000 customers in the metropolitan area. Water is supplied from the aquifer, surface water and reuse.

In 2007, the Water Authority adopted a comprehensive Water Resources Management Strategy (WRMS) to update the 1997 strategy adopted by the City and to assure a safe and sustainable water supply for its customers to the year 2060. The 2007 WRMS consists of thirteen policies and more than sixty recommendations for providing a safe and sustainable water supply. This plan update addresses Policy D, “Update and Implement the Water Conservation Strategy” and Policy M, “Encourage and Facilitate Public Involvement and Support”. As recommended in Policy D of the WRMS, the water conservation goal shall be reviewed every five years to ensure that adequate progress is being made to reduce water consumption.

The Albuquerque Bernalillo County Water Utility Authority (Authority) and its predecessor, the City of Albuquerque, have made significant progress in the first seventeen years of the water conservation program, moving from among the highest municipal water users in the Southwest to among the lowest. When the conservation program began in 1995, the service area’s water use was 251 gallons per person per day (GPCD). GPCD is calculated by dividing the total annual production by the total population divided by 365 using a calculator designed by the Office of the State Engineer (OSE). So, all uses of water residential, multi-family, commercial, industrial, institutional, non-revenue and reuse are accounted for in the Authority’s GPCD calculation.

The original conservation goal was to reduce use to 175 GPCD by 2005. This goal was achieved in 2005 when a GPCD of 172 was reached. A new goal was then established of 150 GPCD by 2014. This goal was reached three years early in 2011. GPCD was further reduced to 148 in 2012. The Office of the State Engineer (OSE) has required the Water Authority to reduce its water use to 155 gallons per capita per day as a condition of SP-4830 which allows for use of the Authority’s San Juan Chama Drinking Water Project. The graphs on the next three pages show various ways of representing the benefits of conservation over time.
Figure 1 illustrates the Authority’s overall water budget under the WRMS. Conservation is shown in the light blue band at the top of the graph. The more conservation efforts are able to reduce demand, the longer it will be before the Authority must acquire new sources of supply to meet demand represented by the small light blue triangle on the far right side of the graph. Conservation efforts also help create and maintain a groundwater reserve for use in times of drought.

**Figure 1 – Water Authority Adopted Water Budget Under the WRMS**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conservation</strong></td>
<td>Water savings from historic use</td>
</tr>
<tr>
<td><strong>Reuse &amp; Recycling</strong></td>
<td>Non-potable reuse from North I-25 and Southside Reuse projects</td>
</tr>
<tr>
<td><strong>San Juan-Chama</strong></td>
<td>Transition to SJC water under the Drinking Water Project</td>
</tr>
<tr>
<td><strong>Aquifer Drawdown</strong></td>
<td>Drawdown due to use of aquifer storage</td>
</tr>
<tr>
<td><strong>Renewable Groundwater</strong></td>
<td>Aquifer recharge from natural sources primarily the Rio Grande</td>
</tr>
<tr>
<td><strong>New Sources</strong></td>
<td>Future sources of supply to maintain sustainable usage</td>
</tr>
</tbody>
</table>
Figure 2 shows water conservation progress over time plotting total water production (green line), the number of accounts served (purple line) and annual rainfall (blue bars). When the conservation program began in 1995 it took approximately 40 billion gallons of water annually to serve 143,000 accounts. In 2012, approximately 205,000 accounts were served with only 34 billion gallons of water. In 2009, the Authority acquired New Mexico Utilities so production increased to serve those additional accounts.

Figure 2 – Water Usage 1989-2012
Figure 3 shows the relative proportions of groundwater, surface water and reuse being used to meet Authority customer demand. Adoption of the new water conservation goal will bring the strategy goal line down even further necessitating less use of groundwater supplies. Since 2009, about 40% of Authority production has come from surface water. Drought in 2011 and 2012 impacted the Authority’s ability to produce surface water due to river flow requirements in OSE permit SP-4830.

Figure 3 – Water Conservation Program 1980-2012
Overview of Plan Development

Development of the new water conservation plan was a highly public, stakeholder-focused, interactive process. Meetings were held with stakeholder groups in the summer and fall of 2012 to generate ideas for new programs.

The new program ideas were then presented to the public in a series of eight public focus group meetings from November 2012 through January 2013. The focus group meetings were advertised on customer water bills and on the Water Authority website (for bill inserts see Appendix A). Customers who attended the meetings received a $20 credit on their water bill to compensate them for their time. Forty customers were registered for each focus group session. Many more customers were interested in participating than we had space to accommodate.

To solicit further public input the program ideas were also posted on the Water Authority website to obtain input from customers who were unable to attend the focus group meetings. Customers were notified of the opportunity to comment on the programs through a water bill insert and information on the website home page (for bill insert see Appendix A, for details on each program presented to the public and customer comments see Appendix B).

Throughout the process, conservation staff worked with the Authority’s Customer Advisory Committee (CAC) to gather input on conservation ideas, the design of the focus group meetings and plan development.

From public input on program preferences, a plan was developed for implementation of new programs, and a goal was established based on the savings to be achieved from the new programs and the continuation of existing efforts.
2024 Conservation Goal

The water conservation goal for 2024 of 135 gallons per person per day (GPCD) was established using the Authority’s water budget model based on implementation of programs customers favored in focus group meetings, insight gained from current water conservation efforts and the following principles:

1) the annual budget for water conservation programs may increase by 2% each year,

2) all new programs will comply with R-10-12 “‘Enhancing the Water Conservation Program and Establishing a Process for Evaluating and Amending the Program” to ensure that new programs provide the same cost benefit as the current programs,

3) water conservation will continue to focus on positive, participatory, choice-based ways to save water rather than prescriptive, punitive programs,

4) outdoor savings programs were favored over indoor savings programs because outdoor use is consumptive while indoor is not,

5) residential customers have already dramatically reduced their water use and while all programs should continue to be offered to all customer classes, new programs would target reductions from the non-residential classes and

6) water conservation programs will be designed to enhance, support and work conjunctively with all other Water Resource Management Strategy policy objectives.

7) while decreasing the water conservation goal to 135 GPCD will provide many benefits through saving both water and money it cannot and is not intended to address all of the Authority’s future water resource planning needs.
Figure 4 shows the annual GPCD from 1995 through 2024. Past usage is shown in blue and goals for future years are shown in yellow.

The original conservation goal was to reduce use by 30% from 250 GPCD to 175 from 1995 to 2005. Once that goal was reached a further goal of reducing use by another 14% in ten years was established with a GPCD goal of 150 by 2014. The new goal is to reduce use 10% over the next ten years to reach a GPCD of 135 by 2024.

Water conservation goals for the next ten years are less than in previous years because the Authority has already made significant reductions on water usage. Residential customers particularly have made enormous reductions in usage over the past ten years as shown in the graphs below. Reductions of this type cannot reasonably be expected to continue for the next ten years without significant mandatory restrictions, so much of the savings will need to come from the other customer classes that are using a smaller percentage of the total supply, so the savings opportunities are lower. As water use decreases it will become more sensitive to fluctuations in weather, so there may be individual years when GPCD increases even as the general long-term water use trend is downward. When customers were using larger volumes of water and more waste was occurring, it was easier to continue to conserve during a dry year.
Figure 5 shows the Water Authority’s overall GPCD use allocated to each customer class based on the volume of water sold to that customer class each year.

- In 2009, all large turf area irrigation-only accounts (about 1,300 accounts) were moved out of their previous classes and into the class designated “Other” during a billing system upgrade, so in that year the “Other” class shows a dramatic increase in use.
- Many of the large turf customers were in the Industrial, Commercial and Institutional (ICI) customer classes, so in 2009 those classes show a reduction when a large percentage of their use was transferred to another customer class.
- Also starting in 2009, the Water Authority data includes the former New Mexico Utilities, Inc. service area. Different usage characteristics of customers in that area changed the relative GPCD of some user classes in 2009.
- Data in the graph below comes from the Office of the State Engineer GPCD calculator.

**Figure 5 – GPCD Allocated by Customer Class 2002-2012**

![Graph showing GPCD Allocated by Customer Class 2002-2012]
Figure 6 shows expected reductions for each class of customer as GPCD is reduced from 150 to 135.

**Figure 6 – Water Use in 2024 By Customer Class 135 GPCD vs 150 GPCD**

Over the next ten years, each customer class is expected to reduce their use by the following percentages: Residential 7.5%, Commercial 17.7%, Multi-Family 12.6%, Industrial 10%, Institutional 10%, Non-Revenue 13% and Other 6.4%.

Table 1 provides a breakdown of expected reductions for both indoor and outdoor use for each customer class.

**Table 1 – Breakdown of Expected Water Use Reductions**

<table>
<thead>
<tr>
<th>Customer Class</th>
<th>GPCD = 135 Indoor</th>
<th>GPCD = 135 Outdoor</th>
<th>GPCD = 150 Indoor</th>
<th>GPCD = 150 Outdoor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>43.0</td>
<td>24.0</td>
<td>45.5</td>
<td>27</td>
</tr>
<tr>
<td>Commercial</td>
<td>11.6</td>
<td>6.5</td>
<td>14.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>14.0</td>
<td>3.3</td>
<td>15.3</td>
<td>4.5</td>
</tr>
<tr>
<td>Industrial</td>
<td>0.8</td>
<td>0.1</td>
<td>0.8</td>
<td>0.2</td>
</tr>
<tr>
<td>Institutional</td>
<td>3.2</td>
<td>3.0</td>
<td>3.6</td>
<td>3.3</td>
</tr>
<tr>
<td>Non-Revenue</td>
<td>2.0</td>
<td>12.0</td>
<td>2.1</td>
<td>14.0</td>
</tr>
<tr>
<td>Other</td>
<td>3.1</td>
<td>8.5</td>
<td>3.5</td>
<td>8.9</td>
</tr>
<tr>
<td>Total</td>
<td>77.7</td>
<td>57.4</td>
<td>84.8</td>
<td>65.9</td>
</tr>
</tbody>
</table>

Because residential customers have already made significant reductions in use, they are expected to contribute less to future conservation efforts than the other customer classes. The “Other” class contains approximately 1,300 “irrigation-only accounts” that are specifically for large turf customers (parks, golf courses, athletic fields). New conservation programs
target removal of grass from non-use areas (medians, commercial settings, aesthetic residential settings, slopes and small areas). When this turf is removed, customers will rely even more heavily on the public turf at athletic fields, parks and golf courses. For this reason, the “Other” class is expected to have a comparatively small reduction in water use over the next ten years.

Non-Revenue Water

The non-revenue class just as its name implies, is all the water produced by the Authority for which no revenue is received. This does not mean all that water is lost, however. Each year the Authority conducts a validated, internal water usage audit using the American Water Works Association/International Water Association water audit methodology to determine where non-revenue water is going. Non-revenue water is divided into apparent losses (unauthorized consumption, customer meter inaccuracies and systematic data handling errors) and real losses (leakage from distribution lines and mains, leakage and overflow from storage tanks and leakage on service connections). Apparent losses and real losses each account for about 50% of the total non-revenue water. The Authority has programs to reduce the volume of water in both of these categories.

The Authority’s leak detection program is utilized to find and repair leaking water lines before they surface. Additionally, the Authority’s steel line replacement program spends one million dollars each year to replace steel water lines which are the most likely to develop leaks. Over the next ten years, the Authority will be replacing its existing meters with Advanced Meter Infrastructure (AMI), so that the metering system will be more accurate and leaks will be able to be detected more quickly. Customers will be able to access the AMI system so they can monitor their water consumption in real time and will even be able to set up alerts so they can receive phone calls, emails or text messages when it appears they have a leak or when their water usage goes beyond a specified amount.

Accounting for Aquifer Storage and Recovery Projects in GPCD Calculations

In accordance with Policy C of the Water Resources Management Strategy, over the next ten years, the Authority will begin utilizing aquifer storage and recovery (ASR) as part of water resources management. In order to ensure that ASR water is not counted twice in GPCD calculations (both when it is diverted from the river and when it is removed from the aquifer for use), ASR water will be included in GPCD calculations when it is recovered from the aquifer for customer use, not when it is diverted from the river and put into the aquifer for storage.
SAVINGS FROM A GPCD OF 135

Reaching a GPCD of 135 by 2024 as compared to remaining at a GPCD of 150 will reduce service area demand in the year 2024 from 134,699 acre-feet to 122,399 assuming the baseline water system growth scenario from the Authority’s 40-Year Water Development Plan which estimates 810,270 people by 2024 (CH2M Hill, 2012). This is a 9% reduction in overall demand. The total savings generated during the 10-year time period will be 59,157 acre-feet (19,246,485,921 gallons). Figure 7 illustrates the reduction in water usage to be achieved each year by reducing GPCD to 135.

Figure 7 – Water Authority Service Area Annual Demand GPCD =135 vs. GPCD =150 by 2024

Note: Population assumed to reach 810,270 people by 2024
Figure 8 shows the modeled change in groundwater storage (the drought reserve) each year both with and without a GPCD reduction to 135. In 2023 and 2024, the water budget model anticipated drought that will cause the Authority to draw from the groundwater drought reserve rather than adding to it. With a reduction to a GPCD of 135, the Authority would add 187,629 acre-feet to the drought reserve while only 144,730 acre-feet would be added while remaining at a GPCD of 150. This represents an additional 42,899 acre-feet of groundwater being stored as a drought reserve. With a reduction to a GPCD of 135, the amount needed from the drought reserve could be reduced from 37,808 acre-feet to 23,262 acre-feet for a total savings in the drought years of 14,546 acre-feet.

**Figure 8 – Annual Change in Groundwater Storage**

![Graph showing annual change in groundwater storage from 2014 to 2022 with two scenarios: GPCD = 135 in 2024 and GPCD = 150 in 2024. The graph indicates a decrease in groundwater storage in 2023 and 2024 compared to previous years.]
Public Input Sessions

General Approach

The Water Authority’s Water Conservation Program conducted eight Public Input Sessions from November 2012 – January 2013 as a part of developing its next 10 year Water Conservation Plan. The meetings were held at four venues throughout the Water Authority’s service area including: The African American Performing Arts Center, UNM Continuing Education, The Indian Pueblo Cultural Center, and Taylor Ranch Community Center.

Each venue sponsored a Thursday evening meeting from 6:00PM – 8:00PM and a session the following Saturday morning from 10:00AM – 12:00 Noon. The Public Input Sessions were advertised on billing inserts and 45 spaces were fully registered for each meeting. Participants received a $20 rebate stipend for their attendance.

The Public Input Sessions were designed to provide a forum for education and dialogue about potential new measures to enhance water conservation, and to identify priorities to guide future program activities. Katherine Yuhas, Water Conservation Officer developed and framed a set of new proposals after conducting a series of meetings with key stakeholder groups in the service area. The stakeholder groups included: Amigos Bravos, MRCOG Board, MRCOG Water Resources Board, NAIOP, Business Water Task Force, Middle Rio Grande Water Assembly, NM Water Collaborative, Water Authority Customer Advisory Committee, Water Authority Board Members, and the Middle Rio Grande Conservancy District.

During the Public Input Sessions, Yuhas presented an overview of the new proposals. Attendees were given the opportunity to ask questions, offer comments and suggest additional ideas for consideration. At the end of each session, participants engaged in a multi-voting exercise (allocating 12 “dots” to the Program’s proposals and/or ideas generated during the meeting) to indicate where they would like the Water Conservation Program to prioritize its resources in the future. Finally, a meeting evaluation allowed participants to assess each session as well as to record any additional substantive suggestions.

The Public Input Sessions were staffed by:

- Katherine Yuhas, Water Conservation Officer
- Frank Roth, Senior Policy Manager
- Mellisa Cuellar, Rebate Specialist
- Sal Mora, Rebate Specialist
- Mary Davis Hamlin, Facilitator
Results of Prioritization Exercises

Water Conservation Program Proposals-Summary

Figure 9 ranks the combined prioritization results from all eight sessions of the possible new programs presented. Education received the highest levels of support (257) followed by Building Codes (248), Test Your Toilet Month (207), 10% of Customer Rebates to New Programs (181), Xeriscaping Rebate (168), Rainwater Harvesting (166), Water Waste (162), Storm water (128) and Meters (117) respectively. Appendix B has a detailed explanation of each program.

Figure 9 – Total Votes for Each Program from All Meetings
Meeting Evaluations

The meeting evaluations were overwhelmingly positive. Participants were asked to rate the statements below on a scale from 1 (Don’t Agree) to 5 (Completely Agree).

- My time was well spent.
- I would participate in this type of session again.
- I felt the Water Authority truly wanted my input.
- The meeting was productive.
- I learned something about water conservation.

Figure 10 summarizes the numerical results of responses to the questions from all eight sessions. The appendix includes all comments and data from the evaluations.

Figure 10 – Average Scores from Meeting Evaluations

<table>
<thead>
<tr>
<th>Statement</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time was well spent</td>
<td>4.5</td>
</tr>
<tr>
<td>I would participate again</td>
<td>4.0</td>
</tr>
<tr>
<td>Authority truly wanted my input</td>
<td>4.2</td>
</tr>
<tr>
<td>Meeting was productive</td>
<td>4.6</td>
</tr>
<tr>
<td>I learned something</td>
<td>4.3</td>
</tr>
</tbody>
</table>
Implementation of New Programs

The Authority will begin implementation of the top six programs in Fiscal Year 2014 based on customer input. Programs that were not ranked in the top six may be considered for implementation in the future after the top six programs have been implemented and evaluated. Additionally, one program that did not rank in the top six will be considered for evaluation at the request of the Customer Advisory Committee.

Conservation program progress will be evaluated annually. Based on the annual evaluation, changes to programs or new program development may be proposed, if sufficient conservation progress is not being made. Additionally, new programs may be added to generate public interest in conservation, if funds are available.

Two programs were eliminated from the focus group sessions after the first set of meetings, because it was determined that there were too many programs being presented. A program to implement a rebate program for cooling tower efficiency was eliminated from the discussions because it was a low-cost, easily implementable program that did not require public input. An education program on charity car washes was removed from the discussion because input from Water Use Compliance staff was that charity car washes were not generating a significant enough number of water waste fines to justify a new program.

In addition to the programs presented in the focus group meetings, the Authority will establish a new program to assist low income customers with conservation. New low-income credit customers will receive a free water audit and if they do not have low-flow fixtures, these fixtures will be installed for them through an Authority-funded program to ensure that customers receiving the low-income credit are conserving as much as possible.

All changes to rebate programs will be made in accordance with R-06-12, “Enhancing the Water Conservation Program and Establishing a Process for Evaluating and Amending the Program, Section 5. Approval of New Rebates and Phasing Out of Existing Rebates.” No new rebate program shall pay for more than half the cost of the product or conversion, no rebate shall pay more than $20 per anticipated unit (748 gallons) of water saved and customers will be notified six months in advance of the phase out of any rebate program.

Programs for immediate action are detailed below with implementation plans.

Increase the Education Program

This program received the most votes from customers. In order to increase education while keeping costs at the same level the Water Authority will implement several strategies.
The Authority will partner with members of the Mid-Region Council of Governments (MRCOG) Water Resources Board to apply for a grant to increase regional education programs in the fall of 2014. The Authority’s current education program is highly successful and would be an excellent resource for the entire region. The current program is easily expandable and if the grant application is successful, additional services could be administered under the Water Authority contract. The Authority Education Specialist would develop a fourth-grade education program specifically for the students in the MRCOG area that will address rural and agricultural water issues along with basic water resources and conservation education.

The current field trips to the Rio Grande Nature Center that have been offered to 60 Water Authority service area fourth-grader classes will expand in the fall of 2013 to include an additional 30 classes on the field trips. This expansion will be possible because the Authority’s Education Specialist will be available to provide field trips one day per week during the school year and the Bachechi Open Space classroom will be available to be used as a field trip location along with the Rio Grande Nature Center. The ultimate goal of the Authority is to take every fourth-grade student in our service area on a field trip to the river. Additional education funds may be generated by a new program to contribute 10% of water conservation rebate funds to new conservation efforts (see “Rebate Donation Program” below).

The Authority will begin offering education grants to Authority customers. The grants will be based on the amount of savings being built up in the aquifer. When we have built up 10,000 acre-feet in the aquifer, we will give away $10,000 for water conservation projects. And, each time we build up another 10,000 acre-feet, we will give away another $10,000. When we reach 100,000 acre-feet, we will give away $100,000. So, in addition to providing education through the grant itself, the program will increase awareness of the need to conserve and build up groundwater reserves in the aquifer. The increase in water in the aquifer will be tracked on the website, so customers can monitor the progress and know when the grants will be issued.

The Authority will begin offering weekend field trips to our customers four times a year: twice at the Southside Reclamation Plant and twice at the Bachechi Open Space and the San Juan Chama Diversion Dam.

Finally, because the focus group meetings were so well received, the Authority will hold quarterly meetings throughout our service area each year to inform our customers of important issues and to gather their input on Authority policies, plans and programs.

Building Codes

This program received the second most votes from customers, nearly tying with education programs for the number one spot. While changes to building codes, will not require
additional water conservation program funds, considerable staff time will be needed to work with other agencies on development of appropriate legislation.

The Environmental Protection Agency’s WaterSense program certifies toilets, bathroom faucets and showerheads. The Authority is a WaterSense partner and may use installation of these WaterSense certified products as a starting point for development of new indoor water conservation building standards. The Authority’s conservation staff will work with both State and local agencies and area stakeholder groups to develop legislation to require updates to current building codes that will benefit conservation without being financially burdensome to new development.

Test Your Toilet Month

This program was ranked third highest among customers and has the potential to save large volumes of water at a low cost. Authority conservation staff will develop a “Test Your Toilet Month” campaign to be rolled out in March 2014. Leak detection tablets will be distributed throughout the service area (libraries, home improvement centers, hardware stores, community centers and senior centers along with Authority customer service locations). TV, radio and outdoor ads will promote testing your toilet for leaks and information videos and brochures will be available to customers on how to make repairs if a leak is found. In addition, this campaign will promote replacing older toilets with new, high-efficiency models to achieve extra savings. The Authority will partner with the Apartment Association of New Mexico so that a high number of multi-family toilets are included in the program for testing and leak repair. Other possible partnerships include hardware stores for discounts on toilet repair parts and local plumbers for discounts on leak repair.

Rebate Donation Program

The purpose of this new program is twofold. First, it is to connect Authority customers with a reason for conservation beyond just the monetary incentive. Second, it will allow the Authority to use rebate program dollars twice. Additionally, the Authority will be able to gather information on which conservation efforts are most popular with our customers.

The current rebate programs apply 100% of the rebate credit to a customer’s water bill. With this program customers will be able to donate 10-100% of their water conservation rebate to a new conservation program of their choice. This will be a voluntary program and customers will be given the option to opt-out and receive the entire rebate as a bill credit.

Three programs will be selected from the following to be included on the rebate forms starting January 2014: the Living River Fund, habitat restoration projects in the Bosque, City of
Albuquerque Parks Department irrigation efficiency projects, agricultural efficiency projects for ditches currently being operated within the City and regional education programs.

**Toilet Rebate Program**

A consistent comment heard at the focus group meetings and from regular customer contact was that the requirement to have a licensed plumber inspect the installation of toilets prevents customers from participating in the program. In order to address this concern and improve customer participation in the program, the Authority will now offer two options to customers who install their own toilets: 1) Have a licensed plumber sign off on the rebate form or 2) have an Authority inspection of their toilet which will reduce their rebate by $25. Because the cost of high-efficiency toilets has come down and implementation of the proposed new programs requires funding, the rebate amount will be reduced to $100/toilet beginning January 1, 2014.

**Xeriscape Rebate Program Changes**

A 2011 Master’s thesis completed by a student in the University of New Mexico economics department evaluated the efficacy of the Authority’s rebate program. When compared to other rebate programs, the xeriscape rebate program does not generate as much water saved per dollar spent as the toilet and washing machine rebate programs. This is to be expected, because conversion to xeriscape is a more costly process than changing a toilet or replacing a washing machine.

However, in order to make the xeriscape rebate program as effective as possible and to target user classes where it would be most beneficial to remove turf the following changes will be made:

1. Require that customers are educated on the water requirements of xeriscaping prior to receiving the rebate.
2. Increase the rebate for commercial, institutional and industrial customers to $1.50/square foot for all projects and to $2/square foot for slopes and small areas.
3. Offer a rebate of .75/square foot for converting high water use grass to lower water use grass – even if it uses spray irrigation
4. Increase the rebate for landscapes irrigated with harvested rainwater to $2/square foot
5. Scale the rebate in a way that is easier for customers to understand. Remove turf: for every square foot of plant material you install in the area where you’ve removed the turf, you get X dollars
6. Provide an additional $50/tree credit to cover the cost of tree irrigation systems when xeriscape is installed and offer rebates for tree moisture sensors.
7. Redesign the rebate form to be clearer and shorter.
These changes to the xeriscape rebate program will be promoted in the fall of 2013 and will take effect beginning January 1, 2014.

**Rainwater Harvesting**

The goal of this program is to generate more interest in installation of rainwater harvesting systems both in new construction and as a remodel to existing construction. The Authority is partnering with the New Mexico Water Collaborative to design a program to install rainwater harvesting systems in a variety of locations throughout the Albuquerque area to show how this technology can be implemented in our area and to provide real cost and water savings data. From this data the Authority will evaluate how best to expand the rainwater harvesting rebate program.

**Cooling Tower Rebate**

Develop a rebate program for equipment to increase the cycles of concentration for cooling towers and for projects that would reuse cooling tower wastewater for landscape irrigation. This program was removed from discussion after the first round of public meetings because it is easily implemented and did not require further public comment to establish that it was a good idea.

**Metering of Multi-Family Housing**

Although this idea, did not receive high ratings during the public focus group meetings, members of the Customer Advisory Committee felt it was an important issue to address and requested that it be added to the implementation plan. Authority conservation staff will evaluate how to incentivize installation of meters for each housing unit rather than just master meters when new multi-family housing is constructed.
Appendix A – Bill Inserts

WEIGH IN ON Albuquerque’s Water Future

The Water Authority will be holding a series of focus groups over the next several months to solicit public input on the future of water conservation in the Albuquerque metro area. Participants will help provide direction in the development of new conservation goals and programs — and will earn a $20 credit on their water bill for taking part!

Participants MUST PRE-REGISTER in order to attend. Pre-registration will be on a first-come, first-served basis and seating is limited to 45 people for each session. Call today to reserve your spot in one of these four groups:

- **NOVEMBER 15** (Thursday), 6 p.m.-8 p.m.
- **NOVEMBER 17** (Saturday), 10 a.m.-Noon
  African American Performing Arts Center
  New Mexico State Fairgrounds
  310 San Pedro Dr. NE

- **DECEMBER 6** (Thursday), 6 p.m.-8 p.m.
- **DECEMBER 8** (Saturday), 10 a.m.-Noon
  UNM Continuing Education Center, Room H
  1634 University Blvd. NE

Other focus groups are planned for January and February if you can’t make one of the meetings above, so watch this space for more information.

To Pre-Register, Please Call 768-3655, 8 a.m.-5 p.m., M-F

Albuquerque Bernalillo County Water Utility Authority
NOTE: The meeting for high school students because we did not have enough high school students register despite contacting schools directly to recruit.
WEIGH IN ON Albuquerque’s Water Future

Water Authority customers surpassed the long-term conservation per capita usage goal of 150 gallons last year, coming in at 148 gallons of usage per person per day. But we can’t stop there. As a desert community, our long-term viability depends on responsible use and conservation of our most precious natural resource.

So... What’s next for water conservation in the metro area?

The Water Authority has been soliciting public comment on the development of new conservation programs, including:

» Rebates
» Rainwater harvesting
» Building codes
» Public awareness campaigns
» Low-interest loan programs
...and more!

We’d love to get your opinion, too! Just follow the link on the home page at www.abcwua.org and follow the instructions for providing input. We’re looking forward to hearing your thoughts!

Albuquerque Bernalillo County Water Utility Authority
APPENDIX B – FOCUS GROUP MEETING DETAILS

Water Conservation Proposals as Presented At Public Input Sessions and on the Website

Test Your Toilet Month – For one month each year, promote testing toilets for leaks. Toilets are the largest indoor use of water. Toilet leaks can waste thousands of gallons of water each month and frequently customers are unaware the leak is occurring. The Water Authority would distribute the dye tablets for toilet testing all over town – community centers, libraries, senior centers, schools, hardware stores, etc. We would produce a pamphlet and a video on how to test for leaks and how to repair the leak if detected. The program would be advertised on billboards, TV, radio and bill inserts. This is a low cost program that has the potential to save a significant amount of water without requiring any lifestyle changes from our customers.

Expand Educational Programs – Currently the Water Authority makes 600 in class water resource presentations each year and take 60 fourth-grade classes on free, day-long field trips to the Rio Grande. Every year, we have far more requests than we can meet. With educational grant funds, we could reach more students in our service area and expand the education program beyond our service area to students who are currently receiving no water resource education. This program will provide well educated stewards of our water resources for the future.

Directing a Portion of Rebate Funds to Conservation Projects – Currently, customers receive the rebate for participating in water conservation programs as a credit on their water bill. While saving money is one reason for conservation, many customers conserve to ensure sufficient water for other areas of our community. In order to connect customer conservation with larger conservation efforts in the region this program would provide the majority of the rebate to the customer, but then the remainder of the rebate would be given to a regional conservation project of the customer’s choice. Examples of possible projects are: the Living River Fund (to purchase water rights to keep water in the Rio Grande), habitat restoration projects in the Bosque, City of Albuquerque Parks Department irrigation efficiency projects and agricultural efficiency projects for ditches currently being operated within the City.
Loans to Conserve – In order to participate in water conservation rebate programs, the customer must currently fund the entire cost of the project up front and then the rebate credit is applied to their water bill. This program would provide low interest loans to customers to help them make conservation improvements (leak repair, new toilets, xeriscape). The customer would then pay back the loan with a small amount of interest. This program would take funding from the Water Authority to get started but as loans are repaid it would be self-sustaining. This program would allow customers who are currently unable to participate in water conservation programs due to financial constraints to be a part of the long-term sustainability solution for our community.

Rainwater Harvesting – Currently the Water Authority offers rebates for the purchase of rain barrels and cisterns, but the rebate is not large enough to encourage customers to install gutters and cisterns. Rain barrels are a fine way to save a small amount of water, but to really address outside irrigation needs for our area cisterns are needed. Raising the rebate to fund 25% of the cost of cistern installation would help generate a market for cisterns in our area and bring the cost down.

Building Codes – Currently the plumbing code requires installation of low-flow fixtures, but better options are now available that could make new construction even more efficient. Working at the State level to improve water efficiency requirements for all new construction in New Mexico has the potential to provide large savings for many years to come. If it were not possible to make these changes at a State level, these types of changes could be made at the City or County level.

Storm Water – According to state law, storm water cannot be detained. It must be allowed to flow to the river. However, due to the larger amount of paved area in Albuquerque, storm flows are likely higher than they used to be. If the Authority could calculate the increase in flow, it might be possible to retain the only the increased flow amount for aquifer recharge or local irrigation.

Water Waste – The Authority’s water waste regulations currently have fees starting at $20 and escalating to $2,000 by the ninth violation. In the new program, the fees would remain the same for residential customers but would double for all non-residential customers. In
addition, customers who receive a third water waste fee would be required to attend a WaterSmart class (a one hour class on how to irrigate efficiently) or schedule an irrigation audit for their site.

**Xeriscape Rebates** – Currently the Water Authority offers of $1 per square foot to all customers who remove turf and replace it with low water-use plants that cover at least 50% of the landscaped area. In addition, non-residential customers can receive a $1.50 per square for turf that is removed from slopes greater than 6:1 or areas less than 10 feet in any dimension. In the new program, the basic xeriscape rebate would remain the same, but all customers who participate in the xeriscape rebate program would be required to attend a WaterSmart class (a one hour class on how to irrigate efficiently) to ensure that they are informed of how to care for their new landscape. In addition, rebates for commercial and industrial customers would increase because it is especially important to convert landscapes in these areas where turf is unnecessary. In addition, a new residential rebate for installation of low water use grass would be evaluated.

**Meters** – Currently, most multi-family housing (apartments, mobile home parks, etc) that are built in our area are installed with just one master meter and the residents may or may not share in paying the bill. This is because it is less expensive for developers to install one meter than to install an individual meter for each housing unit. But, studies have shown that residents use less water when they are responsible for their own individual water bill. Under the new conservation plan, the Authority would investigate methods to have individual meters installed on each unit in multi-family housing.

**Cooling Towers** – Currently, the Water Authority does not offer rebates for cooling towers (large cooling systems for offices, apartments, etc). Under the new program, the Authority would develop a rebate program for equipment to increase the cycles of concentration for cooling towers and for projects that would reuse cooling tower wastewater for landscape irrigation.

NOTE: This program was dropped from the public input sessions after the first set of meetings because there were too many programs to discuss meaningfully and this program was determined to be one that was low-cost, could be easily implemented and therefore did not require customer input.
Charity Car Washes – Under current regulations, charity car washes are allowed as long as they do not create water waste. In the updated water conservation program, charity car washes would still be allowed but would be required to register and receive educational information about preventing water waste when conducting their activities. This would ensure that the car washes are being held for legitimate charitable organizations. In addition, the Water Authority would supply hose shut-off nozzles to ensure that a minimum of water is used.

NOTE: This program was dropped from the public input sessions after the first set of meetings because there were too many programs to discuss meaningfully and feedback from Water Use Compliance staff was that charity car washes were not a significant source of water waste.

Water Conservation Program Proposals – By Location

This series breaks down the prioritization results by meeting location. One can see some variation in the rankings especially at the meetings conducted at UNM Continuing Education where Building Codes and 10% of Customer Rebates to New Programs were ranked much lower than the aggregate totals. However, Education is consistently ranked first or second.
UNM CONTINUING EDUCATION
12/6/12 & 12/8/12

TAYLOR RANCH COMMUNITY CENTER
1/24/13 & 1/26/13
Participant Additional Comments – By Meeting

Water conservation ideas proposed by participants were recorded at each session. During the multi-voting prioritization exercise, attendees could place all or some of their “dots” on the ideas generated at that meeting in addition to the proposals presented by the Water Conservation Program. The next series of charts identifies the participant comments which received the highest number of prioritization “dots” at each meeting. The appendix includes a compilation of all participant comments.
MEETING VIII - 12/26/13 - TAYLOR RANCH COMMUNITY CENTER

- Retail Discounts for Xeriscape Plants
- Hire Emergency Contractors
- Outreach to Neighborhood Ass.
- Rebate for Roof Gutters
- Improve Broken Meter Response Time
Substantive Themes from the Public Input Sessions

Below is a brief discussion of several themes which surfaced during the Public Input Sessions. Again, a full compilation of all participant comments is included in the appendix.

Education and Outreach: Participants encouraged more education and outreach efforts such as expanding programs to involve all ages and targeting populations outside the service area. Attendees urged providing programs to new audiences – e.g. box store nurseries, landscaping companies and commercial enterprises - as well as nurturing creative partnerships such as training older students to teach younger students about water conservation. Additional comments included developing a model water-efficient home and a demonstration xeriscaped garden in an area park.

Trees: Participants consistently expressed concerns about the increased prevalence of dead and dying trees in the community. Attendees suggested better education about effective tree watering, increasing rebates to plant new trees and working more closely with city and county landscaping initiatives.

Creative Incentives: Participants generally preferred the use of incentives rather than punishments to promote positive behavior. Attendees suggested expanding the rebate programs to include water conservation measures such as replacing parking lots with porous materials, and changing rock-scapes to xeriscapes. They proposed providing rewards for exceptional water conservation efforts such as passes to the zoo. Several sessions recommended publicizing the names of chronic commercial violators or dispatching middle and high school students to conduct educational visits.

Technical Support: Participants highlighted the importance of access to personal technical support for community members interested in implementing conservation measures. They suggested training a corps of volunteers including Boy/Girl Scouts for activities such as fixing leaky toilets. Attendees also asked for a certification program that would allow homeowners to qualify for rebates without using a licensed plumber.

Reuse: All sessions supported increasing the region’s capacity to use gray water- especially on parks, golf courses, and city landscaping.

Growth Management and Sustainability: Participants often noted the importance of wise growth management practices to support the region’s long term sustainability.
Proposals (Replicas of Proposal Posters Used at Meeting)

A. **Education: Teaching students about water resources, water conservation and waste water treatment (Total votes: 257)**

*Current Program:*
- Just for schools in the Water Authority service area
- Current education contract is $150,000 for 600 presentations and field trips for 60 fourth grade classes

*New Idea:*
- Expand to serve the entire Middle Rio Grande region
- Another $150,000 would allow us to double the number of presentations and field trips
- **Cost – Medium  Water Saving – Long-term High  Difficulty – Low**

B. **Building Codes (Total votes: 248)**

*Current Program:*
- Low-flow toilets and fixtures are required
- For residential construction-only 20% of the landscaped area can be turf
- Other construction- no turf (except parks, schools, athletic fields)

*New Idea:*
- Work with the Legislature to improve water conservation in new construction
- Work with the City to encourage/require more water conservation measures in new construction
- **Cost – Low  Water Savings – High  Difficulty - High**

C. **Test Your Toilet Month (Total votes: 207)**

*Current Program:*
- Toilets tested as part of the audit program

*New Idea:*
- One month per year where leak detection tablets and information on leak repairs are distributed all over town so customers can check and repair their own leaks
- **Cost – Low  Water Savings – High  Difficulty – Low**

D. **10% of Customer Rebates Going to New Program (Total votes: 181)**

*Current Program:*
- 100% of rebate to customer

*New Idea:*
- 90% of the rebate goes to the customer
- 10% of rebate is given to a new program that is selected by the customer
- Examples of programs:
  - Purchasing water rights to keep water in the Rio Grande
  - Restoring habitat for desert willow flycatcher and silvery minnow
  - Expanding educational programs
- Repairing infrastructure
- Supporting parks
- Supporting agriculture

- **Cost** – Low  **Water Savings** – Medium  **Difficulty** – Low

### E. Xeriscaping Rebates (Total votes: 168)

**Current Program:**
- Residential customers - $1/square foot
- Commercial, industrial, and institutional customers - $1/square foot for flat areas; $1.50/square foot for slopes and small areas

**New Ideas:**
- Increase rebates for turf removal from commercial and industrial areas
- Require attendance at a Water Smart class as part of rebate requirements
- Offer landscape consultations for plant selection and irrigation

- **Cost** – High  **Water Savings** – High  **Difficulty** – Low

### F. Rainwater Harvesting (Total votes: 166)

**Current Program:**
- Rebates for installation of rain barrels and cisterns based on the volume that can be stored
- Cap is at $150

**New Idea:**
- Expand rebate program to encourage installation of cisterns at construction
- Rebate 25% of cost
- Work to change building codes so that rainwater harvesting is required as part of construction

- **Cost** – High  **Water Savings** – High  **Difficulty** – High

### G. Water Waste: Water going into the street or sprinkler irrigation occurring between 11 AM to 7PM from April 1 –October 31 (Total votes: 162)

**Current Program:**
- For all customers the fee progression is $20, $50, $100, $300, $400, $600, $800, $1000 and then $2000 for all subsequent violations

**New Ideas:**
- Residential fee structure stays the same
- Non-residential fees will double
- For the first violation, you can get a $20 fee or attend a class
- For the third violation you must attend a class or the fee doubles

- **Cost** – Low  **Water Savings** – Medium  **Difficulty** – Medium

### H. Loans to Conserve (Total votes: 147)

**Current Program:**
- Customer must pay all costs for leak repair and water conservation improvements up front

**New Idea**
- A low-interest loan program to assist customers with leak repair and water conservation improvements
- **Cost** - Low-Medium  **Water Savings** - High  **Difficulty** - High

I. **Stormwater  (Total votes: 128)**

**Current Program:**
- Storm water throughout the city flows into storm drains and into the Rio Grande

**New Idea:**
- Find ways to use stormwater onsite for irrigation and to enhance recharge of the aquifer regionally
- Work with other agencies to create linear parks along arroyos
- **Cost** - Medium  **Water Savings** – Medium  **Difficulty** – High

J. **Meters  (Total votes: 117)**

**Current Program:**
- It is less expensive to install one large meter for an apartment building or other multi-family developments than install individual meters

**New Idea:**
- Evaluate ways to make sub-metering more affordable in multi-family developments
- **Cost** – High  **Water Savings** – Medium  **Difficulty** – High
Water Conservation Program’s Proposals – “Votes” by Meeting

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Substantive Comments from Participants

A. Meeting I: Thursday, November 15, 2012 – African American Performing Arts Center – 6:00PM – 8:00PM

Participant Comments during Meeting
- Support sustainable population growth (Votes: 13)
- Address dying trees in the community/Require irrigation systems for mature trees/Clarify educational messages regarding the importance of watering trees (6)
- Develop xeriscaped golf courses and eliminate non-essential turf in parks and golf courses (4)
- Look for best practices globally (4)
- Give incentives to citizens who report violations (4)
- Conduct seminars on reducing water footprint (3)
- Develop “Toss no Mas”- type waste water campaign (3)
- Capture and use more gray water – require commercial businesses to use gray water on landscaping (2)
- Expand the Rio Grande education program to adults (2)
- Provide cooling tower rebates based on percentage of water use (2)
- Develop xeriscape demonstration gardens – with examples also on web site (2)
- Provide more technical assistance to homeowners regarding water conservation - personal advisors not just literature (2)
- Place third bar on bill to indicate leakage (2)
- Charity Car Wash - Require permits for all non-profits – not just schools – and do more outreach to those groups (2)
- Allow large users to get larger percentage of savings (1)
- Channel water without cisterns (1)
- Distribute “Test Your Toilet Tablets” with recycling bags and in water bills (1)
- Show consumption data on new residential meters (1)
- Develop educational circular that describes the holistic connection between water quality and quantity
- Promote educational programs that explain the water cycle and how our watershed works
- Develop educational program focusing on our river “at risk”
- Support retention of stormwater from parking lots for vegetative areas
- Need “buffer” usage on water bill (i.e. 750 gallons pushed to two units)
- Need to conduct regional outreach regarding Car Wash permitting
- Need incentives for retrofits
- Place water conservation messages on donation boxes at parks and zoo
- Provide customer information on where reuse water goes
- Develop partnerships with schools, businesses, and tribes
- Develop educational program with older students teaching younger students
- Clarify messages regarding watering regulations for xeriscape

Substantive Comments from Evaluations
- Support more regional growth management planning
• Conduct education on jet fuel contamination and dry cleaner chemical contamination in aquifer
• Use water bill as educational tool (similar to Smith’s Farmers Market Rewards Program)/Display an estimate of the cumulative money lost over a year due to leakage and describe examples of what could be done with that money to boost conservation
• Use public resources wisely/Have public entities implement the water plan/Save public money and demonstrate the savings in natural resources and money/Demonstrate accountability to tax payers and rate payers
• “Humor Conservation” – Develop “shower time” with humorous prompts (“Ain’t you clean yet?”) that vary daily with 365 daily prompts on a computer chip/Distribute at State Fair, Xeriscape Fair, Balloon Fiesta, River of Lights, Zoo, Museums, and City Busses etc./Use similar timers for landscape watering or develop an I-phone app to accomplish this via a simple download
• Talk more about how we can limit development/Stop encouraging development for economic growth because there is a limit to what can be supported and sustained
• Implement tiered rate structure
• Really look at building codes because ABQ had a good energy building code that was rescinded when our new mayor came in/Bring back those codes and look at what other cities and countries are doing (e.g. Tucson, Las Vegas, Palm Springs, Israel, Australia etc.)/Conduct a state-wide push
• Education seems to be key – all age groups on many issues
• Work with the U.S. Navy to get their support regarding water conservation
• Get strong commitment to water sustainability on part of City Council and Planners and not allow developers to get a pass on this/People need nature, for environmental, mental, and physical health and nature needs water.

B. Meeting II: Saturday, November 17, 2012 – African American Performing Arts Center – 10:00AM – 12:00PM

Participant Comments during Meeting
• Reward customers for water conservation efforts using passes/discounts to programs (e.g. zoo, golfing, swimming passes (Votes: 18)
• Develop a toilet certification program for self-installation (8)
• Develop rebate for synthetic turfs (7)
• Promote tree rebates – and link with clean air campaign (7)
• Develop rebates to convert zero-scape – to xeriscape (6)
• Establish a rebate for charity carwash program – donate a percentage to charity that complies with permit and uses e-friendly cleaning products (5)
• Establish a car wash space to rent that supports water conservation methods (5)
• Require City to comply with regulations (5)
• Expand education program by using volunteers (including intergenerational efforts) (5)
• Partner with City on educational efforts (4)
• Use water bill for water conservation education (3)
• Strengthen gray water and reuse/recycling regulations (2)
• Retrofit school parking lots for stormwater retention (2)
• Address potential safety concerns of linear parks along arroyos (2)
• Develop property tax incentives for rainwater harvesting (1)
• Retrofit parks and golf courses to reduce waste water and support wise irrigation (1)
• Establish a leak repair rebate (1)
• Estimate real financial impacts to construction of enhanced building codes to support water conservation
• Evaluate neighborhood covenants for compliance with regulations
• Develop performance specs for cisterns
• Clarify who receives interests on loans
• Place toilet tablet in water bill
• Allow customers to select the percentage that goes to a program of choice
• Establish a high school education program
• Use county open space as a venue for education
• Incorporate all age groups in a continuous educational program
• Use smaller areas than city-wide approach to calculate residential averages

**Substantive Comments from Evaluation**
• Support the idea of rewarding consisters with passes because it makes a lot sense as the bioscope is what we share
• Education includes sharing knowledge with neighbors
• List resources for help on website (landscape and irrigation support etc.)
• Describe difference between Water Authority and City Water Department
• Conduct more rebate programs and focus groups- more outreach to new people

**C. Meeting III: Thursday, December 6, 2012 – UNM Continuing Education – 6:00PM -8:00PM**

**Participant Comments during Meeting**
• Address too high surcharges in summer that force customers to use more water in the winter (Votes: 15)
• Establish tree rebates to replace dead or dying trees (9)
• Use porous pavements (7)
• Educate regarding the importance of watering trees (7)
• Develop more restrictive codes for new housing (6)
• Support the ability of future generations to live here – they are our kids and economic development is important (5)
• Include mature tree irrigation requirement as part of xeriscape rebate (4)
• Publicize major water users or major water wasters (in newspaper etc.) (4)
• Install gray water infrastructure when replacing water lines (4)
• Educate renters on water use – provide them a copy of the bill (3)
• Promote the availability of the water audit program (3)
• Retrofit parking lots to be more permeable (2)
• Make water use available on website (2)
• Promote car wash education with permit (2)
• For cisterns, the rebate cost needs to be equitable to cost of the construction (1)
• Coordinate better with homeowner associations (1)
• Provide information on radio-read meter implementation schedule and describe benefits of the program (1)
• Prioritize the availability of loan program and target apartments (1)
• Require pre-installation education for xeriscape rebate (1)
• Develop more water detention for purposes such as parks, open spaces and athletic fields
• Address too high first block in rates- they are too hard
• Use new rebate program percentage as a match for federal funding
• Update codes state-wide
• Enforce City’s maintenance of median landscapes

Substantive Comments from Evaluations

• Discuss putting water in saving accounts because we should not be conserving water just so that developers can entice more people to move here and use for more golf course/Conservation is useless if it only transfers water from us to an increased population. /We are in for a drought for the foreseeable future and water conservation should be our preparation for that not expansion.
• Give out car wash coupons/vouchers to responsible water users
• Education with kids works. /“Litter bug” was my opportunity to help 55 years ago and I am aware of my and others’ trash on the ground.
• Talk more about gray water for the homeowner
• Focus on the real wasters of water versus those of us who really do conserve and are concerned/Your bell curve formula based on winter usage is unfair to those who use very little in winter and then are charged excessive summer rates simply to keep their plants and grass alive in July and August.

D. Meeting IV: Saturday, December 8, 2012 – UNM Continuing Education - 10:00AM – 12:00PM

Participant Comments during Meeting

• Develop satellite reuse facilities (Votes: 6)
• Develop a demonstration water conservation house (6)
• Work with nurseries to provide labels or indicators on native plants (2)
• Support a facility for car wash that has reuse capability (1)
• Increase waste water education on irrigation practices (e.g. don’t water when it is raining) (1)
• Establish demonstration parks that don’t require turf (1)
• Work with “big box” retailers to provide more native plants (1)
• Make xeriscape plant guides available at nurseries (1)
• Provide rebates for gutters as part of rain water harvesting rebate (1)
• Provide on-demand shower rebate (1)
• Ban landscaping strips (1)
• Enhance educational opportunities for future generations
• Use gray water for charity car washes
• Upon receiving fee or fine require Smart Watering class
• Develop partnerships to support designing and planting xeriscaping
• Conduct education on the water savings in green homes
• Develop hose meter to know how much water is used or provide education on how to measure water use

Substantive Comments from Evaluations
• Get ABQ to support agriculture’s water conservation efforts and establish a benefit to City
• Your proposed and existing education program is excellent – especially when it involves schools.
• Provide phone numbers for resources and programs (xeriscaping rebate, toilets, toilet disposal etc.)
• Provide incentives/information regarding the fact that evaporative coolers are better at saving water than air conditioning/Contractors make more money on air-conditioning units
• Looks like we as a county are moving in the right direction – thanks for your time in this matter

E. Meeting V: Thursday, January 10, 2013– Indian Pueblo Cultural Center – 6:00PM -8:00PM

Participant Comments during Meeting
• Use 10% rebate to support artificial turf for public fields (Votes: 7)
• Show students how to fix toilets as part of educational program (5)
• Have crew members or meter readers distribute test toilet kits (4)
• Work with boy/girl scouts to teach skills such as fixing toilets (particularly to help senior citizens (3)
• Conduct more outreach to disenfranchised community (3)
• Distribute test kits at senior centers (2)
• Develop a program that advertises heavy water users/wasters/violators (2)
• Develop notice in the newspaper and on website on worst wasters and best conservers (2)
• Provide vertical reinforcement/repetition of educational program (2)
• Use 10 % from rebate for enhancing leak detection on water lines and investing in infrastructure (2)
• Develop stormwater program to create green space but address safety concerns regarding children near arroyos (1)
• Use 10% rebate to replace non-permeable sidewalks, parking lots etc. (1)
• Develop intergenerational educational program (1)
• Investigate government subsidies for sub-metering multi-family housing and get the City and County to include sub-metering via ordinance (1)
• Convert to low-water grass (e.g. gamma, buffalo) instead of xeriscaping (1) Allow a meadow option for xeriscaping rebate (1)
• Develop a “money talks” program for outreach to commercial businesses (1)
- Develop water waste informational brochure
- Develop volunteer program with contact information on website
- Frame 10% rebate not as rebate but as “where would you like to place your donation?”
- Develop more “how to” guidance for the WBTN program
- Reuse cooling tower water for charity car washes
- Secure 1% from bill for retrofit toilet program
- Develop program that allows residences to purchase new smart meters (in order to get them early)

Substantive Comments from Evaluations
- Establish higher fees for average usage and provide payment reductions for those who are well under average/Support artificial turf for school athletic fields/Provide credit for installing recirculation pumps so hot water comes immediately to shower/Provide funds for projects and prizes for middle school water conservation projects
- Doing what is right is not always a motivator because people need a reason to conserve-for example people buy better mpg cars because of savings in their pockets.

F. Meeting VI: Saturday, January 12, 2013 – Indian Pueblo Cultural Center-10:00AM – 12:00 PM

Participant Comments during Meeting
- Develop bill inserts to educate about available rebates (Votes: 17)
- Provide more education for customers (13)
- Conduct classes for landscaping companies (10)
- Develop a “One Stop Shop” for education, rebates, and technical information (9)
- Adopt an ordinance that requires apartment sub-metering (9)
- Conduct more town halls for public education – “State of the Water Authority” (6)
- Distribute test tablets at the same location as recycle bags (6)
- Develop xeriscape rebate for existing tree irrigation (6)
- Develop educational partnerships with City Biopark, Bio Van etc. (5)
- Develop volunteer program to assist education program (4)
- Put video on website on “how to fix a leak” (4)
- Develop higher rebate for non-rock mulch (4)
- Develop xeriscape rebate for low-water grass (4)
- Educate on minimal flushing and using less toilet paper (4)
- Implement a student campaign for “Test Your Toilet” (3)
- Work with the Water Trust Board for additional funding for education (3)

Substantive Comments from Evaluations
- I agree that there is a lot of wasted water and that something should be done about it but I also feel that some people use water conservation as an excuse not to water I have seen many nice trees in my neighborhood die in the last few years and find that really sad as the trees kept houses cooler and clean the air. My neighborhood library has let the trees die while maintaining their turf.
- Open a store that sells conservation products with rebate included in price
- Expand this educational program to include more people
• Water is a limited resource however we still encourage growing our population. I live in a part of town – the southeast – that has grown ugly and it used to be green but now because many homeowners can’t afford to water landscape they have removed grass and instead of xeriscape they have dirt and weeds. I would suggest a program that encourages homeowners to xeriscape so that more folks will stay in the southeast instead of moving to the west side or Rio Rancho.
• Provide more information and rebates about recirculating pumps
• Develop fliers to educate about rebates
• Have xeriscape consultant go to schools and help plant xeriscape gardens
• Combine proposed ideas with education
• Coordinate with other agencies designated for specific services rather than developing new programs
• ABQ needs to stop growing.
• Link draught with climate change in people’s psyche
• Consult Denver’s Institute for Environmental Solutions tree study for urban environments in order to provide rebates and guidelines
• Conduct public education about not flushing every time
• Change building codes so that gray water is used to water the yard –or educate about using buckets to capture gray water
• Charge more for water, price should reflect reality of scarcity/value
• Contact USNMFU regarding loan program -it offers a program called MOMA (loans for Members of Modest Means)
• Conduct meetings with local landscaping companies that are responsible for putting in xeriscape landscapes and offer them educational classes so they are more effective when advising clients
• Create a certification program and place contractors on a list of companies supported by the Water Authority as my company would value classes offered by the city regarding xeriscaping in the winter months
• Provide more continuous education – changes and improvements are constant

G. Meeting VII: Thursday, January 24, 2013, Taylor Ranch Community Center
6:00PM – 8:00 PM

Participant Comments during Meeting
• Use water budget type of rate structure that is more specific regarding house size, lot size etc. (Votes: 10)
• Use newspapers to show high-usage violators (like DUI posters) (8)
• Distribute toilet tablets at recycling centers (6)
• Ban the sale of high-water use plants (6)
• Provide rebate for replacing rockscapes with xeriscape (5)
• Conduct more outreach programs (4)
• Develop fix-it-yourself class (4)
• Landscape medians with xeriscape plants (4)
• Preserve the Bosque trees with a 10% program credit (or use it to plant more trees (3)
• Allow more than 20% high turf requirements (3)
• Initiate a water conservation month and include checklist of conservation activities (3)
Substantive Participant Center Meeting

- Take education program to more children and create partnerships (2)
- Look for federal funding and charitable grants to fund more education (2)
- Educate about flushing to create behavioral changes (1)
- Provide a higher low water credit (1)
- Balance incentives with penalties (1)
- Create rebate for irrigation efficiency (1)
- Require that the business owner attends waste water violation class (1)
- Distribute tablet with shower head rebate (1)
- Design guidelines to restrict rockscapes and allow more “green” options (1)
- Use inclining block structure – reflecting the concept of the more you use the more you pay
- Shut off water of waste water violators if they don’t comply with class attendance

Substantive Comments from Evaluations

- Why is the magic number 50% for xeriscaping? A customer removes lawn and puts in less than 50% in xeriscaping and is refused a rebate – “too bad, so sad. “The incentive evaporates with the water. Why do the fire hydrants need to be flushed until water is running down .5 mile of road and why flush them during peak usage time?
- Educate college age students and other adults in addition to children and seniors
- Develop credit for water returned to river and if unable to develop credit for return flow, inject treated water into existing wells
- Compute evaporative loss from flood irrigation and fund more efficient irrigation systems/Claim or purchase water “saved” from reduced evaporative losses
- Require all homes to use low flow showers
- Assess a penalty for water losses due to failure of old water lines to stimulate replacement of failing lines
- Explore use of mono-filaments on water surfaces to reduce evaporative losses from reservoirs
- Purchase water rights from farmers and ranchers
- Recycle treated sewage into water supply system
- Trap and store more storm water underground
- Secure water from outside of the watershed above Albuquerque
- Reduce evaporative losses by increasing cost of “additional” summer water usage

H. Meeting VIII: Saturday, January 26, 2013 - Taylor Ranch Community Center - 10:00AM – 12:00PM

Participant Comments during Meeting

- Support retail discounts for xeriscape plants (Votes: 12)
- Hire emergency contractors (11)
- Conduct outreach to neighborhood associations for education programs (7)
- Include roof gutters as part of rainwater harvesting rebate (7)
- Improve response time for broken meters (7)
- Distribute xeriscaping guide to home improvement centers (6)
- Provide rebate for dual flush flapper (5)
- Create a “share idea forum” on website/Facebook (5)
• Distribute tablets at community senior centers and recycling centers (4)
• Create performance standards related to water conservation for home builders (4)
• Change building codes to require gray water (3)
• Create a penalty for taking out xeriscape (2)
• Split the water conservation credits between homeowner and builder

Substantive Comments from Evaluations
• Examine what can be accomplished to reduce the number of water main ruptures due to underground tunneling
• Re-purpose some of the nationwide network of pipelines to transport water from wet regions to dry ones as we are apparently in a wealth redistribution mindset in this country and water is part of our wealth
• Support not just low flow showerheads but also include valve that you can adjust to lower flow when applying shampoo etc.
• Make it easier to use gray water for home and commercial laundries
• Support new building codes for gray water reuse for toilets
# Meeting Evaluations/Process Comments

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
<th>VIII</th>
<th>Total</th>
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<tr>
<td>My time was well spent.</td>
<td>4.5</td>
<td>4.6</td>
<td>4.8</td>
<td>4.8</td>
<td>4.6</td>
<td>4.9</td>
<td>4.7</td>
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<td>I would participate in this type of session again.</td>
<td>4.6</td>
<td>4.5</td>
<td>4.6</td>
<td>4.4</td>
<td>4.4</td>
<td>4.7</td>
<td>4.7</td>
<td>4.6</td>
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<tr>
<td>I felt the Water Authority truly wanted my input.</td>
<td>4.6</td>
<td>4.8</td>
<td>4.7</td>
<td>4.6</td>
<td>4.7</td>
<td>4.8</td>
<td>4.7</td>
<td>4.6</td>
<td>4.7</td>
</tr>
<tr>
<td>The meeting was productive.</td>
<td>4.5</td>
<td>4.6</td>
<td>4.6</td>
<td>4.7</td>
<td>4.7</td>
<td>4.7</td>
<td>4.7</td>
<td>4.7</td>
<td>4.7</td>
</tr>
<tr>
<td>I learned something about water conservation.</td>
<td>4.6</td>
<td>4.7</td>
<td>4.6</td>
<td>4.7</td>
<td>4.7</td>
<td>4.8</td>
<td>4.7</td>
<td>4.8</td>
<td>4.7</td>
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</tbody>
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### A. Meeting I: Thursday, November 15, 2012 – African American Performing Arts Center – 6:00PM – 8:00PM

**Process Comments from Evaluations**
- Put final input results from our session on line or email us
- Excellent presentation
- Very Informative - would come to more of these classes and could inform our community - will be emailing a few of my ideas – thank you-very good
- Facilitator made me nervous – bigger graphics – great snack

### B. Meeting II: Saturday, November 17, 2012 – African American Performing Arts Center – 10:00AM – 12:00PM

**Process Comments from Evaluation**
- Thank you!
- Great meeting – lots of input – will tell all neighbors about your program – excellent program
- This will last me a while (reason for 3 instead of 5).
• The ABCWUA put on an excellent presentation. There were a few meeting participants who monopolized the conversation making this a waste of time.
• Reward good behavior more rather than punish bad, and avoid the backlash – thanks- good seminar
• Facilitator was unnecessary – she was distracting – spoke over the speaker, was too hyper, loud, intrusive, annoying.

C. Meeting III: Thursday, December 6, 2012 – UNM Continuing Education – 6:00PM -8:00PM

Process Comments from Evaluations
• I have been conserving for 45 years.
• Don’t say Rio Grande River just Rio Grande.
• Great enthusiasm
• Very impressive, informative – thank you

D. Meeting IV: Saturday, December 8, 2012 – UNM Continuing Education - 10:00AM – 12:00PM

Process Comments from Evaluations
• Excellent information on rebate program
• Too many unrelated comments/questions from participants – Wall visuals should also be handout to allow for individual specific notes and allow for future feedback after review privately.
• In the future please have the speakers repeat questions asked and please talk louder.
• Could not hear in the back
• I only signed up for this because of the rebate on my water bill, but it was actually really interesting. I will totally participate in something like this in the future. Also, I thought you all “controlled” the crowd really well, thank you.
• It looks like we as a community are moving in the right direction – thanks for your time on this matter.

E. Meeting V: Thursday, January 10, 2012– Indian Pueblo Cultural Center – 6:00PM -8:00PM

Process Comments from Evaluations
• All was excellent
• This was a great opportunity. I am glad I was able to participate.

F. Meeting VI: Saturday, January 12, 2013 – Indian Pueblo Cultural Center-10:00AM – 12:00 PM

Process Comments from Evaluations
• Thank you for this informative meeting. It was good to see so many concerned citizens take part.
• Yuhas and Hamlin did an excellent job. Well organized and informed – Keep up the good work
• Great job. I would love to go to another meeting such as this that would focus on education
• Great presentation, thanks
• Input great idea – well prepared visual and presentation style
• Thanks for a good program
• Thank you!
• Great job
• Would participate again depending on day and time
• Would be willing to help with education classes for landscape providers especially during the winter – Vivian 410-6672 – My company is Quality Lawn Care.
• Break into working groups so we can talk more
• If you have any questions about recirculating pumps call John 463-3212.

G. Meeting VII: Thursday, January 24, 2013, Taylor Ranch Community Center
   6:00PM – 8:00 PM

   Process Comments from Evaluations
   • Great job having mediator present
   • Gave a 1 about input because I did not like to hear comments to moderate conservation efforts
   • Thank you great job
   • Only a few people can hear comment from individuals – have portable mike to use and have them stand up, summarize and repeat.
   • Would absolutely participate again

H. Meeting VIII: Saturday, January 26, 2013 - Taylor Ranch Community Center - 10:00AM – 12:00PM

   Process Comments from Evaluations –
   • Great focus workshop
   • Excellent program – great way to brainstorm for new ideas while educating participant
Comments from Web Site and Received Post-Meeting

December 14, 2012 - Nice focus group session last Saturday. I imagine you learn a lot from each one! And thanks for the explanation about the differences in reporting for the gpcd calculator. It is confusing when the utility uses different numbers. I am writing for a number of reasons. One, I was surprised to not discuss the gpcd goal. Since you had told me that the goal had not been set in stone, but was rather something to be determined through these meetings, I would have thought that we would be discussing, if not dot voting on, a new goal. It never seemed appropriate to bring up within the meeting format. So that brings me back to my question of how was the 135 gpcd by 2024 goal determined. Particularly in light of the fact that Stan Allred told the CAC on Thursday that the gpcd was not integrated with rates. It would have been good to see the tradeoffs set out more explicitly, rather than just high, medium and low in terms of whether a certain proposal would save water, be easy to implement and would cost very much. Have you done this with the water model? I am sure that a number of assumptions -- such as projections of population, water production, revenue and expenditures -- were used to arrive at the goal. Did you include not only the cost of having to purchase more water rights, necessary assuming even a modest population growth, but also the loss of ecological services that such lands now provide? Such losses will affect us customers. May I please have a copy of the assumptions used? I have confusion about non-revenue water as used by the ABCWUA. You said it was about 9% at the focus group. Angelique Moldanado told the Board last April that it was 8.22%. In the FY11 CAFR, the difference between billed and non-billed looks to be about the same as reported in the GPCD Calculator, or roughly 13%.

<table>
<thead>
<tr>
<th>Source</th>
<th>2010</th>
<th>2011</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td>Water Audit Presentation (4/16/12)</td>
<td>6.52%</td>
<td>8.22%</td>
<td>Unbilled Authorized Consumption + Apparent Losses + Real Losses</td>
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<tr>
<td>GPCD Calculator</td>
<td>14%</td>
<td>13%</td>
<td>Difference between water produced and water billed</td>
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<td>FY11 Annual Performance Plan</td>
<td>11.80%</td>
<td>11.50%</td>
<td>Volume of water distributed, volume billed, volume unbilled but authorized</td>
</tr>
<tr>
<td>FY12 Annual Performance Plan</td>
<td>2.10%</td>
<td>2.10%</td>
<td>Total water unbilled, meter inaccuracies, data handling errors, total water distributed</td>
</tr>
<tr>
<td></td>
<td>5.10%</td>
<td>4.90%</td>
<td>Total water loss from leakages, total water distributed</td>
</tr>
</tbody>
</table>

I realize that some of the difference is due to what is being measured and reported, but the same term is used for everything. Clearly, some water is lost, such as via leaks, while some is used for public reasons so not billed, such as fire hydrant flushings. (Angelique's presentation on April 18, 2012 to the Board defined the various components quite well.) However, using different definitions, it is difficult to gage success much less compare our rates with those of other utilities. Do we really know how we stack up with other utilities? Finally, I wanted to say that the Frank Roth's summary of my comments as "satellite waste facilities" doesn't do justice to my idea. As I mentioned during your meetings with stakeholders, more focus needs to be placed on recycling and reusing water. (I was glad to see that that was also stressed in the recent BoR report on the Colorado River.) Probably the way to get there would be to have satellite waste facilities. But the purpose would be to reuse the water. Rather than 6%, why not aim for 20% by 2024? Maybe not all of it would be used to water turf. What would the costs and trade-offs be? This reminds me. You said that you were about to start up the pilot ASR
project. Last summer, you said that we would never treat black water to drinking water standards and then inject it as opposed to delivering it. However, that is exactly what the ASR project will do -- take SJC water, treat it to drinking water standards and then inject it to pull it out 6 months later. So why one versus the other? Remember that, if injected, the SJC ASR project will lose the native river water component. That's huge! Does the water budget model really show that it would be smarter to inject such water rather than use it? I can't help but think that it might be at least as efficient to release additional water from Abiquiu when the river flows are low, divert little or no native water, and eat the difference. Would there really be more loss than under the injection plan? I look forward to hearing back from you. Thanks for your hard work. While I’m sure that you’ve thought of this, what about adding "0" to the Water by Numbers program for the winter months?

February 05, 2013 - My favorite new idea is the "loans to conserve". I think a lot of people have a hard time with that initial outlay of cash. I think the response could be incredible to a program like that. I think the commercial xeriscape rebate program is great. At work, I recently completed xeriscaping a large and steep bermed area that cost $24,600, but generated a rebate of $20,500. I never would have talked my company into that initial outlay if it were not for the rebate. It will take years to recoup the cost, but at least I could justify the expense. I also like the idea of expansion of rainwater harvesting. I have installed some gutters and rain barrels at my residence (can now harvest 240 gallons with a good rainfall), but rain barrels are really expensive. The rebate is not that generous, considering the cost. I have found the best prices online. I am wondering if the City could buy in bulk and make them available locally at a more reasonable price. I am also interested in cisterns. People are much more likely to be mindful of their water use and waste if they pay the water bill. Individual metering would definitely promote water conservation.

February 08, 2013 - I love your mix of short-term and long-term goals! And I also want to compliment your public outreach team. Water conservation is something I discuss with my kids, but since someone came to talk to my kindergartener's class HE's the one that brings up the topic. Here are a few of my thoughts on the water conservation program: (1) I propose changing the metering of water use. Right now, people are billed in 748-gallon units. I replaced my toilet with an ultra-low-flow toilet. I installed ultra-low flow aerators and shower heads. And I did not see any change in my water use whatsoever. It's really discouraging to go through that much effort and cost and not even know how much water I'm saving. If you want people to change their water use behaviors, it would be extremely useful if they got some positive feedback when they do something good. There is nothing I can do to reduce my water use by 728 gallons a month. (2) Eliminate the requirement to get a plumber to certify the installation of low-flow toilets. If you install your own toilet, paying a plumber to come to your house to certify the toilet is a hassle and an expense that negates the rebate. Just require a receipt. (3) Expand outreach program to businesses, daycares, etc. to provide information on rebates and benefits of replacing toilets and installing aerators, and information on toilets that customers have been happy with.

February 11, 2013 - Thank you for opening up to public comment ABCWUA's proposed 10-yr plan. Below are my comments. FYI, I have a couple of pending employment applications with ABCWUA, one of which (Compliance) I believe is under your jurisdiction.

*Test Your Toilet Month:* A low flow toilet requirement is likely the better option (or at the least in conjunction with managing leaking toilets). Require the resale of toilets in ABQ to be no more than the dual-flush 4 lpf average. Lifestyle changes should not be dismissed; this is the desert after all. Heaven forbid should citizens have to take some responsibility for their actions!

*Expand Educational Programs:* Good idea. Also run periodic TV and billboard advertisements. While
ABCWUA’s mission is not about preaching the detriments of overpopulation, the latter, no doubt, in addition to per capita usage, plays a large role in resource utilization. This concept is unfortunately not in the mainstream vernacular. Without actually preaching on the detriments of overpopulation, ABCWUA can implicitly imply this all-important factor in its outreach and education.

**Directing a Portion of Rebate Funds to Conservation Projects:** Good.

**Loans to Conserve:** Very good concept. Many people don’t care or are ambivalent about conservation. To get those fence-sitters engaged, they must be made aware that such opportunities exist - and, for that matter, that the word "conservation" should be in their lexicon. Effective marketing through door to door community canvassing, mailers, billboards, radio-, and TV advertising is critical. ABCWUA seems to otherwise do a fairly good job at this.

**Rainwater Harvesting:** Do you advertise this? I didn't know of this option, and yet I periodically check the ABCWUA site! This should be marketed and actively promoted similar to what I mentioned in the preceding section. Do we have private donors/sponsors who would be willing to help offset some of the cost, not only in this instance, but with other ABCWUA financial incentive programs as well?

**Building Codes:** Absolutely! And refurbish/upgrades should be required also. New construction should have stricter requirements than existing infrastructure (because some of the new residential construction will be going to newly-settled individuals to the area - i.e. "junior" water rights holders).

**Storm Water:** Seems worthy of discussion.

**Water Waste:** What about making public the identities, or at least addresses, of water wasters, both residential and commercial? I vaguely recall years ago a local publication had indeed done this.

**Xeriscape Rebates:** I suppose that if the City is to offer money back for conserving water through xeriscaping, one should know how to appropriately water one's grounds.

**Increasing Rebates for Commercial and Industrial Customers:** Not sure about this one. I think their rates should be higher in the first place - a for-profit entity should not need rebates. Target these businesses by appealing to their (hopeful) sense of community, that they will voluntarily mitigate extraneous water use (but perhaps charge them more per water unit nonetheless, if that is not already the case).

**Low Water Use Grass:** You would have to verify that specifically old turf is being replaced by the new turf; not a xeriscape to low water grass replacement.

**Meters:** In principle, a fair and rational concept. My past experience in apartment searching indeed found the lumped, averaged water and utility bill unfairly implicitly charges more for those who conserve, less for those who waste.

**Cooling Towers:** Seems reasonable.

**Charity Car Washes:** Seems very reasonable.

**Water-Energy Nexus:** Conserving both resources. The embodied energy in water is not trite: water transport, pumping, new- and expanded infrastructure outlays, water treatment (pre- and post-consumer use), domestic hot water use. There is ample opportunity to capitalize on efficiencies on both energy- and water conservation fronts. If not already in place, seek out a partnership with the ABQ Energy Management Division to further accomplish such goals.

**February 12, 2013** - Thank you for putting forth a comprehensive plan. I would encourage ABCWUA to provide rebate/credit for the installation of artificial turf; it's care will never include that of water use. I was very surprised and disappointed when I had artificial turf installed (grass taken up) that there was not credit/incentive for doing so.

**February 15, 2013** - I know this has nothing to do with the Water Authority but **well water users** must be included in a water plan for this city. They are using **OUR aquifer H20** to water their sod lawns w/o paying for the water.
February 15, 2013 - After review of your summary, the program regarding toilet leaks seems extremely promising, especially given the relatively low cost of repair parts and the relative simplicity of the repairs themselves (most can be done by homeowners that are interested). The other programs that include rebates are also likely helpful as giving rewards for conserving water will go a long way towards motivating consumers. However, most of your rebate programs are unwieldy considering the lengths one has to go to qualify for a rebate. Specifically, I have installed several water saving devices in my home (installed mechanisms to convert full flush toilets to half/full flush selectable toilets, and water recirculating system to prevent water waste when waiting for hot water at a distant (from the water heater) faucet. I have been unable to collect the offered rebates due to the costs that would be associated with hiring a plumber to verify the installations I made myself (plumbers charge a 1 hour minimum, you know). Thus, the rebate would go to paying the plumber to verify my installation, thus I have no incentive to collect the rebate (I have made these installations because I firmly believe that we MUST conserve what water we have). I would suggest for future rebate programs that the Water Authority either hire a person to perform verifications, even for a slight nominal fee (verifications do not need to be performed immediately, and thus could be grouped by region/area for increased efficiency). Another option would be to make some arrangements with local plumbing firms to allow them to perform any necessary verification for a nominal (agreed, fixed) fee. This would allow a consumer to actually pocket some of the offered rebates. Just so you know that I am serious, our water usage is typically 2 to 3 units per month, rising to around 5 in the summer, including servicing our swimming pool. I think we have done a pretty good job of conserving water despite not having the ability to take advantage of your rebate programs. The Water Authority could motivate much more water saving if they make the inspection requirements for installations cheap enough to allow residents to pocket a little of the rebate money.

February 15, 2013 - To really motivate citizens to conserve, how about actually making the bill proportional to water use? For example, I use a tiny amount of water and my bill is $38. If I use twice as much it barely goes up. This is due to the base charge, the sewer charge, [and the trash pick-up as well.] How about making the entire bill proportional to water usage? After all, less water use usually means less sewer use. And people who are very careful with their water use are often the same people who generate very little trash. There are exceptions. For example, large poor families may not be watering a lawn, but may still need quite a bit of water, or trash pick-up. But I would suggest that these are people who also need a break. Please understand that this is not a personal complaint about my bill. I can easily afford what I pay. This is about a strategy for conserving water, and encouraging all sustainable practices. I am an Architect with almost 40 years of building solar buildings, many with water harvesting systems.

February 19, 2013 – I have lived in Albuquerque since 1973 and have watched the many changes that have occurred. I also had a very successful Landscape business here in which water conservation and Xeriscape were my main focus. During that time, and even up until now, I have noticed one area of water waste that continues to “get my back up.” The uncontrolled and under regulated waste and usage of water from the very old arroyos throughout this city. Case in point is the fact that anyone fortunate enough to live near one of these old arroyos gets free water. I used to flood a 2 1/2 acre field for a customer, once a week, which was not used for growing any food or grain. It was merely a native grass area for their own enjoyment. Another case in point - my step daughter rents a home at the south end of 3rd street off Griegos and has an ongoing problem with the arroyo (dirt ditch) that runs along the back of the property and floods the yard to the point that it is unusable. I also understand that these are areas under the authority of AMAFCA, but they most seriously affect the
water waste situation in this city. Perhaps there should be a panel of persons who are NOT AFFILIATED with either water controlling organizations, to see the problems that exist and have a major input mechanism to force the changes that are required in this area to be water efficient. I would also like to state that I firmly believe that an "up to $2000 fine for the ninth" offense is NOT ENOUGH OF AN INCENTIVE to people who do not have respect for water waste. It is my opinion that to get these people's attention - their water needs to be SHUT OFF after the 3rd offense until they resolve the waste problem. People who have no respect for the others in their community do not care about fines (and I am sure that the enforcement of collecting these fines is understaffed and inefficient). I would be happy to talk with you more about my experiences living here with these issues. Feel free to call me.

February 20, 2013 - So once the policies have all been implemented and we have reduced use what do you project the rates to be so I can begin saving my $ to pay my water bill. As you are aware Water is the largest money maker for the city of Santa Fe - as they have managed to increase their rates to almost the highest in the nation thru manipulation of the conservation movement. What protection does the consumer have that protects them from an out of control revenue enhancement program? I’m all for conservation but not revenue enhancement.

February 23, 2013 - Generally all the current measures are good but could be better. About building codes - why is there no mention or promotion of the new grey water codes...couldn’t we encourage/require new construction to include plumbing for grey water use along with low-water toilets? And YES on better rainwater harvesting...I have installed about 1,000 gallons of capacity at my residential lot over about 20 years...6 large and small barrels, all the gutters, etc...Hundreds of dollars of expense and only one rebate for $25.00. Most people are not going to spend this much on their own but everyone who sees my set-up would like to do so. But they are always shocked by the cost of the barrels from private businesses...and it does seem rather exorbitant... perhaps the ABCWUA could buy them in bulk and sell them at cost to users?

February 24, 2013 - I believe it’s past time to bring all communities into compliance with the water code: specifically the Tanoan developments and any others which have covenants against xeriscaping and lower water use landscaping. It is disgraceful that Trudy Jones can make the statement that the watering rules don’t apply to her due to her home being in Tanoan West and still sit on the water board. It is also time to address the hundreds of private swimming pools in the county and perhaps go so far as to disallow the filling of these pools while we are in this extreme drought. Personally, my toilets are low-flow and my faucets and shower are also. I obey the watering guides and to time of day and which days to water and believe that no one should be exempt from these rules. People downstream from us who need the water for their livelihoods should not watch their crops die while we so cavalierly squander water on personal use. Thanks for your time.

February 25, 2013 - Based on reading the information on the website, it looks like the ABCWUA is heading in the right direction. Perhaps we should consider the following: (1) Increasing fines for high water usage and violators. (2) Coordinate with Albuquerque to reduce the amount of grass and landscaped areas that need watering. Tucson, Phoenix and other cities in the Southwest have golf courses with minimal grass; I know golfers citywide will balk at this, but given the low amount of precipitation we receive, we need to reduce what we use for landscaping - regardless the source. (How many golfers are there compared to non-golfers? Which is more important - a lush golf course we use now or sustainability that benefits everyone at-large?) (3) Consider high penalties for organizations, whether golf courses, homeowners’ associations, etc. that refuse to abide by water
conservation efforts. Everyone throughout the city (and/or county) needs to participate so future generations have enough water to live in the city/county. I've heard Tanoan, for example, balked in the past at water conservation efforts aimed at reducing the amount of water they use in their community. Regardless who the source is, we need to ensure that conservation applies to everyone equally. Thank you for your time.

March 03, 2013 - I found the invitation to "Weigh-In" on the front page of the ABCWUA website as I was going to pay my bill online. I am happy to see this plan! I did read it and wanted to say that I think all of the ideas are good and show broad-minded thinking. Some examples are the Storm Water and Rainwater Harvesting areas. I so applaud our City/County's water conservation efforts, and am glad the step was taken to increase water waste fees because of the drought. Thanks so much for asking for feedback from residential users. There is one element that I would like to suggest be separated into its own program or sub-heading, and that is saving our trees. I see a glimmer of it in the Rebates to Conservation Project paragraph - where it lists habitat restoration projects. Before moving to Albuquerque in 1978, I was a resident of the Denver Metro area. That city already had water conservation efforts in place in the mid 70's. A good friend that still lives there says Denver encourages watering of trees, and makes a distinction between lawns and trees, and does not fine for watering trees. When I heard that, I wished Albuquerque had a similar distinction in its program. At the end of last summer, I noticed how certain species, especially Sycamores and certain high country pines here in town, were dying again. It has happened every few years. I know the effect that shade provides in both energy conservation and saving water. I know that if trees are not given special protections built into existing programs there will be a large number lost. As people change their watering habits to conserve, attention to the importance of maintaining trees in the urban landscape is essential in the public campaign. Many people will "do the right thing" and help with conservation - but they should also be informed that watering their trees is important. I encourage the WUA to include language to this effect in their public education and in program policies. Of course, planting of trees with lower water needs would be an essential part of that message. Has the City/County ever partnered officially with Xeriscape NM (their Water Conservation Expo happening today) and Tree NM? Thank you again for requesting this feedback.

March 03, 2013 - In the past, I had heard that the Intel Semiconductor plant was not allowed to pump their remediated process water back into ABQ's water system (either the river or the aquifer). Since they use billions of gallons, I think that should be an option – or mandatory – to keep that water available for downstream drinking or irrigation. If we get their water back, we won't have as much of a water shortage.

March 27, 2013 - Thank you for your hard work on this vital area! In regards to the plans for future conservation, the proposals are helpful, but the net effect could be so much more significant. Most people who can have already started converting to xeriscape. I would like to convert to xeriscape, however, much to my chagrin I did not realize how pervasive and restrictive our homeowners association rules are. We are required by our covenant to maintain an inordinate amount of lawn and thus waste an inordinate amount of water. To truly be able to make the xeriscape rebates and loans to conserve elements in the forward looking plans impactful, the County needs to exercise some form of eminent domain or higher authority privilege and supersede the original covenants of communities like Tannon and Primrose Point. If there were some higher precedent available to me, I would xeriscape in a heartbeat. Please let me know if any such laws over-riding community covenants are enacted in the future. I would love to get rid of my lawn.
April 19, 2013 - It was good to have time to chat at the Water Collaborative meeting and I’m finally getting back to you on the website initiatives. I don’t have much to add in the way of additions/amendments except that low water lawns in my opinion are an oxymoron. I think not assigning rebate value for anything spray irrigated is a sound idea. I do think that blue grama/buffalo groundcover is a cooler surface than mulch, especially stone mulch and it can be easy to maintain once it’s well-established which takes at least one growing season. I guess I’d want to see metered evidence of substantially lower water use because in my experience to develop a dense enough cover with native grasses that they exclude most weeds requires less frequent but deeper watering than with cool season grasses so the net use isn’t that different. There’s a world of difference (in gallons) between a native stand of grasses and a landscape groundcover stand. All the water conservation initiatives on your website are excellent! I appreciate that they cover a range of users in a lot of different ways, are practical and require no big lifestyle changes, so bravo. Efficiency is getting more use/value whether it’s from water itself or from programs that conserve, so I particularly appreciate the educational projects—not only do you reach out to future users but you get the message home to their parents so the effect is both long-term and immediate. Loans to implement conservation measures are a great way to allow people constrained by finances to get with the program. Another impediment to homeowners reducing lawn areas is HOA’s that require such water waste. This relates indirectly to your building codes initiative and to stormwater regulations that were drafted in times when there were fewer stakeholders and much more water to share. There should be coherent and reasoned outreach to decision makers for cities, counties and the state to bring New Mexico a more up to date and comprehensive set of policies governing how water is budgeted. Again making less water do more should be the goal. It seems now when drought is a reality for many people is the time to make progress. Thanks for your expertise.
APPENDIX C - CURRENT WATER CONSERVATION PLAN

WATER CONSERVATION PLAN
FOR THE
ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY

Prepared by the Water Resources Division
Albuquerque Bernalillo County Water Utility Authority
Required By
New Mexico Office of the State Engineer
Permits Numbered RG-960 et al. and 4830

Updated January 2012
Conservation Plan Overview

The Albuquerque Bernalillo County Water Utility Authority (Authority) and its predecessor, the City of Albuquerque, have made significant progress in the first sixteen years of the water conservation program, moving from among the highest municipal water users in the Southwest to among the lowest. The Authority was authorized by the State Legislature in 2003 (Laws 2003, Chapter 437, NMSA 1978, Section 72-1-10)) and took over the Utility at that time. The Authority is a partnership between the City and Bernalillo County and the Board consists of the Mayor and three members of the City Council and three members of the Bernalillo County Commission. The seven member Board establishes policy, budget and controls operations of the Utility and provides service to more than 200,000 accounts throughout the metropolitan area.

This water conservation plan overview provides a history of the water conservation program under the City and recent updates to the program under the Authority. Through a combination of water conservation measures, including public information, rate restructuring, in-school education, rebate incentives, landscape ordinances and other programs, the City and now the Authority have achieved a 44% overall water reduction in per account use over the last sixteen years. Figure 1 shows water usage, number of accounts and rainfall since 1989 and Figure 2 compares the percentage of use by customer class in 2010.
Figure 1. Water Usage, Number of Accounts and Rainfall 1989-2010
2010 BILLED CUSTOMER CLASSES

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<th>% OF TOTAL PRODUCTION</th>
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<tr>
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<tr>
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<tr>
<td>NON-REVENUE</td>
<td>2,092.00</td>
<td>6.52%</td>
</tr>
</tbody>
</table>

Figure 2. 2010 Percentage of Use by Customer Class
One of the original goals of the conservation program was to reduce peak day usage by 20%. In 2010, peak day usage was 21% less than the average peak day usage for the five years (1990-1994) prior to the start of the conservation program. This goal has been achieved despite a population increase of more than 150,000 people. Figure 3 shows peak day usage over the period 1989 through 2010.

Figure 3. Peak Day Usage in Millions of Gallons 1989-2010

*Foundation for the Water Conservation Program*

The municipal water and sewer system began operation in 1916. The sole water source from then until 2003 has been ground water wells. After many years of relatively slow growth in both number of accounts and per capita water use, the system expanded rapidly with the post-war growth of the 1950’s. In the mid-1970’s, the system was extended outside the City limits, for the first time, to serve portions of the North and South Valleys where ground water quality from private wells was often poor due largely to on-site liquid waste systems. By the early 1990’s, the system and water use had increased to almost 124,000 accounts with a per capita usage of 252 gallons per day, resulting in an annual production of 38.54 billion gallons.

The billed sales for the water system are currently divided into five billing classes. The Residential class includes all single family development, apartments up to triplexes, mobile homes on individual lots, and town homes. The second class, Multi-family, includes apartments larger than a triplex and mobile home
parks. The third class, Commercial, includes all business uses including malls, theaters, hotels and motels. The fourth class, Institutional, includes government facilities, hospitals, office buildings and schools. The fifth class, Industrial, is very small, having only about 150 and representing only 2% of the billed sales. There are very few very large use customers, such as the semiconductor plants, and a small number with much less use. In 2010, approximately 13.7% of the production was non-revenue water, but this is reduced to less than 7% when authorized uses such as fire-fighting and well washing are taken into account.


**Initial Water Conservation Program Goals**

The short-term water conservation program adopted in 1992 called for the following actions:

- Appoint a conservation officer by the end of the fiscal year who would oversee the short-term program, coordinate with the Public Works Department’s efforts to model and quantify the City’s water, and ensure that all affected City departments be involved in developing long-term strategy;
- Develop and interpret a groundwater flow model in cooperation with the U.S. Geological Survey (USGS) to help define and implement water conservation measures;
- Develop a contract for a conservation-related rate analysis to recommend rate modifications to encourage conservation;
- Form a committee involving the Planning, Parks and Public Works departments plus private sector landscaping interests to recommend changes to landscaping requirements to reduce water used for irrigation on both public and private properties;
- Review development proposals to determine if water saving designs and techniques have been utilized;
- Promote low water use landscaping;
- Develop an education effort aimed at children, in cooperation with Albuquerque Public Schools;
- Inform City development boards and commissions of changes in development policies and regulations to promote conservation;
- Encourage water conservation through City building and plumbing codes; and
- Reduce wasted water.

The long-term water conservation strategy (R-173) presented to the City Council for adoption in 1995 included the following:
• Specific long-term per capita consumption goals following water use data analysis;
• Modification of water rates to encourage conservation; and
• Modification of the water capital program to reflect lower usage patterns.

In July, 1992, the City adopted amendments to the Uniform Plumbing Code to require low flow fixtures (1.6 gallons or less) in all new residential development. This action preceded the Federal Energy Act amendments which prohibited the production of high use residential plumbing fixtures beginning in January, 1994 and high use non-residential plumbing fixtures in January, 1997. Within the City of Albuquerque, suppliers and retailers were allowed to use up their existing inventory of older fixtures, so uniform installation of the low flow fixtures in new residential developments in the City did not occur until mid-to-late 1993.

In August, 1993, the USGS released the first of two reports which dramatically changed the prevailing view of the aquifer, particularly relative to recharge. Based on well logs and other data collected over previous years, the federal agency determined that only one-third to one-half of every gallon pumped out of the Albuquerque basin was replaced through recharge. This added scientific impetus to the City’s existing water conservation effort, because the community’s future depended on reducing its use of the limited resource.

The City hired experts to develop measures appropriate for Albuquerque and projections of costs and water savings, as well as rate structure modifications that would promote conservation. The Landscaping and Water Waste Ordinance was drafted in 1994, and lead to the development of the Albuquerque Plant List, which has been invaluable to the community in changing its reliance on only turf for most landscaping. The water conservation program was generally supported by the public.

In 1994 the City Council approved an 8.8 cent per unit commodity rate increase dedicated to funding the water resource programs, including conservation, ground water protection, San Juan-Chama surface water and reuse projects, and arsenic investigations. This increase became effective in January 1995.

In March of 1995, the City Council adopted the Long-Term Strategy and the Landscaping and Water Waste Ordinance. These two pieces of legislation have served as the blueprint for the City’s water conservation program to date. Ongoing evaluation and modification of this legislation has improved the City’s water conservation efforts.

Key provisions of the legislation promoted reduction of gallons per capita per day by 30%, reduction of peak day usage by 20% within ten years, promotion of public education prior to implementation of higher excess use surcharges, continuation of water conservation marketing and awareness, initiation of a residential fixture retrofit, toilet rebate and xeriscape programs, as well as City-approved water use surveys and retrofit programs for the highest 25% of the institutional, commercial and industrial water users.

Adopted at the same time was the Landscaping and Water Waste Ordinance related to outdoor water conservation.

In 2004, the Authority implemented a new water conservation goal (R-04-12) to reduce water use by an additional 10 percent by 2014. This ambitious effort will do much to serve the Authority’s long-range conservation goals and to comply with the requirements of Permit 4830 which mandates that the Authority achieve an overall per capita of 155 gallons per capita per day by 2024. In measuring the water
conservation usage reductions, the Authority adopted the per account methodology. The Authority and staff believe that per account reduction is a more accurate method for examining per customer reductions rather than per capita methodology due to the difficulty in determining actual population served.

The Authority also adopted a policy to reduce unaccounted-for-water (UAW) from 11% to 7% over a five year period (Resolution 5-05-13).

The Authority also organized the Water Resources Advisory Committee (WRAC) that worked over a two year period including recommendations to improve and build on the existing water conservation program. The WRAC recommendations were presented and adopted by the Authority on October 19, 2005 (Resolution R-05-13).

In June of 2006, Resolution R-06-12 was adopted by the Water Authority to enhance water conservation rebate programs, dedicate about one million dollars per year to water conservation rebates and incentives and established a policy for rescinding rebates and adding new ones.

**Public Information**

The Authority continues to educate and get feedback from the community about conservation issues. A citizen’s Customer Advisory Committee was established in 2007. The Water Authority funds conservation marketing and awareness programs to communicate and inform the public about the need for conservation. The Authority collaborates with community organizations, neighborhood associations and other government agencies to extend the conservation message.

The “Water by the Numbers” program was developed in 2007 to educate our customers about proper irrigation schedules. The program includes TV, radio, outdoor ads and classes. Awareness of the conservation program and satisfaction with the incentives offered to encourage conservation are included in customer surveys to provide information to the Authority on the efficacy of public information campaigns.

In 2010, the Authority’s conservation program received an EPA excellence award for the rebate program to promote the installation of WaterSense approved high-efficiency toilets. In 2009, the conservation program was featured in an article in *National Geographic* on conservation solutions to water supply problems. In 2010, the Authority’s conservation rebate programs were featured in *Time* magazine in an article entitled “Droughtbusters.” The Authority’s programs have also garnered attention and prompted visits and inquiries from policymakers in France, Botswana, Mexico, Colombia, Iraq, Armenia and several countries of the former Soviet Union.

**Existing Conservation Measures**

**In School Education**

In 1995, the Utility funded and hired a K-12 environmental education specialist to develop and implement an ongoing ecological program for water conservation and ground water protection in our schools, offering presentations in classrooms, literature for teachers, and participation in school events and science fairs. Education of students on water conservation issues is considered a key element to the success of the Utility’s water conservation effort.

The Utility, since 1995, has also offered children’s theatre performances promoting water conservation to all elementary schools in the local district. In 2002, the program was expanded to middle schools, and
private and pueblo schools wishing to participate. The Utility’s sponsorship of this program has been enthusiastically supported by teachers, and feedback has consistently been positive. Ongoing evaluations by teachers consistently reflect the outstanding quality and usefulness of this program.

Additionally, the Utility has supported a Children’s Water Festival, which is a two-day, water education experience for approximately 1,200 children in the fourth grade. The children participate in a number of education activities which cover a broad range of water topics, including conservation. The Utility participates in the Festival through in-kind services, materials and financial support.

Beginning in 2004, pre- and post-instruction surveys were provided to the teachers to allow us to determine the level of conservation education the children have gained.

Since 2007, the education program has been expanded to reach more than twice as many students – about 17,000 students each year. A specific water resource education activity has been developed for every grade level and aligned with the standards and benchmarks for that grade. This makes it much easier for teachers to invite us into their classrooms because the students are covering required material while learning about local water resources. In addition, tours of water reclamation plant are offered to students in grades four and up. The Authority developed a puppet show for use at local libraries during the summer months and with younger students during the school year. The Authority partnered with PNM to develop a video for students in grades six and up on the connection between water and energy.

**Figure 4. Students educated by the Authority 2008-2011**

**Incentives Offered to the Public**

The Authority currently offers rebates on customers’ water bills for the following water conservation measures:

**The Xeriscape Incentive Program** offers $1.00-$1.50 for conversion of part or all of high water use landscape to Xeriscape. Participants must consult the Authority before selecting their plants and installing their xeriscape and/or a drip irrigation system.
The Toilet Rebate Program has been successfully converted to a program only offering rebates for conversion to EPA WaterSense-approved high-efficiency toilets. In 2011, the rebate is $150 per toilet for converting from a high-flow toilet to a high-efficiency toilet and $50 per toilet for converting from a low-flow toilet to a high-efficiency toilet.

The High Efficiency Washing Machine Rebate Program offers a $100 rebate for purchase of qualifying, water saving clothes washing machine. Qualifying models are indicated in any appliance outlet in the Albuquerque area and on the Authority’s website.

The Rainwater Harvesting Barrel Rebate Program offers a rebate of up to $150 based on the volume of water being stored.

The Hot Water Recirculation Rebate Program offers a $100 rebate for purchase of a Hot Water Recirculation System. Installation must be verified by a licensed plumber.

The Outdoor Rebate Programs offers rebates of $25 for rain sensors, pressure regulation valves and backflow prevention valves, 25% off the cost of multi-setting sprinkler timers, soil amendments and equipment rental for turf removal and $2 per head for installation of multi-stream rotor heads for sprinkler systems.

WaterSmart Classes are offered monthly during the irrigation season and customers receive a $20 credit on their water bill for attending. Classes last one hour and focus on watering appropriately for the season and the weather.

Evaporative Cooler Thermostat Rebate Program offers a $25 rebate. Multiple units can be installed at one address and any model of thermostat qualifies for the rebate.

Drip Irrigation Installation and Maintenance Classes are monthly during the irrigation season in conjunction with the WaterSmart classes.

Xeriscape Presentations are offered to the public from March through October, covering xeriscaping principles, plant selection, design strategies, drip irrigation, and advice to the public on obtaining a rebate.

Water Audits

In 1996, the Utility initiated a residential audit program. The audits are offered free of charge to all residential customers. The contractor engaged by the City personally visits the single family customers and explains how to read the water bill and water meter, retrofits showerheads, faucets and toilets, checks the irrigation system and type of soil, and makes recommendations about improvements to save water. Conservation materials are left with the customer and promote the City’s other incentive programs.

A second audit effort aimed at non-residential customers was initiated in 1999. For these customers, the auditor prepares an estimated breakdown of their usage and recommendations for water use reductions. Costs, water savings and payback time are detailed in the report to encourage customers’ participation in this free of charge program.

In 2007, the Water Authority began more aggressively targeting leak identification with customers. As a part of that effort, leak-only audits were established. The intent of these audits is to assist the customer in identifying the source of unexplained high water use. Sometimes these audits can even be conducted
over the phone. This has proven to be a program that is very popular with our customers and very effective at reducing water use.

To date, the Water Conservation Audit Program as performed: 11,112 single-family audits, 26,339 multi-family audits, 5,281 inspections to identify leaks, 2,608 small commercial audits, 312 large commercial audits, 3,264 audits to establish or verify irrigation budgets for large turf, 223 irrigation-only audits, 1,018 restaurant audits and 543 inspections of low-flow toilet or hot water recirculation unit installations.

**Xeriscape and Landscape Design Ordinances**

In 2003, the City Council amended and improved the Xeriscape Landscape Retrofit Incentive Program, increasing the maximum and square foot rebate amounts to offer sixty cents per square foot credit against customers’ water bills. The replacement of high water use turf with xeriscape is a crucial component of reducing outdoor water use, which represents approximately 40% of the City’s total use. In 2010, the Water Authority Board approved an increase in the xeriscape rebate to $1.00 per square foot of turf removed and replaced with low water-use plants. They also approved a rebate of $1.50 per square foot for non-residential customers who remove turf from slopes greater than 6:1 or from areas less than 10 feet in any dimension and replace it with a qualifying xeriscape.

In 2005, the Authority established an increased rebate for xeriscapes that are designed to utilize only rainwater for irrigation. These landscapes qualify for a rebate of 1.50 per square foot.

**Water Waste Enforcement**

In 2006, the Authority adopted a new Water Waste Ordinance. This Ordinance superseded the City of Albuquerque’s Water Conservation Landscaping and Water Waste Ordinance that had been in effect since 1995. The landscaping portion of the City ordinance remained in effect. Water waste is any water, other than natural precipitation, that flows or sprays from a property to the public right-of-way or adjacent private property. Landscape irrigation is the most common cause of water waste, but it can also result from air conditioning systems, unrepaired leaks and/or malfunctions, car washing, watering during the time of day restriction and other uses of water. Water Waste Enforcement Program staff deter water waste by enforcing the Water Waste Ordinance and educating customers by informing them of actions required to eliminate the sources of their water waste.

The enforcement process for assessing water waste violations includes videotaping violations, notifying the customer by certified mail of the violation, and assessing a fee on the water bill for each violation. The fee for the first observed violation is $20, and fees for subsequent violations gradually increase to $2000 per violation for nine or more violations. In the summer of 2006, Authority Board declared a Drought Advisory, and the water waste fees were temporarily doubled.

For purposes of determining the appropriate fee, previous violations are not considered if:

1. A period of five years has elapsed since the violations were incurred; or
2. The property is acquired by a new owner; or
3. The violation occurred prior to July 1, 1998.

Customers have seven (7) days from receipt of the violation notice to appeal a water waste violation. If the customer chooses to appeal, a hearing is held by the City of Albuquerque’s Administrative Hearing Officer. Customers may appeal the Hearing Officer’s decision to the State District Court by filing a petition for a “writ of certiorari.” The District Court will review only the records of the hearing, i.e., only the information that was already presented to the Hearing Officer.
If customers have taken reasonable measures to stop water waste but have not been successful, and if elimination of water waste could impose a hardship, customers may apply for a variance. A variance allows customers to temporarily avoid additional water waste fees until they complete the work required to correct the water waste problem within a specified period of time. Variance applications are available from the Water Resources Division.

The Water Waste Ordinance prohibits sprinkler use from 11:00 am to 7:00 pm, from April 1 to October 31 each year. This step minimizes the large losses from sprinklers during the hottest/windiest times of day. Under the Drought Advisory in 2006, the Authority adopted a three-day per week mandatory watering schedule for the entire water utility service area and time of day watering restrictions were extended through the end of October.

Several Authority employees are authorized to issue citations for water theft from fire hydrants. Water theft is a criminal offense with a penalty of up to $500.00 and/or up to 90 days in jail.

**Water Budgets for Irrigation-Only Accounts**

The Landscaping and Water Waste Ordinance also includes water budgets for parks and golf courses. These budgets set an allowable usage in inches per year for these facilities. Usage over this amount is surcharged at the same rate as the surcharge for other customers’ usage. As called for in Ordinance 18-1995, the allowable budget has decreased over time. A higher allowance for athletic fields was added with the enactment of Ordinance 14-1998. As a part of this program, customers with numerous accounts (City Parks and Golf, Albuquerque Public Schools and Bernalillo County) receive a monthly report on water use at each of their facilities to assist them in staying within their budget. This program has proven very effective at reducing water use on large turf areas with an overall decrease in water use of just over 20%.

**Irrigation with Non-potable Water and Reclaimed Water**

The Utility has developed a separate system for providing non-potable river water and reclaimed water for turf irrigation purposes at Balloon Fiesta Park and several other large turf irrigation facilities in the Northeast Heights of Albuquerque. The $37M system consists of 26 miles of distribution lines, four storage reservoirs, and five booster stations and, in 2006, provided 2,062 acre-feet of water for the irrigation of about 950 acres of turf. Without this system, this turf would have been irrigated with high quality aquifer water.

Reuse water usage has increased since the system came on-line in 2003 and now represents about 3-percent of the Authority’s overall usage. A second project, entitled the Southside Municipal Effluent Polishing and Reuse Project will soon be operational. This project will provide treated recycled effluent for industrial and irrigation use in the southeast heights and south valley areas.

**Drought Management Plan**

The Authority’s Drought Management Plan has been filed with the Office of the State Engineer as a separate document. This plan was adopted by the City and then the Authority. During the drought in late 2005 and 2006, the Authority implemented numerous measures in the Drought Management Plan to reduce use during the drought.

On March 15, 2006 the Water Authority announced the first Drought Advisory in the history of the Utility. Water usage was up 13.8% from the previous year. At this time, the fines for water waste were doubled. Thus, the first citation for water waste that a customer received was $40 during the drought.
instead of the usual $20. In June of 2006, the area had still not received any precipitation and water usage was up 1.2 billion gallons for the same time period the previous year. So, beginning on July 1, 2006 a Drought Watch was declared. The Drought Watch was in effect through November 1, 2006. The following measures were implemented:

- All customers were restricted to a three day per week watering schedule with the exception of drip irrigation systems being used for vegetable gardens,
- The summer surcharges for water usage over 400% of the winter conservation average were doubled,
- The doubling of the water waste fees remained in effect,
- Drought updates were conducted at each Board meeting,
- Water waste enforcement staff was increased, and
- Additional drought education and public awareness programs were aired on TV and radio.

By November 1, 2006 water usage by Utility customers in the first ten months of 2006 was down 1.1 billion gallons from water usage by Utility customers for the same time period the previous year. The combination of the summer storm season and increased drought awareness by the public made 2006, the Utility’s lowest water use year since the conservation program began.

In May 2011, the Drought Management Strategy was again enacted and a Drought Watch was declared. Under the Drought Watch, public education on the drought, the need for conservation and available rebate programs were increased. This proved sufficient to curtail water use and declaration of further drought stages was unnecessary. The Drought Watch remains in effect through March 2012.

**Planned Conservation Measures and Goals**

- Update of the Drought Management Strategy by Water Authority staff and the Customer Advisory Committee
- Development of a new rebate and education program to promote healthy trees
- Evaluation of the cost-benefit of rebate programs based on the PhD thesis of a University of New Mexico Economics graduate student
- Establishment of a new water conservation goal once the 150 gallon per day per person goal is achieved
- Development of a field trip program for 4th-graders to provide them with a day of educational activities at the Rio Grande

**Conclusion**

The future of the Middle Rio Grande Region depends greatly upon the availability of water for the generations to come. Water conservation is one of the surest, cheapest ways that we can insure that future.

In 1994, Mayor Chavez and the Albuquerque City Council called for a 30% reduction in water use in ten years. The response by water customers has been extraordinary, with per person usage dropping from 250 gallons per capita per day (GPCD) when the program began in 1995, to 157 by the end of 2010. When re-use water is deducted, usage actually drops to 154 gpcd.

Per account analysis shows similar reductions, 44% compared to the baseline use in 1987-1993. Few cities in the nation can match this accomplishment. Residential customers, who represent approximately
51% of all water use, have reduced their usage by 46% since the program began. Institutional customers have reduced by 36%. Commercial customers have reduced by 35%.

The State Engineer required that the Authority reduce per capita use to 155 gpcd within 20-years under Permit 4830 which was approved in July 2004. The Authority adopted a more stringent goal of 150 gpcd (40% reduction in overall usage as compared to 1995) by 2014. As shown in Figure 5 below the Authority is on track to meet this goal.

Figure 5. Water Authority Gallons Per Capita Per Day Use 1994-2010