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Chas. F. McDevitt
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May 8, 2007

Via Hand Delivery

Jean Jewell, Secretary
Idaho Public Utilities Commission
472 W. Washington St.
Boise, Idaho 83720

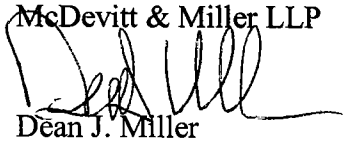
Re: Case No. UWI-W-06-05

Dear Ms. Jewell:

Enclosed for filing in the above matter please find the original and seven (7) copies of United Water Idaho Inc's Petition for Reconsideration or Clarification.

An additional copy of the document and this letter is included for return to me with your file stamp thereon.

Very Truly Yours,
McDevitt & Miller LLP



Dean J. Miller

DJM/hh
Attach.

ORIGINAL

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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION OF UNITED WATER IDAHO INC., FOR APPROVAL OF ITS WATER CONSERVATION PLAN AND FOR APPROVAL OF A WATER CONSERVATION SURCHARGE AND REQUEST FOR MODIFIED PROCEDURE	**CASE NO. UWI-W-06-05** **PETITION FOR RECONSIDERATION OR CLARIFICATION**

COMES NOW United Water Idaho Inc., ("United Water"), pursuant to Idaho Code 61-626 and IPUCRP 325 and 331 *et. seq.* and petitions the Commission for an Order granting Reconsideration or Clarification of Final Order No. 30305 issued herein and in support thereof respectfully shows as follows, to wit:

Introduction and Course of Proceedings

On December 1, 2006, United Water, as required by prior Commission order, filed its Application for approval of its updated Water Conservation Plan. On January 24, 2007, the Commission issued its Notice of Application and Notice of Modified Procedure. The Commission Staff filed comments on February 23, 2007, and United Water filed reply comments on March 28, 2007. On April 18, 2007, the Commission issued its Final Order No. 30305 which granted in part and denied in part the Application.

Question Presented

United Water appreciates the Commission's careful review of the updated Conservation Plan and does not in this Petition dispute most of the Commission's findings and conclusions.

In this Petition, United Water requests that the Commission reconsider or clarify a single issue—the nature and quantity of evidence that must be presented by United Water in a subsequent rate proceeding in order to obtain amortization in rates of deferred expenses associated with implementation of the conservation programs authorized by Order No. 30305.

The relevant portion of Order No. 30305 is:

> "The Commission does not believe further evaluation of the specific program is necessary at this point, as efficiency of implementation and prudency of the program will be evaluated to establish the recovery level and amortization period when the Company seeks recovery of the new conservation costs. A cost/benefit analysis for each program should be provided to show the ongoing benefits to customers."

Discussion

In its Comments, Staff criticized the Plan for not containing an adequate evaluation component for the proposed conservation programs. (Staff Comments pgs. 3—6). Staff, however, acknowledged that evaluation of water conservation programs is both imprecise and expensive:

> "Estimating savings from a conservation program is a difficult and imprecise process *under the best of conditions*, but especially so for educational and public information programs. It is difficult to determine the number of real customers exposed to the information, the number of customers that actually implement a particular conservation measure, and the amounts of water actually saved..." (Emphasis added). (Staff Comments, Pg.7).

Staff went on to say:

> "The most reliable estimates of educational programs are based on surveys of customers who receive promotional materials and a control group to estimate the percentage of participants that actually take the actions being promoted. *Significant concerns about these estimates include the accuracy of the survey responses, and the persistence of the savings from measures that rely upon customer actions rather than hardware. In most*

cases, the cost of such an evaluation significantly exceeds the amount spent for the program..." (Emphasis added). (Staff Comments, Pg.7).

In its Reply Comments United Water observed that, as proposed, the programs do not include a budget for evaluation and it would be unwise to undertake evaluation programs when their cost would likely exceed the cost of implementation. (Reply Comments, Pg. 5). United Water further recommended that, in order to clarify the proof required in subsequent rate proceedings the following language be included in the Commission's final order:

> "In the ordinary course of events, in a subsequent rate case United Water may expect to receive approval for amortization of deferred conservation expense upon a demonstration that:
>
> a). The program measures identified in the Plan were implemented consistent with the Plan and,
> b). The expenses of implementation were recorded on the Company's books so as to permit audit and verification."

Order No. 30305, quoted above, appears to agree that evaluation is not required, but, apparently rejecting United Water's suggested order language, included the requirement that in future rate proceedings, "A cost/benefit analysis for each program should be provided to show ongoing benefits to customers."

The requirement of a "cost/benefit analysis" is a source of uncertainty for United Water in two respects.

First, it is unclear how the required cost benefit analysis differs from an "evaluation" which the Commission did not require.

Second, as United Water understands it, the phrase "cost benefit analysis" is a term of art in the water utility industry. It refers to the type of analysis already performed in preparation of the Plan and is a *prospective* evaluation of potential water savings compared to the cost of

achieving the savings over a multi-year period[1]. The phrase, as it is commonly used in the industry, does not refer to a *retrospective* analysis of program effectiveness, as apparently required by Order No. 30305.

There is probably good reason the phase is not used to describe a retrospective analysis. As Staff acknowledged, it is difficult, if not impossible, to quantify water savings in a short-term retrospective analysis. In any given year, or small number of years, it is impossible to know if changes in water consumption are due to successful conservation efforts, difference in weather from year to year, customer response to price signals or a variety of other factors. It is thus unlikely that a short term retrospective analysis that attempted to compare savings to program costs would produce meaningful information.

Accordingly, at a minimum, United Water respectfully requests that the Commission clarify the nature of the requested analysis that is encompassed within the phrase "cost benefit analysis" as it is used in Order No. 30305.

More fundamentally, the Commission should reconsider its underlying premise and expectation that "efficiency of implementation and prudency of the program will be evaluated to establish the recovery level and amortization period when the Company seeks recovery of the new conservation costs." (Order No. 30305, pg 4). Instead, the Commission should consider adopting the order language originally suggested by United Water, set forth above, which establishes a bright-line test of what must be shown to permit amortization of deferred costs.

This recommendation is sensible for two reasons. First, as discussed above, there do not yet exist retrospective short-term evaluation tools capable of quantifying water savings in a

[1] Attached, for ease of reference is Chapter 6 of the Plan demonstrating the cost benefit analysis that has already been performed. Also attached are excerpts from the AWWA manual that generally describe the cost effectiveness methodology that is standard in the industry.

rigorous, reliable way. The best that can be accomplished is the type of prospective cost benefit analysis already contained in the plan.

Second, phases such as "efficiency of implementation and prudency of the program" and "cost benefit analysis" are susceptible to widely different interpretations. These phrases do not provide any meaningful guidance to United Water as to the quantity and quality of evidence that must be presented to obtain approval of amortization. They invite litigation because Staff and other parties could adopt different interpretations. For example, United Water is under the impression that by approving the four program measures for implementation the Commission has determined them to be prudent. As written, however, the Order implies that prudency may be re-litigated, under some undefined standard, in a subsequent proceeding. Similarly, the phrase "efficiency of implementation" does not in any meaningful way alert United Water as to the nature and quantity of evidence expected by the Commission.

United Water's suggested order language establishing bright-line tests for entitlement to amortization is supported by Commission precedent. In a series of cases, the Commission has provided to Idaho Power Company an assurance of future rate recovery upon a showing by the company that the amount expended on construction of generation facilities was less than a pre-determined commitment cap. *See* Case No. IPC-E-90-2, Order No. 23520 (Swan Falls); Case No. IPC-E-92-8, Order No. 23529 (Milner); Case No. IPC-E-91-4, Order No. 25021 (Twin Falls); Case No. IPC-E-03-12, Order No. 29422 (Bennett Mountain).

Similarly, in this case the Commission can determine now, based on the cost/benefit analysis contained in the Plan, the implementation of the identified conservation measures is prudent. The only issues for review in a subsequent proceeding would be a showing that the

programs were implemented and that program costs were recorded in a way that could be verified and audited.

Conclusion

Based on the reasons and authorities citied herein, United Water believes that portion of Order No. 30305 discussed herein is unreasonable and erroneous. United Water respectfully requests that the Commission issue its order granting reconsideration or clarification. United Water does not believe additional evidence or argument is required and the matter may be considered based on this Petition.

DATED this 4th day of May, 2007

UNITED WATER IDAHO INC.

By: _____
Dean J. Miller
Attorney for United Water Idaho Inc.

CERTIFICATE OF SERVICE

I hereby certify that on the 8th day of May, 2007, I caused to be served, via the method(s) indicated below, true and correct copies of the foregoing document, upon:

Jean Jewell, Secretary	Hand Delivered	X
Idaho Public Utilities Commission	U.S. Mail	
472 West Washington Street	Fax	
P.O. Box 83720	Fed. Express	
Boise, ID 83720-0074	Email	
jjewell@puc.state.id.us		
Weldon B. Stutzman	Hand Delivered	X
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Conservation Director	U.S. Mail	X
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Boise, ID 83701	Email	
Kevin@idahorivers.org		

Heather Houle, Legal Asst.
McDEVITT & MILLER LLP

SECTION 6: Evaluation of Long Term Water Conservation Measures

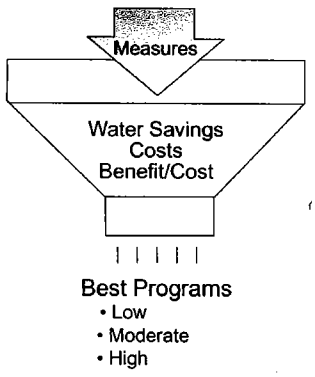
This section presents an overview of the conservation evaluation process which has been completed for the United Water Idaho service area. The 17 measures selected for analysis were screened from a total of 91 measures based on ranking and rating of the following four criteria: technology/market maturity, service area match, customer acceptance/equity, and legal authority existing or possible.

Once selected for analysis, the conservation measures were analyzed using the Least Cost Planning Water Demand Management Decision Support System (DSS) Model. These conservation measures were then organized into four programs showing future activity levels and associated cost for UWID. The intent of this memorandum is to present an unbiased assessment of the conservation potential and its relative cost-effectiveness for UWID's consideration. No recommendations were made at this stage. After review and comments by UWID a recommended plan and funding mechanism was developed and is presented in Section 7.

6.1 Overview of Evaluation Methodology (DSS Model)

During the evaluation process, water savings were estimated and costs for the measures were developed. Benefits and costs were compared in a formal present value analysis and conclusions were drawn about which measures produce cost-effective water savings. This process can be thought of as an economic screening process, shown in Figure 6-1. Packaging the best measures into alternative programs is how we are helping you to consider what level of conservation is appropriate for UWID.

Figure 6-1 Evaluation Process



Benefit-cost analysis has been used by many water agencies to evaluate and help select water conservation measures best suited to local conditions. This analysis requires a locale-specific set of data, such as historical water consumption patterns by customer class, population projections, age of housing stock, and prior conservation efforts.

The following eight steps were used to implement the methodology:

1. Develop baseline water use projections with and without the national plumbing code. Projections cover each key customer category and are broken down into indoor end uses and outdoor end uses. Note the plumbing code refers to savings from the 1992 Energy Act. The baseline water use projections (demand projections) for this project were matched to the 2006 UWID Water Master Plan forecasts created by John Church, Idaho Economics, found in the report Chapter 4 Page 4-13. The projections used in the DSS Model are shown in Section 5.
2. Estimate the affected population (or number of accounts) for each conservation measure by dividing the measure's projected population (or accounts) that implements the measure by the total service area population (accounts). This factor is called the market penetration or installation rate.
3. Estimate total annual average and peak day water savings. The water savings are computed by multiplying unit water savings, per measure, by the market penetration or installation rate, and then multiplying by the number of units in a particular service area (such as dwelling units) targeted by a particular measure.
4. Identify benefits to United Water Idaho including potential reduced water costs (capital improvements and variable water production costs).
5. Quantify total benefits for each year in the planning period by multiplying average annual water savings by the computed value of the benefits.
6. Determine initial and annual costs to implement the measures based upon pilot projects, local experience, and the costs of goods, services, and labor in the community. This is multiplied by the number of units participating each year and then added to overall administration and promotion costs to arrive at a total measure cost, which may be spread over a number of years.
7. Compare benefits and costs of measures by computing the present value of costs and benefits over the planning period.
8. Compile and compare alternative packages containing appropriate measures (for example, benefit-cost ratios greater than 1.0 and significant water savings).

6.2 Estimated Water Savings

Data necessary to forecast water savings of measures include specific data on water use, demographics, market penetration, and unit water savings. Savings normally develop at a measured and predetermined pace, reaching full maturity after full market penetration is achieved. This may occur three to ten years after the start of implementation, for example, depending upon the implementation schedule.

6.3 Value of Saved Water and Cost of Measures

Perspectives on Benefits and Costs

The determination of the economic feasibility of water conservation programs depends on comparing the costs of the programs to the benefits provided. The analysis was performed using the DSS model. The DSS model calculates savings at the end-use level; for example, the model determines the amount of water a toilet rebate program saves in daily toilet use for each single family account. For this evaluation benefits are based on the average "system wide" variable operation cost of $103.80 per million gallons plus the reduced (present value) cost due to a delay in building of capacity related capital improvement projects. The following list is a sample of the capital improvement projects included in the model spread over the period 2007 to 2025:

- 7 New Wells
- 5 New ASRs
- 6 New Membrane Skids for Columbia WTP
- Marden WTP Expansion

UWID provided the exact trigger points for added capacity and these were input into the model along with the costs of the capacity increment. The model was allowed to adjust the timing of when these would be needed in order to satisfy peak demands. The total capital improvement projects expenditures amount to over $36 million. If water conservation is successful in reducing demand then there can be some delay in portions of the current capital improvement project schedule. This is a conservation benefit.

Present value analysis is used to discount costs and benefits to the base year. From this analysis benefit-cost ratios of each measure are computed. When measures are put together in programs the interactions are accounted for by multiplying water use reduction factors together at the end use level. A water use reduction factor is 1.0 minus the water savings, expressed as a decimal. This avoids double counting when more than one measure acts to reduce the same end use of water.

Benefit-cost analysis can be performed from several different perspectives, based on who is affected. For planning water conservation programs for utilities, the perspectives most commonly used for benefit-cost analyses include the utility and the community. The "utility" benefit-cost analysis is based on the benefits and costs to the water provider. The "community" benefit-cost analysis includes the utility benefits and costs together with account owner/customer benefits and costs. These include customer energy benefits and costs of implementing the measure, beyond what the utility pays.

The utility perspective offers two advantages for this analysis. First, it considers only the program costs that will be directly borne by the utility. This enables the utility to fairly compare potential investments for saving and supplying water. Second, because revenue shifts are treated as transfer payments, the analysis is not complicated with uncertainties associated with long-term rate projections and retail rate design assumptions. Because it is

the water provider's role in developing a conservation plan that is paramount in this study, the utility perspective was primarily used to evaluate elements of the plan.

No evaluation perspectives are without shortcomings. The principal weakness of the utility perspective is that it does not count the benefits accrued or costs incurred outside of the utility. Therefore another perspective is also used – the community perspective. The community perspective is defined to include the utility costs and benefits and the customer costs and benefits. Costs incurred by customers striving to save water while participating in conservation programs are considered, and are the benefits received in terms of reduced energy bills (from water heating costs). Other factors external to the utility, such as environmental effects, are not included in the benefit-cost analysis. Because these external factors are often difficult to quantify, they are frequently excluded from economic analyses, including this one.

Although quantifying these benefits is beyond the scope of the present study, it goes without saying that reducing water diversions from the Boise River and the groundwater aquifer (because water conservation programs are implemented) has downstream benefits that increase in proportion to the amount of water savings.

Present Value Parameters

The time value of money is explicitly considered. The value of all future costs and benefits is discounted to 2005 (the base year) at the real interest rate of 3.5%. The DSS model calculates this real interest rate, adjusting the current nominal interest rate (assumed to be approximately 6.6%) by the assumed rate of inflation (3%). Cash flows discounted in this manner are herein referred to as "Present Value" sums.

Assumptions about Costs

Costs were determined for each of the measures based on industry knowledge and past experience and data provided by UWID. Costs may include incentive costs, usually determined on a per-participant basis; fixed costs, such as marketing; variable costs, such as the costs to staff the measures and to obtain and maintain equipment; and a one-time set-up cost. The set-up cost is for measure design by staff or consultants, any required pilot testing, and preparation of materials that will be used in marketing the measure. Measure costs were estimated for each year between 2007 and 2030. Costs were spread over the time period depending on the length of the implementation period for the measure.

Lost revenue due to reduced water sales is not included as a cost because the conservation measures evaluated herein generally take effect over a span of time that is sufficient to enable timely rate adjustments, if necessary, to meet fixed cost obligations.

6.4 Comparison of Conservation Measures

Table 6-1 provides a short description of the 17 measures evaluated in the DSS Model. The savings from the components of each measure are additive.

Table 6-1 Description of Measures Evaluated in the DSS Model

Measure Number	Measure	Target Customer Category	Short Description
1	Additional Xeriscape demonstration gardens	Existing Customers RSF	Develop additional demonstration garden(s) displaying living examples of low water-using gardens and landscaping. United Water Idaho would create and manage the gardens and provide signs and brochures to educate those people visiting the garden(s).
2	Continue & Expand WELs	Existing Customers RSF	Continue and expand the Water Efficient Landscaping (WELs) program to greatly increase the number of participants. Incentives could include landscape and drip system vouchers.
3	Residential school education programs	Existing Customers RSF	United Water Idaho would sponsor school conservation programs with workbooks and presentations; teaching materials and other educational tools to teach the students the importance of conserving water.
4	Rain-sensor (shut off device) retrofit on irrigation controllers	Existing Customers RSF	United Water Idaho pays for a rain sensor giveaway or voucher, and homeowner pays for the optional installation ($35).
5	Residential water surveys	Existing Customers RSF	Modeled after California BMP 1, possibly redesign former United Water Idaho Program and reinitiate to offer free irrigation system evaluations to high water use customers. Simplify audit procedure to hold costs down.
6a	Smart Irrigation Controller Rebates	Existing Customers RSF	Use the latest state of the art irrigation controllers for single family homes. These controllers have on-site temperature sensors or rely on a signal from a central weather station that modifies irrigation times at least weekly (preferably daily) as the weather changes. United Water Idaho would provide a rebate for the controller.
6b	Smart Irrigation Controller Rebates	Existing Customers RMF, COM	Use the latest state of the art irrigation controllers for multifamily and commercial customers. These controllers have on-site temperature sensors or rely on a signal from a central weather station that modifies irrigation times at

Measure Number	Measure	Target Customer Category	Short Description
			least weekly (preferably daily) as the weather changes. United Water Idaho would provide a rebate for the controller.
7	Trigger shut-off valves and hose timers	SF Existing	United Water Idaho would offer a voucher or otherwise provide to the customer at no cost hose timers and shut-off valves. This would enable homeowners to use water outdoors more efficiently.
8	New home efficiency award programs	New SF, New MF	Provide annual awards to developers that are "Green Builders" and offer homes/condominiums for sale and/or apartments for rent that meet certain criteria. This could be combined with energy efficient homes.
9	Landscape rebate program	SF Existing	Modeled after Arizona RCM, Las Vegas and other programs, UWID would provide a rebate of $ 0.25 to $1.00 per square-foot of existing irrigated turf removed and replaced with hard cape or approved low water use plant material, irrigated by new efficient irrigation system.
10	Rebates for 6/3 dual flush or 4-liter toilets (also known as high efficiency toilet HET)	SF Existing	Provide a rebate or voucher for the retrofit of a 6/3 dual flush, 4-liter or equivalent very low water use toilet. Rebate amounts would reflect the incremental purchase cost and would be in the range of $50 to $100 per toilet replaced.
11	Award program for water savings by businesses	Existing CII	United Water Idaho would sponsor an annual awards program for businesses that significantly reduce water use. They would receive a plaque, presented at a lunch with the mayor.
12	Commercial toilet replacement	Existing CII	Modeled after California BMP 9 and Arizona RCM, businesses with high water use toilets (restaurants, grocery stores, etc.) would be offered a rebate for a ULF or high efficiency toilet (HET)
13	Rebates for replacing high use commercial urinals with 0.5 gal/flush urinals	Existing CII	Selectively provide rebates to businesses to convert to efficient urinals only where urinals are subject to high use, such as restaurants, theaters, stadiums etc.
14	Replace inefficient water using equipment	Existing CII	Provide a rebate for a standard list of water efficient equipment. Included would be icemakers, efficient dishwashers, cooling towers to replace once through cooling, irrigation controllers, and certain process equipment.

Measure Number	Measure	Target Customer Category	Short Description
15	Restaurant low flow spray rinse nozzles	Existing CII	Provide free installation of 1.6 gpm spray nozzles for the rinse and clean operation in restaurants and other commercial kitchens.
16	Landscape water budgets	Existing CII	Modeled after California BMP 5 and Arizona RCM all dedicated irrigation meters would be provided a water budget for their existing landscape showing the expected volume of water required for every month of the season. Renew every ten years. Target larger sites so water savings are two times average.
17	Financial incentives, rebates for irrigation upgrades	Existing CII	Provide rebates for selected types of irrigation equipment upgrade. Model after EBMUD or Contra Costa Water District, California programs.

Notes:

RSF =	Residential Single Family
RMF =	Residential Multi Family
COM =	Commercial
CII =	Commercial/Industrial/Institutional
New SF =	New Single Family
BMP =	Best Management Practice
ULF =	Ultra Low Flow
RCM =	Reasonable Conservation Measure
EBMUD=	East Bay Municipal Water District

For a detailed description of California BMPs see http://www.cuwcc.org/memorandum.lasso
For an overview of Arizona Reasonable Conservation Measures see Phoenix Conservation Plan http://phoenix.gov/WATER/waterpln.html

Table 6-2 and 6-3 present results of conservation measure evaluation going forward from 2006. This table presents how much water the measures would save, how much they would cost and what the benefit-cost ratios are *if the measures were run on a stand-alone basis, i.e. without interaction or overlap from other measures that might address the same end use(s).* Water savings shown are averaged over the 25-year analysis period and may be higher or lower in a particular year. Other key statistics are the cost of water saved in dollars per million gallons ($/MG), and the benefit-cost ratios. Benefits and costs are defined below:

- *Utility benefits and costs:* those benefits and costs that the utility would receive or spend.
- *Community benefits and costs:* community benefits equal utility benefits plus customer energy (cost to heat water) benefits. Community costs include utility and customer costs to implement measures.
- *Water Benefits:* based on the 2005 average annual variable operating cost of water and a deferral of the planned capital improvement projects through 2025. The present value of this deferral in capital is the major benefit from water conservation programs.

- *Costs for the utility:* include measure set-up, annual administration, and payment of rebates or purchase of devices or services as specified in the measure design.
- *Customer costs:* include costs of implementing the measure and maintaining its effectiveness over the life of the measure.
- *30-year average water savings:* this is the sum of all individual annual water savings divided by the 30 year analysis period. This provides the average water savings for the 30 years. It is useful in comparing the relative water savings of the various measures.
- *First 5-year utility cost is the total money needed by UWID to sponsor the program for the first 5 years.* Included would be the cost of incentives, contracts, materials and utility staff. Annual costs may be approximated by dividing the numbers by five.

Table 6-2 Residential Conservation Measure Costs and Savings
Individual Measure Analysis

	Conservation Measure	Water Utility Benefit-Cost Ratio	Total Community Benefit-Cost Ratio	"30-year" Average Water Savings (MGD)	Cost of Savings per Unit Volume ($/MG)	First 5-Year Utility Cost* ($)
1	Additional Xeriscape demonstration gardens	1.46	0.12	0.0801	$115.52	$87,000
2	Continue/Expand WELs	1.79	0.08	0.1448	$105.98	$56,203
3	Residential school education programs	0.42	1.05	0.0246	$424.18	$33,722
4	Rain-sensor (shut off device) retrofit on irrigation controllers	0.96	0.40	0.1286	$213.22	$178,120
5	Residential water surveys	0.18	0.38	0.0639	$1,016.93	$209,850
6a	Smart Irrigation Controller Rebates Single Family	0.13	0.10	0.1177	$1,240.45	$699,556
6b	Smart Irrigation Controller Rebates Multi Family, Commercial	0.26	0.23	0.1197	$600.16	$368,271
7	Trigger shut-off valves and hose timers	1.10	1.10	0.0238	$233.98	$34,490
8	New home efficiency award programs	0.18	0.02	0.0721	$819.08	$173,786
9	Landscape rebate program	0.13	0.07	0.1283	$1,572.15	$2,713,319
10	Rebates for 6/3 dual flush or 4-liter toilets	0.08	0.05	0.2889	$1,223.95	$2,626,514

*First five years is normally 2008-2012 except for measure 6 assumed to begin in 2010 and measure 10 assumed to begin in 2009

Table 6-3 Commercial Conservation Measure Costs and Savings

Individual Measure Analysis

	Conservation Measure	Water Utility Benefit-Cost Ratio	Total Community Benefit-Cost Ratio	"30-year" Average Water Savings (MGD)	Cost of Savings per Unit Volume ($/MG)	First 5-Year Utility Cost ($)
11	Award program for water savings by businesses	1.01	0.08	0.0165	$113.92	$6,697
12	Commercial toilet replacement	0.10	0.04	0.1449	$1,116.09	$1,292,815
13	Rebates for replacing high use commercial urinals with 0.5 gal/flush urinals	0.06	0.02	0.0133	$1,824.55	$169,499
14	Replace inefficient water using equipment	0.03	0.49	0.0084	$2,897.56	$111,512
15	Restaurant low flow spray rinse nozzles	0.85	49.96	0.1191	$127.73	$204,514
16	Landscape water budgets	0.38	0.27	0.0714	$498.07	$118,374
17	Financial incentives, rebates for irrigation upgrades	0.33	0.18	0.0681	$598.01	$284,496

From Table 6-2, Table 6-3 the following observations can be made:

- The most cost-effective and highest water savings measure is to continue to expand the WELs program.
- Replacing inefficient commercial equipment has the lowest benefit-cost ratio which is less than one, indicating it is not cost-effective.

NOTE: Individual measure water savings are not additive due to measure overlap. Savings are aggregated at the program level (see below).

6.5 Results of Conservation Program Analysis

Comparison of Measures

Table 6-4 provides a summary of which measures make up each of the options packages, programs A, B, C and D, which are the four packages designed to illustrate an increasing level of water savings for UWID.

These programs are not intended to be rigid programs but rather to demonstrate the range in saving that could be generated if selected measures were run together. In this step we account for the overlap in water savings (and benefits) and estimate combined savings and benefits from programs or packages of measures.

Selection criteria for the measures in each option package included the following, by program: Measure with B/C less than 0.10 were not placed in any program because although the measure could save significant water, the cost of the saved water was excessive (more than $1,500/MG). Thus measures 9, 10, 13, and 14 were not used in any program. Four alternative programs that save progressively more water are defined below.

Program A

Program A includes a modest step up from current efforts. It includes measures that expand on your current program to a total of 4 measures. Each individual measure has a benefit cost ratio of more than 1.0 (i.e., benefits exceed costs).

Program B

Program B was designed to be the middle ground and consists of measures with individual measure benefit-cost ratio of more than 0.40, and is able to save more water than Program A. Program B includes Program A measures, plus additional measures for a total of 7 measures.

Program C

Program C includes a few additional conservation measures to those in Program B (individual measures all have benefit-cost ratios more than 0.25). It includes Program A measures, Program B measures, plus additional measures for a total of 10 measures.

Program D

Program D includes, in our opinion, a maximum practical limit of measures for conservation program managers to handle at one time (a total of 14 measures) It includes Program A measures, Program B measures, Program C plus a few additional measures that are less cost-effective (individual measure benefit-cost ratio more than 0.10).

Figure 6-2 shows annual water savings for each of these programs for the year 2005 to 2030.

Figure 6-2 Program A, B, C, D Conservation Measure Programs

Annual Water Conservation Savings