

2010 – 2030

Water Resource Plan

Appendix K

December 2009

**Appendix K:
2003 – 2006
Pilot Evapotranspiration Controller Study**

2003 – 2006

Pilot Evapotranspiration

Controller Study

(“TMWA ET Controller Study”)

TABLE OF CONTENTS

	<u>Page</u>
Table of Contents	i
List of Figures and List of Tables	ii
I Introduction	1
Purpose of Study	2
II Key Findings	3
II Study Description	9
Aqua Conserve Technology	9
Participating Sites	12
Data Collection	14
Historical Water Use	15
Data Analysis Methods	18
IV Results	20
2003 ET Controller Group Results	23
2004 ET Controller Group Results	25
V Summary	28
Water Savings Potential to TMWA and its Customers	28
Appendix A – List of Participating Sites	(3 pages)
Appendix B – Regression Results for ‘Expected Use’ Methodology	(8 pages)
Appendix C – Weather Variables	(2 pages)
Appendix D – 2003 ET Controller Group Study Results	(3 pages)
Appendix E – 2004 ET Controller Group Study Results	(3 pages)
Appendix F – Results by Month by Meter (2003)	(7 pages)
Appendix G – Results by Month by Meter (2004)	(7 pages)
Appendix H – Results by Month by Meter (2005)	(7 pages)
Appendix I – Results by Month by Meter (2006)	(7 pages)

LIST OF FIGURES

		<u>Page</u>
Figure 1	2000-2006 Average ET in Inches at UNR Weather Station	11
Figure 2	Location of ETCS ET Controllers	13
Figure 3	Average Water Use per Square Foot of Turf in Base Period	16
Figure 4	2003 ET Controller Group Percent Savings	24
Figure 5	2003 ET Controller Group Savings in Thousands of Gallons	25
Figure 6	2004 ET Controller Group Percent Savings	27
Figure 7	2004 ET Controller Group Savings in Thousands of Gallons	27

LIST OF TABLES

Table 1	Number of Meters by Meter Size	14
Table 2	Results of 2003 Sample Audits	17
Table 3	Comparison of Results by Methodology	21
Table 4	Summary Results of 2003 ET Controller Group	24
Table 5	Summary Results of 2004 ET Controller Group	26

INTRODUCTION

The Truckee Meadows Water Authority (“TMWA”) embarked on a pilot evapotranspiration (“ET”) controller study in 2003 to test the water savings potential of such controllers for use at commercial irrigated sites as part of its conservation program. Funding for the pilot study was initially from TMWA’s conservation budget; however, successful application for a US Department of the Interior Water Conservation Field Services Program (“US Water Conservation”) grant augmented the pilot study considerably. TMWA-funded ET controllers were purchased and installed prior to the 2003 irrigation season. US Water Conservation-funded ET controllers were purchased in the fall of 2003 and spring of 2004 and were installed prior to the 2004 irrigation season. Collectively, the two funding sources provided the means for the TMWA ET Controller Study (“ETCS”).

In 2003 the ET controller was a promising emerging technology anticipated to significantly reduce outdoor water consumption. Unlike traditional automatic sprinkler systems, ET controllers only deliver water to plants when they need it and only in the amount needed according to local climatic conditions. ET controllers are part of new irrigation technology being promoted by water conservationists as ‘smart irrigation controllers’. Smart irrigation controllers are weather-based controllers using climatic variables such as evapotranspiration rates and air temperature, or utilizing soil moisture content measurements to apply water to plant materials. Whether watering schedules are based on real-time on-site weather data or historical weather data, the new "smart" controllers would reportedly leave little room for under or over-watering plant materials. At the time the ETCS began, however, little practical application had been conducted and the technology was not yet proven or endorsed by professional irrigation and landscape associations.

Promising benefits to TMWA and its customers included delayed or reduced costs of new treatment facilities by maintaining consumption levels as the community grows, increased drought storage, and environmental benefits including leaving more water in the river for riparian habitat and improving water quality. Outdoor watering uses a significant portion (approximately 65%) of annual TMWA treated water deliveries due to summer months’ irrigation. In addition, should the ET controllers prove successful by reducing water use while keeping the landscape healthy, customers would have a corresponding reduction in their water bills.

Purpose of Study

The objective of the study was to measure the water saving potential from using the ET controller technology versus historical water applications using traditional automatic irrigation controllers. The study was limited to commercial customers¹ with separate irrigation metered accounts and not offered to residential customers for several reasons including:

- Larger irrigated sites were anticipated to reap greater volume of water savings,
- Separate irrigation accounts provide most accurate measurement of savings on outdoor applications,
- Simpler to work with a handful of landscape management companies and participating site owners,
- Ease of access to ET controllers,
- Greater TMWA control of study; and,
- The landscape management companies spread the word about water conservation technology more rapidly and tend to be willing to promote water conservation measures since they result in water savings to their clients.

The TMWA-funded 2003 ET Controller group study period was 2003-2005, and the US Water Conservation-funded 2004 ET Controller group study period was 2004-2006, hence the total four-year duration of the ETCS.

Each of the ET controllers in the ETCS were programmed and locked by TMWA staff to help prevent tampering. Each of the controllers was fitted with a temperature sensor and utilized historical weather data to schedule watering according to local climatic variables. Every site participating in the project was separately metered with at least two years of historical water use data available to compare water use in each year of the project's duration.

¹ TMWA's Rule 1 defines Commercial Service as "Delivery of water to customers engaged in a business activity, or in a profession, or in some form of economic or social activity (offices, stores, clubs, hotels), or that creates or changes raw or unfinished materials into another form or product, and for purposes that do not come directly under another service classification".

KEY FINDINGS

Conservation potential is the difference between actual outdoor use and what should have been used taking weather into account². The ETCS measured conservation potential from Aqua Conserve ET controllers during the 2003, 2004, 2005, and 2006 irrigation seasons at 25 sites within the TMWA's service territory. These sites included 19 individual commercial sites and 6 homeowner association ("HOA") sites.

The participating sites were spread throughout TMWA's service territory and were permitted off-schedule watering schedules from assigned watering. The assigned watering schedule in Washoe County is two days each week, with no watering permitted between 1 pm and 5 pm. Businesses, which include homeowner associations, must water on Tuesday and Friday unless they receive a variance from TMWA. All the 2003 ET controller group sites participating in the ETCS were permitted to water any day of the week but not between 1 pm and 5 pm. Of the 2004 ET controller group sites, all but one of the individual commercial sites and one homeowner association were permitted to water any day, and 4 homeowner associations and one individual commercial site were permitted to water 3 days each week. There was no restriction as to which three days of the week were permitted but no watering was programmed between 1 pm and 5 pm. The following key findings are documented:

1. Conservation Potential (Water Savings)

Water savings recorded by meters at participating sites that were not affected by excessive leak problems measured 0% to 56%. It is important not to use total or average savings numbers from this study due to the wide differences in results from site to site caused by site design and management problems rather than ET controller performance.

The ET controllers clearly delivered water savings although water savings potential varies greatly by site. The range of savings is due to additional site-specific factors including:

- irrigation design and assembly,
- plant materials,

² Irvine ET Controller Study, 2001.

- age of irrigation equipment and maintenance schedule of irrigation equipment; and,
- landscape features such as slopes and ornamental water features.

Unanticipated factors that affected the results of this study included:

- tampering with controllers, sensors, and reprogramming by landscapers; and,
- meter changes by TMWA.

Despite the effect these factors have on the control and usefulness of the data from a purely statistical point of view, the results are true to real-world conditions, and reflect what customers might expect to see with installation of an ET controller.

The individual commercial sites performed best, with savings typically greater than 20%. The homeowner association sites had greater challenges, and did not always use less water with the ET controllers than before. This result is believed to be attributable to management of the sites rather than the performance of the controllers, since the controllers performed very well at other sites. A key factor to this outcome is the budgetary constraints of homeowner associations. Ironically, homeowner association boards voting to keep dues for landscape maintenance low end up using more water and paying for that wasted water.

Another factor that may contribute to the poorer water savings results at the homeowner association participating sites is the number of meter changes that took place over the program period. In an effort to capture unrealized revenue, TMWA actively pursued meter changes about the same time that the pilot study kicked off. Large meters were targeted, and commercial irrigated properties were high on the priority list. Since old meters under-record the amount of water passing through the water meter, and the new meters are accurate, higher meter reads during the study period are expected. Meter reads would likely have been even higher without use of the ET controllers. This problem was particularly prevalent at the Vistas HOA. Where this was clearly an issue, TMWA removed the meter data from the study.

2. Data Analysis Methodology

The ETCS measured water savings using two methodologies. The first, the 'Average Use' methodology, compared water use in the study years with average historical use. Average historical use (termed 'base period' use) was determined as average annual use in the three years prior to study start. The second, the 'Expected Use' methodology, compared water use in the study years with expected water use in the study years using linear regression analysis.

Results between methodologies were similar for the 2003 ET Controller group but varied widely for the 2004 ET Controller group. This difference was attributed to the expected use results for the autumn months. Study period autumn month temperatures were cooler than in the base period for the 2004 ET Controller group. Given the high variability of weather in the autumn in Northern Nevada, controllers are typically turned off in late September or October. The expected use methodology estimates water use for an entire month and consequently underestimates the amount of water that should be used in the month that the controller is turned off.

There is no conclusive test to evaluate whether one methodology is better than the other. Since the expected use methodology appears to have difficulties estimating water use for the autumn months, and the average approach is easier to understand, the results of the latter methodology are presented as the final results for this study.

3. Customer Preference

The best indicator of the success of the ET controllers, as perceived by the customer, is the number of customers who chose to continue using the ET controllers after the study period ended. All 2003 ET controller group of customers chose to keep the controllers with their original programming with the exception of a handful of controllers at the Vistas HOA due to electrical short problems.

4. Watering Day Restrictions

This study is inconclusive as to whether restrictions on the number of watering days permitted affects quantity of water applied. Landscape health did not suffer at sites restricted to 3 days / week watering. The unrestricted watered sites achieved greater

water savings than the majority of those restricted to 3 days-a-week but, with the exception of Lakeridge Shores, each of the participating sites that were restricted to 3 days-a-week suffered from problems such as leaks or insufficient historical water use, making their results unusable for statistical testing.

5. Study Management

There is a delicate balance to be achieved between keeping tight control of variables affecting the study's credibility and maintaining good working partnerships with the study participants. During the first two years of the study, TMWA staff made a significant time investment working closely with the study participants, responding to calls quickly for programming needs, explaining the features of the ET controllers, and conducting audits, for example. After these initial set-up years, the goal was to minimize interference with management of the landscaping and to allow the controllers to perform with little or no reprogramming. A good rapport was achieved, with the landscapers providing annual feedback on their impression of the ET controllers' performance.

Only landscapers who attended the Aqua Conserve training class were authorized to make programming changes to the ET Controllers. If the landscaper had not attended the class, TMWA staff had to be called upon to make requested changes. During the first year of operation, this system worked well. Over the study duration, some landscape technicians learned how to "pop" the lock off the controller cabinets and made their own programming adjustments. Although this was not a widespread problem, it indicated that the property owner or hired maintainer of the landscape, used to making continual manual adjustments to irrigation controllers, did not understand this new technology, and that an education program is necessary to accompany widespread application of new technology to landscaped areas.

6. Ease of Use

TMWA had all controllers, their steel cabinets, and temperature sensors mounted by a licensed professional electrician. Installation took approximately one hour per controller. Wiring may be challenging for non-electricians. Professional installation of controllers is recommended.

The ET controllers are relatively easy to program for professionals in the industry, in particular as only the peak month (July) program needs to be input. The Aqua Conserve ET controller adjusts watering throughout the year based on the program entered for this one month. Similar to explanation of use of other landscaping devices, there was a language barrier between the Spanish and English speakers maintaining landscapes at participating study sites. Education programs in Spanish as well as English for ET controllers and other new landscape technologies may be desirable in Northern Nevada.

7. Controller Hardware

There were a few issues documented over the course of the study with the hardware itself; however, these issues are not unique to ET controllers. Customer service from the manufacturer was excellent.

- Electrical problems:
 - i. Circuit board failure,
 - ii. Screen display failure,
 - iii. Solenoid valve failure tripping the system and blowing a fuseAqua Conserve replaced controllers with electrical problems at no cost to the program.
- Tampering with steel cabinets – although the controllers are housed in a lockable stainless steel cabinet, several cabinets were found “popped” open with use of flathead screwdrivers or similar instruments.
- Universal steel cabinet key – although TMWA staff only provided trained landscape technicians with the key, it is universal, and therefore possible that the key was used at sites other than those intended.

8. Controller Applicability in Washoe County

Results indicate that smart controllers can be an effective tool to reduce application of treated water on commercial property landscapes. Critical to the performance of smart controllers is the condition of the irrigation system. It is recommended that irrigation system audits be conducted prior to installation of such a new device. Smart controllers only work properly when the entire system is functioning optimally. The system audit will check for leaks, malfunctioning equipment, water pressure, site

coverage and other related issues that can impact the efficiency of the entire system, allowing the ET controller to maximize its effectiveness. Problems with irrigation systems were frequently documented during the program, in some instances causing removal of the meter information from the study, since large leak problems invalidate the water use recordings for purposes of the study.

The challenge with increased use of ET controllers in Washoe County is allowing their use with the assigned day watering schedule. To comply with local law, only ET controllers that can be programmed to account for local watering restrictions could be permitted, causing an enforcement issue; alternatively all sites using ET controllers could be exempted (receive a variance) to water off-schedule.

STUDY DESCRIPTION

TMWA initiated the project by meeting with local landscaping companies and caretakers of large irrigated properties such as homeowner associations. These parties were invited to submit sites to qualify for an ET controller, to be assessed by TMWA for suitability. Target sites included landscaped areas surrounding commercial, retail, and office buildings, as well as large homeowner association irrigated areas. Following site selection, TMWA ordered appropriately-sized ET controllers from the selected ET controller manufacturer, Aqua Conserve. Two TMWA staff members were trained by Aqua Conserve personnel on how to operate the controllers.

Controllers were programmed to water for the same duration that the existing sprinkler clocks were delivering; this amount of water being the maximum amount needed in the peak irrigation month (July). The July watering programs were provided by each of the property owners or landscape maintenance companies. In accordance with local law, no watering was permitted between 1pm and 5pm. Each of the sites received a variance permitting application of water more than two days-a-week. For the majority of participating sites in 2003, ET controllers were programmed to water four days-a-week, and some drip stations more than four days-a-week. Scheduled mowing days and other required dry times were incorporated into the programming cycles. Each participating site agreed to display a TMWA sign stating that off-scheduled watering was permitted. (TMWA had anticipated to receive several calls regarding these signs but in fact received very few).

In 2004 many of the sites were restricted to three days-a-week watering with the ET controllers. The purpose of this restriction was to evaluate whether additional water savings are made with restricted watering, and whether the overall visual health of the landscape is affected by the restriction.

Aqua Conserve Technology

The Aqua Conserve ET controllers were selected from a choice of several ET controller manufacturers largely because of the watering restrictions in Washoe County. TMWA wanted to be able to test the effectiveness of ET controllers if they were programmed for more restrictive watering schedules. The other available technology at the time used satellite systems requiring on-demand watering when climatic conditions dictated and

could not be restricted to have periods of no watering during the week. This has since changed.

Unlike some ET controllers that use real-time data (satellite systems), the Aqua Conserve controllers use historical climatic data coupled with temperature sensors to adjust watering throughout the year. Peak month watering (July in Washoe County) is programmed into the controller and the controller adjusts watering throughout the year based on historic evapotranspiration rates, as explained below.

Evapotranspiration

ET is the combined process of plant transpiration and soil evaporation. Plant transpiration is the movement of moisture from the plant to the air through tiny pores in the leaves known as stomates. The water enters the plants through the roots in a liquid form and leaves the plants through the stomates in a gaseous form. Soil evaporation is the direct evaporation of water from the surface of the soil into the atmosphere.

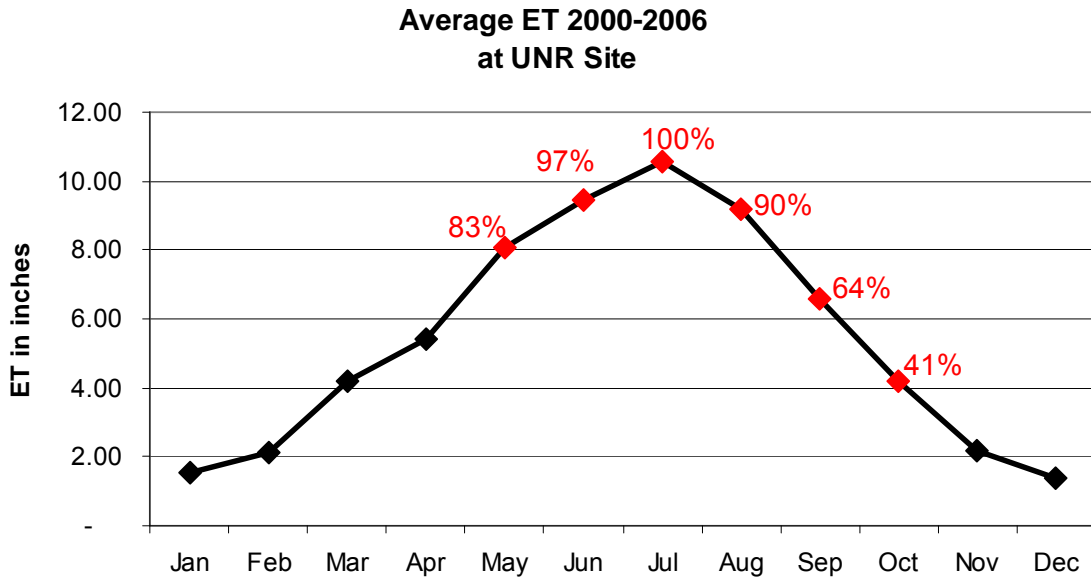
The ET rate is closely related to a plant's water requirement. By scheduling the irrigation based on ET rates, the plants will receive the required amount of water with very little waste of water. ET rates are expressed in amount of water removed over a period of time. The common units for ET rates are inches per day or millimeters per day. There are four primary factors that affect ET rates. These factors are solar radiation, temperature, relative humidity and wind. The ET rate generally increases with each increase in solar radiation, temperature and/or wind; however, the opposite is true with relative humidity. An increase in relative humidity will generally result in a decrease in the ET rate. Soil moisture, plant type and stage of plant development are other factors that affect the ET rate. If there is no soil moisture, there cannot be any ET. Also, some types of plants may have low transpiration rates whereas other plants may have high transpiration rates. The most commonly used ET mathematical formula to compute ET rates is the Penman-Monteith Equation, which uses these four weather factors.³

Under a 'normal' weather year (one which is most similar to the average recorded weather for the area), the Aqua Conserve controllers will water approximately 97% of the July volume in June, and 90% of the July volume in August, for example. Average

³ Information from Aqua Conserve at www.AquaConserve.com

monthly ET rates, measured at the UNR site by the Agricultural Experimental Station⁴, are shown in Figure 1 below.

Figure 1



An ET irrigation controller will automatically vary the irrigation applications to meet the water requirements of the plants based on historical ET data and current air temperature, therefore actual water application will vary from the percentages shown in Figure 1.

Equipment

Various size ET controllers were purchased for the ETCS, ranging from 6-stations to 64-stations. Controllers were ordered according to site needs and installed by a licensed professional electrician. Each controller was also fitted with a temperature sensor that collects and transmits data to the controller at regular intervals during the day. This information is then processed by the controller to determine if a change in the scheduled watering program is required. If the average daily temperature falls outside the stored data for the day, a change in watering run-times or watering days may be activated.⁵

⁴ www.washoet.dri.edu

⁵ The Water Efficient Irrigation Study, Puget Sound, 2003, concluded that the ET controller with sensor had the greatest effect in reducing water consumption compared to ET controllers without sensors and manually adjusted clocks.

Participating Sites

The locations of ET controllers were spread throughout TMWA's service territory as shown in Figure 2. A list of participating sites is provided in Appendix A of this report. Site selection was based on property owner and landscape company willingness to participate, sufficient historical water use data, balance of individual commercial sites versus homeowner association sites, and diversity of landscape plant materials.

During April 2003, TMWA installed 33 ET controllers at 14 sites with the cooperation of two local landscaping companies; one landscaping company, responsible for the care of the Vistas HOA portion of Los Altos parkway in Sparks, and another company responsible for several landscaped sites in and around Reno. Of the total, 19 controllers were installed at the Vistas HOA landscape parkway in Sparks, and 14 controllers around Reno. Water was delivered to these sites through 28 dedicated irrigation water meters. During the fall of 2003 and spring of 2004 an additional 71 ET controllers were installed at 11 sites spread throughout TMWA's service territory. Water was delivered to these participating sites through 41 meters.

A total of 104 ET controllers were installed at participating sites, with water use recorded at 69 meters. Over two million square feet, or forty seven acres of turf (15 acres by the 2003 group and 32 acres by the 2004 group) was irrigated with the ET controllers.

Table 1 shows that the sites included in the ETCS were predominantly serviced by 1.5 and 2.0 inch water meters, which service larger landscaped areas. In 2004, 63% of metered irrigation accounts system-wide were serviced by these meter sizes, compared to 84% in the ETCS group.

Figure 2 Location of ETCS ET Controllers

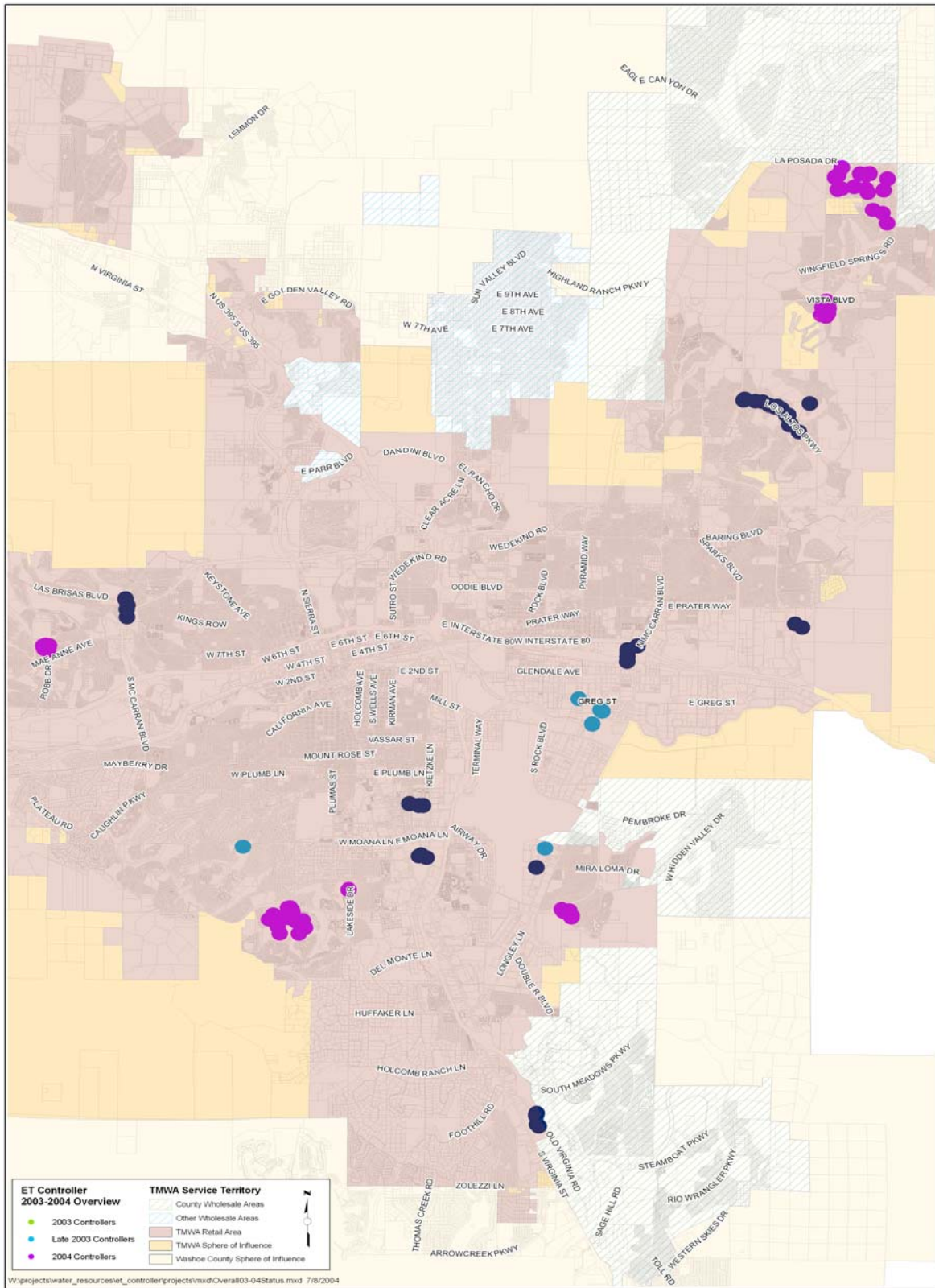


Table 1
Number of Meters by Meter Size

DISTRIBUTION BY METER SIZE				
Metered Irrigation Accounts [1]	Systemwide 2004		Total in Study	
	Number	Distribution	Number	Distribution
0.75	251	12%	2	3%
1	412	20%	5	7%
1.5	371	18%	15	21%
2	918	45%	45	63%
3	49	2%	2	3%
4	27	1%	1	1%
6	4	0%	1	1%
Total	2,032	100%	71	100%

[1] Listed by meter size in inches.

Data Collection

Monthly meter reads were extracted from TMWA's billing software and entered into excel spreadsheets for the analysis presented in this report. To augment the study, US Water Conservation grant funding was utilized to hire interns to manually read the meters and the controller run times each week. The weekly data has been catalogued for use in further technical studies.

Only data from the months of May through October was utilized in the study. Although many controllers will have been operating for over a month before the data period, due to the high variability of weather in the spring time in the study area, April data is discarded. For meters that clearly recorded extraordinary water use due to leak problems, or for newly planted landscapes, and for meters with bad or insufficient historical data, usage results were excluded from the study.

Monthly weather data was downloaded from the UNR weather station, one of the weather stations monitoring climatic data as part of the Washoe Evapotranspiration Project⁶.

⁶ The Washoe ET project is a network of weather stations located in the region surrounding Reno, Nevada that monitor evapotranspiration rates. The project is sponsored by the Washoe County Regional Water Planning Commission in conjunction with Washoe County Department of Water Resources, the University of

Historical Water Use

Figure 3 shows that average water use per square foot of turf for participating sites in the base period spanned two bands; those sites using 5 to 15 gallons per square foot per month, and those sites using 15 to 25 gallons per square foot per month in the peak irrigation months. The one exception is the Redfield site, where there are two meters and one ET controller with 64 stations. The looped system, coupled with an ornamental water feature may explain why water use per square foot was historically so high. Sites using 5 to 15 gallons per square foot in the peak irrigation months include Lakeridge Shores HOA, Cimarron HOA, Lakeside Church, The Fairways HOA, Ridgeview, the Vistas HOA, Mill Creek HOA, and Northgate HOA. Sites using 15 to 25 gallons per square foot include Skyline Blvd, Coit Plaza, Sierra Market place, the Greg Street sites, McCarran Landing, the Mill Street individual commercial sites, and Manogue sites. These groupings indicate that the larger turf areas, such as those found at the homeowner association sites historically applied less water per square foot than the individual commercial sites. This result is unsurprising since we would expect greater efficiency (distribution uniformity) of water application at larger turf sites⁷.

Audits (catch can tests) conducted at the 2003 controller sites found distribution uniformity of 56-73% at various locations within the Vistas HOA landscaped area, and more varied results at individual commercial locations ranging from 35% to 76%, with the majority of those audits at the lower end of the scale. Table 2 below shows the results of those sample audits conducted in 2003. Distribution uniformities reported are for stations watering turf areas only. Multiple distribution uniformities for a site reflect that multiple stations were audited. The results show that most areas have poor distribution uniformity. The industry benchmark for distribution uniformity in irrigation systems is at least 65%, with a target range typically 70-80% for turf.

Table 2 also shows historical use per square foot and actual water use per square foot in 2003. With the exception of Ridgeview Plaza, water use in 2003 was less for each site than historical use. Ridgeview Plaza received a new water meter in April 2003, which is

Nevada Cooperative Extension, Desert Research Institute's Western Regional Climate Center, UNR College of Agriculture, Biotechnology and Natural Resources, and the Nevada Landscape Association.

⁷ Irrigation efficiency and distribution uniformity are different. Efficiency is affected by both site management and equipment at the site. Uniformity is primarily related to the design and mechanical performance of the irrigation system. Source: Certified Landscape Irrigation Auditor Manual, The Irrigation Association.

the most likely explanation of why water use was recorded as being higher in 2003 at this site.

Figure 3

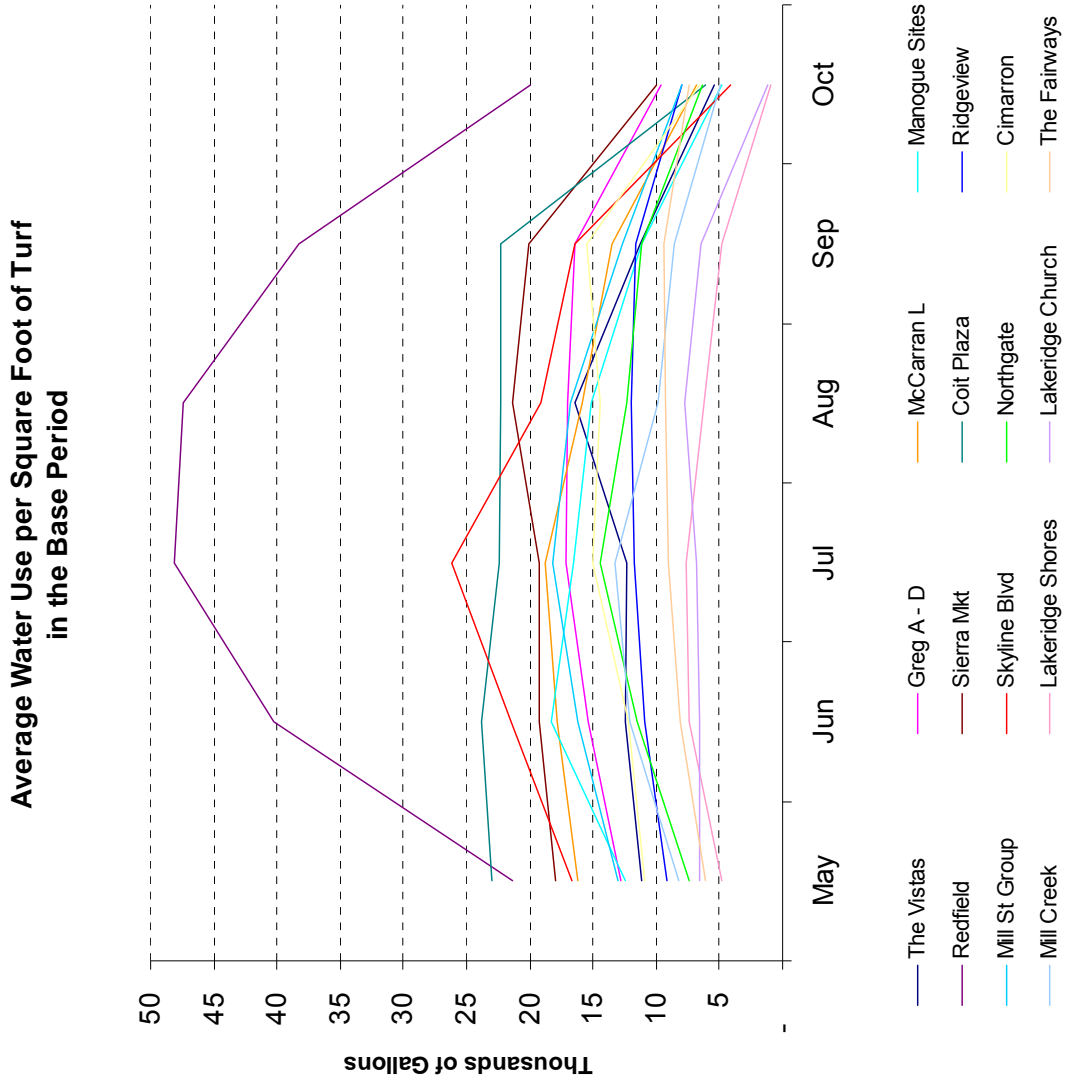


Table 2
Results of 2003 Sample Audits

Site Name	Use in Thousands of Gallons	Turf Area Square Feet	Gallons per Sq Ft	Sample Distribution Uniformities
LOS ALTOS SITES [1]				
32341159		23,084		57%, 58%, 73%
2003 Use	2,111		91.4	
Historical Use 2000 - 2002	2,720		117.8	
20670		28,213		56%
2003 Use	1,524		54.0	
Historical Use 2000 - 2002	1,883		66.7	
RENO GREEN SITES				
Greg Center - Bldg B		13,917		51%
2003 Use	1,027		74	
Historical Use 2000 - 2002	1,253		90	
Greg Center - Bldg D		3,520		74%
2003 Use	216		61	
Historical Use 2000 - 2002	382		109	
McCarran Landing		22,617		47%, 57%
2003 Use	1,308		58	
Historical Use 2000 - 2002	2,012		89	
Manogue Post Office		11,600		58%, 66%, 41%
2003 Use	675		58	
Historical Use 2000 - 2002	997		86	
Manogue Church		16,391		65%, 51%, 61%
2003 Use	1,172		72	
Historical Use 2000 - 2002	1,195		73	
Redfield Promenade		18,453		53%, 62%
2003 Use	3,331		181	
Historical Use 2000 - 2002	4,066		220	
Coit Plaza		10,052		45%, 76%
2003 Use	925		92	
Historical Use 2000 - 2002	1,205		120	
Ridgeview Plaza - McDonalds		56,294		35%, 39%, 36%
2003 Use	4,185		74	
Historical Use 2000 - 2002	3,449		61	

[1] Audit results reported by meter number.

Data Analysis Methods

Two methods were employed to analyze the dataset.

Average Use Methodology

The first method was to compare water use in the study years with average historical use. Average historical use (termed 'base period') was determined as 3 years prior to study start; therefore, ET controllers installed in 2003 had a base period of 2000-2002, and ET controllers installed in 2004 had a base period of 2001-2003. Comparison with average historical use is most easily understood and widely used by water service providers. This method is termed the 'Average Use' methodology.

Expected Use Methodology

The second method was to estimate expected use during the study years and compare the estimated expected use with actual use during this timeframe. This methodology uses regression analysis that adjusts average base period use for study period air temperature. The expected use methodology accounts for prior management of the study site (since it is based on historical water use) and variability of weather by incorporating an air temperature variable.

Ordinary least squares (OLS) regression for each study site, or group of study sites if they were located closely together, was performed with average monthly air temperature departure in degrees Fahrenheit from the base period as the X (independent) variable and average monthly water use per square foot of turf as the Y (dependent) variable. The resulting coefficient per site or group of sites for the independent variable was applied to the corresponding site or group of sites' meters for each month in the study period. For example, expected water use at a meter is estimated as:

$$Y_1 = \alpha_1 + \beta_1(X_1)$$

Where: Y_1 is monthly water use at meter (per square foot)
 α_1 is average monthly water use in the base period
 β_1 is the estimated coefficient
 X_1 is monthly air temperature deviation from base period

Note that since the estimated coefficient is expressed per square foot of turf irrigated, the X variable has to be multiplied by square feet of turf to estimate total monthly water use for each meter.

The OLS results for each site or group of sites is reported in Appendix B. The coefficient of determination, or adjusted R square, is the proportion of variability in the data set that is accounted for by the model (in other words it provides a measurement of 'fit' for the model). Fit of dependent to independent variable for the regression in the ETCS range from 47-94%, with only three of the 16 regression results lower than 60%.

RESULTS

There is a large difference in the quantity of water 'saved' depending on which methodology is used, most particularly for the 2004 ET Controller group. The average use methodology is the method most commonly used in evaluating water conservation measures by water providers because it is easy to understand and explain. The expected use methodology, which compares the actual water use with ET controllers to water use that was expected without ET controllers in the study period, is probably more indicative of actual water savings. Both methodologies assume everything apart from the weather is constant, (for example condition of the sprinkler system and management of the site), as in the base period. Although this assumption is not very realistic as there are constant changes such as replacement of sprinkler heads, meter replacements, change of ownership and site management, it is necessary for comparison purposes.

Results using these two methodologies suggest that the expected use methodology works well during the spring and summer months but not in autumn (September and October) when systems are turned off according to weather conditions. This problem could possibly be avoided if the expected use estimates were calculated by week rather than by month. The problem is also exacerbated by low temperatures in the autumn that occurred during the study period compared to their base periods. These lower than base period temperatures are illustrated in graphs of weather variables in Appendix C. In Appendices F through I, which show monthly water use by meter under each methodology, under the expected use methodology, usage for a handful of sites in September and October in some of the study years was estimated to be negative. Since this is not feasible, usage in these months was made equal to zero. In other words, the expected use methodology estimated that, based on average historical use for the month and current air temperature in the month, no water should have been applied.

Monthly data in Appendices F through I of this report show a positive relationship between departure in average monthly air temperature from the base period with expected water use by month. For example, on page C-2 of Appendix C, air temperature in June 2005 was more than six degrees below the average air temperature for base period June 2001-2003. As a result page H-3 of Appendix H shows that expected use for the 2004 controller group is 2.9 million gallons less than the historical average use in June 2005.

Table 3
Comparison of Results by Methodology

Participating Site	Average Approach					Expected Use				
	Thousands of Gallons Saved in Study Period				Study Period Average % Savings	Thousands of Gallons Saved in Study Period				Study Period Average % Savings
	Year 1	Year 2	Year 3	Total		Year 1	Year 2	Year 3	Total	
2003 Group										
Vistas HOA	2,145	2,309	536	4,989	2%	2,469	1,846	(114)	4,202	-4%
Coit Plaza	280	113	274	666	11%	312	66	208	586	17%
Greg Center- Bldg. A	164	259	67	489	7%	209	194	(24)	379	6%
Greg Center- Bldg. B	226	269	137	631	13%	250	234	88	572	15%
Greg Center- Bldg. C	416	223	138	778	22%	432	200	106	739	26%
Greg Center- Bldg. D	166	72	99	338	21%	173	64	87	323	29%
Manogue - Church	23	125	307	454	4%	67	62	218	347	10%
Manogue - Post Office	322	130	444	897	15%	354	86	382	821	28%
McCarran Landing	704	978	1,134	2,817	28%	757	904	1,030	2,690	46%
Redfield Promenade	735	293	1,339	2,366	8%	1,008	(97)	791	1,703	15%
Sierra Marketplace Office	411	344	245	999	18%	440	302	187	929	22%
2003 GROUP TOTAL	5,591	5,113	4,719	15,423	3%	6,470	3,861	2,960	13,291	6%
2004 Group										
4840 Mill St	85	125	126	335	23%	26	52	92	170	13%
1301 Corporate Blvd	267	240	(146)	361	25%	242	209	(161)	290	21%
3001 Skyline Blvd	66	125	96	286	26%	31	79	77	187	19%
1150 Corporate Blvd	364	523	559	1,445	56%	340	493	545	1,378	55%
4865 Longley Ln	121	153	(165)	109	37%	94	119	(181)	33	3%
Northgate Village HOA	1,477	1,221	1,013	3,712	21%	1,020	650	748	2,418	14%
Cimarron HOA [R]	447	(122)	(264)	62	-7%	289	(320)	(356)	(387)	-13%
Mill Creek HOA [R]	56	239	126	421	3%	(270)	(169)	(63)	(502)	-4%
The Fairways HOA [R]	1,110	(13)	381	1,478	14%	1,066	(66)	354	1,354	13%
Lakeridge Shores HOA [R]	3,391	4,725	6,556	14,673	21%	1,228	1,557	5,670	8,456	14%
2004 GROUP TOTAL	7,383	7,215	8,280	22,878	16%	4,065	2,604	6,727	13,396	9%

Table 3 above provides a summary and comparison of results of the ETCS using both methodologies. The table shows that approximately 15,400 thousands of gallons were saved by the 2003 controller group over the 3-year study duration using the average use methodology, and 13,300 thousands of gallons using the expected use methodology. For the 2004 controller group, data indicates that approximately 22,900 thousands of gallons were saved over the 3-year study duration using the average approach, and 13,400 thousands of gallons using the expected approach. Appendices D and E provide greater details of the results under each of the two methodologies for the 2003 and 2004 ET controller groups respectively.

There is no conclusive test to evaluate whether one methodology is better than the other. Since the expected use methodology appears to have difficulties estimating water for the autumn months, and the average approach is easier to understand, the results of the latter methodology are presented as the final results for this study in the remainder of this section.

Weather Influence

We would expect to see a high correlation of water usage with air temperature and evapotranspiration rates each month. Correlation coefficients were calculated for monthly usage with monthly air temperature and evapotranspiration rates. Water usage and air temperature have a correlation coefficient of 74%, and water usage and evapotranspiration rates 38%, indicating that air temperature is the greater driver of irrigation water demand in the area.

Key weather variables are illustrated in Appendix C. The first graph in Appendix C shows that ET rates and air temperature are fairly consistent year-to-year. Precipitation and soil temperature are not consistent from year-to-year but follow the same annual pattern of rise and fall in general. The second and third graphs show the departure of air temperature in the study years for the 2003 and 2004 ET controller groups compared to their base periods. Of note is the warm temperature in the fall of 2003, the cool spring months and then sharp temperature increase in July and August in 2005, affecting the 2003 controller group. For the 2004 ET controller group, we would expect the cool fall months of 2004, 2005, and 2006 to affect study results, as well as the cool spring months in 2005.

Water Rates

In 2005 the structure of water rates for irrigation meters changed. Previously, irrigation meters were charged at the highest rate for water because the treated water is used during peak periods. In 2005 an incentive was created for new irrigation sites to establish plantings in the shoulder (off-peak) months. During the months of June through September the rate is at the highest tier. For the remainder of the year the rate is at a lower tier. This rate change may cause greater watering system-wide during the months of May and October than in previous years under the old rate structure. This rate change should not have affected the study sites since the programmed irrigation schedules were not changed by TMWA staff (unless special circumstances warranted a change). Consequently, no attempt was made to quantify this effect; however, potentially, it may have had some impact on the pattern and amount of water used if ET controllers were tampered with and reprogrammed.

2003 ET Controller Group Results

Summary results for the 2003 ET Controller group are shown in Table 4. At first glance, it appears that there were diminishing water savings over the 3-year study period for the 2003 controller group; however, this total result is driven by the largest water user, the Vistas HOA. Removing this site, total water savings reduced between 2003 and 2004 but were greatest in 2005. Water savings ranged from 2% to 28% for the 2003 ET Controller sites over the 3-year duration of the study; however, during some years, for some sites, savings reached as high as 56%. For the entire 2003 ETCS group, average savings was 3%.

The Vistas HOA was considered a good candidate for the ETCS because of numerous customer complaints of water waste and large turf areas. The site actually turned out to be a poor site for the ETCS because, like the other sites in the ETCS that did not perform as well, the primary reasons for water waste included poor system design and management⁸. Continual problems at The Vistas HOA included broken valves, pipes, (sometimes caused by excessive water pressure), and electrical shorts at the ET controllers. Due to the way the water drained from the irrigated site, some major water leaks were not detected for several days. It became clear during the second year of the ETCS that the Vistas HOA was a good candidate for major retrofit work including new landscape design, replacement of plant materials in certain spots, and hardscape areas. During 2003 and 2004 the landscape management company replaced sprinkler heads in the study area. In 2006 the Vistas HOA removed sod and replaced much of the irrigation system with assistance of funding from TMWA's annual conservation budget.

The individual commercial sites all benefited from water savings during the ETCS period. Interestingly, not all sites benefited proportionately the same in each of the study years. For example, in 2004, Greg Street buildings C and D had lower savings than in 2003, but buildings A and B had greater savings. The Manogue church site had much lower savings in 2003 due to building construction activities. The high water savings at McCarran Landing is attributed to good landscape design and layout, a simple irrigation system, and all-turf plant materials.

⁸ Note that management problems may be the result of either the site owner or the landscape contractor, or both. Problems found by landscape contractors may not be fixed owing to budgetary limitations or wishes of the site owner. On the other hand, poor maintenance of systems by landscape contractors may result in water waste.

Table 4 – Summary Results of 2003 ET Controller Group

Site	PERCENT SAVINGS OVER HISTORICAL AVERAGE				THOUSANDS OF GALLONS SAVINGS REPORTING PERIOD MAY - OCTOBER			
	2003	2004	2005	Total	2003	2004	2005	Total
2003 Controller Group								
Vistas HOA	10%	11%	3%	2%	2,145	2,309	536	4,989
Coit Plaza	23%	9%	23%	11%	280	113	274	666
Greg Center- Bldg. A	8%	13%	3%	7%	164	259	67	489
Greg Center- Bldg. B	18%	21%	11%	13%	226	269	137	631
Greg Center- Bldg. C	43%	23%	14%	22%	416	223	138	778
Greg Center- Bldg. D	44%	19%	26%	21%	166	72	99	338
Manogue - Church	2%	10%	26%	4%	23	125	307	454
Manogue - Post Office	32%	13%	45%	15%	322	130	444	897
McCarran Landing	35%	49%	56%	28%	704	978	1,134	2,817
Redfield Promenade	18%	7%	33%	8%	735	293	1,339	2,366
Sierra Marketplace Office	29%	24%	17%	18%	411	344	245	999
TOTAL (THOUSANDS OF GALLONS)				3%	5,591	5,113	4,719	15,423

Figures 4 and 5 below demonstrate that although percent water savings were greater at the individual commercial sites, due to the size of landscaped area, the Vistas HOA still benefited from the greatest total volume of water savings.

Figure 4

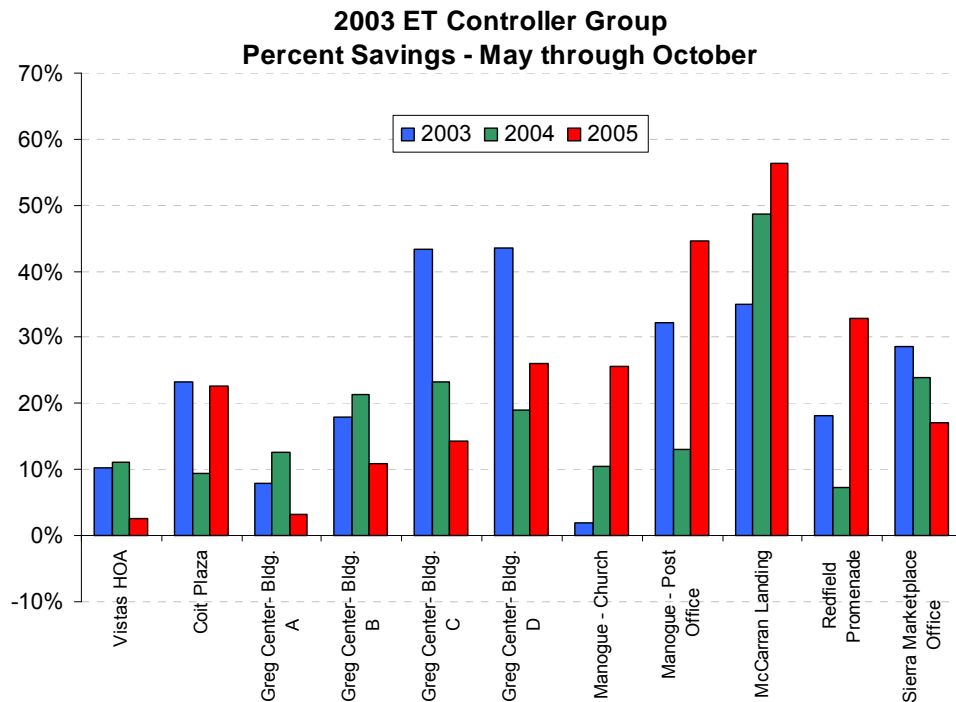
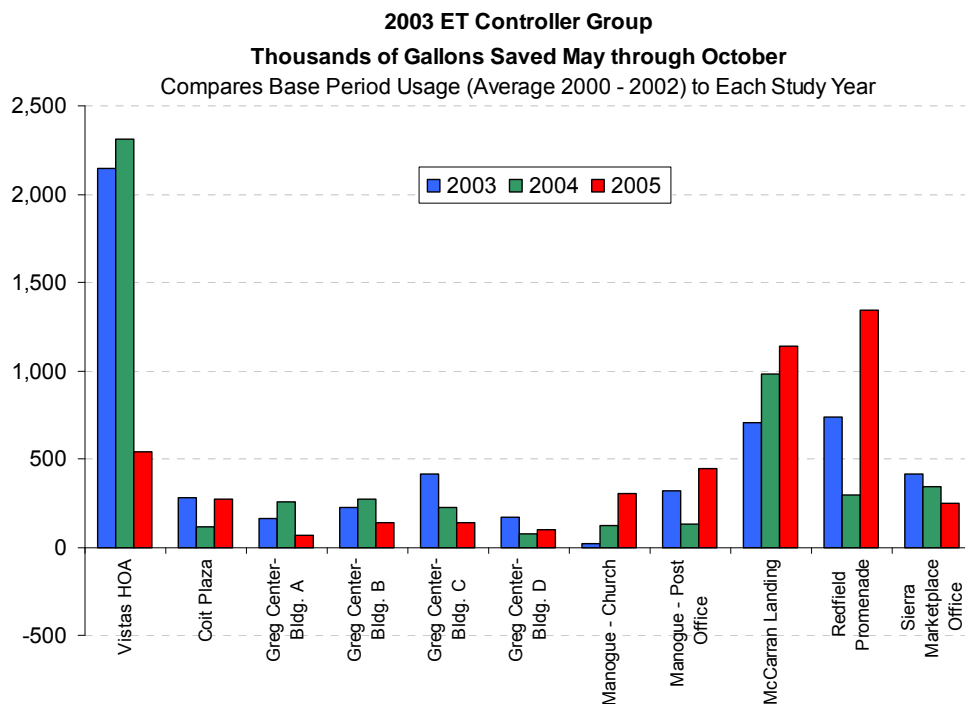


Figure 5



2004 ET Controller Group Results

In aggregate, the 2004 controller group achieved about the same water savings in 2004 and 2005, and increased water savings in 2006. Summary results for the 2004 ET Controller group are shown in Table 5. The 2006 results are largely driven by Lakeridge Shores HOA which experienced greater water savings in each successive year of the study, compensating for some sites (Cimarron HOA and two individual commercial sites in particular) that used more water in 2006 than in the base period.

The Fairways HOA in particular suffered from tampering with the ET controllers. At Mill Creek HOA the controllers were not only tampered with, but the temperature sensors removed in 2006. Since the temperature sensors make the largest difference in water application between this type of ET controller and conventional controllers, there was water waste at this site. Mill Creek HOA water savings are also likely understated since this was the site of another ET controller study performed by the University of Nevada Reno Cooperative Extension during the years that are used as the base period for this study. The results suggest little difference between the Aqua Conserve controllers and

the different type of ET controller used during that study. Slight change may be due to the controllers or other factors such as some improvement to the irrigation system.

Cimarron HOA suffered from continual leak problems caused largely by an extensive drip irrigation system that is not buried sufficiently under the earth and is therefore susceptible to sun exposure and erosion of pipe material, as well as devastation by coyotes and other wild animals. An ornamental water feature that was intermittently used is also thought to be a source of large fluctuating water use.

Table 5 – Summary Results of 2004 ET Controller Group

Site	PERCENT SAVINGS OVER HISTORICAL AVERAGE				THOUSANDS OF GALLONS SAVINGS REPORTING PERIOD MAY - OCTOBER			
	2004	2005	2006	Total	2004	2005	2006	Total
2004 Controller Group								
4840 Mill St	18%	26%	26%	23%	85	125	126	335
1301 Corporate Blvd	55%	49%	-30%	25%	267	240	(146)	361
3001 Skyline Blvd	18%	34%	26%	26%	66	125	96	286
1150 Corporate Blvd	42%	61%	65%	56%	364	523	559	1,445
4865 Longley Ln	35%	45%	-48%	37%	121	153	(165)	109
Northgate Village HOA	25%	20%	17%	21%	1,477	1,221	1,013	3,712
Cimarron HOA [R]	6%	-2%	-4%	-7%	447	(122)	(264)	62
Mill Creek HOA [R]	1%	5%	3%	3%	56	239	126	421
The Fairways HOA [R]	31%	0%	11%	14%	1,110	(13)	381	1,478
Lakeridge Shores HOA [R]	15%	21%	28%	21%	3,391	4,725	6,556	14,673
TOTAL (THOUSANDS OF GALLONS)				16%	7,383	7,215	8,280	22,878

As with the 2003 ET Controller Group, Figures 6 and 7 below demonstrate that sites with the greatest percent water savings do not necessarily enjoy the greatest volume of water savings. Since Lakeridge Shores HOA had the largest irrigated area of the 2004 group, it benefited from the greatest total volume of water savings.

Lakeridge Shores HOA is also believed to have experienced greater water savings because the landscaping is cared for by the site owners rather than a landscape company. The landscape staff took keen interest in learning about the ET controllers and conducted scheduled routine landscape maintenance. Leaks in the irrigation system tended to be found and rectified quicker than at the other large homeowner association sites.

Figure 6

**2004 ET Controller Group
Percent Savings - May through October**

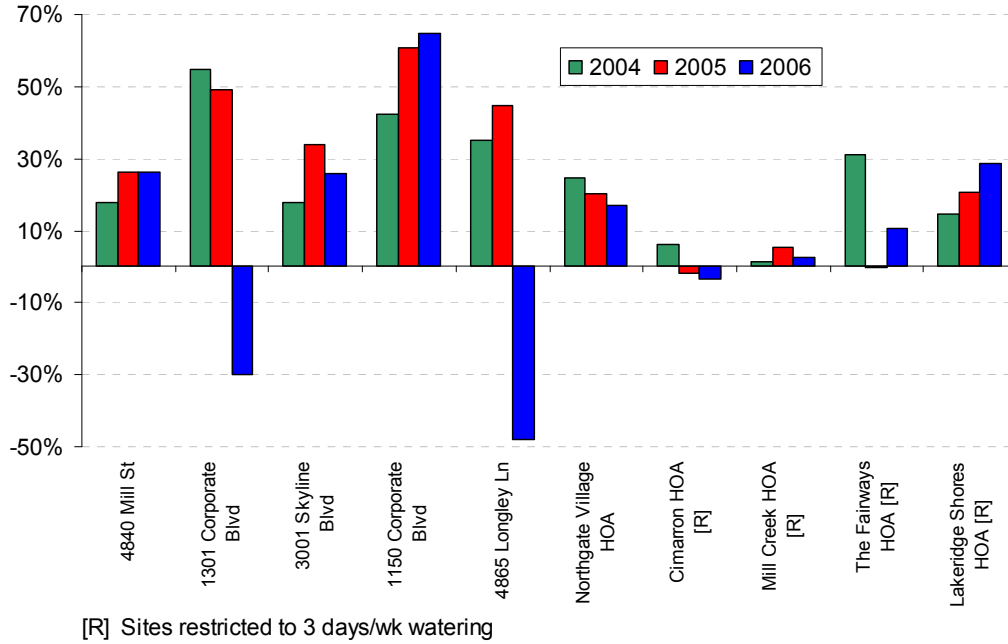
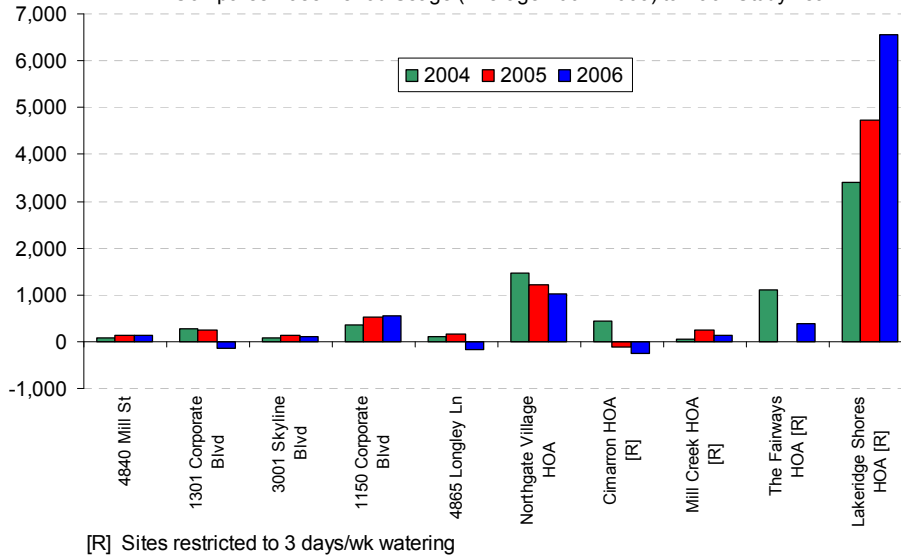


Figure 7

**2004 ET Controller Group
Thousands of Gallons Saved May through October
Compares Base Period Usage (Average 2001- 2003) to Each Study Year**



SUMMARY

Smart controllers are irrigation controllers that automatically adjust the irrigation schedule based on changing weather or soil moisture conditions. They are designed to give the landscape the amount of water it needs and at proper frequencies to keep the plants healthy. Studies indicate that smart controllers may deliver water savings ranging from 15-40% depending on the region and the property's previous watering schedules⁹.

Smart controllers may also be a time and money saver for contractors, management companies, home owners and business owners. Potential benefits include:

- Reduced call backs for contractors,
- Reduced plant mortality due to improper watering,
- Reduced overspray onto sidewalks and parking lots thus reducing potential liabilities and reduce the possibility of getting a water waste fine due to over-watering; and,
- Monetary savings to the water bill payer.

Water Savings Potential to TMWA and its Customers

The results of the ETCS compare favorably to other ET controller study results cited by the Irrigation Association and water purveyors across the nation. Although most ET controller studies report results in terms of average savings for all sites, it is important not to use average savings numbers from this study due to the wide differences in results from site to site caused by site design and management problems rather than ET controller performance. This study indicates water savings potential up to 56% over current water usage with traditional irrigation sprinkler controllers, depending on site-specific conditions including:

- irrigation design and assembly,
- plant materials,
- age of irrigation equipment and maintenance schedule of irrigation equipment; and,
- landscape features such as slopes and ornamental water features.

⁹ Source: www.snwa.com. The Southern Nevada Water Authority.

It is inconclusive whether 2004 ET Controller Group sites restricted to 3-days-a-week watering schedules with this type of ET controller performed worse, as well as, or better than sites that were not restricted to watering three days per week. Due to historical data and site design and management problems encountered at Cimarron HOA, Mill Creek HOA, and the Fairways HOA, these results cannot be compared to the results from sites that were permitted to water any day of the week.

Based on the dataset provided by this study, water savings potential (percentage rather than volume) appears to be greatest at individual commercial sites. Total volume of water savings is greatest at larger irrigated turf sites even though reduction of water application per square foot is not as great. Potential reasons for the greater success of individual commercial sites over the large homeowner association sites include:

- The individual commercial sites have had fewer meter changes and are therefore providing better comparison between the base period water usage and the study period years' usage,
- Management of systems and leaks are better managed at the smaller sites (leaks at larger sites can take long time to find),
- System pressure varies on the larger sites, particularly those with elevation changes, causing more leaks; and,
- The individual sites have less difficult landscape layouts to water. For instance, many of the HOA sites have small turf patches between homes or small patches of turf under trees that are difficult to water in the right amount when a station is programmed for a larger area.

The challenge with increased use of ET controllers in Washoe County is allowing their use with the assigned day watering schedule. Since many of the ET controllers use satellite data, their use is optimized when allowed to run automatically when the plant needs water (i.e. unrestricted watering days and times). To comply with local law, only ET controllers that can be programmed to account for local watering restrictions could be permitted, causing an enforcement issue; alternatively all sites using ET controllers could be exempted (receive a variance) to water off-schedule. This latter proposal would necessarily have to be codified by the local municipalities and documented in the

TMWA's rules. This watering restriction challenge would also extend to residential customers and be harder to enforce due to the number of sites to be inspected, and location of controllers in private property.

Smart irrigation technology is more expensive than the standard equipment currently used to irrigate landscapes. In order to make this technology more accessible, several water providers are providing rebates toward the purchase of smart controllers. Rebate programs may or may not be a viable way to expand or promote the use of ET controllers for TMWA customers. Unlike most water purveyors, TMWA's use of water is heavily regulated by federal and local laws that forbid reuse of conserved water. TMWA cannot "hook-up" new customers with water saved by existing customers. As such, there is no revenue stream generated by conservation to pay for promotion of conservation devices. TMWA promotes conservation to reduce and/or delay costs associated with expanded water treatment facilities, to store water upstream for use during drought periods and other emergency circumstances, and, more generally, to encourage responsible water use.

The ETCS results show that smart irrigation technology can be an effective tool for reducing water waste, water demand for the entire system, and enabling individual customers to reduce their water bill. Examples of current rebate programs offered around the country are given below. Typically, only models from manufacturers that have been approved by the Irrigation Association's Smart Water Application Technology product testing qualify for rebate.

In Southern Nevada, the Southern Nevada Water Authority ("SNWA") is encouraging the use of smart controllers by offering rebates to all customers for new installation or retrofit of existing irrigation controllers. For single family residential customers, rebate coupons are valid up to \$200 or 50% off the purchase price of the product, whichever is less. Other rebate programs are available for commercial and multi-family residential customers.

Sonoma County Water Agency, Northern California is currently providing a cash rebate of up to \$450 for the purchase of a Smart Controller and associated signal fees (for satellite systems) for residential customers and small commercial customers.

Businesses with large landscapes and 13 or more active stations on their irrigation system may qualify for rebates up to \$1,100.

The **Metropolitan Water District, Southern California**, rebates vary by participating water agency, however, up to \$630 per irrigated area is available for both newly planted landscapes and existing landscapes upgrading to smart controller irrigation technology. The rebate amount is capped at the price of the new device.

In **Colorado, the Town of Castle Rock** is offering rebates to residents; however, rebate participants must also attend a Water Wiser Workshop. The workshops cover Castle Rock's water supply, water system, efficient irrigation methods and fundamentals of water conservation with a focus on landscaping practices. Rebates cover 50% of the cost of the controller, up to \$300.

Appendix A
List of Participating Sites

2003 ET Controller Sites

Address	Square Feet Turf Area	Controller Size (# of Stations)	Meter Size	Meter Number
	<i>by meter</i>		<i>in inches</i>	
The Vistas HOA [1], [2]				
1	61,102	12	2.0	18476086
1a		8		
2	65,740	12	2.0	18476078
10		24		
3	37,014	12	2.0	18973805
3a		6		
4	12,742	12	2.0	18476083
5	32,470	16	2.0	19094645
6	13,705	12	2.0	18476089
7	28,213	12	2.0	20670
13		24		
9	16,378	16	2.0	18476074
11	19,112	12	2.0	18476093
11a		12		
12	3,665	24	2.0	29979
7a	23,084	16	2.0	32341159
14	74,555	12	2.0	19090159
8		12		
15	9,374	8	2.0	15737
Subtotal The Vistas Controllers	397,154	19	13	
Individual Commercial Sites [1]				
Coit Plaza	10,052	12	1.5	19748149
Greg Center- Bldg. A	25,792	12	2.0	27651
Greg Center- Bldg. B	13,917	12	1.5	33479997
Greg Center- Bldg. C	9,156	12	2.0	19094575
Greg Center- Bldg. D	3,520	6	2.0	32987658
Manogue - Church	16,391	16	2.0	19653756
Manogue - Post Office	11,600	24	1.5	30080
McCarran Landing	22,617	6	1.5	19090442
Redfield Promenade	18,453	64	2.0	11346
Redfield Promenade			2.0	34172
Ridgeview Plaza South	41,995	16	2.0	18973776
Ridgeview Plaza North	56,294	32	2.0	14988
Sierra Marketplace Office	13,305	12	2.0	8076
Sierra Marketplace Gallery	12,495	12	2.0	19090154
Vista Industrial Park	4,605	8	2.0	631318
Subtotal Commercial Sites Controllers	260,192	14	15	
<hr/>				
Total 2003 Controller Group	<u>Turf Sq Ft</u> 657,346	<u>Controllers</u> 33	<u>Meters</u> 28	

[1] Installed Spring 2003.

[2] Site numbers assigned by TMWA staff for monitoring.

2004 ET Controller Sites

Page 1

Address	Square Feet Turf Area by meter	Controller Size (# of Stations)	Meter Size in inches	Meter Number
Individual Commercial Sites [1]				
4840 Mill St	6,233	6	1.0	20628
	4,444	6		
1301 Corporate Blvd	4,578	12	1.5	6098437
3001 Skyline Blvd	3,539	8	2.0	28818
1150 Corporate Blvd	1,888	6	1.5	19087340
	2,392	8		
4865 Longley Ln	4,916	6	2.0	32987647
Subtotal Commercial Sites Controllers		7	5	
Northgate Village HOA [2]				
1882 E Minaret Cir	13,519	6	2.0	20461
1915 E Minaret	17,942	8	2.0	19092168
	23,092	6		
1914 E Minaret	15,778	6	2.0	32341155
1931 Tuolumne	13,343	12	2.0	11850
1889 Tuolumne	14,974	8	2.0	16562
Subtotal Northgate Village Controllers	98,648	6	5	
Cimarron HOA [2]				
8101 Spanish Springs Dr	9,216	16	2.0	18829963
	6,039	16		
	7,388	16		
	23,891	32		
	15,296	32		
100 Via Del Cobre	17,065	16	2.0	19094615
	10,707	16		
	20,629	16		
	8,915	16		
7995 Tres Arroyos	32,397	12	1.5	41110
	20,186	16		
	13,892	16		
7810 Tiburon Ct	6,244	8	2.0	19094574
	1,282	16		
	9,359	16		
3561 Avila Dr.	17,227	8	1.5	33475446
	5,422	8		
	8,373	16		
3156 Zaragoza Dr.	20,088	16	1.5	42347
7804 Almeria Ct	17,741	16	2.0	17146916
Subtotal Cimarron Controllers	271,357	20	7	

[1] Installed Fall 2003.

[2] Installed Spring 2004.

2004 ET Controller Sites

Page 2

Address	Square Feet Turf Area by meter	Controller Size (# of Stations)	Meter Size in inches	Meter Number
Mill Creek HOA [2]				
4063 Snowshoe Ln	24,786	16	1.5	19087349
4320 Loreto Ln	14,858	12	1.5	19094541
4329 Leeward Ln	8,487	6	1.5	19087330
	13,286	8		
4360 Loreto Ln	17,582	8	1.5	19087350
Subtotal Mill Creek Controllers	78,999	5	4	
The Fairways HOA [2]				
6247 Ingleston Dr	2,549	12	2.0	32987627
6200 Ingleston Dr (clubhouse)	319	12	2.0	19090206
	5,839	16		
	7,690	12		
	10,424	16		
6150 Vista Blvd	4,504	12	2.0	19090228
6202 Black Cinder Ct	1,184	8	0.75	37829
6197 Black Gypsum Ct	20,806	12	0.75	18103265
6070 Ingleston Dr	6,000	24	1.5	18819958
	17,821	16		
Subtotal The Fairways Controllers	77,136	10	6	
Lakeridge Shores HOA [2]				
151 Harbor Dr	29,366	8	2.0	19092210
	43,611	8		
2490 Catamaran	94,085	12	2.0	17848406
150 Harbor Cir	7,536	8	1.0	17198504
	5,583	8		
	11,342	8		
2693 Lakeridge Shore	24,319	8	1.0	19100433
2300 Greensboro Dr	14,844	8	2.0	19090189
	6,787	16		
	9,720	8		
	68,827	8		
	29,504	8		
2829 E Lakeridge Shore	21,102	8	2.0	19094641
2455 E Lakeridge Shore	79,063	8	2.0	19090190
2545 E Lakeridge Shore	11,411	8	1.0	19851503
2401 E Lakeridge Shore	102,469	12	3.0	3049653
2453 E Lakeridge Shore	39,777	8	3.0	18048571
	59,807	8		
2585 Spinnaker Dr	32,257	8	2.0	19653763
	33,415	12		
2485 Catamaran Dr	50,649	12	2.0	29116008
2677 Spinnaker Dr	18,828	8	1.0	19851783
Subtotal Lakeridge Shores Controllers	794,302	22	13	
Lakeside Church [2]	24,577	24	1.5	19568719
Subtotal Church Controllers		1	1	
<hr/>				
Total 2004 Controller Group	<u>Turf Sq Ft</u> 1,373,009	<u>Controllers</u> 139	<u>Meters</u> 41	

[1] Installed Fall 2003.

[2] Installed Spring 2004.

Appendix B
Regression Results for 'Expected Use' Methodology

LINEAR REGRESSION (OLS) RESULTS FOR

THE VISTAS HOA

<i>Regression Statistics</i>	
Multiple R	0.878533508
R Square	0.771821125
Adjusted R Square	71%
Standard Error	1.892671848
Observations	6

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	48.46763876	48.46764	13.53011	0.021235098
Residual	4	14.3288269	3.582207		
Total	5	62.79646566			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-14.25781316	7.047495579	-2.023104	0.113097	-33.82483829	5.30921197	-33.8248383	5.30921197
X Variable 1	0.39	0.105771473	3.678329	0.021235	0.095393013	0.682731606	0.095393013	0.682731606

LINEAR REGRESSION (OLS) RESULTS FOR

COIT PLACE

<i>Regression Statistics</i>	
Multiple R	0.75948877
R Square	0.576823192
Adjusted R Square	47%
Standard Error	4.971962104
Observations	6

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	134.783418	134.7834	5.452314	0.079812213
Residual	4	98.88162866	24.72041		
Total	5	233.6650467			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-22.99473024	18.51344753	-1.242056	0.282064	-74.39640746	28.40694699	-74.39640746	28.40694699
X Variable 1	0.648800928	0.277856806	2.335019	0.079812	-0.122654839	1.420256695	-0.122654839	1.420256695

LINEAR REGRESSION (OLS) RESULTS FOR

GREG STREET SITES A, B, C & D

<i>Regression Statistics</i>	
Multiple R	0.933292258
R Square	0.871034438
Adjusted R Square	84%
Standard Error	1.198557693
Observations	6

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	38.80962539	38.80963	27.01603	0.006526462
Residual	4	5.746162178	1.436541		
Total	5	44.55578757			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-8.301415729	4.462913132	-1.860089	0.136386	-20.69247471	4.089643256	-20.69247471	4.089643256
X Variable 1	0.348147239	0.066981084	5.197695	0.006526	0.16217755	0.534116927	0.16217755	0.534116927

LINEAR REGRESSION (OLS) RESULTS FOR

MANOGUE SITES - POST OFFICE AND CHURCH

<i>Regression Statistics</i>	
Multiple R	0.89073959
R Square	0.793417018
Adjusted R Square	74%
Standard Error	2.445201992
Observations	6

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	91.85365507	91.85366	15.36268	0.017254589
Residual	4	23.91605113	5.979013		
Total	5	115.7697062			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	(22.42)	9.104880091	-2.4624	0.069512	-47.69910769	2.859396551	-47.69910769	2.859396551
X Variable 1	0.54	0.136649476	3.919525	0.017255	0.156200534	0.915001643	0.156200534	0.915001643

LINEAR REGRESSION (OLS) RESULTS FOR

MCCARRAN LANDING

<i>Regression Statistics</i>	
Multiple R	0.849670075
R Square	0.721939237
Adjusted R Square	65%
Standard Error	2.546385487
Observations	6

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	67.33939781	67.3394	10.38534	0.03219997
Residual	4	25.9363162	6.484079		
Total	5	93.27571401			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-15.5425631	9.481643888	-1.639227	0.176509	-41.86788139	10.78275518	-41.86788139	10.78275518
X Variable 1	0.458593446	0.142304089	3.22263	0.0322	0.063493136	0.853693756	0.063493136	0.853693756

LINEAR REGRESSION (OLS) RESULTS FOR

REDFIELD PROMENADE

<i>Regression Statistics</i>	
Multiple R	0.948499494
R Square	0.899651291
Adjusted R Square	87%
Standard Error	4.401911615
Observations	6

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	694.8723709	694.8724	35.861	0.003910156
Residual	4	77.50730345	19.37683		
Total	5	772.3796744			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-61.70029416	16.39082479	-3.764319	0.019701	-107.2086137	-16.19197465	-107.2086137	-16.19197465
X Variable 1	1.473145866	0.245999683	5.988406	0.00391	0.790139835	2.156151896	0.790139835	2.156151896

LINEAR REGRESSION (OLS) RESULTS FOR

RIDGEVIEW PLAZA

<i>Regression Statistics</i>	
Multiple R	0.916562599
R Square	0.840086997
Adjusted R Square	80%
Standard Error	0.725177542
Observations	6

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	11.05068419	11.05068	21.0136	0.010152263
Residual	4	2.103529871	0.525882		
Total	5	13.15421406			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	(1.73)	2.700249136	-0.639765	0.557129	-9.224635247	5.7695828	-9.22463525	5.7695828
X Variable 1	0.19	0.040526358	4.584059	0.010152	0.073255791	0.29829467	0.07325579	0.29829467

LINEAR REGRESSION (OLS) RESULTS FOR

SIERRA MARKETPLACE

<i>Regression Statistics</i>	
Multiple R	0.843521755
R Square	0.711528951
Adjusted R Square	64%
Standard Error	2.461903078
Observations	6

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	59.79876796	59.79877	9.86621	0.034812442
Residual	4	24.24386707	6.060967		
Total	5	84.04263503			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-10.6240764	9.167067749	-1.158939	0.310955	-36.07598952	14.82783667	-36.0759895	14.82783667
X Variable 1	0.432154806	0.137582812	3.141052	0.034812	0.050162891	0.814146722	0.050162891	0.814146722

LINEAR REGRESSION (OLS) RESULTS FOR

**CORPORATE BLVD, MILL ST, AND LONGLEY LANE SITES
(MILL STREET GROUP)**

<i>Regression Statistics</i>	
Multiple R	0.960468781
R Square	0.92250028
Adjusted R Square	90%
Standard Error	1.156576051
Observations	6

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	63.69051435	63.69051	47.61309	0.002313188
Residual	4	5.350672645	1.337668		
Total	5	69.04118699			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	(17.30)	4.579344881	-3.77729	0.019481	-30.01184048	-4.5831885	-30.01184048	-4.58318845
X Variable 1	0.47	0.068012338	6.900224	0.002313	0.280467446	0.6581333	0.280467446	0.658133274

LINEAR REGRESSION (OLS) RESULTS FOR

SKYLINE BOULEVARD

<i>Regression Statistics</i>	
Multiple R	0.910750011
R Square	0.829465583
Adjusted R Square	79%
Standard Error	3.429107308
Observations	6

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	228.7749523	228.775	19.45568	0.011592878
Residual	4	47.03510771	11.75878		
Total	5	275.81006			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	(42.24)	13.57720055	-3.110894	0.035841	-79.9336568	-4.54079661	-79.9336568	-4.54079661
X Variable 1	0.89	0.201648309	4.410859	0.011593	0.32957561	1.449308852	0.32957561	1.449308852

LINEAR REGRESSION (OLS) RESULTS FOR

NORTHGATE VILLAGE HOA

<i>Regression Statistics</i>	
Multiple R	0.977388184
R Square	0.955287662
Adjusted R Square	94%
Standard Error	0.733486947
Observations	6

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	45.97815743	45.97816	85.46077	0.000761161
Residual	4	2.152012405	0.538003		
Total	5	48.13016984			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	(16.17)	2.904166737	-5.567413	0.005099	-24.23197149	-8.10541904	-24.2319715	-8.10541904
X Variable 1	0.40	0.043132626	9.244499	0.000761	0.278983912	0.518495145	0.278983912	0.518495145

LINEAR REGRESSION (OLS) RESULTS FOR

CIMARRON HOA

<i>Regression Statistics</i>	
Multiple R	0.835501075
R Square	0.698062046
Adjusted R Square	62%
Standard Error	2.060871693
Observations	6

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	39.27699185	39.27699	9.247755	0.038364182
Residual	4	16.98876855	4.247192		
Total	5	56.26576039			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	(12.26)	8.159811224	-1.502901	0.207288	-34.91870698	10.39192274	-34.918707	10.39192274
X Variable 1	0.37	0.121189352	3.041012	0.038364	0.032062012	0.705014572	0.032062012	0.705014572

LINEAR REGRESSION (OLS) RESULTS FOR

MILL CREEK HOA

<i>Regression Statistics</i>	
Multiple R	0.908291776
R Square	0.82499395
Adjusted R Square	78%
Standard Error	1.390387914
Observations	6

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	36.45269645	36.4527	18.85635	0.012229946
Residual	4	7.732714208	1.933179		
Total	5	44.18541066			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	(14.30)	5.505099102	-2.597383	0.060214	-29.58348966	0.98578457	-29.5834897	0.98578457
X Variable 1	0.36	0.081761621	4.34239	0.01223	0.128033739	0.58204798	0.12803374	0.58204798

LINEAR REGRESSION (OLS) RESULTS FOR

THE FAIRWAYS HOA

<i>Regression Statistics</i>	
Multiple R	0.757781846
R Square	0.574233326
Adjusted R Square	47%
Standard Error	0.935077219
Observations	6

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	4.717062951	4.717063	5.394817	0.080899026
Residual	4	3.497477622	0.874369		
Total	5	8.214540573			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	(0.26)	3.66592436	-0.070043	0.947522	-10.43502984	9.92148781	-10.43502984	9.92148781
X Variable 1	0.13	0.05436373	2.322675	0.080899	-0.024668973	0.277207474	-0.024668973	0.277207474

LINEAR REGRESSION (OLS) RESULTS FOR

LAKERIDGE SHORES HOA

<i>Regression Statistics</i>	
Multiple R	0.904614018
R Square	0.818326521
Adjusted R Square	77%
Standard Error	1.158653156
Observations	6

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	24.18811274	24.18811	18.01752	0.013213794
Residual	4	5.369908546	1.342477		
Total	5	29.55802129			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	(14.0790)	4.587568969	-3.068956	0.037331	-26.81620729	-1.341887708	-26.81620729	-1.341887708
X Variable 1	0.2892	0.068134482	4.244705	0.013214	0.100038756	0.478382837	0.100038756	0.478382837

LINEAR REGRESSION (OLS) RESULTS FOR

LAKESIDE CHURCH

<i>Regression Statistics</i>	
Multiple R	0.782148937
R Square	0.611756959
Adjusted R Square	51%
Standard Error	1.624983499
Observations	6

ANOVA

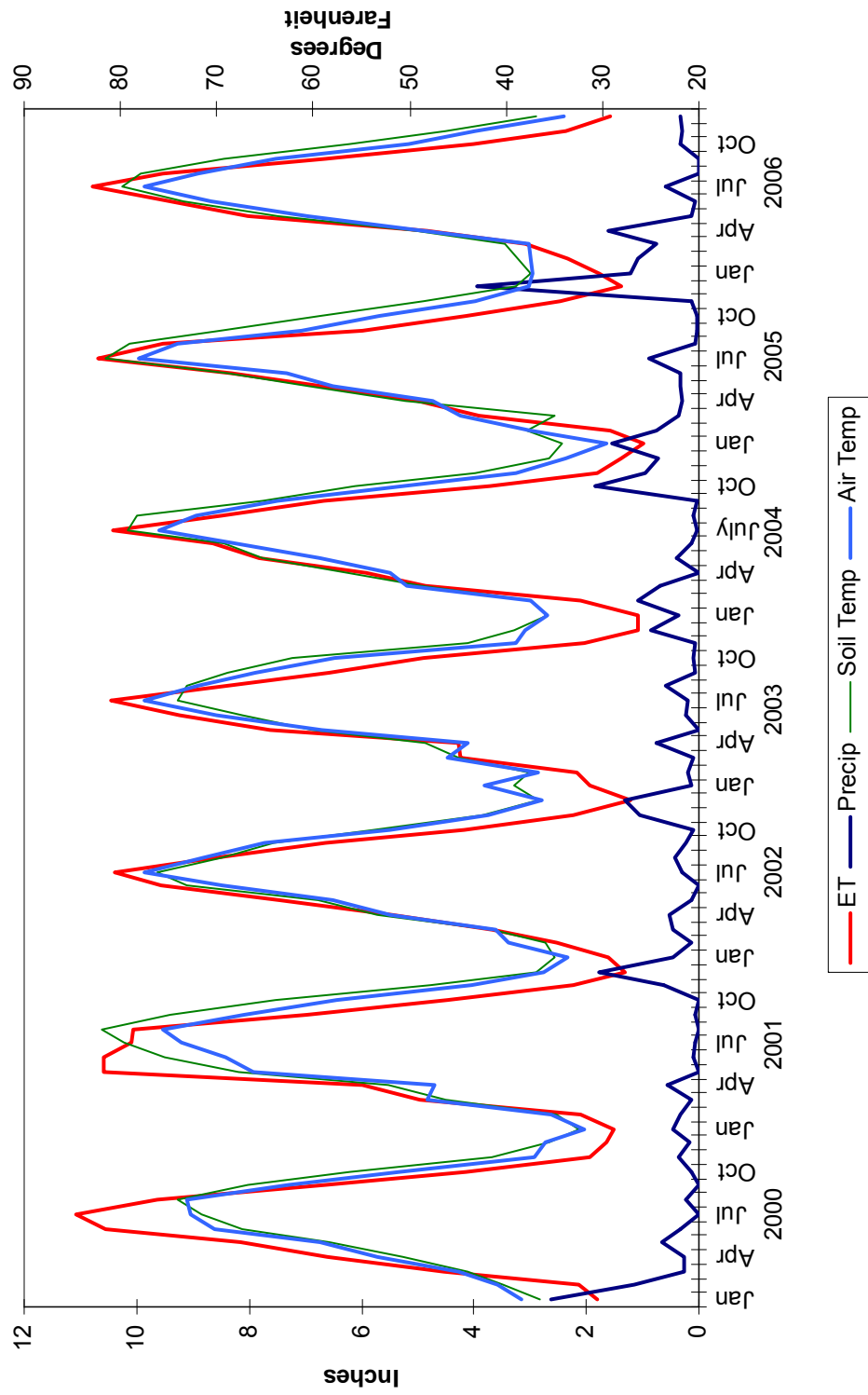
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	16.64305854	16.64306	6.302825	0.066019122
Residual	4	10.56228549	2.640571		
Total	5	27.20534403			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	(10.18)	6.433956387	-1.581585	0.188904	-28.03941044	7.687716994	-28.03941044	7.687716994
X Variable 1	0.24	0.095556991	2.510543	0.066019	-0.025409382	0.505209196	-0.025409382	0.505209196

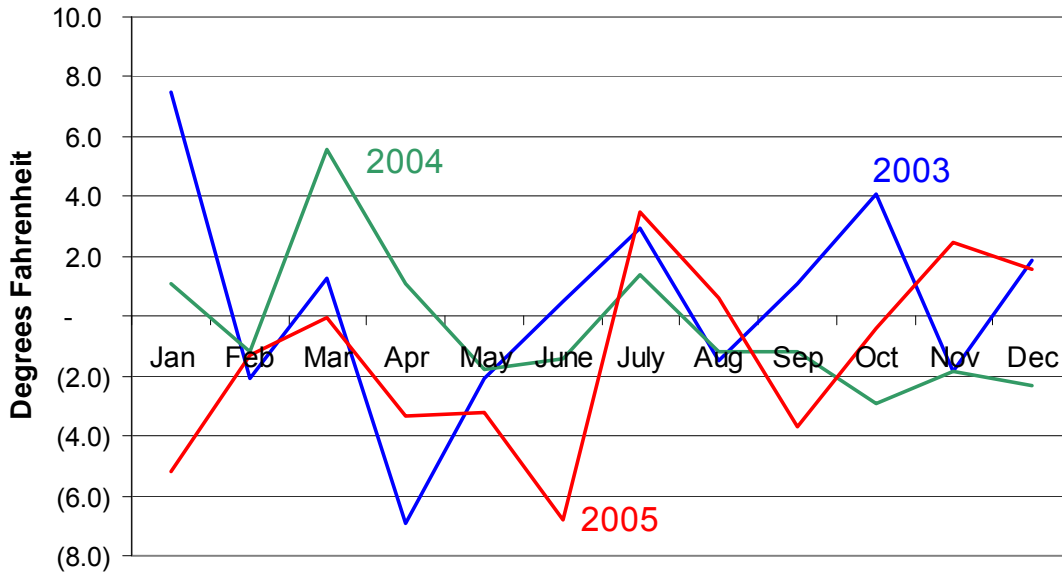
Appendix C

Weather Variables

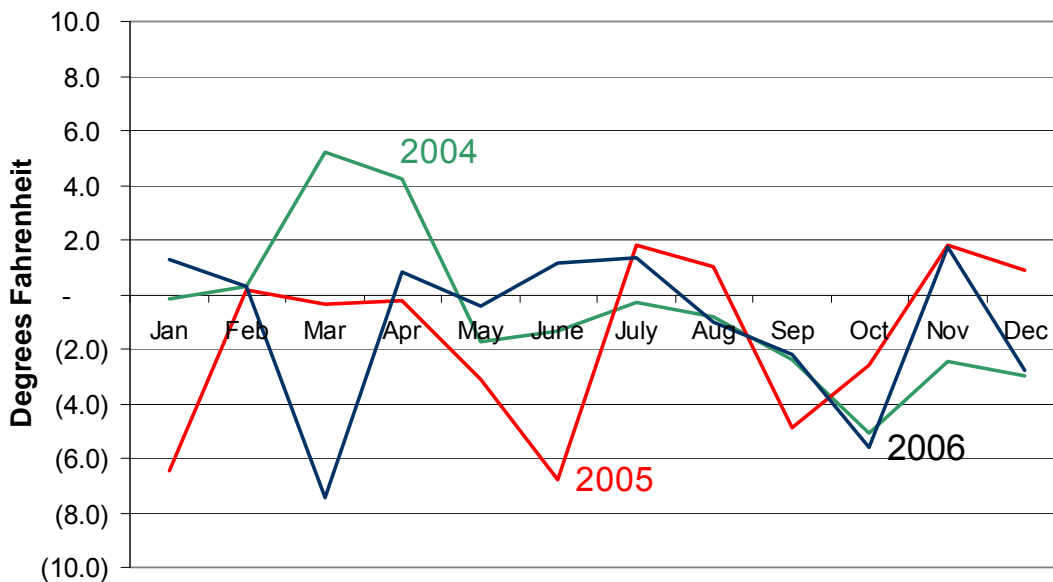
Weather Variables 2000-2006



**Average Monthly Air Temperature Departure
from Base Period 2000-2002**



**Average Monthly Air Temperature Departure
from Base Period 2001-2003**



Appendix D
2003 ET Controller Group Study Results

2003 ET Controller Group Results by Year

MAY THROUGH OCTOBER FOR EACH YEAR												
Site / Meter Number	Meter	Usage Comments	2003			2004			2005			
			% Savings Average	Gallons Saved Average	% Savings Expected	% Savings Average	Gallons Saved Average	% Savings Expected	% Savings Average	Gallons Saved Average	% Savings Expected	
Vistas HOA				1,000's of Gallons		1,000's of Gallons		1,000's of Gallons		1,000's of Gallons		
18476086	[1]	Major Leaks 2004 & 2005	11%	430	13%	868	18%	698	34%	1,373	30%	1,134
18476078	[1]	Major Leaks 2004 & 2005	-9%	(217)	-6%	(5)	-5%	(108)	-23%	(549)	-31%	(694)
18973805	[1]	Major Leaks 2005	-22%	(501)	-21%	(5)	-2%	(41)	-19%	(436)	-22%	(486)
18476083	[1]	Insufficient history	19%	359	21%	84	0%	5	4%	84	-2%	(27)
19094645	[2]	Major Leaks 2005	53%	1,464	53%	881	32%	871	-12%	(342)	-13%	(356)
18476089	[1]	Major Leaks 2004	22%	609	24%	485	16%	421	15%	405	12%	315
20670	[1]	Major Leaks 2004	10%	2,145	4%	2,469	3%	1,846	3%	536	0%	(114)
18476074	[1]	Major Leaks 2005	23%	280	25%	312	6%	66	23%	274	18%	208
18476093	[1]	Major Leaks 2004	8%	164	10%	209	13%	194	3%	67	-1%	(24)
29979	[1]	Major Leaks 2004	18%	226	20%	250	19%	234	11%	137	7%	88
32341159	[1]	Major Leaks 2004	43%	416	44%	432	23%	200	14%	138	11%	106
19090159	[1]	Major Leaks 2004	44%	166	44%	173	19%	64	26%	99	24%	87
15737	[1]	Major Leaks 2004	2%	23	5%	62	5%	62	26%	307	20%	218
Individual Commercial Sites			32%	322	34%	354	9%	86	45%	444	41%	382
Cott Plaza	[1]		35%	704	37%	757	47%	904	56%	1,134	54%	1,030
Greg Center- Bldg. A	[1]		18%	735	23%	1,008	-3%	(97)	33%	1,339	22%	791
Greg Center- Bldg. B	[1]		29%	411	30%	440	22%	302	17%	245	14%	187
Greg Center- Bldg. C	[1]		22%	3,446	9%	4,001	4%	2,015	27%	4,183	7%	3,073
Greg Center- Bldg. D	[1]											
Manogue - Church	[1]	Minor Leak July 2004										
Manogue - Post Office	[1]											
McCarran Landing	[1]											
Redfield Promenade	[1]											
Sierra Marketplace Office	[1]											
Subtotal Commercial Sites				5,591		6,470		3,861		4,719		2,960
TOTAL ALL SITES				5,591		6,470		3,861		4,719		2,960

[1] Received new meter during study period, and [2] No meter prior to study start.

2003 ET Controller Group Results – Average Use Methodology

All Figures in Thousands of Gallons unless otherwise noted

Site / Meter Number	Notes	Water Use since ET Installation			Annual Use in Base Period 2000 - 2002	Water Use Difference			Total Use Difference i = f + g + h	Percent Savings			Results for Meters Included in Study			
		May through Oct-03	May through Oct-04	May through Oct-05		2003	2004	2005		2003	2004	2005	Total % Savings m = i / (e * 3)	Average Annual Water Use in Base Period 2000 - 2002	Water Use Difference	Total % Savings p = o / n
Visitas HOA					e	f = e - a	g = e - b	h = e - c		j = f / e	k = g / e	l = h / e	m = i / (e * 3)	n = e	o = i / 3	
18476086	[1]	3,586	3,148	2,643	4,016	430	868	1,373	1,298	11%	22%	34%	11%	4,016	433	11%
18476078	[1]	4,382	3,416	4,367	2,485	(1,897)	(931)	(2,082)	(2,827)	-76%	-37%	-84%	-38%	2,370	(74)	-3%
18973805	[1]	2,987	2,375	2,919	3,087	(217)	(5)	(649)	(2,871)	-9%	0%	-23%	-1%	3,087	21	1%
18476083	[1]	2,909	3,200	4,207	3,087	178	(113)	(1,120)	64	6%	-4%	-36%	-6%	3,087	(189)	-8%
19094645	[1]	2,742	2,246	2,677	2,241	(501)	(5)	(436)	(506)	-22%	0%	-19%	-8%	2,241		
18476089	[2]															
20670		1,524	1,799	1,799	1,883	359	84	84	442	19%	4%	4%	8%	1,883	147	8%
18476074	[1]	1,863	1,620	6,946	1,629	(234)	9	(5,317)	(224)	-14%	1%	-326%	-5%	1,629	(75)	-5%
18476093	[1]	1,919	2,198	1,539	1,599	(320)	(599)	60	(918)	-20%	-37%	4%	-19%	1,599		
29979		1,295	1,878	3,101	6,274	1,464	881	(942)	2,346	53%	32%	-12%	28%	2,759	782	28%
32341159	[1]	2,111	2,235	2,315	2,720	609	485	405	1,095	22%	18%	15%	13%	2,720	365	13%
19090159	[1]	740	656	612	731	(9)	75	119	66	-1%	10%	16%	3%	731		
15737		843	1,667	542	1,080	237	(588)	538	(351)	22%	-54%	50%	-11%	1,080		
Subtotal Visitas HOA		26,501	26,438	33,867	26,601	100	163	(7,266)	263	0%	1%	-27%	0%	20,706	1,431	2%
Individual Commercial Sites																
Colt Plaza	[1]	925	1,092	931	1,205	280	113	274	392	23%	9%	23%	11%	1,205	131	11%
Greg Center- Bldg. A	[1]	1,880	1,785	1,977	2,044	164	259	67	422	8%	13%	3%	7%	2,044	141	7%
Greg Center- Bldg. B	[1]	1,027	984	1,116	1,253	226	269	137	494	18%	21%	11%	13%	1,253	165	13%
Greg Center- Bldg. C	[1]	543	736	821	959	416	223	138	640	43%	23%	14%	22%	959	213	22%
Greg Center- Bldg. D	[1]	216	310	283	382	168	72	99	239	44%	19%	26%	21%	382	80	21%
Manogue - Church	[1]	1,172	1,070	888	1,195	23	125	307	147	2%	10%	26%	4%	1,195	49	4%
Manogue - Post Office	[1]	675	867	553	897	322	130	444	453	32%	13%	45%	15%	897	151	15%
McCannan Landing	[1]	1,308	1,035	876	2,012	704	978	1,134	1,662	35%	49%	56%	26%	2,012	561	26%
Redfield Promenade	[1]	3,331	3,773	2,727	4,066	735	293	1,339	1,027	18%	7%	33%	8%	4,066	342	8%
Ridgeview Plaza South	[1], [3]															
Ridgeview Plaza North	[3]	1,026	1,093	1,192	1,437	411	344	245	754	29%	24%	17%	18%	1,437	251	18%
Sierra Marketplace Office	[4]															
Sierra Marketplace Gallery	[1], [5]															
Visita Industrial Park																
Total Savings (Additional) Use		38,604	38,183	45,233	42,150	3,546	2,968	(3,083)	6,514	8%	7%	-7%	5%	36,255	3,515	3%

[1] Received new meter during study period.
 [2] No meter prior to study period.
 [3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.
 [4] Dead meter prior to study start.
 [5] Insufficient historical data.

2003 ET Controller Group Results – Expected Use Methodology

All Figures in Thousands of Gallons unless otherwise noted

Site / Meter Number	Notes	Water Use since ET Installation			Expected Water Use			Water Use Difference			Percent Savings			Results for Meters Included in Study					
		May through Oct-03	May through Oct-04	May through Oct-05	May through Oct-03	May through Oct-04	May through Oct-05	2003	2004	2005	2003	2004	2005	Expected During Study	Difference from Expected	Total % Savings			
		a	b	c	d = a + b + c	e	f	g	h = e + f + g	i = e - a	j = f - b	k = g - c	m = i / e	n = j / f	o = k / g	p = l / h	q = h	r = l	s = r / q
Vistas HOA																			
1847/0096	[1]	3,586	3,148	2,643	9,377	4,136	3,846	3,777	11,758	550	698	1,134	13%	18%	30%	20%	11,758	2,391	20%
1847/0078	[1]	4,382	3,416	4,557	12,355	2,614	2,302	2,228	7,144	(1,768)	(1,114)	(2,339)	-68%	-48%	-105%	-73%	6,935	(946)	-14%
1897/3805	[1]	2,587	2,375	2,919	7,881	2,443	2,267	2,225	6,935	(144)	(108)	(694)	-6%	-5%	-31%	-14%	6,935	(946)	-14%
1847/0083	[1]	2,909	3,200	4,207	10,316	3,112	3,051	3,037	9,200	203	(148)	(1,170)	7%	-2%	-39%	-12%	9,200	(1,116)	-12%
1909/4645	[1]	2,742	2,246	2,677	7,665	2,266	2,205	2,191	6,663	(476)	(41)	(468)	-21%	-2%	-22%	-15%	6,663	(1,002)	-15%
1847/0089	[2]																		
1847/0074	[1]	1,524	1,709	1,769	5,122	1,938	1,904	1,772	5,514	414	5	(67)	21%	0%	-2%	7%	5,514	393	7%
1847/0074	[1]	1,883	1,620	6,946	10,429	1,681	1,584	1,565	4,810	(202)	(98)	(5,381)	-12%	-2%	-34%	-117%	4,810	(5,616)	-117%
1847/0093	[1]	1,919	2,198	1,539	5,656	1,637	1,546	1,524	4,707	(282)	(652)	(1,515)	-17%	-42%	-13%	-20%	4,707	(949)	-20%
25979	[1]	1,295	1,878	3,101	6,274	2,767	2,749	2,745	8,261	1,472	871	(358)	53%	21%	11%	24%	8,261	1,987	24%
3234/1159	[1]	2,111	2,235	2,315	6,661	2,766	2,656	2,630	8,051	655	421	315	24%	16%	12%	17%	8,051	1,390	17%
1909/0159	[1]	740	656	612	2,008	877	544	439	1,860	(112)	(173)	(173)	16%	-21%	-39%	-8%	1,860	(148)	-8%
15737	[1]	843	1,667	542	3,052	1,088	1,053	1,043	3,194	255	(614)	501	23%	-58%	48%	4%	3,194	142	4%
Subtotal Vistas HOA		26,501	26,438	33,867	86,806	27,313	25,607	25,176	78,097	812	(831)	(6,891)	1%	-1%	-11%	-6%	61,192	(2,533)	-4%
Individual Commercial Sites																			
Greg Center - Bldg. A	[1]	925	1,092	931	2,948	1,237	1,159	1,139	3,524	312	66	208	25%	6%	19%	17%	3,524	586	17%
Greg Center - Bldg. B	[1]	1,860	1,785	1,977	5,622	2,039	1,979	1,953	6,021	209	194	(24)	10%	10%	-1%	6%	6,021	379	6%
Greg Center - Bldg. C	[1]	1,027	984	1,116	3,127	1,277	1,218	1,204	3,689	250	234	88	20%	19%	7%	15%	3,689	572	15%
Greg Center - Bldg. D	[1]	543	736	821	2,100	975	936	927	2,839	432	200	106	44%	21%	11%	26%	2,839	739	26%
Greg Center - Church	[1]	216	310	283	809	389	374	370	1,132	173	64	87	44%	17%	24%	29%	1,132	323	29%
Manogue - Post Office	[1]	1,172	1,070	888	3,130	1,239	1,132	1,106	3,477	67	62	218	5%	5%	20%	10%	3,477	347	10%
McCarran Landing	[1]	1,308	1,035	878	3,221	2,065	1,938	1,908	5,910	757	904	1,030	37%	47%	54%	28%	5,910	2,690	46%
Redford Promenade	[1]	3,331	3,773	2,727	9,831	4,339	3,676	3,518	11,534	1,008	(97)	791	23%	-3%	22%	15%	11,534	1,703	15%
Ridgeway Plaza North	[1],[3]																		
Sierra Marketplace Office	[3]																		
Sierra Marketplace Gallery	[4]																		
Vista Industrial Park	[1],[5]	1,026	1,093	1,192	3,311	1,466	1,395	1,379	4,240	440	302	187	30%	22%	14%	22%	4,240	929	22%
Total Savings (Additional) Use		38,604	39,183	45,233	123,020	43,417	40,367	39,616	123,399	4,813	1,184	(5,617)	4%	1%	-5%	0%	106,494	6,556	6%

[1] Received new meter during study period.
 [2] New meter installed during study period.
 [3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.
 [4] Dead meter prior to study start.
 [5] Insufficient historical data.

Appendix E
2004 ET Controller Group Study Results

2004 ET Controller Group Results by Year

MAY THROUGH OCTOBER FOR EACH YEAR

Site / Meter Number	Meter	Usage Comments	2004				2005				2006			
			% Savings		Gallons Saved		% Savings		Gallons Saved		% Savings		Gallons Saved	
			Average	Expected	Average	Expected	Average	Expected	Average	Expected	Average	Expected	Average	Expected
Individual Commercial Sites														
4840 Mill St			18%	6%	85	26	26%	13%	125	52	26%	21%	126	92
1301 Corporate Blvd	[1]	Landscape mg't change '06	55%	52%	267	242	49%	46%	240	209	-30%	-34%	(146)	(161)
3001 Skyline Blvd			18%	9%	66	31	34%	24%	125	79	26%	22%	96	77
1150 Corporate Blvd	[1]		42%	41%	364	340	61%	59%	523	493	65%	64%	559	545
4865 Longley Ln	[1]	Large leak 2006	35%	30%	121	94	45%	39%	153	119	-48%	-55%	(165)	(181)
Northgate Village HOA														
20461			38%	34%	418	355	46%	42%	507	428	45%	43%	494	457
19092168	[1]		20%	12%	448	257	9%	-1%	209	(29)	-7%	-12%	(156)	(266)
32341155	[1]		21%	14%	191	118	31%	23%	286	195	42%	39%	386	344
11850			22%	17%	233	171	11%	4%	117	40	17%	14%	179	143
16562			28%	20%	188	119	15%	3%	103	16	16%	11%	110	70
Northgate Village HOA			25%	6%	1,477	1,020	20%	4%	1,221	650	17%	4%	1,013	748
Cimarron HOA [R]														
18829963		Major Leaks 2004												
19094615	[1]	Major Leaks 2005												
41110		Insufficient history												
19094574	[1]		8%	5%	171	99	-3%	-7%	(62)	(152)	-21%	-24%	(464)	(506)
33475446	[1]	Major Leaks 2004												
42347			16%	11%	276	190	-3%	-10%	(60)	(168)	11%	9%	200	150
17146916		Insufficient history												
Cimarron HOA			6%	1%	447	289	-2%	-2%	(122)	(320)	-4%	-2%	(264)	(356)
Mill Creek HOA [R]														
19087349	[1]		6%	0%	100	(3)	21%	15%	364	236	5%	1%	84	25
19094541	[1]		-4%	-10%	(40)	(101)	21%	15%	225	148	16%	13%	170	134
19087330	[1]	Temp. sensors removed '06	-12%	-22%	(122)	(211)	-27%	-43%	(285)	(397)	-16%	-22%	(163)	(215)
19087350	[1]	Temp. sensors removed '06	15%	6%	117	44	-8%	-23%	(65)	(156)	5%	-1%	35	(7)
Mill Creek HOA			1%	-2%	56	(270)	5%	-1%	239	(169)	3%	0%	126	(63)
The Fairways HOA [R]														
32987627	[1]	Controller tampered 2005	47%	47%	269	265	-16%	-17%	(89)	(94)	-6%	-7%	(35)	(37)
19090206		Controller tampered 2005	29%	28%	782	744	0%	-2%	(8)	(54)	12%	12%	328	305
19090228		Insufficient history												
37829			18%	17%	59	57	25%	25%	84	82	27%	26%	88	86
18103265		Insufficient history												
18819958		Insufficient history												
The Fairways HOA			31%	10%	1,110	1,066	0%	-1%	(13)	(66)	11%	3%	381	354
Lakeridge Shores HOA [R]														
19092210	[1]		24%	18%	690	475	38%	30%	1,096	789	36%	34%	1,056	955
17848406			2%	-10%	47	(189)	28%	12%	578	195	35%	32%	712	623
17198504			20%	13%	215	133	41%	35%	443	340	44%	41%	469	425
19100433	[1]		20%	-13%	37	(17)	13%	-48%	24	(50)	24%	17%	43	27
19090189	[1]		15%	8%	849	413	22%	14%	1,274	729	25%	23%	1,433	1,272
19094641	[1]	Insufficient history												
19090190	[1]		1%	-12%	19	(178)	21%	2%	355	34	24%	21%	413	339
19851503	[1]		21%	13%	74	42	21%	9%	74	26	28%	25%	97	82
3049653	[1]		14%	3%	308	53	21%	3%	467	52	31%	28%	699	604
18048571	[1]		12%	3%	321	72	0%	-18%	11	(394)	26%	23%	671	577
19653763	[1]		27%	19%	549	350	3%	-11%	72	(204)	31%	28%	638	541
29116008	[1]		13%	5%	225	81	16%	4%	275	62	12%	9%	214	149
19851783	[1]		15%	-2%	58	(6)	14%	-7%	57	(23)	28%	21%	112	74
Lakeridge Shores HOA			15%	2%	3,391	1,228	21%	2%	4,725	1,557	28%	9%	6,556	5,670
TOTAL ALL SITES														
					7,383	4,065			7,215	2,604			8,280	6,727

[1] Received new meter during study period., [R] Sites restricted to 3 days-a-week watering.

2004 ET Controller Group Results – Average Use Methodology

All Figures in Thousands of Gallons unless otherwise noted

Site / Meter Number	Notes	Water Use since ET Installation			Annual Use in Base Period 2001-2003	Water Use Difference			Total Use Difference	Percent Savings				Average Annual Water Use in Base Period 2001-2003	Results for Meters Included in Study	
		May through Oct-04				2004-2006				2004-2006					m = l/(e*3)	p = o/n
		May through Oct-04	May through Oct-06	c		2004	2005	2006		f = e-a	g = e-b	h = e-c	i = f+g+h			
a	b	d = a+b+c	e	f = e-a	g = e-b	h = e-c	i = f+g+h	j = f/e	k = g/e	l = h/e	m = l/(e*3)	n = e	o = l/3	Total % Savings	Total % Savings	
Individual Commercial Sites																
4540 Mill St		390	349	1,089	475	85	126	335	18%	26%	26%	475	112	23%	23%	
1301 Corporate Blvd	[1]	222	249	1,106	489	267	240	361	55%	49%	30%	489	120	25%	25%	
3001 Skiffins Blvd	[1]	302	273	818	368	66	96	286	18%	34%	26%	368	95	26%	26%	
1150 Corporate Blvd	[1]	497	538	1,137	861	364	523	1,445	42%	61%	65%	861	482	56%	56%	
4865 Langley Ln	[1]	222	190	920	343	121	153	109	35%	45%	48%	2,192	809	37%	37%	
Northgate Village HOA																
20451		683	594	1,884	1,101	418	494	1,418	38%	46%	45%	1,101	473	43%	43%	
19032168	[1]	1,805	2,044	6,257	2,253	448	507	501	20%	20%	9%	2,253	167	7%	7%	
32341155	[1]	739	644	1,927	930	191	286	863	21%	31%	42%	930	288	31%	31%	
11850		885	947	2,663	1,064	233	117	530	22%	11%	17%	1,064	177	17%	17%	
16562		480	565	1,603	668	188	103	401	28%	15%	16%	668	134	20%	20%	
Subtotal Northgate Village HOA		4,538	4,794	14,334	6,015	1,477	1,013	3,712	25%	20%	17%	6,015	1,237	21%	21%	
Cimarron HOA																
18229863		9,580	8,134	27,057	7,400	(2,181)	(1,944)	(4,859)	-29%	-10%	-26%	7,400	(511)	-15%	-15%	
19094615		3,682	4,750	3,240	3,380	(302)	140	(1,533)	-9%	-41%	4%	3,380	(511)	-15%	-15%	
41110		1,692	1,933	5,286	1,965	273	304	609	14%	2%	15%	1,965	(118)	-5%	-5%	
19094574	[1]	1,991	2,224	6,841	2,162	171	(62)	(354)	8%	-3%	-21%	2,162	(118)	-5%	-5%	
33475446	[1]	3,322	2,752	8,658	2,230	(1,083)	(523)	(1,970)	-49%	-23%	-16%	2,230	(118)	-5%	-5%	
42347		1,484	1,820	4,864	1,760	276	(60)	1,176	16%	-3%	11%	1,760	139	8%	8%	
17146916		4,498	4,064	10,644	8,144	3,646	4,080	13,787	45%	50%	74%	8,144	490	56%	56%	
Subtotal Cimarron HOA		26,249	25,677	75,022	27,039	790	3,943	6,096	3%	5%	15%	27,039	(490)	-7%	-7%	
Mill Creek HOA																
19097349	[1]	1,621	1,357	4,615	1,721	100	364	548	6%	21%	5%	1,721	183	11%	11%	
19094541	[1]	1,066	822	2,785	1,047	(40)	225	355	-4%	21%	16%	1,047	118	11%	11%	
19097330	[1]	1,321	1,199	3,678	(163)	(122)	(163)	(569)	-12%	-27%	-16%	1,037	(190)	-18%	-18%	
19097350	[1]	660	842	2,244	777	117	(65)	87	15%	-8%	5%	777	29	4%	4%	
Subtotal Mill Creek HOA		4,525	4,342	13,322	4,581	56	239	421	1%	5%	3%	4,581	140	3%	3%	
The Fairways HOA																
32987627	[1]	299	657	1,559	568	269	(89)	145	47%	-16%	-6%	568	48	9%	9%	
19090206		1,868	2,657	6,847	2,650	782	(8)	1,102	29%	0%	12%	2,650	367	14%	14%	
19090228		249	287	776	544	295	257	856	54%	47%	56%	544	77	52%	52%	
37829		273	248	765	332	59	84	231	18%	25%	27%	332	77	23%	23%	
18103265		241	357	916	257	16	(100)	(145)	6%	-39%	-24%	257	77	23%	23%	
18819958		1,467	2,282	5,592	3,721	2,254	1,439	5,571	61%	39%	50%	3,721	493	50%	50%	
Subtotal Fairways HOA		4,397	6,488	16,455	8,072	3,675	1,584	7,760	46%	20%	31%	8,072	493	14%	14%	
Lakeridge Shores HOA																
19092210	[1]	2,210	1,804	5,858	2,900	690	1,096	2,843	24%	38%	36%	2,900	948	33%	33%	
17848406		2,009	1,478	4,831	2,056	47	578	1,337	2%	28%	35%	2,056	446	22%	22%	
17198504		860	632	2,098	1,075	215	443	1,128	20%	41%	44%	1,075	376	35%	35%	
19100433	[1]	143	156	436	180	37	24	104	13%	13%	24%	180	35	19%	19%	
19090189	[1]	4,838	4,413	13,506	5,687	849	1,274	3,557	15%	22%	25%	5,687	1,186	21%	21%	
19090190	[1]	778	784	2,326	1,722	(272)	(258)	(809)	-54%	-55%	-51%	1,722	263	15%	15%	
19091503	[1]	1,703	1,367	4,379	2,326	19	355	1,433	1%	21%	24%	2,326	81	24%	24%	
3049653	[1]	269	269	784	343	74	97	244	21%	21%	21%	343	81	24%	24%	
19048571	[1]	1,967	1,808	5,351	2,275	308	467	1,473	14%	21%	31%	2,275	491	22%	22%	
19653763	[1]	2,259	2,569	6,737	2,063	549	72	1,259	12%	0%	0%	2,063	334	13%	13%	
29116008	[1]	1,522	1,991	4,930	1,514	1,472	225	1,747	27%	3%	31%	1,514	420	20%	20%	
19851783	[1]	334	335	949	392	58	57	226	15%	14%	14%	392	75	19%	19%	
Subtotal Lakeridge Shores HOA		20,406	19,078	56,711	23,525	3,119	4,447	13,864	13%	19%	27%	23,525	4,881	20%	20%	
Lakeside Church		1,035	882	2,897	869	(166)	(111)	(291)	-19%	-2%	-13%	869	7,887	16%	16%	
Total Savings (Additional) Use		62,783	62,632	183,811	72,635	9,852	10,004	34,095	14%	14%	20%	48,850	7,887	16%	16%	

[1] Received new meter during study period.

[2] Removed for statistical purposes due to landscape changes. ET Controller remains in place.

2004 ET Controller Group Results – Expected Use Methodology

All Figures in Thousands of Gallons unless otherwise noted

Site / Meter Number	Water Use since ET Installation			Total 2004-2006	Expected Water Use			Water Use Difference			Percent Savings			Results for Meters Included in Study					
	May through Oct-04	May through Oct-05	May through Oct-06		May through Oct-04	May through Oct-05	May through Oct-06	2004	2005	2006	2004	2005	2006	Expected During Study	Difference from Expected	Total % Savings	Total % Savings	Total % Savings	
Notes	a	b	c	d=a+b+c	e	f	g	h=e+f+g	i=e-a	j=f-b	k=g-c	l=i+j+k	m=i/e	n=j/f	o=k/g	p=l/h	q=h	r=i	s=r/q
Individual Commercial Sites																			
4840 Mill St	390	350	349	1,089	416	402	441	1,259	28	52	92	170	6%	13%	21%	13%	1,259	170	13%
1301 Corporate Blvd	222	249	635	1,106	464	458	474	1,396	242	209	(161)	290	52%	46%	-34%	21%	1,396	290	21%
3001 Skyline Blvd	302	244	273	819	333	322	350	1,005	31	79	77	187	9%	24%	22%	19%	1,005	187	19%
1150 Corporate Blvd	487	338	302	1,127	837	831	847	2,515	340	493	545	1,378	41%	59%	64%	59%	2,515	1,378	55%
4885 Longley Ln	222	190	508	920	316	309	327	953	94	119	(161)	33	30%	39%	-55%	3%	953	33	3%
Northgate Village HOA																			
20481	683	594	607	1,884	1,038	1,022	1,064	3,125	355	428	457	1,241	34%	42%	43%	40%	3,125	1,241	40%
19092168	1,805	2,044	2,408	6,257	2,962	2,015	2,142	6,219	157	(20)	(268)	(38)	12%	-1%	-12%	-1%	6,219	(38)	-1%
32341155	739	644	544	1,927	857	839	888	2,583	118	195	344	656	14%	23%	39%	25%	2,583	656	25%
11850	831	947	885	2,663	1,002	987	1,028	3,017	171	40	143	354	17%	4%	14%	12%	3,017	354	12%
16562	480	565	558	1,603	599	581	628	1,808	119	16	70	205	20%	11%	11%	11%	1,808	205	11%
Subtotal Northgate Village HOA	4,538	4,794	5,002	14,334	5,558	5,444	5,750	16,752	1,020	650	748	2,418	18%	12%	13%	14%	16,752	2,418	14%
Cimarron HOA																			
18829683	9,580	8,134	9,343	27,057	7,134	7,088	7,246	21,449	(2,446)	(1,066)	(2,097)	(5,608)	-34%	-15%	-29%	-26%	9,444	(2,228)	-24%
19094615	3,682	4,750	3,240	11,672	3,134	3,073	3,237	9,444	(48)	(167)	(3)	(2,228)	-17%	-55%	0%	-4%	9,444	(2,228)	-24%
41110	1,692	1,933	1,661	5,286	1,680	1,609	1,800	5,089	(12)	(324)	138	(197)	-1%	-20%	8%	-4%	5,286	(197)	-9%
19094574	1,991	2,224	2,626	6,841	2,090	2,072	2,120	6,282	99	(152)	(608)	(509)	5%	-7%	-20%	-37%	6,282	(509)	-9%
33475446	3,322	2,752	2,584	8,658	2,095	2,063	2,153	6,312	(1,226)	(888)	(431)	(2,346)	-38%	-33%	-24%	-37%	6,312	(431)	-9%
42347	1,484	1,620	1,580	4,684	1,074	1,052	1,100	3,098	80	(168)	150	172	11%	-10%	9%	3%	3,098	172	3%
16163565	2,411	2,382	2,418	7,211	3,524	3,476	3,510	10,510	3,524	3,476	3,510	10,510	4%	50%	74%	5%	10,510	10,510	100%
Subtotal Cimarron HOA	26,249	25,077	25,099	75,022	25,076	25,586	26,366	77,028	(973)	(91)	3,270	2,806	-1%	0%	12%	4%	20,762	(2,615)	-13%
Mill Creek HOA																			
19097349	1,621	1,357	1,637	4,615	1,618	1,593	1,662	4,873	(3)	236	25	258	0%	15%	1%	5%	4,873	258	5%
19094541	1,086	822	877	2,785	985	970	1,011	2,966	(101)	148	134	181	-10%	13%	6%	6%	2,966	181	6%
19087330	1,158	1,321	1,199	3,678	947	924	984	2,855	(231)	(397)	(215)	(823)	-22%	-43%	-22%	-29%	2,855	(823)	-29%
19087350	660	842	742	2,244	704	686	735	2,126	44	(156)	(7)	(118)	6%	-23%	-1%	-6%	2,126	(118)	-6%
Subtotal Mill Creek HOA	4,525	4,342	4,455	13,322	4,255	4,173	4,392	12,820	(270)	(169)	(63)	(502)	-6%	-4%	-1%	-4%	12,820	(502)	-4%
The Fairways HOA																			
32987827	299	657	603	1,559	564	563	566	1,693	265	(94)	(37)	134	47%	-17%	-7%	8%	1,693	134	8%
19090206	1,868	2,857	2,322	6,847	2,612	2,603	2,627	7,842	744	(54)	305	995	28%	46%	12%	52%	7,842	995	13%
19090228	249	287	240	776	537	535	540	1,612	288	248	300	836	54%	48%	56%	52%	1,612	836	52%
37829	273	246	244	763	330	330	330	990	57	82	86	225	17%	25%	26%	23%	990	225	23%
16163565	1,411	1,411	1,411	4,233	1,411	1,411	1,411	4,233	1,411	1,411	1,411	4,233	100%	100%	100%	100%	4,233	4,233	100%
19094568	1,571	2,392	1,816	5,779	3,623	3,677	3,809	11,109	2,134	(19)	(160)	(236)	60%	-68%	-50%	-39%	11,109	(236)	-39%
Subtotal Fairways HOA	4,397	6,488	5,570	16,455	7,953	7,924	7,999	23,876	5,556	1,436	2,429	7,421	45%	18%	30%	31%	10,525	1,354	13%
Lakeridge Shores HOA																			
19092210	2,210	1,804	1,844	5,858	2,885	2,593	2,799	8,078	475	789	955	2,220	18%	30%	34%	27%	8,078	2,220	27%
17948206	2,009	1,478	1,344	4,831	1,620	1,673	1,987	5,481	(169)	195	623	630	-10%	12%	32%	12%	5,481	630	12%
17198504	860	632	606	2,098	993	972	1,031	2,997	133	340	425	899	13%	35%	41%	30%	2,997	899	30%
19100433	143	156	137	436	126	106	164	396	(17)	(50)	27	(40)	-13%	-48%	17%	-10%	396	(40)	-10%
19090189	4,838	4,413	4,254	13,505	5,251	5,142	5,526	15,919	413	729	1,272	2,414	8%	14%	23%	15%	15,919	2,414	15%
19094641	1,778	784	764	4,326	437	417	470	1,324	(341)	(367)	(294)	(1,002)	-78%	-88%	-63%	-76%	1,324	(1,002)	-76%
19090190	1,703	1,367	1,309	4,379	1,525	1,401	1,648	4,575	(178)	34	339	196	12%	2%	21%	4%	4,575	196	4%
19851503	289	289	246	784	311	285	328	934	42	28	82	150	13%	3%	25%	16%	934	150	16%
3048653	1,967	1,808	1,576	5,351	2,020	1,860	2,180	6,059	53	52	604	708	3%	3%	23%	12%	6,059	708	12%
18048571	2,259	2,569	1,909	6,737	2,331	2,175	2,486	6,993	72	(394)	577	256	3%	-18%	23%	4%	6,993	256	4%
19853763	1,514	1,991	1,425	4,930	1,864	1,787	1,966	5,617	350	(204)	541	687	12%	-11%	28%	12%	5,617	687	12%
29116008	1,522	1,472	1,533	4,527	1,603	1,534	1,682	4,819	81	62	149	282	5%	4%	9%	6%	4,819	282	6%
19851783	334	335	280	949	328	312	354	995	(6)	(23)	74	46	4%	-7%	21%	3%	995	46	5%
Subtotal Lakeridge Shores HOA	20,406	19,078	17,227	56,711	21,293	20,268	22,603	64,164	887	1,190	5,376	7,453	4%	6%	24%	12%	62,444	8,495	14%
Lakeside Church	1,035	882	980	2,897	800	783	832	2,415	(235)	(69)	(148)	(482)	-29%	-13%	-18%	-20%	2,415	(482)	-20%
Total Savings (Additional) Use	62,783	62,832	59,397	183,811	68,100	66,501	70,382	204,983	5,317	3,669	11,986	21,172	8%	6%	17%	10%	130,631	11,208	9%

[1] Received new meter during study period.
 [2] Removed for statistical purposes due to landscape changes. ET Controller remains in place.

Appendix F
Results by Month by Meter (2003)

2003 Results by Meter Number (May through October)

Meter No.	Notes	Water Use			Savings (Additional) Water Use		Percent Savings	
		2003 Use	Historical Use	Expected Use [1]	over Average	over Expected	over Average	over Expected
Los Altos								
18476086		3,586	4,016	4,136	430	550	11%	13%
18476078		4,382	2,485	2,614	-1,897	-1,768	-76%	-68%
18973805		2,587	2,370	2,443	-217	-144	-9%	-6%
18476083		2,909	3,087	3,112	178	203	6%	7%
19094645		2,742	2,241	2,266	-501	-476	-22%	-21%
18476089	[2]							
20670		1,524	1,883	1,938	359	414	19%	21%
18476074		1,863	1,629	1,661	-234	-202	-14%	-12%
18476093		1,919	1,599	1,637	-320	-282	-20%	-17%
29979		1,295	2,759	2,767	1,464	1,472	53%	53%
32341159		2,111	2,720	2,766	609	655	22%	24%
19090159		740	731	877	-9	137	-1%	16%
15737		843	1,080	1,098	237	255	22%	23%
Total		26,501	26,601	27,313	100	812	0%	3%
Reno Green								
19748149		925	1,205	1,237	280	312	23%	25%
27651		1,880	2,044	2,089	164	209	8%	10%
33479997		1,027	1,253	1,277	226	250	18%	20%
19094575		543	959	975	416	432	43%	44%
32987658		216	382	389	166	173	44%	44%
19653756		1,172	1,195	1,239	23	67	2%	5%
30080		675	997	1,029	322	354	32%	34%
19090442		1,308	2,012	2,065	704	757	35%	37%
11346		2,110	2,460	2,597	350	487	14%	19%
34172		1,221	1,605	1,742	384	521	24%	30%
18973776	[3]							
14988	[3]							
8076		1,026	1,437	1,466	411	440	29%	30%
19090154	[4]							
631318	[5]							
Total		12,103	15,549	16,104	3,446	4,001	22%	25%
GRAND Total 2003 Group		38,604	42,150	43,417	3,546	4,813	8%	11%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

May 2003

Meter No.	Notes	2003 Use	Water Use		Savings (Additional) Water Use		Percent Savings	
			Historical Use	Expected Use [1]	over Average	over Expected	over Average	over Expected
Los Altos								
18476086		499	412	362	-87	-137	-21%	-38%
18476078		424	585	531	161	107	28%	20%
18973805		258	362	332	104	74	29%	22%
18476083		353	498	488	145	135	29%	28%
19094645		288	421	411	133	123	32%	30%
18476089	[2]							
20670		172	282	259	110	87	39%	34%
18476074		195	246	233	51	38	21%	16%
18476093		246	259	244	13	-2	5%	-1%
29979		177	555	552	378	375	68%	68%
32341159		223	462	443	239	220	52%	50%
19090159		5	106	45	101	40	95%	89%
15737		86	193	185	107	99	55%	54%
Total		2,926	4,383	4,085	1,457	1,159	33%	28%
Reno Green								
19748149		148	231	217	83	69	36%	32%
27651		274	285	266	11	-8	4%	-3%
33479997		116	163	152	47	36	29%	24%
19094575		65	144	138	79	73	55%	53%
32987658		28	78	76	50	48	64%	63%
19653756		143	204	186	61	43	30%	23%
30080		115	144	131	29	16	20%	12%
19090442		238	366	344	128	106	35%	31%
11346		219	285	228	66	9	23%	4%
34172		132	204	147	72	15	35%	10%
18973776	[3]							
14988	[3]							
8076		115	239	227	124	112	52%	49%
19090154	[4]							
631318	[5]							
Total		1,593	2,343	2,112	750	519	32%	25%
GRAND Total 2003 Group		4,519	6,726	6,197	2,207	1,678	33%	27%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

June 2003

Meter No.	Notes	2003 Use	Water Use		Savings (Additional) Water Use		Percent Savings	
			Historical Use	Expected Use [1]	over Average	over Expected	over Average	over Expected
Los Altos								
18476086		820	572	583	-248	-237	-43%	-41%
18476078		1,122	581	593	-541	-529	-93%	-89%
18973805		636	426	433	-210	-203	-49%	-47%
18476083		495	589	592	94	97	16%	16%
19094645		659	430	432	-229	-227	-53%	-52%
18476089	[2]							
20670		352	343	348	-9	-4	-3%	-1%
18476074		470	316	319	-154	-151	-49%	-47%
18476093		418	263	266	-155	-152	-59%	-57%
29979		210	491	492	281	282	57%	57%
32341159		491	525	530	34	39	7%	7%
19090159		113	132	146	19	33	15%	23%
15737		199	196	197	-4	-2	-2%	-1%
Total		5,985	4,864	4,930	-1,121	-1,055	-23%	-21%
Reno Green								
19748149		208	239	242	31	34	13%	14%
27651		368	353	357	-15	-11	-4%	-3%
33479997		212	209	211	-3	-1	-2%	-1%
19094575		104	173	175	69	71	40%	41%
32987658		43	72	73	29	30	41%	41%
19653756		196	257	261	61	65	24%	25%
30080		147	255	258	108	111	42%	43%
19090442		358	403	408	45	50	11%	12%
11346		448	410	423	-38	-25	-9%	-6%
34172		246	333	346	87	100	26%	29%
18973776	[3]							
14988	[3]							
8076		234	257	259	23	25	9%	10%
19090154	[4]							
631318	[5]							
Total		2,564	2,962	3,013	398	449	13%	15%
GRAND Total 2003 Group		8,549	7,826	7,943	-723	-606	-9%	-8%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

July 2003

Meter No.	Notes	2003 Use	Water Use		Savings (Additional) Water Use		Percent Savings	
			Historical Use	Expected Use [1]	over Average	over Expected	over Average	over Expected
Los Altos								
18476086		891	552	622	-339	-269	-62%	-43%
18476078		972	447	523	-525	-449	-117%	-86%
18973805		644	332	375	-312	-269	-94%	-72%
18476083		821	619	633	-202	-188	-33%	-30%
19094645		747	457	471	-291	-276	-64%	-59%
18476089	[2]							
20670		408	414	446	6	38	1%	9%
18476074		411	357	376	-54	-35	-15%	-9%
18476093		467	317	339	-150	-128	-47%	-38%
29979		274	458	463	184	189	40%	41%
32341159		557	545	571	-12	14	-2%	3%
19090159		191	152	238	-39	47	-26%	20%
15737		225	218	229	-7	4	-3%	2%
Total		6,608	4,868	5,287	-1,741	-1,321	-36%	-25%
Reno Green								
19748149		196	226	245	30	49	13%	20%
27651		402	394	421	-8	19	-2%	4%
33479997		233	243	257	10	24	4%	9%
19094575		132	188	198	56	66	30%	33%
32987658		51	75	79	24	28	32%	35%
19653756		359	254	280	-105	-79	-42%	-28%
30080		147	208	227	61	80	29%	35%
19090442		326	426	456	100	130	23%	29%
11346		443	541	621	98	178	18%	29%
34172		244	346	427	102	183	30%	43%
18973776	[3]							
14988	[3]							
8076		259	256	273	-3	14	-1%	5%
19090154	[4]							
631318	[5]							
Total		2,792	3,157	3,484	365	692	12%	20%
GRAND Total 2003 Group		9,400	8,025	8,772	-1,375	-628	-17%	-7%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

August 2003

Meter No.	Notes	Water Use			Savings (Additional) Water Use		Percent Savings	
		2003 Use	Historical Use	Expected Use [1]	over Average	over Expected	over Average	over Expected
Los Altos								
18476086		588	1,549	1,513	961	925	62%	61%
18476078		863	442	403	-421	-460	-95%	-114%
18973805		394	533	511	139	117	26%	23%
18476083		470	735	728	265	258	36%	35%
19094645		450	513	505	63	55	12%	11%
18476089	[2]							
20670		259	380	363	121	104	32%	29%
18476074		368	390	381	22	13	6%	3%
18476093		317	417	406	100	89	24%	22%
29979		202	441	439	239	237	54%	54%
32341159		361	553	540	192	179	35%	33%
19090159		169	162	118	-7	-51	-5%	-43%
15737		154	243	237	89	83	36%	35%
Total		4,595	6,356	6,144	1,761	1,549	28%	25%
Reno Green								
19748149		188	224	214	36	26	16%	12%
27651		347	387	374	40	27	10%	7%
33479997		194	256	248	62	54	24%	22%
19094575		100	189	185	89	85	47%	46%
32987658		40	61	59	21	19	35%	33%
19653756		309	224	211	-85	-98	-38%	-47%
30080		131	199	190	68	59	34%	31%
19090442		183	358	342	175	159	49%	47%
11346		407	581	540	174	133	30%	25%
34172		215	293	253	78	38	27%	15%
18973776	[3]							
14988	[3]							
8076		179	285	276	106	97	37%	35%
19090154	[4]							
631318	[5]							
Total		2,293	3,058	2,892	765	599	25%	21%
GRAND Total 2003 Group		6,888	9,414	9,036	2,526	2,148	27%	24%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

September 2003

Meter No.	Notes	Water Use			Savings (Additional) Water Use		Percent Savings	
		2003 Use	Historical Use	Expected Use [1]	over Average	over Expected	over Average	over Expected
Los Altos								
18476086		487	581	607	94	120	16%	20%
18476078		613	321	349	-292	-264	-91%	-76%
18973805		397	439	455	42	58	10%	13%
18476083		486	486	491	0	5	0%	1%
19094645		343	289	294	-55	-49	-19%	-17%
18476089	[2]							
20670		198	284	296	86	98	30%	33%
18476074		276	231	238	-45	-38	-20%	-16%
18476093		240	272	280	32	40	12%	14%
29979		151	468	469	317	318	68%	68%
32341159		303	394	404	91	101	23%	25%
19090159		148	115	147	-33	-1	-28%	-1%
15737		90	169	173	79	83	47%	48%
Total		3,732	4,048	4,204	317	472	8%	11%
Reno Green								
19748149		0	224	231	224	231	100%	100%
27651		272	389	399	117	127	30%	32%
33479997		152	244	250	92	98	38%	39%
19094575		79	167	171	88	92	53%	54%
32987658		32	61	62	29	30	47%	48%
19653756		112	173	182	61	70	35%	39%
30080		87	139	146	52	59	37%	40%
19090442		127	305	317	178	190	58%	60%
11346		346	439	469	93	123	21%	26%
34172		261	266	296	5	35	2%	12%
18973776	[3]							
14988	[3]							
8076		157	267	274	110	117	41%	43%
19090154	[4]							
631318	[5]							
Total		1,625	2,675	2,796	1,050	1,171	39%	42%
GRAND Total 2003 Group		5,357	6,723	7,000	1,367	1,643	20%	23%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

October 2003

Meter No.	Notes	Water Use			Savings (Additional)		Percent Savings	
		2003 Use	Historical Use	Expected Use	over Average	over Expected	over Average	over Expected
[1]								
Los Altos								
18476086		301	351	448	50	147	14%	33%
18476078		388	110	215	-278	-173	-254%	-81%
18973805		258	278	337	20	79	7%	23%
18476083		284	159	179	-125	-105	-79%	-58%
19094645		255	133	153	-123	-102	-92%	-67%
18476089	[2]							
20670		135	180	225	45	90	25%	40%
18476074		143	89	115	-54	-28	-61%	-24%
18476093		231	71	101	-160	-130	-225%	-128%
29979		281	346	352	65	71	19%	20%
32341159		176	241	278	65	102	27%	37%
19090159		114	63	182	-51	68	-80%	37%
15737		90	62	77	-28	-13	-44%	-16%
Total		2,656	2,082	2,662	-573	7	-28%	0%
Reno Green								
19748149		185	61	88	-124	-97	-203%	-111%
27651		217	235	272	18	55	8%	20%
33479997		120	138	158	18	38	13%	24%
19094575		63	97	110	34	47	35%	43%
32987658		22	34	39	12	17	36%	44%
19653756		53	83	119	30	66	36%	55%
30080		48	52	77	4	29	7%	38%
19090442		76	155	197	79	121	51%	61%
11346		247	205	316	-42	69	-21%	22%
34172		123	163	274	40	151	24%	55%
18973776	[3]							
14988	[3]							
8076		82	132	156	50	74	38%	47%
19090154	[4]							
631318	[5]							
Total		1,236	1,355	1,807	119	571	9%	32%
GRAND Total 2003 Group		3,892	3,437	4,469	-455	578	-13%	13%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

Appendix G
Results by Month by Meter (2004)

2004 Results by Meter Number (May through October)

Meter No.	Notes	Water Use			Savings (Additional) Water Use		Percent Savings	
		2004 Use	Historical Use	Expected Use (1)	over Average	over Expected	over Average	over Expected
Los Altos								
18476096		3,148	4,016	3,846	868	698	22%	18%
18476078		3,416	2,485	2,302	-931	-1,114	-37%	-48%
18973805		2,375	2,370	2,267	-5	-108	0%	-5%
18476083		3,200	3,087	3,051	-113	-149	-4%	-5%
19094645		2,246	2,241	2,205	-5	-41	0%	-2%
18476089	[2]							
20670		1,799	1,883	1,804	84	5	4%	0%
18476074		1,620	1,629	1,584	9	-36	1%	-2%
18476093		2,198	1,599	1,546	-599	-652	-37%	-42%
29979		1,878	2,759	2,749	881	871	32%	32%
32341159		2,235	2,720	2,656	485	421	18%	16%
19090159		656	731	544	75	-112	10%	-21%
15737		1,667	1,080	1,053	-588	-614	-54%	-58%
Total		26,438	26,601	25,607	163	-831	1%	-3%
Reno Green								
19748149		1,092	1,205	1,158	113	66	9%	6%
27651		1,785	2,044	1,979	259	194	13%	10%
33479997		984	1,253	1,218	269	234	21%	19%
19094575		736	959	936	223	200	23%	21%
32987658		310	382	374	72	64	19%	17%
19653756		1,070	1,195	1,132	125	62	10%	5%
30080		867	997	953	130	86	13%	9%
19090442		1,035	2,012	1,938	978	904	49%	47%
11346		2,547	2,460	2,286	-87	-281	-4%	-12%
34172		1,226	1,605	1,411	379	185	24%	13%
18973776	[3]							
14988	[3]							
8076		1,093	1,437	1,395	344	302	24%	22%
19090154	[4]							
631318	[5]							
Total		12,745	15,549	14,759	2,805	2,015	18%	14%
Reno Lawn								
20628		390	475	416	85	26	18%	6%
6098437		222	489	464	267	242	55%	52%
28818		302	368	333	66	31	18%	9%
19087340		497	861	837	364	340	42%	41%
32987647		222	343	316	121	94	35%	30%
Total		1,633	2,535	2,366	902	733	36%	31%
Northgate Village HOA								
20461		683	1,101	1,038	418	355	38%	34%
19092168		1,805	2,253	2,062	448	257	20%	12%
32341155		739	930	857	191	118	21%	14%
11850		831	1,064	1,002	233	171	22%	17%
16562		480	668	599	188	119	28%	20%
Total		4,538	6,015	5,558	1,477	1,020	25%	18%
Cimarron HOA								
18829663		9,580	7,400	7,134	-2,181	-2,446	-29%	-34%
19094615		3,682	3,380	3,134	-302	-548	-9%	-17%
41110		1,692	1,965	1,680	273	-12	14%	-1%
19094574		1,991	2,162	2,090	171	99	8%	5%
33475446		3,322	2,230	2,096	-1,093	-1,226	-49%	-58%
42347		1,484	1,760	1,674	276	190	16%	11%
17146916		4,498	8,144	8,067	3,646	3,569	45%	44%
Total		26,249	27,039	25,676	790	-373	3%	-1%
Mill Creek HOA								
19087349		1,621	1,721	1,618	100	-3	6%	0%
19094541		1,086	1,047	985	-40	-101	-4%	-10%
19087330		1,158	1,037	947	-122	-211	-12%	-22%
19087350		660	777	704	117	44	15%	6%
Total		4,525	4,581	4,255	56	-270	1%	-6%
The Fairways HOA								
32987627		299	568	564	269	265	47%	47%
19090206		1,868	2,650	2,612	782	744	29%	26%
19090228		249	544	537	295	288	54%	54%
37829		273	332	330	59	57	18%	17%
18103265		241	257	225	16	-16	6%	-7%
18819958		1,467	3,721	3,684	2,254	2,217	61%	60%
Total		4,397	8,072	7,953	3,675	3,556	46%	45%
Lakeridge Shores HOA								
19092210		2,210	2,900	2,685	690	475	24%	18%
17848406		2,009	2,056	1,820	47	-189	2%	-10%
17198504		860	1,075	993	215	133	20%	13%
19100433		143	180	126	37	-17	20%	-13%
19090189		4,838	5,687	5,251	849	413	15%	8%
19094641		778	506	437	-272	-341	-54%	-78%
19090190		1,703	1,722	1,525	19	-178	1%	-12%
19851503		269	343	311	74	42	21%	13%
3049653		1,967	2,275	2,020	308	53	14%	3%
18048571		2,259	2,580	2,331	321	72	12%	3%
19653763		1,514	2,063	1,864	549	350	27%	19%
29116008		1,522	1,747	1,603	225	81	13%	5%
19851783		334	392	328	58	-6	15%	-2%
Total		20,406	23,525	21,293	3,119	887	13%	4%
Lakeside Church								
19568719	[6]	1,035	869	800	-166	-235	-19%	-29%
GRAND Total 2003 Group		39,183	42,150	40,367	2,968	1,184	7%	3%
GRAND Total 2004 Group		62,783	72,635	68,100	9,852	5,317	14%	8%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

[6] Removed from study due to landscape changes. ET Controller remains in place.

May 2004

Meter No.	Notes	Water Use		Expected Use (1)	Savings (Additional) Water Use		Percent Savings	
		2004 Use	Historical Use		over Average	over Expected	over Average	over Expected
Los Altos								
13476086		573	412	369	-161	-204	-39%	-55%
18476078		662	585	539	-77	-123	-13%	-23%
18973805		438	362	336	-76	-102	-21%	-30%
18476083		870	498	489	-372	-381	-75%	-78%
19094645		412	421	412	9	0	2%	0%
18476089	[2]							
20670		250	282	263	32	13	11%	5%
18476074		310	246	235	-64	-75	-26%	-32%
18476093		337	259	246	-78	-91	-30%	-37%
29979		552	555	552	3	0	1%	0%
32341159		385	462	446	77	61	17%	14%
19090159		113	106	54	-7	-59	-8%	-109%
15737		125	193	186	68	61	35%	33%
Total		5,027	4,383	4,128	-644	-899	-15%	-22%
Reno Green								
19748149		221	231	219	10	-2	4%	-1%
27651		284	285	269	1	-15	0%	-6%
33479997		161	163	154	2	-7	1%	-5%
19094575		113	144	139	31	26	22%	18%
32987658		48	78	76	30	28	39%	37%
19653756		183	204	188	21	5	10%	3%
30080		144	144	133	0	-11	0%	-8%
19090442		124	366	347	242	223	66%	64%
11346		401	285	236	-116	-165	-41%	-70%
34172		187	204	155	17	-32	8%	-21%
18973776	[3]	460	534	520	74	60	14%	
14988	[3]							
8076		201	239	229	38	28	16%	12%
19090154	[4]							
631318	[5]							
Total		2,527	2,877	2,664	350	138	12%	5%
Reno Lawn								
20628		76	87	78	11	2	12%	3%
6098437		36	92	88	56	52	61%	59%
28818		68	59	53	-9	-15	-16%	-27%
19087340		150	122	118	-29	-32	-23%	-27%
32987647		52	34	30	-18	-22	-54%	-75%
Total		382	393	367	11	-15	3%	-4%
Northgate Village HOA								
20461		106	138	129	32	23	23%	18%
19092168		278	244	216	-34	-62	-14%	-29%
32341155		111	117	106	6	-5	5%	-4%
11850		126	137	127	11	1	8%	1%
16562		68	90	80	22	12	24%	15%
Total		689	726	658	37	-31	5%	-5%
Cimarron HOA								
18829963		1,626	1,226	1,186	-401	-440	-33%	-37%
19094615		592	560	523	-32	-69	-6%	-13%
41110		301	188	146	-113	-155	-60%	-107%
19094574		380	306	295	-74	-85	-24%	-29%
33475446		450	422	402	-29	-48	-7%	-12%
42347		184	338	325	154	141	45%	43%
17146916		976	1,602	1,591	626	615	39%	39%
Total		4,509	4,641	4,467	132	-42	3%	-1%
Mill Creek HOA								
19087349		160	354	339	194	179	55%	53%
19094541		130	142	133	12	3	9%	2%
19087330		124	157	144	33	20	21%	14%
19087350		73	126	116	53	43	42%	37%
Total		487	780	731	293	244	38%	33%
The Fairways HOA								
32987627		53	90	80	37	37	41%	41%
19090206		334	371	372	37	38	10%	10%
19090228		45	32	32	-13	-13	-41%	-40%
37829		39	32	32	-8	-7	-24%	-24%
18103265		45	27	28	-18	-17	-67%	-62%
18819958		325	434	435	109	110	25%	25%
Total		841	986	988	145	147	15%	15%
Lakeridge Shores HOA								
19092210		251	430	394	179	143	42%	36%
17848406		440	291	243	-150	-197	-51%	-81%
17198504		124	121	108	-4	-16	-3%	-15%
19100433		22	27	15	5	-7	19%	-49%
19090199		766	720	655	-46	-111	-8%	-17%
19094641		97	123	113	26	16	21%	14%
19090190		229	267	228	38	-1	14%	-1%
19851503		48	53	47	5	-1	9%	-2%
3049653		324	411	360	87	36	21%	10%
18048571		395	475	425	80	30	17%	7%
19653763		277	370	337	93	60	25%	18%
29116008		231	311	286	80	55	26%	19%
19851783		45	62	53	17	8	27%	14%
Total		3,249	3,661	3,263	412	14	11%	0%
Lakeside Church								
19568719	[6]	104	161	151	57	47	36%	31%
GRAND Total 2003 Group		7,554	7,260	6,792	-294	-761	-4%	-11%
GRAND Total 2004 Group		10,261	11,347	10,626	1,086	365	10%	3%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

[6] Removed from study due to landscape changes. ET Controller remains in place.

June 2004

Meter No.	Notes	Water Use			Savings (Additional)		Percent Savings	
		2004 Use	Historical Use	Expected Use [1]	Water Use over Average	Water Use over Expected	over Average	over Expected
Los Altos								
18476086		628	572	538	-56	-90	-10%	-17%
18476078		635	581	544	-54	-91	-9%	-17%
18973805		455	426	405	-29	-50	-7%	-12%
18476083		575	589	582	14	7	2%	1%
19094645		430	430	423	0	-7	0%	-2%
18476089	[2]							
20670		347	343	327	-4	-20	-1%	-6%
18476074		303	316	307	13	4	4%	1%
18476093		603	263	252	-340	-351	-129%	-139%
29979		378	491	489	113	111	23%	23%
32341159		377	525	512	148	135	28%	26%
19090159		128	132	91	4	-37	3%	-41%
15737		233	196	190	-38	-43	-19%	-22%
Total		5,092	4,864	4,661	-228	-431	-5%	-9%
Reno Green								
19748149		262	239	230	-23	-32	-10%	-14%
27651		330	353	340	23	10	7%	3%
33479997		183	209	202	26	19	12%	9%
19094575		142	173	169	31	27	18%	16%
32987658		56	72	71	16	15	23%	21%
19653756		302	257	245	-45	-57	-17%	-23%
30080		244	255	246	11	2	4%	1%
19090442		474	403	388	-71	-86	-18%	-22%
11346		519	410	371	-109	-148	-27%	-40%
34172		228	333	294	105	66	32%	23%
18973776	[3]	503	500	488	-3	-15	-1%	
14988	[3]							
8076		251	257	248	6	-3	2%	-1%
19090154	[4]							
631318	[5]							
Total		3,494	3,461	3,292	-33	-202	-1%	-6%
Reno Lawn								
20628		90	108	101	18	11	16%	11%
6090437		45	97	94	52	49	54%	52%
28818		76	76	72	0	-4	0%	-6%
19087340		139	157	154	18	15	11%	10%
32987647		57	65	62	8	5	13%	8%
Total		407	503	483	96	76	19%	16%
Northgate Village HOA								
20461		128	202	195	74	67	37%	34%
19092168		314	418	395	104	81	25%	21%
32341155		132	193	185	61	53	32%	29%
11850		160	185	177	25	17	13%	10%
16562		88	142	134	54	46	38%	34%
Total		822	1,140	1,086	318	264	28%	24%
Cimarron HOA								
18829963		2,111	1,452	1,420	-660	-691	-45%	-49%
19094615		808	621	592	-187	-216	-30%	-36%
41110		432	437	404	5	-28	1%	-7%
19094574		503	435	426	-68	-77	-16%	-18%
33475446		686	380	364	-307	-322	-81%	-89%
42347		302	321	311	19	9	6%	3%
17146916		757	1,740	1,731	983	974	56%	56%
Total		5,599	5,384	5,247	-215	-352	-4%	-7%
Mill Creek HOA								
19087349		238	329	317	91	79	28%	25%
19094541		126	216	208	90	82	42%	40%
19087330		255	203	193	-52	-62	-25%	-32%
19087350		122	206	198	84	76	41%	38%
Total		741	954	916	213	175	22%	19%
The Fairways HOA								
32987627		67	98	97	31	30	31%	31%
19090206		267	335	329	68	62	20%	19%
19090228		53	35	34	-18	-19	-51%	-56%
37829		61	48	48	-13	-13	-27%	-28%
18103265		52	48	43	-4	-9	-8%	-21%
18819958		313	707	701	394	388	56%	55%
Total		813	1,270	1,251	457	438	36%	35%
Lakeridge Shores HOA								
19092210		355	604	575	249	220	41%	38%
17848406		418	550	513	132	95	24%	18%
17198504		207	315	305	108	98	34%	32%
19100433		35	38	29	3	-6	9%	-22%
19090199		1,037	1,379	1,328	342	291	25%	22%
19094641		191	123	115	-68	-76	-55%	-66%
19090190		459	394	363	-65	-96	-16%	-26%
19851503		52	80	75	28	23	35%	31%
3049653		745	569	528	-176	-217	-31%	-41%
18048571		496	830	791	334	295	40%	37%
19653763		239	496	470	257	231	52%	49%
29116008		398	396	376	-2	-22	0%	-6%
19851783		67	80	72	13	5	16%	7%
Total		4,699	5,854	5,540	1,155	841	20%	15%
Lakeside Church								
19568719	[6]	83	162	154	79	71	49%	46%
GRAND Total 2003 Group		8,586	8,326	7,953	-261	-633	-3%	-8%
GRAND Total 2004 Group		13,164	15,268	14,678	2,104	1,514	14%	10%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

[6] Removed from study due to landscape changes. ET Controller remains in place.

July 2004

Meter No.	Notes	Water Use			Savings (Additional) Water Use		Percent Savings	
		2004 Use	Historical Use	Expected Use (1)	over Average	over Expected	over Average	over Expected
Los Altos								
18476086		575	552	584	-23	9	-4%	2%
18476078		694	447	482	-247	-212	-55%	-44%
18973805		520	332	352	-188	-168	-56%	-48%
18476083		557	619	625	62	68	10%	11%
19094645		488	457	463	-32	-25	-7%	-5%
18476089	[2]							
20670		433	414	429	-19	-4	-5%	-1%
18476074		382	357	366	-25	-16	-7%	-4%
18476093		669	317	327	-352	-342	-111%	-104%
29979		278	458	460	180	182	39%	40%
32341159		591	545	557	-46	-34	-9%	-6%
19090159		133	152	192	19	59	13%	31%
15737		817	218	223	-599	-594	-275%	-266%
Total		6,137	4,868	5,061	-1,270	-1,076	-26%	-21%
Reno Green								
19748149		230	226	235	-4	5	-2%	2%
27651		400	394	406	-6	6	-2%	2%
33479997		233	243	250	10	17	4%	7%
19094575		173	188	193	15	20	8%	10%
32987658		64	75	77	11	13	15%	17%
19653756		265	254	266	-11	1	-4%	0%
30080		256	208	217	-48	-39	-23%	-18%
19090442		118	426	440	308	322	72%	73%
11346		506	541	578	35	72	6%	12%
34172		230	346	383	116	153	34%	40%
18973776	[3]	589	521	532	-68	-57	-13%	
14988	[3]							
8076		230	256	264	26	34	10%	13%
19090154	[4]							
631318	[5]							
Total		3,294	3,679	3,840	385	546	10%	14%
Reno Lawn								
20628		90	106	105	16	15	15%	14%
6098437		55	114	113	59	58	52%	52%
23818		65	93	92	28	27	30%	29%
19087340		78	168	167	90	89	53%	53%
32987647		38	82	81	44	43	54%	53%
Total		326	562	558	236	232	42%	42%
Northgate Village HOA								
20461		115	306	305	191	190	62%	62%
19092168		297	601	596	304	299	51%	50%
32341155		115	192	190	77	75	40%	39%
11850		198	185	184	-13	-14	-7%	-8%
16562		102	145	144	43	42	30%	29%
Total		827	1,429	1,418	602	591	42%	42%
Cimarron HOA								
1882963		2,263	1,300	1,293	-964	-970	-74%	-75%
19094615		710	580	574	-130	-136	-22%	-24%
41110		411	397	390	-14	-21	-4%	-5%
19094574		380	406	404	26	24	6%	6%
33475446		722	429	425	-294	-297	-68%	-70%
42347		424	366	364	-58	-60	-16%	-16%
17146916		962	1,877	1,875	915	913	49%	49%
Total		5,872	5,354	5,327	-518	-545	-10%	-10%
Mill Creek HOA								
19087349		486	352	350	-134	-136	-38%	-39%
19094541		317	268	267	-49	-50	-18%	-19%
19087330		346	240	238	-106	-108	-44%	-46%
19087350		175	190	188	15	13	8%	7%
Total		1,324	1,049	1,042	-275	-282	-26%	-27%
The Fairways HOA								
32987627		67	142	141	75	74	53%	52%
19090206		360	476	471	116	111	24%	24%
19090228		57	116	115	59	58	51%	50%
37829		61	61	61	0	0	0%	0%
18103265		54	42	38	-12	-16	-29%	-43%
18819958		307	714	709	407	402	57%	57%
Total		906	1,550	1,534	644	628	42%	41%
Lakeridge Shores HOA								
19092210		894	713	707	-181	-187	-25%	-26%
17848406		578	505	497	-74	-81	-15%	-16%
17198504		252	296	294	44	42	15%	14%
19100433		37	51	49	14	12	28%	25%
19090189		1,448	1,447	1,437	-1	-11	0%	-1%
19094641		232	74	72	-158	-160	-215%	-222%
19090190		618	475	469	-143	-149	-30%	-32%
19851503		86	79	78	-7	-8	-9%	-10%
3049853		366	585	577	219	211	37%	37%
18048571		590	552	545	-38	-45	-7%	-8%
19653763		410	550	545	140	135	25%	25%
29116008		397	441	437	44	40	10%	9%
19851783		91	77	76	-14	-15	-18%	-20%
Total		5,999	5,844	5,782	-155	-217	-3%	-4%
Lakeside Church								
19568719	[6]	205	168	167	-37	-38	-22%	-23%
GRAND Total 2003 Group		9,431	8,546	8,901	-885	-530	-10%	-6%
GRAND Total 2004 Group		15,459	15,956	15,829	497	370	3%	2%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

[6] Removed from study due to landscape changes. ET Controller remains in place.

August 2004

Meter No.	Notes	Water Use			Savings (Additional)		Percent Savings	
		2004 Use	Historical Use	Expected Use [1]	Water Use over Average	Water Use over Expected	over Average	over Expected
Los Altos								
18476086		641	1,549	1,520	908	879	59%	58%
18476078		783	442	411	-341	-372	-77%	-91%
18973805		455	533	515	78	60	15%	12%
18476083		540	735	729	195	189	27%	26%
19094645		436	513	507	77	71	15%	14%
18476089	[2]							
20670		276	380	366	104	90	27%	25%
18476074		273	390	383	117	110	30%	29%
18476093		246	417	408	171	162	41%	40%
29979		314	441	439	127	125	29%	29%
32341159		385	553	542	168	157	30%	29%
19090159		133	162	127	29	-6	18%	-5%
15737		330	243	238	-85	-92	-38%	-39%
Total		4,812	6,356	6,186	1,544	1,374	24%	22%
Reno Green								
19748149		231	224	216	-7	-15	-3%	-7%
27651		369	387	376	18	7	5%	2%
33479997		189	256	250	67	61	26%	24%
19094575		125	189	186	64	61	34%	33%
32987658		67	61	60	-6	-7	-9%	-12%
19653756		190	224	213	34	23	15%	11%
30080		88	199	192	111	104	56%	54%
19090442		142	358	346	216	204	60%	59%
11346		520	581	548	61	28	10%	8%
34172		349	293	281	-56	-88	-19%	-34%
18973776	[3]							
14988	[3]							
8076		189	285	278	96	89	34%	32%
19090154	[4]							
631318	[5]							
Total		2,459	3,058	2,925	599	466	20%	16%
Reno Lawn								
20628		64	79	75	15	11	19%	15%
6096437		41	86	84	45	43	52%	51%
28818		53	68	65	15	12	22%	19%
19087340		61	166	164	105	103	63%	63%
32987647		37	71	69	34	32	48%	46%
Total		256	470	458	214	202	46%	44%
Northgate Village HOA								
20461		147	232	227	85	80	37%	35%
19092168		378	433	420	55	42	13%	10%
32341155		134	182	177	48	43	26%	24%
11850		120	247	243	127	123	51%	51%
16562		89	124	119	35	30	23%	23%
Total		868	1,218	1,187	350	319	29%	27%
Cimarron HOA								
18829963		1,286	1,247	1,228	-40	-58	-3%	-5%
19094615		539	687	670	148	131	21%	20%
41110		249	383	363	134	114	35%	31%
19094574		310	453	448	143	138	31%	31%
33475446		601	467	458	-134	-143	-29%	-31%
42347		284	321	315	37	31	12%	10%
17146916		711	1,658	1,653	947	942	57%	57%
Total		3,980	5,215	5,134	1,235	1,154	24%	22%
Mill Creek HOA								
19087349		305	311	304	6	-1	2%	0%
19094541		244	203	199	-41	-45	-20%	-23%
19087330		236	223	217	-13	-19	-6%	-9%
19087350		117	123	118	6	1	5%	1%
Total		902	860	838	-42	-64	-5%	-8%
The Fairways HOA								
32987627		67	92	92	25	25	27%	27%
19090206		452	534	535	82	83	15%	16%
19090228		42	138	138	96	96	70%	70%
37829		48	65	65	17	17	26%	26%
18103265		45	46	47	1	2	2%	4%
18819958		272	645	646	373	374	58%	58%
Total		926	1,520	1,522	594	596	39%	39%
Lakeridge Shores HOA								
19092210		395	640	623	245	228	38%	37%
17848406		328	431	409	103	81	24%	20%
17198504		158	196	191	38	33	19%	17%
19100433		25	29	24	4	-1	15%	-5%
19090199		749	1,025	995	276	246	27%	25%
19094641		160	86	81	-74	-79	-85%	-96%
19090190		228	343	324	115	96	33%	30%
19851503		46	71	68	25	22	35%	33%
3049653		291	371	347	80	56	21%	16%
18048571		396	372	349	-24	-47	-6%	-13%
19653763		289	320	304	31	15	10%	5%
29116008		238	316	304	78	66	25%	22%
19851783		76	77	73	1	-3	1%	-5%
Total		3,379	4,276	4,093	897	714	21%	17%
Lakeside Church								
19568719	[6]	274	189	184	-85	-90	-45%	-49%
GRAND Total 2003 Group		7,271	9,414	9,112	2,143	1,841	23%	20%
GRAND Total 2004 Group		10,585	13,747	13,416	3,162	2,831	23%	21%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

[6] Removed from study due to landscape changes. ET Controller remains in place.

September 2004

Meter No.	Notes	Water Use			Savings (Additional) Water Use		Percent Savings	
		2004 Use	Historical Use	Expected Use [1]	over Average	over Expected	over Average	over Expected
Los Altos								
13476086		471	581	552	110	81	19%	15%
18476078		450	321	290	-129	-160	-40%	-55%
18973805		321	439	422	118	101	27%	24%
18476083		410	486	480	76	70	16%	15%
19094645		312	289	283	-24	-29	-8%	-10%
18476089	[2]							
20670		349	284	271	-65	-78	-23%	-29%
18476074		233	231	223	-2	-10	-1%	-4%
18476093		190	272	263	82	73	30%	28%
29979		226	468	466	242	240	52%	51%
32341159		320	394	384	74	64	19%	17%
19090159		92	115	81	23	-11	20%	-14%
15737		110	169	164	59	54	35%	33%
Total		3,484	4,048	3,879	564	395	14%	10%
Reno Green								
19748149		128	224	216	96	88	43%	41%
27651		252	389	378	137	126	35%	33%
33479997		138	244	239	106	101	44%	42%
19094575		115	167	164	52	49	31%	30%
32987658		49	61	59	12	10	19%	17%
19653756		126	173	162	47	36	27%	22%
30080		133	139	132	6	-1	-4%	-1%
19090442		129	305	293	176	164	56%	50%
11346		504	439	406	-85	-98	-15%	-24%
34172		165	266	233	101	68	38%	29%
18973776	[3]							
14988	[3]							
8076		158	267	260	109	102	41%	39%
19090154	[4]							
631318	[5]							
Total		1,897	2,675	2,542	778	645	29%	25%
Reno Lawn								
20628		52	60	48	8	-4	13%	-8%
6090437		35	74	68	39	33	52%	49%
28818		32	58	51	26	19	45%	37%
19087340		55	144	139	89	84	62%	61%
32987647		31	59	54	28	23	47%	42%
Total		205	395	360	190	155	48%	43%
Northgate Village HOA								
20461		112	145	133	33	21	23%	16%
19092168		375	399	360	24	-15	6%	-4%
32341155		91	141	126	50	35	35%	28%
11850		135	187	174	52	39	28%	23%
16562		80	95	81	15	1	16%	1%
Total		793	967	874	174	81	18%	9%
Cimarron HOA								
18829963		1,611	1,342	1,288	-270	-323	-20%	-25%
19094615		511	588	538	77	27	13%	5%
41110		199	380	322	181	123	48%	38%
19094574		277	414	399	137	122	33%	31%
33475446		643	366	338	-278	-305	-76%	-90%
42347		198	283	265	85	67	30%	25%
17146916		719	929	914	210	195	23%	21%
Total		4,158	4,301	4,064	143	-94	3%	-2%
Mill Creek HOA								
19087349		327	248	227	-79	-100	-32%	-44%
19094541		220	152	139	-69	-81	-45%	-58%
19087330		161	144	125	-17	-36	-12%	-28%
19087350		129	89	74	-41	-55	-46%	-75%
Total		837	631	565	-206	-272	-33%	-48%
The Fairways HOA								
32987627		38	86	85	48	47	56%	55%
19090206		284	533	525	249	241	47%	46%
19090228		34	156	155	122	121	73%	70%
37829		40	73	73	33	33	45%	45%
18103265		28	51	45	23	17	45%	38%
18819958		189	631	624	442	435	70%	70%
Total		613	1,530	1,507	917	894	60%	59%
Lakeridge Shores HOA								
19092210		226	435	385	209	159	48%	41%
17848406		174	222	158	48	-16	22%	-10%
17198504		83	113	96	30	13	26%	13%
19100433		18	26	10	8	-8	32%	-86%
19090189		667	873	784	206	117	24%	15%
19094641		89	70	56	1	-13	1%	-24%
19090190		126	196	141	70	15	36%	11%
19851503		27	49	42	22	15	45%	35%
3049653		177	278	208	101	31	36%	15%
18048571		301	290	222	-11	-79	-4%	-36%
19653763		230	252	207	22	-23	9%	-11%
29116008		188	234	199	46	11	20%	6%
19851783		41	64	51	23	10	36%	20%
Total		2,327	3,103	2,559	776	232	25%	9%
Lakeside Church								
19568719	[6]	195	158	144	-37	-51	-24%	-36%
GRAND Total 2003 Group		5,381	6,723	6,421	1,342	1,040	20%	16%
GRAND Total 2004 Group		9,128	11,083	10,073	1,955	945	18%	9%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

[6] Removed from study due to landscape changes. ET Controller remains in place.

October 2004

Meter No.	Notes	Water Use			Savings (Additional)		Percent Savings	
		2004 Use	Historical Use	Expected Use [1]	over Average	over Expected	over Average	over Expected
Los Altos								
18476086		260	351	282	91	22	26%	8%
18476078		192	110	35	-82	-157	-75%	-441%
18973805		186	278	236	92	50	33%	21%
18476083		248	159	145	-89	-103	-56%	-71%
19094645		168	133	118	-36	-50	-27%	-42%
18476089	[2]							
20670		144	180	148	36	4	20%	3%
18476074		119	89	71	-30	-48	-34%	-69%
18476093		153	71	49	-82	-104	-115%	-209%
29979		130	346	342	216	212	62%	62%
32341159		177	241	215	64	38	27%	18%
19090159		57	63	0	6	-57	10%	na
15737		52	62	51	10	-1	16%	-1%
Total		1,886	2,082	1,693	196	-193	9%	-11%
Reno Green								
19748149		20	61	42	41	22	67%	52%
27651		150	235	209	85	59	36%	28%
33479997		80	138	124	58	44	42%	36%
19094575		68	97	87	29	19	30%	22%
32987658		26	34	31	8	5	24%	16%
19653756		4	83	58	79	54	95%	93%
30080		2	52	34	50	32	96%	94%
19090442		48	155	125	107	77	69%	61%
11346		97	205	128	108	29	53%	23%
34172		67	163	84	96	17	59%	20%
18973776	[3]							
14988	[3]							
8076		64	132	116	68	52	52%	45%
19090154	[4]							
631318	[5]							
Total		626	1,355	1,035	729	409	54%	40%
Reno Lawn								
20628		18	35	9	17	-9	49%	-91%
6098437		10	26	15	16	5	62%	-34%
28818		8	15	0	7	-8	45%	na
19087340		14	105	94	91	80	87%	85%
32987647		7	32	20	25	13	78%	65%
Total		57	212	139	155	82	73%	59%
Northgate Village HOA								
20461		75	77	50	2	-25	3%	-50%
19092168		163	158	75	-5	-88	-3%	-119%
32341155		156	105	73	-51	-83	-48%	-113%
11850		92	124	96	32	4	26%	5%
16562		53	72	41	19	-12	26%	-28%
Total		539	536	335	-3	-204	-1%	-61%
Cimarron HOA								
18829963		683	835	719	152	36	18%	5%
19094915		522	344	237	-178	-285	-52%	-121%
41110		100	180	55	80	-45	44%	-82%
19094574		141	150	118	9	-23	6%	-20%
33475446		220	168	109	-53	-111	-31%	-101%
42347		92	132	94	40	2	30%	2%
17146916		373	338	305	-35	-68	-10%	-22%
Total		2,131	2,146	1,636	15	-495	1%	-30%
Mill Creek HOA								
19087349		105	127	82	22	-23	18%	-27%
19094541		49	66	39	17	-10	26%	-25%
19087330		36	70	30	34	-6	48%	-20%
19087350		44	43	11	-1	-33	2%	-294%
Total		234	306	163	72	-71	23%	-44%
The Fairways HOA								
32987627		7	62	59	55	52	89%	88%
19090206		171	402	381	231	210	57%	55%
19090228		18	97	63	49	45	73%	71%
37829		24	54	52	30	28	55%	54%
18103265		17	43	25	26	8	60%	31%
18819658		61	590	569	529	508	90%	89%
Total		298	1,217	1,149	919	851	76%	74%
Lakeridge Shores HOA								
19092210		89	77	0	-12	-89	-15%	na
17848406		71	58	0	-13	-71	-22%	na
17198504		36	36	0	0	-36	0%	na
19100433		6	8	0	2	-6	20%	na
19090189		171	244	53	73	-118	30%	-224%
19094641		29	29	0	0	-29	1%	na
19090190		43	48	0	5	-43	10%	na
19851503		10	11	0	1	-10	5%	na
3049653		64	61	0	-3	-64	-4%	na
18048571		81	61	0	-20	-81	-34%	na
19653763		69	75	0	6	-69	8%	na
29116008		70	49	0	-21	-70	-44%	na
19851783		14	31	4	17	-10	55%	-293%
Total		753	787	56	34	-697	4%	-1244%
Lakeside Church								
19568719	[6]	174	30	0	-144	-174	-480%	na
GRAND Total 2003 Group		2,512	3,437	2,728	925	216	27%	8%
GRAND Total 2004 Group		4,186	5,234	3,478	1,048	-708	20%	-20%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

[6] Removed from study due to landscape changes. ET Controller remains in place.

Appendix H
Results by Month by Meter (2005)

2005 Results by Meter Number (May through October)

Meter No.	Notes	Water Use			Savings (Additional) Water Use		Percent Savings	
		2005 Use	Historical Use	Expected Use [1]	over Average	over Expected	over Average	over Expected
Los Altos								
18476086		2,643	4,016	3,777	1,373	1,134	34%	30%
18476078		4,567	2,485	2,228	-2,082	-2,339	-84%	-105%
18973805		2,919	2,370	2,225	-549	-694	-23%	-31%
18476083		4,207	3,087	3,037	-1,120	-1,170	-36%	-39%
19094645		2,677	2,241	2,191	-436	-486	-19%	-22%
18476089	[2]							
20670		1,799	1,883	1,772	84	-27	4%	-2%
18476074		6,946	1,629	1,565	-5,317	-5,381	-32%	-34%
18476093		1,539	1,599	1,524	60	-15	4%	-1%
29979		3,101	2,759	2,745	-342	-356	-12%	-13%
32341159		2,315	2,720	2,630	405	315	15%	12%
19090159		612	731	439	119	-173	16%	-39%
15737		542	1,080	1,043	538	501	50%	48%
Total		33,867	26,601	25,176	-7,266	-8,691	-27%	-35%
Reno Green								
19748149		931	1,205	1,139	274	208	23%	18%
27651		1,977	2,044	1,953	67	-24	3%	-1%
33479997		1,116	1,253	1,204	137	88	11%	7%
19094575		821	959	927	138	106	14%	11%
32967658		283	382	370	99	67	26%	24%
19653756		868	1,195	1,106	307	218	28%	20%
30080		553	997	935	444	382	45%	41%
19090442		878	2,012	1,908	1,134	1,030	56%	54%
11346		2,056	2,460	2,187	404	131	16%	6%
34172		671	1,605	1,332	934	661	58%	50%
18973776	[3]							
14988	[3]							
8076		1,192	1,437	1,379	245	187	17%	14%
19090154	[4]							
631318	[5]							
Total		11,366	15,549	14,439	4,183	3,073	27%	21%
Reno Lawn								
20628		350	475	402	125	52	26%	13%
6098437		249	489	458	240	209	49%	46%
28818		244	368	322	125	79	34%	24%
19087340		338	861	831	523	493	61%	59%
32987647		190	343	309	153	119	45%	39%
Total		1,371	2,535	2,322	1,164	952	46%	41%
Northgate Village HOA								
20461		594	1,101	1,022	507	428	46%	42%
19092168		2,044	2,253	2,015	209	-29	9%	-1%
32341155		644	930	839	286	195	31%	23%
11850		947	1,064	987	117	40	11%	4%
16562		565	668	581	103	16	15%	3%
Total		4,794	6,015	5,444	1,221	650	20%	12%
Cimarron HOA								
18829663		8,134	7,400	7,068	-735	-1,066	-10%	-15%
19094615		4,750	3,380	3,073	-1,370	-1,677	-41%	-55%
41110		1,933	1,965	1,609	32	-324	2%	-20%
19094574		2,224	2,162	2,072	-62	-152	-3%	-7%
33475446		2,752	2,230	2,063	-523	-689	-23%	-33%
42347		1,820	1,760	1,652	-60	-168	-3%	-10%
17146916		4,064	8,144	8,048	4,080	3,984	50%	50%
Total		25,677	27,039	25,586	1,362	-91	5%	0%
Mill Creek HOA								
19087349		1,357	1,721	1,593	364	236	21%	15%
19094541		822	1,047	970	225	148	21%	15%
19087330		1,321	1,037	924	-285	-397	-27%	-43%
19087350		842	777	686	-65	-156	-8%	-23%
Total		4,342	4,581	4,173	239	-169	5%	-4%
The Fairways HOA								
32987627		657	568	563	-89	-94	-16%	-17%
19090206		2,657	2,650	2,603	-8	-54	0%	-2%
19090228		287	544	535	257	248	47%	46%
37829		248	332	330	84	82	25%	25%
18103265		357	257	217	-100	-140	-39%	-64%
18819958		2,282	3,721	3,676	1,439	1,394	39%	38%
Total		6,488	8,072	7,924	1,584	1,436	20%	18%
Lakeridge Shores HOA								
19092210		1,804	2,900	2,593	1,096	789	38%	30%
17848406		1,478	2,056	1,673	578	195	28%	12%
17198504		632	1,075	972	443	340	41%	35%
19100433		156	180	106	24	-50	13%	-48%
19090189		4,413	5,687	5,142	1,274	729	22%	14%
19094641		784	506	417	-278	-367	-55%	-88%
19090190		1,367	1,722	1,401	355	34	21%	2%
19851503		269	343	295	74	26	21%	9%
3049653		1,808	2,275	1,860	467	52	21%	3%
18048571		2,569	2,580	2,175	11	-394	0%	-18%
19653763		1,991	2,063	1,787	72	-204	3%	-11%
29116008		1,472	1,747	1,534	275	62	16%	4%
19851783		335	392	312	57	-23	14%	-7%
Total		19,078	23,525	20,268	4,447	1,190	19%	6%
Lakeside Church								
19568719	[6]	882	869	783	-13	-99	-2%	-13%
GRAND Total 2003 Group		45,233	42,150	39,616	-3,083	-5,617	-7%	-14%
GRAND Total 2004 Group		62,632	72,635	66,501	10,004	3,869	14%	6%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

[6] Removed from study due to landscape changes. ET Controllers remain in place.

May 2005

Meter No.	Notes	2005 Use	Water Use Historical Use	Expected Use [1]	Savings (Additional) Water Use		Percent Savings	
					over Average	over Expected	over Average	over Expected
Los Altos								
18476086		474	412	336	-62	-138	-15%	-41%
18476078		774	585	503	-189	-271	-32%	-54%
18973805		537	362	316	-175	-221	-48%	-70%
18476083		999	498	482	-501	-517	-100%	-107%
19094645		494	421	405	-73	-89	-17%	-22%
18476089	[2]							
20670		267	282	247	15	-20	5%	-8%
18476074		386	246	226	-140	-160	-57%	-71%
18476093		280	259	236	-21	-44	-8%	-19%
29979		526	555	550	29	24	5%	4%
32341159		411	462	433	51	22	11%	5%
19090159		119	106	14	-13	-105	-12%	-781%
15737		106	193	181	87	75	45%	42%
Total		5,373	4,383	3,930	-990	-1,443	-23%	-37%
Reno Green								
19748149		175	231	210	56	35	24%	17%
27651		268	285	256	17	-12	6%	-5%
33479997		155	163	147	8	-8	5%	-5%
19094575		120	144	134	24	14	17%	11%
32987658		41	78	74	37	33	48%	45%
19653756		165	204	176	39	11	19%	6%
30080		99	144	124	45	25	31%	20%
19090442		109	366	332	257	223	70%	67%
11346		450	285	198	-165	-252	-58%	-127%
34172		113	204	117	91	4	45%	3%
18973776	[3]							
14988	[3]							
8076		221	239	221	18	0	8%	0%
19090154	[4]							
631318	[5]							
Total		1,916	2,343	1,990	427	74	18%	4%
Reno Lawn								
20628		71	87	71	16	0	18%	0%
6098437		50	92	85	42	35	46%	41%
28818		41	59	49	18	8	30%	16%
19087340		44	122	115	78	71	64%	62%
32987647		41	34	26	-7	-15	-22%	-55%
Total		247	393	347	145	100	37%	29%
Northgate Village HOA								
20461		39	138	121	99	82	72%	68%
19092168		164	244	193	80	29	33%	15%
32341155		47	117	98	70	51	60%	52%
11850		133	137	120	4	-13	-3%	-11%
16562		74	90	71	16	-3	18%	-4%
Total		457	726	603	269	146	37%	24%
Cimarron HOA								
18829963		1,163	1,226	1,154	63	-9	5%	-1%
19094615		619	560	494	-59	-125	-11%	-25%
41110		218	188	111	-30	-107	-16%	-96%
19094574		292	306	287	14	-5	5%	-2%
33475446		319	422	386	103	67	24%	17%
42347		221	338	314	117	93	35%	30%
17146916		674	1,602	1,562	928	908	58%	57%
Total		3,506	4,641	4,327	1,135	821	24%	19%
Mill Creek HOA								
19087349		210	354	326	144	116	41%	36%
19094541		127	142	126	15	-1	11%	-1%
19087330		197	157	133	-40	-64	-25%	-48%
19087350		120	126	107	6	-13	5%	-12%
Total		654	780	692	126	38	16%	6%
The Fairways HOA								
32987627		139	90	90	-49	-49	-54%	-55%
19090206		605	371	368	-234	-237	-63%	-65%
19090228		69	32	31	-37	-38	-116%	-120%
37829		37	32	31	-6	-6	-17%	-18%
18103265		96	27	24	-69	-72	-256%	-298%
18819958		511	434	431	-77	-80	-18%	-19%
Total		1,457	986	975	-472	-482	-48%	-49%
Lakeridge Shores HOA								
19092210		266	430	364	164	98	38%	27%
17848406		234	291	205	57	-29	19%	-14%
17198504		81	121	98	40	17	33%	18%
19100433		30	27	5	-3	-25	-11%	-505%
19090189		502	720	602	218	100	30%	17%
19094841		102	123	104	21	2	17%	2%
19090190		191	267	196	76	5	29%	2%
19851503		42	53	43	11	1	21%	2%
3049653		271	411	318	140	47	34%	15%
18048571		105	475	384	370	279	78%	73%
19653763		669	370	311	-299	-358	-81%	-115%
29116008		228	311	265	83	37	27%	14%
19851783		42	62	45	20	3	32%	7%
Total		2,763	3,661	2,941	898	178	25%	6%
Lakeside Church								
19568719	[6]	175	161	143	-14	-32	-8%	-22%
GRAND Total 2003 Group		7,289	6,726	5,920	-563	-1,369	-8%	-23%
GRAND Total 2004 Group		9,259	11,347	10,028	2,088	768	18%	8%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

[6] Removed from study due to landscape changes. ET Controller remains in place.

June 2005

Meter No.	Notes	Water Use		Expected Use [1]	Savings (Additional) Water Use		Percent Savings		
		2005 Use	Historical Use		over Average	over Expected	over Average	over Expected	
Los Altos									
18476086		523	572	410	49	-113	9%	-28%	
18476078		1,668	581	406	-1,087	-1,262	-187%	-311%	
18973805		646	426	328	-220	-318	-52%	-97%	
18476083		874	589	555	-285	-319	-48%	-57%	
19094645		515	430	396	-85	-119	-20%	-30%	
18476089	[2]								
20670		337	343	268	6	-69	2%	-26%	
18476074		426	316	272	-110	-154	-35%	-56%	
18476093		280	263	212	-17	-68	-6%	-32%	
29979		510	491	481	-19	-29	-4%	-6%	
32341159		470	525	464	55	-6	11%	-1%	
19090159		124	132	-66	8	-190	6%	288%	
15737		119	196	171	77	52	39%	30%	
Total		6,492	4,864	3,897	-1,628	-2,595	-33%	-67%	
Reno Green									
19748149		211	239	194	28	-17	12%	-9%	
27651		333	353	292	20	-41	6%	-14%	
33479997		186	209	176	23	-10	11%	-6%	
19094575		158	173	152	15	-6	9%	-4%	
32987658		56	72	64	16	8	23%	12%	
19653756		175	257	197	82	22	32%	11%	
30080		103	255	213	152	110	60%	52%	
19090442		152	403	332	251	180	62%	54%	
11346		433	410	224	-23	-209	-6%	-93%	
34172		132	333	148	201	16	60%	11%	
18973776	[3]								
14988	[3]								
8076		233	257	217	24	-16	9%	-7%	
19090154	[4]								
631318	[5]								
Total		2,172	2,962	2,208	790	36	27%	2%	
Reno Lawn									
20628		66	108	74	42	8	39%	7%	
6098437		51	97	82	46	31	47%	32%	
28818		56	76	55	20	-2	26%	-2%	
19087340		104	157	143	53	39	34%	25%	
32987647		36	65	50	29	14	45%	21%	
Total		313	503	404	190	91	38%	22%	
Northgate Village HOA									
20461		150	202	166	52	16	26%	8%	
19092168		312	418	307	106	-5	25%	-1%	
32341155		105	193	151	88	46	46%	24%	
11850		183	185	149	2	-34	1%	-19%	
16562		101	142	101	41	0	29%	0%	
Total		851	1,140	874	289	23	25%	3%	
Cimarron HOA									
18829963		1,147	1,452	1,297	305	150	21%	10%	
19094615		712	621	478	-91	-234	-15%	-38%	
41110		238	437	271	199	33	46%	8%	
19094574		293	435	393	142	100	33%	23%	
33475446		497	380	302	-118	-195	-31%	-51%	
42347		254	321	271	67	17	21%	5%	
17146916		617	1,740	1,695	1,123	1,078	65%	62%	
Total		3,758	5,384	4,707	1,626	949	30%	20%	
Mill Creek HOA									
19087349		287	329	269	42	-18	13%	-5%	
19094541		191	216	180	25	-11	11%	-5%	
19087330		340	203	151	-137	-189	-67%	-93%	
19087350		215	206	164	-9	-51	-4%	-25%	
Total		1,033	954	765	-79	-268	-8%	-35%	
The Fairways HOA									
32987627		148	98	95	-51	-53	-52%	-54%	
19090206		514	335	312	-180	-202	-54%	-60%	
19090228		65	35	31	-20	31	-57%	-69%	
37829		48	48	47	0	-1	0%	-2%	
18103265		71	48	29	-23	-42	-48%	-88%	
18819958		462	707	685	245	223	35%	32%	
Total		1,298	1,270	1,199	-28	-99	-2%	-8%	
Lakeridge Shores HOA									
19092210		420	604	462	184	42	31%	7%	
17848406		334	550	366	216	32	39%	6%	
17198504		147	315	267	168	120	53%	38%	
19100433		37	38	0	1	-37	3%	-97%	
19090189		791	1,379	1,125	588	334	43%	24%	
19094841		158	123	82	-35	-76	-28%	-62%	
19090190		283	394	240	111	-43	28%	-11%	
19851503		55	80	58	25	3	31%	3%	
3049653		355	569	368	214	13	38%	2%	
18048571		112	830	635	718	523	87%	63%	
19653763		325	496	367	171	42	34%	9%	
29116008		264	396	297	132	33	33%	8%	
19851783		71	80	43	9	-28	11%	-35%	
Total		3,352	5,854	4,309	2,502	957	43%	22%	
Lakeside Church									
19568719	[6]	180	162	122	-18	-58	-11%	-35%	
GRAND Total 2003 Group		8,664	7,826	6,106	-838	-2,558	-11%	-42%	
GRAND Total 2004 Group		10,785	15,268	12,380	4,482	1,594	29%	13%	

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

[6] Removed from study due to landscape changes. ET Controller remains in place.

July 2005

Meter No.	Notes	2005 Use	Water Use		Savings (Additional) Water Use		Percent Savings	
			Historical Use	Expected Use [1]	over Average	over Expected	over Average	over Expected
Los Altos								
18476086		672	552	634	-120	-38	-22%	-6%
18476078		790	447	536	-343	-254	-77%	-47%
18973805		669	332	382	-337	-287	-101%	-75%
18476083		1,091	619	636	-472	-455	-76%	-72%
19094645		602	457	474	-146	-128	-32%	-27%
18476089	[2]							
20670		327	414	452	87	125	21%	28%
18476074		403	357	379	-46	-24	-13%	-6%
18476093		390	317	343	-63	-37	-20%	-11%
29979		435	458	463	23	28	5%	6%
32341159		385	545	576	160	191	29%	33%
19090159		150	152	253	2	103	1%	41%
15737		127	218	231	91	104	42%	45%
Total		6,031	4,868	5,358	-1,163	-672	-24%	-13%
Reno Green								
19748149		231	226	248	-5	17	-2%	7%
27651		442	394	425	-48	-17	-12%	-4%
33479997		232	243	260	11	28	5%	11%
19094575		235	168	199	-47	-36	-25%	-18%
32987658		69	75	80	6	11	8%	13%
19653756		195	254	284	59	89	23%	31%
30080		143	208	230	65	87	31%	38%
19090442		163	426	462	263	299	62%	65%
11346		377	541	635	164	258	30%	41%
34172		150	346	441	196	291	57%	66%
18973776	[3]							
14988	[3]							
8076		271	256	276	-15	5	-6%	2%
19090154	[4]							
631318	[5]							
Total		2,508	3,157	3,540	649	1,032	21%	29%
Reno Lawn								
20628		78	106	115	28	37	26%	32%
6098437		54	114	118	60	64	53%	54%
28818		70	93	99	23	28	24%	29%
19087340		76	168	171	92	95	55%	56%
32987647		43	82	86	39	43	48%	50%
Total		321	562	589	241	268	43%	45%
Northgate Village HOA								
20461		158	306	316	148	158	48%	50%
19092168		690	601	631	-79	-49	-13%	-8%
32341155		115	192	203	77	88	40%	43%
11850		199	185	195	-14	-4	-8%	-2%
16562		117	145	156	28	39	19%	25%
Total		1,269	1,429	1,501	160	232	11%	15%
Cimarron HOA								
18829963		2,265	1,300	1,341	-966	-924	-74%	-69%
19094615		1,141	580	619	-561	-522	-97%	-84%
41110		551	397	442	-154	-109	-39%	-25%
19094574		527	406	417	-121	-110	-30%	-26%
33475446		680	429	449	-252	-231	-59%	-51%
42347		502	366	380	-136	-122	-37%	-32%
17146916		1,194	1,877	1,889	683	695	36%	37%
Total		6,860	5,354	5,537	-1,506	-1,323	-28%	-24%
Mill Creek HOA								
19087349		309	352	368	43	59	12%	16%
19094541		181	268	278	87	97	32%	35%
19087330		351	240	254	-111	-97	-46%	-38%
19087350		207	190	201	-17	-6	-9%	-3%
Total		1,048	1,049	1,101	1	53	0%	5%
The Fairways HOA								
32987627		127	142	142	15	15	10%	10%
19090206		542	476	477	-67	-65	-14%	-14%
19090228		62	116	116	54	54	47%	47%
37829		53	61	61	8	8	13%	13%
18103265		71	42	43	-29	-28	-69%	-64%
18819958		517	714	716	197	199	28%	28%
Total		1,372	1,550	1,555	178	183	11%	12%
Lakeridge Shores HOA								
19092210		441	713	751	272	310	38%	41%
17848406		392	505	554	113	162	22%	29%
17198504		169	296	309	127	140	43%	45%
19100433		45	51	64	6	19	12%	30%
19090189		1,093	1,447	1,515	354	422	24%	28%
19094641		223	74	85	-149	-138	-203%	-163%
19090190		447	475	517	28	70	6%	13%
19851503		72	79	85	7	13	9%	15%
3049653		503	585	639	82	136	14%	21%
18048571		916	552	605	-363	-310	-66%	-51%
19653763		494	550	584	56	90	10%	15%
29116008		357	441	468	84	111	19%	24%
19851783		94	77	87	-17	-7	-22%	-8%
Total		5,246	5,844	6,265	598	1,019	10%	16%
Lakeside Church								
19568719	[6]	214	168	179	-46	-35	-27%	-19%
GRAND Total 2003 Group		8,539	8,025	8,898	-514	359	-6%	4%
GRAND Total 2004 Group		16,330	15,956	16,726	-374	397	-2%	2%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

[6] Removed from study due to landscape changes. ET Controller remains in place.

August 2005

Meter No.	Notes	Water Use		Savings (Additional)		Percent Savings		
		2005 Use	Historical Use	Expected Use [1]	Water Use over Average	Water Use over Expected	over Average	over Expected
Los Altos								
18476086		529	1,549	1,563	1,020	1,034	66%	66%
18476078		715	442	457	-273	-258	-62%	-56%
18973805		564	533	541	-31	-23	-6%	-4%
18476083		652	735	738	83	86	11%	12%
19094645		496	513	515	17	19	3%	4%
18476089	[2]							
20870		327	380	386	53	60	14%	15%
18476074		5,455	390	394	-5,065	-5,061	-1298%	-1284%
18476093		306	417	421	111	115	27%	27%
29979		668	441	442	-227	-226	-51%	-51%
32341159		385	553	558	168	173	30%	31%
19090159		114	162	179	48	65	29%	36%
15737		102	243	245	141	143	58%	58%
Total		10,313	6,356	6,441	-3,957	-3,872	-62%	-60%
Reno Green								
19748149		163	224	228	61	65	27%	28%
27651		406	387	392	-19	-14	-5%	-3%
33479997		229	256	259	27	30	10%	11%
19094575		152	189	191	37	39	20%	21%
32987658		53	61	62	8	9	14%	15%
19653756		169	224	229	55	60	25%	26%
30080		91	199	203	108	112	54%	55%
19090442		155	358	364	203	209	57%	57%
11346		314	581	597	267	283	46%	47%
34172		139	293	310	154	171	53%	55%
18973776	[3]	504	493	497				
14988	[3]							
8076		234	285	288	51	54	18%	19%
19090154	[4]							
631318	[5]							
Total		2,609	3,550	3,621	953	1,019	27%	28%
Reno Lawn								
20628		66	79	84	13	18	17%	22%
6098437		50	86	88	36	38	42%	43%
28818		44	68	71	24	27	35%	38%
19087340		44	166	168	122	124	73%	74%
32987647		39	71	73	32	34	45%	47%
Total		243	470	485	227	241	48%	50%
Northgate Village HOA								
20461		154	232	237	78	83	34%	35%
19092168		408	433	450	25	42	6%	9%
32341155		115	182	188	67	73	37%	39%
11850		237	247	253	10	16	4%	6%
16562		120	124	130	4	10	3%	8%
Total		1,034	1,218	1,258	184	224	15%	18%
Cimarron HOA								
18829963		1,669	1,247	1,269	-423	-400	-34%	-31%
19094615		1,128	687	708	-442	-420	-64%	-59%
41110		539	383	407	-156	-132	-41%	-32%
19094574		569	453	459	-117	-110	-26%	-24%
33475446		693	467	478	-226	-215	-48%	-45%
42347		487	321	328	-166	-159	-52%	-48%
17146916		791	1,658	1,665	867	874	52%	52%
Total		5,876	5,215	5,315	-662	-561	-13%	-11%
Mill Creek HOA								
19087349		322	311	320	-11	-2	-4%	-1%
19094541		182	203	208	21	26	10%	13%
19087330		286	223	231	-63	-55	-28%	-24%
19087350		202	123	129	-79	-73	-64%	-56%
Total		992	860	888	-132	-104	-15%	-12%
The Fairways HOA								
32987627		118	92	92	-27	-26	-29%	-28%
19090206		437	534	540	97	103	18%	19%
19090228		46	138	139	92	93	67%	67%
37829		41	65	65	24	24	37%	37%
18103265		53	46	52	-7	-1	-15%	-3%
18819958		386	645	651	259	265	40%	41%
Total		1,081	1,520	1,540	439	459	29%	30%
Lakeridge Shores HOA								
19092210		356	640	661	284	305	44%	46%
17848406		269	431	458	162	189	38%	41%
17198504		124	196	203	72	79	37%	39%
19100433		20	29	36	9	16	32%	45%
19090189		840	1,025	1,062	185	222	18%	21%
19094641		158	86	92	-72	-66	-83%	-71%
19090190		197	343	365	146	168	42%	46%
19851503		47	71	74	24	27	34%	37%
3049653		346	371	400	25	54	7%	14%
18048571		916	372	401	-544	-515	-146%	-128%
19653763		236	320	339	84	103	26%	30%
29116008		327	316	330	-11	3	-4%	1%
19851783		53	77	82	24	29	31%	36%
Total		3,889	4,276	4,506	388	617	9%	14%
Lakeside Church								
19568719	[6]	138	189	195	51	57	27%	29%
GRAND Total 2003 Group		12,922	9,906	10,062	-3,004	-2,853	-30%	-28%
GRAND Total 2004 Group		13,253	13,747	14,186	495	933	4%	7%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

[6] Removed from study due to landscape changes. ET Controller remains in place.

September 2005

Meter No.	Notes	2005 Use	Water Use Historical Use	Expected Use [1]	Savings (Additional) Water Use		Percent Savings	
					over Average	over Expected	over Average	over Expected
Los Altos								
18476086		376	581	493	205	117	35%	24%
18476078		438	321	226	-117	-212	-36%	-93%
18973805		332	439	386	107	54	24%	14%
18476083		404	486	468	82	64	17%	14%
19094645		317	289	270	-29	-47	-10%	-17%
18476089	[2]							
20670		383	284	244	-99	-139	-35%	-57%
18476074		188	231	207	43	19	18%	9%
18476093		218	272	244	54	26	20%	11%
29979		483	468	462	-15	-21	-3%	-4%
32341159		469	394	361	-75	-108	-19%	-30%
19090159		77	115	8	38	-69	33%	-861%
15737		66	169	155	103	89	61%	57%
Total		3,751	4,048	3,525	297	-226	7%	-6%
Reno Green								
19748149		102	224	200	122	98	54%	49%
27651		330	389	356	59	26	15%	7%
33479997		187	244	226	57	39	23%	17%
19094575		104	167	156	63	52	38%	33%
32987858		39	61	56	22	17	36%	31%
19653756		123	173	140	50	17	29%	12%
30080		75	139	116	64	41	46%	35%
19090442		217	305	267	88	50	29%	19%
11346		336	439	338	103	2	23%	1%
34172		85	266	165	181	80	68%	49%
18973776	[3]							
14988	[3]							
8076		135	267	246	132	111	50%	45%
19090154	[4]							
631318	[5]							
Total		1,733	2,675	2,267	942	534	35%	24%
Reno Lawn								
20628		46	60	36	14	-10	23%	-29%
6098437		33	74	63	41	30	55%	48%
28818		31	58	43	27	12	46%	27%
19087340		36	144	134	108	98	75%	73%
32987647		23	59	48	36	25	61%	52%
Total		169	395	324	225	154	57%	48%
Northgate Village HOA								
20461		93	145	119	52	26	36%	22%
19092168		477	399	319	78	-158	-20%	-49%
32341155		119	141	110	22	-9	15%	-8%
11850		116	187	161	71	45	38%	28%
16562		74	95	66	21	-8	22%	-12%
Total		879	967	776	88	-103	9%	-13%
Cimarron HOA								
18829963		1,178	1,342	1,231	164	53	12%	4%
19094615		732	588	485	-144	-247	-25%	-51%
41110		264	380	261	116	-3	31%	-1%
19094574		375	414	384	39	9	9%	2%
33475446		359	366	310	7	-49	2%	-16%
42347		258	283	247	25	-11	9%	-4%
17146916		507	929	897	422	390	45%	43%
Total		3,673	4,301	3,814	628	141	15%	4%
Mill Creek HOA								
19087349		146	248	205	102	59	41%	29%
19094541		112	152	126	40	14	26%	11%
19087330		92	144	106	52	14	36%	13%
19087350		79	89	58	10	-21	11%	-36%
Total		429	631	495	202	66	32%	13%
The Fairways HOA								
32987627		75	86	84	11	9	13%	11%
19090206		302	533	518	231	216	43%	42%
19090228		32	156	153	124	121	79%	79%
37829		37	73	72	36	35	49%	49%
18103265		37	51	38	14	1	27%	4%
18819958		269	631	617	362	348	57%	56%
Total		752	1,530	1,483	778	731	51%	49%
Lakeridge Shores HOA								
19092210		225	435	333	210	108	48%	32%
17848406		197	222	90	25	-107	11%	-120%
17198504		83	113	78	30	-5	26%	-6%
19100433		19	26	0	7	-19	28%	na
19090189		693	873	690	180	-3	21%	0%
19094641		103	70	40	-33	-63	-47%	-156%
19090190		197	196	84	-2	-113	-1%	-134%
19851503		43	49	33	6	-10	13%	-29%
3049653		261	278	134	17	-127	6%	-95%
18048571		434	290	150	-144	-284	-50%	-190%
19653763		196	252	160	56	-36	22%	-23%
29116008		228	234	163	6	-65	3%	-40%
19851783		46	64	38	18	-8	28%	-22%
Total		2,725	3,103	1,993	378	-732	12%	-37%
Lakeside Church								
19568719	[6]	118	158	129	40	11	25%	9%
GRAND Total 2003 Group		5,484	6,723	5,792	1,239	308	18%	5%
GRAND Total 2004 Group		8,745	11,083	9,012	2,338	267	21%	3%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

[6] Removed from study due to landscape changes. ET Controller remains in place.

October 2005

Meter No.	Notes	Water Use			Savings (Additional) Water Use		Percent Savings	
		2005 Use	Historical Use	Expected Use [1]	over Average	over Expected	over Average	over Expected
Los Altos								
18476086		69	351	341	282	272	80%	80%
18476078		182	110	99	-72	-83	-66%	-83%
18973805		171	278	272	107	101	38%	37%
18476083		187	159	157	-28	-30	-18%	-19%
19094645		253	133	131	-121	-122	-91%	-94%
18476089	[2]							
20670		159	180	175	21	16	12%	9%
18476074		88	89	86	1	-2	1%	-2%
18476093		75	71	68	-4	-7	-6%	-10%
29979		479	346	346	-133	-133	-38%	-39%
32341159		195	241	238	46	43	19%	18%
19090159		28	63	52	35	24	56%	46%
15737		22	62	61	40	39	65%	64%
Total		1,908	2,082	2,026	174	118	8%	6%
Reno Green								
19748149		49	61	58	12	9	20%	16%
27651		198	235	232	37	34	16%	15%
33479997		127	138	136	11	9	8%	7%
19094575		52	97	95	45	43	46%	45%
32987658		25	34	34	9	9	27%	26%
19653756		61	83	79	22	18	27%	23%
30080		42	52	49	10	7	19%	15%
19090442		82	155	151	73	69	47%	46%
11346		146	205	194	59	48	29%	25%
34172		52	163	152	111	100	68%	66%
18973776	[3]							
14988	[3]							
8076		98	132	130	34	32	26%	25%
19090154	[4]							
631318	[5]							
Total		932	1,355	1,311	423	379	31%	29%
Reno Lawn								
20628		23	35	22	12	-1	34%	-5%
6098437		11	26	21	15	10	58%	47%
28818		0	15	6	14	6	98%	96%
19087340		34	105	99	71	65	67%	66%
32987647		8	32	26	24	18	75%	69%
Total		76	212	174	136	98	64%	56%
Northgate Village HOA								
20461		0	77	63	77	63	100%	100%
19092168		3	158	115	155	112	98%	97%
32341155		143	105	89	-38	-54	-36%	-61%
11850		79	124	110	45	31	36%	28%
16562		79	72	56	-7	-23	-10%	-40%
Total		304	536	434	232	130	43%	30%
Cimarron HOA								
18829963		712	835	776	123	64	15%	8%
19094615		418	344	289	-74	-129	-21%	-44%
41110		123	180	116	57	-7	32%	-6%
19094574		168	150	133	-19	-35	-12%	-26%
33475446		204	168	138	-37	-66	-22%	-48%
42347		98	132	112	34	14	25%	13%
17146916		281	338	321	57	40	17%	12%
Total		2,004	2,146	1,886	142	-118	7%	-6%
Mill Creek HOA								
19087349		83	127	104	44	21	35%	21%
19094541		29	66	52	37	23	56%	45%
19087330		55	70	49	15	-6	21%	-11%
19087350		19	43	27	24	8	56%	29%
Total		186	306	233	120	47	39%	20%
The Fairways HOA								
32987627		50	62	60	12	10	19%	17%
19090206		257	402	388	145	131	36%	34%
19090228		23	67	64	44	41	66%	64%
37829		32	54	53	22	21	40%	39%
18103265		29	43	31	14	2	33%	7%
18819958		137	590	576	453	439	77%	76%
Total		528	1,217	1,173	689	645	57%	55%
Lakeridge Shores HOA								
19092210		96	77	22	-19	-74	-24%	-331%
17848406		52	58	0	6	-52	10%	na
17198504		28	36	17	8	-11	22%	-61%
19100433		5	8	0	3	-5	33%	na
19090189		494	244	146	-250	-348	-102%	-237%
19094641		40	29	13	-11	-27	-37%	-201%
19090190		52	48	0	-4	-52	-8%	na
19851503		10	11	2	1	-8	5%	-421%
3049653		72	61	0	-11	-72	-17%	na
18048571		87	61	0	-26	-87	-43%	na
19653763		71	75	26	4	-45	6%	-175%
29116008		68	49	11	-19	-57	-40%	-543%
19851783		29	31	17	2	-12	7%	-69%
Total		1,104	787	255	-317	-849	-40%	-333%
Lakeside Church								
19568719	[6]	57	30	15	-27	-42	-90%	-289%
GRAND Total 2003 Group		2,840	3,437	3,336	597	496	17%	15%
GRAND Total 2004 Group		4,259	5,234	4,169	975	-90	19%	-2%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] No meter prior to study period.

[3] Removed from study in 2004 due to landscape changes. ET Controllers remain in place.

[4] Dead meter prior to study start.

[5] Insufficient historical data.

[6] Removed from study due to landscape changes. ET Controller remains in place.

Appendix I
Results by Month by Meter (2006)

2006 Results by Meter Number (May through October)

Meter No.	Notes	Water Use		Savings (Additional)		Percent Savings		
		2006 Use	Historical Use	Expected Use	Water Use over Average	over Expected	over Average	over Expected
Reno Lawn								
20628		349	475	441	126	92	26%	21%
6098437		635	489	474	-146	-161	-30%	-34%
28818		273	368	350	96	77	26%	22%
19087340		302	861	847	559	545	65%	64%
32987647		508	343	327	-165	-181	-48%	-55%
Total		2,067	2,535	2,439	468	373	18%	15%
Northgate Village HOA								
20461		607	1,101	1,064	494	457	45%	43%
19092168		2,408	2,253	2,142	-156	-266	-7%	-12%
32341155		544	930	888	386	344	42%	39%
11850		885	1,064	1,028	179	143	17%	14%
16562		558	668	628	110	70	16%	11%
Total		5,002	6,015	5,750	1,013	748	17%	13%
Cimarron HOA								
18829963		9,343	7,400	7,246	-1,944	-2,097	-26%	-29%
19094615		3,240	3,380	3,237	140	-3	4%	0%
41110		1,661	1,965	1,800	304	139	15%	8%
19094574		2,626	2,162	2,120	-464	-506	-21%	-24%
33475446		2,584	2,230	2,153	-355	-431	-16%	-20%
42347		1,560	1,760	1,710	200	150	11%	9%
17146916		2,082	8,144	8,099	6,062	6,017	74%	74%
Total		23,096	27,039	26,366	3,943	3,270	15%	12%
Mill Creek HOA								
19087349		1,637	1,721	1,662	84	25	5%	1%
19094541		877	1,047	1,011	170	134	16%	13%
19087330		1,199	1,037	984	-163	-215	-16%	-22%
19087350		742	777	735	35	-7	5%	-1%
Total		4,455	4,581	4,392	126	-63	3%	-1%
The Fairways HOA								
32987627		603	568	566	-35	-37	-6%	-7%
19090206		2,322	2,650	2,627	328	305	12%	12%
19090228		240	544	540	304	300	56%	56%
37829		244	332	330	88	86	27%	26%
18103265		318	257	238	-61	-80	-24%	-34%
18819958		1,843	3,721	3,699	1,878	1,856	50%	50%
Total		5,570	8,072	7,999	2,502	2,429	31%	30%
Lakeridge Shores HOA								
19092210		1,844	2,900	2,799	1,056	955	36%	34%
17848406		1,344	2,056	1,967	712	623	35%	32%
17198504		606	1,075	1,031	469	425	44%	41%
19100433		137	180	164	43	27	24%	17%
19090189		4,254	5,687	5,526	1,433	1,272	25%	23%
19094641		764	506	470	-258	-294	-51%	-63%
19090190		1,309	1,722	1,648	413	339	24%	21%
19851503		246	343	328	97	82	28%	25%
3049653		1,576	2,275	2,180	699	604	31%	28%
18048571		1,909	2,580	2,486	671	577	26%	23%
19653763		1,425	2,063	1,966	638	541	31%	28%
29116008		1,533	1,747	1,682	214	149	12%	9%
19851783		280	392	354	112	74	28%	21%
Total		17,227	23,525	22,603	6,298	5,376	27%	24%
Lakeside Church								
19568719	[2]	980	869	832	-111	-148	-13%	-18%
GRAND Total 2004 Group		58,397	72,635	70,382	14,239	11,986	20%	17%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] Removed from study due to landscape changes. ET Controller remains in place.

May 2006

Meter No.	Notes	Water Use			Savings (Additional)		Percent Savings	
		2006 Use	Historical Use	Expected Use [1]	over Average	over Expected	over Average	over Expected
Reno Lawn								
20628		61	87	84	26	23	30%	28%
6098437		59	92	91	33	32	36%	35%
28818		63	59	57	-4	-5	-7%	-9%
19087340		48	122	121	74	73	60%	60%
32987647		8	34	33	26	25	76%	76%
Total		239	393	386	154	148	39%	38%
Northgate Village HOA								
20461		57	138	136	81	79	59%	58%
19092168		163	244	237	81	74	33%	31%
32341155		98	117	115	19	17	16%	14%
11850		125	137	134	12	9	9%	7%
16562		80	90	87	10	7	11%	8%
Total		523	726	709	203	186	28%	26%
Cimarron HOA								
18829963		1,578	1,226	1,216	-353	-362	-29%	-30%
19094615		396	560	551	164	155	29%	28%
41110		347	188	177	-159	-170	-85%	-96%
19094574		427	306	303	-121	-124	-40%	-41%
33475446		395	422	417	27	22	6%	5%
42347		306	338	334	32	28	9%	8%
17146916		161	1,602	1,599	1,441	1,438	90%	90%
Total		3,610	4,641	4,597	1,031	987	22%	21%
Mill Creek HOA								
19087349		191	354	350	163	159	46%	45%
19094541		123	142	140	19	17	14%	12%
19087330		143	157	154	14	11	9%	7%
19087350		55	126	124	71	69	56%	56%
Total		512	780	768	268	256	34%	33%
The Fairways HOA								
32987627		96	90	91	-6	-5	-7%	-6%
19090206		362	371	376	9	14	2%	4%
19090228		42	32	33	-10	-9	-31%	-28%
37829		34	32	31	-3	-3	-8%	-9%
18103265		47	27	31	-20	-16	-74%	-51%
18819958		322	434	439	112	117	26%	27%
Total		903	986	1,001	83	98	8%	10%
Lakeridge Shores HOA								
19092210		299	430	421	131	122	31%	29%
17848406		361	291	279	-71	-82	-24%	-30%
17198504		101	121	117	20	16	16%	14%
19100433		25	27	24	2	-1	7%	-4%
19090189		633	720	703	87	70	12%	10%
19094641		103	123	121	20	18	16%	15%
19090190		197	267	257	70	60	26%	23%
19851503		47	53	52	6	5	11%	9%
3049653		260	411	398	151	138	37%	35%
18048571		326	475	462	149	136	31%	29%
19653763		176	370	362	194	186	52%	51%
29116008		323	311	305	-12	-18	-4%	-6%
19851783		41	62	60	21	19	34%	31%
Total		2,892	3,661	3,561	769	669	21%	19%
Lakeside Church								
19568719	[2]	150	161	159	11	9	7%	6%
GRAND Total 2004 Group		8,829	11,347	11,181	2,518	2,352	22%	21%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] Removed from study due to landscape changes. ET Controller remains in place.

June 2006

Meter No.	Notes	2006 Use	Water Use		Savings (Additional)		Percent Savings over Average
			Historical Use	Expected Use [1]	Water Use over Average	Water Use over Expected	
Reno Lawn							
20628		76	108	113	32	37	29%
6098437		166	97	99	-69	-67	-71%
28818		63	76	79	13	17	17%
19087340		58	157	159	99	101	63%
32987647		46	65	68	19	22	30%
Total		409	503	519	94	111	19%
Northgate Village HOA							
20461		93	202	208	109	115	54%
19092168		500	418	436	-82	-64	-20%
32341155		94	193	200	99	106	51%
11850		140	185	191	45	51	24%
16562		112	142	148	30	36	21%
Total		939	1,140	1,184	201	245	18%
Cimarron HOA							
18829963		1,963	1,452	1,477	-512	-486	-35%
19094615		670	621	645	-49	-25	-8%
41110		325	437	465	112	140	26%
19094574		458	435	442	-23	-16	-5%
33475446		419	380	392	-40	-27	-10%
42347		273	321	329	48	56	15%
17146916		112	1,740	1,747	1,628	1,635	94%
Total		4,220	5,384	5,498	1,164	1,278	22%
Mill Creek HOA							
19087349		354	329	339	-25	-15	-8%
19094541		187	216	222	29	35	13%
19087330		280	203	212	-77	-68	-38%
19087350		191	206	213	15	22	7%
Total		1,012	954	986	-58	-26	-6%
The Fairways HOA							
32987627		128	98	98	-31	-30	-31%
19090206		453	335	336	-119	-117	-35%
19090228		52	35	35	-17	-17	-49%
37829		47	48	47	1	0	2%
18103265		66	48	50	-18	-16	-38%
18819958		388	707	709	319	321	45%
Total		1,134	1,270	1,275	136	141	11%
Lakeridge Shores HOA							
19092210		442	604	628	162	186	27%
17848406		361	550	581	189	220	34%
17198504		145	315	323	170	178	54%
19100433		31	38	46	7	15	19%
19090189		890	1,379	1,422	489	532	35%
19094641		204	123	130	-81	-74	-65%
19090190		320	394	420	74	100	19%
19851503		52	80	84	28	32	35%
3049653		445	569	602	124	157	22%
18048571		501	830	863	329	362	40%
19653763		308	496	517	188	209	38%
29116008		395	396	413	1	18	0%
19851783		70	80	86	10	16	12%
Total		4,164	5,854	6,115	1,690	1,951	29%
Lakeside Church							
19568719	[2]	241	162	169	-79	-72	-48%
GRAND Total 2004 Group		12,119	15,268	15,745	3,149	3,627	21%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] Removed from study due to landscape changes. ET Controller remains in place.

July 2006

Meter No.	Notes	Water Use			Savings (Additional)		Percent Savings	
		2006 Use	Historical Use	Expected Use [1]	Water Use over Average	Water Use over Expected	over Average	over Expected
Reno Lawn								
20628		90	106	113	16	23	15%	20%
6098437		101	114	117	13	16	11%	14%
28818		65	93	97	28	32	30%	33%
19087340		76	168	170	92	94	55%	55%
32987647		53	82	85	29	32	35%	38%
Total		385	562	582	177	197	31%	34%
Northgate Village HOA								
20461		163	306	313	143	150	47%	48%
19092168		581	601	622	20	41	3%	7%
32341155		91	192	200	101	109	52%	54%
11850		236	185	192	-51	-44	-28%	-23%
16562		123	145	153	22	30	15%	20%
Total		1,194	1,429	1,481	235	287	16%	19%
Cimarron HOA								
18829963		2,557	1,300	1,330	-1,258	-1,227	-97%	-92%
19094615		798	580	608	-218	-190	-38%	-31%
41110		361	397	430	36	69	9%	16%
19094574		554	406	414	-148	-140	-37%	-34%
33475446		757	429	444	-329	-313	-77%	-71%
42347		319	366	376	47	57	13%	15%
17146916		473	1,877	1,886	1,404	1,413	75%	75%
Total		5,819	5,354	5,487	-465	-332	-9%	-6%
Mill Creek HOA								
19087349		461	352	364	-109	-97	-31%	-27%
19094541		216	268	275	52	59	19%	21%
19087330		352	240	250	-112	-102	-47%	-41%
19087350		219	190	198	-29	-21	-15%	-11%
Total		1,248	1,049	1,087	-199	-161	-19%	-15%
The Fairways HOA								
32987627		152	142	142	-11	-11	-7%	-7%
19090206		563	476	476	-88	-88	-18%	-18%
19090228		57	116	116	59	59	51%	51%
37829		52	61	61	9	9	15%	15%
18103265		83	42	42	-41	-41	-98%	-98%
18819958		446	714	714	268	268	38%	38%
Total		1,353	1,550	1,550	197	197	13%	13%
Lakeridge Shores HOA								
19092210		505	713	741	208	236	29%	32%
17848406		462	505	541	43	79	8%	15%
17198504		184	296	305	112	121	38%	40%
19100433		30	51	61	21	31	42%	51%
19090189		1,127	1,447	1,497	320	370	22%	25%
19094641		240	74	82	-166	-158	-226%	-193%
19090190		352	475	505	123	153	26%	30%
19851503		59	79	83	20	24	25%	29%
3049653		395	585	624	190	229	32%	37%
18048571		520	552	591	32	71	6%	12%
19653763		469	550	575	81	106	15%	18%
29116008		366	441	461	75	95	17%	21%
19851783		79	77	85	-2	6	-2%	7%
Total		4,788	5,844	6,150	1,056	1,362	18%	22%
Lakeside Church								
19568719	[2]	230	168	176	-62	-54	-37%	-31%
GRAND Total 2004 Group		15,017	15,956	16,513	939	1,495	6%	9%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] Removed from study due to landscape changes. ET Controller remains in place.

August 2006

Meter No.	Notes	Water Use			Savings (Additional)		Percent Savings	
		2006 Use	Historical Use	Expected Use [1]	Water Use over Average	Water Use over Expected	over Average	over Expected
Reno Lawn								
20628		60	79	74	19	14	24%	19%
6098437		144	86	84	-58	-60	-67%	-71%
28818		39	68	65	29	25	42%	39%
19087340		66	166	164	100	98	60%	60%
32987647		123	71	69	-52	-54	-74%	-79%
Total		432	470	455	38	23	8%	5%
Northgate Village HOA								
20461		162	232	226	70	64	30%	28%
19092168		515	433	417	-82	-98	-19%	-24%
32341155		122	182	176	60	54	33%	31%
11850		212	247	242	35	30	14%	12%
16562		118	124	118	6	0	5%	0%
Total		1,129	1,218	1,179	89	50	7%	4%
Cimarron HOA								
18829963		1,517	1,247	1,224	-271	-293	-22%	-24%
19094615		615	687	665	72	50	10%	8%
41110		309	383	359	74	50	19%	14%
19094574		441	453	446	12	5	3%	1%
33475446		612	467	456	-145	-156	-31%	-34%
42347		285	321	314	36	29	11%	9%
17146916		612	1,658	1,651	1,046	1,039	63%	63%
Total		4,391	5,215	5,114	824	723	16%	14%
Mill Creek HOA								
19087349		361	311	302	-50	-59	-16%	-20%
19094541		190	203	198	13	8	6%	4%
19087330		223	223	215	0	-8	0%	-4%
19087350		168	123	117	-45	-51	-36%	-44%
Total		942	860	832	-82	-110	-10%	-13%
The Fairways HOA								
32987627		112	92	92	-21	-20	-22%	-22%
19090206		436	534	534	98	98	18%	18%
19090228		42	138	138	96	96	70%	70%
37829		43	65	65	22	22	34%	34%
18103265		56	46	46	-10	-10	-22%	-21%
18819958		281	645	645	364	364	56%	56%
Total		970	1,520	1,521	550	551	36%	36%
Lakeridge Shores HOA								
19092210		300	640	619	340	319	53%	52%
17848406		160	431	404	271	244	63%	60%
17198504		102	196	189	94	87	48%	46%
19100433		27	29	22	2	-5	8%	-21%
19090189		896	1,025	987	129	91	13%	9%
19094641		124	86	80	-38	-44	-44%	-55%
19090190		235	343	320	108	85	31%	26%
19851503		47	71	68	24	21	34%	30%
3049653		265	371	341	106	76	29%	22%
18048571		314	372	343	58	29	16%	9%
19653763		277	320	301	43	24	13%	8%
29116008		257	316	301	59	44	19%	15%
19851783		51	77	72	26	21	34%	29%
Total		3,055	4,276	4,047	1,221	992	29%	25%
Lakeside Church								
19568719	[2]	165	189	183	24	18	13%	10%
GRAND Total 2004 Group		11,084	13,747	13,331	2,663	2,247	19%	17%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] Removed from study due to landscape changes. ET Controller remains in place.

September 2006

Meter No.	Notes	Water Use			Savings (Additional)		Percent Savings	
		2006 Use	Historical Use	Expected Use [1]	over Average	over Expected	over Average	over Expected
Reno Lawn								
20628		43	60	49	17	6	28%	13%
6098437		142	74	69	-69	-73	-93%	-106%
28818		25	58	51	33	26	57%	51%
19087340		34	144	140	110	106	76%	76%
32987647		170	59	54	-111	-116	-188%	-215%
Total		414	395	363	-20	-51	-5%	-14%
Northgate Village HOA								
20461		84	145	134	61	50	42%	37%
19092168		455	399	363	-56	-92	-14%	-25%
32341155		97	141	127	44	30	31%	24%
11850		108	187	175	79	67	42%	38%
16562		84	95	82	11	-2	12%	-2%
Total		828	967	882	139	54	14%	6%
Cimarron HOA								
18829963		1,267	1,342	1,292	75	25	6%	2%
19094615		512	588	542	76	30	13%	6%
41110		219	380	327	161	108	42%	33%
19094574		746	414	400	-332	-346	-80%	-86%
33475446		264	366	341	102	77	28%	23%
42347		268	283	267	15	-1	5%	0%
17146916		495	929	915	434	420	47%	46%
Total		3,771	4,301	4,084	530	313	12%	8%
Mill Creek HOA								
19087349		200	248	229	48	29	19%	13%
19094541		95	152	140	57	45	37%	32%
19087330		137	144	127	7	-10	5%	-8%
19087350		72	89	75	17	3	19%	4%
Total		504	631	571	127	67	20%	12%
The Fairways HOA								
32987627		75	86	85	11	10	13%	12%
19090206		331	533	526	202	195	38%	37%
19090228		33	156	155	123	122	79%	79%
37829		35	73	72	38	37	52%	52%
18103265		45	51	45	6	0	12%	1%
18819958		266	631	625	365	359	58%	57%
Total		785	1,530	1,509	745	724	49%	48%
Lakeridge Shores HOA								
19092210		200	435	390	235	190	54%	49%
17848406		0	222	163	222	163	100%	100%
17198504		55	113	97	58	42	51%	43%
19100433		18	26	11	8	-7	32%	-62%
19090189		523	873	792	350	269	40%	34%
19094641		71	70	57	-1	-14	-1%	-25%
19090190		166	196	146	30	-20	15%	-14%
19851503		34	49	42	15	8	31%	19%
3049653		186	278	214	92	28	33%	13%
18048571		190	290	228	100	38	34%	17%
19653763		149	252	211	103	62	41%	29%
29116008		175	234	202	59	27	25%	14%
19851783		35	64	52	29	17	45%	33%
Total		1,802	3,103	2,605	1,301	803	42%	31%
Lakeside Church								
19568719	[2]	166	158	145	-8	-21	-5%	-15%
GRAND Total 2004 Group		8,270	11,083	10,158	2,813	1,887	25%	19%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] Removed from study due to landscape changes. ET Controller remains in place.

October 2006

Meter No.	Notes	Water Use			Savings (Additional)		Percent Savings	
		2006 Use	Historical Use	Expected Use [1]	Water Use over Average	over Expected	over Average	over Expected
Reno Lawn								
20628		19	35	7	16	-12	46%	-174%
6098437		23	26	14	3	-9	12%	-63%
28818		17	15	0	-3	-17	-19%	na
19087340		20	105	93	85	73	81%	79%
32987647		108	32	19	-76	-89	-238%	-466%
Total		187	212	133	25	-54	12%	-40%
Northgate Village HOA								
20461		48	77	47	29	-1	38%	-2%
19092168		194	158	66	-36	-128	-23%	-192%
32341155		42	105	70	63	28	60%	40%
11850		64	124	94	60	30	48%	32%
16562		41	72	38	31	-3	43%	-7%
Total		389	536	316	147	-73	27%	-23%
Cimarron HOA								
18829963		461	835	707	374	246	45%	35%
19094615		249	344	226	95	-23	28%	-10%
41110		100	180	43	80	-57	44%	-134%
19094574		0	150	115	150	115	100%	100%
33475446		137	168	103	31	-34	18%	-32%
42347		109	132	90	23	-19	17%	-21%
17146916		229	338	301	109	72	32%	24%
Total		1,285	2,146	1,586	861	301	40%	19%
Mill Creek HOA								
19087349		70	127	78	57	8	45%	10%
19094541		66	66	36	0	-30	0%	-81%
19087330		64	70	26	6	-38	8%	-144%
19087350		37	43	8	6	-29	14%	-360%
Total		237	306	149	69	-88	23%	-59%
The Fairways HOA								
32987627		40	62	59	22	19	35%	32%
19090206		177	402	379	225	202	56%	53%
19090228		14	67	63	53	49	79%	78%
37829		33	54	53	21	20	38%	38%
18103265		21	43	23	22	2	51%	10%
18819958		140	590	567	450	427	76%	75%
Total		425	1,217	1,144	792	719	65%	63%
Lakeridge Shores HOA								
19092210		98	77	0	-21	-98	-27%	na
17848406		0	58	0	58	0	100%	na
17198504		19	36	0	17	-19	47%	na
19100433		6	8	0	2	-6	20%	na
19090189		185	244	126	59	-59	24%	-47%
19094641		22	29	0	7	-22	25%	na
19090190		39	48	0	9	-39	19%	na
19851503		7	11	0	4	-7	33%	na
3049653		25	61	0	36	-25	59%	na
18048571		58	61	0	3	-58	4%	na
19653763		46	75	0	29	-46	39%	na
29116008		17	49	0	32	-17	65%	na
19851783		4	31	0	27	-4	87%	na
Total		526	787	126	261	-400	33%	-318%
Lakeside Church								
19568719	[2]	28	30	0	2	-28	7%	na
GRAND Total 2004 Group		3,077	5,234	3,454	2,157	377	41%	11%

[1] For some months the expected use methodology estimated negative water use. These values were made equal to zero.

[2] Removed from study due to landscape changes. ET Controller remains in place.