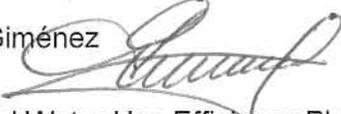


Memorandum



Date: April 20, 2012

To: Honorable Chairman Joe A. Martinez and Members
Board of County Commissioners

From: Carlos A. Giménez 
Mayor

Subject: 2011 Annual Water Use Efficiency Plan Report

The 2011 Annual Water Use Efficiency Plan Report is attached for your review. The report shows that the County's water conservation efforts continue to exceed expectations. The South Florida Water Management District sets the County's 2011 cumulative water savings goal at 6.10 million gallons per day (MGD). We have surpassed the goal by nearly 2.37 MGD making the total water savings since 2007, approximately 8.47 MGD.

The County's water conservation program, together with countywide landscape irrigation restrictions, water loss reduction efforts, and lower than projected population growth, have resulted in a lower demand forecast for water consumption. Consequently, the lower demand has allowed the County to scale back its water supply capital program. To date, the revised capital program excludes development of the Floridian aquifer blending projects, postpones the reuse irrigation projects, and delays the completion of the water reclamation plant projects.

Conservation continues to be the least expensive method of reducing water demand which is why the County will continue to focus on conservation efforts.

If you need additional information, please contact John Renfrow, Director, Miami-Dade Water and Sewer Department at 786-552-8086 or me directly at 305-375-1880.

Attachment

c: Honorable Harvey Ruvín, Clerk of Courts
Alina T. Hudak, Deputy Mayor/ County Manager
Office of the Mayor Senior Staff
John W. Renfrow, P.E., Director Water and Sewer Department
Charles Anderson, Commission Auditor



Delivering Excellence Every Day

2011 Annual Water-Use Efficiency Plan Report

Miami-Dade Water and Sewer Department
3071 SW 38 Avenue
Miami, FL 33146
(786)-552-8974

SUMMARY

In April 2006, the Board of County Commissioners (Board) adopted Resolution R-468-06 approving the County's Water Use Efficiency Five-Year Plan. The Water Use Efficiency Five-Year Plan required the Miami-Dade Water and Sewer Department (WASD) to develop measurable water conservation initiatives, best management practices, more efficient water use practices, and finally, to encourage Miami-Dade County residents to save water. It was also used as the basis upon which to develop a 20-year water conservation plan required by the County's 20-Year Water Use Permit. The 20-year water conservation plan, now entitled as the "20-Year Water Use Efficiency Plan" started in November 2007 and is targeted to save 19.6 million gallons of water per day by 2026.

The following summarizes the County's achievement for a series of conservation initiatives implemented in calendar year 2011 beginning with the initiative that generated the most savings. Together these initiatives saved more than 1.9 million gallons per day in 2011, as shown in Table 1, on page 3.

Water Efficient Landscape Irrigation Evaluations for Homeowner Associations

This project offers free irrigation evaluations and financial incentives to homeowner associations to make their irrigation systems more water efficient. In 2011, 44 associations participated in the project, saving an estimated 1,540,000 gallons of water per day.

Showerhead Exchange and Retrofits

Participating multi-family and single-family properties received high-efficiency showerheads to replace older models through this program. Additionally, WASD distributed water savings kits consisting of high efficiency faucet aerators and leak detection tablets to complement both the showerhead exchange and retrofit projects noted above. The County distributed a total of 1,936 showerheads to single-family households (exceeding the goal by 436 showerheads) and 2,857 to multi-family units (exceeding the goal by 357). The total water saved from these projects is estimated to be 216,165 gallons per day.

High Efficiency Toilet Rebates

This project offers up to a \$50 rebate for the purchase and installation of a high efficiency toilet. In 2011, the goal set for high efficiency toilet rebate applications was 2,000 rebates. This goal was exceeded by 566 as 2,566 rebates were issued generating an estimated 74,414 gallons of water saved per day.

Senior and Low Income Retrofits

This project offers retrofits to senior and low income property owners who either have the senior property tax exemption or meet certain federal income criteria. In 2011, a total of 706 residents participated in the project, which saved an estimated 45,184 gallons of water per day.

Single-Family Homes Urban Conservation Unit Landscape Evaluations and Retrofits

Under this program, the County offers single-family households free landscape irrigation system evaluations and a \$400 rebate to qualifying homeowners. In 2011, 145 homeowners made their landscapes and irrigations systems more water efficient, saving an estimated 33,785 gallons of water per day.

Green Lodging

The County, in conjunction with the Florida Department of Environmental Protection, launched this program to provide water conservation information and technical assistance to hotels. The program encourages hotel guests to use bed linens and towels more than once before the linens and towels are laundered. This program resulted in an estimated savings of 4,851 gallons of water per day.

The water conservation goal as pledged by WASD is to save 19.6 million gallons per day by 2026 as shown in the table below. At the end of calendar year 2011, WASD has saved more than 8.4 million gallons per day.

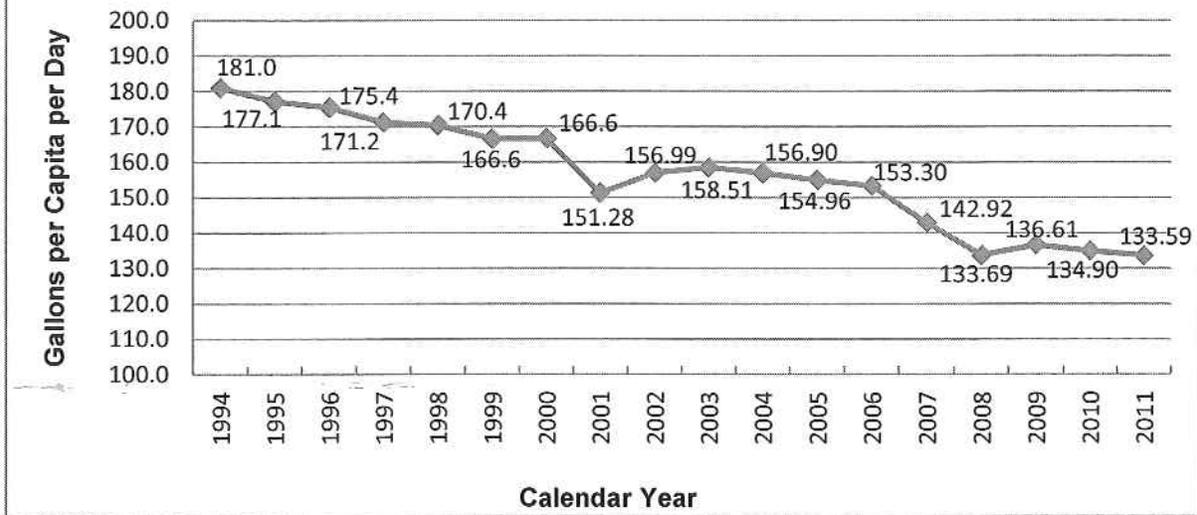
Calendar Year	Water Savings (MILLION GALLONS PER DAY)	
	Planned	Reported
2007	1.085854	1.212308
2008	2.243228	3.476908
2009	3.529212	4.902751
2010	4.815196	6.541536
2011	6.10118	8.466445
2016	11.69942	--
2021	15.66834	--
2026	19.62226	--

Table 1

The current demand for finished water is 44 million gallons per day lower than was projected in November 2007. The lower demand is the result of lower than projected population growth, permanent landscape irrigation restrictions, water loss reduction, and the success of the water conservation initiatives and best management practices that have been implemented. As a result of the lower than projected demand, WASD re-evaluated the County's water use projections and has adjusted the schedule of capital water supply projects.

On the following page, Figure 1 shows the per capita water consumption rates and illustrates a significant decline in water consumption since 2006, when the County implemented the Water Use Efficiency 5-Year Plan. Water usage in 2011 continues to remain well below levels in 2006 when finished water per capita usage averaged approximately 154 gallons per capita per day; in 2011, the per capita water usage averaged approximately 134 gallons per capita per day.

**Figure 1
Historical Systemwide Average
Finished Water Per Capita**



Water Conservation Program Details

Details of the various programs (and their respective achievements) that make-up both the 5-Year and 20-Year Water Use Efficiency Plans are outlined below.

Outreach

WASD has partnered with the County’s Community Information & Outreach and the Miami-Dade County Cooperative Extension Service to promote water conservation through public information, education, and workshops. Table 2 shows the public education activities performed in 2011.

Table 2
Water Use Efficiency Public Education

<p>In-School Programs</p>	<p>The Children's Education Campaign Water Conservation Outreach Plan which began in 2009 is intended to educate school children about the importance and benefits of water conservation. Outreach is conducted in public, private and charter schools. The multimedia program currently consists of PowerPoint presentations at schools, distribution of activity and coloring books that teach a water-conservation ethic, along with movie theater ads, social media, and television ads geared towards children. The Miami-Dade Water Conservation website also features a "Kid's Page" with water conservation information including activities and games. Additionally, "The Every Drop Counts" poster contest is held annually to encourage kindergarten through 5th grade children to develop ideas on how to conserve water. The contest features the Program's mascot, D-Rop.</p> <p>WASD also partners with the Miami-Dade Cooperative Extension Service Florida Yards & Neighborhood Program to conduct youth-oriented outreach on outdoor water conservation at schools and in the 4-H program.</p>
<p>Public Events</p>	<p>WASD participates in various public events such as "Adopt a Tree" "Earth Fest", Miami-Dade County Home Energy Workshops, Commissioner-sponsored events, Community Group Meetings and outreach activities geared towards specific business sectors.</p> <p>Additionally, the Florida Yards and Neighborhoods program is part of the County Urban Conservation Unit and is funded by WASD. The Florida Yards and Neighborhoods program conducts outreach at public events promoting Florida-friendly landscaping, rain barrel workshops, the water use efficiency program and other water conservation programs available through WASD.</p>
<p>Printed Materials</p>	<p>WASD provides several publications: <i>The Pipeline</i> newsletter is distributed in the quarterly water and sewer bills; the customer information booklet, "All You Need to Know" is a guide for customers regarding WASD services and water conservation; the "Saving Water at Home" publication and the Leak Detection brochure provide water conservation practices and leak detection information for households.</p>
<p>Public Service Announcements</p>	<p>Water conservation information is developed by WASD and the County's Community Information & Outreach Office, who together developed a comprehensive media campaign including radio and TV announcements.</p>
<p>Program Materials</p>	<p>Program Material sources include: Environmental Protection Agency American Water Works Association Materials Developed In-House by Miami-Dade County Community Information & Outreach</p>

Figure 2 provides an example of the outreach and the communication methods used in the High Efficiency Toilet Rebate Program. The most successful method of promoting the High Efficiency Toilet Program was through the County's water conservation web page, www.miamidade.gov/conservation, followed by word of mouth, and in-store brochures.

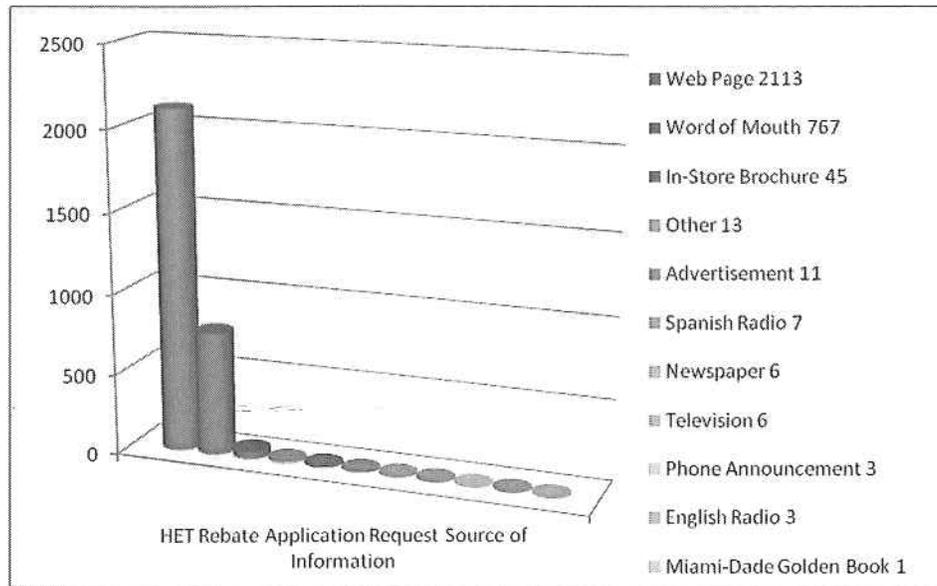


Figure 2 – Information Sources for High Efficiency Toilet Rebate Program

Deliverables and Milestones with a Five-Year Horizon

Appendix A of this report describes the Plan's deliverables, milestones and results of various conservation components of the Water Use Efficiency 20-Year Plan. These include indoor and outdoor water efficiency projects and WASD's outreach program. Some of the most noteworthy accomplishments were the indoor water use efficiency projects, which continued to yield a higher number of applications in 2011 than anticipated.

Three of the indoor water use efficiency projects far exceeded their goals. The High Efficiency Toilet Rebate Program was expected to result in 2,000 applications by year's end, however 2,566 applications were processed. The Single-Family Showerhead Exchange Program had a 2011 goal to exchange 1,500 showerheads but this goal was surpassed with a total of 1,936 showerheads exchanged for more efficient models during the period. The Multi-Family Showerhead Retrofit Project provided 2,857 showerheads, which was above the target of 2,500 showerheads.

The Landscape Irrigation Evaluation Programs, coordinated in conjunction with the Cooperative Extension Service also exceeded their goals. Landscape irrigation evaluations were completed at 44 homeowners associations and 145 single family homes; the goals for these projects were 35 homeowners associations and 120 single family homes, respectively. During 2011, WASD in conjunction with the Cooperative Extension Service also implemented a Landscape Evaluation and Rebate Program for County facilities, which resulted in the evaluation of seven landscape irrigation systems.

Cumulative Water Savings

Total water savings from implementing best management practices are summarized below. A total of 1.925 million gallons of water per day was saved in 2011.

Figure 3 illustrates water savings generated from outdoor and non-residential water saving initiatives. Homeowner association landscape irrigation evaluations and rebates yielded the highest water savings, 1,540,000 gallons per day, while single family home landscape irrigation evaluations and retrofits reduced consumption by an estimated 33,785 gallons per day. Water savings for the green lodging program accounted for an estimated 4,851 gallons per day while landscape evaluations at County facilities totaled nearly 10,500 gallons per day.

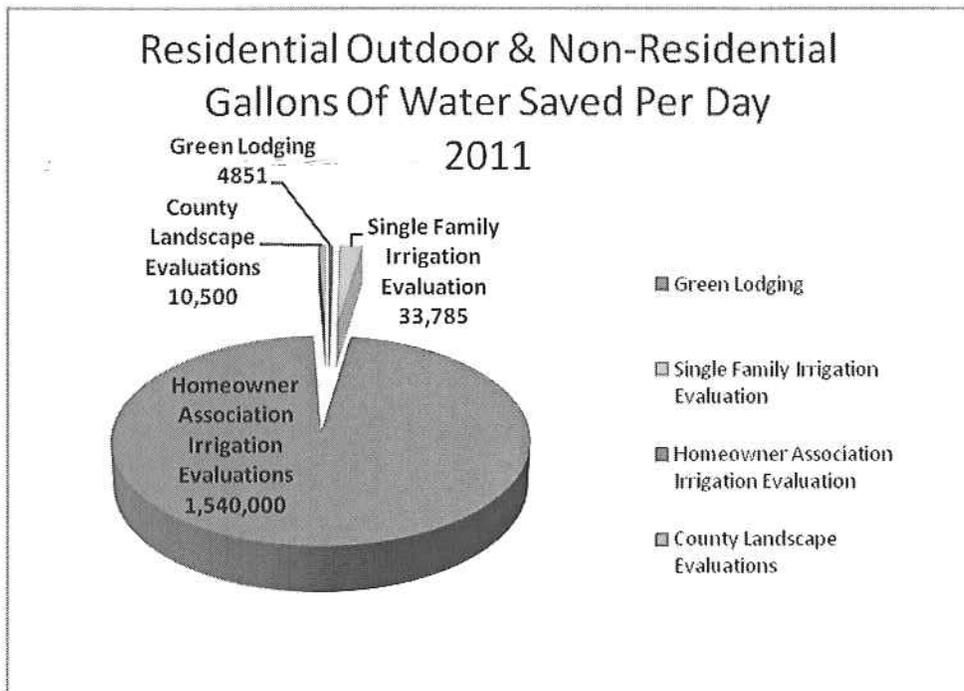


Figure 3: Outdoor & Non-Residential Water Savings

As shown on the next page, Figure 4 depicts the water savings associated with indoor residential conservation initiatives. The showerhead projects generated the most water savings totaling about 216,165 gallons per day for both the single-family and the multi-family programs, followed by the high efficiency toilet rebates which saved an estimated 74,414 gallons per day, while the Senior and Low Income Retrofit Program conserved approximately 45,184 gallons of water per day.

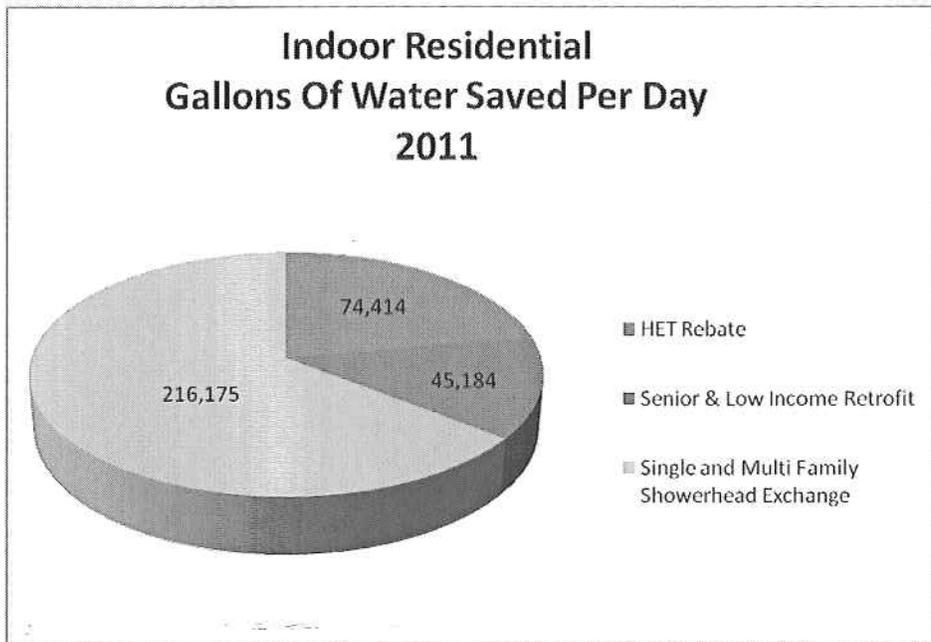


Figure 4: Savings from Residential Indoor Water Conservation Programs

Water use efficiency standards for new residential and commercial developments enacted by the Board of County Commissioners on January 1, 2009, are being implemented through local building codes. The standards included technical amendments to the County's building code requiring maximum water conservation flow rates for plumbing fixtures. These standards will result in a significant reduction in indoor water use when compared to construction that occurred under the old Code.

The County continues to implement the Permanent Landscape Irrigation Restrictions Ordinance which limits landscape irrigation to two days a week. In 2011, an educational door hanger was developed to provide County and municipal police, code enforcement, and field staffs with a tool to provide a friendly reminder to residents and businesses that are not complying with the restrictions.

The County has also enacted a tiered water rate structure which includes a surcharge for high water use to encourage water conservation.

Educational efforts are on-going to ensure that the public is informed of these water use efficiency requirements.

APPENDIX A
DELIVERABLES AND MILESTONES
WITH A FIVE-YEAR HORIZON

PROJECTS	2008	2009	2010	2011	2012
<p>Indoor Projects (Residential)</p> <ul style="list-style-type: none"> Exceeded Senior Retrofit Project Goal of 1000 installations by 124 residences. Exceeded High Efficiency Toilet Rebate Project Goal of 750 by issuing 1393 rebates. Implemented the High Efficiency Washer Rebate Project and exceeded goal of 150 rebates by issuing 773 rebates. Exceeded goal of Showerhead Exchange Project. Implemented Showerhead Rebate Project. 	<ul style="list-style-type: none"> Installed 1000 High Efficiency Toilets and showerheads as part of the Senior and Low Income Retrofit Project. Exceeded High Efficiency Washer rebate goal of 250 rebates by 687 rebates. Exceeded High Efficiency Toilet Rebate project goal of 1000 by issuing 3478 rebates. Exceeded goal of Single Family Showerhead Exchange Project by 683. Continued Showerhead Rebate Project. Implemented the Multi-Family Retrofit Pilot Project co-funded by the South Florida Water Management District Water Savings Incentive Program, and installed 315 High Efficiency Toilets. 	<ul style="list-style-type: none"> Exceeded High Efficiency Toilet Rebate Project goal of 2000 by issuing 2622 rebates. Exceeded goal of Single Family Showerhead Exchange Project by 486. Issued 6519 showerheads to multi-family residential Properties, including partnering with the Miami Dade Public Housing Agency to install 1145 showerheads in low-income and senior housing. Installed more than 1000 High Efficiency Toilets in 845 homes as part of the Senior and Low Income Retrofit Project. Tracked Project water savings. 	<ul style="list-style-type: none"> Installed more than 1000 High Efficiency Toilets in 706 homes as part of the Senior and Low Income Retrofit Project. Exceeded High Efficiency Toilet Rebate Project goal of 2000 by issuing 2566 rebates. Established Multi-family High Efficiency Toilet rebate project. Exceeded goal of 1500 exchanges by 436 for the Single Family Showerhead Project. Issued 2857 showerheads to multi-family residential Properties. Tracked Project water savings. 	<ul style="list-style-type: none"> Evaluate Senior and Low Income Retrofit Project to find ways to achieve greater water savings, while decreasing implementation cost. Continue implementation of High Efficiency Toilet Rebate Project. Continue Showerhead projects for Single & Multi-family Units and Rebate Projects for residential properties. Continue Multi-family High Efficiency Toilet rebate project. Track water savings. 	
<p>Outdoor Projects</p> <ul style="list-style-type: none"> Implemented the Landscape Irrigation Evaluation project (20 Homeowner Associations) in partnership with the Cooperative Extension Service and developed the Urban Conservation Unit to perform irrigation evaluations in single family homes. 	<ul style="list-style-type: none"> Implemented Urban Conservation Unit Project and met goal of evaluating 200 single family homes. Exceeded goal of 20 Homeowners Association Evaluations by completing 25 evaluations. 	<ul style="list-style-type: none"> Completed 131 single family irrigation evaluations and installation of soil moisture sensors. Implemented new single family irrigation evaluation and rebate program. Completed 26 Homeowner Association Evaluations. Tracked actual water savings for participating Homeowner Association and single family participants. 	<ul style="list-style-type: none"> Implemented single family irrigation evaluation and new rebate program; completed 145 evaluations. Completed 44 Homeowner Association evaluations. Implemented an Irrigation Evaluation and Rebate project targeting County facilities with large landscaped areas that are served by potable water and conducted 7 evaluations. Tracked actual water savings. 	<ul style="list-style-type: none"> Continue implementation of single family landscape evaluations. Continue implementation of Homeowner Association Landscape Evaluations. Implement Commercial and Large Property Landscape Evaluation Program. Continue County Facility Irrigation Evaluations & Rebate Program. Track water savings. 	

PROJECTS	2008	2009	2010	2011	2012
Commercial, Institutional and Industrial (ICI) Water-use Audits	<ul style="list-style-type: none"> Evaluated audit recommendations for county-owned facilities. Established guidelines for water-use reduction project for cooling towers. 	<ul style="list-style-type: none"> Established guidelines for implementation of water-use audits for institutional facilities. Evaluated water-use reduction project for cooling towers and held cooling tower workshop for building managers. 	<ul style="list-style-type: none"> Worked with the Sustainability, Planning & Economic Enhancement Department to develop the Green Business Certification Program. 	<ul style="list-style-type: none"> Worked with Sustainability, Planning & Economic Enhancement Department to finalize and implement the Green Business Certification Program. Began tracking water savings for audited County facilities and worked with County building managers to increase water savings. 	<ul style="list-style-type: none"> Continue working with County facilities to increase water savings and offer incentives to assist Departments in retrofits. Implement high efficiency toilet rebate project for hotels. Evaluate commercial water savings incentive programs. Track water savings.
Green Lodging and Restaurant Projects	<ul style="list-style-type: none"> Completed evaluations of 12 hotels for green lodging program. Completed evaluations of 12 restaurants. 	<ul style="list-style-type: none"> Met the annual goals of Green Lodging and Green Restaurant Programs. 	<ul style="list-style-type: none"> Worked with Sustainability, Planning & Economic Enhancement Department to develop the Green Business Certification Program, which will incorporate lodging and restaurants. Completed green lodging and restaurant evaluations. 	<ul style="list-style-type: none"> Worked with Sustainability, Planning & Economic Enhancement Department to develop and implement the Green Business Certification Program, which incorporates lodging and restaurants. Implemented Showerhead Retrofit project for small hotels. Completed green lodging evaluations. 	<ul style="list-style-type: none"> Implement water-use audits for lodging and restaurants participating in Green Business Program. Continue Showerhead Retrofit project for small hotels. Implement High Efficiency Toilet rebate project for hotels. Track water savings.
Outreach	<ul style="list-style-type: none"> Developed marketing/media campaigns in partnership with the Community Information & Outreach. Completed training of 100 teachers through the WET in the City Project. Completed the update and redesign of the website (Community Information & Outreach). Developed and published the Water-use Efficiency Standards Manual. 	<ul style="list-style-type: none"> Developed a Children's Campaign. Started outreach program in schools. Created D-Rop mascot for Children's Campaign. Held first annual "Every Drop Counts" poster contest for elementary age school children. Evaluated and assessed effectiveness of campaigns. 	<ul style="list-style-type: none"> Held 2nd annual "Every Drop Counts" poster contest and received more than 2000 entries. Conducted "Get Your Green On" video contest for high school students. Continued extensive outreach program, visiting numerous schools, and participating in business and Commission-sponsored events. 	<ul style="list-style-type: none"> Held 3rd annual "Every Drop Counts" poster contest and received more than 2300 entries. Continued extensive outreach program, visiting numerous schools, and participating in outreach events. Continued Use-Less Campaign. In partnership with the Urban Conservation Unit, delivered landscape and rain barrel workshops. 	<ul style="list-style-type: none"> Continue to implement and evaluate Children's Campaign. Continue D-Rop poster contest Develop program for middle school age children to encourage water savings. Work with <i>Dream in Green</i> on water conservation program for schools. Perform evaluation and assessment of new strategies and continue to implement marketing campaigns based on results.

PROJECTS	2008	2009	2010	2011	2012
Outreach (Continued)	<ul style="list-style-type: none"> Implemented an outreach plan for the Landscape Irrigation Project. 	<ul style="list-style-type: none"> Continued Landscape Irrigation Education Campaign (Community Information & Outreach) with Use-Less Campaign. In partnership with the Urban Conservation Unit, delivered landscape and rain barrel workshops. Held irrigation contractor workshop with Urban Conservation Unit. 	<ul style="list-style-type: none"> Created EcoFair Program in conjunction with Cooperative Extension Service to conduct outreach at low income and senior housing. Continued Use-Less Campaign (Community Information & Outreach). In partnership with the Urban Conservation Unit, delivered landscape and rain barrel workshops. Held irrigation contractor workshop with Urban Conservation Unit. 	<ul style="list-style-type: none"> Held irrigation contractor workshops with the Urban Conservation Unit. 	
Wholesale Customer Assistance Project	<ul style="list-style-type: none"> Completed development of all wholesalers Water Use Efficiency Program 	<ul style="list-style-type: none"> Completed selection of the appropriate best management practices for each wholesale customer. 	<ul style="list-style-type: none"> Educated wholesale customers on Irrigation Restrictions and water conservation initiatives. 	<ul style="list-style-type: none"> Educated wholesale customers on Irrigation Restrictions and water conservation initiatives. 	<ul style="list-style-type: none"> Assist wholesale customers in the updating their Water Use Efficiency Program.



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