



Miami-Dade
Water and Sewer Department

**Miami-Dade Consolidated PWS
Water Use Permit No. 13-00017-W**

**Water Conservation Plan
2011 Annual Report**

January 1, 2011 Through December 31, 2011

**Miami-Dade
Water and Sewer Department
P.O. Box 33-0316, Miami, FL 33233-0316**

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INTRODUCTION

On November 15, 2007, the South Florida Water Management District (SFWMD) Governing Board approved the Miami-Dade Consolidated PWS Water Use Permit (WUP). On November 1, 2010, the SFWMD Governing Board approved the reissuance of the permit extending the WUP for an additional three years.

To comply with the Permit requirements, MDWASD developed a 20-year Water Use Efficiency (WUE) Plan using the Florida Department of Environmental Protection Conserve Florida Guide (Guide). The Guide is a web-based application for goal-based water conservation planning. MDWASD was the first utility in the State to use the Guide to develop, administer and report its water conservation program.

The implementation of the Best Management Practices (BMPs) included in the Conserve Florida Plan guarantees that MDWASD will meet the projected 19.6 million gallons a day (MGD) water savings target by 2026, as required by the Permit. Current water savings have surpassed the projected 2011 cumulative savings target of 6.10 MGD, by more than 2.36 MGD.

MDWASD hereby submits the fifth Water Conservation Plan Annual Progress Report detailing the County's actions and efforts to comply with Limiting Condition 48 of the WUP.

SUMMARY

Miami-Dade County's Water Use Efficiency (WUE) Program was implemented utilizing the Florida Department of Environmental Protection (DEP) Conserve Florida Guide. The web-based guide for public water suppliers was used for developing, implementing, and now reporting on the water conservation measures and best management practices (BMPs) of Miami-Dade's WUE program. The use of quantifiable BMPs and measures has assisted in reviewing and evaluating planned and reported water savings on an annual basis to ensure the implementation of a cost-effective conservation program.

To ensure future water savings, the Water Use Efficiency Standards for new residential and commercial developments, which were enacted by the Miami-Dade Board of County Commissioners on January 1, 2009, are being implemented through local building codes. The standards included technical amendments to the Building Code to require 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. A written advisory notice is sent to follow up on formal complaints that are received through either the County's 3-1-1 system or via a web-based e-mail system.

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

Miami-Dade County is currently experiencing actual finished water demands 44 MGD lower than what was anticipated in November 2007. The lower demands are the result of lower than anticipated population growth, along with the implementation of the County's irrigation restrictions, Water Loss Reduction Program, and Water Use Efficiency Program.

SECTION I - PLAN IMPLEMENTATION

The Conserve Florida BMPs that MDWASD has implemented as part of the Water Use Efficiency Plan are shown in this Report in Appendix A. Overall, the projected water savings for 2011 has exceeded projections (Figure 1) and most individual BMP targets have been exceeded.

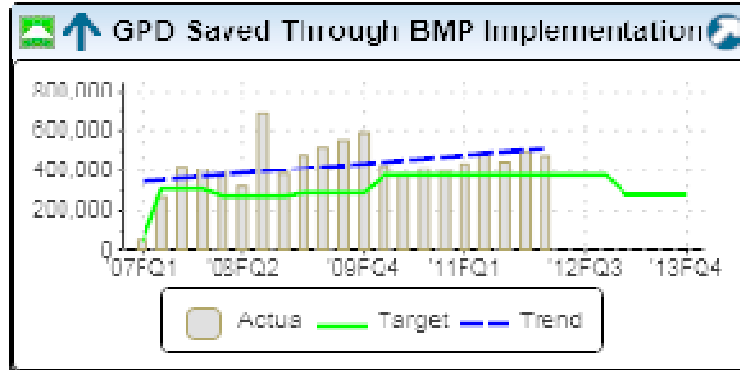


Figure 1

As a result of the implementation of the BMPs and the landscape irrigation restriction measures, Miami-Dade County has continued to see a lower than expected per capita water consumption. Figure 2 reflects the historical systemwide per capita, showing the effectiveness of all of MDWASD's water efficiency strategies.

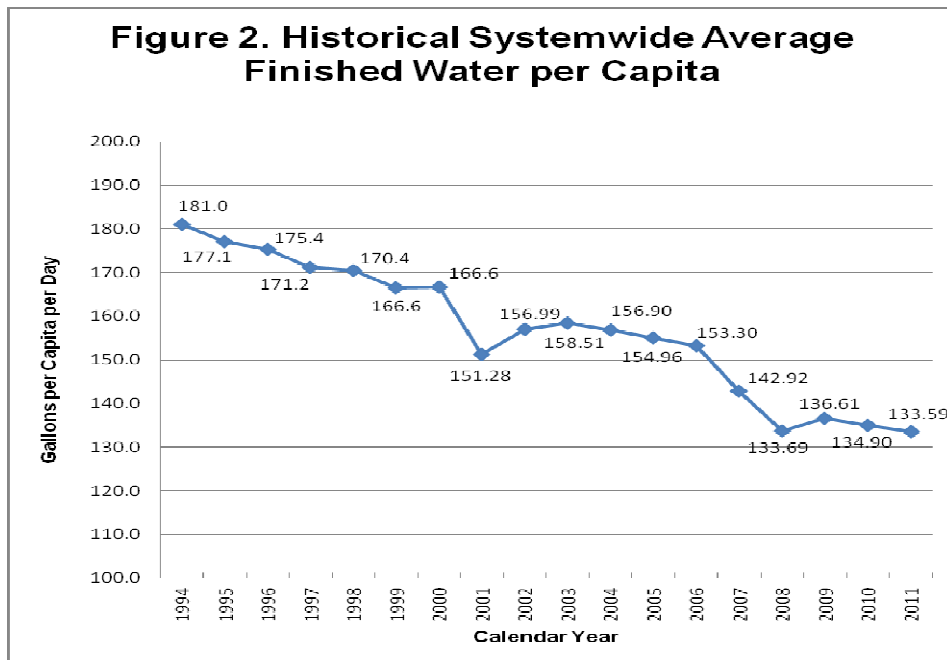


Figure 2

Table 1, the Water Savings Projections Table, shows both the actual and projected water saving information generated from the Guide's Reporting Module. This Table also includes population and per capita projections for the 20-year Plan horizon.

Water Savings Projection Report Summary

Year	Water Savings (mgd)		Demand (mgd)			Population		Per Capita Demand (gpcd)		
	Planned	Reported	Without Conservation	Planned	Actual	Forecasted	Actual	Without Conservation	Planned	Actual
2007	1.09	1.212308	348.89	347.37865	315.8	2250944	2235179	155	154.33	142.92
2008	2.24	3.476908	345.78	342.732191	295.2	2230895	2213833	155	153.63	133.69
2009	3.53	4.902751	325.51	320.771322	305.8	2238700	2238700	145.4	143.28	136.61
2010	4.82	6.541536	329.12	322.429388	305.3	2263566	2263566*	145.4	142.44	134.90
2011	6.10	8.466445	332.74	324.247924	305.7	2288432	2288432*	145.4	141.69	133.59
2016	11.70		352.86	337.652284	--	2401027	--	145.4	139.14	--
2021	15.67		371.58	352.402364	--	2529835	--	145.4	137.89	--
2026	19.62		390.31	367.177444	--	2658643	--	145.4	136.78	--

*Pending Verification of Census Numbers

Table 1

**APPENDIX A - BMP IMPLEMENTATION
THROUGH DECEMBER 31, 2011**

BMP Implementation for: High Efficiency Toilet & Retrofit Kit
Category: Retrofit
Sector: Single Family –Senior and Low Income Retrofit Project
Cost per Account: \$

Year		Units	Savings/Account (Address) Gallons/account/day	Total Savings (gal/day)
2007	Planned	750	64	48,000
	Reported	890	64	56,960
	Difference	140		8,960
2008	Planned	1000	64	64,000
	Reported	1124	64	71,936
	Difference	124		7,936
2009	Planned	1000	64	64,000
	Reported	1000	64	64,000
	Difference	0		
2010	Planned	1000	64	64,000
	Reported	845*	64	54,080
	Difference	-155		-9,920
2011	Planned	750	64	48,000
	Reported	706	64	45,184
	Difference	44		-2,816

*** Note: Reported Value is for each address where an retrofit occurred. A retrofit consists of up to 2 HETs, 2 showerheads, 2 bathroom faucet aerators and a kitchen aerator.**

BMP Implementation for: High Efficiency Clothes Washer Rebates
Category: Indoor
Sector: Single Family Home Washers – Rebate
No Expenditures in 2010

Year		Units	Savings/Measure gallon/measure/day	Total Savings (gal/day)
2007	Planned	0	16.3	0
	Reported	0	16.3	0
	Difference	0		
2008	Planned	150	16.3	2,445
	Reported	849	16.3	13,838.7
	Difference	699		11,393.7
2009	Planned	250	16.3	4,075
	Reported	937	16.3	15,273.1
	Difference	687		11,198.1
2010	Planned	0	16.3	0
	Reported	0	16.3	0
	Difference	0		
2011	Planned	0	16.3	0
	Reported	0	16.3	0
	Difference	0		

BMP Implementation for: Ultra Low Flush (ULF) Toilet Rebates
Category: Rebate
Sector: Single Family – High Efficiency Toilet (HET) Rebate Project
Cost per Rebate: \$50

Year		Units	Savings/Account gallons per account per day	Total Savings (gal/day)
2007	Planned	750	29	21,750
	Reported	971	29	28,159
	Difference	221		6,409
2008	Planned	750	29	21,750
	Reported	1253	29	36,337
	Difference	503		14,587
2009	Planned	1000	29	29,000
	Reported	3478	29	100,862
	Difference	2478		71,862
2010	Planned	2000	29	58,000
	Reported	2622	29	76,038
	Difference	622		18,038
2011	Planned	2000	29	58,000
	Reported	2566	29	74,414
	Difference	566		16,414

BMP Implementation for: High Efficiency Toilet (HET)
Category: Retrofit
Sector: Multi-Family HET Retrofit Project
No Expenditures in 2011

Year		Units	Savings/Unit Gallons per multi-family unit per day	Total Savings (gal/day)
2007	Planned	0	64	0
	Reported	0	64	0
	Difference	0		
2008	Planned	0	64	0
	Reported	0	64	0
	Difference	0		
2009	Planned	310	64	19,840
	Reported	315	64	20,160
	Difference	5		320
2010	Planned	0	64	0
	Reported	0	64	0
	Difference	0		
2011	Planned	0	64	0
	Reported	0	64	0
	Difference	0		

BMP Implementation for: High Efficiency Showerheads**Category: Indoors****Sector: Single Family - Showerhead Exchange****Cost per Showerhead: \$3.00**

Year		Units	Savings/Measure Gallons/measure/day	Total Savings (gal/day)
2007	Planned	1600	35	56,000
	Reported	4194	35	146,790
	Difference	2594		90,790
2008	Planned	1600	35	56,000
	Reported	2437	35	85,295
	Difference	837		29,295
2009	Planned	1480	35	51,800
	Reported	2163	35	75,705
	Difference	683		23,905
2010	Planned	1500	35	52,500
	Reported	1986	35	69,510
	Difference	486		17,010
2011	Planned	1500	35	52,500
	Reported	1936	35	67,760
	Difference	436		15,260

BMP Implementation for: High Efficiency Retrofit Kit**Category: Indoors****Sector: Single Family - Retrofit Kit (High Efficiency Faucet Aerators and Dye Tablets)****Cost per Retrofit Kit: \$2.83**

Year		Units	Savings/Measure Gallons/measure/day	Total Savings (gal/day)
2007	Planned	1600	12	19,200
	Reported	4194	12	50,328
	Difference	2594		31,128
2008	Planned	1600	12	19,200
	Reported	2437	12	29,244
	Difference	837		10,044
2009	Planned	1480	12	17,760
	Reported	1498	12	17,976
	Difference	18		216
2010	Planned	1000	12	12,000
	Reported	1321	12	15,852
	Difference	321		3,852
2011	Planned	1000	12	12,000
	Reported	1417	12	17,004
	Difference	417		5,004

BMP Implementation for: High Efficiency Showerheads
Category: Indoors
Sector: Multi-Family – Showerhead Exchange
Cost per Showerhead: \$3.00

Year		Units	Savings/Measure Gallons/Unit/Day	Total Savings Gallons Per Day (gal/day)
2007	Planned	1600	35	56,000
	Reported	4193	35	146,755
	Difference	2593		90,755
2008	Planned	1600	35	56,000
	Reported	4000	35	140,000
	Difference	2400	35	84,000
2009	Planned	2120	35	74,200
	Reported	2130	35	74,550
	Difference	10		350
2010	Planned	5000	35	175,000
	Reported	6519	35	228,165
	Difference	3485		53,165
2011	Planned	2500	35	87,500
	Reported	2857	35	99,995
	Difference	357		12,495

BMP Implementation for: High Efficiency Retrofit Kit**Category: Indoors****Sector: Multi-Family – Retrofit Kit (High Efficiency Faucet Aerators and Dye Tablets)****Cost per Retrofit Kit: \$2.83**

Year		Units	Savings/Measure Gallons/measure/day	Total Savings (gal/day)
2007	Planned	1600	12	19,200
	Reported	4193	12	50,316
	Difference	2593		31,116
2008	Planned	1600	12	19,200
	Reported	4000	12	48,000
	Difference	2400		28,800
2009	Planned	2120	12	25,440
	Reported	2130	12	25,560
	Difference	10		120
2010	Planned	2600	12	31,200
	Reported	5657	12	67,884
	Difference	3057		36,684
2011	Planned	2000	12	24,000
	Reported	2618	12	31,416
	Difference	618		7,416

BMP Implementation for: Water-Efficient Landscape and Irrigation Evaluations and Rebates
Category: Landscape and Irrigation Evaluations with Rebates
Sector: Homeowners Associations (HOA) Landscape Evaluation with Smart Controller
Cost per Evaluation, Smart Controller and Rebate: \$3200

Year		Units	Savings/Account Gallons/account/day	Total Savings (gal/day)
2007	Planned	20	35,000	700,000
	Reported	20	35,000	700,000
	Difference	0		
2008	Planned	20	35,000	700,000
	Reported	50	35,000	1,750,000
	Difference	30		1,050,000
2009	Planned	20	35,000	700,000
	Reported	25	35,000	875,000
	Difference	5		175,000
2010	Planned	25	35,000	875,000
	Reported	26	35,000	910,000
	Difference	1		35,000
2011	Planned	35	35,000	1,225,000
	Reported	44	35,000	1,540,000
	Difference	9		315,000

BMP Implementation for: Water-Efficient Landscape and Irrigation Evaluations and Rebates
Category: Landscape and Irrigation Evaluations with Rebates
Sector: Single Family Homes (UCU) Landscape Evaluation and Rebate
Cost per Evaluation and Rebate: \$500

Year		Units	Savings/Account Gallons/account/day	Total Savings (gal/day)
2007	Planned	0	233	0
	Reported	0	233	0
	Difference	0		
2008	Planned	0	233	0
	Reported	0	233	0
	Difference	0		
2009	Planned	200	233	46,600
	Reported	200	233	46,600
	Difference	0		
2010	Planned	120	233	27,960
	Reported	131	233	30523
	Difference	11		2563
2011	Planned	120	233	27,960
	Reported	145	233	33,785
	Difference	25		5,825

BMP Implementation for: Non-residential Water-Use Evaluations/Implementations
Category: Evaluations without Rebates
Sector: Non-Residential – County Owned Facilities Landscape Evaluation
Cost per Evaluation - \$250

Year		Units	Savings/Measure Gallons/measure/day	Total Savings (gal/day)
2007	Planned	22	1,500	33,000
	Reported	22	1,500	33,000
	Difference	0		
2008	Planned	10	1,500	15,000
	Reported	38	1,500	57,000
	Difference	28		42,000
2009	Planned	0	1,500	0
	Reported	0	1,500	0
	Difference	0		
2010	Planned	0	1,500	0
	Reported	3	1,500	4500
	Difference	3		4500
2011	Planned	10	1,500	15000
	Reported	7	1,500	10,500
	Difference	3		-4,500

BMP Implementation for: Non-residential Water-Use Evaluations/Implementations**Category: Evaluations without Rebates****Sector: Non-Residential – Green Restaurant Program****Cost per Evaluation and Spray Nozzle: \$250**

Year		Units	Savings/Measure Gallons/measure/day	Total Savings (gal/day)
2007	Planned	0	100	0
	Reported	0	100	0
	Difference	0		
2008	Planned	12	100	1,200
	Reported	14	100	1,400
	Difference	2		200
2009	Planned	12	100	1,200
	Reported	12	100	1,200
	Difference	0		
2010	Planned	12	100	1,200
	Reported	11	100	1,100
	Difference	-1		-100
2011	Planned	0	100	0
	Reported	0	100	0
	Difference	0		

BMP Implementation for: Non-residential Water-Use Evaluations/Implementations**Category: Evaluations without Rebates****Sector: Non-Residential – Green Lodging Project****Cost per Evaluation: \$250**

Year		Units	Savings/Measure gallons/measure/day	Total Savings (gal/day)
2007	Planned	0	1,617	0
	Reported	0	1,617	0
	Difference	0		
2008	Planned	12	1,617	19,404
	Reported	17	1,617	27,489
	Difference	5		8,085
2009	Planned	12	1,617	19,404
	Reported	21	1,617	33,957
	Difference	9		14,553
2010	Planned	0	1,617	0
	Reported	4	1,617	6,468
	Difference	4		6,468
2011	Planned	0	1,617	0
	Reported	3	1,617	4,851
	Difference	3		4,851

BMP Implementation for: Non-residential Water-Use Evaluations/Implementations
Category: Evaluations without Rebates
Sector: Non-Residential Industrial, Commercial and Institutional (ICI) – Private Facilities
No Expenditures in 2011

Year		Units	Savings/Measure (gpm/d)	Total Savings (gal/day)
2007	Planned	22	1,500	33,000
	Reported	22	1,500	33,000
	Difference	0		
2008	Planned	10	1,500	15,000
	Reported	38	1,500	57,000
	Difference	28		42,000
2009	Planned	0	1,500	0
	Reported	0	1,500	0
	Difference	0		
2010	Planned	0	1,500	0
	Reported	0	1,500	0
	Difference	0		
2011	Planned	0	1,500	0
	Reported	0	1,500	0
	Difference	0		