

6

DEMAND MANAGEMENT MEASURES

6.1 DEMAND MANAGEMENT MEASURE IMPLEMENTATION

Urban Water Management Planning Act Requirement:

10631 (f) (1) and (2) (Describe and provide a schedule of implementation for) each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following: (A) water survey programs for single-family residential and multifamily residential customers; (B) residential plumbing retrofit; (C) system water audits, leak detection, and repair; (D) metering with commodity rates for all new connections and retrofit of existing connections; (E) large landscape conservation programs and incentives; (F) high-efficiency washing machine rebate programs; (G) public information programs; (H) school education programs; (I) conservation programs for commercial, industrial, and institutional accounts; (J) wholesale agency programs; (K) conservation pricing; (L) water conservation coordinator; (M) water waste prohibition; (N) residential ultra-low-flush toilet replacement programs

10631 (f)(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented, or described under the plan

10631 (f)(4). An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand

10631 (g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following: (1) take into account economic and noneconomic factors, including environmental, social, health customer impact,

and technological factors; (2) Include a cost-benefit analysis, identifying total benefits and total costs; (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost; (4) Include a description of the water supplier’s legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation

The City of Morgan Hill works with the Santa Clara Valley Water District (SCVWD) to implement water conservation techniques to reduce the total demand of water throughout the City and Santa Clara County. Together, the City and SCVWD implement the 13 required Demand Management Measures (DMMs) within the City (DMM 10 is not required as the City is not a wholesale agency). Although the City is not a member of the California Urban Water Conservation Council (CUWCC) and has not signed the Memorandum of Understanding (MOU), the City does recognize the importance of implementing the DMMs to encourage water conservation throughout the community. SCVWD is a member of the CUWCC and has subscribed to the implementation of the Best Management Practices (BMPs). Since the City is a member agency of SCVWD, SCVWD assists the City in the implementation of the BMPs to improve water conservation. The following table summarizes the BMPs/DMMs:

Table 6.1.1 CUWCC BMP Organization and Names (2009 MOU) and UWMP DMMs					
Type	Category	BMP #	BMP Name	DMM #	DMM Name
Foundational	Operations Practices	1.1.1	Conservation Coordinator	12	Water Conservation Coordinator
		1.1.2	Water Waste Prevention	13	Water Waste Prohibition
		1.1.3	Wholesale Agency Assistance Programs	10	Wholesale Agency Programs
		1.2	Water Loss Control	3	System Water Audits, Leak Detection, and Repair

Table 6.1.1 CUWCC BMP Organization and Names (2009 MOU) and UWMP DMMs						
Type	Category	BMP #	BMP Name	DMM #	DMM Name	
		1.3	Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections	4	Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections	
		1.4	Retail Conservation Pricing	11	Conservation Pricing	
	Education Programs	2.1	Public Information Programs	7	Public Information Programs	
		2.2	School Education Programs	8	School Education Programs	
	Programmatic	Residential	3.1	Residential Assistance Program	1	Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers
					2	Residential Plumbing Retrofit
3.2			Landscape Water Survey	1	Water Survey Programs for Single-Family Residential and Multifamily Residential Customers	
3.3			High-Efficiency Clothes Washing Machine, Financial Incentive Programs	6	High-Efficiency Washing Machine Rebate Programs	

Table 6.1.1 CUWCC BMP Organization and Names (2009 MOU) and UWMP DMMs					
Type	Category	BMP #	BMP Name	DMM #	DMM Name
		3.4	WaterSense Specification (WSS) toilets	14	Residential Ultra-Low-Flush Toilet Replacement Programs
	Commercial, Industrial, and Institutional	4	Commercial, Industrial, and Institutional	9	Conservation Programs for Commercial, Industrial, and Institutional Accounts
	Landscape	5	Landscape	5	Large Landscape Conservation Programs and Incentives

6.2 OPERATIONS PRACTICES

6.2.1 Water Conservation Coordinator (DMM 12)

The City has appointed an employee who is responsible for water conservation. Currently, the duties of the Water Conservation Coordinator do not require a full-time position, and therefore it is part of the duties of another full-time employee. Duties for the Water Conservation Coordinator include:

- Coordination and oversight of conservation programs and DMM implementation.
- Keeping a log of conservation practices conducted throughout the City and point person(s) assigned to each area.
- Acting as the point-of-contact to the Public for general inquiries and requests for information.
- Communication and promotion of water conservation issues to City senior management, and coordination of City conservation programs with operations and planning staff.

The person responsible for Water Conservation for the City is Mr. Anthony Eulo. His contact information is below:

Name: Anthony Eulo
 Title: Program Administrator
 Address: 17575 Peak Ave., Morgan Hill, CA 95037
 Phone: (408) 778-6480
 E-mail: Anthony.Eulo@morganhill.ca.gov

The City has historically had a part-time Water Conservation Coordinator. The below table outlines the staff allocations and actual/projected expenditures the City will allocate for their conservation coordinator duties through 2015.

Table 6.2.1					
Water Conservation Coordinator Staff Time and Expenditure					
Year	2006	2007	2008	2009	2010
Number of Part-Time Staff	0.31	0.31	0.31	0.31	0.31
Actual Expenditures	\$61,800	\$85,800	\$95,800	\$119,700	\$113,600
Year	2011	2012	2013	2014	2015
Number of Part-Time Staff	0.31	0.31	0.31	0.31	0.31
Projected Expenditures	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000

6.2.2 Water Waste Prohibition (DMM 13)

There are specific water waste prohibitions already stipulated in the City’s Municipal Code Section 13.04.330; this can be found in Appendix J. The City has also prepared a “Model Resolution for Mandatory Reductions In and Specified Prohibitions of Water Use” so that it is prepared in the case of drought or water shortage, which can be found in Appendix K.

SCVWD has also developed a set of model water use restrictions. In 2009, SCVWD worked with cities and member agencies to develop a model Drought Response and Water Waste Ordinance which can be found in Appendix L.

Together, these three documents support the conservation of water and reduction of waste water, with tips and laws to prevent unnecessary water waste. These documents also work with

the Water Shortage Contingency plan to reduce water waste during in times of drought. For more information about the Water Shortage Contingency Plan, see Chapter 5: Water Supply Reliability and Water Shortage Contingency Plan.

6.2.3 Wholesale Agency Programs (DMM 10)

This DMM is not required as the City is not a wholesale agency.

6.2.4 System Water Audits, Leak Detection, and Repair (DMM 3)

The City has implemented a system water audit to determine if leaks in the supply and distribution system exist and a method for repair in the event that the leaks become significant. The system audit is performed by tracking the actual metered water use, which can be compared to total well production. Production is tracked monthly, and reviewed annually to determine if the system exhibits significant losses.

As part of this program, the City's Maintenance Department handles physical audits and repairs. When losses become significant, the Maintenance Department determines specifically where leaks exist. Discovered leaks are then slated for repairs. A record of the discovery of leaks and details of the repair are kept.

Documentation of each incidence and/or detected leak will be kept along with the date repairs are made. Once a repair is made, a minimum of one year's follow up of well production versus use data will be tracked to determine the total amount of water savings through said repair.

An auditing system was developed in 2007 and annual reviews have been conducted since then. Using 2010 data, verifiable use as a percent of total production is calculated comparing actual metered sales (6,778 AF) against total supply into the system as measured at the wellhead meters (7,333 AF). Based upon this data, the City has approximately 7% loss in their system.

6.2.5 Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections (DMM 4)

Part of DMM 4 includes the retrofitting of existing metered connections. The City estimates that there are no unmetered connections within the City limits since there has never been a flat rate charged for water use within any sector. Therefore, no program for retrofitting existing unmetered connections is identified.

The City adopted an Ordinance that requires separate meters installed at multi-unit residences and in multi-use developments. Research shows that water users paying for their own water use an average of 15% less water than they would if they were not metered separately. By requiring separate water meters, the City expects to see a marked decrease in water use at these locations.

As part of this effort, SCVWD offers rebates for installation of submeters. This program gives a rebate of \$100 for every water submeter installed at multi-family housing complexes, such as mobile home parks and condominium complexes. During the pilot program in 2001, 1,187 rebates were distributed by SCVWD. From 2007-2011, 160 submeter rebates have been given to the City.

6.2.6 Conservation Pricing (DMM 11)

The City uses an inverted water rate structure to provide incentives to customers to reduce water use. This type of structure effectively resulted in a 32% reduction of water use between 1987 and 1991. Considering the historical success of using such a structure, this type of structure has been in use for nearly 25 years and encourages a mind-set for conservation with its customers. The table below shows the current rate structure. Note that 1 unit is equivalent to 748 gallons.

Table 6.2.2 Current Residential Rate Structure			
User Class	Tier 1 (1-10 Units)	Tier 2 (11-30 Units)	Tier 3 (31+ Units)
City Residents	\$1.17/Unit	\$2.34/Unit	\$3.51/Unit
County Residents	\$1.76/Unit	\$3.52/Unit	\$5.26/Unit

6.3 EDUCATION PROGRAMS

6.3.1 Public Information Programs (DMM 7)

The City and SCVWD work together to raise public awareness regarding many different issues regarding water and water supply. These issues include information pertaining to runoff pollution, water quality, and water conservation. The City and SCVWD have several ways of educating the public about these broad topics that ultimately pertain to water use by the City customers.

The City promotes water conservation to local residents and business in the following ways:

- Literature Rack: A rack containing water conservation literature has been in the City Hall lobby since 1999.
- Bill Inserts: The City's utility bills have included a minimum of one insert annually on water conservation.
- New Resident Orientation: each new utility customer is sent information about the City's water conservation program and offered additional literature and water-saving devices.
- Demonstration Gardens: The City has three Demonstration Garden Sites to inform residents how to maintain their gardens in ways that still conserve water and improve water quality.
- Newspaper Columns and Newsletters: The City's Water Conservation Coordinator has written numerous newspaper columns promoting water conservation during the past decade. In addition, the topic has been featured in the City's newsletter and in the City's Consumer Confidence Report.
- Special Events: For the past several years, City Staff have attended community festivals and exhibitions to promote water conservation.

In addition to these educational outreach programs provided by the City, the City also works with SCVWD to develop and market conservation techniques through various types of media, including radio, television and the internet.

One such campaign spearheaded by SCVWD and supported by the City encouraged all water users in the Santa Clara Valley County to "Save 20 gallons." The 20 gallon reduction goal was developed by SCVWD and its member agencies as a significant reduction in water use per person. The campaign focused on influencing residents' daily habits involving water use and

identifying where water can be conserved. Among advertising this campaign on television, radio, and the internet (save20gallons.org), SCVWD also provided fliers posters, signs, bookmarks and other material to remind residents to be constantly aware of their water use. The “Save 20 gallons” campaign is a year-long campaign. Updates on the success and actual conservation are done on a District wide basis, and available through SCVWD.

The table below shows the implementation schedule and actual/projected expenditures of certain of the above-listed conservation efforts through 2015:

Table 6.3.1 Public Information Actual Expenditures					
Program	2006	2007	2008	2009	2010
Bill Inserts/Newsletters/Brochures	X	X	X	X	X
Demonstration Gardens	X	X	X	X	X
Special Events/Media Events	X	X	X	X	X
Program to Coordinate with other government agencies, industry and public interest groups and media	X	X	X	X	X
Actual Expenditures	\$6,517	\$2,958	\$1,436	\$8,979	\$2,355

Table 6.3.2 Public Information Projected Expenditures					
Program	2011	2012	2013	2014	2015
Bill Inserts/Newsletters/Brochures	X	X	X	X	X
Demonstration Gardens	X	X	X	X	X
Special Events/Media Events	X	X	X	X	X
Program to Coordinate with other government agencies, industry and public interest groups and media	X	X	X	X	X
Projected Expenditures	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500

6.3.2 School Education Programs (DMM 8)

In 1995, SCVWD hired a full-time, fully-credentialed educator who holds life-time teaching and Administrative Services credentials to coordinate the school education programs. This included developing school programs, contracting with the Youth Science Institute for additional instructors, and supervising university student interns as classroom assistants.

SCVWD has been continuously active in the area of youth education by providing free classroom presentations, puppet plays, and tours of District facilities within the County. The objective is to teach students about water conservation, water supply, watershed stewardship, and flood protection. SCVWD also provides school curricula to area educators, including workbooks and videos as well as hands-on training for teachers. In 2010, over 11,200 kindergarten through 6th grade students and 221 7th grade through 12th grade students were reached. SCVWD completed 476 classroom presentations, with over 10,600 students attending. The annual budget for FY 2010 was \$215,000. The goal of the program is to reach 12,000 students this year, ranging from pre-kindergarten through college.

Materials distributed to students included topical lessons, all of which meet state education framework requirements and are grade-level appropriate. All students who participated in the program received materials.

6.4 RESIDENTIAL PROGRAMS

6.4.1 Water Survey Programs for Residential Customers (DMM 1)

The City works with SCVWD to administer residential water survey programs to its single-family and multi-family residential customers. Since 1998, SCVWD has conducted Water Wise House Calls that include the following components:

- Educating the customer on how to read a water meter
- Checking flow rates of showerheads, faucet aerators, and toilets
- Checking for leaks
- Installing low-flow showerheads, aerators and/or toilet flappers
- Checking the irrigation system for efficiency, including leaks
- Measuring landscaped area
- Developing an efficient irrigation schedule for the different seasons,
- Providing the customer with evaluation results, water savings recommendations, and other educational materials

The Water Survey Programs are promoted countywide through a summer media campaign which typically includes television, radio, and print ads. SCVWD plans to continue the program to meet the region’s long-term water conservation goals.

Since the program started, SCVWD has administered approximately 29,600 audits and since 2005, 297 were performed within the City.

Table 6.4.1 Water Wise House Call Summary for Single and Multi-Families					
Year	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Surveys Completed	20	27	82	104	64

6.4.2 Residential Plumbing Retrofit (DMM 2)

The City offers free water-saving showerheads and faucet aerators to all City residents as mechanisms to achieve in-home water savings. This is done with SCVWD as part of its Residential Plumbing Retrofit strategy. SCVWD also distributes high-quality, low-flow showerheads and faucet aerators to single-family and multi-family residents through the water retailers and public events. Since program inception in 1992, more than 296,000 low-flow showerheads and aerators have been distributed throughout the county, including more than 22,000 in FY 2010. Since 2005, 700 water-saving showerhead retrofits have been completed for the City.

6.4.3 High Efficiency Washing Machine Rebate Programs (DMM 6)

SCVWD has a high-efficiency washing machine rebate program that serves the customers of the City. Currently SCVWD partners with Pacific Gas and Electric (PG&E) to provide a total rebate of \$125 to residents who purchase a washer rated as a Tier 3 according to the Consortium for Energy Efficiency. Of this total rebate, PG&E contributes \$50 per washer and SCVWD contributes the remaining \$125. A high-efficiency washer will save approximately 6,500 gallons of water per year for an average household. Since 1995, 1948 washing machine rebates were given to residents of the City of Morgan Hill.

Table 6.4.2 High-Efficiency Washing Machine Rebate Summary					
Year	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Rebates Given	268	303	234	451	494

6.4.4 Residential ULFT Replacement Programs (DMM 14)

The City has a program for ULFT replacement through SCVWD. SCVWD has completed the required water savings by retrofitting approximately 244,000 toilets in the County with ULFTs since the program started in 1992.

In 2004, SCVWD shifted towards offering High-Efficiency Toilets (HETs), which offer additional water savings of about 20%. The current program offers rebates only for WaterSense HETs. Single-family and multi-family accounts are eligible for the \$125 rebate upon purchase of a HET.

Multi-family residential units are also eligible for installation. SCVWD has already given out rebates for 7,700 single-family HETs and 8,000 multi-family HETs. SCVWD plants to continue this program to increase water conservation. Since 2005, 549 ULFTs were installed through this program in the City of Morgan Hill.

Table 6.4.3 High-Efficiency Toilet Rebate Summary					
Year	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Rebates Given	1	13	149	178	208

6.5 COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL PROGRAMS

6.5.1 Commercial, Industrial, and Institutional Programs (DMM 9)

SCVWD has initiated programs for Commercial, Industrial and Institutional (CII) incentives for water conservation. SCVWD offers comprehensive CII surveys – including cost-benefit analysis for all recommendations – to businesses within Santa Clara County. Since 2008, SCVWD has completed approximately 220 CII Water Use Surveys; 13 of these surveys have been completed for CII customers in the City.

The City and SCVWD also encourages water conservation through rebate programs for newer, more water efficient technologies. Among these technologies offered for businesses are commercial ultra-low flush toilets and urinals, commercial clothes washers, efficient pre-rinse spray valves, and submeter rebates.

In 1994, SCVWD began offering rebates to businesses who replaced inefficient toilets with ULFT. This program changed in 2000, when SCVWD began offering direct installation of ULFT, as opposed to offering rebates as incentive for businesses to replace existing toilets. Since the program started in 1994, more than 8,700 ULFTs have been installed through District funded programs.

In addition to the ULFT rebate, SCVWD also offers rebates to businesses that replace inefficient washers with new high-efficiency washers. This program began in 1999, and offered rebates to Laundromats within the County only. In 2000, the program was expanded to include multi-family housing complexes and other commercial operations including hotels, schools, churches and other CII customers. In July 2010, the program was modified so that only the highest tier of

water conservation washers is eligible for rebates. This is consistent with SCVWD’s long-term water conservation goals.

SCVWD also offers free low-flowing pre-rinse sprayers and high-efficiency faucet aerators to businesses. The pre-rinse sprayers offered flow at 1.15 gallons per minute, and the faucet aerators flow at 0.5 gallons per minute. These are available through SCVWD website and offer significant savings (approximately \$1,000 per year for local businesses). Since 2005, 1500 aerators and 37 pre-rinse sprayers were retrofitted in the City.

6.6 LANDSCAPE PROGRAMS

6.6.1 Large Landscape Conservation Programs and Incentives (DMM 5)

Water-Wise Landscaping

The City is currently implementing three demonstration gardens using “Water-Wise” landscaping that serve as models for both public and private water conservation practices. These gardens include hardscaping mixed with native plants. The watering systems designed for planted areas are beneath the surface for increased efficiency. Additional information on demonstration gardens is also provided under DMM 7: Public Information.

The Weather Based Irrigation Controller (WBIC) Rebate program, a financial incentive for commercial, industrial, and institutional sites, to purchase and install WBICs from the District’s approved list is available to sites that have a minimum of a half acre (21,780 sq ft) of irrigated landscape. The sites must also participate in a pre-installation landscape survey. 19 WBIC rebates were given to the City since 2005.

Landscape Survey Program

The Landscape Survey Program (LSP) provides technical assistance to property owners and managers with greater than one acre of irrigated landscape. Based on a thorough evaluation of the entire irrigation system, including checking system efficiencies and distribution uniformity, participants receive customized efficiency recommendations and an annual watering schedule/budget. Since 2005, 36 landscape surveys have been completed for the City.

City Ordinance

A City Ordinance stipulates was adopted in 2006 landscape water conservation standards and requirements for irrigation system management and maintenance. The Ordinance includes inspection, monitoring, and enforcement practices.

Irrigation System Hardware Rebate Program

SCVWD’s Irrigation System Hardware Rebate Program (ISHRP) is a rebate program that has been developed to assist the Landscape Survey Program participants in implementing their site-specific hardware upgrade recommendations. The program offers a rebate of 50 percent of the water efficient hardware cost up to \$4,000 per site. This program launched in December 2005 and since then, 26 rebates have been given to the City.

Residential Water Efficient Landscape Rebate Program (WELRP)

The Residential WELRP program which began in December 2005 provides rebates to assist homeowners in converting high water using plants to low water using plants or permeable hardscape. The rebate amount is \$75 per 100 square feet or a maximum of \$1,000, whichever is lower for residents in Santa Clara County. The City of Morgan Hill, being a cost sharing partner, provides City of Morgan Hill residents an additional \$75 per 100 square feet for a total of \$150 per 100 square feet, or a maximum of \$2,000.

Reduced City Maintenance Areas

In an effort to both advance the water conservation efforts of municipal operations and reduce the amount of required maintenance in low-use park areas, the City has implemented a “Fringe Area Turf Reduction Program.” In these low-use park areas, watering of turf has been ceased and is instead allocated solely to sustaining tree and shrub growth. Wood chips replace the turf once it dies. Signs have been or will be posted at these areas to inform the public of the transition period, as shown in Figure 6.6.1:

Figure 6.6.1 – Example of a Reduced Maintenance Area



There are currently seven parks within the City that are impacted by this program:

- Civic Center Park
- Community Park
- Diana Park
- Galvan Park
- Jackson Park
- Nordstrom Park
- Paradise Park

As a long-term program, a significant reduction in water use is expected. Additional information on the reduced maintenance areas may be found on the City's website or through inquiry with the City's Water Conservation Coordinator.