

APPENDIX G

Demand Management Measure Implementation Plan, January 2011

City of Ceres

2005 Urban Water Management and Conservation Plan – Demand Management Measure Implementation Plan

January 2011

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Section 1

Introduction

This Demand Management Measure (DMM) implementation plan has been prepared to provide procedures for the Water Conservation Coordinator or conservation staff to implement and track conservation outlined in the City's 2005 Urban Water Management and Conservation Plan (UWMP). The UWMP minimum requirements have been identified, and program implementation elements recommended are consistent with current industry standards for water conservation. Based on research of how other agencies are implementing their water conservation programs, we have identified program elements that we believe exceed the minimum requirements of the Ceres UWMP, but represent a reasonable level of effort and a good investment by the City to reduce water waste and curb excessive water use. It should be noted however, most of these programs largely rely on metered data tracking, therefore; documenting the effects of these programs will not be possible until the City completes the meter retrofit project.

The following DMMs are discussed in this Report:

DMM 1: Water Survey Programs for Single Family and Multi-Family Residential Customers

DMM 2: Residential Plumbing Retrofit

DMM 3: System Water Audits, Leak Detection, and Repair

DMM 4: Metering with Commodity Rates

DMM 5: Large Landscape Conservation Programs and Incentives

DMM 6: High Efficiency Washing Machine Rebate Program

DMM 7: Public Information Program

DMM 14: High Efficiency Toilet Rebate Program

For each of the above DMM's, the minimum requirement described in the City's approved UWMP are summarized. Included with the minimum requirements is a brief listing of the goal and objectives of the element and a description of the implementation plan, procedures, and data tracking to be summarized in UWMP five (5) year reporting periods. The appendices to this report contain supporting documents, forms, and worksheets for the City's use in implementing these DMM's. Electronic copies of the appendix documents are also contained in the attached CD.

DMM 1: Water Survey Programs for Single Family and Multi-Family Residential Customers

2.1 MINIMUM REQUIREMENTS OF THE URBAN WATER MANAGEMENT PLAN, 2005

The City has committed to providing interior and/or exterior water audits to single-family and multi-family connections on an as requested basis. The program as described in the UWMP is a self-audit program consisting of an audit form and general information on how to reduce water consumption. The City has a goal of achieving at least two (2) single-family surveys and one (1) multifamily survey per year. In order to implement this DMM, the City will need to prepare the self-audit forms and disseminate general information regarding water conservation measures with the self audit forms. In order to comply with the UWMP requirements, the City will also need to document the number of survey forms issued and to what addresses they were sent. With this information the City would track implementation and even possibly review changes in water use for these connections.

2.2 GOALS AND OBJECTIVE

Many residential customers unknowingly use water inefficiently. Additionally, customers may not understand the amount of water wasted by over watering their landscape. A water survey program will educate City customers on efficient landscape water use, test fixtures for leaks, and provide information on other services available to them (other DMM's) such as rebates and provide free water efficient fixtures.

The overall goal of this DMM is to reduce the residential sector water demand, in conjunction with other DMM's, by 10 % of historic average annual water demand as provided by metered data for the reporting period. This will be done by targeting specific customers on an ongoing basis and provide an indoor/outdoor residential survey.

2.3 IMPLEMENTATION PLAN

2.3.1 DMM DESCRIPTION

The Water Survey Program for Single-Family Residential and Multi-Family Residential Customers consists of the following actions:

2.3.2 MARKETING

1. Target high use customers and market water use surveys to single-family residential and multi-family residential customers through the following actions.

- A. On an annual basis (each August), compile single-family and multi-family residential user account information and water use data. This information will be analyzed to prioritize the marketing efforts described below. High volume water use customers as identified as being the top 5 percent (%) highest water consumers in each residential sub-sector will be the focus for marketing efforts.
 - B. Develop or identify marketing material to be used for initial contact, and follow up to surveys. Example marketing documents are attached in Appendix F.
 - C. Since metered data is currently not available, self audit information will be available on the city's website and at the Public Works Department front desk.
2. Directly contact via letter, telephone, or bill stuffer not less than 5% of single-family residential customers and 5% of multi-family residential customers each year with an offer to conduct a water survey. Letter correspondence will include information on other DMM services available to the customer such as high efficient toilets, high efficient washing machines, and free water conserving retrofit devices.

2.3.3 SURVEY PROCEDURES

Self surveys will be issued for all positive respondents to the survey offer and other interested customers becoming aware of the survey through DMM # 7 or other marketing methods. The self survey kit will include the survey forms and instructions to walk the customer through the water audit process. Surveys shall include indoor and outdoor components, and have the following elements:

2.3.3.1 Indoor

The form enclosed in the kit will allow the customer to record their fixture flow rates for comparison to currently available low water use fixtures and allow the customer to return the completed form for a free water conservation kit distributed under DMM # 2. The self survey kit will include the following:

- A. Toilet dye tabs to detect toilet leaks (DMM #2),
- B. Shower flow rate detector bag (DMM #2),
- C. Self Water Survey instructions and forms (Appendix A),
- D. Educational material such as water savings tips, and water savings estimates upon switching to water efficient devices (Included in Survey Instructions)
- E. The significance of the EPA WaterSense® certification (Appendix F),
- F. Promotional material for incentives and rebates the City provides (Appendix F).

Forms and instruction can be found in Appendix A which Figure 2-1 displays the customer survey form.

City of Ceres Self Water Home Survey

GENERAL INFORMATION

Customer/Account Name: _____ Account #: _____
 Address: _____
 Telephone No. _____

Type of Dwelling Single-family Multi-family Other
 No. of occupants: Adults _____ Children _____

INDOOR RESIDENTIAL WATER-USE INVENTORY

Faucet	No. 1	No. 2	No. 3	No. 4
Gallons per minute (gpm, full flow)				
Bathroom / Lavatory/Kitchen				
Water saving device installed? ²				
Leak detected? (yes/no)				
Shower				
Gallons per minute (gpm, full flow)				
Leak detected at shower head? (yes/no)				
Water saving device installed? (yes/no) ²				
Toilets				
Gallons per flush (gpf)				
Year toilet manufactured				
Water saving device installed? (yes/no) ¹				
Leak detected? (yes/no, dye test/other)				
Clothes Washer				
Washing Machine present? (yes/no)				
Year washing machine was manufactured				
Gallons per load (from survey instructions)				
Leak detected at washer or hose connection? (yes/no)				
Dish Washer				
Dish Washer present? (yes/no)				
Year dish washer was manufactured				
Leak detected? (yes/no)				
<small>¹ Toilet displacement bag, toilet etc. ² Flow restrictor etc.</small>				

OUTDOOR RESIDENTIAL WATER-USE INVENTORY

Irrigation System

Irrigation controller Controller Timer Manual
 Types Hose Sprinkler Rotor Impact Drip Micro-spray

Lawn Operation	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Normal run time						
Type of plants irrigated per zone (grass/shrubs)						
# of broken heads						
Head clogged						
Head too high or low						
Head stuck or tilted						
Spray blocked or misdirected						
Gallons per minute						
Square footage of lawn						
Type of plants irrigated per zone (grass/shrubs)						

Source: Adapted from Vickers (2000)

Figure 2-1
Self Water Audit Worksheet

2.3.3.2 Outdoor

An outdoor self survey will walk the customer through a simple irrigation check and provide tips on efficient landscape irrigation practices. The outdoor self survey will contain:

- A. A City approved irrigation schedule,
- B. Information on how to identify the amount of water to be used during a watering event,

Upon returning the survey to the City, the City will provide the customer with evaluation results, and water saving recommendations.

2.3.4 EQUIPMENT LIST

The City will compile DMM specific materials/equipment such as the following:

- 1) Flow measuring equipment used to measure fixture flow rates (flow rate bag) and leakage rates. (optional: portable meter reader see Section 5.6 of DMM # 7)
- 2) A self survey kit containing marketing material, instructions, worksheet, toilet dye tablets, and flow rate bag. (See Appendix A for survey instructions & Appendix F for marketing material).

2.4 TRACKING AND DOCUMENTATION

Information gathered through surveys will be used to track implementation of this DMM. Additionally, this information will assist in communicating conservation efforts during UWMP updates. The following information will be retained for each survey for the reporting period:

1. Number of single-family residential accounts in service area.
2. Number of multi-family residential accounts in service area.
3. Number of single-family residential surveys offered during the reporting period.
4. Number of single-family residential surveys completed during the reporting period.
5. Number of multi-family residential surveys offered during reporting period.
6. Number of multi-family residential surveys completed during reporting period.
7. Retain self survey records for all survey respondents.
8. Track costs on a per survey basis and cumulative basis. Costs include, staff time during survey and administrative time tracking and updating account information, repairs done, and plumbing retrofit devices installed.
9. Track projected water savings for this DMM until the city completes the meter installation to verify actual water savings. Projected savings will be the estimated

savings achieved from installed retrofit devices in DMM 2 and should be reported under that DMM.

2.5 BUDGET AND STAFFING

Adequate resources are the key to the implementation of any program. Specific tasks and material are identified to assist the Water Conservation Coordinator allocate staff and resources to ensure a successful conservation campaign. The estimates provided are conservative and should be accurately tracked and revised as this DMM is implemented to provide accurate budget estimates for subsequent fiscal years. The estimates shown are on a per survey basis therefore the annual costs must be determined based on total budget allocated for this DMM. The following items are broken down in water conservation staff time, office administration and units costs for equipment and supplies.

Table 2-1
DMM 1 Costs per Survey and Initial Materials Costs

Water Conservation Staff:	
Evaluate indoor/outdoor self-survey forms	1 hrs
Contact marketing and survey follow-up	0.25 hrs
Administration:	
Administrative support:	0.5 hrs
Total Staff Time:	1.75
Unit Costs:	
Marketing Material	\$1.50
Self Survey Kit Equipment (dye tabs, catch cans)	\$7.50
Other DMM #1 Budgetary Costs :	
Capital Costs for equipment:	
Annual Marketing analysis of high water users:	8 hrs

DMM 2: Residential Plumbing Retrofit

3.1 MINIMUM REQUIREMENTS OF THE URBAN WATER MANAGEMENT PLAN, 2005

The City has implemented this DMM making retrofit kits available to the public since 1994. Since implementation of this DMM the City covered approximately 7% of the 2005 residential population. The City has planned to continue the distribution of the retrofit devices at a rate of eight (8) single-family and two (2) multi-family residential plumbing retrofit kits each year.

3.2 GOAL AND OBJECTIVE

This Demand Management Measure replaces high water use fixtures with low-volume plumbing retrofit devices. These devices range from toilet water displacement bags to faucet aerators. The devices are typically installed during a water survey however are available to the public upon request. The Goal of this DMM is to:

1. Install retrofit devices, as necessary, in all households conducting a residential survey with high quality water efficient fixtures and water saving devices.
2. Make available retrofit devices to all utility customers who are interested in conserving water.
3. Actively market, distribute and install plumbing retrofit devices as appropriate for high water use fixtures present in the residential sector with high-quality, low-flow showerheads.

3.3 IMPLEMENTATION PLAN

Implementing this DMM will be coupled with a residential self water survey as described in DMM #1 and through direct distribution at City staffed event booths, and front counter inquiries. These devices produce an immediate savings over non-retrofit fixtures, so long as they are not removed from service which is typical of many low quality devices. To combat this tendency, the City should procure high quality retrofit devices which are EPA WaterSense® certified. The US Environmental Protection Agency (USEPA) has developed performance specifications which requires third party verification on high efficient devices to ensure that products that bear the WaterSense® insignia meet EPA efficiency and performance specifications.

Under this implementation plan, the City will continue advertising and distribution of retrofit kits at the Public Works office, and track the number of kits distributed. However coordination,

tracking and additional materials are proposed to enhance the program to produce additional water savings.

3.3.1 DMM DESCRIPTION

The Residential Plumbing Retrofit DMM targets replacement of old high water use plumbing fixtures with new high efficiency or low flow fixtures. In coordination with survey and marketing efforts (DMM # 1, 7) and through DMM implementation described below, the City will maintain and offer the following plumbing retrofit components:

1. Toilet displacement bags,
2. New toilet flap valves,
3. Low-volume shower heads, and
4. Low-volume faucet aerators.

Particular plumbing fixtures maintained by the City may be from the list of appliances found at the EPA WaterSense® website at: <http://www.epa.gov/watersense/>.

3.3.2 MARKETING

1. Marketing will be provided by letter contact through DMM #1, customer contact at the Public Works and Utility Billing Department, periodic bill stuffers, and through customer interaction at City events booths.
2. Develop or identify marketing material necessary to implement DMM #2 and coordinate with DMM #7. Examples of marketing material to be included with the retrofit devices are attached in Appendix F.
3. Bill stuffers, ads, events booths, online content and physical posters placed in public areas are methods of communicating the availability of retrofit devices and should be evaluated for execution as part of DMM #7. An example bill stuffer is attached in Appendix F.
4. As an option, the City could conduct follow-up paper surveys to determine customer satisfaction with the kits and device retention. An example short survey is attached in Appendix F.

3.3.3 PROCEDURES

This DMM does require specific procedures other than administering the retrofit devices and keeping accurate records of recipients. The City's current water conservation kit distribution list is adequate with minor changes (see Tracking and Documentation section of this DMM) for use when distributing the kits at public events or at the City Hall and Public Works front counters.

3.3.4 EQUIPMENT

Maintain an inventory of plumbing retrofit devices for direct distribution. These devices should be water efficient devices that meet EPA WaterSense® efficiency and performance specifications. The two devices used under this DMM which are or will be WaterSense® certified are as follows:

1. Low flow showerhead with shut off valve rated at 2.5 gpm or less. At the time of this writing, WaterSense® showerhead protocol is in draft form and has not been finalized. At the time of DMM implementation, the City should check on the status of WaterSense® certified showerheads.
2. Faucet Aerators: There are a number of WaterSense® certified faucet aerators available on the market to choose from. A list of WaterSense® certified aerators is attached in Appendix B.

Additional equipment will be toilet flap valves and toilet displacement bags which are not WaterSense® certified items. Note that the use of a water displacement device, such as toilet displacement bags or bricks, is not recommended for toilets rated at 1.6 gallons per flush or less. These toilets are designed to operate with the specified tank volume.

3.4 TRACKING AND DOCUMENTATION

To assess the progress of the DMM, the following information should be gathered and maintained. This information will also be summarized in the UWMP updates.

1. Maintain a list of customer accounts fitted with retrofit devices to track water savings. Minimum information necessary to evaluate the effectiveness of this DMM includes the following:
 - A. Number of people in the household.
 - B. Number of fixtures.
 - C. Number and age of toilet(s) (if known).
 - D. Number and type of devices delivered and/or installed.
 - E. Type of household the device is going to be installed (Multi Family/Single Family)
 - F. Name, address and account number.
 - G. Age of home or year of construction
2. Track costs and staff time conducted for this DMM.

3. Track water savings per survey respondent by recording the amount of water saved by replacing or retrofitting existing high water use fixtures with water saving devices.

3.4.1 TRACKING OPTIONS

The City utilizes various software to execute data management and billing tasks of the water division. These software were investigated for use in the tracking DMM related efforts and devices installed. Software tracking reduces the need for paper files and will assist in developing savings estimates or at minimum track respondents to City conservation services. Three different software packages were reviewed and are as follows:

1. **WaterTrax:** An online database which stores routine water quality data and issues alerts to the City in the event that any constituent exceeds it's MCL.
2. **EDEN Billing System:** EDEN is the water billing system used to track customer account information, and processes billing from metered data where available. Only commercial accounts are currently metered and billed according to volumetric rates whereas the residential sector is billed a flat monthly fee. Residential accounts will be tracked in EDEN when the City implements its meter retrofit program.
3. **MS Excel:** Excel is a spreadsheet application which its main features are calculation and graphing tools. Excel can be used to set up and track, and display water use trends given metered use data.

A WaterTrax representative was contacted to discuss their capability of uploading metered use data and conservation measures on a per account basis using their online database to create reports based on that data. According to WaterTrax, this type of customizable information is beyond the intended scope of this system.

The City's billing system EDEN is supported by Tyler Technologies (Tyler). Tyler representatives were contacted to discuss the software's capabilities. According to the vendor, EDEN is a customizable utility program where field tabs in each customer account can be edited to track specific conservation measures. Utilizing the edited customer field data, the Conservation Coordinator would have the ability to query those customers who participated in specific DMM's for tracking water savings. The following components must be completed prior to utilizing this software for DMM tracking purposes:

1. Specific requirements of field customization must be investigated further. It is unknown at this time if edits can be done globally or if it needs to be done on a per account basis.
2. A procedure must be created and implemented to ensure that accurate and prompt DMM data entry is maintained in the customized fields. This procedure will ensure efficient internal communication between billing and water conservation staff. Communication such as account closures must be communicated with the conservation staff to ensure accurate water savings tracking.

3. The Conservation Coordinator will need read and query access to EDEN and the City's metered use Database, if they are separate, to identify DMM specific participants and retrieve use data for those identified customers to track water savings.
4. Custom query reports must be created to give the Water Conservation Coordinator the ability to run reports and access use data to analyze in a spreadsheet environment.

Microsoft (MS) Excel, packaged as part of the MS Office suite, can also be used as a means of tracking and reporting DMM implementation. Given customer use data output from EDEN, water savings tracking and graphing can be conducted. Additionally Excel can be used to track customer DMM participation and sorted as such however; there still remains a need for a method of retrieving the data from the customer metered use database. Excel can be used to perform similar tasks as EDEN however, similar steps as those presented for the EDEN alternative must be addressed with additional coordination between the Excel database and EDEN.

The alternatives are presented for the City's consideration and future implementation however, it is our recommendation that the most efficient software for DMM tracking would be via Microsoft Excel with periodic updates of water use information as output from EDEN. Using this program will allow the Water Conservation Coordinator track customer participation at first hand without the extra necessary steps of gaining access to EDEN.

3.5 BUDGET AND STAFFING

Specific tasks and items are identified below to assist the Water Conservation Coordinator allocate staff and resources to ensure a successful conservation campaign. The estimates provided are conservative and should be accurately tracked and budgets revised based on actual cost of DMM implementation for subsequent fiscal years. The costs displayed below assume the installation of all retrofit devices subsequent to a residential self survey response. Annual budgetary amounts must be determined based on the number of retrofits the City intends to conduct. Additional administrative costs consist of distributing conservation devices upon request.

Table 3-1
DMM 2 Unit Costs and Initial Material Costs

Water Conservation Staff:	
Distribution at events booths (already accounted for in DMM #7)	0 hrs
Administration:	
Distribution at counter or phone requests	0.5 hrs
Total Staff Time:	0.5 hrs
Unit Material Costs per retrofit device^{[a],[b]}	
Showerheads	\$22.00
Aerators (bathroom & kitchen)	\$4.00
Displacement Bags	\$3.00
Toilet flap valves	\$6.00
Total of Unit Costs	\$35.00

[a] prices do not include tax (source: Niagara conservation)

[b] Actual number of devices distributed must be determined on a case by case basis

DMM 3: System Water Audits, Leak Detection, and Repair

4.1 MINIMUM REQUIREMENTS OF THE URBAN WATER MANAGEMENT PLAN, 2005

The City will perform annual audits of the water system including leak detection and repair defects. Reduce unaccounted water loss to five percent by 2010.

4.2 GOALS AND OBJECTIVE

System water losses are a result of leaks through cracked pipes, damaged appurtenances, faulty joints, illegal uses such as withdrawals from hydrants without explicit approval or permitting and through other non-revenue uses such as metering errors. Water loss, through distribution system leaks, does not register at the customer meter for subsequent billing. This water loss translates to lost revenue that is used to recoup the operational investment made in the supply of potable water. To minimize the amount of lost revenue, utilities typically target an acceptable amount of water loss as determined by the balance of non-revenue generating water losses to operational costs required to track down system water losses.

The goal of this DMM is to identify all revenue and non-revenue generating water use and perform periodic prescreening water audits in an ongoing effort to minimize water loss to less than 10 percent of total production, or less. While the 2005 UWMP set the goal of reducing unaccounted water loss to five percent (5%), actual reduction will depend on the current condition of the City's distribution system and the overall effectiveness of this DMM.

4.3 IMPLEMENTATION PLAN

The city will initially target an unaccounted water loss percentage of 10%, which is consistent with AWWA published manual of water supply practices (M36). In order to do so, the City will require metered use data and procedures for recording flow rates during water system maintenance procedures. The City is currently in the process of implementing the meter retrofit/installation project where meters are scheduled to be installed early 2010. Metered use data and developed procedures for tracking City water use are will be used to accomplish this DMM and are expected to be available for the first prescreening of the system by Fiscal Year 2011. Until that data is available, tracking of other water uses will commence and leaks will be repaired when discovered.

4.3.1 DMM DESCRIPTION

The System Water Audit, Leak Detection, and Repair DMM will consist of the following implementation step described below:

1. System tracking of water production, use, and an assessment of water losses as a percentage of production, and
2. A systematic program for the detection and repair of leaks and maintain or reduce the water loss percentage.

4.3.2 PROCEDURES

Implementation will consist of at least the following actions:

1. Annually (around April) complete a prescreening system audit, according to the prescreening worksheet attached in Appendix C, to determine the need for a full scale system audit. The prescreening system audit shall be calculated as follows:
 - A. Determine total metered sales for previous year;
 - B. Determine other verifiable water uses from previous year, e.g., construction water, hydrant flushing, fire suppression uses, etc.;
 - C. Determine total annual production into the distribution system;
 - D. Divide metered sales plus other verifiable uses by total supply into the system to determine the quantity of water loss. If the calculated quantity is less than 0.9, then the water loss is greater than 10%.
 - E. Create a staff report updating City Council on the status of the water system.
2. Advise customers whenever it appears possible that leaks exist on the customer's side of the meter. This will be done in conjunction with DMM#1, where high water use might indicate a leak.

4.4 TRACKING AND DOCUMENTATION

To assess the progress of the DMM the following information should be gathered. This information will be summarized in UWMP updates and is as follows:

1. Prescreening audit results and supporting documentation,
2. Maintain necessary data on file to verify the values used to calculate verifiable uses as a percent of total production.

3. Records of physical surveys conducted on the system including the length in miles of surveyed lines, and
4. Tracking of all leak repairs with estimates of leakage flow rate in gallons per day.
5. Tracking of other water uses such as flushing, hydrant use, fire suppression etc.
6. Track costs and staff time conducted for this DMM. As well as the expenditures required for distribution system leak repairs.

4.5 BUDGET AND STAFFING

This DMM requires staff time gathering the use data required to complete the prescreening audit, evaluation of that data and performing the water loss calculation. Data gathering will be conducted at the administrative level and evaluation and calculation will be complete by the Water Conservation Coordinator or Water System Superintendent. Therefore, it is anticipated that the annual budget for this DMM will be as follows:

Table 4-1
DMM 3 Annual Administrative Costs

Administration:	
Administrative Level Data Compilation	16 hrs
Senior Staff Evaluation	8 hrs
Senior Staff Calculation and Report of Findings	24 hrs

DMM 4: Metering With Commodity Rates for All New Connections and Retrofit of Existing Connection

5.1 MINIMUM REQUIREMENTS OF THE URBAN WATER MANAGEMENT PLAN, 2005

The City is planning a meter retrofit project to install meters in all water connections ahead of the state mandated deadline of 2010 and 2025 for connections constructed post and pre 1992 respectively. To provide efficient data acquisition capabilities, the City is planning on supplementing the meters with Automatic Meter Read (AMR) software and equipment. As a result of the anticipated use data obtained by the meters, the City is currently conducting a water rate study to establish new fees based on volumetric consumption. During the first year subsequent to the completion of the meter installation project, the city will display usage and potential charges based on actual consumption however, billing will resume under the flat rate structure as a method of preparing the citizens for their impending bills.

5.2 GOALS AND OBJECTIVES

The goal of this DMM is to accelerate the installation of meters for all connections and bill according to volumetric rates. The City intends to fulfill this goal by obtaining 100% metered coverage by 2010 with subsequent volumetric billing. Metering and billing based on water consumption fulfills the requirement of this DMM however, implementation and coordination between the City's billing system and anticipated AMR software, to ensure that data pertinent to future UWMP updates is captured, requires investigation.

5.3 IMPLEMENTATION PLAN

The implementation of this DMM will commence after the city is metered and proven through a testing period. The City is currently in the process of implementing the meter retrofit/installation project, where meters are scheduled to be installed early 2010. When complete, metered use data and developed record tracking procedures for water use will be utilized to accomplish this DMM and water system prescreening audits as described in DMM 3, by Fiscal Year 2011.

5.3.1 PROCEDURES

In order to fulfill the requirements for this DDM, the City should continue implementing the following measures:

1. Complete the Meter Retrofit Project as planned.

2. Bill users as determined in the UWMP.
3. Implement a meter test, repair and replacement plan.

Upon Completion of Meter Installation Project:

1. Read meters and bill customers by volume of use.
 - A. Establish and maintain billing intervals that are no greater than monthly for all customers.
 - B. For each metered connection, perform at least five actual meter readings (including remotely sensed) per twelve month period.
2. Prepare and implement a written plan, policy or program that includes:
 - A. An inventory database of all meters, by size, type, year installed, customer class served and manufacturer's warranty accuracy when new;
 - B. A schedule of meter testing and repair, by size, type and customer class;
 - C. A schedule of meter replacement, by size, type, and customer class based on the results of testing or other appropriate criteria.
3. Annually, conduct a year-end water savings analysis to determine overall water savings for each sector. Comparing metered well production data to historic use, the City will quantify the estimated savings for this retrofit program. Further analysis will quantify the water savings over projected water demands established in the UWMP.

5.4 TRACKING AND DOCUMENTATION

Implementing the meter program of this DMM is the heart of a conservation program. It allows the City to track use on a per account basis, and analyze savings for each sector and the City as a whole. Additionally this data will allow the City to perform water audits based on recorded water use. The following information is required for UWMP summary updates and should be tracked during the reporting period:

1. Number of metered and unmetered accounts,
2. Number of retrofit meters installed,
3. Number of the accounts without commodity rates,
4. Annually summarize tracked expenditures associated with this DMM,

5. As metered use becomes available, determine water savings from current to historic production records.

5.5 BUDGET AND STAFFING

Costs associated with this DMM consist of the conducting water data analysis for actual water savings. This requires staff time to gather use data, evaluate and generate water savings reports for public progress updates and for the City's use in evaluating effectiveness of the conservation programs. Capital and meter system O&M costs are not included in this analysis. This analysis should be conducted concurrent with the annual system water loss prescreening procedures to share in staffing requirements for use data compilation. It is anticipated that the annual budget for this DMM will be as follows:

Table 5-1
DMM 4 Administrative Costs

Administration:	
Administrative Level, Use Data Compilation (accounted for in DMM 3)	0 hrs
Senior Level Evaluation Residential Sector	24 hrs
Senior Level Evaluation Commercial Sector	10 hrs
Senior Level Evaluation Large Landscape	10 hrs
Senior Staff Report of Findings	40 hrs

5.6 ADDITIONAL PROGRAM OPTIONS

Additional program options include the following:

1. Obtain Crystal Reports software and train in-house technical staff to develop reports as needed for metered data retrieval and analysis of water savings from EDEN.
2. Install meters with internal data logging capabilities. This type of meter will log a 24 hr period of use to allow water conservation staff to download and present use information as part of a water survey. Such meters could be limited to documenting use at particular connections or as a way to study effectiveness of certain DMM's.
3. As an alternative to data logging meters, purchase of radio read devices as part of conservation outreach program to educate the customer on water use. These devices contain a magnetic strip for mounting on metal surfaces such as a refrigerator and allow the user to monitor their real-time water use as an added measure of use awareness.

DMM 5: Large Landscape Conservation Programs and Incentives

6.1 MINIMUM REQUIREMENTS OF THE URBAN WATER MANAGEMENT PLAN, 2005

The City will develop two water budgets for large landscape areas, conduct two surveys, and conduct three follow up visits to areas where conservation measures have been implemented annually. In addition, water use data for large landscape areas will be reviewed annually. Maintain and enforce conservation guidelines and standards for landscape water conservation.

6.2 GOALS AND OBJECTIVE

Landscape irrigation demand is difficult to generalize due to differing turf areas, plant materials, climate, soil conditions and topology. However, extensive research has been conducted on such topics and guidance material is available to account for this variability when determining landscape water requirements. The goal of this DMM is to target irrigated large landscapes (as defined below) in the City and implement water conservation measures which include irrigation system evaluations and water budgeting to achieve a 10% reduction in large landscape connections water use.

6.3 IMPLEMENTATION PLAN

A reconnaissance review of the City's listed large landscaped areas can be performed by an aerial review on Google Earth®. A list of large landscapes irrigation users should be developed and would include the following categories with two or more acres of irrigated landscaping using potable water from the City:

- Ceres Unified School District schools,
- City of Ceres Parks,
- Private schools and churches,
- Industrial complexes.

The list should continue to be updated by staff and as large landscape owners participate in the program.

6.3.1 DMM DESCRIPTION

The large landscape conservation program, as described below, applies to large landscape areas greater than 2 acres, and include Commercial, Industrial, and Institutional accounts with mixed use meters and landscape accounts with dedicated meters. This DMM consists of developing, tracking, and accounting for irrigation water use at these large landscape accounts through the use of irrigation budgets based on site surveys with follow-up visits. The city is not including incentives in this DMM at this time. Water conservation is achieved through this DMM by increasing irrigation efficiency at large landscape accounts and reducing water waste.

The Large Landscape Conservation Programs and Incentives DMM will consist of the following implementation steps described below:

1. Develop water budgets for landscapes with dedicated landscape irrigation meters.
2. Identify large landscapes greater than 2 acres serviced by a mixed use meter.
3. Provide large landscape irrigation system surveys to promote water conservation.
4. Provide water efficient landscaping standards for new and existing development that meets or exceed state mandated landscape guidelines.

6.3.2 MARKETING

Market large landscape water use surveys to commercial/industrial/institutional (CII) accounts with mixed-use meters servicing landscapes larger than 2 acres. This will be done by mailing the sample marketing letter attached in Appendix F and checking the appropriate box.

6.3.3 EQUIPMENT

The City will compile DMM specific materials/equipment such as the following:

1. Flow measuring equipment used to measure irrigation zone flow rates for users with dedicated irrigation meters. (optional: portable meter reader see Section 5.6 of DMM # 7)
2. Measurement equipment such as a measurement wheel to record landscaped area dimensions and reference utility locations to the property.
3. Site maps to identify current and any planned landscape areas.

6.3.4 PROCEDURE

1. Revise current landscaping standards to meet or exceed State mandated landscaping guidelines for future and existing development or adopt the updated Model Water Efficient Landscape Ordinance by January 2010. A list of recommended changes as provided by O'Dell Engineering is attached in Appendix D for the City's consideration.

2. The City will provide non-residential customers with support to improve their landscape water use efficiency. Support shall include, but not be limited to, the following:
 - A. Accounts with Dedicated Irrigation Meters
 - 1) Identify accounts with dedicated irrigation meters and assign reference evapotranspiration (ET_o) based water use budgets equal to no more than 70% of ET_o per square foot of landscape area plus a reasonable leaching fraction based on soil type (e.g., 10 to 20%)(CUWCC 2008). Water budget estimating guidance is located in Appendix D supporting documents.
 - 2) Provide notices each billing cycle to accounts with water use budgets showing the relationship between the budget and actual consumption. The City may choose not to notify customers whose use is less than their water use budget.
 - 3) Offer water use analysis and landscape surveys as described below.
 - B. Commercial/Industrial/Institutional (CII) Accounts with Mixed-Use Meters: This section of the DMM will focus on CII accounts serviced by a mixed use meter irrigating an accumulated landscaped area greater than 2 acres.
 - 1) Compile CII user account information and historical water use data. Determine the difference in water use during summer months (June, July, August) when landscape irrigation is conducted and winter months (December, January, February) when no irrigation occurs (Baseline). This information can be used to analyze and focus the marketing efforts described above, educating the customer on historical use during the survey and for follow up tracking to determine post survey savings.
 - 2) Offer a landscape survey described in sub-section 6.3.4 (3).
 - 3) Encourage the installation of dedicated landscape irrigation meters for mixed use systems.
 - C. Offer Training (multi-lingual where appropriate) in landscape maintenance, irrigation system maintenance, and irrigation system design.
 - D. Provide follow-up to water use analyses/surveys reminding the customer to implement the recommended improvements resulting from the survey. Follow-up will consist of a letter or site visit where appropriate.
 - E. New or Change of Service Accounts: Provide information on climate-appropriate landscape design, efficient irrigation equipment/management to new customers and change-of-service customer accounts.

3. Large Landscape Survey: Surveys will consist of the following components
 - A. Discuss the purpose of the survey. This will include the savings potential for the City, community, and for the recipient of the survey (benefits). Describe the step to be taken during the survey and why they are important.
 - B. Review the historical water use data, if available, gathered from sub-section 6.3.4 (2.B.2) with the survey recipient and explain the potential magnitude of savings by maintaining the irrigation system.
 - C. Landscape evaluation: Evaluation will be conducted by recording landscape area, features, plant zones, total irrigable area, irrigation system check, and distribution uniformity (DU) analysis. DU analysis guidance is provided in landscape auditing procedures created by the Irrigation Association and evaluation log sheet and instructions are attached in Appendix D.
 - D. Results: Discuss the findings of the survey, review or develop irrigation schedules, as appropriate, provide conservation recommendations, and leave information packet on rebates or incentives if available.
 - E. Post survey follow-up: A post survey follow up should be conducted. The survey recipient should be contacted via letter reminding the user of the recommendations and provide to the city feedback about their survey experience.

6.4 TRACKING AND DOCUMENTATION

To assess the progress of the DMM the following information should be gathered. This information will be summarized in the UWMP updates.

1. Dedicated Landscape Irrigation Accounts
 - A. Annually summarize tracked expenditures associated with this DMM,
2. Dedicated Landscape Irrigation Accounts
 - A. The City shall preserve water use records and budgets for customers with dedicated landscape irrigation accounts for a period of not less than one reporting period. This information may be used to assess effectiveness for this particular type of account.
 - 1) Number of dedicated irrigation meter accounts.
 - 2) Number of dedicated irrigation meter accounts with water budgets.
 - 3) Aggregate water use for dedicated landscape accounts with budgets.
 - 4) Aggregate budgeted water use for dedicated landscape accounts with budgets.

3. Mixed Use Accounts

- A. Number of mixed use accounts.
- B. Number of surveys offered.
- C. Number of surveys accepted and completed
- D. Estimated annual water savings by customers receiving surveys and implementing recommendations.
- E. Number of mixed use account installing dedicated landscape irrigation meters.
- F. Number of follow-up surveys conducted.
- G. Actual water savings as determined from historical water use to post survey water use as applicable.

6.5 BUDGET AND STAFFING

The below estimates are based on performing an outdoor water survey for large landscape customers. Specific tasks and items identified will assist the Water Conservation Coordinator allocate staff and resources to ensure a successful conservation campaign. The estimates provided are conservative and should be accurately tracked for revision as this DMM is implemented to provide accurate budget estimates for subsequent fiscal years. The following items are broken down by water conservation staff time, office administration and units costs for equipment and supplies.

Table 6-1
DMM 5 Costs per Survey and Initial Materials Costs

Water Conservation Staff:	
Outdoor landscape survey	8 hrs
Survey Follow up:	0.5 hrs
Contact marketing (phone/mail)	0.25 hrs
Administration:	
Administrative support:	1 hrs
Total Staff Time:	10.25
Unit Costs:	
Marketing material	\$3.00
Other DMM #5 Budgetary Costs :	
Equipment:	
Measure wheel, pressure gauges, irrigation tools	\$300

6.6 ADDITIONAL PROGRAM OPTIONS

Additional measures to reduce landscape irrigation water use could include the following:

1. Provide educational signs and plant identification tags on City landscapes documenting water conservation practices employed and creating a demonstration garden. This option should be coordinated with DMM # 7.
2. Require nurseries to mark water efficient and native plants.
3. Develop a non-potable supply and distribution system and require its use on large landscape areas.
4. Enact ordinances requiring efficient irrigation systems.
5. Enact ordinances prohibiting or limiting the use of high water requirement vegetation.
6. Install climate appropriate water efficient landscaping at City facilities, and dual metering where appropriate.
7. Provide customer notices prior to the start of the irrigation season alerting them to check their irrigation systems and make repairs as necessary. Provide customer notices at the end of the irrigation season advising them to adjust their irrigation system timers and irrigation schedules.
8. Require by ordinance of all large landscaped areas regardless of source an annual irrigation system analysis to be conducted and submitted to the City for review by the Water Conservation Coordinator.

DMM 6: High Efficiency Washing Machine Rebate Program

7.1 MINIMUM REQUIREMENTS OF THE URBAN WATER MANAGEMENT PLAN, 2005

The City has planned to fund a High Efficiency Washing Machine (HEWM) Rebate Program in 2009. Beginning the Fiscal year 2009/2010, \$10,000 dollars will be made available to fund the HEWM Rebate Program which has a goal of providing approximately 130 rebates per fiscal year. The City's current efforts focus on promoting the rebate programs established by Pacific Gas and Electric (PGE) which provides rebates of up to \$75 dollars per HEWM's. The City planned rebates will increase the total rebate (City +PGE) to \$150 per HEWM however, each customer must submit two separate applications to receive the full rebate amount.

7.2 GOALS AND OBJECTIVES

Washing machines make up 21.7% of the total indoor residential water use (Mayer et al, 1999). Replacing conventional top load high volume washing machines with horizontal axis front loading washing machines have been found to conserve water by as much as 38% per load (Vickers, 2001); however HEWM's now come in top load configurations that meet the same energy efficiency specifications as front loaders. Although high efficiency washing machines save the consumer more money over the life of the appliance when compared to conventional washing machines, initial sticker price and unfamiliarity tend to be main barriers withholding consumers from purchasing HEWM's. It is the goal of this DMM to overcome consumer barriers by providing additional incentive over and above those that may be received by PG&E. Additionally, the California Department of Water Resources also requires urban water suppliers to participate in HEWM rebate programs. Doing so will assist in saturating the service area with high efficient water use washing machines to benefit both the consumer, utility and the State of California in water savings.

7.3 IMPLEMENTATION PLAN

7.3.1 DMM DESCRIPTION

This DMM is based on providing a financial incentive for customers in the City's utility service area to switch to HEWM's. The incentive will allow customers to upgrade existing conventional washing machines to high efficient washing machines to benefit both the customer and utility through reduced water use.

7.3.2 MARKETING

Marketing for this DMM will be provided by brochures handed out at events, the City department, and through other DMM mailings as coordinated with DMM #7 Public Programs. Due to a wide eligible customer base, marketing for the HEWM rebate program should cover as many customers as possible.

7.3.3 PROPOSED HEWM REBATE POLICY

The rebate program policy that outlines terms and conditions, eligible products, eligible customers, method of incentive transfer and tracking are proposed as follows.

1. Eligible products are those washing machines which meet or exceed minimum performance specification for 2011 Energy Star Criteria. See the Equipment Section below.
2. Eligible Customers: All City of Ceres water customers who purchase a HEWM and abide by the Terms and Conditions are eligible for a HEWM rebate.
3. Payout: The City may consider different methods of incentive transfer for this DMM. Three methods of fund transfer are described below and should be investigated for implementation. The methods are as follows:
 - A. Rebate: A rebate is issued in the form of a check to the utility customer. This method requires administrative support to process paperwork to produce a check which is processed and paid after verifying and accounting the installation of the water saving device
 - B. Voucher: The City can partner with local appliance and home improvement retailers to accept City issued vouchers. In this case the customer will use the voucher as an instant cash discount on a predetermined water saving device. A voucher is usually issued for specific few types of devices which may not appeal to all participants.
 - C. Bill Credit: This method provides a direct credit to the customer's water bill after verifying installation. Doing so would reduce staff time and resources and provide an environmentally friendly process by providing a nearly paperless rebate program should the application be submitted online.
4. Tracking: Information identified as necessary for assessing DMM progress, effectiveness, and water savings should be tracked and filed. (See Tracking and Documenting below)
5. Terms and Conditions: The terms and conditions of the rebate program set requirements of the customer should they decide to participate in the program. Attached in Appendix E are example documents for the City's HEWM Rebate Program. The documents consist

of an example rebate application, terms and conditions outlining criteria which are consistent with this DMM and should be considered for implementation.

7.3.4 EQUIPMENT

Eligible equipment will be those washer machines which meet the following performance factors:

1. Water factor (WF) value of 6.0 or less. This factor represents the amount of water in gallons required for each cycle to wash 1 cubic foot of laundry.
2. Modified energy factor (MEF) of 2 or greater. This factor represents the volume, in cubic feet, of laundry washed per kilowatt hour (kWhr) of energy. This factor also accounts for the additional energy required to dry that same volume of laundry

These factors represent standards which the Energy Star, a partnering program between the Department of Energy (DOE) and US Environmental Protection Agency, has declared as upcoming regulatory performance standards to be enacted by July 1, 2011 shown in the figure below. These standards are chosen for the HEWM incentive program to expedite the transition from pre 2007 and non-Energy Star models to HEWM's whose performance standards are higher than current Federal efficiency standards.

	Current ENERGY STAR Criteria as of January 1, 2007	ENERGY STAR Criteria as of July 1, 2009	ENERGY STAR Criteria as of January 1, 2011
ENERGY STAR Criteria	MEF \geq 1.72 WF \leq 8.0	MEF \geq 1.8 WF \leq 7.5	MEF \geq 2.0 WF \leq 6.0

Courtesy of Energy Star: Program Requirements and Criteria for Cloths Washers as of March 7, 2008

A list of washing machines meeting the January 2011 criteria is attached and can be viewed at: <http://www.cee1.org/resrc/qualprod-main.php3>. The list is developed and updated regularly by the Consortium for Energy Efficiency (CEE), which CEE classifies the above criteria as Tier 2 performance criteria.

7.3.5 PROCEDURES

Implementation will consist of at least the following actions:

1. The City should offer a financial incentive in the amount not less than \$50, for the purchase of high-efficiency clothes washing machines (HEWMs) meeting the performance criteria above.
2. Make the rebate program information available on the City's website and allow for the necessary application to be submitted online or downloadable and submitted via email, mail or in person. Additionally the rebate and application should be made available at City Hall and the Public Works Department front desk along with other DMM materials.
3. Processing applications will require the following steps:

- A. Ensure that the application is complete. This would include all requested information filled into the application and supporting documents necessary to process the rebate. Supporting documentation consists of a city issued water bill or the ability to identify account information, and the original receipt for the HEWM purchase. Ensure the customer is aware that original receipt will be the property of the City after the rebate is processed.
- B. After verifying the information the customer may be contacted to schedule an inspection to verify the installation of the HEWM as stated in the Terms and Conditions.
- C. An optional pre-installation visit may be conducted to ensure that the outgoing washing machine is indeed a non-water saving washing machine, however; this may unnecessarily increase DMM expenditures as the likelihood of an user removing a water efficient washing machine to purchase a marginally water saving HEWM is low.

7.4 TRACKING AND DOCUMENTATION

The City shall maintain documentation for all of the following items:

1. The quantity of single-family and multi-family dwelling units in the agency service area.
2. The quantity and value of financial incentives issued for HEWM's offered.
3. Average or estimated administration and overhead costs to operate the program.
4. Estimated water savings as a result of this DMM. (Estimates will be used until verifiable data is provided by metered data)
5. Maintain a list of customer accounts participating in the HEWM rebate program to track water savings. Minimum information necessary to evaluate the effectiveness of this DMM includes the following:
 - H. Number of people in the household.
 - I. Age of out-going washing machine (if known).
 - J. Type of household the device is going to be installed (Multi Family/Single Family)
 - K. Name, address and account number.
 - L. Age of home or year of construction

7.5 ESTIMATE OF CURRENT CONSERVATION SAVINGS

Gross water savings (gallons) from financial incentive programs that result in the purchase and installation of High Efficiency Washing Machines is estimated to be range from 11.7 to 28.3 gallons per day per household dependent on the age of the outgoing washing machine (Vickers 2001). In order to estimate the water savings from this DMM an average water savings of 20 gallons per day will be assumed. This average assumed rate will be updated based on City records of water savings for connections where HEWM's are installed.

7.6 BUDGET AND STAFFING

Table 7-1 estimates staff time to process rebates and perform installation inspection. The estimates shown are on a per rebate basis therefore the annual amounts must be determined based on total budget allocated for this DMM.

Table 7-1
DMM 6 Costs per Rebate

Water Conservation Staff:	
Pre & Post installation inspection	1.5 hrs
Administration:	
Rebate processing	1.5 hrs
Total Staff Time:	3.25 hrs
Unit Costs:	
Marketing material	\$1.50
Rebate	\$75.00

DMM 7: Public Information Program

8.1 MINIMUM REQUIREMENTS OF THE URBAN WATER MANAGEMENT PLAN, 2005

The City promotes water conservation to its public by providing conservation information via utility bills, annual water quality reports, display tables during public events, newspaper, and City webpage.

8.2 GOAL AND OBJECTIVE

A public information program should provide powerful channel of communication to the public and deliver a clear message. The key goal to a public information program is to: educate the public on the necessity of conservation; the benefits of conservation; and actions needed to achieve water conservation goals. A secondary benefit is the ability to convey specific DMM information and if possible conduct business through certain channels such as processing a rebate application on the City website. There is a variety of media available to choose from to keep the public informed therefore, it is the goal of this DMM to implement cost effective communications to disseminate water conservation information, rebates, and services and to promote conservation and support of DMM activities.

8.3 IMPLEMENTATION PLAN

8.3.1 DMM DESCRIPTION

An informed public tends to be more responsive to City services and more understanding to the needs of water conservation. This DMM includes communication with the public through various means as described below to promote water conservation, involvement in the UWMP update process, and general awareness of water use and conservation. This program includes development of outreach materials for each targeted DMM effort, providing educational material, DMM supporting material, references via the City's website, providing conservation displays and information via community events, bill stuffers and other forms of communication.

8.3.2 PROCEDURES

Implementation will consist of at least the following actions:

1. Prepare and implement a public information program to promote water conservation and water conservation related activities. Components of the program include but are not limited to:
 - A. Producing paid and public service advertising

- B. Provide conservation education via bill inserts. An example bill stuffer is attached in Appendix F
 - C. Marketing of other conservation programs when conducting specific DMM business. (e.g. promoting a rebate program via a brochure when conducting a landscape survey.)
 - D. Develop online content on the City's website promoting water conservation and city sponsored conservation services. If the City will process their own rebates, make application forms which include equipment and eligibility, available as a downloadable document.
1. Provide information on customers' bills showing use in gallons per month for the last billing period compared to the same period the year before if available.
 2. Provide public information to promote water conservation practices, over different forms of media. This would be done by bill inserts, and dedicated webpage for water conservation, handouts at City Hall and educational materials left after a complete survey.

8.3.3 RESOURCES

The following resources were gathered for the City's consideration for use in this DMM. A series of example marketing materials are presented in Appendix F for each DMM requiring a marketing component. The material provided is a compilation of program marketing information from different agencies conducting conservation programs. Logos, or specific conservation trademarks or demographic analysis to further refine marketing efforts may be prepared by a public relations consultant specializing in that area of work. The example documents shown in Appendix F are as follows:

1. Water Conservation Bill Stuffers (list of water saving tips and promote city services),
2. Flyer of Conservation programs sponsored by the City,
3. Rebate application and terms for the HEWM rebate program,
4. Rebate application and terms for the ULFT rebate program,
5. Educational handout for Outdoor / Indoor water saving tips,
6. Contact Marketing letter to be sent to targeted customers specific DMM's,
7. Sample Website content to include in the City's Water Conservation Website including links to other online resources.

8.4 TRACKING AND DOCUMENTATION

In order to document implementation of this DMM and to track costs and budget, the following information should be collected and retained.

1. Number of events attended by City staff relating to conservation during reporting period.
2. Number of paid or public service announcements relating to conservation produced or sponsored during reporting period.
3. Types of information relating to conservation provided to customers. (e.g. number of brochures handed out by the City in the reporting period)
4. Annual budget and expenditures for public information programs directly related to conservation.

8.5 STAFFING AND BUDGET

The estimates provided below account for the time required to coordinate city sponsored conservation workshops, staff events booths, and develop the City's water conservation website. Additional costs consist of annual production of marketing information such as brochures and educational material. It is anticipated that public service announcements will be contracted to a public relations firm and landscape professionals to provide educational workshops.

Table 8-1
DMM 7 Annual Marketing Costs

Water Conservation Staff:	
Special events booths (assumes 2 staff and 2 events/year)	32 hrs
Administration:	
Web design and maintenance	20 hrs
Conservation Workshop coordination (3 workshops a year)	12 hrs
Total Annual Staff Time:	64 hrs
Unit Costs:	
Marketing material budget	\$1,000
Contractor Costs	
Contracted professionals to teach conservation workshops	
Public Relations Consultant to develop PSA's	\$2,000

DMM 14: Ultra Low Flush Toilet Rebate Program

9.1 MINIMUM REQUIREMENTS OF THE URBAN WATER MANAGEMENT PLAN, 2005

The City has planned to fund an Ultra Low Flush Toilet (ULFT) Rebate Program for the FY 2009/2010. Beginning the Fiscal year 2009/2010, the ULFT Rebate Program has a goal of providing approximately 50 rebates per fiscal year.

9.2 GOALS AND OBJECTIVES

Ultra Low Flush Toilets use a maximum of 1.6 gallons per flush (gpf) and save approximately 55% to 68% of water when compared to their high water use counterparts at 3.5 and 5.0 gpf (Vickers). In this measure, older 3.5 and 5.0 (gpf) toilet fixtures in residences are replaced with 1.6 gpf fixtures. Maximum performance (MaP) testing was conducted on standard, ULFT's and High Efficient toilets with the intent to verify actual performance with mass loadings which have been determined to be nearly identical to real world loadings. The MaP test list displays toilet performance for numerous toilets and provides a second source of performance verification to ensure that the recipient will be satisfied with the purchase of a low water use toilet when selected from the list with a MaP flush performance of 350 grams or more.

The goal of this DMM is to provide a financial incentive to eligible recipients to expedite the replacement of high water use toilets rated at 3.5 gpf or higher with ULFT's which have demonstrated adequate flushing performance capabilities of 350 grams or more.

9.3 IMPLEMENTATION PLAN

9.3.1 DMM DESCRIPTION

This DMM is based on implementing a financial incentive program for customers in the City's utility service area for replacement of higher water use toilets with ULFT's. The incentive will allow customers to upgrade existing high water use toilets to ultra low flush toilets to benefit both the customer and utility through reduced water use.

9.3.2 MARKETING

Coordinate marketing efforts with DMM # 7. Toilets sold after 1994 were required by law to be Ultra Low Flush Toilets (1.6 gpf) therefore, residences which were constructed prior to 1994 would typically contain toilets which use 3.5 gpf or greater and are the target residences for this the ULFT rebate program.

9.3.3 PROPOSED ULFT REBATE POLICY

The below proposed policy outlines terms and conditions, eligible products, eligible customers, method of incentive transfer and tracking considering the following components:

1. Eligible products are those ULFT's which use 1.6 gallons per flush or less meet or exceed performance specifications required to be WaterSense® certified. WaterSense® specifications require a minimum flushing performance of 350 grams. See the Equipment Section below.
2. Eligible customers are those existing City customers utilizing toilets with a flush rate of 3.5 gallons per flush (gpf) or more. Rebates shall be allowed for the maximum of three high water use (3.5 gpf or greater) toilets per customer based on permit recorded bathrooms.
3. Payout: The City may consider different methods of incentive transfer for this DMM. Three methods of fund transfer described below and should be investigated for implementation. The methods are as follows:
 - A. Rebate: A rebate is issued in the form of a check to the utility customer. This method requires administrative and accounting support to produce a check which is processed and paid after verifying the installation of the water saving device
 - B. Voucher: The City can partner with local appliance and home improvement retailers to accept City issued vouchers. In this case the customer will use the voucher as an instant cash discount on a predetermined water saving device. A voucher is usually issued for specific few types of devices which may not appeal to all participants.
 - C. Bill Credit: This method provides a direct credit to the customer's water bill after verifying installation. Doing so would reduce staff time and resources and provide an environmental friendly process by providing a nearly paperless rebate program should the application be submitted online.
4. Tracking: Information identified as necessary for assessing DMM progress, effectiveness, and water savings should be tracked and filed. (See Tracking and Documenting below)
5. Terms and Conditions: The terms and conditions of the rebate program set requirements of the customer should they decide to participate in the rebate program. Attached in Appendix G is an example documents for the ULFT Rebate Program. The documents consist of an example rebate application, terms and conditions criteria which are consistent with this DMM and should be considered for implementation.

9.3.4 EQUIPMENT

Eligible products are those ULFT's which use water at 1.6 gpf or less and are at minimum capable of flushing 350 grams or more. To ensure that utility customers obtain high performing ULFT's, the City may opt to narrow down the eligibility list to those high performing toilets listed in a Maximum Performance (MaP) Study. A list of ULFT's eligible for the ULFT Rebate Program can be found attached and viewed online at:

www.a4we.org/MaP-main.aspx.

9.3.5 PROCEDURES

Implementation shall consist of at least the following actions:

1. The City should offer a financial incentive in the amount not less than \$50, for the purchase of a ULFT to replace an existing high flow toilet.
2. Make the rebate program information available on the City's website and allow for the necessary application to be submitted online or downloadable and submitted via mail or in person. Additionally the rebate and application should be made available at City Hall, and the Public Works Department front desk, along with other DMM materials.
3. Processing applications will require the following steps:
 - A. Ensure that the application is complete and accurate. This would include all requested information be accurately completed on the application and supporting documents necessary to process the rebate. Supporting documentation consists of a copy of the water bill displaying the name of the customer and account number and the original receipt for the ULFT purchase. Ensure the customer is aware that original receipt will be the property of the City after the rebate is processed.
 - B. Verification that all rebates requested to date does not exceed pre-1994 total toilet approved for the residence or business.
 - C. After verifying the information the customer must be contacted to schedule an inspection to verify the installation of the ULFT as stated in the Terms and Conditions.
 - D. Upon installation verification, process the rebate transfer via a bill credit or other method the City chooses.

9.4 TRACKING AND DOCUMENTATION

1. The number of single-family residences and multi-family units in the service area constructed prior to 1994. Coordinate with DMM #2, as this is part of the marketing criteria.
2. The number of rebates issued for single-family residences and multi-family residences.
3. Estimated water savings per ULFT replacement
4. Total program cost by year, including administration and overhead, labor (staff salaries and benefits), marketing, outside services, incentives, and implementation (agency installation, rebate, and permitting costs). Costs for program development and program operation shall be reported separately.
5. Description of program acceptance or resistance by customers, any obstacles to implementation.

9.5 BUDGET AND STAFFING

Table 8 estimates staff time to process rebates, perform installation inspection and marketing the DMM to target customers. The estimates shown are on a per rebate basis therefore the annual amounts must be determined based on total budget allocated for this DMM.

Table 9-1
DMM 14 Costs per Rebate

Water Conservation Staff:	
Pre & Post installation inspection	1.5 hrs
Contact marketing (phone/mail)	0.25 hrs
Administration:	
Rebate processing	1.5 hrs
Total Staff Time:	3.25 hrs
Unit Costs:	
Marketing material	\$1.50
Rebate	\$50.00

Appendix A

DMM # 1 Supporting Documents

Appendix A

Table of Contents

A-1. Home Water Self Survey

City of Ceres

Self-Survey Kit instructions

Section 1.01 Kit Contents:

This kit comes with everything you need to evaluate your water uses. The contents of this kit are as follows:

- **This instructions manual**
- **Survey Worksheet**
- **Calibrated flow rate bag**
- **Toilet dye tablets**
- **Return Envelop**

Section 1.02 Introduction

The self survey water audit was created to help you identify areas where water may be unknowingly wasted. The survey is split into two components, indoor and outdoor. The indoor survey will walk you through steps to determine your fixture flow rates, detect leaks, determine the amount of wasted water through leaks and provide you with estimates of water savings if you switch out high water use fixtures or appliances with low water use fixtures or appliances. The outdoor component of the survey will help you identify common irrigation problems for repair, measure the irrigation flow rates of your system, and use that information to develop a customized watering schedule specific to your lawn. The information gathered from the test should be recorded on the Survey Worksheet and returned to the City for analysis of results where the City will return to you, water saving devices as needed.

Article II. Indoor Survey

Section 2.01 Flow Measurements

This section of the Water Audit will walk you through the steps necessary to assess how much water your fixtures use. The kit contains a flow measurement bag with lines on the side to measure the amount of water coming out of your fixtures.

Kitchen Sink , Faucets, & Showerhead

1. Turn the cold water on all the way
2. Get a timer ready to count down 60 seconds
3. Use the flow measurement bag and place it under the kitchen sink faucet and start the count down
4. After 60 seconds, remove the bag and check the water level using the printed lines on the side of the bag.

5. Mark the level on the Survey Worksheet. This number is the rated flow for your fixture in gallons per minute (gpm).
6. Repeat the steps for each faucet and showerhead in your home making sure to note where they are located (kitchen, bathroom, laundry etc...)
 - a. Example: After following the instructions above, the water level is around the 2.5 line. Your faucet uses two and a half gallons every minute it is turned on.

Fixture Tips: Did you know that if live in a home that was built before 1992 and are using the original faucets that came with the house that you could save up to approximately 20,000 gallons a year just by fitting your existing faucet with an aerator. Aerators mix air with water to create the sensation of a high water flow. Typically, a 1.5 gallons-per-minute aerator is appropriate for your bathrooms and 2.5 gallons-per-minute for your kitchen. When you fill out the Survey Worksheet we will evaluate the numbers and provide you with water saving devices to help you achieve these savings.

Below is a chart showing how much water you could be saving if you switch to a water efficient aerator, just find the measured flow from the flow rate bag and go across to either the 2.5 gpm or 1.5 gpm column to see how much you could be saving each minute you use your faucet and the amount of water you would save each year.

		Estimated Savings with an Aerator			
		1.5 gpm aerator		2.5 gpm aerator	
Year Manufactured	Measured Flow (gpm)	GPM Savings (gpm)	Yearly Saving (gpy)	GPM Savings (gpm)	Yearly Saving (gpy)
1994-present	1.5				
	2.5	1.0	8,000		
1980-1994	2.75	1.25	10,000	0.25	2,000
	3.0	1.5	12,000	0.5	4,000
Pre-1980	5.0	3.5	28,000	2.5	20,000

[a] aerator flow – measured flow

[b] savings based on 8.1 minutes per person per day and 2.7 people per house

gpm = gallons per minute

gpy = gallons per year

Toilets

Toilets flow measurements are easy. Find the date the toilet was manufactured. There is usually a stamped manufactured date on the inside of the tank or under the tank cover. Newer (post 1992) toilets have the flush rating on the top of the bowl behind the lid, (e.g. 1.6 gpf). Use the table below to determine how much water per flush is used based on the year your toilet was manufactured. Record this number on the Survey Worksheet. The estimated savings by switching to an Ultra Low Flush Toilet (ULFT) or better (high efficient toilet) is also listed below.

Year Manufactured	Toilet Water Use Rate (gpf)	Estimated Water Savings with a 1.6 gpf ULF Toilet	
		Daily, per household (gal) ^[a]	Yearly, per household (gal) ^[b]
1994 - present	1.6		
1980-1994	3.5	26	9,300
	4.0	32	11,800
	4.5	39	14,300
1950-1980	5.0	46	16,700
pre 1950	7.0	73	26,500

Source: adapted from Vickers: Handbook of Water Use and Conservation

[a] Savings x 2.64 persons per households x 5.1 uses per person

[b] Daily, per household savings x 365 days

gpf = gallons per flush

If the manufacturing year or flush rate of your toilet is unknown you can take measurements of the toilet tank by:

1. drawing a line at the standing water level,
2. turn off the water valve,
3. flush the toilet to remove the water from the tank allowing the flapper to shut naturally, and
4. count the number gallons it takes to refill the tank to the line drawn in to estimate the volume of water used per flush. An empty milk jug is adequate for this application.
5. Record this volume on the Survey Worksheet.

Toilet Tips: Did you know that the City is funding a toilet rebate program? The rebate program pays you for upgrading your pre-1994 manufactured toilet to an Ultra Low Flush Toilet. Based on the table above you could save as much as 26,500 gallons of water each year. That's enough to fill 358 bathtubs to the overflow drain or a pool measuring 20ft wide x 40ft long and depth from 1 to 7 ft (shallow to deep end). Call the Public Works Department for the more information on the program.

Washing Machines

Water use measurements can be estimated by determining the year your washing machine was manufactured. Using the year it was manufactured and matching it up with the table below will show you the approximate water use per load. As some added information we've also included some conservation information to show you how much you could be saving if you are currently using an older model washing machine. Once you have determined the water use of your washing machine record this in the Survey Worksheet

Year Manufactured or Installed	Clothes Washer Water-Use Rate (gpl)	Estimated Water Savings with a 27 gpl Clothes Washer	
		Daily, per household (gal) ^[a]	Yearly, per household (gal) ^[a]
1998 - present	27		
1990 - present	39	11.7	4,278
	43	15.6	5,705
1980-1990	51	23.4	8,557
Pre-1980	56	28.3	10,339

Source: adapted from Vickers: Handbook of Water Use and Conservation

[a] Based on average of 2.64 persons per occupied U.S. households.

gpl = gallons per load

gal = gallons

Conservation Tip: Washing machines make up approximately 22% of a household's water use. New High Efficient Washing Machines (HEWM) use 27 gallons per load and can save as much as 47% per load when compared to older models. Also HEWM's saves time and energy in the drying cycle by removing more water during the spin cycle. The City is funding a HEWM rebate program to encourage City residents to replace old machines and use these water efficient devices in the City's service area. Certain conditions apply so call the City's Public Works Department to learn more about the HEWM rebate program.

Section 2.02 Leaks

Most leaks are small and seem unimportant but you will be surprised to find out how much water is actually wasted from a small leak. Below are a few ways to estimate the amount of water wasted due to leaks.

Plumbing

If you have a water meter installed at your residence, then continue reading, otherwise skip to the Faucets and Showerheads section below. A leak through the plumbing line from the meter to your home is your responsibility. If you feel that your water bill is high you may have a leak in your private water line. The easiest way to check if you have a leak is to read your water meter at night when everyone goes to sleep and then again early in the morning. If no one used the restroom or drank any water overnight and there is a change in the meter reading then you have a leak in your water system.

The likely culprits are leaks from faucets or toilets which so happen to be the easiest and least expensive fixes. The following sections show you what to consider. If there still seems to be a leak in your system after making repairs, then the leak may be in your water line which you should contact a licensed plumber to perform repairs.

Faucets and Showerheads

Faucet leaks are obvious. You either have them or you don't. If you have a slow drip count the number of drips in a minute and use this drip table to determine the amount of unused water that is going down the drain. Record this information in the Survey Worksheet.

	# of Drips per minute					
	1	2	3	4	5	10
Wasted Water per Year (gpy)	53	105	158	211	264	527

Source: Table created from drip calculator from Waterwiser.org

If the drip is more like a slow stream of water then measure the amount of time it takes to fill two ounces using a measuring cup or baby bottle, then look up the time in the table below to determine the amount of water wasted a year. Record this information in the Survey Worksheet.

	Time to fill 2 ounces (minute)							
	1	2	3	4	5	6	7	8
Wasted Water per Year (gpy)	8,213	5,475	4,106	3,285	1,643	1,369	1,173	1,027

Source: Table created from drip calculator from Waterwiser.org

Toilets

Toilets leaks are silent wasters. A toilet leak can go undetected for a long time wasting a few to hundreds of gallons a day. The best defense is to perform a simple dye test using the dye tablets provided with this Self Audit Kit.

Just follow these easy steps to find out if your toilet is leaking:

- 1) Lift the lid off the toilet tank.
- 2) Place the dye tablets inside the toilet tank.
- 3) After 15 minutes, check the toilet bowl for any signs of dye color. If there's no color in the bowl, there is no water leaking from the tank into the bowl. But if there's color in your bowl, your toilet is leaking.

Here are a few tips if you do have a leak.

Check the Flapper

The flapper is a rubber-like control valve that opens when the toilet is flushed to let water rush from the tank to the bowl. One of the most common reasons a toilet loses water from the tank to the bowl is a flapper that's not functioning properly, so checking the flapper is a good place to start tracking down a toilet leak. Sometimes a leak can be caused by a buildup of mineral deposits on the flapper and/or the valve seat upon which the flapper sits. Clean the valve seat and

flapper with fine steel wool or a plastic cleansing pad to make sure they are both smooth and free of mineral deposits. Another cause of flapper leaks is the use of bleach-type bowl cleaning tablets in your toilet tank. The tablets not only can lead to a damaged flapper (which then leaks) but may also void your toilet manufacturer's warranty.

Replacing the Flapper

If cleaning the flapper doesn't fix the leak, it's probably time to replace it. A worn-out flapper is an invitation to water waste because it will never form a tight seal with the valve seat. If you found that there is a leak in your toilet, the City's will provide you with a free toilet flapper to kick off you repairs.

Other Common Toilet Leaks

In addition to a leaky flapper, common toilet leaks can be caused by an improperly adjusted float ball, a water fill valve that doesn't completely shut off after filling the tank or an improperly set water level in the tank. Additional toilet repair information is listed on the City's website for your assistance or you can call a licensed plumber to repair your toilet.

Article III. Outdoor

Irrigation System Check

A properly functioning irrigation system is the back bone to efficient outdoor water use. A survey conducted on residential end use of water found that outdoor water use accounts for approximately 55% of total household water use, where irrigation accounts for up to 90% of total outdoor water use. The following steps will walk you through on how to evaluate you irrigation system. Use the Survey Worksheet to write your notes down and make a copy for yourself.

Here are some simple instructions on how to evaluate your in-ground sprinkler system.

- 1) Make notes of the type of controller you have, the number of stations or zones, the types of sprinklers used per zone, watering duration, and the problems you see on each station. Note this information on the worksheet.
- 2) Evaluate this station by looking for the following problems:
 - a) Heads that spray onto the sidewalk, driveway, or road
 - b) Heads that are not operating or have reduced water flow
 - c) Heads that may be broken at their base or gushing out the top
 - d) Heads that are no longer straight up and down
 - e) Heads that cause a cloud of mist
 - f) Areas that are receiving very little water

- 3) Repair the problems found from step 2 above and adjust your sprinklers so that you get even irrigation coverage over your lawn.
- 4) Next we need to find out how much water each zone uses in gallons. This information will be used to determine how long you need to water your lawn. For this test you will use your water meter to make flow rate measurements so make sure that no one else uses the water during the test or you will get a false reading.
 - a) Locate your water meter in your front yard. You will see a box with the words water on it. Open it up clean the meter head and take an initial reading.
 - b) Run a zone/station of your irrigation system for five (5) minutes.
 - c) After 5 minutes is up, go back to your meter and write down another meter reading.

NOTE the City needs to update items d and e below to account for the specific type of meter installed

- d) Subtract the second reading from the first, this is how much water you used (in gallons) during the 5 minute period.
 - e) Then divide the amount of water by 5 to get the amount of water in gallons per minute.
 - f) Repeat steps a through e for each zone/station. When you are done continue onto the next step below.
- 5) Next we need to measure the area (Length x Width) of each zone dedicated to watering your grass. This information will help determine the amount of water needed per square foot of irrigated lawn. If you have an irregular shaped zones, break it up into smaller sections then add up the areas. Record this information on the survey worksheet.
- 6) Now that you know how much water each zone uses and the lawn area needing it, we can use this information to determine how long you should water your grass depending on the type of grass or the time of year.
- 7) Cool weather grasses require more water than warm weather grasses. Below is list of cool and warm weather grasses. If you don't know your grass type, use the cool weather grass requirement and adjust the schedule as needed.
 - a) Cool weather grass: Kentucky Bluegrass, various species of Fescue, Perennial Ryegrass, Bentgrass
 - b) Warm weather grass: variations of Bermuda grass, St. Augustine, Zoysiagrass, Centipede grass, and Buffalograss

- 8) The table below displays the amount of water needed in gallons per square foot of lawn. It is developed specifically for Ceres Climate conditions, city approved watering schedule, type of grass and time of year. This chart is based on historic weather data to determine the amount of water that would be lost due to the environment and through irrigation inefficiencies such as runoff. Keep in mind the chart assumes the grass is in full sun with a well graded site. Adjustments may be needed up or down of the estimates to account for steep slopes, soil type, irrigation inefficiencies, irregular weather and the such.

Inches of water required per irrigation day

	Cool Weather Grasses		Warm Weather Grasses	
	Irrigation Day		Irrigation Day	
	odd	even	odd	even
January	0.08	0.08	0.06	0.06
February	0.13	0.13	0.10	0.10
March	0.20	0.20	0.15	0.15
April	0.28	0.28	0.21	0.21
May	0.35	0.37	0.26	0.28
June	0.46	0.43	0.35	0.32
July	0.44	0.48	0.33	0.36
August	0.42	0.42	0.32	0.32
September	0.31	0.31	0.23	0.23
October	0.22	0.21	0.17	0.15
November	0.12	0.12	0.09	0.09
December	0.08	0.08	0.06	0.06

- 9) Using the measured irrigated grass area and the flow rate measurements f for those zones irrigating grass, we can now determine the proper watering durations required to keep a healthy lawn while keeping water conservation in mind.
- a) To do this take water requirement in the month you are watering from the table above, multiply it by your area of irrigated grass and divide by the zone **flow rate**. This is the irrigation duration you set your irrigation timer by.
 - b) Example: Say we are watering in **July** for **warm weather grass**, you live in an **odd** # street address (Water requirement: 0.33 gallons/square foot per watering day) and let's assume your Zone #1 area is 100 square feet and zone #1 flow rate of 3.5 gallons per minute. You would set Zone #1 to water for 9 minutes. **(0.33 x 100 ÷ 3.5 = 9.4 minutes or 9 minutes rounding to the nearest minute)**
 - c) Repeat this step for each zone watering grass.
- 10) If you need assistance determining your watering times, send us the measured information for each zone and the type of grass you have and the City will respond with the time schedule for you to set your irrigation controller.

Landscape Tip: Remember these are only estimates based on historic weather so it is up to you to make sure your grass condition is not damaged due to applying to little or too much water.

Finish filling out the Survey Worksheet send it back to the City. The City will evaluate the water survey and send you water saving devices, if necessary and provide you with a additional conservation material and advice if needed.

City of Ceres Self Water Home Survey

GENERAL INFORMATION

Customer/Account Name:	Account #:		
Address:			
Telephone No.			
Type of Dwelling	<input type="checkbox"/> Single-family	<input type="checkbox"/> Multi-family	<input type="checkbox"/> Other
No. of occupants:	Adults	Children	

INDOOR RESIDENTIAL WATER-USE INVENTORY

	No. 1	No. 2	No. 3	No. 4
Faucet				
Gallons per minute (gpm, full flow)				
Bathroom / Lavatory/Kitchen				
Water saving device installed? ²				
Leak detected? (yes/no)				
Shower				
Gallons per minute (gpm, full flow)				
Leak detected at shower head? (yes/no)				
Water saving device installed? (yes/no) ²				
Toilets				
Gallons per flush (gpf)				
Year toilet manufactured				
Water saving device installed? (yes/no) ¹				
Leak detected? (yes/no, dye test/other)				
Clothes Washer				
Washing Machine present? (yes/no)				
Year washing machine was manufactured				
Gallons per load (from survey instructions)				
Leak detected at washer or hose connection? (yes/no)				
Dish Washer				
Dish Washer present? (yes/no)				
Year dish washer was manufactured				
Leak detected? (yes/no)				
<small>1 Toilet displacement bag, brick etc...</small>				
<small>2 Flow restricter etc...</small>				

OUTDOOR RESIDENTIAL WATER-USE INVENTORY

Irrigation System						
Irrigation controller	<input type="checkbox"/> Controller <input type="checkbox"/> Timer <input type="checkbox"/> Manual					
Types	<input type="checkbox"/> Hose <input type="checkbox"/> Sprinkler <input type="checkbox"/> Rotor <input type="checkbox"/> Impact <input type="checkbox"/> Drip <input type="checkbox"/> Micro-spray					
Lawn Operation	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Normal run time						
Type of plants irrigated per zone (grass/shrubs)						
# of Broken heads						
Head clogged						
Head too high or low						
Head stuck or tilted						
Spray blocked or misdirected						
Gallons per minute						
Square footage of lawn						
Type of plants irrigated per zone (grass/shrubs)						

Source: Adapted from Vickers (2000)

Appendix B

DMM # 2 Supporting Documents

Appendix B

Table of Contents

B-1. List Aerators

B-2. Typical Water Saving Device Kit Contents

B-1: List of Aerators

US EPA WaterSense® certified Aerators

American Standard	1.5 gpm Aerator	Attachable Aerator	M922880
American Standard	1.5 gpm Aerator	Attachable Aerator	M922881
NEOPERL	Cache Perlator Junior 1.5 gpm Aerated	Attachable Aerator	BF.2107.1
NEOPERL	Cache Perlator Regular 1.5 gpm Aerated	Attachable Aerator	40.3232.010
NEOPERL	PCA Cache Cascade Regular 1.5 gpm Aerated	Attachable Aerator	40.1256.010
NEOPERL	PCA Cache Perlator Junior 1.5 gpm Aerated	Attachable Aerator	BF.2707.1
NEOPERL	PCA Cache Perlator Regular 1.5 gpm Aerated	Attachable Aerator	40.2256.010
NEOPERL	PCA Cascade Regular 1.5 gpm Aerated	Attachable Aerator	40.1056.000
NEOPERL	PCA Cascade SLC Regular 1.5 gpm Aerated	Attachable Aerator	40.0056.000
NEOPERL	PCA Perlator Junior 1.5 gpm Aerated	Attachable Aerator	B2.2707.1
NEOPERL	PCA Perlator Regular 1.5 gpm Aerated	Attachable Aerator	40.2056.000
NEOPERL	PCA Perlator Tom Thumb 1.5 gpm Aerated	Attachable Aerator	02.5607.1
NEOPERL	Perlator Junior 1.5 gpm Aerated	Attachable Aerator	B2.2107.1
NEOPERL	Perlator Regular 1.5 gpm Aerated	Attachable Aerator	40.3032.000
Niagara	Niagara 1.5 Lavatory	Attachable Aerator	N3104 (1.5gpm)

Source: Water Sense®: http://www.epa.gov/watersense/pp/bathroom_faucets.htm

For 2.5 gpm Aerators a non-exclusive list of vendors are shown below:

Niagra Conservation: <http://www.niagaraconservation.com/>

AMConservation: <http://www.amconservationgroup.com/>

NRG Savers: <http://www.nrgsavers.com/>

New Resource Group: <http://www.nrgideas.com/>

B-2: Typical Water Saving Device Kit Contents

Typical Water Saving Device Kit Contents

Toilet Tanks Bank	 A blue, flexible, bladder-like device with a red cap, designed to fit into a toilet tank. It is labeled "TOILET TANK BANK" and "DISPOSE OF WATER & WASTE". The device is shown against a white background.
Faucet Aerators	 A cylindrical, chrome-finished aerator with a mesh screen at the bottom. It is shown against a white background.
Swivel Kitchen Aerator	 A chrome-finished aerator with a white plastic body and a swivel mechanism. It is shown against a white background.
Low Flow Showerhead	 A chrome-finished showerhead with a circular face and a central nozzle. It is shown against a white background.

Source: Greenfeet.com, 2009

Appendix C

DMM # 3 Supporting Documents

Leak Detection Prescreening Audit Worksheet

Audit Year _____ to _____

Steps

1 Gather Water Well Production Data for the year

Production Data	Mgal/Y
	0 AF/Y

2 Gather Metered Sales in Gallons

Residential	Gallon
Single Family	Gallon
Multi Family	Gallon
Commercial	Gallon
Intitutional	Gallon
Parks	Gallon
Total Sales	0.0 Mgal
	0 AF/Y

3 Gather Other Verifiable Uses

Metered Construction Use	Gallon
Metered Fire Events	Gallon
Line Flushing	Gallon
Other Uses:	Gallon
	Gallon
	Gallon
	Gallon
Total	0.0 Mgal
	0 AF/Y

4 Prescreening Results

#DIV/0!

#DIV/0!

5 Action

If Prescreening results displays a number less than 90% and shaded in red
Then proceed to conduct a system water audit

If Prescreening results displays a number greater than 90% and shaded in green
Then compile information and file the Prescreening audit. Note data gaps and make changes
to recording procedures to gather information for the next annual prescreening audit.

Appendix D

DMM # 5 Supporting Documents

Appendix D

Table of Contents

- D-1. Large Landscape Worksheet**
- D-2. Irrigation Institute Recommended Audit Guidelines**
- D-3. WaterSense® Water Budget Approach and Tool**
- D-4. O'Dell Engineering (Dec. 2008) Memorandum:
Large Landscape Design Guidelines and Standard
Review Commentary,**

D-1: Large Landscape Worksheet

City of Ceres Large Landscape Survey

GENERAL INFORMATION

Customer/Account Name: _____		Account #: _____	
Address: _____			
Contact Person _____		Telephone No. _____	Fax Number: _____
Customer Type:	<input type="checkbox"/> Residential	<input type="checkbox"/> Sports field	<input type="checkbox"/> Industrial/Commercial <input type="checkbox"/> Other
Meter:	<input type="checkbox"/> Separate	<input type="checkbox"/> Master	System Pressure: _____
Pool, pond, fountain, waterfall on site?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

IRRIGATION SYSTEM WATER-USE INVENTORY

IRRIGATION AREA

Type	<input type="checkbox"/> Hose	<input type="checkbox"/> Sprinkler	<input type="checkbox"/> Drip
Location	<input type="checkbox"/> In-ground	<input type="checkbox"/> Above ground	Rain shut off valves? <input type="checkbox"/> Yes <input type="checkbox"/> No
Irrigation controller	<input type="checkbox"/> Manual	<input type="checkbox"/> Automatic	Number of valves: _____
Irrigation runoff:	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, describe: _____	
Leaks	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, describe: _____	
Controller schedule reset:	<input type="checkbox"/> Weekly	<input type="checkbox"/> Monthly	<input type="checkbox"/> Yearly
Controller schedule set by:	<input type="checkbox"/> Site Manager	<input type="checkbox"/> Maintenance Contractor	

LANDSCAPE AREA

Total area irrigated (sq ft)	Irrigated area that is sloped (sq ft)
Shaded Area (low, medium, high)	Irrigated area that is non-turf (sq ft)
Irrigated area that is turf (sq ft)	

TURF GRASS AND PLANTS

Grass type	<input type="checkbox"/> Cool-season	<input type="checkbox"/> Warm-season	Mix: Cool (%) _____	Warm (%) _____
Irrigated nonturf area (describe):	_____			
Grass mow height (in.):	Dry spots? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Watering zones/valve:	Are zones separated by plant/turf watering needs?			<input type="checkbox"/> Yes <input type="checkbox"/> No

SOIL

Soil type:	<input type="checkbox"/> Clay	<input type="checkbox"/> Loam	<input type="checkbox"/> Sandy Loam	<input type="checkbox"/> Mix
Condition:	Nutrient Level: <input type="checkbox"/> Good <input type="checkbox"/> Poor		Root depth (in.): _____	Moisture depth (in.): _____
Compaction:	<input type="checkbox"/> Light	<input type="checkbox"/> Heavy	<input type="checkbox"/> Medium	Sufficient Mulch around plant area? <input type="checkbox"/> Yes <input type="checkbox"/> No

OPERATION	Valve/ Zone 1	Valve/ Zone 2	Valve/ Zone 3	Valve/ Zone 4	Valve/ Zone 5	Valve/ Zone 6	Valve/ Zone 7	Valve/ Zone 8
Normal run time								
Total Gallons per minute for zone								
Square footage (sq ft)								
Shade (low,med,high)								
PLANTS								
Plant types								
Valves Operated according to plant water needs?								
Area overwaterred (muddy spots)								
Area underwatered (dry spots)								
Excess thatch buildup								
Mulch Needed								
Sloped area								
Runoff								
Ponding								

City of Ceres Large Landscape Survey

	Valve/ Zone 1	Valve/ Zone 2	Valve/ Zone 3	Valve/ Zone 4	Valve/ Zone 5	Valve/ Zone 6	Valve/ Zone 7	Valve/ Zone 8
SYSTEM TYPE: ROTOR SPRAY BUBBLER, DRIP								
Head inventory								
Rotor								
Impact								
Stream rotor								
Soaker								
Bubbler								
Full head								
Three-quarter head								
Half head								
Side spray head								
Quarter head								
SPRINKLER PROBLEMS								
Broken head								
Broken pipe								
Broken seal Broken valve								
Head clogged								
Head too high or low								
Head stuck or tilted								
Incorrect pressure								
Radius Long or short								
Spray blocked or misdirected								
DRIP PROBLEMS								
Pinched or broken tubing								
Emitters separated from tubing								
Emitters spaced incorrectly								
Clogged/mising/broken emitters								

Source: Adapted from Vickers (2000)

Prepared By: _____

Date: _____

D-2: Irrigation Institute Recommended Audit Guidelines

**Prepared by the Irrigation Institute (May 2009)
www.irrigation.org**

Recommended Audit Guidelines

The Irrigation Association has developed a set of minimum guidelines to create a standardized procedure to perform an audit of a landscape irrigation system. ASABE standards have been reviewed and incorporated wherever possible. Consultation and review of the guidelines has been conducted with many irrigation auditors, contractors, statisticians, educators, irrigation consultants and the Irrigation Association Certification Board. The usage and application of these guidelines is at the discretion of others. The Irrigation Association offers the guidelines without warranty or obligation.

Irrigation Audit Guidelines

The guidelines were developed by the Irrigation Association and are intended to function as recommendations in the auditing of landscape irrigation systems. They have been designed to aid irrigation professionals in fieldwork procedures, techniques and performance calculations.

Recommendations and projections from the guidelines and their accuracy depend upon the quality of measurements and data provided by the individual user. The Irrigation Association makes no warranty, implied or expressed, as to the results obtained from these procedures.

Step #1 Pre-audit inspection

- Irrigation system should be in optimal working condition prior to performing a test.
 - Verify that the irrigation system complies with local codes.
 - Identify operational defects or deficiencies.
 - Assure that corrections have been made.

Step #2 Auditing procedures

- Maximum wind allowable during audit = 5 mph or less (ASAE S398.1). Wind speed should be monitored and recorded every five minutes during the audit test.
- Audit should reflect normal operating conditions. If normal operating conditions occur at odd hours, some assessment of the impact of these conditions should be made on the tested conditions
- Pressure tests should be conducted at normal operating conditions at the sprinkler using the appropriate pressure testing device at the beginning and end of each zone audited.
- All catch devices must be uniform in size and shape. Larger collectors give better repeatable results.
- Catchments for a test area should be documented to facilitate repeatability.
- A minimum of 24 catch devices should be used. Research (Vinchesi, et al., Irrigation Show 2007 and 2008 proceedings.) shows that smaller sprinkler spacing may require more catch devices to improve statistical accuracy.
- The catchments along the edge of the zones should be placed 12 to 24 inches in from the edge.
- Minimum catchment device spacing
 - For fixed spray sprinklers – near a head (within two to three feet) and half-way between the heads.
 - For rotor sprinkler heads spaced less than 40 feet on center – near a head (within two to three feet) and every one-third of the distance between the heads.
 - Rotor heads spaced greater than 40 feet on center – near a head (within two to three feet) and every one-fourth of the distance between the heads.
 - Unusual or irregularly shaped areas:
 - For rotor sprinklers – uniform grid of catch devices, 10 to 20 feet on center spacing (i.e., baseball infield, golf green).
 - For spray sprinklers – uniform grid of catch devices, 5 to 8 feet on center spacing (i.e., curvilinear areas without defined rows of sprinklers).
- Test run times must be consistent and appropriate for the sprinkler type and arc.
- When the test area contains multiple stations, the test run times for each station or zone must be adjusted to achieve a matched precipitation rate across the test area.

- The volume in milliliters should be approximately one and one-half times the throat area of the catch device in square inches. For example if the throat area of the catch device is 20 square inches the average volume of water should be 30 ml (20 x 1.5 = 30).
- “Linking” (using information from one station or zone and applying to another) may be used when there are a large number of sprinkler zones that are identical, i.e. the same sprinkler head, nozzle, spacing, operating pressure and irrigating similar soil and plant types. The auditor may elect to perform catch device tests on one-third to one-half of the sprinkler zones to get an average value that could be applied to all sprinkler zones that are identical.
- The following data should be documented and recorded:
 - Sprinkler head locations
 - Sprinkler head spacing
 - Sprinkler make, model and nozzle size
 - Approximate catch device locations
 - Catchment readings
 - Test run time
 - Meter readings if available
 - Pressure readings with locations
 - Wind speed readings
 - Soil types and root zone depths
 - Date and time of testing

Step #3 Performance calculations

To calculate the precipitation rate using milliliter readings:

$$PR_{net} = \frac{3.66 \times V_{avg}}{t_R \times A_{CD}}$$

- PR_{net} = station precipitation rate {in./h},
- V_{avg} = average catch volume for station {ml},
- t_R = testing run time {min},
- A_{CD} = catch device throat area {in.²}.

To calculate the low-quarter distribution uniformity:

$$DU_{LQ} = \text{Low-quarter distribution uniformity \%}.$$

$$DU_{LQ} = \left(\frac{\text{Average Catch in Lower Quarter}}{\text{Average Catch Overall}} \right) \times 100$$

When calculating the base irrigation schedule it is recommended to use IA scheduling methodology and procedures as presented in the Golf Irrigation Auditor and Landscape Irrigation Auditor manuals.

D-3: WaterSense® Water Budget Approach and Tool

**http://www.epa.gov/watersense/specs/waterbudget_tool.htm
May 2009**

Revised WaterSense® Water Budget Approach

I. Introduction

On May 8, 2009, EPA released a revised draft of the [specification for water-efficient single-family new homes](#) (specification). To meet the Landscape Design Criteria (Section 4.1.1), the builder may choose to comply with one of the following options:

Option 1 – Turfgrass shall not exceed 40 percent of the landscapable area.

Option 2 – Landscape design shall be developed using the water budget approach and tool based on a 70 percent evapotranspiration adjustment factor.

EPA has developed a tool to guide the builder, landscape professional, or WaterSense irrigation partner through the water budget calculations. The first version of this tool, released on November 20, 2008, was based on methodology developed by the irrigation industry as described in the Irrigation Association (IA)'s *Landscape Irrigation Scheduling and Water Management*, published in March 2005. This second version incorporates recommendations suggested by stakeholders as part of the public comment process.

This document provides an overview of the tool as well as detailed instructions for using the tool. Definitions of technical terms are provided at the end of the document.

The water budget approach serves as a design tool, allowing the professional to design a sustainable landscape based on a regionally appropriate amount of water. A water budget is a site-specific method of calculating an allowable amount of water to be used by the landscape and then designing the landscape to meet this budget. The budget takes into account plant type, plant water needs, irrigation system design, and applied water that the landscape receives either by irrigation or by precipitation, as described in detail below. Water budgets must be associated with a specified amount of time, such as a week, month, or year. This tool is based on the site's peak watering month. For most of the United States, the peak watering month is July.

WaterSense designated a 70 percent evapotranspiration adjustment factor in Option 2 of the specification's Landscape Design Criteria (Section 4.1.1). This means that the designed landscape is allowed to use 70 percent of the amount of water required by a similar-sized landscape composed entirely of turfgrass. It does not mean that each hydrozone of the designed landscape can receive only 70 percent of the water that the plants need. The water budget approach will allow users to plant a mixture of high-, medium-, and low-water-using plants, lending flexibility in the design of the water-efficient landscape.

II. Who Should Use the Tool?

If the builder chooses Option 2 of the Landscape Design Criteria (4.1.1), the WaterSense Water Budget Tool shall be used and documentation shall be submitted as part of the inspection package. Although the tool is based on the assumption that the designed landscape has an in-

ground irrigation system, designers that choose not to install an irrigation system shall still use the tool if they choose Option 2. Details on completing the tool for a landscape without an irrigation system are discussed in [Section B.3.c](#). However, if a landscape is more than 50 percent non-vegetated area (e.g., mulch or hardscape), then the tool is not appropriate for use and Option 1 is more suitable.

III. The Water Budget Tool

The tool (file name: WaterSense Water Budget Tool_050809.xls) is provided in a Microsoft Excel spreadsheet format that guides the user through the water budget calculation in three parts. First, the tool calculates the amount of water the designed landscape is allowed based on EPA criteria (Part 1 – Landscape Water Allowance). Next, the tool calculates how much water the designed landscape requires based on climate, plant type, and irrigation system design (Part 2 – Landscape Water Requirement). Last, the tool compares the allowable amount of water from Part 1 to the required amount of water from Part 2 and determines whether the designed landscape meets EPA’s criteria (Part 3 – Results).

A. Background on the Calculations

The following sections describe the equations and calculations used by the tool to calculate the water budget and determine if the designed landscape meets EPA criteria.

Part 1: Determining the Landscape Water Allowance

The landscape water allowance (LWA) is the amount of irrigation water allotted for the designed landscape. The LWA is based on the local reference evapotranspiration (ET_o), an evapotranspiration adjustment factor (ETAF), and the area (A) of the designed landscape:

Equation A-1: Landscape Water Allowance

$$LWA = ET_o \times ETAF \times A \times C_u$$

Where:

LWA = Landscape water allowance (gallons/month)

ET_o = Local reference evapotranspiration (inches/month)

ETAF = Evapotranspiration adjustment factor (dimensionless), designated by WaterSense as 0.70 (70%)

A = Area of the landscape (square feet)

C_u = Conversion factor (0.6233 for results in gallons/month)

Part 2: Determining the Landscape Water Requirement

The landscape water requirement (LWR) is the amount of irrigation water required by the designed landscape. The LWR is calculated for each hydrozone and the sum of these values is the LWR for the site. The LWR is based on ET_o , the landscape coefficient (K_L), the

area of the hydrozone, the lower quarter distribution uniformity (DU_{LQ}) of the associated system, and a portion of local rainfall designated as allowable rainfall (R_a):

Equation B-1: Landscape Water Requirement

$$LWR_H = RTM \times [(ET_o \times K_L) - R_a] \times A \times C_u$$

Where:

LWR_H = Landscape water requirement for the hydrozone (gallons/month)

RTM = Run time multiplier, equal to 1/lower quarter distribution uniformity (dimensionless)

ET_o = Local reference evapotranspiration (inches/month)

K_L = Landscape coefficient for the highest water-using plant in that hydrozone (dimensionless)

R_a = Allowable rainfall, designated by WaterSense as 25% of the site's peak monthly rainfall

A = Area of the hydrozone (square feet)

C_u = Conversion factor (0.6233 for results in gallons/month)

Further explanation of R_a : For the purposes of this tool, WaterSense is limiting the landscape designer to 25 percent of the peak watering month's average rainfall at the site. This is a conservative estimate to allow for a landscape to survive on less rainfall than expected and still meet the water budget.

Part 3: Results

This worksheet is used to compare the LWA to the LWR to determine if the water budget is met. If the LWR is **LESS** than the LWA, then the water budget criterion is met. If the LWR is **GREATER** than the LWA, then the water budget criterion is not met and the landscape design and/or irrigation system needs to be redesigned to use less water.

Additionally, this worksheet will calculate and display the total amount of turfgrass used in the landscape. This information is necessary for the inspector to verify the builder actually installed the designated amount of turfgrass at the home site.

B. Detailed Instructions

Each worksheet is formatted in an identical fashion:

- The blue section at the top displays the user, builder, and site information. Once the information is entered for Part 1, it is automatically populated into Parts 2 and 3 of the tool.
- The yellow section displays the equation that is used in each worksheet.
- The gray section is the area of the worksheet where the user enters the required data.
- The green section displays the result.

Please note, the tool only allows information to be entered into the white cells.

Part 1: Determining the Landscape Water Allowance

1. Complete the site information in the blue section at the top of the worksheet. Enter the peak watering month for the site. The peak watering month is the month when the plants in the site's region require the most water. For most regions of the United States, the peak watering month is July. If you are unsure of the peak watering month for your area, contact your local water utility. Site information entered on this tab will be populated automatically in the next two worksheets.
2. In the gray section, complete Step 1A by entering the area of the landscape in square feet. Note: For purposes of this tool, the landscapable area is defined as "Buildable lot area excluding area under roof. Buildable lot area is the portion of a site where construction can occur. Buildable land excludes public streets and other public rights-of-way, land occupied by nonresidential structures, public parks, and land excluded from residential development by law. Septic field drainage areas are excluded from the definition of landscapable area."
3. In the gray section, complete Step 1B by entering the monthly ET_o for the site's peak month. For this version of the tool, please use the additional resources provided in Section E to determine your local peak month ET_o . EPA is developing a Web page that will provide average monthly ET_o by zip code for users in the United States. A beta version of this tool will be available soon. The data are based on information obtained from the International Water Management Institute's (IWMI) World Water and Climate Atlas (www.iwmi.cgiar.org/WAtlas/Default.aspx), which calculates Penman-Monteith reference evapotranspiration rates from 1961-1990 historical data. While local, real-time evapotranspiration data are more suitable for scheduling an irrigation system, EPA believes that the IWMI data are suitable for use when designing the landscape.
4. The result is displayed in the green section.
5. Click on the worksheet tab labeled "Part 2 - LWR" at the bottom of the screen to calculate the landscape water requirement.

Part 2: Determining the Landscape Water Requirement

1. In the gray section, complete Step 2A by entering the monthly rainfall (R) in inches per month for the peak watering month. Rainfall data should be taken from the National Ocean and Atmospheric Administration (NOAA) 1971–2000 dataset (located at http://cdo.ncdc.noaa.gov/cgi-bin/climatenormals/climatenormals.pl?directive=prod_select2&prodtype=CLIM81&subrum). Choose the appropriate state on the right side of the screen. Open the file format of your preference (PDF or ASCII) and locate the "precipitation normals" (total in inches) for the peak watering month for the station nearest the home. Enter the corresponding average monthly rainfall into the tool.
2. Complete Step 2B by filling Table 1 with the required information. When completed, the total area of all of the hydrozones/landscape feature areas must equal the total

landscapable area to avoid an error message in Step 3. For each hydrozone/landscape feature area, complete the following information:

- a. Hydrozone/Landscape Feature Area: Enter the area of the hydrozone or landscape feature in square feet.
- b. Plant Type or Landscape Feature: From the dropdown list, choose the plant type (e.g., trees – high water requirement, turfgrass – medium water requirement, etc.) or landscape feature (i.e., hardscape, nonvegetated softscape, or pool, spa, or water feature) for the associated hydrozone/landscape feature area. If there are multiple plant types or landscape features within one hydrozone, enter the feature with the highest water requirement. The landscape coefficient (K_L) for the respective plant type (or landscape feature) will automatically populate in the adjacent cell. The source data for the plant type dropdown list and associated K_L values are displayed in Table 2. These plant types and associated K_L values are based on the U.S. Green Building Council's (USGBC's) Leadership in Energy and Environmental Design (LEED) for Homes Rating System 2008 table of species factors (SS 2.5 Table 6) (USGBC 2008).

The landscape coefficient is a factor used to modify reference ET, which includes species factor (K_s), density factor (K_d), and microclimate factor (K_{mc}). The equation for the landscape coefficient is $K_L = K_s \times K_d \times K_{mc}$ (Landscape 2000 in IA 2005). For the purposes of this tool, WaterSense is assuming K_d and K_{mc} are both approximately equal to one to reduce the complexity of the calculations. Therefore, $K_L = K_s$.

In general, a high value for K_s is used for plants that need a lot of water, and a low value is used for plants that need little water. As a general rule of thumb, species requiring the indicated amounts of water are designated as follows (WUCOLS, 2000):

- 70-90% ET_o : High K_s
- 40-60% ET_o : Moderate K_s
- < 30% ET_o : Low K_s

If you are not familiar with the K_s values for the proposed plant types, contact your local cooperative extension for guidance.

For hardscape and nonvegetated softscape, the K_L is assumed to be zero and no water requirement will be assigned in Table 1. For a pool, spa, or water feature, the associated K_L is assumed to be that of a high-water-using plant such as turfgrass and is set at 0.80.

- c. Irrigation Type and Lower Quarter Distribution Uniformity (DU_{LQ}): For each hydrozone, choose the type of irrigation (e.g., standard drip, rotor) that will be installed. The associated DU_{LQ} will automatically populate in the adjacent cell. The data for the irrigation type and DU_{LQ} are based on the Irrigation Association's *Landscape Irrigation Scheduling and Water Management* (IA 2005).

Note: If the hydrozone/landscape feature area is designated as hardscape or nonvegetated softscape then choose “no irrigation” from the dropdown list. If the hydrozone/landscape feature area is designated as “Pool, Spa, or Water Feature,” then set the irrigation type to “fixed spray.”

If irrigation is not being installed on the site at this time: Although not installing irrigation, an irrigation type must be chosen if the hydrozone includes a plant type.

- If the K_L for the plant type or landscape feature for the hydrozone is 0.2, then choose the irrigation type to be “standard drip” for this column.
- If the K_L for the plant type or landscape feature is greater than 0.2, then choose “fixed spray.”
- If areas of the landscape are “hardscape” or “nonvegetated softscape”, choose “no irrigation” as discussed above.

- d. LWR_H : The LWR for each hydrozone, in gallons per month, will be calculated by the tool and displayed in this column.
3. The result is displayed in the green section.
 4. Click on the worksheet tab labeled “Part 3 - Results” at the bottom of the screen to review the results of the water budget tool.

Part 3: Results

If the total area of the hydrozone/landscape feature areas entered in Part 2 does not equal the total landscapable area entered in Part 1, then an error message in red text will appear at the top of the gray section requesting that Table 1 be completed.

1. Complete Step 3A by reviewing the LWA and LWR calculated in Part 1 and Part 2.
2. Complete Step 3B by reviewing the total area of turfgrass in the designed landscape. The percentage of designed landscape that is comprised of turfgrass, pools, spas, and/or water features is also displayed.
3. The result is displayed in the green section.
 - a. If the blue cell displays “YES” then the water budget criterion is met (i.e., $LWR < LWA$). Print an entire copy of the completed tool and submit it to the builder to be included in the inspection documentation.
 - b. If the blue cell displays “NO” then the designed landscape requires more water than the site is allotted. Adjustments should be made to the composition of the landscape and/or irrigation system in [Step 2B](#) of the water budget tool. Then return to Part 3 – Results to see if the revised design meets the water budget criterion.

When all of the information has been entered into the tool and the water budget is complete, print an entire copy of the completed tool and submit it to the builder to be included in the inspection documentation. This documentation must be provided to the builder prior to a home being inspected for compliance with EPA criteria.

C. Definitions

Allowable rainfall –The amount of rainfall WaterSense is allowing to be incorporated into the water budget. For the purpose of this tool, 25 percent of the site’s average peak monthly rainfall was designated by WaterSense. This is a conservative estimate to allow for a landscape to survive on less rainfall than expected and still meet the water budget.

Evapotranspiration adjustment factor – An adjustment factor used in the water budget tool to limit the allotment of water a landscape can be designed to use. For the purposes of this specification, EPA has set this level at 70 percent of reference evapotranspiration (ET_o).

Hydrozone – Grouping of plants with similar water and environmental requirements for irrigation with one of more common station/zone valves (Weinberg and Roberts 1988 and Water Management Committee 2001 in IA 2005).

Landscape coefficient (K_L) – Coefficient used to modify reference ET, which includes species factor (K_s), density factor (K_d), and microclimate factor (K_{mc}). ($K_L = K_s \times K_d \times K_{mc}$) (Landscape 2000 in IA 2005). Note: For the purposes of this tool, WaterSense is assuming K_d and K_{mc} are both approximately equal to one to reduce the complexity of the calculations.

Landscape water allowance (LWA) – A volume of water allocated to the entire landscape area over a specified period of time. For the purpose of this tool, the LWA is based on the local reference evapotranspiration (ET_o), an evapotranspiration adjustment factor (ETAF), and the area (A) of the designed landscape.

Landscape water requirement (LWR) – The amount of water required by the landscape over a specified period of time.

Landscapable area – Buildable lot area excluding area under roof. Buildable lot area is the portion of a site where construction can occur. Buildable land excludes public streets and other public rights-of-way, land occupied by nonresidential structures, public parks, and land excluded from residential development by law. Septic field drainage areas are excluded from the definition of landscapable area (WaterSense 2009).

Reference evapotranspiration (grass reference evapotranspiration) (ET_o) – Rate of evapotranspiration from an extensive surface of cool-season grass cover of uniform height of 12 centimeters, actively growing, completely shading the ground, and not short of water (FAO 1998 and ASCE 1990 in IA 2005).

Run time multiplier (RTM) – Factor used to increase zone run time to account for lack of distribution uniformity within the root zone (Water Management Committee 2001 in IA 2005).

Softscape – The natural elements of a landscape, such as plant materials and soil. Softscapes can include hard elements such as rocks (U.S. Green Building Council. LEED for Homes Reference Guide, First Edition, Washington, D.C, 2008).

Water budget – A water budget is used to calculate the amount of water a landscape needs taking into account the inputs and outputs of water to and from the root zone. Inputs, such as precipitation, are subtracted from outputs, such as evapotranspiration, to calculate the water needs of the landscape. Many factors are taken into consideration when calculating a water budget, such as plant type and irrigation system efficiencies (WaterSense 2008).

D. References

California Department of Water Resources. 2009. Model Water-Efficient Landscape Ordinance.

Irrigation Association (IA). 2005. Landscape Irrigation Scheduling and Water Management. [*Currently out for review*]

United States Green Building Council (USGBC). LEED for Homes Rating System 2008.

University of California Cooperative Extension and California Department of Water Resources. 2000. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California. The Landscape Coefficient Method and Water Use Classifications of Landscape Species (WUCOLS) III.

WaterSense. 2009. Revised Draft Water-Efficient Single-Family New Home Specification.

E. Additional Resources

The Irrigation Association's ET Connection page lists known ET sources by state and is available at: www.irrigation.org/gov/pdf/ET_Conn_Info.pdf

Irrisoft's InSite Irrigation Scheduling program, available for free download at: www.irrisoft.net/wr/inSite.cfm contains historical ET data for several cities in each US state.

Rain Bird's ET Manager Scheduler program, available for free download at: www.rainbird.com/landscape/products/controllers/etmanager.htm contains historical ET data for several cities in each US state.

Revised Draft Water-Efficient Single-Family New Home Specification: Water Budget Tool

This water budget tool shall be used to determine if the designed landscape meets Criteria 4.1.1.2 of the specification.

Please refer to the WaterSense Water Budget Approach for additional information.

Your Name:
Builder Name:
Lot Number/Street Address:
City, State, Zip Code:



Peak Watering Month:

Is an irrigation system system being installed on this site?

This worksheet determines the Landscape Water Allowance (LWA) for a site based on its peak watering month.

The LWA is the monthly water budget (i.e., allotment) for the site. The following formula is used to calculate the LWA:

$$LWA = ET_o \times ETAF \times A \times C_u$$

Where:

LWA = Landscape water allowance (gallons/month)

ET_o = Local reference evapotranspiration (inches/month)

ETAF = Evapotranspiration adjustment factor (dimensionless), designated by WaterSense as 0.70 (70%)

A = Area of the landscape (square feet)

C_u = Conversion factor (0.6233 for results in gallons/month)

To calculate the LWA for a site, enter the landscapable area and average monthly reference evapotranspiration for the site's peak watering month. (Enter data in white cells only.)

STEP 1A - ENTER THE AREA (A) OF THE LANDSCAPE

Area of the landscape (square feet)

STEP 1B - ENTER THE AVERAGE MONTHLY REFERENCE EVAPOTRANSPIRATION (ET_o)

Average monthly reference ET (inches/month) for the site's peak watering month

OUTPUT - WATER ALLOWANCE FOR THE SITE

Monthly landscape water allowance (gallons/month) based on the site's peak watering month

Next Step: Click on the next tab labeled *Part 2 - LWR* to calculate the landscape water requirement.

Revised Draft Water-Efficient Single-Family New Home Specification: Water Budget Tool

This water budget tool shall be used to determine if the designed landscape meets Criteria 4.1.1.2 of the specification. Please refer to the WaterSense Water Budget Approach for additional information.

Your Name: _____
 Builder Name: _____
 Lot Number/Street Address: _____
 City, State, Zip Code: _____
 Peak Watering Month: _____
 Is an irrigation system being installed on this site?



This worksheet determines the monthly Landscape Water Requirement (LWR) for a site based on the peak watering month

The monthly LWR is the water requirement specific to the designed landscape. The sum of all the LWRs for each hydrozone, equals the site LWR. The following formula is used to calculate the LWR:

$$LWR_H = RTM \times [(ET_o \times K_L) - R_a] \times A \times C_u$$

Where:
 LWR_H = Landscape water requirement for the hydrozone (gallons/month)
 RTM = Run time multiplier, equal to 1/low quarter distribution uniformity (dimensionless)
 ET_o = Local reference evapotranspiration (inches/month)
 K_L = Landscape coefficient for the type of plant in that hydrozone (dimensionless)
 R_a = Allowable rainfall, designated by WaterSense as 25% of average peak monthly rainfall
 A = Area of the hydrozone (square feet)
 C_u = Conversion factor (0.6233 for results in gallons/month)

To calculate the LWR for the site, enter the information requested below for the site's peak watering month. (Enter data in white cells only.)

STEP 2A - ENTER THE AVERAGE MONTHLY RAINFALL AT THE SITE (R)

Average monthly rainfall (inches/month) for the site's peak watering month

Use the following link for source data: http://cdo.ncdc.noaa.gov/cgi-bin/climate_normals/climate_normals.pl?directive=prod_select2&prodtype=CLIM81&subnrnm

STEP 2B - COMPLETE TABLE 1 BELOW (enter data in white cells only)

Enter the area of the hydrozone (square feet). The total area must equal the landscape area entered in Step 1A.

Choose the plant type from the dropdown list (source data is displayed in Table 2).

Choose the irrigation type from the dropdown list (source data is displayed in Table 3).

Table 1. Landscape Water Requirement

Zone	Hydrozone/Landscape Feature Area (sq. ft.)	Plant Type or Landscape Feature	Landscape Coefficient (K _L)	Irrigation Type	Distribution Uniformity (DU _{LQ})	LWR _H (gal/month)
1						-
2						-
3						-
4						-
5						-
6						-
7						-
8						-
9						-
10						-
11						-
12						-
13						-
14						-
15						-
Total Area =		Landscape Water Requirement for the Site (gal/month)				-

Table 2. Plant Type or Landscape Feature and Associated Landscape Coefficient

Plant Type or Landscape Feature	K _L		
	Low	Medium	High
Trees	0.2	0.5	0.9
Shrubs	0.2	0.5	0.7
Groundcover	0.2	0.5	0.7
Turfgrass	0.6	0.7	0.8
Pool, Spa, or Water Feature	0.8		
Hardscape	0		
Nonvegetated Softscape	0		

Source: Based on LEED for Homes Rating System 2008.

Table 3. Distribution Uniformity

Irrigation Type	DU _{LQ} or EU*
Drip - Standard	70%
Drip - Press Comp	90%
Fixed Spray	65%
Micro Spray	70%
Rotor	70%
No Irrigation	NA

*Lower quarter distribution uniformity (DU_{LQ}) applies to sprinkler zones and emission uniformity (EU) applies to drip/micro-irrigation zones. Source: (The Irrigation Association, October 2001) in Landscape Irrigation Scheduling and Water Management, IA 2005.

OUTPUT - WATER REQUIREMENT FOR THE SITE

Monthly landscape water requirement (gallons/month) based on the site's peak watering month

Next Step: Click on the next tab labeled *Part 3 - Results* to view the results.

Revised Draft Water-Efficient Single-Family New Home Specification: Water Budget Tool

This water budget tool shall be used to determine if the designed landscape meets Criteria 4.1.1.2 of the specification.
Please refer to the WaterSense Water Budget Approach for additional information.

Your Name:

Builder Name:

Lot Number/Street Address:

City, State, Zip Code:

Peak Watering Month:



Is an irrigation system system being installed on this site?

This worksheet determines if the designed landscape meets the water budget.

If the landscape water requirement is LESS than the landscape water allowance, then the water budget criterion is met.

If the landscape water requirement is GREATER than the landscape water allowance, then the landscape and/or irrigation system needs to be redesigned to use less water.

STEP 3A - REVIEW THE LWA AND LWR FROM PART 1 AND PART 2

LWA (gallons/month)

LWR (gallons/month)

STEP 3B - REVIEW THE TOTAL AREA OF TURFGRASS* IN THE DESIGNED LANDSCAPE FROM STEP 2E

The designed landscape contains square feet of turfgrass.* This is of the landscapable area.

*This includes the area of any pools, spas, and/or water features, designated by WaterSense to be counted as turfgrass.

OUTPUT - DOES THE DESIGNED LANDSCAPE MEET THE WATER BUDGET?

If YES, then the water budget criterion is met.

If NO, then the landscape and/or irrigation system needs to be redesigned to use less water.

D-4: O'Dell Engineering (Dec. 2008)
Memorandum: Large Landscape Design
Guidelines and Standard Review Commentary

Appendix E

DMM # 6 Supporting Documents

Appendix E

Table of Contents

- E-1. HEWM Application and Policy**
- E-2. Consortium for Energy Efficiency (CEE) Super-Efficient Home Appliances Initiative: Clothes Washer Qualifying Product List**

E-1: HEWM Application and Policy

**City of Ceres High Efficient Washing Machine (HEWM)
REBATE APPLICATION**

Complete application (including reverse side), detach, and mail with original receipt(s) to:
Ceres Public Works Department Water Conservation, 2220 Hackett Rd., Ceres, CA, 95307

Offer good for purchases of qualifying HEWM's.
Application must be postmarked within 90 days of purchase.
A separate application must be submitted for each metered address.

PLEASE PRINT:

APPLICANT FIRST _____ LAST NAME _____

WATER SERVICE ACCOUNT _____ PHONE NUMBER _____

HOA NAME IF APPLICABLE _____

INSTALLATION ADDRESS _____ CITY _____ ZIP _____

TYPE OF PROPERTY:

- House Apartments (# of units) Townhouse/Condo Other

WASHING MACHINE INFORMATION (Please indicate the Tier Level, Refer to the Consortium of Energy Efficiency list of cloths washers qualifying product list):

- Tier 2 (Water Factor 6.0) Tier 3 (Water Factor 4.5)

Store Name, City, Zip Code _____

MAKE AND MODEL NUMBER OF HEWM INSTALLED _____

DISCLAIMER:

The undersigned expressly agrees that the City of Ceres (City) may inspect all properties participating in the High Efficient Washing Machine Rebate Program; that the City does not guarantee the performance of any washing machine; and that the City does not warrant any washing machine or installation to be free of defects; the quality of workmanship, or the suitability of the premises or the washing machine for the installation. The undersigned further agrees to defend, indemnify and hold harmless the City, their directors, officers, agents, and employees, from and against any and all loss, damage, expense, claims suits and liability, including attorneys fees arising out of or in any way connected with the washing machine(s) and its (their) installation. Applicant has read, understands and agrees to the terms and conditions listed on the High Efficient Washing Machine Rebate Program application. Applicant understands that installation of a qualifying High Efficient Washing Machine may not result in lower water bills. The City reserves the right to add or remove eligible High Efficient Washing Machines from the list or change the terms of the incentive offer at any time.

I HAVE READ, UNDERSTAND, AND AGREE TO THE TERMS AND CONDITIONS OF THIS REBATE PROGRAM.

SIGNATURE OF APPLICANT _____ DATE _____

High Efficient Washing Machine Rebate Terms and Conditions

- The HEWM Rebate Program only rebates the replacement of non-Energy Star Certified and pre-1990 washing machines.
- HEWM must be installed in the Ceres water service area for a duration of one (1) year.
- HEWM installation and rebate application postmark must be completed within 90 days of purchase date.
- Original receipt(s) and a copy of your water bill must be sent with application.
- The exact model number of the HEWM you purchase must match the model number shown on the List of Qualifying HEWMs provided by the CEE list of qualifying HEWM's listed as Tier 2 and Tier 3.
- The applicant is responsible for the installation of the new washing machine and proper disposal of the old washing machine.
- A separate application must be submitted for each metered address.
- All rebates are subject to availability of funds. Rebates may take up to eight weeks to process.
- Rebates are **\$75** per HEWM or up to the total cost (not including sales tax), whichever is less.
- Limit: One HEWM rebate per living unit, not per account. Rebates are issued as credits applied to the Ceres water service account, except where the person applying for the rebate does not pay the water bill at the address where the HEWM is installed.
- If you need your original receipt(s) returned, please enclose a self-addressed, stamped envelope with your application.
- Applicant certifies that necessary permissions have been obtained from the property owner, if applicant is not the owner.
- You may not apply for Pacific Gas and Electric gas water heating customer rebates using this rebate application. You may apply directly to Pacific Gas and Electric. Check www.pge.com for details.
- Drop the application of at the Ceres Bill payment drop box or mail to:

City of Ceres
Public Works Department
2220 Hackett Rd., Ceres, CA 95307



City of Ceres Public Works
Water Conservation
209-538-5732

**E-2: Consortium for Energy Efficiency (CEE)
Super-Efficient Home Appliances Initiative:
Clothes Washer Qualifying Product List**



CEE Super-Efficient Home Appliances Initiative Clothes Washer Qualifying Product List

April 22, 2009

This list based on 2007 CEE Residential Clothes Washer Specifications

The list is updated monthly. See the CEE website (www.cee1.org) for the most recent listing.

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Key

- Symbols: An asterisk (*), plus sign (+), or pound sign (#) indicate that one or more coding variables may be used in place of the symbol to indicate a color or feature that does not affect washer efficiency
- *Red italics* indicate that a product is inactive.
- *Blue italics* indicate a US-only model.
- *Green italics* indicate a Canada-only model.
- Models shaded in GREY use Silver Ion Technology.
- ***Bold italics*** indicate the model is a combination washer and ventless dryer. CEE does not require test data for dryer performance and does not certify the efficiency of the dryer. NOTE: A "ventless" combination clothes washer/dryer is one that does not have a hose attached to an outside source to vent air in the drying process. "Ventless" models instead have a condensing dryer system. The condenser dryer system replaces the traditional dryer vent allowing the combo unit to be used in space-constrained locations, such as old apartments where venting is not available. In this system, as clothes are dried, the air warms and becomes moist. The warm saturated air is then run through a condenser unit, which is surrounded by cold water. The cold water lowers the temperature of the moist air, causing the water to condense into a tray. Estimates of cold water use over the condenser unit range from 2 to 12 gallons per load.
- MEF=Modified Energy Factor, a combination of Energy Factor and Remaining Moisture Content. MEF measures energy consumption of the total laundry cycle (washing and drying). It indicates how many cubic feet of laundry can be washed and dried with one kWh of electricity; the higher the number, the greater the efficiency.
- WF=Water Factor (number of gallons needed for each cubic foot of laundry). A lower number indicates lower consumption and more efficient use of water.
- Although all models on the CEE list are very efficient, the tiers are structured so the most efficient products are listed in the higher tiers. For example, Tier 3 would contain the most efficient models.

CEE does not administer rebate programs. Consumers who have questions about filling out rebate forms should contact their local efficiency program administrator (often the local utility).

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Tier 1							
Modified Energy Factor (MEF) ≥ 1.80, Water Factor (WF) ≤ 7.50							
BRAND	MODEL	MEF	WF	BRAND	MODEL	MEF	WF
Amana	NAH6800	1.90	7.20	Kenmore	4292*20	1.96	4.10
Amana	NFW7200TW	1.93	4.50	Kenmore	4390*20+	1.96	4.10
Ariston	AW 120	1.92	5.00	Kenmore	4425*	1.99	4.90
Ariston	AWD 120	1.90	5.00	Kenmore	4482*30	1.81	4.27
Ariston	AWD129	1.83	7.12	Kenmore	4483*20	1.81	4.27
Asko	W6461	2.50	6.86	Kenmore	4483*30	1.81	4.27
Asko	W6661	1.84	7.48	Kenmore	4493*20	1.96	4.10
Asko	W6761	1.84	7.48	Kenmore	4493*30	1.96	4.10
Asko	WCAM1812	2.50	7.48	Kenmore	4580****	1.99	4.34
Bosch	WFL2060UC	2.03	6.23	Kenmore	4710*	1.83	7.26
Bosch	WFL2090UC	2.03	6.56	Kenmore	C4701*	1.81	7.13
Brada	BFW36*	1.92	4.29	Kenmore	C4702*	1.81	7.13
Crosley	CAH4205	1.90	7.20	Kenmore	C4710*	1.83	7.26
Crosley	CFW2000F	1.97	7.00	Kenmore	C4711*	1.83	7.26
Danby Designer	DWM5500W-1	1.80	6.63	Kenmore	C4712*	1.87	5.66
Equator	EW 620	1.89	7.10	Kenmore	4492*30	1.96	4.10
Equator	EZ 1720 V	1.89	7.10	KitchenAid	KHWS02R*+	1.84	4.27
Equator	EZ 3720 CEE	1.89	7.10	LG Electronics	WD-327*RHD	1.86	6.35
Equator	EZ2512CEE	1.83	6.00	LG Electronics	WM133#H*	1.96	5.46
Eurotech	EWC177	2.50	7.48	LG Electronics	WM1812C*	1.89	4.45
Eurotech	EWf272EL	2.66	7.30	LG Electronics	WM1814C*	1.89	4.45
Fagor	FA-5812	2.07	6.73	LG Electronics	WM1815C*	1.89	4.45
Fagor	FA-5812X	2.07	6.73	LG Electronics	WM2011H*	1.83	4.00
Fisher & Paykel	GWL15	2.00	7.20	LG Electronics	WM2411H*	1.87	3.99
Fisher & Paykel	IWL 16	2.00	6.90	LG Electronics	WM3431H*	1.96	5.15
Fisher & Paykel	WA37T26G	2.00	7.20	LG Electronics	WM3611H*	1.87	3.99
Fisher & Paykel	WA37TG1	2.00	7.20	LG Electronics	WM3677H*	1.96	4.20
Frigidaire	FTF2140E	1.82	5.64	Maytag	MAH5500B**	1.90	7.20
Frigidaire	FTF530F	1.97	7.00	Maytag	MAH55FLB	1.90	7.20
Frigidaire	FTFB4000F	1.82	5.64	Maytag	MAH6500**	1.90	7.20
Frigidaire	GLTF2940E	1.98	5.13	Maytag	MAH6700	1.81	4.68
Frigidaire	LTF2140E	1.82	5.64	Maytag	MAH8700	1.83	4.07
Frigidaire	LTF2940E	1.98	5.13	Maytag	MAH9700	1.84	3.97
Frigidaire	LTF530F	1.97	7.00	Maytag	MFW9600S*+	1.95	4.50
General Electric	EWA5600K***	1.93	5.99	Maytag	MTW6500T*+	1.98	6.91
General Electric	GBVH6260FWW	1.82	4.22	Maytag	MTW6600T*+	1.98	6.91
General Electric	GCVH6260FWW	1.82	4.22	Maytag	MVWC6ESW*+	1.85	7.11
General Electric	WBVH6240F	1.82	4.22	Samsung	WF-J1254	1.81	6.30
General Electric	WCRE6270K***	1.94	6.48	Softline	XQG 65-11	1.85	5.70
General Electric	WCVH6260F	1.82	4.22	Speed Queen	AFB50+	1.96	4.90
General Electric	WCXH208H	1.86	7.23	Speed Queen	ATSA5***	1.96	4.90
General Electric	WHDVH626F	1.82	4.22	Splendide	WD 2000S	1.83	6.00
General Electric	WHRE5550K***	1.94	6.48	Splendide	WDC 5200	1.83	6.00
General Electric	WJRE5550K***	1.94	6.48	Splendide	WDC 6200CEE	1.92	5.00
General Electric	WPGT9150H***	1.83	7.14	Staber	HXW2304W03	1.85	6.75
General Electric	WPGT9360E***	1.98	7.08	Staber	HXW2404W03	1.85	6.75
General Electric	WSSH300G	1.82	5.64	Staber	HXW2504W03	1.85	6.75
General Electric	WSXH208H	1.85	7.20	Thor	XQG 65-11	1.85	5.70
Huebsch	ZFB50+	1.96	4.90	Whirlpool	GHW9160P*	1.99	4.34
Kenmore	2706*60+	2.00	6.77	Whirlpool	GHW9250M*	1.92	4.30
Kenmore	2707*60+	2.00	6.77	Whirlpool	GHW9300P*+	1.95	4.38
Kenmore	2708*60+	2.00	6.77	Whirlpool	WTW6200V*+	1.82	7.35
Kenmore	2709*60+	2.00	6.77	Whirlpool	WTW6400S*+	1.98	6.91
Kenmore	2982*60	1.88	7.40	Whirlpool	WTW6600S*+	1.98	6.87
Kenmore	2983*60+	1.88	7.40	White-Westinghouse	WTF330H	1.97	7.00
Kenmore	4041*	1.83	7.26	White-Westinghouse	WTR430F	1.90	7.14
Kenmore	4282*20	1.81	4.27				

Tier 2							
Modified Energy Factor (MEF) ≥ 2.00, Water Factor (WF) ≤ 6.00							
BRAND	MODEL	MEF	WF	BRAND	MODEL	MEF	WF
Ariston	AW129	2.25	5.96	Kenmore	4586*	2.03	4.31
Ariston	AW149	2.25	5.96	Kenmore	4587*	2.03	4.31
Asko	WL6511	2.04	4.00	Kenmore	4596*	2.03	4.32
Beaumont	BTF1240F	2.00	5.38	Kenmore	4598*	2.19	4.02
Beaumont	BTF2140F	2.01	4.12	Kenmore	4599*	2.19	4.02
Bosch	WAS20160UC	2.14	4.53	Kenmore	4646*50+	2.10	4.79
Bosch	WAS24460UC	2.22	4.53	Kenmore	4647*50+	2.10	4.79
Bosch	WFMC2100UC	2.13	4.74	Kenmore	4650*70+	2.22	4.69
Bosch	WFMC4300UC	2.31	4.59	Kenmore	4651*70+	2.22	4.69
Bosch	WFR2460UC	2.08	5.73	Kenmore	4810*	2.01	4.12
Crosley	CFW4000F	2.01	4.12	Kenmore	4811*	2.01	4.12
Crosley	CFW8000	2.04	4.00	Kenmore	C4706*	2.02	5.03
Crosley	CLCE900F	2.09	5.21	Kenmore	C4707*	2.01	4.12
Crosley	CLCG900F	2.09	5.21	Kenmore	C4717*	2.01	4.12
Equator	EZ1612VCEE	2.04	4.85	KitchenAid	KHWV01R*+	2.09	4.24
Equator	EZ3612CEE	2.04	4.85	LG Electronics	W0532H*	2.04	4.15
Fisher & Paykel	WA37T26EW2	2.07	5.96	LG Electronics	WD-1274FHB	2.02	5.21
Fisher & Paykel	WA37T26GW2	2.07	5.96	LG Electronics	WD-324*RHD	2.10	5.04
Fisher & Paykel	WA37T26GWL15	2.07	5.96	LG Electronics	WM0532H*	2.01	4.20
Fisher & Paykel	WL26CW1	2.05	5.96	LG Electronics	WM1832C*	2.09	4.02
Fisher & Paykel	WL26CW2	2.15	5.79	LG Electronics	WM2032H*	2.04	4.02
Fisher & Paykel	WL37T26*	2.15	5.79	LG Electronics	WM2432H*	2.08	4.13
Fisher & Paykel	WL37TD1	2.15	5.80	LG Electronics	WM3632H*	2.08	4.13
Frigidaire	ATF6000E	2.04	5.25	Maytag	MFW9700S*+	2.15	4.28
Frigidaire	ATF6500F	2.04	5.25	Maytag	MFW9700T*+	2.15	4.28
Frigidaire	ATF7000E	2.01	5.10	Maytag	MFW9800T*+	2.15	4.28
Frigidaire	ATFB6000E	2.04	5.25	Maytag	MHWE300V*+	2.18	4.28
Frigidaire	ATFB7000E	2.01	5.10	Maytag	MTW6700T*+	2.11	5.55
Frigidaire	FTF1240F	2.00	5.38	Miele	W1113	2.11	4.49
Frigidaire	FTF2140F	2.01	4.12	Miele	W1119	2.11	4.49
Frigidaire	FTFB4000G	2.01	4.12	Miele	W1203	2.04	4.35
Frigidaire	GLEH1642F	2.09	5.21	Miele	W1213	2.04	4.35
Frigidaire	GLGH1642F	2.09	5.21	Miele	W1215	2.04	4.35
Frigidaire	GLTF1570F	2.00	5.38	Samsung	WF203***	2.04	4.03
Frigidaire	GLTR1670F	2.00	5.38	Samsung	WF206***	2.01	3.89
Frigidaire	LTF2140F	2.01	4.12	Samsung	WF306*A*	2.01	3.89
Frigidaire	LTF2140H	2.01	4.12	Samsung	WF306BHW	2.01	3.90
Frigidaire	LTF6000E	2.04	5.25	Samsung	WF306LAW	2.01	3.89
Frigidaire	LTF7000E	2.01	5.10	Samsung	WF316***	2.01	3.89
GE Camco	GCRH410H	2.01	4.12	Samsung	WF317	2.01	3.89
General Electric	GBVH5140	2.09	4.30	Samsung	WF326LAS	2.01	3.86
General Electric	GCVH6260HWW	2.09	4.20	Samsung	WF326LAW	2.06	3.86
General Electric	GCVH6600HWW	2.07	4.10	Siemens	WM10S160UC	2.14	4.53
General Electric	GHDVH626	2.09	4.20	Siemens	WFXD5200UC	2.10	5.30
General Electric	GHDVH670	2.07	4.10	Speed Queen	AFN50+	2.04	4.90
General Electric	WBVH5100H	2.09	4.31	Speed Queen	AFN51+	2.04	4.90
General Electric	WBVH6240H	2.09	4.19	Speed Queen	ATE50+	2.04	4.90
General Electric	WCVH6260H	2.09	4.19	Speed Queen	ATG50+	2.04	4.90
General Electric	WCVH6600H	2.07	4.11	Speed Queen	ATSA0***	2.04	4.90
General Electric	WCXH214H	2.00	5.38	Speed Queen	CTSA0***	2.04	4.90
General Electric	WHDVH626H	2.09	4.19	Speed Queen	CTSA7***	2.04	4.90
General Electric	WHDVH660H	2.07	4.11	Speed Queen	CTSA9***	2.04	4.90
General Electric	WPRE6150K***	2.02	5.44	Splendide	WD2100	2.04	4.85
General Electric	WPRE8150K***	2.02	5.44				
Gibson	GTF1040F	2.00	5.38	Whirlpool	GHW9150P*	2.03	4.14
Huebsch	ZFN50+	2.04	4.90	Whirlpool	GHW9400P*	2.04	4.15
Huebsch	ZFN51+	2.04	4.90	Whirlpool	GHW9400S*+	2.04	4.26
Kenmore	2808*70+	2.19	5.36	Whirlpool	GHW9460P*	2.03	4.14
Kenmore	2809*70+	2.19	5.36	Whirlpool	LHW0050PQ**	2.79	6.00
Kenmore	4407*	2.07	5.87	Whirlpool	WFC7500V*+	2.05	5.77
Kenmore	4409*	2.00	4.74	Whirlpool	WFW8410S*+	2.37	4.51
Kenmore	4508*40+	2.19	4.02	Whirlpool	WFW9200S*+	2.05	4.40
Kenmore	4509*40+	2.19	4.02	Whirlpool	WFW9300V*+	2.16	4.10

Tier 3							
Modified Energy Factor (MEF) ≥ 2.20, Water Factor (WF) ≤ 4.50							
BRAND	MODEL	MEF	WF	BRAND	MODEL	MEF	WF
Amana	NFW7400V*+	2.58	4.02	Kenmore	4778*80+	2.64	3.41
Amana	NFW7500V*+	2.22	4.18	Kenmore	4779*70+	2.46	3.76
Asko	W6022	2.30	3.40	Kenmore	4779*80+	2.64	3.41
Asko	W6222	2.30	3.40	Kenmore	4785*60+	2.22	4.18
Asko	W6903FI	2.40	4.16	Kenmore	4788*60+	2.22	4.18
<i>Bosch</i>	<i>WFMC1001UC</i>	<i>2.24</i>	<i>4.31</i>	Kenmore	4789*60+	2.22	4.18
Bosch	WFMC220*UC	2.43	4.34	Kenmore	488**80*	2.24	3.41
<i>Bosch</i>	<i>WFMC330*UC</i>	<i>2.40</i>	<i>4.24</i>	Kenmore	4996*60+	2.22	4.18
Bosch	WFMC4301UC	2.40	4.24	Kenmore	4997*60+	2.22	4.18
Bosch	WFMC530*UC	2.47	4.47	<i>Kenmore</i>	<i>C4709*</i>	<i>2.20</i>	<i>4.47</i>
Bosch	WFMC544*UC	2.52	4.46	<i>Kenmore</i>	<i>C4719*</i>	<i>2.20</i>	<i>4.47</i>
Bosch	WFMC5801UC	2.52	4.46	<i>Kenmore</i>	<i>C4899*</i>	<i>2.29</i>	<i>4.37</i>
<i>Bosch</i>	<i>WFMC640*UC</i>	<i>2.43</i>	<i>4.06</i>	LG Electronics	WM0001H***	2.65	3.39
Bosch	WFMC840*UC	2.55	4.13	LG Electronics	WM064#H*	2.42	3.51
Bosch	WFMC8440UC	2.52	4.46	LG Electronics	WM0742H**	2.61	3.38
<i>Brault</i>	<i>BLTF2940F</i>	<i>2.22</i>	<i>4.21</i>	LG Electronics	WM2000C*	2.21	3.16
<i>Brault</i>	<i>BLTF6100F</i>	<i>2.29</i>	<i>4.37</i>	LG Electronics	WM2010C*	2.21	3.16
Crosley	CFW5000F	2.29	4.37	LG Electronics	WM2016C*	2.20	3.88
Electrolux	EIFLW55H	2.23	3.61	LG Electronics	WM204#C**	2.47	3.70
Electrolux	EIFLW55I	2.23	3.61	LG Electronics	WM207#C*	2.35	3.78
Electrolux	EWFLW65H	2.31	3.77	LG Electronics	WM2233H*	2.33	3.28
Electrolux	EWFLW65I	2.31	3.77	LG Electronics	WM2277H*	2.42	3.60
Fisher & Paykel	WL37T26*W2	2.25	4.29	LG Electronics	WM2301H*	2.89	3.36
Frigidaire	ATF6000F	2.29	4.37	LG Electronics	WM2355C*	2.38	3.24
Frigidaire	ATF6500G	2.29	4.37	LG Electronics	WM244#H*	2.38	3.80
Frigidaire	ATF6700F	2.29	4.37	LG Electronics	WM2455H*	2.44	3.35
<i>Frigidaire</i>	<i>ATF7000F</i>	<i>2.22</i>	<i>4.37</i>	LG Electronics	WM248#H***	2.65	3.56
Frigidaire	ATF8000F	2.22	4.37	LG Electronics	WM249#H**	2.38	3.31
<i>Frigidaire</i>	<i>ATFB6000F</i>	<i>2.29</i>	<i>4.37</i>	LG Electronics	WM2601H*	2.57	3.40
Frigidaire	ATFB6700F	2.92	4.37	LG Electronics	WM2677H*	2.34	3.64
<i>Frigidaire</i>	<i>ATFB7000F</i>	<i>2.22</i>	<i>4.37</i>	LG Electronics	WM268#H***	2.65	3.29
Frigidaire	FAFW3511K	2.21	4.29	LG Electronics	WM2701H*	2.57	3.40
Frigidaire	FAFW3574K	2.22	4.40	LG Electronics Inc.	WM2801H***	2.70	3.40
Frigidaire	FAFW3577K	2.31	4.14	LG Electronics	WM3001H***	2.71	3.35
<i>Frigidaire</i>	<i>FTF5000H</i>	<i>2.22</i>	<i>4.21</i>	LG Electronics	WM398#H***	2.54	3.43
<i>Frigidaire</i>	<i>FTFB2940F</i>	<i>2.22</i>	<i>4.21</i>	Maytag	MHWE500V*+	2.35	3.83
Frigidaire	GLTF2940F*	2.22	4.21	Maytag	MHWE900V*+	2.58	3.55
Frigidaire	GLTF2940K	2.22	4.21	Maytag	MHWZ400T*+	2.31	4.26
Frigidaire	LAFW3574K	2.22	4.40	Maytag	MHWZ600T*+	2.48	3.92
Frigidaire	LTF2940F	2.22	4.21	Maytag	MVWB400V*+	2.23	4.44
<i>Frigidaire</i>	<i>LTF6000F</i>	<i>2.29</i>	<i>4.37</i>	Maytag	MVWB700V*+	2.23	4.44
Frigidaire	LTF6700F	2.29	4.37	Maytag	MVWB800V*+	2.25	4.45
<i>Frigidaire</i>	<i>LTF7000F</i>	<i>2.22</i>	<i>4.37</i>	<i>Miele</i>	<i>W3033</i>	<i>2.31</i>	<i>4.41</i>
<i>Frigidaire</i>	<i>LTF8000F</i>	<i>2.22</i>	<i>4.37</i>	<i>Miele</i>	<i>W3035</i>	<i>2.31</i>	<i>4.41</i>
<i>General Electric</i>	<i>GBVH5200J</i>	<i>2.22</i>	<i>4.00</i>	<i>Miele</i>	<i>W3039</i>	<i>2.24</i>	<i>4.41</i>
<i>General Electric</i>	<i>GCVH6400J</i>	<i>2.20</i>	<i>4.00</i>	<i>Miele</i>	<i>W4800</i>	<i>2.44</i>	<i>4.23</i>
<i>General Electric</i>	<i>GCVH6800J</i>	<i>2.20</i>	<i>4.00</i>	<i>Miele</i>	<i>W4840</i>	<i>2.44</i>	<i>4.23</i>
<i>General Electric</i>	<i>WBVH5200J</i>	<i>2.22</i>	<i>4.00</i>	Samsung	WF209***	2.63	3.62
<i>General Electric</i>	<i>WBVH5300K*</i>	<i>2.32</i>	<i>3.75</i>	Samsung	WF218***	2.55	3.55
<i>General Electric</i>	<i>WCVH6400J</i>	<i>2.20</i>	<i>4.00</i>	Samsung	WF328***	2.30	3.69
<i>General Electric</i>	<i>WCVH6800J</i>	<i>2.20</i>	<i>4.00</i>	Samsung	WF337***	2.40	3.62
General Electric	WPDH8800J**	2.23	4.00	Samsung	WF338***	2.59	3.56
General Electric	WPDH8900J**	2.23	4.00	Samsung	WF409***	2.86	3.11
Kenmore	2806*80+	2.23	4.44	Samsung	WF419***	2.86	3.11
Kenmore	2807*80+	2.23	4.44	Samsung	WF428***	2.70	3.39
Kenmore	2808*80+	2.26	4.48	Samsung	WF438***	2.70	3.39
Kenmore	2809*80+	2.26	4.48	Samsung	WF448***	2.70	3.39
<i>Kenmore</i>	<i>4597****</i>	<i>2.26</i>	<i>4.35</i>	Siemens	WFXD5201UC	2.57	4.25
Kenmore	4674*70+	2.28	3.79	Siemens	WFXD5202UC	2.57	4.25
Kenmore	4675*70+	2.28	3.79	Siemens	WFXD840 AUC	2.20	4.50
Kenmore	4708*60+	2.36	3.98	<i>Siemens</i>	<i>WFXD8400UC</i>	<i>2.20</i>	<i>4.50</i>
Kenmore	4709*60+	2.36	3.98	Whirlpool	WFW8200T*+	2.24	4.48
Kenmore	4751*60+	2.58	4.02	Whirlpool	WFW8300S*+	2.24	4.48
Kenmore	4753*60+	2.58	4.02	Whirlpool	WFW8400T*+	2.44	3.96

Tier 3							
Modified Energy Factor (MEF) \geq 2.20, Water Factor (WF) \leq 4.5							
BRAND	MODEL	MEF	WF	BRAND	MODEL	MEF	WF
Kenmore	4754*60+	2.58	4.02	Whirlpool	WFW8500S*+	2.44	3.96
<i>Kenmore</i>	<i>4756*60+</i>	<i>2.28</i>	<i>4.37</i>	Whirlpool	WFW9400S*+	2.29	3.87
Kenmore	4756*70+	2.60	3.67	Whirlpool	WFW9400V*+	2.29	3.87
<i>Kenmore</i>	<i>4757*60+</i>	<i>2.28</i>	<i>4.37</i>	Whirlpool	WFW9500T*+	2.26	3.61
Kenmore	4757*70+	2.60	3.67	Whirlpool	WFW9600T*+	2.42	3.67
Kenmore	4758*70+	2.60	3.67	Whirlpool	WFW9600S*+	2.29	3.87
Kenmore	4770*80+	2.64	3.41	Whirlpool	WFW9700V*+	2.41	3.84
Kenmore	4771*80+	2.64	3.41	Whirlpool	WTW6500V*+	2.29	4.19
Kenmore	4775*80+	2.64	3.41	Whirlpool	WTW6500W*+	2.29	4.19
Kenmore	4776*80+	2.64	3.41	Whirlpool	WTW6700T*+	2.23	4.44
Kenmore	4778*70+	2.46	3.76	Whirlpool	WTW6800W*+	2.29	4.19

Appendix F

DMM # 7 Supporting Documents

Appendix F

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F-1: Water Conservation Website Content

WATER SERVICE DIVISION



Water Distribution Supervisor: Joseph Reyes

Phone: (209) 538-5797

Email: joseph.reyes@ci.ceres.ca.us

Business hours: 6:30 a.m. to 4:00 p.m.

[Water Customer Service Request](#) TO START OR STOP UTILITY SERVICES - CALL OUR FINANCE DEPT. AT 538-5769 or 538-5757

Groundwater is Ceres only source of drinking water. The Water Services Division maintains the City's ten wells, eight of which are presently active. Two wells have well-head treatment; one for Uranium and one for Arsenic and Manganese. The City has two reservoirs of 1.5 and 2.3 million gallons that operates during our high demand times during summer months. Staff is also responsible for maintaining 154+ miles of water main, pump maintenance, water quality sampling, main line repair, meter reading, and other Finance Division support. Staff also manages the City's Backflow and Water Conservation programs.

The Division has a staff of eight personnel.

For after hours water issues call Ceres Police Dispatch: (209) 538-5712

FOR INFORMATION ON SIGNING UP FOR CITY UTILITY SERVICES, [CLICK HERE](#).

Consumer Confidence Report: The [2007 Consumer Confidence Report](#) is provided on this site for your review.

[Ceres Water Conservation Program & Citation Process \(English/Español\)](#)

Water Conservation Flyer: Have a question about your water days? Want some water saving tips? Teaching your children why we need to conserve water? See the [Water Conservation Flyer](#) for answers available in both Spanish/English. For more great water saving tips and games go to: www.wateruseitwisely.com.

Water Waiver: You can request a waiver to be able to: water new landscape every day, to test sprinkler system on your non-watering days if doing a repair, to water in fertilizer, to wash down your driveway or building exterior, and to drain your pool into the storm drain system. You may contact the Public Works Department office to request a waiver at (209) 538-5732, Monday - Friday, 8:00 a.m. - 5:00 p.m.

Water Wasting Ordinance Violation Appeal: A utility customer shall have the right to appeal either the Water Wasting Ordinance Violation or Notice to Impose a Fee. The customer must request an appeal hearing in writing within ten (10) days from the date of service of the Notice of Ordinance Violation; or Notice to Impose a Fee for water wasting. The form shall be addressed to the address below and shall be deemed served only when received by the City. Failure to properly serve the request for hearing within the ten (10) day period shall be deemed a waiver of the right to appeal the matter and the penalty fee if applicable, will be assessed against the customer's account.

The appeal hearing, shall be held not sooner than ten (10) days from receipt of the request for hearing and not longer than thirty (30) days. The decision of the hearing officer shall be final. The [Water Wasting Ordinance Violation Appeal form](#) is to be printed, completed, signed and mailed or faxed to:

Water Conservation Programs: Ceres is expanding the water conservation program! The following programs are now being offered:

- Home Water Surveys (indoor/outdoor) ([Survey Instructions](#))
- Water Saving Devices Retrofit Distribution
- Large Landscape Survey (larger than 2 acres)
- High Efficient Washing Machine Rebate ([Rebate Application](#))
- Ultra Low Flush Toilet Rebate ([Rebate Application](#))

Home Water Self Surveys: Typically, up to 51 percent of residential water use occurs outdoors. A water use survey will give you important information on improving the effectiveness of your landscape irrigation as well as ways to conserve inside the home, including how to check for leaks.

A water use self survey includes:

- Tips to evaluate the irrigation equipment, and help you develop a custom timing schedule to apply the correct amount of water to your lawn.
- Guides to determine the amount of water used per fixtures.
- Tips on determining wasted water due to leaks.
- Low-flow showerheads, toilet tank banks, low-flow kitchen and bathroom sink aerators will be available after submitting the completed survey to the City.

ULFT Rebate Program:

- For the replacement of inefficient toilets with:
 - Ultra Low Flow Toilet (ULFT) toilets 1.6 gallons per flush and
- **To qualify**
 - Property where the toilets are to be replaced must have been constructed before 1994 or
- Up to \$50 per toilet for ULFT residential toilet 1.6 gallons per flush or better

Click [here](#) for the ULFT rebate application

TO QUALIFY FOR THE REBATE BOTH PAGES OF THE APPLICATION MUST BE COMPLETED AND RETURNED TO THE PUBLIC WORKS DEPARTMENT ACCOMPANIED BY AN ORIGINAL RECEIPT OR INVOICE

Click [here](#) for a Performance Testing Report of all Low Flow and High Efficiency Toilets

High Efficiency Clothes Washer Rebate

- Effective through December 31, 2008 or until rebate funds are depleted
- \$75 Folsom Rebate in addition to PGE rebate
- Visit [2007 Consortium for Energy Efficiency, Inc.](#) website for more information and a list of qualifying machines

Click [here](#) for the HEWM rebate application

Summer Water Conservation Tips: Many water conservation tips can be implemented all year. Following are several tips to keep in mind during warm months.

- **Cycle and Soak** – Water your lawn in short intervals rather than one long interval. This allows the soil time to absorb the water, eliminating overwatering and runoff.
- **Adjust your sprinklers** – Don't water the sidewalk or driveway. Keep the water on your landscape.
- **Re-circulate!** – Make pools, spas and ornamental fountains re-circulating and leak-proof.
- **Use a broom** – Sweep sidewalks and driveways clean, rather than using a hose.
- **Use automatic shut-off nozzles** – Don't let your hoses run between uses.
- **Cover swimming pools** – Covers cut the loss of water by evaporation 90 percent.
- **Don't let the water run** – Shut off the water when you wash your hands, brush your teeth or shave.
- **Fix leaky faucets.**
- **Full loads only** – Only run the dishwasher and clothes washer when you have a full load.
- **Be efficient** – Consider remodeling with more energy efficient washing machines and low-flow toilets (rebates available!)
- **Install low-flow showerheads**

Helpful Links:

Test Your WaterSense Quiz

<http://www.epa.gov/watersense/water/text.htm>

Infuse Yourself with Irrigation Information

<http://www.wateright.org/>

or

<http://www.owue.water.ca.gov/docs/wucols00.pdf>

Take a Tour! – Learn how to conserve water in each room at home

<http://www.h2ouse.org/>

Public Works Department

2220 Hackett Road

Ceres, CA 95307

Phone: (209) 538-5732

Fax: (209) 538-5605

**F-2: Water Conservation Program
Marketing Letter**

[Date]

City of Ceres
Public Works Department
2220 Hackett Rd.
Ceres, CA 95307

[Recipient Name]
[Title]
[Company Name]
[Street Address]
[City, ST ZIP Code]

Dear **[Recipient Name]**:

As you may have heard the city is providing programs to help our citizens save water. Not only does it benefit the environment by making less of a withdrawal from our precious limited groundwater resources but it benefits you by potentially reducing your water bill, and helps the City by being able to provide more reliable service at a lower long term cost.

This letter is being sent to you because you have been screened as the perfect recipient for one of our new services. See the checked section below to see what the City can do for you.

_____ **Free! Home Water Survey and Water Saving Fixtures:** The city has installed a water meter at your residence. According to water use records provided by the water meter, your usage is in the top 5% of all residential users in the City. To help you lower your monthly bill, the City would like to offer our free Home Water Survey Kit. This kit includes instruction on how to check the flow rates of your faucets and showerheads, leaks, and assess outdoor water use. Fill out the attached form and return it to the City, and you will receive free water conserving devices.

_____ **Free! Large Landscape Survey:** The City recently identified all Large Landscaped areas greater than 2 acres within the City's water service area. With this much irrigated landscape, the water bill can largely be controlled by the amount of water used for watering your landscape. This is where the City can help. We are offering Large Landscape owners irrigation surveys to help identify water conserving irrigation practices. This includes developing a budget for those customers with a dedicated irrigation meter to performing an irrigation system check up. If you are interested in receiving a landscape survey, call the number shown below and schedule your Free Large Landscape Survey today!

_____ **Free! Fixture Retrofits for Homes Built before 1992:** The City completed a construction survey of all homes in Ceres. Your home has been identified as being built before 1992. If you haven't done any major upgrades to your home or are using the original fixtures (faucets, showerheads, etc.) you qualify for our free fixture retrofits. What this includes

are new faucet aerators, new showerhead, toilet displacement bag, and toilet tank flapper. Even better is that the City will credit your bill up to \$50 dollars if you participate in our ULFT Rebate program (see the rebate program below).

_____ Rebate Programs: If you or someone you know is in the market to buy a new washing machine (\$75 rebate) or toilet (\$50 rebate), you may qualify for a rebate simply by replacing your low-efficiency washing machine or toilet with a qualifying high efficient one. Terms and conditions apply so call the City today and learn more about these programs.

If you are interested in the offered service(s) or would like more information on our other water conservation programs, Call the City's Public Works Department at (209) 538-5732

Sincerely,

[Your Name]
Water Conservation Coordinator
City of Ceres

F-3: Water Conservation Program Flyer

City of Ceres Water Conservation Programs



In response to drought conditions throughout California, the City of Ceres is planning on providing expanded water conservation services to residents and business' within City's water utility service area. This letter is being sent to you to briefly describe these expanded services to inform you of our commitment to water conservation.

The following is a list of what the City is doing to conserve water and programs to help you conserve too.

- **Leak Detection:** The City has planned to install water meters for all connections. This will provide a method for the City to accurately account for the amount of water that goes into the water distribution system as well as account for and track losses from leaking pipes etc. Likewise, having a water meter on your connection will provide you actual usage for comparison when implementing water conserving practices in your home and will allow you to check for leaks in your plumbing system. Additional information is available in the Home Water Audit kit.
- **Home Water Audits:** The city has prepared a self audit form and instructions to help you conserve water. This includes checking the flow rates of your faucets and showerhead, checking for leaks, and assessing outdoor water use. Fill out the attached form and return it to the City. The City will evaluate your survey and give you free water conserving fixtures.
- **Plumbing Retrofits:** Free water conserving devices will be handed out to water utility customers and to those performing home water audits, kits are available at City Hall and the Public Works Department front desk.
- **Large Landscape Audits:** Irrigation of large landscapes (larger than 2 acres) can use as much as 42,000 per day when efficient and up to 2 to 3 times as much when not properly maintained. Irrigation systems are frequently set once and left to run regardless of climate change (spring to summer) or tend to become misaligned with time and watering cement rather than turf. Through this program the City will be contacting large landscape owners to assist with optimizing the operations of their landscape irrigation system.
- **Rebate Programs:** The City will initiate its first rebate program for the replacement of high water use toilets for ultra low flush toilets and conventional washer machines to high efficient washing machines. Certain restrictions apply, but if you're using an older model washing machine or using the same toilet the house was built with (pre-1992), then more than likely you are eligible for the rebate program.
- **Public Information:** The City is committed in providing you with information regarding our programs therefore, we have updated up our website with water saving tips, and links to educational resources, conservation games for kids, and downloadable rebate forms. As the City continues to promote water conservation, we will keep you updated with our water saving progress. You can find more information at www.ceres.ci.ca.us.

If you're interested in conserving water or just want more information on our programs, please call the City of Ceres Public Works Department at (209) 538-5732 and ask for the Water Conservation coordinator. We are ready to help you conserve water.

**F-4: Water Conservation Program
Bill Stuffer Content**

City of Ceres
Water Conservation Programs

Ceres is Serious about conserving water here are some of the things we are doing:

- Rebate program for Ultra Low Flush Toilet
- Rebate program for High Efficiency Washing Machines
- Leak Detection of the City's Water System
- Large Landscape water user Surveys
- Home Water Self Surveys
- Water Saving Device Distribution

If you're interested in learning more about the programs listed above, call the City and ask about what the City can do to help you conserve water. Don't forget to check out the water saving tips on our website and the other side of this bill stuffer. There is some interesting stuff.

City of Ceres Department of Public Works
Water Conservation:
(209) 583-5732

10 Water conserving Tips

- 1) ***There are a number of ways to save water, and they all start with you.***
- 2) When washing dishes by hand, don't let the water run while rinsing. Fill one sink with wash water and the other with rinse water.
- 3) Monitor your water bill for unusually high use. Your bill and water meter are tools that can help you discover leaks.
- 4) Adjust sprinklers so only your lawn is watered and not the house, sidewalk, or street.
- 5) Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- 6) Choose shrubs and groundcovers instead of turf for hard-to-water areas such as steep slopes and isolated strips.
- 7) Install covers on pools and spas and check for leaks around your pumps.
- 8) Use the garbage disposal sparingly. Compost vegetable food waste instead and save gallons every time.
- 9) Plant in the fall when conditions are cooler and rainfall is more plentiful.
- 10) For cold drinks keep a pitcher of water in the refrigerator instead of running the tap. This way, every drop goes down you and not the drain.

F-5: ULFT & HEWM Rebate Program Brochure

**F-6: Water Conservation Program
Follow-Up Door Hanger Content**

City of Ceres
Water Conservation Follow Survey

This Survey is provided by the City of Ceres in response to a water conservation program you have recently participated in.

Please mark which program you participated in:

- Ultra Low Flow Toilet Rebate Program
- High Efficient Washing Machine Rebate Program
- Water Efficient Home Survey (indoor/outdoor)
- Water Efficient Device Program (faucet/sink aerators, toilet bag, showerhead)
- Large Landscape Water Survey

Rank the following from 1 to 5.

1 strongly agree - 5 strongly disagree

The program was helpful: 1 2 3 4 5

The devices are great: 1 2 3 4 5

The devices are still installed: Yes No

I implemented the
City's suggestions: 1 2 3 4 5

Feel free to give us tips on how to better serve your conservation needs or improvements we should make to the programs in the space below.

Mail to:
City of Ceres
Public Works Department
2220 Hackett Rd., Ceres, CA 95307

F-7: Typical Water Saving Device Contents

Typical Water Saving Device Kit Contents

Toilet Tanks Bank	
Faucet Aerators	
Swivel Kitchen Aerator	
Low Flow Showerhead	

Source: Greenfeet.com, 2009

F-8: Water Saving Tips



Using Water Efficiently: Ideas for Residences

Efficient water use can have major environmental, public health, and economic benefits by helping to improve water quality, maintain aquatic ecosystems, and protect drinking water resources. Efficient use of water, through behavioral, operational, or equipment changes, if practiced broadly can help mitigate the effects of drought. Efficiency measures can also save the homeowner money on their water and energy bills. This list of measures is not meant to be comprehensive, but rather a starting point. Other sources of information on water efficiency are available through EPA's web site (<http://www.epa.gov/OWM/genwave.htm>), and innumerable other sources, some of which may be accessed through the EPA web site, or through WaterWiser, The Water Efficiency Clearinghouse (<http://www.waterwiser.org>).

Bathroom — where over half of all water use inside a house takes place:

- Do not let the water run while shaving or brushing teeth.
- Take short showers instead of tub baths. Turn off the water while soaping or shampooing.
- If you must use a tub, close the drain before turning on the water and fill the tub only half full. Bathe small children together.
- Never use your toilet as a waste basket.

Kitchen and Laundry — simple practices that save a lot of water:

- Keep drinking water in the refrigerator instead of letting the faucet run until the water is cool.
- Wash fruits and vegetables in a basin. Use a vegetable brush.
- Do not use water to defrost frozen foods; thaw in the refrigerator overnight.
- Scrape, rather than rinse, dishes before loading into the dishwasher; wash only full loads.
- Add food wastes to your compost pile instead of using the garbage disposal.
- Wash only full loads of laundry or use the appropriate water level or load size selection on the washing machine.

Equipment — homes with high-efficiency plumbing fixtures and appliances save about 30% of indoor water use and yield substantial savings on water, sewer, and energy bills:

- Consider purchasing high-efficiency toilets, or place a plastic container filled with water in the tank of your conventional toilet. Be sure it does not interfere with operation of the toilet's flush mechanisms.
- Install low-flow faucet aerators and showerheads.
- Consider purchasing a high efficiency washing machine which can save over 50% in laundry water and energy use.
- Repair all leaks. A leaky toilet can waste 200 gallons per day. To detect leaks in the toilet, add food coloring to the tank water. If the colored water appears in the bowl, the toilet is leaking. Toilet repair advice is available at www.toiletology.com/index.shtml.

Landscape Irrigation — depending on climate, up to 75% of a home's total water use during the growing season is for outdoor purposes (During drought conditions outdoor watering restrictions may be imposed, so some of the following tips will not apply.):

- Detect and repair all leaks in irrigation system.
- Use properly treated wastewater for irrigation where available.
- Water the lawn or garden during the coolest part of the day (early morning is best). Do not water on windy days.
- Water trees and shrubs, which have deep root systems, longer and less frequently than shallow-rooted plants that require smaller amounts of water more often. Check with the local extension service for advice on watering needs in your area.
- Set sprinklers to water the lawn or garden only – not the street or sidewalk.
- Use soaker hoses or trickle irrigation systems for trees and shrubs.
- Install moisture sensors on sprinkler systems.
- Use mulch around shrubs and garden plants to reduce evaporation from the soil surface and cut down on weed growth.
- Remove thatch and aerate turf to encourage movement of water to the root zone.
- Raise your lawn mower cutting height – longer grass blades help shade each other, reduce evaporation, and inhibit weed growth.
- Minimize or eliminate fertilizing, which promotes new growth needing additional watering.
- When outdoor use of city or well water is restricted during a drought, use the water from the air conditioning condenser, dehumidifier, bath, or sink on plants or the garden. Don't use water that contains bleach, automatic-dishwashing detergent or fabric softener.

Other Outdoor Uses:

- Sweep driveways, sidewalks and steps rather than hosing off.
- Wash the car with water from a bucket, or consider using a commercial car wash that recycles water.
- When using a hose, control the flow with an automatic shut-off nozzle.
- Avoid purchasing recreational water toys which require a constant stream of water.
- Consider purchasing a new water-saving swimming pool filter.
- Use a pool cover to reduce evaporation when pool is not being used.
- Do not install or use ornamental water features unless they recycle the water. Use signs to show the public that water is recycled. Do not operate during a drought.



Usando el Agua Eficientemente: Ideas para las Residencias

El uso eficiente del agua puede tener beneficios significativos para el medio ambiente, la salud pública y la economía por medio de ayudar a mejorar la calidad del agua, mantener los ecosistemas acuáticos y proteger las fuentes de agua potable. El uso eficiente del agua, mediante cambios de comportamiento de los usuarios, cambios operacionales, o cambios de equipo, pueden ayudar a mitigar los efectos de las sequías si lo practican ampliamente. Estas medidas eficientes pueden también significar un ahorro en los costos del agua y la energía eléctrica para el propietario de la vivienda. Esta lista de medidas no es comprensible, si no solamente es un punto de partida. Otras fuentes de información sobre el uso eficiente del agua están disponibles a través de la página Web de la EPA (www.epa.gov/owm/water-efficiency/index.htm), y de innumerables otras fuentes informativas, de las cuales algunas son accesibles por medio de la página Web de la EPA o mediante WaterWiser, El Centro de Intercambio de Información Sobre el Uso Eficiente del Agua (WaterWiser, The Water Efficiency Clearinghouse, www.waterwiser.org).

Cuarto de Baño – donde ocurre más de la mitad del consumo de agua dentro de una casa:

- No deje correr el agua mientras se afeite o se cepille los dientes.
- Tome una ducha por periodos cortos en vez de tomar baños de tina. Cierre la llave del agua mientras se enjabone o se lave la cabeza.
- Si tiene que usar la tina, cierre el desagüe antes de abrir la llave del agua y llene la tina sólo hasta la mitad. Bañe a los niños pequeños juntos.
- Nunca use el inodoro para disponer la basura.

Cocina y Lavandería – prácticas simples que ahorran bastante agua:

- Mantenga el agua de beber dentro del refrigerador en vez de dejar la llave abierta hasta que salga agua fría.
- Lave las frutas y verduras en un lavadero de platos. Use un cepillo para las verduras.
- No use agua para descongelar los alimentos congelados; déjelos en el refrigerador durante la noche.
- Limpie los platos, en vez de enjuagarlos, antes de meterlos en la lavadora de platos; use la lavadora de platos solamente cuando esté lleno.
- Añada los desperdicios de comida al composte en vez de usar el triturador.
- Lave solamente grandes cantidades de ropa sucia, o seleccione el ciclo en la lavadora que use al nivel apropiado de agua o que esté programado para la cantidad de ropa que desee lavar.

Equipo – las residencias con instalaciones de plomería y electrodomésticos de alta eficiencia, conservan casi el 30% del agua que se usa dentro de la casa y rinden ahorros substanciales en los costos del agua, el alcantarillado y la energía eléctrica:

- Considere la compra de inodoros de alta eficiencia, o coloque un recipiente de plástico lleno de agua dentro del tanque de su inodoro convencional. Asegúrese de que no interfiera con la operación de los mecanismos del flujo de agua del inodoro.
- Instale en las llaves aereadores para el bajo flujo, y llaves especiales con el mismo propósito en las regaderas.
- Considere la compra de una lavadora de ropa de alta eficiencia, la cual puede ahorrar más del 50% del agua y la electricidad que se use para lavar.
- Repare todas las fugas. Un inodoro con fugas puede gastar hasta 200 galones de agua por día. Para detectar las fugas en el inodoro, agregue al agua del tanque colorante de comestibles. Si el agua con color aparece en la taza del inodoro, éste tiene una fuga. Consejos para la reparación de inodoros están disponibles en la página Web www.toiletology.com/index.shtml.

Riego de Jardines – dependiendo del clima, hasta el 75% del consumo total de agua de una residencia durante la temporada del crecimiento de la vegetación se usa en el exterior de la casa. (Durante condiciones de sequía, puede haber restricciones en el riego de los exteriores, entonces puede que algunos de los siguientes consejos no sean aplicables):

- Detecte y repare todas las fugas en el sistema de riego para jardines.
- Use para regar el agua residual que ha sido tratada de manera apropiada, donde esté disponible.
- Riegue el césped o el jardín durante la parte más fresca del día (temprano por la mañana es mejor). No riegue en días de mucho viento.
- Riegue los árboles y arbustos que tienen las raíces son profundas, por periodos más largos y con menos frecuencia que las plantas con raíces un poco más profundas que requieran pequeñas cantidades de agua con mayor frecuencia. Consulte con el Servicio de Extensión Agrícola Local para recomendaciones sobre las necesidades de riego en su área.
- Ajuste los rociadores para que rieguen solamente el césped o el jardín—no la calle o la banqueta.
- Use mangueras de remojo o sistemas de riego por goteo para árboles y arbustos.
- Instale sensores de humedad en los sistemas de riego.
- Utilice una cubierta retenedora de humedad alrededor de los arbustos y las plantas de jardín para reducir la evaporación en la superficie de la tierra y reducir el crecimiento de la maleza.
- Remueva los desechos de paja y deje airear el césped para estimular el movimiento de agua hacia la zona de raíces.
- Alce la altura del corte de su máquina cortadera de césped—las hojas del césped más largas ayudan a darse sombra las unas a las otras, a reducir la evaporación, y a impedir el crecimiento de la maleza.
- Minimice o elimine el uso de fertilizante, el cual promueve el nuevo crecimiento que requiera de un riego adicional.
- Cuando el uso del agua de la ciudad o del agua de pozo esté restringida durante una sequía, use el agua del condensador del aire acondicionado o del deshumidificador, o baño o del lavadero de platos para regar las plantas del jardín. No use agua que contenga cloro, detergente de la lavadora de platos, o suavizador de ropa.

Otros Usos Exteriores:

- Barra los caminos de entrada para los vehículos, las banquetas y los escalones, en vez de lavarlos con la manguera.
- Lave los vehículos con agua en una cubeta, o considere usar un sitio de lavado de carros comercial que recicle el agua.
- Cuando use una manguera, controle el flujo con una boquilla que se cierre automáticamente.
- Evite comprar juguetes de recreo de agua que requieran un flujo constante de agua.
- Considere la compra de un filtro nuevo para conservar el agua de la piscina.
- Use una cubierta para la piscina para reducir la evaporación cuando no esté en uso.
- No instale, ni use accesorios ornamentales de agua a menos que reciclen el agua. Use rótulos para enseñar al público que el agua está siendo reciclada. No opere estos accesorios durante una sequía.



Agencia de Protección Ambiental de los Estados Unidos
Oficina de Agua (4204M)
EPA832-F-99-095
www.epa.gov/owm/water-efficiency/index.htm

F-9: WaterSense® Promotional Material

**Additional resources available at:
<http://www.epa.gov/watersense/pubs/index.htm#about>**



WaterSense®

Every Drop Counts!

What is WaterSense?

WaterSense is a partnership program sponsored by the U.S. Environmental Protection Agency (EPA). Its mission is to protect the future of our nation's water supply by promoting and enhancing the market for water-efficient products and services.

What does WaterSense do?

WaterSense is the symbol for water-efficient products, services, and practices. By setting performance and water use specifications, WaterSense helps consumers identify products that meet EPA criteria for efficiency and performance. The WaterSense label appears on high-efficiency toilets that use 20 percent less water than standard models. EPA is also partnering with landscape irrigation professionals certified by WaterSense labeled programs focusing on water efficiency. In the future, EPA will consider additional indoor and outdoor home products, as well as commercial products.

Why promote water efficiency?

Although water shortages have typically been a concern in the Western United States, today concerns about water are spreading across the country. Water managers in at least 36 states now expect local or regional water shortages to occur over the next several years. Wasting less water in our homes and yards also saves money and improves the quality of our water sources nationwide. When we use less water in our homes and daily lives, we all win.

How can I get involved?

Saving water is easy—many products are already available for use, and it doesn't require changing the way most of us live or do business. By choosing products with the WaterSense label, you know you'll be saving water for future generations.

- Consumers can reduce their water bills by as much as 30 percent by making a few simple purchasing decisions.
- Manufacturers can differentiate themselves in the marketplace by offering water-efficient products that perform as well as or better than conventional models.
- Businesses can help increase the marketability of the water-efficient products they sell or improve their bottom line by saving water in their operations.
- Most importantly, the environment benefits from a few simple actions that we all can take.

Start saving!

Look for products with the WaterSense label for your bathroom and lawn, use a WaterSense irrigation partner for your landscape watering system, and visit www.epa.gov/watersense to find easy practices you can undertake at home to reduce your water bill and environmental impact!





Cada gota cuenta



El valor de la eficiencia del agua

En los Estados Unidos, nuestra población creciente está poniendo presión en nuestros suministros de agua disponibles, y la protección del recurso agua se ha convertido en una prioridad nacional. Usar el agua de manera más eficiente ayuda a preservar los suministros de agua para futuras generaciones, ahorra dinero, y reduce el estrés en los sistemas de agua y el medio ambiente. Los gobiernos, los servicios públicos, los fabricantes, los negocios, las comunidades, e individuos a lo largo del país pueden ayudar a proteger nuestros recursos limitados de agua comprando productos de uso eficiente de agua y adoptando prácticas de uso eficiente de agua.

WaterSenseSM, un programa de sociedad auspiciado por la Agencia de Protección Ambiental de Estados Unidos (EPA, por sus siglas en inglés), busca promover la eficiencia del agua y mejorar el mercado con productos y servicios de uso eficiente de agua. Fundamentalmente, la meta de WaterSense es disminuir el uso del agua no agrícola en interiores y exteriores a través de productos de alta eficiencia y prácticas simples. El programa ayuda a los consumidores a identificar productos de uso eficiente de agua en el mercado, mientras se asegura el rendimiento de los productos y se incentiva la innovación en la fabricación.



Como trabaja el programa

WaterSense está construyendo una marca nacional para la eficiencia del agua, un símbolo que represente la importancia de proteger los recursos de agua en los Estados Unidos. Agencias de terceros independientes certificarán que los productos reúnan los criterios EPA para la eficiencia y rendimiento del agua siguiendo los protocolos de evaluación y verificación específicos para cada categoría de productos. Los productos que son certificados que reúnen las especificaciones EPA se les permiten que lleven la marca WaterSense.

EPA ha desarrollado especificaciones para los programas de certificación de irrigación de áreas verdes para profesionales e inodoros de alta eficiencia (HETs, por sus siglas en inglés) que usan menos de 1.3 galones por tirada de cadena. En el futuro, EPA evaluará más oportunidades, variando de productos de irrigación adicional y accesorios de plomería residenciales adicionales a productos comerciales de interiores. EPA también llegará a constructores de casas, escuelas, y otros para promover la eficiencia del agua. Identificar al producto con la marca, junto con campañas y sociedades de extensa educación con accionistas claves, ayudarán a transformar el mercado incentivando a los consumidores y a las organizaciones a comprar productos de uso eficiente de agua.

Programa de sociedades

Además de desarrollar especificaciones de los productos, EPA proporciona información técnica y reconoce el liderazgo en la eficiencia del agua a través de acuerdos de sociedades formales con socios del programa. Los fabricantes comprometidos con la eficiencia del agua y la innovación de productos pueden diferenciar sus productos de otros en el mercado, construir la demanda del consumidor, y ganar reconocimiento nacional por sus productos de alta eficiencia y alto rendimiento. Los servicios públicos, las organizaciones sin fines de lucro, y los gobiernos locales y estatales ayudarán a promover el programa WaterSense a través de campañas de toma de conciencia para alcanzar las metas locales de conservación del agua. Los minoristas y distribuidores proveerán y promoverán productos de marca WaterSense.

EPA trabajará continuamente para edificar conciencia en la marca a través de una amplia gama de sectores industrial, comercial, y del consumidor a través de iniciativas de alcance y educación. A través de este programa nacional, WaterSense tiene la esperanza de hacer el uso común de los productos y las prácticas de uso eficiente del agua.



WaterSense® Labeled Bathroom Sink Faucets



Most of us know we can save water if we turn off the tap while brushing our teeth (as much as 3,000 gallons per year!), but did you know that there are products that will help save water when you turn on the tap too? WaterSense, a program sponsored by the U.S. Environmental Protection Agency (EPA), can help you identify high-performance, water-efficient bathroom sink faucets and faucet accessories that can reduce water use in the home and help preserve the nation's water resources.

Faucet Flows

Faucets account for more than 15 percent of indoor household water use—more than 1 trillion gallons of water across the United States each year.

WaterSense labeled bathroom sink faucets and accessories can reduce a sink's water flow by 30 percent or more without sacrificing performance. We could save billions of gallons each year by retrofitting the country's 222 million bathroom sink faucets with models that have earned the WaterSense label.

The WaterSense Label

All products bearing the WaterSense label complete a third-party certification process that includes independent laboratory testing to ensure they meet EPA criteria. Faucets and faucet accessories—products that can be attached easily to existing faucets to save water—that obtain the WaterSense label will have demonstrated both water efficiency and the ability to provide adequate flow.



WaterSense Savings

By installing WaterSense labeled bathroom sink faucets or faucet accessories, an average household can save more than 500 gallons each year. Also, since these water savings will reduce demands on water heaters, households will also save energy. Achieving these savings can be as easy as twisting on a WaterSense labeled aerator, which can cost as little as a few dollars.

If every household in the United States installed WaterSense labeled bathroom sink faucets or faucet accessories, we could save more than \$350 million in water utility bills and more than 60 billion gallons of water annually—enough to meet public water demand in Miami for more than 150 days! In addition, U.S. homes could avoid about \$600 million in energy costs for heating water.



Look for WaterSense Labeled Faucets and Accessories!

Whether replacing an older, inefficient faucet that's wasting water and money, or simply looking for options to reduce water use in your home, choose a WaterSense labeled bathroom sink faucet or faucet accessory. The next time you wash your hands or brush your teeth, you'll know that you're doing your part to help protect our precious water resources.

For more information, please visit the WaterSense Web site at <www.epa.gov/watersense>.



WaterSense® Labeled Toilets



Toilets are by far the main source of water use in the home, accounting for nearly 30 percent of residential indoor water consumption. Toilets also happen to be a major source of wasted water due to leaks and/or inefficiency. WaterSense, a program sponsored by the U.S. Environmental Protection Agency (EPA), is helping consumers identify high-performance, water-efficient toilets that can reduce water use in the home and help preserve the nation's water resources.



What Are WaterSense Labeled Toilets?

Recent advancements have allowed toilets to use 20 percent less water than the current federal standard, while still providing equal or superior performance. The WaterSense label is used on toilets that are certified by independent laboratory testing to meet rigorous criteria for both performance and efficiency. Only high-efficiency toilets that complete the third-party certification process can earn the WaterSense label.

How Much Can WaterSense Labeled Toilets Save?

Over the course of your lifetime, you will likely flush the toilet nearly 140,000 times. If you replace older, existing toilets with WaterSense labeled models, you can save 4,000 gallons per year with this simpler, greener choice.

What About Price?

WaterSense labeled toilets are available at a wide variety of price points and a broad range of styles. EPA estimates that a family of four that replaces its home's older toilets with WaterSense labeled models will, on average, save more than \$90 per year in reduced water utility bills, and \$2,000 over the lifetime of the toilets. Additionally, in many areas, utilities offer rebates and vouchers that can lower the price of a WaterSense labeled toilet.

And Performance?

Unlike some first-generation, "low-flow" toilets, WaterSense labeled toilets combine high efficiency with high performance. Design advances enable WaterSense labeled toilets to save water with no trade-off in flushing power. In fact, many perform better than standard toilets in consumer testing.

Look for the WaterSense Label!

Whether remodeling a bathroom, starting construction of a new home, or simply replacing an old, leaky toilet that is wasting money and water, installing a WaterSense labeled toilet is a high-performance, water-efficient option worth considering. If every American home with older, inefficient toilets replaced them with new WaterSense labeled toilets, we would save nearly 640 billion gallons of water per year, equal to more than two weeks of flow over Niagara Falls! Go to www.epa.gov/watersense for more information.





Water Supply and Use in the United States

Water covers approximately 70 percent of the Earth's surface, but less than 1 percent of that is available for human use. The world must share this small amount for agricultural, domestic, commercial, industrial, and environmental needs. Across the globe, water consumption has tripled in the last 50 years. Managing the supply and availability of water is one of the most critical natural resource issues facing the United States and the world.

Homes use more than half of publicly supplied water in the United States, which is significantly more than is used by either business or industry. A family of four can use approximately 400 gallons of water every day. Those amounts used can increase depending on location; for example, the arid West has some of the highest per capita residential water use because of landscape irrigation.

With water use in the United States increasing every year, many regions are starting to feel the pressure. In the last five years, nearly every region of the country has experienced water shortages. At least 36 states are anticipating local, regional, or statewide water shortages by 2013, even under non-drought conditions.

To help American homes and businesses make more efficient use of their water, EPA has developed WaterSense®, a partnership program. WaterSense labels products such as toilets and faucets that are independently certified to use less water without sacrificing performance. By offering simple ways to reduce water use through water-efficient product choices—with no sacrifice to quality or product performance—WaterSense helps Americans save water and money.

Saving water around the home is simple and smart.

The average household spends as much as \$500 per year on its water and sewer bill but could save about \$170 per year by retrofitting with water-efficient fixtures and incorporating water-saving practices.



Let WaterSense® show you how to save water—and your wallet.

How much money you save will depend on the cost of water where you live, but it makes sense that using less water lowers your utility bill. More importantly, using less water preserves this limited resource for generations to come.



(866) WTR-SENS (987-7367)

www.epa.gov/watersense watersense@epa.gov

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Simple Steps to Save Water



Inside the Home

By giving your bathroom a water efficiency makeover with WaterSense labeled toilets and faucets, you could save more than 11,000 gallons annually—and that's no drop in the bucket.

Get Flush With Savings

- Consider installing a WaterSense labeled toilet, which uses 20 percent less water while offering equal or superior performance. Compared to older, inefficient models, WaterSense labeled toilets could save a family of four more than \$90 annually on its water utility bill, and \$2,000 over the lifetime of the toilets.
- Check for toilet leaks by adding food coloring to the tank. If the toilet is leaking, color will appear in the bowl within 15 minutes. (Make sure to flush as soon as the test is done, since food coloring can stain the tank.)



Accessorize Your Faucet

- Installing a WaterSense labeled aerator is one of the most cost-effective ways to save water. Also consider replacing the

entire faucet with a WaterSense labeled model. Either way, you can increase the faucet's efficiency by 30 percent without sacrificing performance.

- Repair dripping faucets and showerheads. A drip rate of one drip per second can waste more than 3,000 gallons per year.

Clean Up With Savings

- A full bathtub can require up to 70 gallons of water, while taking a 5-minute shower uses only 10 to 25 gallons.
- Turning off the tap while you brush your teeth can save 8 gallons per day.

Lighten Your Loads

- Wash only full loads of dishes and clothes or lower the water settings for smaller loads.
- Replace your old washing machine with a high-efficiency, ENERGY STAR® labeled model, which uses up to 50 percent less water and electricity.

The average single-family suburban home uses at least 30 percent of its water for outdoor purposes such as irrigation and as much as 70 percent in dry climates. Some experts estimate that more than 50 percent of landscape water is wasted due to evaporation, wind, or overwatering.

Water When Needed

- Water your lawn or garden during the cool morning hours, as opposed to midday, to reduce evaporation.
- Look for sprinklers that produce droplets, not mist, or use soaker hoses or trickle irrigation for trees and shrubs.
- Set sprinklers to water lawns and gardens only. Check that you're not watering the street or sidewalk.
- Try not to overwater your landscaping. Learn plants' water needs and water different types appropriately.

Grow Green Grass

- Don't overfertilize. You will increase the lawn's need for water.
- Raise your lawn mower blade to at least 3 inches. Taller grass promotes deeper

roots, shades the root system, and holds soil moisture better than a closely cropped lawn.

Garden With Care

- Plant climate-appropriate species. Try plants that are native to where you live, which don't require as much water, and group plants together by water requirements.
- Use mulch around trees and plants to help reduce evaporation and control water-stealing weeds.

Outside the Home



Appendix G

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- G-1. ULFT Rebate Application and Program Policy**
- G-2. Maximum Performance (MaP) of UNAR-Compliant High-Efficiency Toilet Fixtures**

G-1: ULFT Rebate Application and Program Policy

**CITY OF CERES ULTRA LOW FLUSH TOILET (ULFT)
REBATE APPLICATION**

Complete application (including reverse side), detach, and mail with original receipt(s) to:
Ceres Public Works Department Water Conservation, 2720 Second Street, Ceres, CA,
95307

Offer good for purchases of qualifying ULFT's.
Application must be postmarked within 90 days of purchase.
A separate application must be submitted for each metered address.

PLEASE PRINT:

APPLICANT FIRST _____ LAST NAME _____

WATER SERVICE ACCOUNT _____ PHONE NUMBER _____

BUSINESS OR HOA NAME IF APPLICABLE _____

INSTALLATION ADDRESS _____ CITY _____ ZIP _____

TOILET INFORMATION (If the information does not fit below, please attach a separate sheet of paper with the requested information.):

NUMBER OF TOILETS AT INSTALLATION ADDRESS _____ HOW OLD IS YOUR EXISTING TOILET? _____ NUMBER OF REBATES REQUESTED _____

MAKE(S) AND MODEL NUMBER(S) INSTALLED _____

APARTMENT NUMBER FOR MULTI-UNIT RESIDENTIAL AND NUMBER OF TOILETS INSTALLED IN EACH APARTMENT (Attach additional sheet of paper, if necessary):

APT.	QTY.								
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

DISCLAIMER:

The undersigned expressly agrees that the City of Ceres (City) may inspect all properties participating in the Ultra Low Flush Toilet Rebate Program; that the City does not guarantee the performance of any toilet; and that the City does not warrant any toilet or installation to be free of defects; the quality of workmanship, or the suitability of the premises or the toilet for the installation. The undersigned further agrees to defend, indemnify and hold harmless the City, their directors, officers, agents, and employees, from and against any and all loss, damage, expense, claims suits and liability, including attorneys fees arising out of or in any way connected with the toilet(s) and its (their) installation. Applicant has read, understands and agrees to the terms and conditions listed on the Ultra Low Flush Toilet Rebate Program application. Applicant understands that installation of a qualifying Ultra Low Flush Toilet may not result in lower water bills. The City reserves the right to add or remove eligible Ultra Low Flush Toilet from the list or change the terms of the incentive offer at any time.

I HAVE READ, UNDERSTAND, AND AGREE TO THE TERMS AND CONDITIONS OF THIS REBATE PROGRAM.

SIGNATURE OF APPLICANT _____ DATE _____

Ultra Low Flush Toilet Rebate Terms and Conditions

- The ULFT Rebate Program only rebates the replacement of toilets using 3.5 GPF or more. *You must replace a working toilet flushing 3.5 gallons per flush or higher to receive a rebate.*
- Toilet(s) must be installed in the Ceres water service area.
- Toilet installation and rebate application postmark must be completed within 90 days of purchase date.
- Original receipt(s) and a copy of your water bill must be sent with application.
- The exact tank and bowl model number of the toilet you purchase must be on the List of Qualifying Toilets for your water agency on the day of your purchase.
- A pre-purchase inspection and post-installation inspection are required for any site where seven or more toilets are being replaced.
- All sites are subject to post-install inspections.
- New construction or bathroom improvements made after 1993 do not qualify.
- A separate application must be submitted for each metered address.
- Approved toilets must be installed within the service area of your water agency.
- All rebates are subject to availability of funds. Rebates may take up to eight weeks to process.
- Rebates are **\$50** per toilet or up to the total cost (not including sales tax), whichever is less.
- Limit: Two rebates per living unit, not per account. Ten rebates per commercial account.
- Rebates are issued as credits applied to the Ceres water service account, except where the person applying for the rebate does not pay the water bill at the address where the toilet is installed.
- If you need your original receipt(s) returned, please enclose a self-addressed, stamped envelope with your application.
- Applicant certifies that necessary permissions have been obtained from the property owner, if applicant is not the owner.
- Drop the application of at the Ceres Bill payment drop box or mail to:

City of Ceres
Public Works Department
2220 Hackett Rd., Ceres, CA 95307



City of Ceres Public Works
Water Conservation
209-538-5732

**G-2: Maximum Performance (MaP) of UNAR-
Compliant High-Efficiency Toilet Fixtures**

Maximum Performance (MaP) of UNAR-Compliant High-Efficiency Toilet Fixtures (HETs) Gravity-Fed Fixtures ONLY

Sorted by Manufacturer

December 2008 listing

Note: Compiling this listing is a service of the U.S.-Canadian Alliance for Water Efficiency and the California Urban Water Conservation Council. All of the fixtures on this list are believed to meet the requirements of the U.S. EPA WaterSense specification for HETs, although there is no guarantee of such. Those that have been reported to be fully certified to WaterSense by recognized laboratories are identified in the WaterSense column below. NOTE: This listing is NOT the official list of the U.S. EPA's WaterSense Program. For a full description of WaterSense, go to: <http://www.epa.gov/watersense/>

MaP Test Report No. (for internal use)	Make	Model Name	Model Number	MaP Flush Performance (grams of solid waste removed from the toilet in a SINGLE flush)	Certified to the U.S. EPA WaterSense Specification for High-Efficiency Toilets	1-piece or 2-piece model	Flush Valve-Flapper size (in.)	Round Front (R) or Elongated (E) bowl	ADA-Comfort Height-Right Height Bowl	1.6G (6L) Gravity-flush on a dual-flush system	HET type		Rear Discharge	Floor-Mounted (F) OR Wall-Mounted (W)
											Dual-Flush	Single-Flush Max 1.28G (4.8L)		
12-108	American Standard	Cadet 3 FloWise EL	2832.128: 3014.128 bowl, 4021.128 tank	1,000	WS	2	3	E			HET		F	
12-107 & 12-114	American Standard	Cadet 3 FloWise EL ADA	2835.128: 3016.128 bowl, 4021.128 tank; NOTE: this combination is also sold as 3305.128, which is identified as the "COMPLETE" package and includes bowl, tank, seat, & installation mat's as one item or SKU.	1,000	WS	2	3	E	*		HET		F	
12-101	American Standard	Cadet 3 FloWise RF	2829.128: 3011.128 bowl, 4021.128 tank	800	WS	2	3	R			HET		F	
10-127	American Standard	Compact Cadet 3 FloWise EL ADA	SOLD IN 3 COMBINATIONS (one-piece toilet) - 2403.128, 2568.128 and 2403.500 (lined tank)	1,000	WS	1	3	E	*		HET		F	
10-126	American Standard	FloWise Dual Flush EL	2479.216 (this combination also sold as 2476.216 when with a slow-close seat): 3067 bowl, 4035.216 tank	900	WS	2	2	E		*	HET		F	
12-112	American Standard	FloWise Dual Flush EL (insulated tank)	SOLD IN 3 COMBINATIONS - 2479.516, 2779.516 and 2476.516: each combination with 3067 bowl, 4035.516 tank(lined)	800	WS	2	2	E		*	HET		F	
12-113 & 12-116	American Standard	FloWise Dual Flush EL ADA	SOLD IN 4 COMBINATIONS - 2480.216, 2484.216, 2566.216 and 2778.516: each combination with 3073 bowl, 4035 tank.	600	WS	2		E	*	*	HET		F	
12-111 & 12-115	American Standard	FloWise Dual Flush EL ADA (insulated tank)	SOLD IN 3 COMBINATIONS - 2480.516, 2484.516 and 2566.516: each combination with 3073 bowl, 4035.516 tank (lined)	500	WS	2	2	E	*	*	HET		F	
	American Standard	FloWise EL	2073.013: 3018 bowl, 4023.013 tank (this model to be discontinued & replaced by 2073.014)	550		2	3	E			HET		F	
10-021	American Standard	FloWise EL	2073.014: 3018 bowl, 4023.014 tank	750	WS	2	3	E			HET		F	
13-089	American Standard	Mainstream FloWise RF	3468.128: 3061.428 bowl, 4061.428 tank	800	WS	2	2	R			HET		F	
7-535	Aquadis	CT-A1200 RF	CT-A1200 (bowl & tank models nos. not identified)	300		2	2	R		*	HET		F	
10-055	Aquadis	Tytane EL	TY350 (one piece)	350		1	2	E		*	HET		F	
WS	Axent-Regatta Water Co.	None EL ADA	AT1203-xx	350	WS	2		E	*		HET		F	

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											Dual-Flush	Single-Flush Max 1.28G (4.8L)		
12-028	Ayers Bath (Tangshan)	Dofiny - EL ADA	UACT1301: UAC1301BS-AA bowl, UAT1302-AA tank	550	WS	2	3	E	*			HET		F
WS-13	Ayers Bath (Tangshan)	None EL	UAC1303BS-AA bowl, UAT1304-AA tank	350	WS	2		E				HET		F
WS-13	Ayers Bath (Tangshan)	None RF (one-piece)	UAC1003BS-AA (one-piece)	350	WS	1		R				HET		F
11-087	Bolina	Italiana EL	3031: 3031 bowl, 3031 tank	400		2	2	E		*		HET		F
WS	Briggs	None EL	4208: 4375 bowl, 4484 tank	350	WS	2		E		*		HET		F
WS	Briggs	None RF	4207: 4370 bowl, 4484 tank	350	WS	2		R		*		HET		F
8-536	Caroma	Adelaide 270 Cube EL	834000 bowl, 814790 tank	700	WS	2	-	E		*		HET		F
12-006	Caroma	Adelaide 270 EH Cube RF ADA	825500 bowl, 814790 tank	700	WS	2	-	R	*	*		HET		F
12-005	Caroma	Adelaide 270 EH Standard RF ADA	825500 bowl, 814328 tank	700	WS	2	-	R	*	*		HET		F
8-537	Caroma	Adelaide 270 Standard EL	834000 bowl, 814328 tank	700	WS	2	-	E		*		HET		F
10-113	Caroma	Bondi 270 CC RF	609159 bowl, 726350 tank	600	WS	2	-	R		*		HET		F
11-050	Caroma	Bondi 270 EL	609100 bowl, 726350 tank	550	WS	2	-	E		*		HET		F
10-112	Caroma	Bondi 270 EL ADA	609120 bowl, 726350 tank	900	WS	2	-	E	*	*		HET		F
11-049	Caroma	Bondi 270 RF ADA	607177 bowl, 726350 tank	550	WS	2	-	E	*	*		HET		F
10-110	Caroma	Bondi 305 CC RF	609151 bowl, 726350 tank	450	WS	2	-	R		*		HET		F
13-069	Caroma	Bondi 305 EL	609130 bowl, 726350 tank	700	WS	2	-	E		*		HET		F
12-002	Caroma	Brisbane 270 RF	833900 bowl, 810266 tank	700	WS	2	-	R		*		HET		F
8-538	Caroma	Caravelle 1-Piece EL ADA	989668	800	WS	1	-	E	*	*		HET		F
9-032	Caroma	Caravelle 270 EL	609100 bowl, 629435 tank	500	WS	2	-	E		*		HET		F
7-525	Caroma	Caravelle 270 EL ADA	609120 bowl, 629435 tank	800	WS	2	-	E	*	*		HET		F
	Caroma	Caravelle 270 RF	989760: 609159 bowl, 629435 tank	500	WS	2	-	R		*		HET		F
5-509	Caroma	Caravelle 270 RF ADA	989770: 609177 bowl, 629435 tank	800	WS	2	-	R	*	*		HET		F
7-526	Caroma	Caravelle 305 EL	609130 bowl, 629435 tank	500	WS	2	-	E		*		HET		F
5-508	Caroma	Caravelle 305 RF	989680: 609151 bowl, 629435 tank	650	WS	2	-	R		*		HET		F
	Caroma	Caravelle One-Piece RF	989646	500	WS	1	-	R		*		HET		F
7-513	Caroma	Colonial 270 RF	605310 bowl, 625070 tank	600	WS	2	-	R		*		HET		F
12-004	Caroma	Colonial 270 RF	605320 bowl, 625070 tank	700	WS	2	-	R		*		HET		F
WS-13	Caroma	Profile Smart 305 RF (NOTE: 1.20-gpf / 4.5 Lpf for the full flush - 0.8-gpf / 3.0 Lpf for reduced flush)	609151A bowl, 840420 tank	350	WS	2	-	R		1.2		HET		F
7-527	Caroma	Reflections 270 EL	609100 bowl, 629530 tank	500		2	-	E		*		HET		F
5-507	Caroma	Reflections 270 RF	989720: 609159 bowl , 629530 tank	650		2	-	R		*		HET		F

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											Dual-Flush	Single-Flush Max 1.28G (4.8L)		
7-524	Caroma	Reflections 305 RF	609151 bowl, 629530 tank	600		2	-	R		*	HET			F
11-052	Caroma	Royale 270 EL	609100 bowl, 624530 tank	800	WS	2	-	E		*	HET			F
7-514	Caroma	Royale 270 EL ADA	609120 bowl, 624530 tank	850	WS	2	-	E	*	*	HET			F
7-528	Caroma	Royale 270 RF	609159 bowl, 624530 tank	600	WS	2	-	R		*	HET			F
11-051	Caroma	Royale 270 RF ADA	609177 bowl, 624530 tank	900	WS	2	-	E	*	*	HET			F
5-519	Caroma	Royale 305 EL	609130 bowl, 629530 tank	850	WS	2	-	E		*	HET			F
	Caroma	Royale 305 RF	609151 bowl, 624530 tank	600	WS	2	-	R		*	HET			F
11-055	Caroma	Sydney 270 EL	609100 bowl, 622320 tank	500	WS	2	-	E		*	HET			F
8-533	Caroma	Sydney 270 EL ADA	609120 bowl, 622320 tank	1,000	WS	2	-	E	*	*	HET			F
11-053	Caroma	Sydney 270 RF	609159 bowl, 622320 tank	600	WS	2	-	E		*	HET			F
11-054	Caroma	Sydney 270 RF ADA	609177 bowl, 622320 tank	600	WS	2	-	E	*	*	HET			F
10-115	Caroma	Sydney 305 EL	609130 bowl, 622320 tank	500	WS	2	-	E		*	HET			F
10-114	Caroma	Sydney 305 RF	609151A bowl, 622320 tank	1,000	WS	2	-	R		*	HET			F
12-093	Caroma	Sydney Low Profile 270 EH EL ADA	609120 bowl, 622330 tank	550	WS	2	-	E	*	*	HET			F
13-125	Caroma	Sydney Low Profile 270 EL	609100 bowl, 622330 tank	550	WS	2	-	E		*	HET			F
13-122	Caroma	Sydney Low Profile 270 EL ADA	609177 bowl, 622330 tank	650	WS	2	-	E	*	*	HET			F
13-123	Caroma	Sydney Low Profile 270 RF	609159 bowl, 622330 tank	550	WS	2	-	R		*	HET			F
13-124	Caroma	Sydney Low Profile 305 EL	609130 bowl, 622330 tank	550	WS	2	-	E		*	HET			F
12-068	Caroma	Sydney Low Profile 305 RF	609151A bowl, 622330 tank	500	WS	2	-	R		*	HET			F
WS-13	Caroma	Sydney Smart 270 EL (NOTE: 1.28-gpf full flush - 0.8-gpf reduced flush)	609100 bowl, 622322 tank	350	WS	2	-	E		1.3	HET			F
WS-13	Caroma	Sydney Smart 270 EL (NOTE: 1.28-gpf full flush - 0.8-gpf reduced flush)	609159 bowl, 622322 tank	350	WS	2	-	E		1.3	HET			F
13-121	Caroma	Sydney Smart 270 EL ADA (NOTE: 1.28-gpf full flush - 0.8-gpf reduced flush)	609120 bowl, 622322 tank	850	WS	2	-	E	*	1.3	HET			F
WS-13	Caroma	Sydney Smart 270 RF ADA (NOTE: 1.28-gpf full flush - 0.8-gpf reduced flush)	609177 bowl, 622322 tank	350	WS	2	-	R	*	1.3	HET			F
WS-13	Caroma	Sydney Smart 305 EL (NOTE: 1.28-gpf full flush - 0.8-gpf reduced flush)	609130 bowl, 622322 tank	350	WS	2	-	E		1.3	HET			F
11-116 & 12-003	Caroma	Sydney Smart 305 RF (NOTE: 1.28-gpf full flush - 0.8-gpf reduced flush)	609151A bowl, 622322 tank	650	WS	2	-	R		1.3	HET			F
10-116	Caroma	Walvit EL (ADA optional)	604119 bowl, 227001 tank (concealed in-wall)	500		2	-	E	*	*	HET		R	W
13-038	Cascadian	Toscana EL ADA	C930 bowl, T901 tank	1,000	WS	2	3	E	*		HET			F
WS-13	CE Union International	None	6810H: X-6810H bowl, T-6810H tank	350	WS	2		R			HET			

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											Dual-Flush	Single-Flush Max 1.28G (4.8L)		
WS-13	CE Union International	None	6810H-S: X-6810HS bowl, T-6810HS tank	350	WS	2		R				HET		
WS-13	CE Union International	None	6811H: X-6811H bowl, T-6811H tank	350	WS	2		E				HET		
WS-13	CE Union International	None	6811H-S: X-6811HS bowl, T-6810HS tank	350	WS	2		E				HET		
WS-13	Ceramica Industrial De Taubate Ltd	Nina EL	111: bowl model unknown, 815 tank	350	WS	2		E				HET		F
WS-13	Ceramica Industrial De Taubate Ltd	Twister EL	151: 151 bowl, 855 tank	350	WS	2		E				HET		F
WS-13	Ceramica Industrial De Taubate Ltd	Twister RF	150: 150 bowl, 855 tank	350	WS	2		R				HET		F
WS	Cerapure Industries	None EL ADA (one-piece)	C-3432D	350	WS	1		E	*	*		HET		F
13-066	Chelini	Marriot RF	B1215R bowl, TDF1246 tank	600		2	2.5	R		*		HET		F
13-126	Conrac	Captiva EL ADA	4710BIV	800		1	3	E	*			HET		F
13-127	Conrac	Carter EL ADA	4720BIV: bowl and tank nos. not provided	550		2	3	E	*			HET		F
11-084	Conrac	None RF	4710BFZ (one piece with insulated tank)	500		1	2.5	R		*		HET		F
11-085	Conrac	None RF	4710BFZU (one piece)	600		1	2.5	R		*		HET		F
11-080	Conrac	None RF	4720BFZ combination (lined tank)	600		2	2	R		*		HET		F
11-081	Conrac	None RF	4720BFZU combination	550		2	2	R		*		HET		F
WS	Crane	Eco Galaxy/Cranada EL	31008: 3372 bowl, 31590 tank	500	WS	2	-	E		*		HET		F
13-014	Crane	Eco Galaxy/Cranada EL ADA	31009: 3815 bowl, 31590 tank	800		2	2	E	*	*		HET		F
13-013	Crane	Eco Galaxy/Cranada EL ADA	31069: 3815 bowl, 31593 tank (insulated)	800		2	2	E	*	*		HET		F
WS	Crane	Eco Galaxy/Cranada RF	31007: 3352 bowl, 31590 tank	500	WS	2	-	R		*		HET		F
WS	Crane	Eco Galaxy/Cranada RF	31067: 3352 bowl, 31593 tank (insulated)	600	WS	2	-	R		*		HET		F
11-004	Crane	Eco Opus III RF	31692: 31562 bowl, 31542 tank	600	WS	2	3	R				HET		F

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											Dual-Flush	Single-Flush Max 1.28G (4.8L)		
WS	Crane	Eco Opus III RF	31693: 31562 bowl, 31543 tank (insulated)	350	WS	2	3	R				HET		F
WS	Crane	Eco Saratoga Dual RF	31970: 3352 bowl, 31960 tank	350	WS	2		R				HET		F
WS	Crane	Eco Saratoga EL	31973: 3372 bowl, 31964 tank	500	WS	2		E		*		HET		F
WS	Crane	Eco Saratoga EL	31980: 3372 bowl, 31960 tank	350	WS	2		E				HET		F
WS	Crane	Eco Saratoga EL	31986: 3372 bowl, 31966 tank (insulated)	350	WS	2		E				HET		F
13-016	Crane	Eco Saratoga EL ADA	31983: 3815 bowl, 31964 tank	600		2	2	E	*	*		HET		F
13-015	Crane	Eco Saratoga EL ADA	31996: 3815 bowl, 31966 tank (insulated)	600		2	2	E	*	*		HET		F
WS	Crane	Eco Saratoga RF	31972: 3352 bowl, 31964 tank	600	WS	2		R		*		HET		F
WS	Crane	Eco Saratoga RF	31976: 3352 bowl, 31966 tank (insulated)	350	WS	2		R				HET		F
12-030	Duravit	2nd Floor (ADA optional)	220509 bowl, 111.335 in-wall tank (Geberit)	350	WS	2	2	S	*	*		HET	R	W
12-032	Duravit	Caro (ADA optional)	015609 bowl, 111.335 in-wall tank (Geberit)	350	WS	2	2	S	*	*		HET	R	W
8-544	Duravit	Darling	020709 bowl, 111.335 in-wall tank (Geberit)	350	WS	2	2	R	*	*		HET	R	W
WS-13	Duravit	D-Code	011701 bowl, 092720 tank	350	WS	2						HET		F
13-070	Duravit	D-Code	220909 bowl, used with in-wall tank	500	WS	2		S	*	*		HET	R	W
12-031	Duravit	Foster (ADA optional)	017509 bowl, 111.335 in-wall tank (Geberit)	350	WS	2	2	S	*	*		HET	R	W
WS-13	Duravit	Happy D	017009 bowl, 091010 tank	350	WS	2				*		HET		F
6-605	Duravit	Happy D RF	017009 bowl, 091000-05 tank	600		2	2	R	*	*		HET	R	W
6-604	Duravit	Happy D Wallmount RF	017109 bowl, 111.335 in-wall tank (Geberit)	600	WS	2	2	R	*	*		HET	R	W
12-033	Duravit	Starck 2 (ADA optional)	016009 bowl, 111.335 in-wall tank (Geberit)	350	WS	2	2	S	*	*		HET	R	W
WS-13	Duravit	Starck 3	012809 bowl, 092010 tank	350	WS	2				*		HET		F
8-543	Duravit	Starck 3 RF	220009 bowl, 111.335 in-wall tank (Geberit)	350	WS	2	2	R	*	*		HET	R	W
WS-13	Duravit	Starck X	220409 bowl, used with in-wall tank	350	WS	2		S	*	*		HET	R	W
WS-13	Duravit	Vero	211609 bowl, 090910 tank	350	WS	2				*		HET		F
WS-13	Duravit	Vero	211709 bowl, 109.304 in-wall tank (Geberit)	350	WS	2	2	S		*		HET		F
12-034	Duravit	Vero (ADA optional)	221709 bowl, 111.335 in-wall tank (Geberit)	350	WS	2	2	S	*	*		HET	R	W
13-141	Foremost	Europa	TL-8271E-WL (one-piece,lined tank)	600		1	2	E				HET		F
8-539	Foremost	Gemini Dual-Flush RF	TL-2005-L: LL-2005 bowl, T-2005-L tank (lined)	800		2	2	R		*		HET		F
9-044 & 13-147	Foremost	Gemini Dual-Flush RF ADA	TL-2100-*L (one-piece)	1,000		1	2	S	*	*		HET		F
13-140	Foremost	Genie	TL-2010E-WL, LL-2010E-W bowl, T-2010-WL tank	750		2	2	E				HET		F
13-135	Foremost	None EL (one-piece)	TL-6100-E*N	350	WS	1	3	E				HET		F
13-139	Foremost	None EL ADA	LL-20PA-HET-EY bowl, T-20PA-HET-EY tank	550		2	3	E	*			HET		F

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											Dual-Flush	Single-Flush Max 1.28G (4.8L)		
13-138	Foremost	None EL ADA	TL-10PA-HET-E (one-piece)	650		1	3	E	*			HET		F
13-137	Foremost	None EL ADA	TL-10PB-HET-E (one-piece)	600		1	3	E	*			HET		F
11-086 & 13-149	Foremost	None EL ADA	TL-7600HC-HET OR BT6001: LL-7600HC-HET bowl, T-7600-HET tank (ALSO SOLD BY HOME DEPOT AS GLACIER BAY SKU 331-725; ALSO SOLD AT LOWE'S AS AQUASOURCE 005905)	1,000	WS	2	3	E	*			HET		F
13-130	Foremost	None EL ADA	TL-7600HC-HET-*L: LL-7600HC-HET bowl, T-7600HC-HET-*L tank (insulated) (ALSO SOLD as TL-8295-WL)	900	WS	2	3	E				HET		F
13-132	Foremost	None RF	TL-7600HC-HETR: LL-7600HC-HETR bowl, T-7600HC-HET tank	900	WS	2	3	R				HET		F
13-131	Foremost	None RF ADA	TL-7600HC-HETR-*L: LL-7600HC-HETR bowl, T-7600HC-HET-*L tank (insulated tank)	1,000	WS	2	3	R				HET		F
11-001	Foremost	Plaza	TL-7107-*L: LL-7107 bowl, T-7107 tank	500	WS	2	2.5	S		*		HET		F
13-142	Foremost	Regent RF	TL-5210-*L (one piece, lined tank)	750		1	2	R				HET		F
8-530	Foremost	Rona Collection EL	TL-8267-WL: LL-8267 bowl, T-8267 tank (lined)	700		2	2.5	S		*		HET		F
11-073	Foremost	Total - RF	TT-2010-*L: LL-2010 bowl, T-2010 tank (lined)	600	WS	2	2.5	R		*		HET		F
13-133	Foremost	Home Depot - Pegasus EL ADA	TL-7700HC-HET: LL-7700HC-HET bowl, T-7700-HET tank (HD SKU#780-036)	800	WS	2	3	E	*			HET		F
13-134	Foremost	Total Advantage EL	TT-2000E-WL (one piece - lined)	1,000	WS	1	2	E				HET		F
12-037	Globe Union	WaterRidge Grace EL	C22055C (one-piece)	500	WS	1	2	E		*		HET		F
8-546	HCG	None - EL	CS9001DF: C9001 bowl, S9002DF tank	400		2	2	E		*		HET		F
8-545	HCG	None - RF	CS9002DF: C9002 bowl, S9002DF tank	350		2	2	R		*		HET		F
11-086	Home Depot - Glacier Bay (by Foremost)	Glacier Bay EL ADA	TL-7600HC-HET-Y: LL-7600HC-HET bowl, T-7600-HET tank - Sold combined as Home Depot SKU 331-725 (Foremost Model BT6001)	400	WS	2		E	*	*		HET		F
12-038	Home Depot - Glacier Bay (by Niagara)	Glacier Bay Ecologic RF ADA	N2225R-165: N2225RB-165 bowl, N2225T tank (Sold combined as Home Depot SKU 779-923)	1,000		2	-	R				HET		F
12-129	Home Depot - Glacier Bay (by Niagara)	Glacier Bay EL ADA	Home Depot SKUs: 331-725 bowl, 331-725 tank	600	WS	2	3	E	*			HET		F
8-540	Home Depot - Pegasus	Dual-Flush RF	Home Depot SKU 131-926	800		2	-	R		*		HET		F
5-534	Home Depot - Pegasus	Tulip EL (See Vortens-Lamosa)	HD SKU 477-546: 3107 bowl, 3427 tank	400		2	-	E		*		HET		F
13-133	Home Depot - Pegasus (by Foremost)	Pegasus EL ADA	TL-7700HC-HET: LL-7700HC-HET bowl, T-7700-HET tank (Sold combined as Home Depot SKU 780-036)	800	WS	2	3	E	*			HET		F
13-068	Home Depot - Pegasus (by Niagara)	Cottage EL ADA (Flapperless)	N2228: N2228B bowl, N2228T tank. Sold combined as Home Depot SKU 840-565	1,000	WS	2	-	E	*			HET		F

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											Dual-Flush	Single-Flush Max 1.28G (4.8L)		
13-067	Home Depot - Pegasus (by Niagara)	Westminster EL ADA	Two-piece fixture sold combined as "All In One" - Home Depot SKU 780-036	1,000		2	3	E	*			HET		F
11-106	Home Depot (by Niagara)	Ecologic EL ADA (Flapperless)	N2225E: N2225EB bowl, N2225T tank. Sold combined as Home Depot SKU 331-725	800	WS	2	-	E	*			HET		F
13-037	Jacuzzi	Espree (one-piece)	EZ36959 (one-piece)	1,000	WS	1	3	E	*			HET		F
10-109	Kohler	Cimarron Eco-Smart EL ADA	K-3496-HE: 4286 bowl, 4634-HE tank	800	WS	2	3	E	*			HET		F
13-032	Kohler	Cimarron EL ADA	K-3609: 4309 bowl, 4421 tank - NOTE: this fixture is also sold as K-11451 when included as part of the "COMPLETE SOLUTION" package	1,000	WS	2	3	E	*			HET		F
12-076	Kohler	Escale EL	K-3588: 4308 bowl, 4472 tank	500	WS	2	-	E	*			HET		F
12-074	Kohler	Kelston EL ADA	K-11453: F4306 bowl, F4469 tank	1,000	WS	2	-	E	*			HET		F
13-063	Kohler	Persuade EL	K-3654: 4322 bowl, 4419 tank	600	WS	2	2.5	E	*			HET		F
12-094	Kohler	Saile EL	K-3564 (one piece)	500	WS	1	-	E	*			HET		F
9-051	Kohler	Sterling Karsten Dual Force EL	402028: 402026 bowl, 402023 tank	400	WS	2	2	E	*			HET		F
8-550	Kohler	Sterling Karsten RF	402025: 402021 bowl, 402023 tank	800	WS	2	2	R	*			HET		F
6-622	Kohler	Sterling Rockton EL	402027: 402026 bowl, 402022 tank	350	WS	2	-	E	*			HET		F
WS	Kohler	Sterling Rockton RF	402024: 402021 bowl, 402022 tank	350	WS	2	-	R	*			HET		F
WS	Kohler	Sterling Stanton EL	402040: 402030 bowl, 402031 tank	350	WS	2	-	E	*			HET		F
WS-13	Lowe's	AquaSource EL	005905: EQUIVALENT TO FOREMOST MODEL TL-7600HC-HET: LL-7600HC-HET bowl, T-7600-HET tank	350	WS	2	-	E				HET		F
WS-13	Luoyang Meidiya	None	6810H: (individual tank and bowl nos. not avail)	350	WS	2	-	R				HET		
WS-13	Luoyang Meidiya	None	6810H-S: (individual tank and bowl nos. not avail)	350	WS	2	-	R				HET		
WS-13	Luoyang Meidiya	None	6811H: (individual tank and bowl nos. not avail)	350	WS	2	-	E				HET		
WS-13	Luoyang Meidiya	None	6811H-S: (individual tank and bowl nos. not avail)	350	WS	2	-	E				HET		
WS-13	Mansfield	None	111 bowl, 112 tank	350	WS	2	-					HET		F
10-023	Niagara	Ecologic EL ADA HET (Flapperless)	N2225E: N2225EB bowl, N2225T tank. Also sold as Home Depot SKU 331-725	800	WS	2	-	E	*			HET		F
10-024	Niagara	Ecologic RF HET (Flapperless)	N2225R: N2225RB bowl, N2225T tank (note that tank and bowl model nos. are identical to those of the older Flapperless RF HET)	500	WS	2	-	R				HET		F
13-064	Niagara	Flapperless EL ADA	N4417 bowl, N4415T tank	800		2	-	E	*			HET		F
13-060	Niagara	Flapperless HET EL	N2228: N2228B bowl, N2228T tank. Also sold as Home Depot Pegasus Cottage: SKU 840-565	1,000	WS	2	-	E	*			HET		F
12-038	Niagara	Glacier Bay Ecologic RF ADA	N2225R-165: N2225RB-165 bowl, N2225T tank	1,000		2	-	R				HET		F

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											Dual-Flush	Single-Flush Max 1.28G (4.8L)		
12-129	Niagara	Glacier Bay EL ADA	331-725N: 331-725 bowl, 331-725 tank	600	WS	2	3	E	*		HET		F	
11-046	Niagara	None EL	N4418 (one piece)	500		1	-	E			HET		F	
13-008	Niagara	None RF	N4416: N4416 bowl, N4415T tank	1,000		2	-	R			HET		F	
WS-13	Original Pacific Supply	None EL	T/X-6688E: T-6688E bowl, X-6688 tank	350	WS	2		E	*		HET		F	
WS-13	Original Pacific Supply	None EL ADA	T/X-6688H: T-6688H bowl, X-6688 tank	350	WS	2		E	*	*	HET		F	
WS-13	Original Pacific Supply	None RF	T/X-6688: T-6688 bowl, X-6688 tank	350	WS	2		R		*	HET		F	
WS	Orion	Green Sense EL	50320 bowl, 51299 tank	350	WS	2		E			HET		F	
WS	Orion	Green Sense RF	50299 bowl, 51299 tank	350	WS	2		R			HET		F	
13-115	Price Pfister	None EL	VTP-E51W: C-5518 bowl, S-5518 tank	1,000		2	3	E		*	HET		F	
13-062	Price Pfister	None EL ADA	VTP-E21W: C-1003 bowl, S-1004 tank	1,000		2	3	E	*	*	HET		F	
13-061	Price Pfister	None EL ADA	VTP-E31W: C-1003 bowl, S-1003 tank	1,000		2	3	E	*	*	HET		F	
WS	Pro-Flo (by Briggs for Ferguson)	None EL	PF9201 bowl; PF9212 tank	350	WS	2		E		*	HET		F	
WS	Pro-Flo (by Briggs for Ferguson)	None RF	PF9200 bowl; PF9212 tank	350	WS	2		R		*	HET		F	
11-066	Pro-Flo (by Tynan for Ferguson)	Cascade EL	PF9301 bowl; PF9312 tank	400	WS	2	2	E		*	HET		F	
11-065	Pro-Flo (by Tynan for Ferguson)	Cascade EL ADA	PF9303 bowl; PF9312 tank	450	WS	2	2	E	*	*	HET		F	
11-067	Pro-Flo (by Tynan for Ferguson)	Cascade RF	PF9300 bowl; PF9312 tank	500	WS	2	2	R		*	HET		F	
13-109	Pro-Flo (by Tynan for Ferguson)	Foyle EL ADA	PF6101 bowl, PF6112HE tank (Fluidmaster fill valve)	800	WS	2	3	E	*		HET		F	
11-114	Pro-Flo (by Tynan for Ferguson)	MacLair EL	PF9401 bowl; PF9412 tank	850	WS	2	3	E			HET		F	
11-112	Pro-Flo (by Tynan for Ferguson)	MacLair RF	PF9400 bowl; PF9412 tank	900	WS	2	3	R			HET		F	
13-104	Pro-Flo (by Tynan for Ferguson)	None EL	PF6101 bowl; PF6112HE tank (R&T fill valve)	900	WS	2		E			HET		F	
13-113	Pro-Flo (by Tynan for Ferguson)	None EL ADA	PF6201 bowl; PF6212HE tank	900	WS	2		E			HET		F	
13-111	Pro-Flo (by Tynan for Ferguson)	None EL ADA	PF9403 bowl; PF 9412 tank (Fluidmaster fill valve)	950	WS	2	3	E	*		HET		F	
13-098	Pro-Flo (by Tynan for Ferguson)	None EL ADA	PF9403 bowl; PF 9412 tank (R&T fill valve)	950	WS	2		E			HET		F	
12-015	Quality Craft	Alexis HET Dual Flush Toilet in Box EL ADA	30014K: 3001 bowl, 3004 tank (insulated)	900	WS	2	3	E	*	*	HET		F	
12-014	Quality Craft	Alexis HET Toilet in a Box - EL ADA	30013K: 3001 bowl, 3003 tank (insulated)	900	WS	2	3	E	*		HET		F	
12-009	Quality Craft	None - EL ADA	3001/3003 (insulated tank)	900		2	3	E	*		HET		F	
12-011	Quality Craft	None - EL ADA	3001/3004 (insulated tank)	900		2	3	E	*	*	HET		F	
9-003	RAK Ceramics	Venice EL	VN03 bowl, VN10 tank	500		2	2	E		*	HET		F	
WS-13	Seasons (HD Supply)	None EL	SE10040 bowl, SE10039 tank	350	WS	2		E			HET		F	
WS-13	Seasons (HD Supply)	None EL (one-piece)	SE10042 (one-piece)	350	WS	1		E			HET		F	
WS-13	Seasons (HD Supply)	None RF	SE10041 bowl, SE10039 tank	350	WS	2		R			HET		F	

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											Dual-Flush	Single-Flush Max 1.28G (4.8L)		
5-516	Toto	Aquia EL	CST414M: CT414 bowl, ST413M tank	800	WS	2	2	E		*	HET		F	
12-082	Toto	Aquia II EL	CST416M: CT416 bowl, ST416M tank	500	WS	2	2.5	E			HET		F	
12-084	Toto	Aquia III EL	CST464M: CT464 bowl, ST464M tank	500	WS	2	2.5	E			HET		F	
12-080	Toto	Aquia IIIUH EL ADA	CST464MF: CT464F bowl, ST464M tank	500	WS	2	2.5	E	*		HET		F	
11-122	Toto	EcoClayton	CST784EF: C784EF bowl, ST784E tank	500	WS	2	3	E	*			HET	F	
11-125	Toto	EcoDartmouth EL ADA	CST754EF: C754EF bowl, ST753E tank	700	WS	2	3	E	*			HET	F	
11-061	Toto	EcoDrake EL	CST744E: C744E bowl, ST743E tank	600	WS	2	3	E				HET	F	
11-062	Toto	EcoDrake EL ADA	CST744EL: C744EL bowl, ST743E tank	900	WS	2	3	E	*			HET	F	
11-060	Toto	EcoDrake RF	CST743E: C743E bowl, ST743E tank	500	WS	2	3	R				HET	F	
13-144	Toto	EcoGuinevere EL ADA	CST974CEF(G) (one-piece) OR MS974***CEF(G) OR MW974***CEF(G)	550	WS	1	3	E	*			HET	F	
11-121	Toto	EcoNexus EL ADA	CST794EF: CT794EF bowl, ST794E tank	500	WS	2	3	E	*			HET	F	
12-081	Toto	EcoPromenade EL ADA	CST424EF: C424EF bowl, ST423E tank	400	WS	2	3	E	*			HET	F	
13-146	Toto	EcoPromenade RF	CST423EF: C423EF bowl, ST423E tank	550	WS	2	3	R				HET	F	
11-120	Toto	EcoSupreme EL	CST864E OR MS864114E OR MW864***E	500	WS	1	3	E				HET	F	
WS	Toto	EcoSupreme Rf	CST863E OR MS863113E OR MW863***E	350	WS	1	3	E				HET	F	
11-118	Toto	EcoUltramax EL	CST854E OR MS854114E OR MW854***E	500	WS	1	3	E				HET	F	
11-119	Toto	EcoUltramax EL ADA	CST854EL OR MS854114EL OR MW854***EL	500	WS	1	3	E	*			HET	F	
11-117	Toto	EcoUltramax RF	CST853E OR MS853113E OR MW853***E	550	WS	1	3	R				HET	F	
11-124	Toto	EcoWhitney EL ADA	CST754EFN: C754EF bowl, ST754E tank	700	WS	2	3	E	*			HET	F	
12-083	Toto	Gwyneth EL ADA	CST454CEF: C454CE bowl, ST454E tank	800	WS	2	3	E	*			HET	F	
11-123	Toto	Gwyneth EL ADA	CST604CEF OR MS604114CEF (one-piece) OR MW604***CEF	500	WS	1	3	E	*			HET	F	
13-107	Tynan Plumbing	Avoca EL ADA	4344: 0344 bowl, 1344 tank (Fluidmaster fill valve)	900	WS	2	3	E	*			HET	F	
13-101	Tynan Plumbing	Avoca EL ADA	4344: 0344 bowl, 1344 tank (R&T fill valve)	900	WS	2	3	E	*			HET	F	
11-066	Tynan Plumbing	Cascade EL	4353: 0353.01 bowl, 1312.01 tank	400	WS	2	2	E		*	HET		F	
11-065	Tynan Plumbing	Cascade EL ADA	4354: 0354.01 bowl, 1312.01 tank	450	WS	2	2	E	*	*	HET		F	
11-067	Tynan Plumbing	Cascade RF	4352: 0352.01 bowl, 1312.01 tank	500	WS	2	2	R		*	HET		F	
13-108	Tynan Plumbing	Foyle EL ADA	4345: 0345 bowl, 1345 tank (Fluidmaster fill valve)	800	WS	2	3	E	*			HET	F	
13-103	Tynan Plumbing	Foyle EL ADA	4345: 0345 bowl, 1345 tank (R&T fill valve)	900	WS	2	3	E	*			HET	F	
11-113	Tynan Plumbing	MacLair EL	4343: 0343 bowl, 1342HET tank	850	WS	2	3	E				HET	F	
13-110	Tynan Plumbing	MacLair EL ADA	4347: 0347 bowl, 1342 tank (Fluidmaster fill valve)	950	WS	2	3	E	*			HET	F	

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											Dual-Flush	Single-Flush Max 1.28G (4.8L)		
13-097	Tynan Plumbing	MacLair EL ADA	4347: 0347 bowl, 1342 tank (R&T fill valve)	950	WS	2	3	E	*			HET		F
11-111	Tynan Plumbing	MacLair RF	4342: 0342 bowl, 1342HET tank	900	WS	2	3	R				HET		F
13-112	Tynan Plumbing	Nore EL ADA	4346: 0346 bowl, 1346 tank	900	WS	2	3	E	*			HET		F
13-053	Villeroy & Boch	Aveo Dual-Flush EL	6614.10 bowl, 7724 U1 tank	700	WS	2	2.5	E		*		HET		F
6-607	Vitra	Evergreen (formerly Corina) Dual Flush Comfort EL ADA	5074 bowl, 5055 tank	800	WS	2	2	E	*	*		HET		F
10-108	Vitra	Evergreen (formerly Corina) Dual Flush RF	5076 bowl, 5055 tank	500	WS	2	-	R		*		HET		F
9-048	Vitra	EverGreen EL ADA	5195 bowl, 5402 tank	600	WS	2	2	E	*			HET		F
9-047	Vitra	EverGreen RF ADA	5196 bowl, 5402 tank	800	WS	2	2	R	*			HET		F
	Vortens-Lamosa	Dali EL	5101 bowl, 5201 tank	350	WS	2		E		*		HET		F
	Vortens-Lamosa	Delfos	3130	350	WS	1				*		HET		F
13-031	Vortens-Lamosa	Hurricane EL	3137 bowl, 3473 tank	800	WS	2	3	E				HET		F
13-036	Vortens-Lamosa	Hurricane RF	3213 bowl, 3473 tank	600	WS	2	3	R				HET		F
12-128	Vortens-Lamosa	Hurricane RF ADA	3140 bowl, 3473 tank	1,000	WS	2	3	E	*			HET		F
13-034	Vortens-Lamosa	Loretto EL	3137 bowl, 3475 tank	800	WS	2	3	E				HET		F
13-033	Vortens-Lamosa	Loretto EL ADA	3140 bowl, 3475 tank	1,000	WS	2	3	E	*			HET		F
13-029	Vortens-Lamosa	Loretto RF	3213 bowl, 3475 tank	800	WS	2	3	R				HET		F
5-534	Vortens-Lamosa	Pegasus Tulip EL (Home Depot brand)	3107 bowl, 3427 tank (HD SKU 477-546)	400		2	-	E		*		HET		F
10-050	Vortens-Lamosa	Rhodas EL ADA (HET)	3123 bowl, 3436 tank	1,000	WS	2	-	E	*	*		HET		F
WS	Vortens-Lamosa	Vienna ELX	3113 bowl, 3420 tank	350	WS	2		E				HET		F
13-035	Vortens-Lamosa	Vienna ELX	3113 bowl, 3436 tank	600	WS	2	2	E		*		HET		F
11-063	Vortens-Lamosa	Vienna RF	3208 bowl, 3436V tank	600	WS	2	2	R		*		HET		F
	Vortens-Lamosa	Vienna RF Dual Flush	3208 bowl, 3420 tank	375	WS	2		R		*		HET		F
WS	Vortens-Lamosa	Vienna Victory RF	3209 bowl, 3420 tank	350	WS	2		R		*		HET		F
10-052	Vortens-Lamosa	Vienna Victory RF	3209 bowl, 3436SPS tank	600	WS	2	2	R		*		HET		F
12-040	Western Pottery	Environmental Dual Flush EL	B812 DF bowl, T8-ULF-DF tank	550		2	2	E		*		HET		F
WS-13	Xiamen Lota International Co.	None	CT-113: CF-113 bowl, TA-113 tank	350	WS	2		E				HET		F
WS-13	Xiamen Lota International Co.	None	CT-123: CF-123 bowl, TA-123 tank	350	WS	2		E				HET		F

Key: RF – Round-front toilet bowl

EL – Elongated-front toilet bowl

S - Special bowl design

ADA-Meets bowl-height requirements of Americans with Disabilities Act; does NOT imply that fixture meets any other ADA requirements.

WS - Compliance established by meeting the requirements of the U.S. EPA WaterSense specification for high-efficiency toilets; certified to WaterSense

Appendix H

DMM Tracking Spreadsheet

Water Conservation DMM Tracking Spreadsheet

Customer Information		Home Water Audit	Device Distribution	Ultra Low Flush Toilet	High Efficient Washing Machine Rebate	EWM Survey (landscapes >2 acres)
Name: _____	Implemented? (check if yes)					
Contact # : _____	DMM Implementation Date					
Account # : _____						
Address: _____	Historic Annual Usage _____				Year: _____	% Conserved
Years at Address: _____	Latest Annual Usage _____				Year: _____	
Last Address in Ceres: _____	Notes: _____					
Meter # : _____						
Name: _____	Implemented? (check if yes)					
Contact # : _____	DMM Implementation Date					
Account # : _____						
Address: _____	Historic Annual Usage _____				Year: _____	% Conserved
Years at Address: _____	Latest Annual Usage _____				Year: _____	
Last Address in Ceres: _____	Notes: _____					
Meter # : _____						
Name: _____	Implemented? (check if yes)					
Contact # : _____	DMM Implementation Date					
Account # : _____						
Address: _____	Historic Annual Usage _____				Year: _____	% Conserved
Years at Address: _____	Latest Annual Usage _____				Year: _____	
Last Address in Ceres: _____	Notes: _____					
Meter # : _____						