

Water Conservation Measure Screening

Potential Water Conservation Measures for City of Santa Cruz

Existing or Potential New Measures								
	Equipment or Program Type	Specific Program	Focus of Program	CUWCC MOU Commitment or Required by State Law or Local Codes	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Current City Program (Yes / No)	Status and Notes
1	Water Loss	Conduct Annual System Water Use Audit	System	CUWCC Foundational BMP 1.2	N/A to Customers	Maintain a thorough annual accounting of water production, sales by customer class and quantity of water produced but not sold (non-revenue water). In conjunction with system accounting, include audits that identify and quantify known legitimate uses of non-revenue water in order to determine remaining unaccounted for water losses. Goal would be to lower the Infrastructure Leakage Index (ILI) and non-revenue water every year by a pre-determined amount based on cost-effectiveness. These programs typically pay for themselves based on savings in operational costs (and saved rate revenue can be directed more to system repairs/replacement and other costs).	Yes	The City has been conducting annual System Water Use Audits since 1997. Need more effort on large and small meter testing.
2A	Water Loss	Apparent Loss Reduction - Billing System	System	CUWCC Foundational BMP 1.2	N/A to Customers	Continuously analyze billing data for system errors and under-registering meters. Identify and quickly notify customers of apparent leaks.	Yes	The City has a procedure in place for many years to monitor billing data for these errors. Customers are contacted when data indicates apparent leaks.
2B	Water Loss	Apparent Loss Reduction - Meter Testing	System	CUWCC Foundational BMP 1.2	N/A to Customers	Address meter testing and repair/replacement to insure more accurate meter reads and revenue collection. Actions could include meter calibration and accelerated meter replacement.	No	City has policy in place, could be more aggressive with testing and replacement. City replaced older 3-inch and 4-inch meters in late 2010.

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3A Water Loss	Real Water Loss Reduction - Leak Repair	System	CUWCC Foundational BMP 1.2	N/A to Customers	Measure covers efforts to find and repair leaks in the distribution system to reduce real water loss. More aggressive actions could include installation of data loggers and proactive leak detection. Leak repairs would be handled by existing crews at no extra cost. Specific goals and methods to be developed by Utility. May include accelerated main and service line replacement.	Yes	Due to past estimates of cost effectiveness, the City does passive leak repairs when leaks are discovered. Enhanced real loss reduction may include active leak detection.
3B Water Loss	Real Water Loss Reduction - Reduce Background Losses with Main Replacement	System	CUWCC Foundational BMP 1.2	N/A to Customers	Enhanced real loss reduction may include more ambitious main replacement and active leak detection.	Main and service line replacement: Yes; Active leak detection, No	City is currently replacing 1% of mains and services per year.
3C Water Loss	Real Water Loss Reduction	System			Capture water from water main flushing and hydrant flow testing for reuse	No	
4 Water Loss - Pressure Regulation	Distribution System Pressure Regulation	System	CUWCC Foundational BMP 1.2	No \$\$ obligation to Customers, but their service would be impacted	Install additional pressure regulators in portions of distribution system to maintain pressure within limits so accounts do not receive excessive pressure. There is a high correlation between high water usage and high pressure, due to higher leakage, atomization of sprinklers and ease of using excessive water.	No	The City is not currently modifying water pressure with regulation equipment. There are gravity challenges within the system.

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5A	Advanced Meter Infrastructure (AMI)	Install AMI	ALL	CUWCC Foundational BMP 1.3	N/A	Retrofit system with AMI meters and associated network capable of providing continuous consumption data to Utility offices. Improved identification of system and customer leaks is major conservation benefit. Some of costs of these systems are offset by operational efficiencies and reduced staffing, as regular meter reading and those for opening and closing accounts are accomplished without need for physical or drive-by meter reading. Also enables enhanced billing options and ability to monitor unauthorized usage (such as use/tampering with closed accounts or irrigation if time of day or days per week are regulated). Customer service is improved as staff can quickly access continuous usage records to address customer inquiries. Optional features include online customer access to their usage, which has been shown to improve accountability and reduce water use. A ten year change-out would be a reasonable objective.	No	The Water Department has hired a consultant to evaluate this option in 2013.
5B	Advanced Meter Infrastructure (AMI)	Install AMI New Development	ALL	CUWCC Foundational BMP 1.3	Requirement	Require that new customers install such AMI meters as described above and possibly purchase means of viewing daily consumption inside their home/business either through the Internet (if available) or separate device. The AMI system would, on demand, indicate to the customer and Utility where and how their water is used, facilitating water use reduction and prompt leak identification. This would require Utility to install an AMI system.	No	Could be considered as part of consultant study.

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5C	Advanced Meter Infrastructure (AMI)	Targeted AMI to Irrigation or Large User Accounts	ALL	CUWCC Foundational BMP 1.3	Requirement	Require that larger or irrigation customers install such AMI meters as described above and possibly purchase means of viewing daily consumption by landscape/property managers, or business either through the Internet (if available) or separate device. The AMI system would, on demand, indicate to the customer and Utility where and how their water is used, facilitating water use reduction and prompt leak identification. This would require Utility to install an AMI system.	No	To be considered in April 2013.
6A	Water Rates	Rate Structure Evaluation	ALL	CUWCC Foundational BMP 1.4	No specific action required of customers, but would impact their charges	Rates must meet Utility costs, but some features can improve customer accountability by better imposing cost impacts for high water usage. Conservation oriented rate structures in California generally collect less than 30% of water revenue through base charges. Tiered rate structures are the most popular form of conservation rates, and can be very effective provided there are sufficient tiers (3 to 4 is recommended), and price differences between tiers is sufficient and tiers are placed at usage levels that appropriately reflect low, medium and high usage levels for the Utility. This measure would also require a rate study.	Yes	The City has had an inclining rate structure in place since 1995. In 2004, a 5-step tiered rate structure was implemented for SF and two-unit customers. A new rate study is planned for 2013.
6B	Water Rates	Modification to or Implementation of Tiered Rate Conservation Pricing	Multi-Family CII Outdoor is Primary Focus	CUWCC Foundational BMP 1.4	No specific action required of customers, but would impact their charges	Consider revising City's tiered rates or seasonal pricing for other customer classes. Some utilities utilize percentages of average winter usage as the basis for individualized summer tiers. Multi-Family Residential tiers could be based on number of housing units served by meters. This measure would require a rate study and advanced billing system capabilities.	No	A new rate study is planned for 2013.

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6C	Water Rates	Establish Separate Pricing Structure for Irrigation Accounts	All large irrigation	CUWCC Foundational BMP 1.4	No specific action required of customers, but would impact their charges	Implementing conservation-oriented pricing for dedicated irrigation customers would encourage more efficient irrigation practices. This is best combined with Measures 7B and 8. Would require a rate study.	Partially	The City currently has in place a system that assigned specific water budget for dedicated irrigation accounts, tracks water consumption, and provides monthly notification on how well irrigation customers are meeting their budget. Utility billing system constraints currently create a barrier to a separate pricing structure for these accounts. Could be included in a new rate study, planned for 2013.
7A	Water Rates	Water Budget Based Billing	ALL	CUWCC Foundational BMP 1.4	No specific action required of customers, but would impact their charges	Develop individualized monthly water budgets for all or a selected category of customers. Water budgets are linked to a rate schedule where rates per unit of water increase when a customer goes above their budget, or decreases if they are below their budget. Budgets typically are based on such factors as the size of the irrigated area and often vary seasonally to reflect weather during the billing period. These rates have been shown to be effective in reducing landscape irrigation demand (AWWARF Reports). Could combine this measure with Measures 6A - 6C. This measure would require rate study and capable billing software.	No	Could be included in a new rate study, planned for 2013.

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7B Water Rates	Water Budget Based Billing	Selected Categories Outdoor Use is primary focus	CUWCC Foundational BMP 1.4	No specific action required of customers, but would impact their charges	Develop individualized monthly water budgets for all or a selected category of customers. Water budgets are linked to a rate schedule where rates per unit of water increase when a customer goes above their budget, or decreases if they are below their budget. Budgets typically are based on such factors as the size of the irrigated area and often vary seasonally to reflect weather during the billing period. These rates have been shown to be effective in reducing landscape irrigation demand (AWWARF Reports). Could combine this measure with Measures 6A-6C. This measure would require rate study and capable billing software.	Partially; see Line 6C	Could be considered in new rate study, planned for 2013. Utility billing system constraints currently create a barrier to a budget based pricing structure for these accounts.
8A	Submetering Mobile Home Park Submetering	MF Indoor	CUWCC Foundational BMP 1.3	Incentive or Ordinance	Require or provide a partial cost rebate to meter all remaining mobile home parks that are currently master metered but not separately metered, pattern after Santa Clara Valley Water District program.	No	Currently, sub-metering is self initiated on the part of the customers. However, research indicates that most MHPs already have submetering.
8B	Submetering MF Submeter Incentive	Existing MF Indoor	CUWCC Foundational BMP 1.3	Incentive	Provide a rebate (per unit) to assist MF building owners installing submeters on each existing individual apartment or condominium unit.	No	
8C	Submetering MF Submeter Incentive	New MF Indoor	CUWCC Foundational BMP 1.3	Incentive	Provide a rebate (per unit) to assist MF building owners installing submeters on each new individual apartment unit.	No	
8D	Submetering Require Multifamily Submetering for New Developments	New MF Indoor	CUWCC Foundational BMP 1.3	Ordinance	Require the submetering of individual units in new multifamily, condos, townhouses, and mobile-home parks.	Partially	Currently, individual metering of each new dwelling unit is strongly encouraged by the City, except where it is infeasible due to site constraints.

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9A	Indoor Plumbing Fixtures	Single Family Water Surveys	SF Indoor	CUWCC Residential BMP	Voluntary	Indoor water surveys for existing single family residential customers. Target those with high water use and provide a customized report to owner. May include give-away of efficient shower heads, aerators, toilet devices. Usually combined with outdoor surveys (See Irrigation Measures).	Yes	Minimal development of this type in the City. Most sites are already developed in the service area.
9B	Indoor Plumbing Fixtures	Multi-Family Water Surveys	MF Indoor	CUWCC Residential BMP	Voluntary	Indoor water surveys for existing multifamily residential customers (2 units or more). Target those with high water use and provided a customized report to owner. Usually combined with outdoor surveys (see Irrigation Measures) and sometimes with single family surveys.	Yes	The City has offered indoor/outdoor water surveys for multi-family customers since 2006.
9C	Indoor Plumbing Fixtures	Real Customer Water Loss Reduction - Leak Repair and Plumbing Emergency Assistance	SFR, MFR	CUWCC Residential BMP	Voluntary / Mandatory	Customer leaks can go uncorrected at properties where owners are least able to pay costs of repair. These programs may require that customer leaks be repaired, but either subsidize part of the repair and/or pay the cost with revolving funds that are paid back with water bills over time. May also include an option to replace inefficient plumbing fixtures at low-income residences.	Yes	The City currently provides leak credit and bill adjustments in certain cases, but does not pay for leak repair costs directly.
9D	Indoor Plumbing Fixtures	Pressure Reduction	ALL		Incentive	Provide incentive to install pressure regulating valve on existing properties with pressure exceeding 80 psi.	No	Covered in new development by plumbing codes
10A	Indoor Plumbing Fixtures	High Efficiency Faucet Aerator / Showerhead Giveaway	SF MF	CUWCC Residential BMP	Device Distribution	Utility would buy showerheads and faucet aerators in bulk and give them away at Utility office or community events.	Yes	The City implemented a mass distribution program targeting all single family residential customers and several multi-family customers in 2000. Currently, free devices are available to all customers at the Utility office and upon request.

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10B	Indoor Plumbing Fixtures	High Efficiency Faucet Aerator / Showerhead Giveaway	CII	CUWCC CII BMP	Device Distribution	Utility would buy showerheads and faucet aerators in bulk and give them away at Utility office or community events.	Yes	Free devices are currently available to all customers including CII customers at the Utility office and upon request.
11A	Indoor Plumbing Fixtures	High Efficiency Toilet (HET) Rebates	SF MF	CUWCC Residential BMP	Incentive	Provide a rebate or voucher for the installation of a high efficiency toilet (HET). (Toilets flushing 1.28 gpf or less and include dual flush technology. Rebate amounts would reflect the incremental purchase cost and have been at least \$150.	Yes	The City began operating a Residential Toilet Rebate Program in 1995 for the replacement of high volume toilets with Ultra-Low Flow toilets. In 2007, the City expanded the program by offering rebates installation of HETs. The City currently gives rebates only for the installation of HETs or Ultra-High Efficiency toilets (UHETs).
11B	Indoor Plumbing Fixtures	High Efficiency Toilet (HET) Rebates	CII	CUWCC CII BMP	Incentive	Provide a rebate or voucher for the installation of a high efficiency toilet (HET). (Toilets flushing 1.28 gpf or less and include dual flush technology. Rebate amounts would reflect the incremental purchase cost and have been at least \$200.	Yes	The City has operated a Commercial Rebate Program since 2000. In 2007, the City began participating in the statewide CUWCC Smart Rebate program which offers CII customers rebates of up to \$200 for HETs.
12A	Indoor Plumbing Fixtures	High Efficiency Urinal Rebates	CII	CUWCC CII BMPs	Incentive	Provide a rebate or voucher for the installation of a high efficiency urinals. WaterSense standard is .5 gpf or less, though models flushing as low as 0.125 gpf (1 pint) are available and function well, so could be specified. Rebate amounts would reflect the incremental purchase cost and have been about \$300.	Yes	The City has operated a Commercial Rebate Program since 2000. In 2007, the City began participating in the statewide CUWCC Smart Rebate program which offers CII customers rebates of up to \$300 for WaterSense Urinals.

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12B	Indoor Plumbing Fixtures	High Efficiency Toilet and / or Urinal Bulk Purchase Program	ALL	CUWCC CII BMPs	Incentive	Utility would buy HETs or urinals in bulk and give them away or sell them at a discounted price for customers who want to replace a 3.5 gallon/flush toilet or >1 gal/flush urinal.	No	Commercial toilets and urinal are fitted to specifications for each fixture, according to building design. There specifications make bulk purchasing challenging.
13	Indoor Plumbing Fixtures	Plumber Initiated High Efficiency Toilet and / or Urinal Retrofit Program	CII	CUWCC CII BMPs	Incentive	Utility would subsidize installation cost of a new HET/urinals purchased by the utility. Licensed plumbers, pre-qualified by the Utility would solicit customers directly. Customers would get a new HET installed at a discounted price. Pattern after Sonoma County program.	No	The City currently does not operate a program, but a direct install program at CII sites may be appropriate.
14A	Indoor Plumbing Fixtures	Install High Efficiency Toilets, Showerheads, and Faucet Aerators in Residential Buildings	SF MF	CUWCC Residential BMPs	Incentive	Utility would subsidize installation cost of a new HET purchased by the utility. Licensed plumbers, pre-qualified by the Utility would solicit customers directly. Customers would get a new HET installed at a discounted price.	No	The City does not currently operate this program. However, a direct install program at Residential sites may be appropriate with ultra-high efficiency toilets (0.8 gpf), showerheads and faucet aerators.
14B	Indoor Plumbing Fixtures	Install High Efficiency Fixtures in Government Buildings	CII Indoor	CUWCC CII BMPs	Incentive	Provide rebates or grants to install high efficiency faucets, toilets, urinals and showerheads in local and state government facilities.	Yes	The City has operated a Commercial Rebate Program since 1995. Local and state government customers are eligible to participate in the program. In 2007, the City began participating in the statewide CUWCC Smart Rebate program which offers all CII customers rebates of up to \$200 for HETs. Showerheads and faucet aerators are available free to government accounts on request.

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14C	Indoor Plumbing Fixtures	Install High Efficiency Fixtures in Low Income Housing	SFR/MFR			Direct install type toilet replacement program in in low income housing operated a government agency/housing authority .	No	
15A	Indoor Plumbing Fixtures	Install High Efficiency Toilets, Urinals, and Showerheads in Commercial Buildings	CII Indoor	CUWCC CII BMPs	Incentive	Consider direct install program-type for installation of high efficiency fixtures in all or selected commercial or institutional buildings. Replacements would include high efficiency toilets, showerhead, and waterless or high efficiency urinals.	No	The City does not currently operate this program. City could target commercial business facilities for an ultra-high efficient program (like Smart City Program).
15B	Indoor Plumbing Fixtures	Install sensor-activated faucets	CII Indoor	CUWCC CII BMPs	Incentive	Consider direct install program, rebates or grants for installation of high efficiency sensor faucet fixtures in all or selected high-use commercial or institutional buildings.	No	The City does not currently operate this program.
16	Indoor Plumbing Fixtures	Toilet Retrofit At Time of Sale	ALL	CUWCC Residential or CII BMPs	Ordinance	Work with the real estate industry to require a certificate of compliance be submitted to the Utility that verifies that a plumber has inspected the property and efficient fixtures were either already there or were installed at time of sale.	Yes	In 2003, the City adopted the Plumbing Fixture Retrofit ordinance which mandates retrofit of plumbing fixtures on resale of real estate within the service area.
17	Indoor Plumbing Fixtures	Require <0.25 gal/flush urinals in new development	CII (New Development)	CUWCC Residential or CII BMPs	Ordinance	Require that new building be fitted with 0.25 gpf (or one pint) urinals rather than the current standard of 0.5 gal/flush models.	No	Minimal development of this type in the service area.
18	Indoor Plumbing Fixtures	Require Fixture Replacement by a Deadline	ALL	CUWCC Residential or CII BMPs	Ordinance	Utility would pass an ordinance that requires certain targeted sectors of businesses to bring fixtures up to efficient standard by a fixed date at their own expense.	No	A Baseline Study analyzing saturation of water efficient fixtures in all customer classes will be completed in Spring 2013. The results of the Baseline Study will be important to evaluating this measure.
19	Indoor Plumbing Fixtures	Garbage Disposal	SF Indoor	CUWCC Residential BMP	Voluntary or Incentive	Encourage 1% of single family homeowners per year to remove garbage disposals. Could provide a rebate.	No	The City does not currently operate this program.

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20A	Hot Water on Demand	Require Hot Water on Demand / Structured Plumbing in New Developments	SF Indoor	CUWCC Residential BMP	Ordinance	Work with developers to equip new homes or buildings with efficient hot water on demand systems such as structured plumbing systems. These systems use a pump placed under the sink to recycle water sitting in the hot water pipes to the water heater or to move the water heater into the center of the house and/or reduce hot water waiting times by having a an on-demand pump on a recirculation line.	No	The City does not currently operate this program. Due to minimal new development, savings estimated may be low.
20B	Hot Water on Demand	Provide a Rebate for Hot Water on Demand Pump Systems	SF Indoor	CUWCC Residential BMP	Incentive	Provide a rebate to equip homes with efficient hot water on demand systems. These systems use a pump placed under the sink to recycle water sitting in the hot water pipes to reduce hot water waiting times by having a an on-demand pump on a recirculation line. Can be installed on kitchen sink or master bath, wherever hot water waiting times are more than 1/2 minute. Requires an electrical outlet under the sink, which is not common on older home bathrooms but is on kitchen sinks.	No	The City does not currently operate this program. Savings estimated may be low.
21A	Clothes Washers	Residential Washer Rebate	SF, MF Indoor	CUWCC Residential BMP	Incentive	Provide a rebate for efficient washing machines to single family homes and apartment complexes that have common laundry rooms. It is assumed that the rebates would remain consistent with relevant state and federal regulations (Department of Energy, Energy Star) and only offer the best available technology. This program would be similar the City's current program. Current rebate \$100. Rebate could be modified to increase incentive for the most efficient washers.	Yes	The City has operated Clothes Washer Rebate program since 2000.

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21B	Clothes Washers	High Efficiency Washer Rebate	CII Indoor	CUWCC Commercial BMP	Incentive	Provide a \$400 rebate for the installation of a high efficiency commercial washer (HEW). Rebate amounts would reflect the incremental purchase cost. Program will be shorter lived as it is intended to be a market transformation measure and eventually would be stopped as efficient units reach saturation.	Yes	The City has operated Clothes Washer Rebate program since 2000, and participated in a regional commercial clothes washing rebate program called LightWash in 2003. In 2007, the City began participating in the statewide CUWCC Smart Rebate program which offers all CII customers rebates of up to \$400 for HECWs.
22	Clothes Washers	Require High Efficiency Clothes Washers in New Development	New SF Indoor	CUWCC Residential BMP	Ordinance	Require developers to install an efficient clothes washer (meeting certain water efficiency standards, such as gallons/load), Building Department would be requested to ensure that an efficient washer was installed before new home or building occupancy. Verify that the Utility can enforce conditions of water service that may include efficiency standards for washing machines. Pattern after the North Marin Water District Program.	Case by Case for Large Multifamily Developments	May not be feasible for new development. Not included in current program. Would require to be inspected by the City/County. Clothes washers are mobile personal property appliances and may move from one site to another.
23A	Dishwashers	Efficient Dishwasher Rebates	SF Indoor		Incentive	Provide a rebate to encourage homeowner to purchase an efficient dishwasher (meeting certain water efficiency standards, such as a limit on the gallons/load) when replacing an existing dishwasher.	No	The City does not currently operate this program. There are pending new regulations for dishwashers.
23B	Dishwashers	Require Efficient Dishwashers in New Development	SF Indoor		Ordinance	Require developers to install an efficient dishwasher (meeting certain water efficiency standards, such as gallons/load).	No	The City does not currently operate this program. May be feasible for new development.

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24	Irrigation	Outdoor Water Surveys	SF MF	CUWCC Residential BMP	Incentive	Outdoor water surveys offered for existing customers. Normally those with high water use are targeted and provided a customized report on how to save water. Can be combined with indoor surveys or focused on certain customer classes. All single family and multi-family residential would be eligible for free landscape water surveys upon request.	Yes	The City has provided outdoor water audits as part of its survey program since in 2006.
25	Irrigation	Outdoor Water Audit	Large Irrigation Customers - Outdoor Only	CUWCC Landscape BMP	Incentive	Outdoor water audits offered for existing large landscape customers. Normally those with high water use are targeted and provided a customized report on how to save water. All large multi-family residential, CII, and public irrigators of large landscapes would be eligible for free landscape water audits upon request. Tied to the Water Budget Program.	Yes	Continue with WaterFluence Program for large properties.
26	Irrigation	Financial Incentives for Irrigation and Landscape Upgrades	ALL	CUWCC Landscape BMP	Incentive	For SF, MF, CII, and IRR customers with landscape, provide a Smart Landscape Rebate Program with rebates for substantive landscape retrofits or installation of water efficient upgrades; Rebates contribute towards the purchase and installation of water-wise plants, compost, mulch and selected types of irrigation equipment upgrades. Rebate for residential accounts and up to 50% more for commercial customers.	No	
27A	Irrigation	Landscape Conversion or Turf Removal	SF	CUWCC Landscape BMP	Incentive	Provide a per square foot incentive for to remove turf and replace with low water use plants or permeable hardscape. Pattern after the City's current program. Rebate is currently \$0.50 per square foot removed, and capped at an upper limit of \$500 for single family residence.	Yes	Recently increased the maximum rebate amount allowed.

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27B	Irrigation	Landscape Conversion or Turf Removal	MF CII	CUWCC Landscape BMP	Incentive	Provide a per square foot incentive for to remove turf and replace with low water use plants or hardscape. Pattern after the City's current program. Rebate is currently \$0.50 per square foot removed, and capped at an upper limit of \$2,500 for multi-family or commercial residence.	Yes	Recently increased the maximum rebate amount allowed.
27C	Irrigation	Artificial Turf Sports Fields	IRR Outdoor	CUWCC Landscape BMP	Incentive	Provide a rebate (up to \$10,000) as a cost share for customer wishing to install artificial grass on sports fields, parks, or golf courses.	No	Not currently supported.
27D	Irrigation	Shade Tree Program	ALL			Provide incentives and information to promote shade tree planting as a water conservation measure		
28	Irrigation	Weather-Based Irrigation Controller Rebates	ALL	CUWCC Landscape BMP	Incentive	Provide a per station rebate (typically \$25 per station) up to a 50% cost-share for the purchase of a waether based irrigation controller. These controllers have on-site weather sensors or rely on a signal from a central weather station that modifies irrigation times at least weekly. Requires local irrigation contractors who are competent with these products, so may require sponsoring a training program in association with this measure.	No	The City does not currently operate this program.
29	Irrigation	Require Weather Adjusting Smart Irrigation Controllers and / or Rain Sensors in New Development	ALL	Cal-Green for Non-residential Properties over 5,000 sf	Ordinance	Require developers for all properties of greater than four residential units and all commercial development to install the weather based irrigation controllers. Some utilities offer rebates for rain sensors. For example see Cal Green building code that requires this on all new buildings with an irrigation system. Like line 28, may require landscaper training.	Yes	Currently required in City Landscape Ordinance.
30A	Irrigation	Rebate or Free Rain Sensors	Outdoor ALL or Selected	N/A	Incentive	Provide a rebate or free rain sensor shut-off device for existing irrigation controllers. These cancel scheduled sprinkling when sufficient rain has been received. This measure is most effective in areas with intermittent rain in peak watering seasons.	No	

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30B	Irrigation	Require Rain Sensors	Outdoor ALL or Selected	Cal-Green for Non-residential Properties over 5,000 sf	Ordinance	Require installation of rain sensor shut-off devices when installing new irrigation systems.	Partially	
31	Irrigation	Rotating Sprinkler Nozzle Rebates	ALL Outdoor	N/A	Incentive	Provide rebates to replace standard spray sprinkler nozzles with rotating nozzles that have lower application rates. Nozzles cost about \$6 and rebates have been on the order of \$4 with a minimum purchase of about 20 nozzles.	No	The City currently does not operate this program, but is interested in offering in the future.
32	Irrigation	Water Conserving Landscape and Irrigation Codes	ALL	Local Ordinance	Ordinance	Develop and enforce Water Efficient Landscape Design Standards. Standards specify that development projects subject to design review be landscaped according to climate appropriate principals, with appropriate turf ratios, plant selection, efficient irrigation systems and smart irrigation controllers. There are many examples that have demonstrated significant water savings. The ordinance could require certification of landscape professionals.	Yes	The City's Water Efficient Landscape Ordinance has been in effect since 1993.
33	Irrigation	Require Irrigation Designers / Installers be Certified (possibly by Irrigation Association or CA Landscape Contractor's Association)	CII Outdoor	N/A	Ordinance	Require design / installation of irrigation systems by trained/certified contractors. Certification might be through the CLCA, Irrigation Association (IA) and/or specialized training provided by utility. Model after Cary North Carolina's program.	No	Not required.

Existing or Potential New Measures

	Equipment or Program Type	Specific Program	Focus of Program	CUWCC MOU Commitment or Required by State Law or Local Codes	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Current City Program (Yes / No)	Status and Notes
34	Irrigation	Landscape irrigation restricted to designated days and times	ALL Outdoor	N/A	Ordinance	Specify specific irrigation schedules, including which days and times watering is allowed. Would help with load balancing system demands with planning for water areas can water on what days. Consider water waste enforcement approach. For an example see the Southern Nevada Water Authority program. http://www.snwa.com/consv/restrictions_landscape.html	Yes, only during water shortages.	Predominately Water Shortage Measure.
35A	Rainwater Catchment	Provide Rain Barrel Incentive	SFR Outdoor	N/A	Incentive	Provide incentive for installation of rain barrels. This could involve rebates or bulk purchase and giveaways of barrels plus workshops on proper installation and use of captured rain water for landscape irrigation. Pattern after Honolulu Board of Water Supply program.	Yes	City has provided low cost rain barrels since 2011.
35B	Rainwater Catchment	Provide Incentive for Large Rainwater Catchment Systems	MFR CII IRR Outdoor	N/A	Incentive	Provide incentive for installation of large rainwater catchment systems. This could involve rebates, grants and other cost share methods. Might require simultaneous installation of water efficient landscaping to assure that amount of water collected is capable of lasting into the peak irrigation season.	No	
36A	Gray water	Gray water Retrofit SF	SF Outdoor	N/A	Incentive	Provide a rebate to assist a certain percentage of single family homeowners per year to install gray water systems.	No	Allowed under State plumbing code and City Municipal Code. No incentives currently.
36B	Gray water	Require Plumbing for Gray Water In New SF Development	SF Outdoor	N/A	Ordinance	Require builders of single family homes to provide plumbing for and/or install a gray water system in new homes.	No	
36C	Gray water	Rebate for Gray Water Systems In New CII Development	CII Outdoor	N/A	Incentive	Provide a rebate for gray water systems in new CII development, in accordance with existing codes.	No	Limited application in CII sector

Existing or Potential New Measures

	Equipment or Program Type	Specific Program	Focus of Program	CUWCC MOU Commitment or Required by State Law or Local Codes	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Current City Program (Yes / No)	Status and Notes
36D	Gray Water		SFR, MFR		Ordinance or Rebate	Recycle lavatory sink water for toilet flushing, such as Aqus System	No	
37	Other Outdoor	Require or Rebate Swimming Pool Covers	ALL Outdoor	N/A	Incentive	Provide a rebate through pool equipment supply stores for purchase of a swimming pool cover.	No	No current program.
38	Other Outdoor	Prohibit Water Waste and Practices	All Outdoor	CUWCC Foundational BMP	Ordinance	Adopt or modify ordinance that prohibits the waste of water defined as gutter flooding and failure to repair leaks in a timely manner.	Yes	Long term practice. Act on all customer reports and City staff observations for violations.
39	CII Equipment	Top Water Users Program (Top customers from each customer category)	CII Indoor / Outdoor	CUWCC Commercial BMP	Incentive	Top water customers from each category would be offered a professional water survey that would evaluate ways for the business to save water and money. The surveys would be for large accounts (such as, accounts that use more than 5,000 gallons of water per day) such as hotels, restaurants, stores and schools. Emphasis will be on supporting the top 25 users for each customer category.	No	Informal CII audits offered through Green Business Program only. Not targeted at Top User at this time.
40A	CII Equipment	Customized Top Users Incentive Program	CII Indoor / Outdoor	CUWCC Commercial BMP	Incentive	After the free water use survey has been completed at site, the Utility will analyze the recommendations on the findings report that is provided and determine if site qualifies for a financial incentive. Financial incentives will be provided after analyzing the cost benefit ratio of each proposed project. Incentives are tailored to each individual site as each site has varying water savings potentials. Incentives will be granted at the sole discretion of the Utility while funding lasts.	No	

Existing or Potential New Measures

Equipment or Program Type	Specific Program	Focus of Program	CUWCC MOU Commitment or Required by State Law or Local Codes	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Current City Program (Yes / No)	Status and Notes
40B CII Equipment	CII Rebates to Replace Inefficient Equipment	Existing Customers CII	CUWCC Commerical BMP	Incentive	Expand on the City's program to provide rebates for a standard list of water efficient equipment. Included would be x-ray machines, icemakers, air-cooled ice machines, steamers, washers, spray valves, efficient dishwashers, replace once through cooling, and add conductivity controller on cooling towers. Pattern after San Diego County Water Authority or Seattle Water Department programs.	Yes	Water Smart Rebates.
40C CII Equipment	Water Savings Performance Program	CII Indoor	CUWCC Commerical BMP	Incentive	Water Districts such as the East Bay Municipal Utility District and Metropolitan Water District of Southern California provide about \$0.50 per 748 gallons (1 billing unit) saved to sites within the City's service area. Incentive is based on the potential for savings over 5 years. Eligible project costs include labor, hardware and up to 1 year of water management fees.	No	
41 CII Equipment	Require Plan Review for new CII	CII Indoor / Outdoor	CUWCC Commerical BMP	Ordinance	Require plan reviews for water use efficiency for all new business customers.	Partially	CII plan review is focused on outdoor landscape plan review; may be covered by City's Green Building requirements
42 CII Equipment	Promote Restaurant Spray Nozzles	CII Indoor	CUWCC Commerical BMP	Provide for free (would be a bulk purchase)	Provide free 1.3 gpm (or lower) spray nozzles and possibly free installation for the rinse and clean operation in restaurants and other commercial kitchens. Thousands have been replaced in California going door to door, very cost-effective because saves hot water.	No	City participated in a systemwide distribution of 1.6 gpm pre-rinse spray valves in 2005-2006. Not a current program.
43 CII Equipment	School Building Retrofit	CII Indoor / Outdoor	CUWCC Commerical BMP	Incentive	School retrofit program wherein school receives a grant to replace fixtures and upgrade irrigation systems. Expand current City Program, pattern after EBMUD program.	No	Not currently.

Existing or Potential New Measures

	Equipment or Program Type	Specific Program	Focus of Program	CUWCC MOU Commitment or Required by State Law or Local Codes	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Current City Program (Yes / No)	Status and Notes
44A	CII Equipment	Focused Water Audits for Hotels/Motels	CII Indoor / Outdoor	CUWCC Commerical BMP	Incentive	Proved free water audits to hotels and motels. Standardize on the types of services offered to reduce costs. Included would be bathrooms, kitchens, ice machines, laundry, landscaping, and irrigation systems and schedules.	No	No specific program targeted at hoptel/motels.
44B	CII Equipment	Hotels/Motels Retrofit w/Financial Assistance	CII Indoor	CUWCC Commerical BMP	Incentive	Following a free water audit offer motels a rebate for equipment identified that would save water. Or provide a rebate schedule for certain efficient equipment such as air-cooled ice machines that motels could apply for without an audit. Pattern after San Antonio, Texas program.	No	
45A	CII Equipment	Rebates for Submeters on Cooling Towers	CII Indoor	CUWCC Commerical BMP	Incentive	Offer a rebate to buildings that install submeters to measure the make-up and bleed-off water of the facility cooling towers. Provide educational brochures and a phone contact of a knowledgeable person to provide conservation information.	No	Limited application in CII sector
45B	CII Equipment	Rebates for Conductivity Controllers on Cooling Towers	CII Indoor	CUWCC Commerical BMP	Incentive	Offer a rebate (\$900-\$1,200 dependent on type) to buildings that install conductivity controllers to reduce bleed-off water of the facility cooling towers. Provide educational brochures and a phone contact of a knowledgeable person to provide conservation information.	Yes	University has already participated on 3 of its cooling towers
45C	CII Equipment	Cooling Tower Regulations	CII Indoor	CUWCC Commerical BMP	Ordinance	Prohibit discharge of cooling tower blow down unless the TDS of the water is at least a certain level (that would ensure 5-10 cycles of concentration). Pattern regulations after the State of Arizona.	No	Limited application in CII sector
46	CII Equipment	Dry Vacuum Pump	CII Indoor	CUWCC Commerical PBMP	Incentive	Provide a rebate to assist CII with installation of dry vacuum pumps. (Possibly combine into Measure #40B CII Inefficient Equipment)	No	

Existing or Potential New Measures

	Equipment or Program Type	Specific Program	Focus of Program	CUWCC MOU Commitment or Required by State Law or Local Codes	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Current City Program (Yes / No)	Status and Notes
47A	Public Education	Conservation Print Media	ALL	CUWCC Foundational BMP 2	Voluntary	Use a range of printed materials to raise awareness of conservation measures available to customers, including incentive programs offered by Utility. This can include newsletters, bill stuffers, brochures (self-developed or purchased), working with local newspapers, signage at retailers, signs on public buses. Regional participation and development can help assure consistent message. Such programs would continue indefinitely.	Yes	Current Program.
47B	Public Education	Electronic Conservation Options / Web Site / Social Media	ALL	CUWCC Foundational BMP 2	Voluntary	Provide variety of conservation information on city or utility web site, distribution of "videos." Also consider social media options such as cell phone apps, Facebook, interactive kiosk with view screen, etc.	Well developed website	Very limited use of social media
47C	Public Education	Speakers Bureau/ Event Participation	ALL	CUWCC Foundational BMP 2	Voluntary	Conduct presentations at various venues, from radio and TV to service organizations and focused groups. Have booths at relevant community events. Participate in parades, etc.	Some	
47D	Public Education	Media Campaign: such as the "Use Only What You Need" or "Beat the Peak"	ALL	CUWCC Foundational BMP 2	Voluntary	Suggest a general "Use Only What You Need" message like Denver Water's program or a "Beat the Peak" message media campaign like Cary, North Carolina or Tucson Arizona: http://cms3.tucsonaz.gov/water/beatthepeak . Also considered a program with focused action like: "Take Control of your Controller" Campaign for a focused social media based campaign as a media campaign. Consider determining appropriate usage and media campaign message with marketing study/focus groups.	Yes	"Surf City Saves"

Existing or Potential New Measures

	Equipment or Program Type	Specific Program	Focus of Program	CUWCC MOU Commitment or Required by State Law or Local Codes	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Current City Program (Yes / No)	Status and Notes
48A	Public Education	Recognition Programs for Water Savings by Residences & Apartments Program	SFR Outdoor	CUWCC Foundational BMP 2	Voluntary	Sponsor an annual awards program for residences and multi-family properties that significantly reduce water use. They would receive a plaque/recognition. This could include innovative customers that install compost toilets, gray-water, bio-swales and rainwater cisterns in an effort to maximize practical home water use efficiency.	No	Do not have now. Used to have in past droughts.
48B	Public Education	Recognition Programs for Water Savings by Businesses	CII Indoor / Outdoor	CUWCC Foundational BMP 2	Voluntary	Sponsor an annual awards program for businesses that significantly reduce water use. They would receive a plaque/recognition.	No	Green Businesses are recognized at city Council.
49A	Public Education - Irrigation Focus	Outdoor Residential focused Public Awareness Information Program	SF Outdoor Only	CUWCC Foundational BMP 2	Voluntary	Programs could continue efforts including poster contests, speakers to community groups, conservation hotline, website, video loan, radio and television time, demonstration gardens and printed educational material such as bill inserts, etc. Could also consider increasing current Utility efforts possibly adding social media such as cell phone apps, Facebook, interactive kiosk with view screen, etc. Program would continue indefinitely.	Yes	Previous training.
49B	Public Education - Irrigation Focus	Efficient Outdoor Use Education and Training Programs	SF/MF/CII Outdoor	CUWCC Foundational BMP 2	Voluntary	Utility would offer, organize and sponsor a series of educational workshops or other means for educating homeowners, landscapers and contractors in efficient landscaping and irrigation principals. Utilize guest speakers, native demonstration gardens, incentives, such as a nursery plant coupon.	Yes	Previous training.

Existing or Potential New Measures

	Equipment or Program Type	Specific Program	Focus of Program	CUWCC MOU Commitment or Required by State Law or Local Codes	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Current City Program (Yes / No)	Status and Notes
49C	Public Education - Irrigation Focus	Train Landscape Maintenance Workers (Green Gardener Program)	ALL Outdoor	CUWCC Foundational BMP 2	Voluntary	Utility would sponsor bilingual training for managers and workers in landscape maintenance methods that will save irrigation water. Model after Green Gardener Program. Santa Barbara County Water Agency example: http://www.greengardener.org/ With some of these programs, names of businesses that have obtained training are included in Utility publications and/or Web sites (as an incentive to participate).	Yes	Current non-profit program supported by the City.
49D	Public Education - Irrigation Focus	Networking with Landscaping Industry	ALL Outdoor	CUWCC Foundational BMP 2	Voluntary	Meet with and become members in "Green Industry" organizations; partner with projects and outreach material development. Outreach to nurseries for information distribution, provide "water wise plant" signage, etc.	Yes	
49E	Public Education - Irrigation Focus	Landscape Water Calculator	ALL	CUWCC Foundational BMP 2	Voluntary	Develop Landscape Watering Calculator and Watering Index, and actively market these. Consider cell phone app with Watering Index, following up in person with large landscape customers on a frequent basis to encourage use of Watering Index.	No	Not currently.
49F	Public Education - Irrigation Focus	Climate appropriate (Water Efficient) Demonstration Gardens	ALL	CUWCC Foundational BMP 2	Voluntary	Donate or acquire a portion of public or private land to create a demonstration garden displaying living examples of low water-using gardens and landscaping. The Utility would provide signs and brochures to educate those people visiting the garden.	No	
50	Public Education	Promote Green Buildings	ALL	CUWCC Foundational BMP 2	Voluntary	Assign Staff a position to work with local Green Building associations, developers, designers, vendors to promote incorporating water efficiency into building design. Possibly work with other partner utilities or agencies energy / wastewater / storm water. Co-sponsor award program.	Yes	City Building Department Function, not the Water Department Program.

Existing or Potential New Measures

Equipment or Program Type	Specific Program	Focus of Program	CUWCC MOU Commitment or Required by State Law or Local Codes	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Current City Program (Yes / No)	Status and Notes
Public Education	Schools Education Programs	ALL	CUWCC Foundational BMP 2	Voluntary	Work with local school districts to develop classroom programs that they would embrace. Consider poster contests, etc. Some programs would require dedicated utility staff to assist & present.	Yes	City offers classroom presentations, curriculum, and watershed tours to upper elementary students and leads watershed academy in San Lorenzo Valley
Other	Low Impact New and Remodeled Development	ALL	N/A	Ordinance	City would require developers of new/remodeled sites to follow Low Impact Development concepts/standards/Best Management Practices for stormwater and water conservation benefits. Encourage or require use of bio-retention facilities, rain water cisterns, graywater plumbing, etc.	Yes	Required by Regional Water Quality Control Board. Implemented by Public Works Department.
Other	Prohibit Once through Cooling, Non-Recycling Fountains, Water Wasting Fixtures and Practices	CII	CUWCC Foundational BMP 1	Ordinance	Prohibit certain obvious wastes of water in new and existing facilities, such as those listed. Consider requiring retrofits of existing situations, allowing reasonable time for compliance.	Yes	Required by City Ordinance.
Other	Encourage "Life Cycle Analysis" Mentality of Sustainability and Reliability	ALL	N/A		Encourage customers to "save water" instead of "sell water". This is a suggested fundamental business model change that would focus on infrastructure delay or prevention by focusing on lowering production. Key would be to get customers to believe in this idea and message as well as management and directors. This is a paradigm shift to the importance of the entire "life cycle" cost of water including review and inclusion of the energy and Green House Gas components associated with each and every gallon of water use.	No	

Add any additional measures to be considered for analysis in the rows provided below.

Existing or Potential New Measures

	Equipment or Program Type	Specific Program	Focus of Program	CUWCC MOU Commitment or Required by State Law or Local Codes	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Current City Program (Yes / No)	Status and Notes
55								
56								
57								
58								
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60								

Key to Categories

SF – Single Family

MF – Multifamily

CII – Commercial, Industrial and Institutional

All – All of the Above

System – Utility’s Distribution System

BMP or PBMP - Best Management Practice or Potential Best Management Practice