This presentation premiered at WaterSmart Innovations

watersmartinnovations.com



SBX7-7 CII TASK FORCE Overview Chris Brown California Urban Water Conservation Council 10/5/2012



California Urban Water Conservation Council



SBX 7 7: Part of Comprehensive Legislation on water supply in California









2

SB x7-7 Overview

- Enacted November 2009
- Mandated per capita targets for urban suppliers and efficiency measures for agricultural water suppliers.
- DWR must:
 - Develop technical methodologies for conservation targets
 - Develop regulations for industrial process water
 - Develop regulations for agricultural water measurement
 - Update EWPMs for agriculture
 - Form CII Task Force, prepare report on BMPs
 - Report to the legislature in 2016 with status and recommendations on meeting per capita targets

CII Task Force

- DWR in conjunction with the CUWCC must:
 - Create a Commercial, Industrial, and Institutional (CII) Task Force.
 - Scope: Develop alternative best management practices for the CII water sector.

Schedule

- First Meeting: March 2011
- Monthly Meetings (alternating north and south)
- Preliminary draft: December 2011
- Public Workshop: January 12, 2012
- Final draft to the DWR: February, 2012
- Draft has been Split into 3 Volumes
- Final expected by November 2012

CII TF Members(28) -water suppliers, environmental groups, CII water users

CWA	Sierra Club	Dept of Defense
ACWA	DNA Associates	Hotel and Lodging Assn
CUWA	Metal Finishing Assn	BP America
Contra Costa WD	Manufacturers Council	IEA
LADWP	Food Service Technology	Golf Association
EBMUD	Plumbing Manufacturers Ins	Silicon Valley Leadership
Metropolitan WD	League of Food Processors	Rain Bird Corp.
SDCWA	WateReuse	School Employees Assn.
Pacific Institute	Bayer Health Care	
NRDC	Society for Health Care Eng.	

CII TF Purpose

- Develop a report which DWR will present to the legislature containing the following:
 - Metrics for evaluating CII water use.
 - Evaluation of water demands for manufacturing processes, goods, and cooling.
 - Evaluation of the public infrastructure necessary for delivery of recycled water to the CII sector.
 - Evaluation of institutional and economic barriers to increased recycled water use within the CII sector.
 - Identification of technical feasibility and cost of the user BMPs for efficient water use statewide in the CII Sector.

Urban Water Uses (California)



CA CII Water Use by Application



Process Water Use by Industry - California



Subcommittees & Work Groups

- Food and Beverage
- Commercial Landscape
- Petroleum Refining and Chemical Industry
- Water Recycling
- Metrics
- Pharmaceutical
- High Tech

Sub-Committees & Workgroups

Commercial Landscape Sub-Committee

Refining & Petrochemicals Sub-Committee Home page

Water Recycling Sub-Committee Home page

Metrics Sub-Committee

Food and Beverage Manufacturing Workgroup Home page

Public Input

- All documents are open for review on the website
- State Agency Briefing October 9
- Final Public Review and Comment period to be announced
- Task Force meetings are open to public





RO System at Beverage Plant



Challenges

- Complexity of Topic
 - Large number of BMPs
 - Technical in nature
 - Each site is unique
- Metrics
 - Lack of common metrics
 - Lack of centralized water use data
- What do we do with the information?



Potential Areas for Recommendations to legislature

- Overcoming barriers to recycled water use
- Metrics for tracking statewide water use efficiency
- Approaches to statewide collection and assessment of water use information
- Steps to encourage businesses to implement cost effective water use efficiency measures

California Food and Beverage

• California Food and Beverage Processing Economic Impact:

\$85 Billion/year to California Economy
180,000 jobs (15% of CA's manufacturing workforce)

- Sectors Included in Report:
 - Fruit and Vegetable ProcessingWine MakingChicken Processing





California Urban Water Conservation Council

California Food and Beverage Industry

2009



Winemaking

Water Uses in a Winery

- Stemming & Crushing
- Crushing of Grapes
- Grape Press
- Fermentation Tanks/Barrels
- Other Cellar Operations
- Bin and Storage
- Ion Exchange
- Filtration
- Bottling



Figure 2. Simplified Schematic Presentation of the Winemaking Process

Fruit and Vegetable Processing

- In washing of products and raw materials
- In fluming for transport of raw, peeled, or blanched products
- When preparing for processing
- When coring, pitting and dicing use dry transport and conveyor belts
- When concentrating food and juices
 - Micro-filtration; Ultra-filtration; Nano-filtration; Reverse osmosis
- Reuse high quality waste water for washing crates and pallets
- Rinsing and cleaning cans and beverage bottles
- Clean in places processes.
- Conveyor belt operations

Introduction/Background METRICS

SB X7-7: CII Taskforce to report to the Legislature on other "appropriate metrics for evaluating commercial, industrial, and institutional water use" (Water Code section 10608.43(a))

"A *metric* is a unit of measure (or a parameter being measured) that can be used to assess the rate of water use during a given period of time and at a given level of data aggregation (e.g., system-wide, sector-wide, customer level, or end-use level)."



California Urban Water Conservation Council



Metrics Sub-Committee

Task Force Goals for the Sub-Committee:

• Assess how water is used in California, in the CII sectors, from an accounting perspective

• Enable CII water customers and users to evaluate their individual water use such that cost-effective water-use efficiency tools, techniques and processes can be utilized at the micro-level

Potential Metrics

<u>Commercial & Institutional</u>:

- •Gallons per capita
- •Gallons per employee
- •Gallons per square feet of building space

Industrial:

Gallons per economic outputGallons per unit of product

Issues addressed by sub-committee

Lack of Data

Municipal water agenciesSelf Supplied Water

•Metric vs. Benchmark

Variability among sectors and within sectors

Recommendations -Data Needs-

•Comprehensive analysis of state-wide tracking of municipally supplied CII water

•Analysis of non-municipally supplied CII water (self-supplied, reused water, etc.)

•Process for collection of data by State agencies

•Development of data needs and collection framework by DWR after completion of CII TF Report

Recommendations

-Alternative Approaches to Measuring, Monitoring, and Reporting on Water Use-

 Normalizing to accommodate variations across years & products

•Federal Executive Orders (EO)

•Water intensity improvements per square footage and mandates for more recycled water use

•Energy/Water Audits

Benchmarking

Other water use metrics

For More Information

2 Cih	California Urban Water Conservation Council Sea				Member Login Membership BMP Reporting				
UWCC	Home	About	Resource Center	Co	mmittees	Calendar	News	Contact	
Contraction of the local division of the loc	A CONTRACTOR							1 4411	

Home » Resource Center » Commercial Industrial Institional Task Force

Resource Center

CII Task Force Resources

Resource Center

- Best Management Practices
- BMP Reporting Support
- Commercial Industrial Institional Task Force
- Water Conservation Need-To-Know
 - Memorandum of Understanding

Group 1 Survey Materials

Background

The Water Conservation Act of 2009 (SBx7-7) requires DWR, in conjunction with the California Urban Water Conservation Council (CUWCC), to convene a task force to develop alternative best management practices (BMPs) for Commercial, Industrial, and Institutional (CII) water users. The CII Task Force (CII TF) will assess the potential statewide water use efficiency improvements in CII sectors that would result from implementation of the alternative BMPs. The CII TF, in conjunction with DWR, will submit a report to the legislature by April 1, 2012.

Next CII TF Meeting



Commercial, Industrial and Institutional Best Management Practices



WaterSmart Innovations 2012 Conference and Exposition

Water and Wastewater Service Areas





- 1.34 million customers (W)
- 0.65 million customers (WW)
- 85 % residential
- ~ 210 mgd demand
 - 160 mgd
- 35 communities
- Distinct microclimates
- 330 sq.mi service area (W)
- 83 sq.mi service area (WW)
- >4,000 miles of pipe
- 400,000 meters
- 385,000 accounts

Commercial Water Savings



- Customized Rebates
- Water Service
 Regulations
- CII Guidebook

Customer Sector	Accounts
Commercial	16,000
Industrial	2,000
Institutional	4,000
Irrigators	5,000
Total	27,000

WaterSmart Business

Certification

Customized Rebates



- Open to any water savings potential
- Measurable Savings (hr/wk, d/yr, uses, etc.)
- Volume of water, estimated life span,
- Rebate is based on District avoided cost
- Can not have a payback of less than 2-yr.
- Funds up to 50% of construction cost up to program/site cap

Water Service Efficiency Regulations

- Applies to <u>all</u> new applicants, increase in meter size and/or change of business classification
- Establishes minimum water-efficiency standards
 - By customer type (residential, commercial, industrial)
 - By use type (indoor, outdoor)
- Applicants "certified" through application process
 - Check list and self-certification form
 - Review site plans
 - District option to inspect and verify efficiency measures
- Individual metering of all CII dwelling units within structures of 3-stories or less

Water Service Requirements



Class	Indoor	Outdoor
	•HET toilets	
Residential	•Clotheswashers	 Landscape practices
	•No multiple showerheads	
	•Plumbing fixtures	 Irrigation hardware
	 Dishwashing spray valves 	
Non- Residential	 Boilerless food steamers 	 Dedicated irrig. meters
	•Air-cooled ice machines	 Plant materials
	•Recirc. cooling towers	



- <u>Energy Policy Act of 1992/2005</u> (low flow toilets, showerheads, PRSV, etc.)
- <u>CalGreen</u> 2010 California Green Building Standards Code
- <u>California Administrative Code, Title 20</u> appliance stds.
- <u>AB 325/1881</u> Statewide/County Model Landscape
 Ordinances
- <u>SB 221</u> Water Supply Assessments
- <u>Title 24, Administrative Code</u> hot water use protections
- <u>California Energy Commission</u> clotheswasher standards

WaterSmart Guidebook



- Reference document on business water efficiency
- Covers: >15 water use technologies
 >20 business types
 - Description of end uses
 - Water savings hardware/processes
 - Cost-benefit analyses
 - Hardware and customer profiles
 - Permit process
 - Marketing plan
 - Technical Appendices





- 1. Very narrow planting space and potential overspray directly into storm drain inlet.
- 2. Overhead sprinklers not permitted in any area less than 8 feet such as between the path and utility area.
- 3. No sprinkler overspray allowed onto paved areas

- 1. Pie-shaped planter less than 8 feet. Acute angle best irrigated with in-line drip or bubblers.
- 2. Overhead sprinklers not permitted in any area less than 8 feet such as the acute angle of this planter.
- 3. Confirm upper and lower paths conform to the C-3 specification for permeable pavement.

Someone paid for this?







WaterSmart Business Certification



- Customer can apply at any time
- Complete site survey
- Receive written report/recommendations
- Implement efficiency measures
- Apply for WaterSmart Certification



WaterSmart Certification Criteria



- Indoor
 - Compliance with checklist of fixtures and equipment
- Outdoor
 - Meet landscape water budget (i.e 70% ETo) or landscape and irrigation checklist
- Business practices
 - Leak repair and compliance with water waste prohibitions
 - Consumption monitoring program
 - Employee education and awareness

District Services



Water Savings Summary for El Cerrito Clay Bar Centers



Indentified Water Savings by Device/Area



Current and Projected Comsumption and Cost



Site Survey and ROI Reports

Identified Measures	Initial Cost ⁱ	Incentives & Rebates ¹	Annual Water Savings (gallons)	Energy Savings (Therms)	Annual Water & WW Savings (\$)	Annual Energy Savings (\$)	Total Annual Savings (S)	Simple Payback (years)
Landscape	\$0	\$0	638,335	0	\$3,507	\$0	\$3,507	Immediate
Toilets	\$7,845	\$576	261,469	0	\$1,437	\$0	\$1,437	5.1
Urinals	\$6,300	\$848	196,184	0	\$1.078	\$0	\$1,078	5.1
Showerheads	\$ FREE	\$ FREE	128,571	412	\$706	\$0	\$706	Immediate
WaterBroom	\$300	\$150	26,863	0	\$148	\$0	\$148	1.0
Commercial Kitchen	\$ FREE	\$ FREE	3,355	11	\$18	\$11	\$30	Immediate
Faucets aerators	\$ FREE	\$ FREE	0	0	\$0	\$0	\$0	Immediate
Totals	\$14,445	\$1,574	1,254,777	423	\$6,895	\$11	\$6,906	1.9

¹ \$ FREE indicates that EBMUD provided your facility of free water efficient device.

WaterSmart Award Materials



For successfully implement	nting water-efficient	best management practices
CA	STRO VAI	LEY
SANIT	ATION DI	STRICT
is here	by designated as a 2	010-2012
Thank you for conserv	Wate SMAR BUSINES	r SS valuable water resources.
Doug Linney, President EBMUD Board of Directors	EBMUD	Dennis M. Kremi Dennis M. Diemer General Manager

Window Decal





Wall Plague



<u>Customer</u>

- Provide step-by-step process for business water conservation programs
- Establish water efficiency benchmarks and training
- Help businesses save on water, energy and sewer costs

<u>District</u>

- Promote customer participation
- Maximize program cost-effectiveness
- Reward outstanding water efficiency



Sustainability Program Partners

- Bay Area Green Business Program
- Bay Friendly Landscaping Coalition
- Build-it-Green "Green Point Rated" certification
- Leadership in Energy and Environmental Design (LEED)
- Product rating and labeling
- PG&E Express Efficiency Program
- CUWCC Smart from the Start Program













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Municipally owned, 4 service utility serving Colorado Springs and the Pikes Peak area of Colorado.

Supplies water, wastewater, electricity and natural gas to over 400,000 people.

Began in 1881, transports water from up to 200 miles away.

Engaging in major pipeline project, the Southern Delivery System.

Serves 5 major military installations, including the US Air Force Academy.

Regularly ranked among top utilities in US in customer satisfaction and other findings.

Motto is "It's how we're all connected"

Colorado Springs Utilities It's how we're all connected



Our proudest CI Moment:

Launching our 2011 & 2012 Business Partnerships that are transforming relationships with multiple commercial customers.

These include: Facilitating Colorado's first EPA WaterSense Home

A free WaterSense showerhead exchange program.

Facilitating efficiency improvements for the non-profit low-income housing providers.

Launching Rebuilding with Rebates; Building Back Green for the Waldo Canyon Fire Victims.



Saving Water in Commercial and Institutional Facilities with WaterSense®

> Veronica Blette U.S. EPA

WaterSmart Innovations 2012



What is WaterSense?

WaterSense is voluntary partnership and labeling program launched by EPA in 2006

- Addresses water efficiency and performance
- Labeled products are independently certified to use at least 20% less water





Water Use by the C&I Sector

• The C&I sector accounts for approximately 17% of the US public water supply withdrawals



*Source: Modified from USGS Estimated Use of Water in the United States in 1995

look for

Water Use by C&I Subsectors



• Utilities and infrastructure, hospitality, and warehousing are the largest C&I subsector water users



*Source: AWWA Research Foundation's Commercial and Institutional End Uses of Water



Water Use within C&I Subsectors

look for

• Domestic/restroom, cooling and heating, and landscaping are typically largest uses of water across C&I subsectors



*Created from New Mexico Office of the State Engineer's Water Conservation Guide for Commercial, Institutional, and Industrial Water Users; AWWA Research Foundation's Commercial and Institutional End Uses of Water; East Bay Municipal Utility District's WaterSmart Guidebook: A Water Use Efficiency Plan Review Guide for New Businesses; AWWA's Helping Businesses Manage Water Use, A Guide for Water Utilities.



WaterSense Activity on Cl

- In 2009 EPA released a white paper Water Efficiency in the Commercial and Institutional Sector: Considerations for a WaterSense Program
 - Summarized current state of water use knowledge in the CI sector
 - Outlined the possibility and options for expanding WaterSense to commercial and institutional sectors
- Held two stakeholder meetings and accepted written comments

2009 WaterSense CI Meeting



- Primary stakeholder recommendations on C&I options and opportunities included:
 - Target specific subsectors based on water consumption and stakeholder interest
 - Remain focused on product labeling and align product specifications with a subsector based approach
 - Support development of building certification and labeling program (or work to improve existing programs)
 - Issue best management practices for water uses applicable to multiple sectors
 - Label certification programs for professionals in the C&I sector including water auditors, facility managers, plumbers
 - Create a national repository for C&I water use and benchmarking data
 - Create an awards program to recognize early adopters



Since 2009

- Since 2009 WaterSense has been working to address several of the recommendations, including:
 - Developing specifications for products used in the C&I sector
 - Compiling comprehensive water-efficiency best management practices
 - Working with ENERGY STAR to support tracking of C&I water use and develop benchmarks
 - Working with ENERGY STAR to initiate an awards/challenge program for C&I buildings that save the most water – National Building Competition

WaterSense at Work Coming November 1



- Water management planning
- Water use monitoring and education
- Sanitary fixtures and equipment
- Commercial kitchen equipment
- Outdoor water use
- Mechanical systems
- Laboratory and medical equipment
- Onsite alternative water sources



look for



What's Included?

Each section incorporates WaterSense labeled products, water-efficient technologies, and water-saving techniques for both new and existing buildings:

- Overview of each practice or technology
- Operation, maintenance, and user education practices
- Retrofit options
- Replacement options
- Water, energy, and cost savings potential
- Additional resources

6.3 Cooling Towers

WaterSense

Overview

Cooling towers are used in a variety of commercial and institutional applications to remove excess heat. They serve facilities of all sizes, such as office buildings, schools, supermarkets, and using facilities, such as hospitals, othere complexes, and university campuses. Cooling towers dissipate heat from recirculating water that is used to cool chillers, air conditioning equipment, or other process equipment. By design, they use significant amounts of water.

Cooling towers often represent the largest use of water in industrial and commercial applications, comprising 20 to 50 percent or more of a facility's total water use. However, facilities can save significant amounts of water by optimizing the operation and maintenance of cooling tower systems.⁴



Cooling towers work by circulating a stream of water through systems that generate heat as they function. To cool the system, heat is transferred from the system to the water stream. This warm water is then pumped to the top of the cooling tower, where it is sprayed or dripped through internal fill (i.e., a labyrinth: like sourcing with a large surface area). Fans puil or push air through the tower in a counterflow, consolve, or patiell flow to the hailing water. As some of the water is exported, the next is removed; the remaining cooled water is recirculated tack through the systems to repeat the process.

The thermal efficiency and longevity of the cooling tower and its associated water loops

depend upon the proper management of water recirculated through the tower. Water leaves a cooling tower system in four ways: evaporation, blowdown or bleed-off, drift, and leaks or overflows.

Evaporation

Evaporation is the primary function of the tower and is the method that transfers heat from the cooling tower system to the environment. The quantity of evaporation is not hypically targeted for water-efficiency efforts, because it controls the cooling process (almough improving the energy efficiency of the systems that use the cooling water will reduce the evaporative load on the tower). The rate of evaporation from a cooling tower is typically equal to approximately 1 percent of the rate of

* North Carolina Department of Environment and Natural Resources, et al. May 2002. Water Efficiency Manual for Commercial Industrial and Institutional Facilities. Face 3.2. unerwaterinc.org/Studhame.php. * Sec.

WaterSense at Work: Best Management Practices for Commercial and Institutional Facilities



Table 1-4. Action Plan Water Use Reduction Opportunity Checklist

Water Use Reduction	Reference	Already Implemented	Evaluate/ Consider	Not Applicable
Opportunity/Project	Section	4	4	4
Water Use Monitoring and Education				
Read water meters and record monthly water use.	2.2			
Install submeters on any major water-using equipment, systems, or processes.	2.2			
Implement a leak detection and repair program.	2.3			
Educate facility staff, building occupants, employees, and visi- tors on water management program goals and initiatives.	2.4			
Review, understand, and utilize information in codes, stan- dards, and voluntary programs for water efficiency.	2.5			
Sanitary Fixtures and Equipment				
Replace old tank-type toilets with WaterSense labeled models.	3.2			
Replace old flushometer-valve-type toilets flushing greater than 1.6 gallons per flush (gpf) with high-efficiency models, and install retrofit dual-flush conversion devices on 1.6 gpf flushometer valve toilets.	3.2			
Replace old flushing urinals with WaterSense labeled models.	3.3			
Replace lavatory faucets or faucet aerators (for private use) with WaterSense labeled models and install 0.5 gallons per minute (gpm) faucets or aerators in public-use settings.	3.4			
Replace old showerheads with WaterSense labeled models.	3.5			
Wash only full loads of laundry.	3.6			
Replace old single-load clothes washers with SNEDCY STAD	26			

qualified models or consider the water facto chasing larger or more industrial-sized launc Commercial Kitchen Equipment

Replace old ice machines with ENERGY STAR of

Replace old steam cookers with ENERGY STA

Load steam cookers, steam kettles, and com

Switch to connectionless combination oven:

Replace old water-cooled wok stoves with a

Install in-line flow restrictor to reduce dipper

models.

model.

to 0.3 gpm.

to capacity.

ers, and steam kettles.

Checklists & Case Studies

Laboratory and Medical Equipment Case Study

To learn how Providence St. Peter Hospital in Olympia, Washington, saved 31 million gallons of water by installing water-efficient laboratory and medical equipment and implementing many additional best management practices described in *Water-Sense at Work*, read the case study in Appendix A.



Recognize that reducing water use requires action in every part of an organization



Water Management Planning

look for

Step 1: Making a Commitment
Step 2: Assessing Facility Water Use
Step 3: Setting and Communicating Goals
Step 4: Creating an Action Plan
Step 5: Implementing the Action Plan
Step 6: Evaluating Progress
Step 7: Recognizing Achievement

Aligns with ENERGY STAR's Guidelines for Energy Management

http://www.energystar.gov/index.cfm?c=business.bus_i ndex

Water Management and Planning

- Measure water use with properly installed meters and sub-meters
- Set efficiency goals
- Conduct a facility water audit
- Incorporate water efficiency into procurement language and policies

look for

Monitor Usage and Calculate Savings

look for

- Contact your local water and energy utilities for rebates and incentives for efficient technologies
- Prioritize improvements including O&M, retrofits, and replacements
- Evaluate water and energy efficiency together for the best results
 - Can reduce payback periods and improve ROI

look for

Water Use Education and Sanitary Fixtures

Water use education

- Regularly check systems and fixtures for leaks
- Encourage employees to report leaks and wasted water
- Educate employees and visitors about how to save water at the point of use
- Sanitary fixtures and equipment
 - Restrooms, lounges, laundry and fitness facilities
 - Choose WaterSense labeled and ENERGY STAR qualified products

Introduction to Water Use Monitoring and Education...... Metering and Submetering...... Leak Detection and Repair..... User Education and Facility Outreach..... Codes, Standards, and Voluntary

Programs for Water Efficiency.....

Introduction to Sanitary Fixtures and Equipment
Toilets
Urinals
Faucets
Showerheads
Laundry Equipment

look for

Commercial Kitchens

Introduction to Commercial Kitchen Equipment..... Commercial Ice Machines Combination Ovens Steam Cookers Steam Cookers Steam Kettles Vok Stoves Dipper Wells Pre-Rinse Spray Valves Food Disposals Commercial Dishwashers Wash-Down Sprayers ...

- Use ENERGY STAR qualified products
 - Dishwashers, ice machines, steam cookers, etc.
- Install efficient pre-rinse spray valves
- Evaluate food disposal systems to avoid continuous water flow
- Monitor steam cooker and steam kettle systems to repair leaks and reuse condensate water

Mechanical Systems

- Eliminate single-pass cooling systems
- Manage heating, cooling, and steam systems
 - Seal and insulate building envelope to reduce load
 - Optimize water use in boilers and cooling towers

Introduction to Mechanical Systems
Single-Pass Cooling
Cooling Towers
Chilled Water Systems
Boiler and Steam Systems

- Maximize cooling tower cycles of concentration
- Sub-meter cooling tower make-up water to measure evaporation losses
- Capture and reuse boiler and steam condensate with a recovery system
- Regularly check for systems for leaks

Lab and Medical Equipment

- Convert to digital imaging equipment wherever possible
- Eliminate single-pass cooling systems especially in equipment used continuously
- Install full or partial recovery and recirculation systems
- Check systems for leaks regularly
- Turn equipment off when not in use

Consult local, state, and federal health & safety codes and water quality standards before making modifications

and Medical Equipment
Water Purification
Vacuum Pumps
Steam Sterilizers
Glassware Washers
Fume Hood Filtration and
Wash-Down Systems
Vivarium Washing and
Watering Systems
Photographic and X-Ray Equipment

In a second s

Outdoor Water Use

- Landscaping
 - Use regionally-appropriate plants
 - Avoid planting "strip grass" in areas difficult to maintain
- Irrigation
 - Water wisely with weather- or sensor-based irrigation controllers
 - Install meters to track and measure use
 - Consider alternative water sources for irrigation
- Vehicle Wash Systems
 - Reuse and recycle rinse water

Introduction to Outdoor Water Use
Landscaping
Irrigation
Commercial Pool and Spa Equipment
Vehicle Washing

Alternative Water Sources

- Consider where water can be reused on site as an alternative to potable water – considering possible state/local restrictions
- Potential sources include
 - Rainwater/stormwater
 - Treated gray water
 - Condensate and reject water
 - Cooling equipment blowdown
- Potential uses include
 - Irrigation
 - Toilet/urinal flushing
 - Colling tower make-up

Water Reuse

Just released: Updated version for 2012

- Contents
 - Planning and management considerations
 - Types of applications
 - State regulatory programs
 - Regional variations
 - Treatment technologies to protect health and env't
 - Funding reuse systems
 - Public outreach and consultation
 - Global experience in reuse
 - Inventory of recent research projects and reports
 - U.S. and international case studies

Interim site at www.waterreuseguidelines.org Long term at water.epa.gov/infrastructure/sustain/availability wp.cfm

WaterSense Resources

 CI Resources – including BMPs and other tools – will be available on WaterSense website

http://www.epa.gov/watersense/commercial

- CI businesses and institutions not eligible for WaterSense partnership
- Utilities and other promotional partners can access promotional materials, tools, campaigns, partner webinars and newsletters

• If you're not a partner yet, join up!

WaterSense Information

Visit us online!

- www.epa.gov/watersense
- www.facebook.com/epawatersense
- www.twitter.com/epawatersense

Questions? E-mail: <u>watersense@epa.gov</u> Helpline: (866) WTR-SENS (987-7367)

Today's Panelists

- Chris Brown Executive Director, California Urban Water Conservation Council
- Frank Kinder Senior Water Conservation Specialist, Colorado Springs Utilities, CO
- Melissa Baum-Haley Water Use Efficiency Program Specialist, Municipal Water District of Orange County, CA
- Richard Harris Manager of Water Conservation East Bay Municipal Utility District, CA
- And YOU...please feel free to share your experiences!