





Visit us online!

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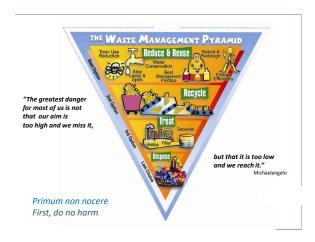
Questions?

E-mail: watersense@epa.gov Helpline: (866) WTR-SENS (987-7367)

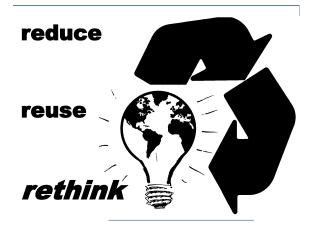
















IFMA's SFP Credential

IFMA – International Facility Managers Assn. SFP – Sustainability Facilities Professional

http://nbdc.unomaha.edu/sustainability/sfp.cfm





Who Should Pursue the SFP?



Interested in sustainable practices?



- Facility management practitioners with a baseline of FM industry knowledge
- FM professionals who are transitioning into sustainabilityrelated positions
- Related industry practitioners such as architects, designers and safety engineers
- > Facility-related product and service providers
- CFMs and FMPs interested in expanding the depth of their expertise in the area of sustainable facility management
- ➤ LEED Professionals seeking CMP hours



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Why Pursue the SFP?



YOU will benefit from the SFP

Earn a sustainability credential created for facility managers by facility managers



- ➤ Improve the efficiency of your facility
- Learn to go beyond the low hanging fruit
- Apply innovative ideas to any industry and any building rating system
- Align resource-optimizing projects with corporate strategy and make the business case to the C-Suite
- > Implement best practices to impact your triple bottom line

Overview

- Sustainability essential -Fishing
- Process: Plan, Do, Check
- · Best practices



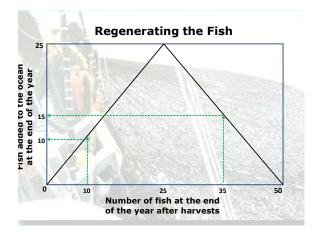






Fishing Game: Steps of Play

- 1. Decide on your team's long-term strategy.
- 2. With each decision round, select the number of fish you wish to harvest.
- 3. Record the number on a slip of paper, place on desk, wait until it is your turn to harvest.
- 4. Harvest requests will be filled in random order.
- 5. Keep your fish, fill out your request for the next round, starting again with Step 1.



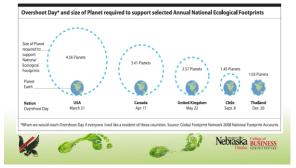


Fishing Game Resources

- For play amongst your family and friends outside of the classroom: http://www.cloudinstitute.org/fish-game/
- For current version of US Seafood Guide, and more information, http://www.seafoodwatch.org & http://www.montereybayaquarium.org/cr/cr_seafoodwatch/sfw_recommendations.aspx
- For a review of books on overfishing, "The Scales Fall", The New Yorker Aug 2, 2010
 http://www.newyorker.com/arts/critics/books/2010/08/02/100802crbo books kolbert



August 22, 2012



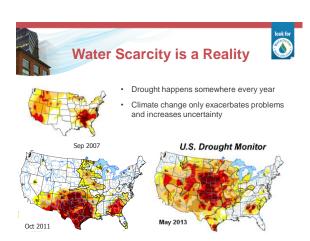
DNR Designated Hydrologically-Connected Fully and Overappropriated Basins, Subbasins and Reaches, July 2008



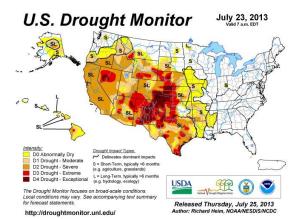
This map was produced by the University of Nebrasia-Lincoln. The madesteral information and an interactive version of this map was produced by the University of Nebrasia-Lincoln. The University of Pelezaka Lincoln does not discremine based on gender, age, disability, raso, color.

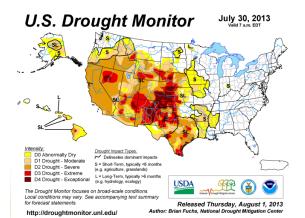
The information presented on this map is the best available as of July 2006. To order a copy of this map go to nebrasium apount adu. Any questions or comments can be directed to the UNI, Water Center at 402-472-3005 or

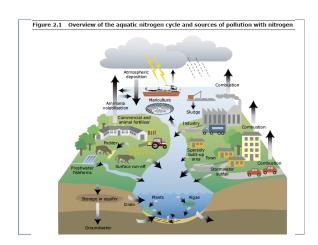


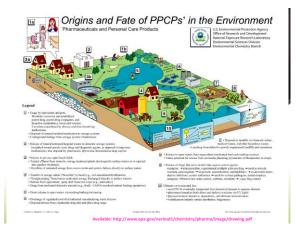




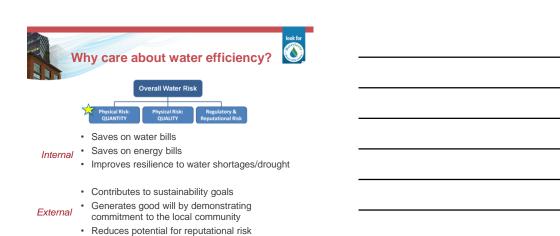




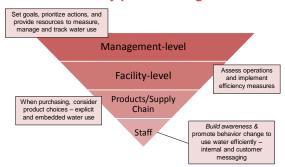




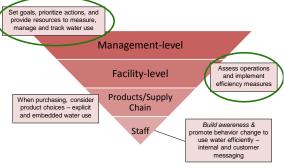




Recognize that reducing water use requires action in every part of an organization



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



Set Goals - Plan

- Tie to mission & strategy
 - Community leadership
- Secure buy-in: You are not alone
- Do a baseline assessment
- Set goals: Save money



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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...so just add water to your programs! http://www.energystar.gov/index.cfm?c=business.bus index





Understanding Facility Water Use

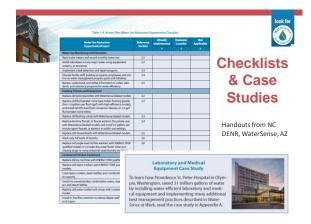
- First step = Establish benchmark.
- Track information from submeters and invoices to establish how water use is distributed.



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Facility Water Management Benchmarking

▶ It can be as simple as creating a spreadsheet where monthly readings from a main water meter can be entered.

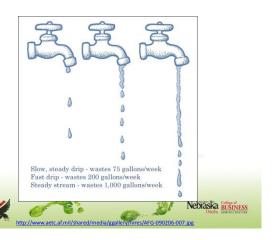
Main Meter				
Start Date	End Date	Gallons	Liters	Cost
6/30/2009	7/30/2009	414,392	1,566,402	\$3,592.78
6/1/2009	6/29/2009	382,228	1,444,822	\$3,329.21
4/30/2009	5/31/2009	522,104	1,973,553	\$4,484.87
3/31/2009	4/29/2009	454,784	1,719,084	\$4,111.25
3/2/2009	3/30/2009	412,148	1,557,919	\$3,729.94
1/30/2009	3/1/2009	562,496	2,126,235	\$5,068.09
12/31/2008	1/29/2009	388,212	1,467,441	\$3,517.20
11/20/2000	12/20/2009	200 212	1 407 441	\$2 £24 00

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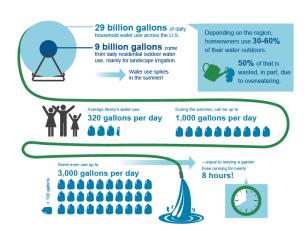
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Water Management and Planning



- Measure water use with properly installed meters and sub-meters
- · Conduct a facility water audit
- · Set efficiency goals
- Identify and implement water efficiency projects
- Incorporate water efficiency into procurement language and policies
- Track water usage in Portfolio Manager



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

Set goals, prioritize actions, and provide resources to measure, manage and track water use

Management-level

Facility-level

Assess operations and implement efficiency measures

When purchasing, consider product choices – explicit and embedded water use

Staff

Build awareness & promote behavior change to use water efficiently – internal and customer messaging





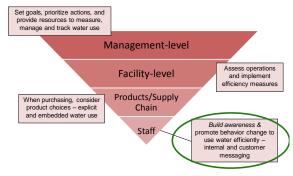


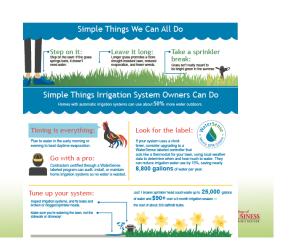
Products must:

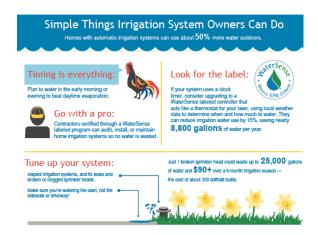
- Offer equivalent or superior performance
- Be about 20 percent more water-efficient than conventional models
- Realize water savings on a national level
- Provide measurable results
- Achieve water efficiency through several technology options
- Be effectively differentiated by the WaterSense label
- Be independently certified for performance and efficiency



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







Bending the Curve

- Are you weird? http://www.wastingwaterisweird.com/
- · God & St. Francis discuss lawns







- EPA's annual reminder for Americans to check their homes for common leaks – third week of March
- Minor water leaks account for more than 1 trillion gallons of water wasted each year in U.S. households
 - Average house can leak 10,000 gallons per year 12% of water bill
- Partners hold events across the country







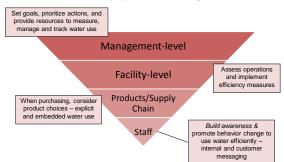




- Umbrella campaign for WaterSense consumer outreach with an identifiable brand
- Theme: Individuals can make a difference
- · Campaign components include:
 - Print PSAs
 - National media outreach
 - Spokesgallon Flo
 - Local media events
 - Online and social media
 - Collateral materials



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



Water Management Planning



Sten	1.	Making a	Commitme	ınء

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...so just add water to your programs! http://www.energystar.gov/index.cfm?c=business.bus index





- · Contact your local water and energy utilities for rebates and incentives for efficient technologies
- · Evaluate water and energy efficiency together for the best results
 - Can reduce payback periods and improve ROI



Tools

- EPA WaterSense ties into EnergyStar
- Green Globes Water Consumption Calculator, "Project Water Use" tab on download





\$8.9 billion





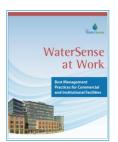
Best Practices

- Certifications:
 - USGBC
 - Green Globes
- Tips, checklists and links
 - EPA WaterSense C&I
 - IFMA Sustainability series
 - P2 InfoHouse









- 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 sources of water



Water Efficiency Best Management Practices



- · Each of 36 BMPs provides:
- An overview of the technology
- Operation, maintenance, and user education tips
- Retrofit and replacement options
- Calculations for potential water, energy, and dollar savings and payback
- 7 case studies outline success stories in major BMP areas





WaterSense Resources



- CI Resources including BMPs and other tools
 - http://www.epa.gov/watersense/commercial
- · CI businesses and institutions not currently eligible for WaterSense partnership
- · Consider collaborating with water utilities and other promotional partners





- · New (and old mini) infographic
- · Outdoor water use fact sheet
- · Irrigation controller fact sheet
- Bill stuffers (English/Spanish)
 - Wasting water as "Most Boring Way to Harm the Environment"
 - Be smart: Know how much water your yard needs to grow
- · Facts and tips to reduce outdoor water use



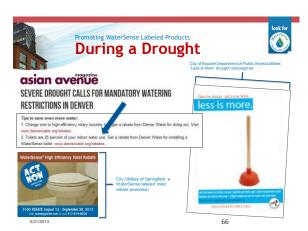


Drought Tools



- Use when needed in times of drought:
 - Updated drought fact sheet
 - "Simple Steps to Save Water" brochure
- · Five simple reminders from WaterSense:
 - Follow the rules.
 - Check for leaks.
 - Consider an upgrade.
 - Wait to hydrate.
 - Go the extra mile.









- Follow the rules. Water restrictions are put in place to save limited supplies for firefighting, health care, and those who need it most
- Check for leaks. Easy-to-fix leaks could be robbing nearly 1,000 gallons of water per month from your home.
- Consider an upgrade. If you're thinking about a bathroom update, now is the time to replace water-wasting fixtures with high-performing, WaterSense labeled models.
- Wait to hydrate. Grass shouldn't be bright green year-round it's natural for your landscape to go dormant in summer's hottest months, so you don't need to water as frequently.
- Go the extra mile. If you've done all you can to be waterefficient, you can get creative by reusing water from dish tubs or ice buckets on your flowers.

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Opportunities for Congregations Improving Efficiency



- · Review your water bill and track water use in Portfolio Manager
- Assess water use in all facilities to identify savings opportunities indoors and outdoors - WaterSense at Work can help to get started
 - Check regularly for leaks and, when found, repair them promptly
 - Optimize your cooling systems and determine if they can provide or use alternative onsite sources of water
 - Consider replacing bathroom fixtures with more efficient models and check automatic sensors to ensure they are operating properly to avoid unnecessary water use
 - Consider water smart landscaping and irrigation practices including WaterSense labeled weather-based irrigation controllers



Opportunities for Congregations Improving Efficiency



- Talk to your water (& energy) utilities they might have \$
 incentives or they might want to collaborate on outreach and
 education
- Communicate your actions beyond the walls of your building – let the public know what you are doing
- Use your power to help educate your parishioners, staff, friends, and community about the importance of water efficiency

Arizona's Famous Running Toilet: Leaky Loo McFlapper



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



Commercial Kitchens



Introduction to Commercial
Kitchen Equipment.
Commercial Los Machines.
Combination Ovens
Steam Cookers
Wok 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
 - 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

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Single-Pass Cooling..

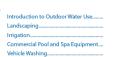
Chilled Water Systems

Boiler and Steam Systems

Cooling Towers...



- 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

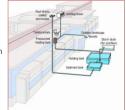




Alternative Water Sources



- 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
 - Cooling tower make-up



Discussion Question

Choose the three options that are water-efficient irrigation methods:

- A. Pop-up spray
- B. Drip irrigation
- C. Moisture sensor
- D. Time clock
- E. Automatic timers
- F. Weather data Answers: B, C, F









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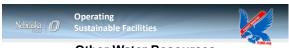
Discussion Question Graywater is most often used for _ A. Drinking B. Irrigation C. Dishwashers D. Swimming pools Answer: B Nebraska BUSINESS Operating Sustainable Facilities Improving Efficiency of **Fixtures and Appliances** ► Test and adjust building water pressure. Lower fixture flow. ▶ Implement an aggressive maintenance program and leak reporting system. ▶ Use water-efficient appliances and equipment. nbdc____ Operating Sustainable Facilities **Water-Conserving Landscaping** Xeriscaping principles: - Amending soil - Retarding evaporation - Weeding - Choosing native plants

- Using turf selectively

- Planting with irrigation in mind

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10 MARC Guide to local flora • 10 Natives for the Kansas City Region - Bluestar - Blue False Indigo - Willowleaf Sunflower - Smooth Hydrangea - Spicebush - Cardinal Flower - Ninebark - Fringe Tree - Christmas Fern Sourgum Nebraska BUSINESS



Other Water Resources

- ► Green Infrastructure: http://water.epa.gov/infrastructure/greeninf rastructure/gi what.cfm
- ► Tools: http://water.epa.gov/infrastructure/greeninf rastructure/gi modelingtools.cfm
- ► Water Efficiency Manual NC
 - http://infohouse.p2ric.org/ref/01/00692.pdf

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Which of following are examples of measures to increase the efficient use of water? (Select three.)

- A. Lower fixture flow.
- B. Install hand sanitizer dispensers.
- C. Choose native plants.
- D. Use automatic settings of irrigation systems after setting controllers to deliver only as much water as needed and no more.
- E. Increase the frequency of water fixture maintenance.

Answer: A, C and D





Sustainable Sites Initiative Guidelines



- ► Regulating global and local climates
- Cleaning air and water
- Continually regenerating habitats
- Recycling waste
- ► Providing aesthetic enjoyment





Sustainable Sites Resources

- ➤ Sustainable Sites Report/Guide: http://www.sustainablesites.org/report/
- ► Green Infrastructure: http://water.epa.gov/infrastructure/greeninf rastructure/gi_what.cfm
- ► Tools: http://water.epa.gov/infrastructure/greeninf rastructure/gi_modelingtools.cfm

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Improve the Management of Stormwater



- Maintain the integrity of stormwater control mechanisms.
- Capture and reuse stormwater for facility purposes if permitted by local regulations.
- Identify and correct grading issues.
- ► Increase permeable surfaces.
- Use fertilizers and pesticides sparingly.
- Add landscaping features to filter and clean stormwater.

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