

This presentation premiered at WaterSmart Innovations

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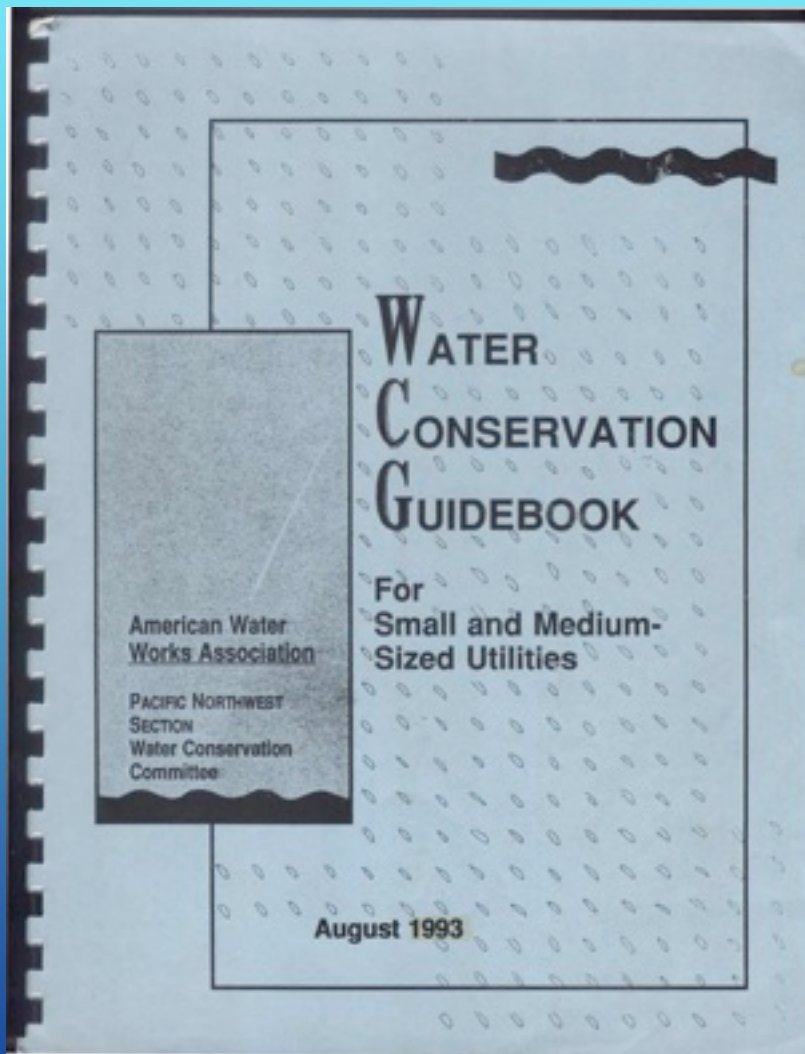
Water Conservation Handbook for Small and Medium- Sized Utilities (New Revised Version)

**Water Smart Innovations
October 5, 2011**

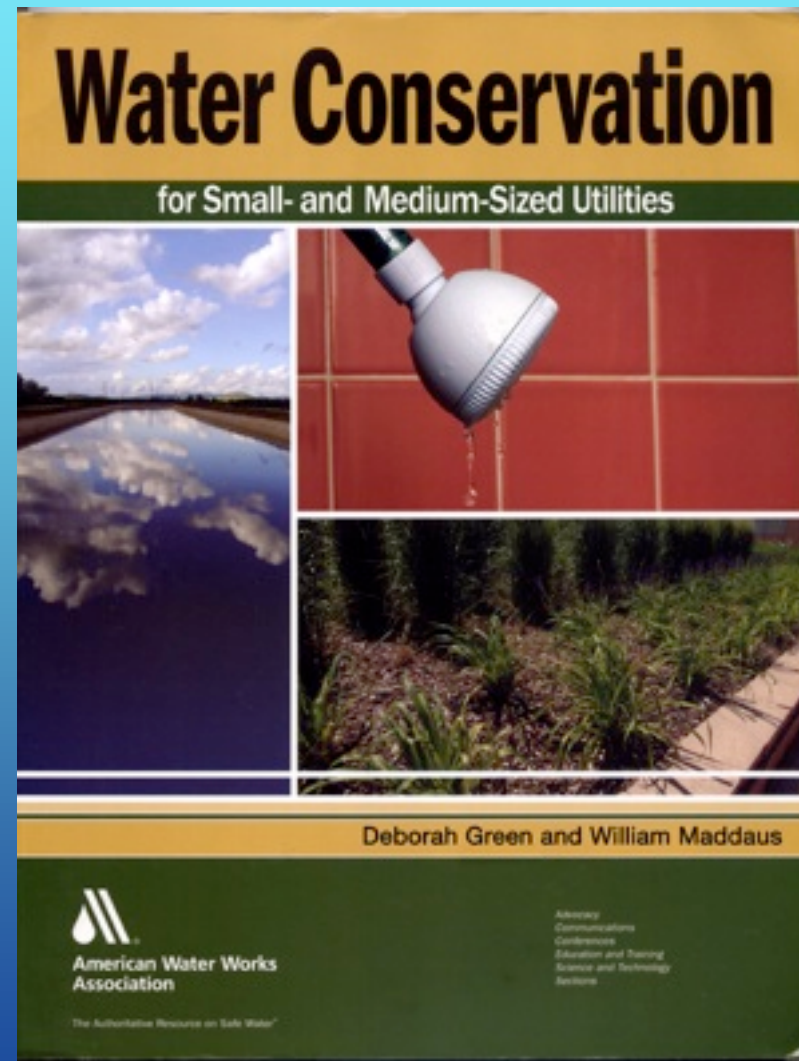
Presented by
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Deborah Green

Small and Medium-Sized Utilities Handbook

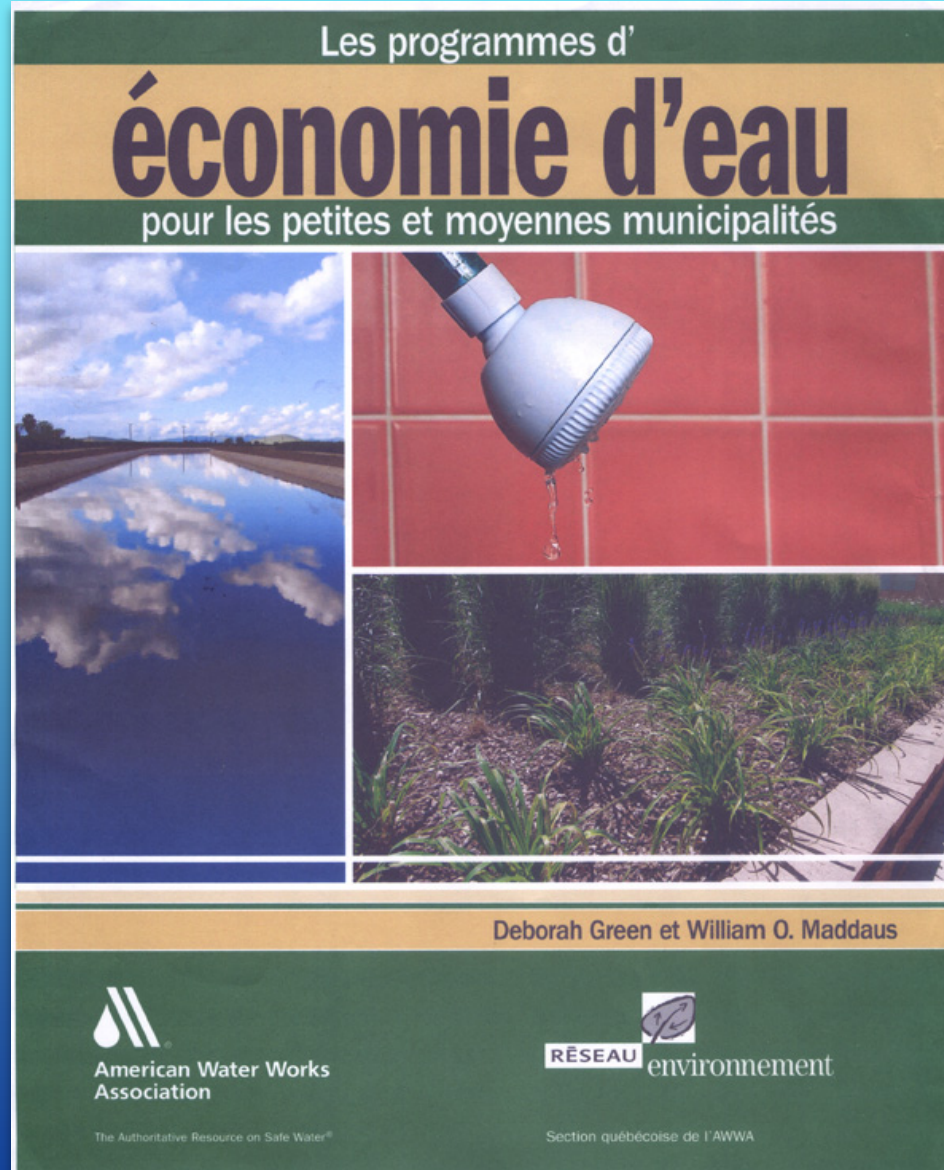
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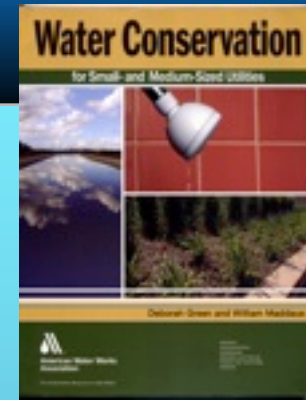
2010



French translation by Quebec Section AWWA!



Water Conservation for Small and Medium-Sized Utilities



Ch.1 – Introduction

Ch.2 – Utility Evaluation (Worksheets)

Ch.3 – Review Utility Conservation Measures

Ch.4 – Review Consumer Conservation Measures

Ch.5 – Potential Water Savings

Ch.6 – Design A Conservation Program

Ch.7 – Implementing A Conservation Program

Glossary

References

Appendices

Utility Size (U.S. EPA definition)

- Small:
Less than 10,000 service connects
- Medium:
10,000 -100,000 service connects
- Large:
over 100,000 service connects

Suggested Goals

Year One:

- ✓ Education program started
- ✓ Seek political buy in for funding
- ✓ Learn about customer base
- ✓ Develop partnership with Customer Service

Year Five:

- ✓ Rate structure/funding established
- ✓ Evaluation strategies established
- ✓ Work toward quantitative goals

Handbook Example: Retrofit and Incentive Programs

Toilets used about 1/4 of indoor water in older households. Replacing with more efficient toilets has been the cornerstone of water conservation programs.



Quantifiable in
Gallons Saved.

But many early 1.6
gallon per flush
toilets performed
poorly.

Handbook Example: Retrofit and Incentive Programs

Last step: Make it easy to specify high performing toilets through a recognizable certification.

Focus on the 1.28 gpf High Efficiency Toilets at same time.

The MaPs testing protocol serves as the basis for the U.S. EPA WaterSense label for high-efficiency toilets.



www.epa.gov/WaterSense/

Handbook Example: Retrofit and Incentive Programs

Showerheads

- Inexpensive in bulk
- Specify no more than 2.0 gpm
- WaterSense now has spec
- Use showerhead exchange: insures installation



Aerators

- Inexpensive
- Giveaway with education
- Good PR



Handbook Example: Retrofit and Incentive Programs

Programs used by larger utilities:

- High Efficiency Clothes Washer Rebates: www.cee1.org
Expensive!
- Turf Buy-back: Expensive!
- ICI audits and rebates:
Additional staff or contractor



Securing Management Buy-in For Budget

Depends on:

- The avoided cost of new water supplies
- The need to demonstrate water efficiency to regulatory agencies
- The need to build public confidence in the utility's commitment to do everything possible to avoid major expansions and cost increases

Multiple Benefits of Efficiency

To the utility

Capital projects deferred
Debt service eliminated for years
O & M costs avoided for years

To the customer

Lower water / sewer bills
Lower energy bills

To the environment

Needed water
(Maddaus Water Mgt)



Public Confidence

Public confidence in the utility's commitment to do everything possible to avoid major expansions and cost increases



Funding Levels

Minimal program

- Program budget of \$1,000 - \$10,000
- Does not include salary or overhead
- Coordinator has other duties

Moderate program

- Program budget of \$10,000 to \$100,000
- Still may not require more than a half-time water conservation coordinator

Maximum program

- Program budget of over \$100,000
- Several staff members working on water conservation

Revenue Stability

- Careful planning can ensure revenue stability even if high water users cut their demand.
- When the unit price for water increases as consumption increases, a signal is sent to customers to conserve and most customers do respond to that price signal.
- Price elasticity of demand is the degree to which customers react to a change in price.
- Studies available on typical customer response at different income levels.

Options to Fund Conservation Programs

1. Through the utility's annual operating budget.
2. From utility's capital budget, predominantly from bond funding or new connection fees.
 - Bond funding: costs of program spread across years that savings actually occur. No cash drain during first year.
 - Connection revenues (impact fees, tap fees, or water connect fees)
 - Pay for development of new infrastructure.
 - Can be used to fund *capacity buy back*.
 - Costs for new "supply" are borne by new residents.
 - Connection revenues dry up in slow growth periods.

Options to Fund Conservation Programs

3. Can direct funds from the upper tiers into the water conservation program budget, if many high water use irrigation customers and tiered rate structure.
4. Some utilities charge a water rate surcharge on the customer bill, with 50%-100% of revenue generated from this surcharge going back to the customers in the form of rebates and incentives.



Options to Fund Conservation Programs

5. Savings from reduction in wastewater treatment costs could be transferred to funding for the water conservation effort.
6. Fines for pollution or watering restriction violations can be used.
7. Energy and water utility partnerships have been formed to co-fund programs.
 - Low-flow showerheads
 - Pre-rinse spray valve installation program for restaurants
 - Clothes washer rebate program

Programs on a “Shoestring” Budget

Helps to

- Piggy-back onto national water efficiency efforts
- Copy regionally-appropriate water efficiency efforts of neighboring large utilities
- Join together with other utilities

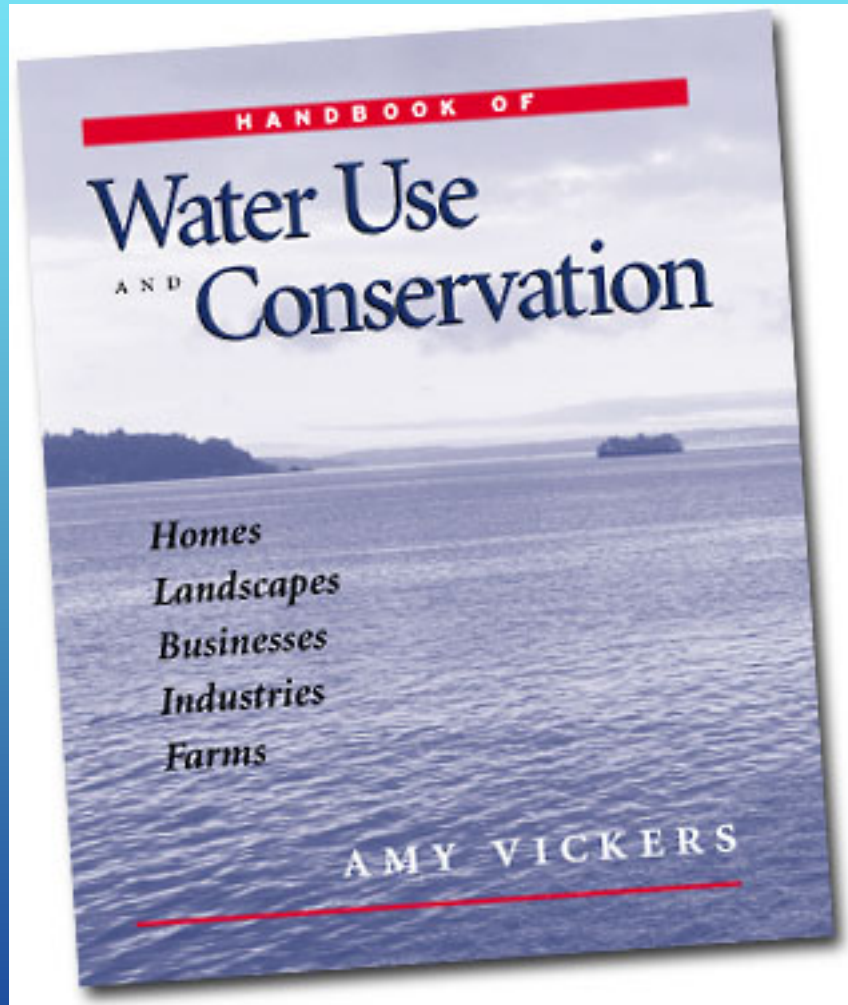


Regional consortiums- Some examples

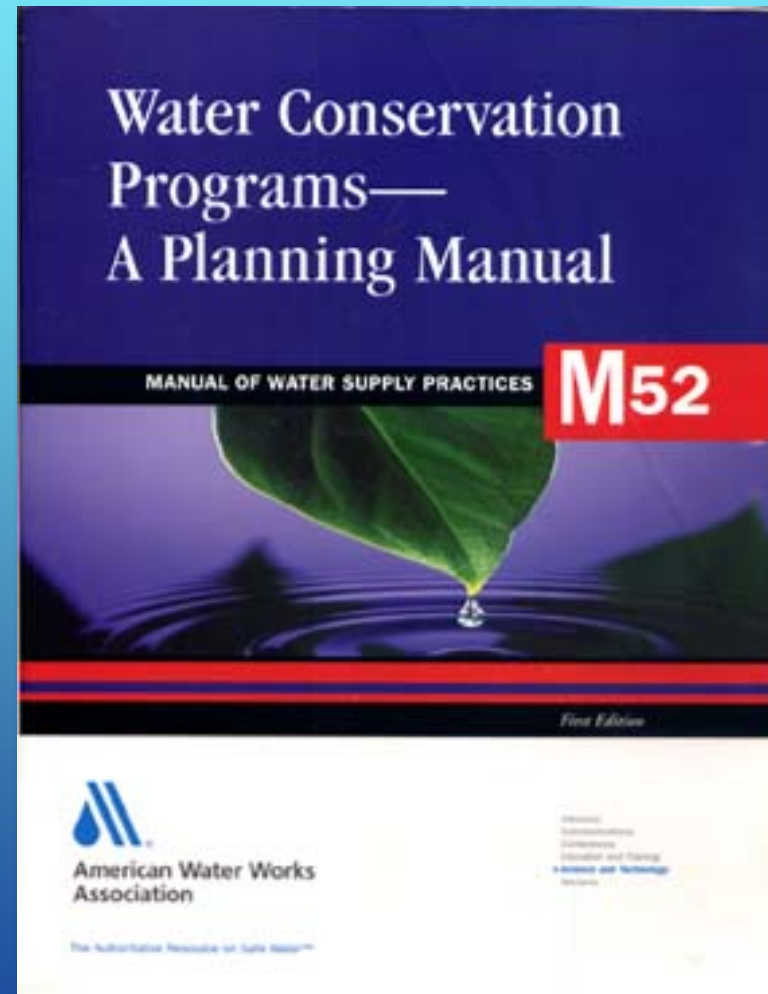
- Regional Water Providers Consortium in the Portland, Oregon area -www.conserveh2o.org
- California Friendly program of the Metropolitan Water District www.bewaterwise.com
- Saving Water Partnership in the Seattle area www.savingwater.org
- Water Conservation Alliance of Southern Arizona - Water CASA www.watercasa.org

Resources

2001



2006



Resources



www.allianceforwaterefficiency.org

Library | WaterSense | Join Us | About Us

search

Go

Alliance For Water Efficiency Launches Resource Library

The Alliance for Water Efficiency, a national non-profit organization that promotes the efficient and sustainable use of water, is pleased to announce the formal launch of a comprehensive web-based Water Efficiency Resource Library, in cooperation with the U.S. Environmental

Protection Agency, who is a major partner and funder of the program. The Resource Library houses a substantial body of information about water efficiency programs, products, practices, and more.



Water Efficiency Watch Newsletter for Nov-Dec 2008 Now Available

The new issue of Water Efficiency Watch features comments on WaterSmart Innovations by Mary Ann Dickinson, an update on the rejection of a UPC code amendment to limit multiple showerheads, new EPA climate strategy, Oregon approves graywater, Tucson approves rainwater harvesting, Georgia limits drought





Calendar of Events



12/2/2008	Corporate Water Footprinting Conference
12/2/2008	Int'l Conference on Water Scarcity, Global Changes, & Groundwater...
12/2/2008	U.S. EPA: Regional Sustainable Water Infrastructure Forum
1/25/2009	2009 AWWA Water Conservation Workshop
2/3/2009	2009 California Irrigation Institute Conference

Latest Information



-  New 13th Edition MaP and UNAR Toilet Testing Results and Info
-  Water Efficiency Watch Newsletter Nov - Dec 2008
-  AWE Launches Major On-Line Water Efficiency Information Library
-  DOE to Convene Meeting on

Resources

www.epa.gov/watersense



The screenshot shows the top navigation bar of the EPA website. On the left is the EPA logo with the text "United States Environmental Protection Agency". Below it are links for "LEARN THE ISSUES", "SCIENCE & TECHNOLOGY", "LAWS & REGULATIONS", and "ABOUT EPA". A secondary navigation bar contains links for "About Us", "Products", "Services", "Spaces", "Water Efficiency", "Partners", and "Resources". Below this is a large banner for "WaterSense" with the tagline "An EPA Partnership Program". To the right of the banner are links for "Product Search" and "Meet Our Partners".









The image shows a family of four (a man, a woman, a child, and another woman) sitting inside cardboard boxes in a room, appearing to be unpacking. A blue text box overlaid on the image reads "Unpack savings with WaterSense labeled new homes!". Below this, another blue text box says "Moving into a neighborhood near you >". In the top right corner of the image, there are four small numbered boxes (1, 2, 3, 4) with the number 3 highlighted.

DID YOU KNOW?

Giving your bathroom a high-efficiency makeover can save you more than just

Save water and protect the environment by choosing WaterSense labeled products in your home and business and taking simple steps to save water each day.

-  [Test Your WaterSense](#)
-  [Calculate Your Water Savings](#)
-  [Save Water, Energy & Money](#)
-  [Find Rebates Near You](#)
-  [Start At Home](#)
-  [WaterSense For Kids](#)

LOOK HERE

Information for Commercial, Education, Government, Professional and more.

Affordable Water Efficiency Programs

- Securing management buy-in of Conservation Plan
- Piggy-back onto national and regional programs
- Review utility water use profile to select best fit
- Consider programs in the areas of:
 - Education
 - Leak detection and repair
 - Regulation
 - Retrofit and incentive programs
- Document savings and keep the plan current!

No Matter How Small Your Utility

You can begin to implement water conservation programs.

Triple bottom line:
People
Profit
Planet

Questions?

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