



A Webinar By Pencilbrook LLC

**Using Customer Research
to Plan and Budget
Residential Conservation Programs**

Introduction

Successful conservation programs are based upon understanding customer circumstances and behavior. Simply put, you need to know your customer.

This webinar will include an explanation of information tools that enable water suppliers to know more about their customers.



Introduction

This webinar is presented by Pencilbrook LLC.

Pencilbrook is a residential conservation and demand management program developer with many year's experience with energy and water programs.





Knowledge Gap

- **Most water suppliers do not know much about what happens on the customer side of the meter. They have not spent the time and money necessary to do customer research.**
- **This knowledge gap makes it difficult to plan and implement water conservation and demand management programs.**

Comparisons to Energy Utilities

- **Energy utilities have an advantage based upon experience. They have been conducting customer research for decades.**
- **Many millions have been spent to learn about their end-users:**
 - **Demographics**
 - **Behavior**
 - **Energy end-uses.**
- **Upon orders by state regulatory agencies, most of this customer research has been paid by a surcharge on the customer's energy bill.**

Energy Customer Research

- **Customer research is fundamental to energy conservation program planning:**
 - **Technical potential – for efficiency and demand management is assessed.**
 - **Saturation of efficient equipment is measured.**
 - **Customer attributes are differentiated.**
 - **Customer preferences determined.**
- **Program goals follow customer research:**
 - **Participation in each program is calculated.**
 - **Energy and demand reduction yields are established.**
 - **Budgets are established.**
 - **Cost/benefit analyses are performed.**

All Customers Are Not Alike

- **No two water suppliers are alike.**
- **Conservation programs that work for one water supplier may be ineffective in another where the customers behave differently.**
- **Analyzing and understanding the customer profile may be difficult but should be an essential part of any utility's management decision-making framework.**

Research-based Marketing

Conservation Marketing

- **As with any marketing campaign, understanding who the target audience is and how they behave is essential.**
- **Socioeconomic and housing characteristics can be used to predict how customers are likely to respond to different initiatives.**

Research-based Marketing

- **For example, home ownership influences customer behavior in a variety of ways. Customers that do not own their home are probably less likely to invest in costly repairs or upgrades that would influence water usage.**
- **Renters often do not pay directly for their water and sewer services, when these bills are included in the rent. This removes the price incentive to conserve water.**
- **All other factors equal, these data would suggest a toilet rebate program in rental neighborhoods would be much less successful than in the owner-occupied communities.**

Importance of Benchmarking

- **Benchmarking is the other purpose for customer research. Metrics for conservation program performance are benchmarked to:**
 - **Historic energy/water use patterns.**
 - **Normalized, annual weather data.**
 - **Demographics and behavior.**
 - **Equipment saturation and age.**
- **Program impact and cost benefit can then be measured against changes to these benchmarked characteristics.**

Residential Customer Research Tool

Waterwatch[©]

- 1. Household-specific analysis and report.**
- 2. Visually engaging and informative.**
- 3. Very high response rate & perceived value.**
- 4. Can be linked to enrollment programs.**

Waterwatch® As a Research Tool

Waterwatch® Functions

- 1. Comprehensive survey to collect customer data.**
- 2. Analyzes meter data.**
- 3. Analyzes historic weather data.**
- 4. Analyzes embedded energy costs.**

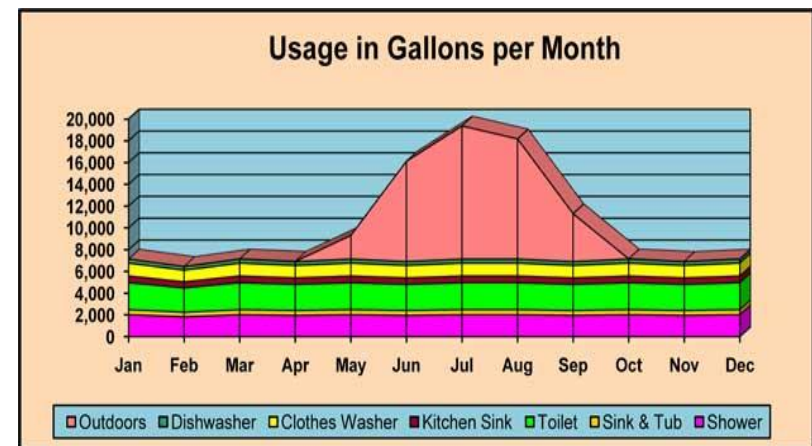
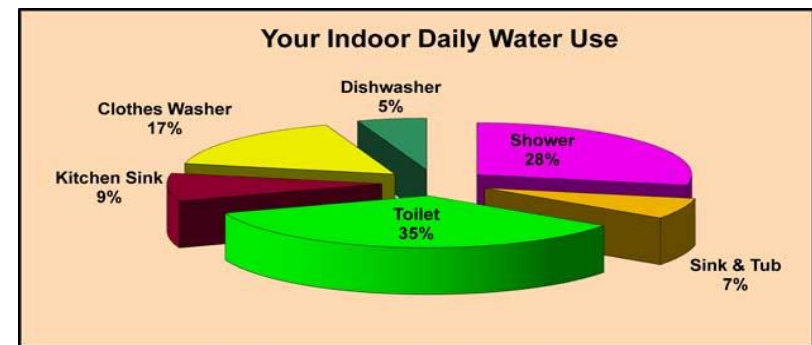
Modeling Residential Water Use

The way Waterwatch© works:

Begins with a survey form mailed to the customer (web version available). Customer completes and returns survey (mail or online).

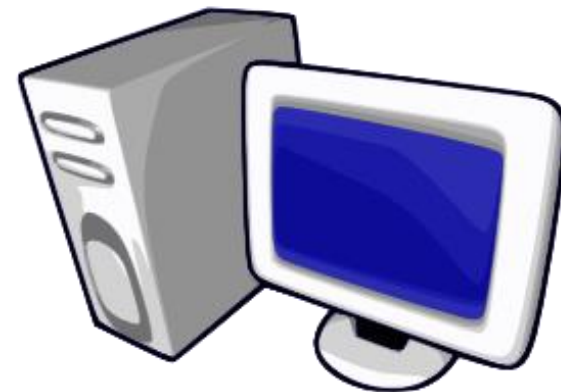
Customer survey data is input; meter & weather data calibrated. Waterwatch© engines regresses data and builds consumption models.

Model data is output graphically. The Customer Report is generated and sent to customer by mail or email attachment.



Waterwatch[®] Report Engine

- **Waterwatch[®] Inputs include: customer survey, meter data, local weather data, average usage data for the area.**
- **Program runs model iterations until the usage distribution is most closely calibrated with actual meter and weather data.**
- **Copyrighted software engine produces reliable estimates for each water use by category (outdoor, toilet, sink, dishwasher, washing machine, shower, etc.).**
- **Report is generated which graphically displays results *and* potential savings with additional conservation measures (water, energy & \$\$\$ saved).**



The Waterwatch[®] Program Customer Report

Spring 2009

An information program for customers of United Water New Jersey

Getting Started

Prepared for the *Smith* household on March 31, 2009

Dear Customer:

This newsletter was prepared just for you, in response to your participation in the Waterwatch[®] program. Waterwatch[®] is a conservation education and information program designed to help our customers understand how they use water at home, and find ways to save water and money.

The analysis of your home water uses is based upon computer analysis of the survey form you submitted; your meter data; and, local weather data.

Your report shows how you use water each day, and explains the daily and annual water consumption for each use. The customer report will also show any variations in seasonal water use caused by washing cars, lawn watering and filling pools

Your Waterwatch[®] report includes the following:

- A detailed analysis of your current water uses;
- A set of recommendations for water and energy savings;
- A comparison of your household water use to the average customer over the past three years.
- Detailed information on water and energy conservation options, and sources for obtaining efficient equipment.

Please note: Our analysis indicates that you can save as much as \$360 per year by following these recommendations.

We thank you for your interest in conserving water. Please visit our website: www.unitedwaternj.com, or contact our customer service department with any questions (800) 222-3333.

Sincerely,

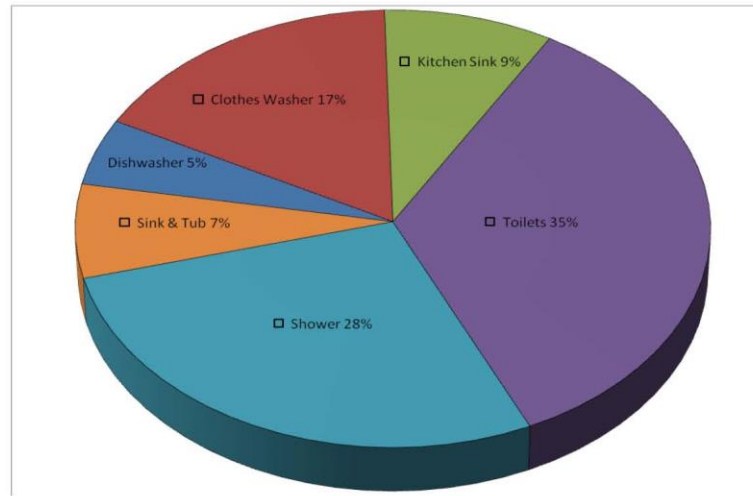
United Water New Jersey

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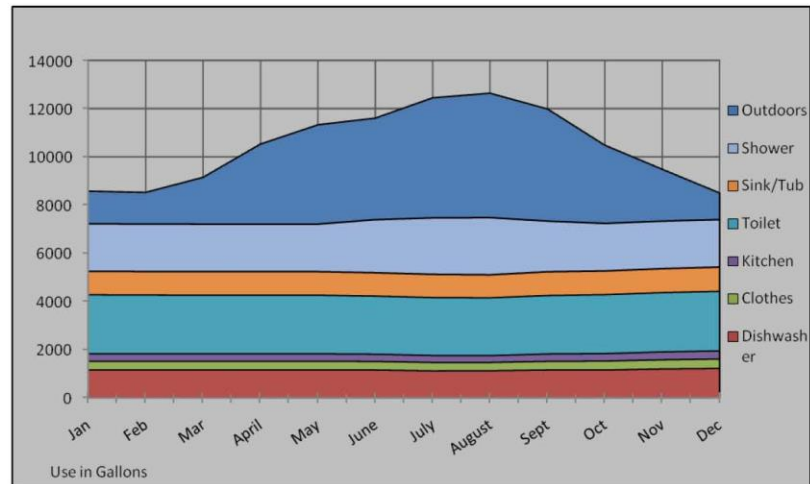
"The costs for heating water can be as much as 5 times greater than the cost of water."

How You Use Water Indoors



This chart shows how you use water inside your house. The average person uses about 70 gals per day, and 75% of that usage is in the bathroom.

Your Seasonal Water Uses



Your seasonal analysis indicates high outdoor water use. Water lawns and gardens, filling swimming pools and washing cars are typical reasons why your outdoor usage is high during the warm weather.

YOUR WATER USES RATING			
APPLIANCE	DAILY USE	ANNUAL	RATING
Shower	69	24770	HIGH
Dishwasher	38	13913	AVERAGE
Clothes Washer	12	4380	AVERAGE
Kitchen	10	3675	AVERAGE
Toilet	80	29200	HIGH
Sink/Tub	32	11735	AVERAGE
Outdoors	103	37560	HIGH

Specific Recommendations for the WALKER Household

The water use rating in the table above compares your use to the national average for similar households. The following water saving opportunities are based upon a computer analysis of your water bills and the survey questionnaire submitted for your household. **Please note some recommendations will save water and energy.**



Shower - A high performance, water-efficient showerhead will give you a good shower and cut your water use. Also fix any leaks in the tub diverter valve. These measures could save about **11,800** gallons or **\$59** per year; and, **\$182** for electricity to heat the water.



Toilet - You indicated that your standard toilet was installed before 1994. If you replace it with a new water conserving model that meets federal standards, you could save about **10,500** gallons or **\$12** per year.



Faucets - Efficient faucet aerators are inexpensive and easy to install on your kitchen and bathroom sinks. In addition to saving energy used for water heating, putting aerators on all your faucets can save **4,020** gallons or **\$7** per year; and, **\$61** for electricity to heat the water.



Outdoors - There are many ways to reduce irrigation water use while ensuring that plants get the water they need. Some of these ways include using soil moisture monitors, cycle irrigation methods and drip irrigation systems. Savings will vary depending upon method used, but could be as much as **14,110** gallons or **\$64** per year.

Community News for United Water New Jersey Customers

Fish in United Water Reservoirs

Spring in the Northeast means spending time outdoors. And United Water's Watershed Recreation Program opens the door to a world of outdoor enjoyment. The program, which runs from April 1 through November 30, allows our customers to enjoy the wooded lands surrounding our reservoirs for fishing or bird watching.

For a nominal application fee, your watershed recreation permit will give you access to four reservoirs - Oradell and Woodcliff Lake in New Jersey and Lake DeForest and Lake Tappan, both in Rockland County, New York. Wheelchair accessible areas are located at our Woodcliff Lake and Lake Tappan reservoirs. In addition the public can enjoy United Water's nature trail. Five-miles of trails wind through 90 acres of land adjacent to the Oradell Reservoir featuring many natural points of interest along the way. For recorded information, please call our Watershed Recreation Hotline at 1 800 666 5555 Extension 3208.

Join Our Customer Advisory Panel

Our customer advisory panel provides input on various programs offered by United Water and help us find better ways to improve customer service initiatives. Members are encouraged to discuss topics of interest to them or their neighbors. These range from water quality issues to new service offerings.

United Water is always looking for new panel members. We look forward to fresh ideas that will further enhance the many programs and information we continue to offer to our customers. The panel is a great way to learn more about the company, its operations, management and future plans.

Customers interested in serving on the panel should contact our Customer Service Department, at 1 800 222 3333, for more information.



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Waterwatch© Program Results

- **15 -25% customer response without advertising or publicity.**
- **High perceived value by the customer. Some customers save survey forms for a month before submitting.**
- **Customers use supplier's website and leave email addresses.**
- **More cost-effective than an onsite audit; savings can exceed \$100 per audit.**



Other Waterwatch® Uses

- **Stand-alone conservation program**
- **Stimulates participation in other programs.**
- **Resolve high bill complaints.**
- **Highlight the value of leak detection.**
- **Help customers in arrears pay overdue bills.**



Measuring the Energy "Embedded" In Residential Water Uses

Most customers don't realize that the energy used to heat household water is expensive. The "embedded energy" to heat water costs as much as *5 X more than the water itself.*

The Waterwatch© program calculates energy costs associated with water use based on the water heater fuel source that is specified in the survey.

The cost is calculated using the regional prices for the water heating fuel for calendar year 2009 provided by the EIA – the U.S. Energy Information Administration.



"Embedded" Energy Cost Savings

- The estimated cost to a PG&E customer, with an electric water heater, would be **\$21.47 for each 1,000 gallons** of water used in the shower and faucets.
- Based on annual water savings for the shower of 11,860 gals, the energy cost savings would be **\$254 (11.86 x \$16.10)**.
- Based on annual water savings of 4,020 gallons at the faucet, the energy costs savings would be **\$86 (4.02 x \$14.52)**.



Questions & Comments?

Please contact Mick Fiato with questions, or to schedule a one-on-one review of the Waterwatch© program options.

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Thank you for participating.

