National Water Services, Inc.

NWS Savings Streams Newsletter

Where the Facts "Hold Water"

Summer 2008
Volume 1, Issue 1

In this issue:

Gallons Saved to Date:
873, 788, 885

Costs Reduced to Date:
$4,422,327

Treating Our Clients Well:
Priceless

NWS Launches Informational Newsletter to "Water Down" Missed Opportunities

National Water Services, Inc. believes that "the best served consumer is the informed consumer". That was never more true than today with droughts and escalating water and sewer rates dominating the news.

National Water Services is a full service water management company specializing in delivering water/sewer savings opportunities— and the related energy savings— to large consumers of water in the Institutional, Commercial and Industrial market.

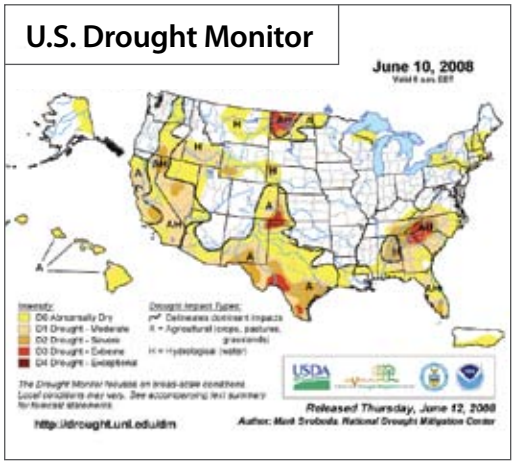
A recent NWS survey found that less than 5% of companies include a comprehensive water management program that can reduce their water and sewer costs by as much as 45% and pay for itself in under 3 years. With Water and sewer rates increasing in almost every community to offset the costs to maintain aging infrastructures the time to save is now.

How do we know this? It can be summed up in two words; "MISSED OPPORTUNITIES". If you don't begin now and your competitor does, they will have the upper hand by having a lower overhead. This is the reason for this newsletter. Each edition will provide you with savings opportunities, highlight areas where water has the biggest impact, review the latest water savings products, as well as demonstrate how successful water savings benefit your company.

So if this newsletter isn't for you, pass it on to someone in your organization who might be able to use it. You'll never know until you try. ■

Western U.S. Faces Drought Crisis, Warming Study Finds

The Western U.S. States will see devastating droughts as global warming reduces the amount of mountain snowpack and causes the snow that does fall to melt earlier in the year, a new study finds. Snowpack, a natural storehouse for moisture in the mountains, is a huge reservoir that releases water into rivers long into the dry summer season. Accord-



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ing to Research Leader Tim Barnett, an oceanographer and climate researcher at the University of California San Diego, "We're losing that reservoir. Spring runoff is getting earlier and earlier In the year, so you have to let water go over the dams and into the ocean". Summers are also getting longer and hotter Barrett added, "That dries things out more and leads to fires. According to the scientists who wrote the report, "Our results are not good news for those living in the Western United States". ■

Sample Western States Water/Sewer Rates

(Cost Per 1000 Gallons)

Location	Water	Sewer	Total
Phoenix, AZ	$3.37	$3.32	$7.09
Los Angeles, CA	$4.39	$2.66	$7.05
San Francisco, CA	$1.97	$8.31	$10.28
Denver, CO	$2.26	$1.95	$4.21
Colorado Springs, CO	$3.41	$2.71	$6.12
Portland, OR	$2.37	$7.66	$10.03
Salt Lake City, UT	$2.42	$3.56	$5.98
Seattle, WA	$4.47	$9.95	$14.42
Cheyenne, WY	$3.31	$2.75	$6.06

Fairness Yields a Water Conservation Surprise

During the 5 years leading up to my full time re-engagement with National Water Services, I was deeply involved in water metering in the Multi- Family/ Apartment industry. The last 15 years have seen a serious focus by the Multi- Family industry on ancillary services income. These services run the gamut from soda machines to video rentals to cable and high speed internet to sweeten the profit on the properties they control.

Up until the mid 90s water and sewer consumption were usually included in rent and not charged to individual apartments. But why not? Other utilities had been submetered since the 1970s. Apartment renters expect utility bills from the gas and electrical companies.

However, owners soon found that water and sewer were more difficult to meter. Typically multi-storied complexes were plumbed in risers servicing bathroom directly above bathroom. Hot and cold water lines were often separated and serving several apartments on the same riser. Installing meters at each point of entry to measure exact consumption was economically unfeasible.

To answer this dilemma some crafty entrepreneurs created a water and sewer billing system dubbed RUBS, or Ratio Utility Billing.

RUBS applies a formula to divide a property's total water and sewer bill into equal portions regardless of usage This Ratio Utility Billing scenario is overseen by a third party contractor. The formula is usually based on square feet or number of tenants, but it can be set up however the landlord wishes. When the utility bill is received by the RUBS firm the formula would be applied less a common area percentage. A bill would be sent to the tenant with the RUBS fee. When the RUBS company receives payment, they keep their fee, and return the difference to the controlling entity.

Neat, clean and a real water saver, right? Absolutely wrong.

One of the original assumptions was that this would save water and sewer consumption because simple awareness of having to pay a water/sewer bill would convince all of the good citizenry to conserve.

The absolute opposite took place. People figured out quickly that they could use as much water as they wanted because they would not be billed for excess use, resulting in as much as a 25% increase in consumption.

As you can imagine, the utilities were not pleased. Some cities and states have outlawed the practice. Tenant groups across the country have labeled the practice unfair. Some tenants have even gone so far as to organize strikes against paying the unfair bills. Disaster.

In the late 1990s the nature of this unfairness gave birth to a variety of sophisticated metering systems. These systems made more accurate billing cost effective. In situations where this new generation of meter was installed, tenants realized that they would be billed for actual consumption, so consumption decreased 15 to 20% nearly immediately. Over the next year, even more conservation took hold. Typically an additional 12% was realized in the complex.

The RUBS creators were correct about one thing. Eventually conservation would take hold if tenants received water and sewer bills. The only thing needed was fair accountability for water use.

In our next Savings Stream, we'll examine the various types of meters available for Apartment sub-metering and the opportunities they afford. ■

Submitted by Brian Boyle, Vice President of Sales & Marketing, Western Region, USA

How Much Water Do We Use At Work?

- Typical Employee or staff use between 20 & 35 gallons per day
- Savings of 25% to 30% readily achievable
- Largest consumer water closet – 41% of restroom use

Pre-Rinse Spray Valves – "Real World" Savings Data From 19 Field Studies!

According to a study performed for the California P.U.C., over 17,000 hot water pre-rinse spray valves were replaced through the Council's Phase 1 Pre-Rinse Spray Valve Program throughout the state of California.

One significant requirement of the Council's agreement with the California Public Utilities Commission was the measurement of energy savings achieved through these replacements. As a result, the Council contracted with SBW Consulting, Inc. of Bellevue WA to measure "before" and "after" water and energy use at 19 randomly selected valve installation locations in northern and southern California. ■

Here are the preliminary results:

Water Savings:
CCF Gallons Acre-Feet Annually
66.4 50,000 0.153
5-Year Life of PRSV 332 250,000 0.765

Energy Savings:
Water heated by natural gas
Annually 335 therms
5-Year Life of PRSV 1,675 therms

Water heated by electricity
Annually 7,600 kWh
5-Year Life of PRSV 38,000 kWh

These figures define water and energy savings within food service operations categorized as "very small" and "small", mostly independent establishments. High-volume food service facilities that serve meals throughout the day are expected to yield significantly higher savings.

Key areas of Water Waste in a Commercial Building

Sanitary and Domestic
Toilets
Urinals
Faucets
Showers

Cooling and Heating
Pass-Through Cooling
Cooling Towers / Chiller
Steam Systems
Boiler & Hot Water Systems

Process Use
Cleaning & Rinsing
Reuse Systems
Photo Processing
Equipment Washing
Water Use in Manufacturing

Vehicle Washing

Kitchen Use
Dishwashers
Pre-rinse valves
Grinders/Garbage Disposal
Ice Machines
Faucets

Other Facility Use
Floor Washing
Building Washing
Labs
Wastewater Treatment

Outdoor Use
Landscaping
Outdoor Washing
Irrigation
Fountains

Water / Sewer Meters

Study Finds Toilet Drain Line Problems More Myth Than Fact

According to a report published in the June 2005 edition of the American Water Works Association Newsletter "Water Wiser" entitled "Flush Hard It's a ULF Toilet" – New Research Dispels Old Myths About Drainline Carry, research has finally been done to dispel the issue of low flow toilets not working properly in older buildings.

The article points out that anyone who has worked in the water efficiency field for more than a few years has more than likely heard plumbers say that ULF toilets don't have enough water to carry the solids out of a building or house and out to the sewer.

WaterWiser goes on to say "The issue of waste transport from toilets in drainlines (aka drainline carry) has been a favorite for critics of ULF toilets such as the American Society of Plumbing Engineers (ASPE).

While ASPE has yet to produce scientific evidence that a problem exists, researchers in Canada have investigated the issue in a rigorous manner. The results suggest that ULF toilets can and do get the job done and the drainline carry problem is more myth than fact. The article cites a study entitled the "Evaluation of Water-Efficient Toilet Technologies to Carry Waste in Drainlines" sponsored by eight Canadian organizations.

These organizations included: Canada Mortgage and Housing Corporation, the cities of Calgary and Toronto, the province of Manitoba, the regions of Peel, Waterloo, and Durham, and the Ontario Ministry of Municipal Affairs and Housing.

More information on this report, which was written for both the Canadian and the American markets can be found and downloaded from the CUWCC web site at: http://www.cuwcc.org/uploads/product/Drainline-Report-3-11-05.pdf ■

Water Savings "Buys Down" the Cost of Energy Projects

It's always interesting to discuss the inclusion of water and wastewater conservation into an overall energy retrofit project, especially with the end user. Facility managers and school administrators look toward the "typical" energy savings measures, Lighting, HVAC, Motors, Control systems, etc., while they often overlook the obvious. The truth is that water and wastewater conservation can significantly buy down the cost of an energy retrofit. Of course, this is if the circumstances are right. And what are the right circumstances?

Moderate combined water and sewer rates for one thing. Typically a facility with a cost of over $3.00 per 1000 gallons consumed will have a decent payback - usually in the 4 to 6 year range, while any project with a combined cost of $4.50 and up will have a significant payback - typically less than 4 years. Are these hard and fast rules? Absolutely not. Types of usage, rate structure, population equipment and hours of operation all effect what kind of payback can be generated for a project. But, with the aging infrastructures in public schools, hospitals, colleges and universities, water efficiency projects are becoming extremely attractive to the end user.

These projects not only offer significant reduction in water and sewer costs but can have a lifespan of 20 plus years, NWS understands that in almost any way that water is used, it can be used more efficiently. The amount can be reduced without having a significant impact on the lives or work habits of those it effects. ■

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Experience The Potential Of Water Savings

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When Does A Water Savings Project Make Sense?

Low Combined Water Sewer rates of $3.00 per 1000 gallons	**4 To 6 Year Payback**
Moderate Combined Water Sewer rates of $4.50 per 1000 gallons	**Under 4 Year Payback**
High Combined Water Sewer rates $7.00 per 1000 gallons	**Under 3 Year Payback**

Experience The Potential Of Water Savings