

MEGAWATT Consulting

[How to save on water costs in your data center](#)

April 15th, 2012

Two weeks ago I spoke at the Recycled Water Use and Outreach Workshop in Sacramento. I know what you're asking, "why is a data center guy talking at a recycled water conference?" Well, funny that you asked.

First of all, most of my ultra-efficient designs use water for cooling, often indirect evaporative systems. Hence, we trade energy use for water use. Now water is far less costly than energy and often has a much lower carbon footprint and other environmental impact per unit of cooling than electricity. But it always is a bonus to use recycled water, as it has an even lower environmental impact than standard potable supply. Of course, all water IS recycled. There are only a finite number of water drops on this wonderful planet that sustains us and every one of them has been around the water cycle block at least a few times, so in essence, all water is recycled.

As we use water to help or entirely cool our data centers, water plays an even greater role in data centers to achieve the greatest efficiency. Hence, water quality, capacity, cost and reliability of service are just as important as any other valuable input into our system of operations, making these factors and the future cost of water even more important into our site selection decisions. I've seen water cost between \$.10 to \$10.00 per 1,000 gallons—wow! What a spread! And I've seen it increase at 40% rates per year! Wouldn't it be nice to have a consistent price from a non-profit water system that YOU have control over and full visibility into all costs? And one that is built to meet the high-availability and quality standards for data centers, and is DEDICATED to data center use? That is what you get at the Reno Technology Park!

And it's not just the supply but also the discharge of water. I learned much about water discharge challenges in Quincy, WA, when building the Yahoo! data center there, as the local water utility wanted Microsoft and Yahoo! to pony up \$10-15 million to pay for a new water treatment plant to handle the QUANTITY of our discharge water. Our quality was fine, but the quantity was too much for the current systems. This led me to find solutions to reduce the cooling tower blow down and avoid this \$10+ million unplanned cost to our project.

I've always been a fan of chemical-free water treatment systems, but when looking for new solutions to solve our problem, I came across WCTI, which makes a chemical-free system quite different than other systems, and could provide us a system to get the cycles of concentration up over 200!!! Yes, that is over 200 cycles of concentration, which means nearly zero blow down! Which means it lowers water consumption by 30-50% and avoidance of paying for a new water treatment plant for the city. And it's truly chemical free (even no biocides), which means it's safer for people and the environment, as well as much lower cost. Keep those chiller tubes and/or pipes clean!

This is one of the comprehensive solutions that we provide for our clients at MegaWatt Consulting. It's about saving money, and water is just another critical part of our system. Reach out to us to learn more!

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