



Water Talk

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Water Conservation

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The western states have an exploding population. As the economy grows, the limited water supply does not. In particular, the southwest has had difficulty providing water to the rapid growth cities like Phoenix and Las Vegas. Drastic action will be needed to address the lack of water in these areas, which will probably involve rationing of water, a teared pricing structure with penalties for the largest users of water, and incentives for water conservation measures.

One region which will be most affected is California. Some of the issues affecting California will be discussed in detail in this Water Talk. The same water conservation measures will be more widely implemented in other arid regions of the USA and in draught areas.

While Southern California's population and economy continue to grow, its water supply does not. Southern California's population is supposed to grow by at least 2.6 million residents over the next 15 years. The state must figure out how to meet the future demand of the population.

Competing users, political demands, and environmental constraints cause problems for water suppliers. The uncertain water supply from the San Francisco Bay/San Joaquin Delta and Colorado River (please read attached letter and send to your legislators) is uncertain. Due to this, we must be **proactive** in our search for ways to conserve and reclaim water.

Conservation of water is one of the most important aspects of California's long-term water management strategy. We must lead the way with new technologies and best available technologies

(BAT) that work as an innovative approach to water programs in California.

The Integrated Resources Plan Update sets a target that by 2025 Southern California's conservation members, along with plumbing code-based savings and savings due to price increases, will save more than 1.1 million acre-feet of drinking water per year.

Water recycling programs use advanced treatment technologies to clean wastewater that would otherwise be unusable and be wasted. Most recycled water is used for landscape irrigation, industrial process water and for purposes other than human consumption. Recycling is an effective way to stretch our water supplies.

When groundwater basins become unstable due to naturally occurring minerals, chemical contamination or increasing salinity, water agencies are faced with a choice. They can rely more heavily on imported supplies or they can recover the water by treating it.

Making every drop count has become the lifestyle and business practice of Southern Californians. During the late 1800s, the region depended on limited rainfall and local supplies. In the 1900s came the dream of aqueducts and bringing water in from the Colorado River, while nearly a half century later the State Water Project offered more water to the Southland. Thirty years later, the Integrated Resource Plan focuses on balanced management and development of local and imported water supplies. The success of these programs ensures reliable water supply for Southern California through 2025.

#### **What can industrial and commercial business do to conserve water?**

Companies can adopt water-efficient procedures for equipment and technology for space cooling, refrigeration, laundry, cleaning and flushing.

There are many cash incentives provided to companies that cut water use. In addition, financial assistance is provided to conduct technical studies (water use audits) and implementation of water conservation measures. For example, many water districts offer rebates for commercial toilets. These rebates range from about \$80 to \$120 per fixture for replacing older flush valve toilets and urinals with more water efficient models. Rebates of up to 50% for project costs to improve cooling such as air conditioning and refrigeration can be obtained.

Improving control of cooling tower water provides quick opportunities for office buildings, manufacturing plants, schools, universities and hospitals to save money and avoid costly repairs due to equipment failure.

#### **Green Initiatives**

Chem Inc issued a green paper in October 2007 covering All aspects of the green movement and what water treatment companies can do to incorporate initiatives. Your company can follow these suggestions to be more proactive with your customers in taking initiatives for water and energy savings.

Environmental and Green Initiatives historically have been ignored by the business world and viewed as being propagated by a gro Environmental Extremists.

Today the Green Movement is an integral part of the business world as it involves major financial benefits.

LEED is focused on the commercial/institutional segment of the marketplace. However, the industrial market is taking major green initiatives including reduce energy and water us utilization of recycled materials; this reduces costs making them more competitive and

increases profits. All industrial companies, including the Fortune 500, have taken major green initiatives. LEED expect to see 100,000 commercial buildings and over 1 million homes involved in LEED by 2010.

There is a major opportunity for all water treatment companies to partnership with your customers to take Green Initiatives directed towards water reuse and energy savings. It is also a good selling tool to distinguish you from your competitors.

To capitalize on this opportunity, it is necessary that you contact individuals who control the budgets for the Facility. This is most likely the Plant Manager, Facilities Manager, Operations Manager or Director of Facilities. Set up a plan to address cost saving initiatives with him and his subordinate staff with joint goals. You can then follow through with these goals by identifying opportunities for saving water and energy costs as part of this Green Initiative. It is then extremely important that you document the \$ saving before and after the initiatives are implemented.

The EPA has completed water management plans at several places.

- In Corvallis, Oregon they eliminated the need for single-pass cooling water which saved about 3 million gallons of water per year.
- In Fort Meade, Maryland efforts to optimize cooling tower operation and deionized water production efficiency combined to save almost 2 million gallons of water in 2003.
- In Houston, Texas condensate recovery systems saved nearly 832,000 gallons per year.
- In Narragansett, Rhode Island mechanical upgrades helped reduce water consumption in 2004 by more than 26% compared to the previous five year average.

A few ways that we can improve cooling tower water consumption is by:

- Avoid excessive cooling tower blowdown.
- Record makeup water and blowdown regularly to address any anomalous usage patterns that would indicate leaks or problems in the system.
- Investigate ways to reduce blowdown
- Discuss cooling tower sewer abatement with your city/town water department.
- Utilize side stream filtration to reduce concentration of solids.
- Investigate the possibility of waste water for cooling tower makeup
- Investigate ways to treat water so it can be recycled.

In boilers:

- Check steam traps and ensure return of steam condensate to boiler for reuse
- Limit boiler blowdown, check continuous blowdown systems and adjust if necessary
- Employ an expansion tank for boiler blowdown drainage rather than cold water mixing
- Look into improved pretreatment to increase cycles and reduce bleed.
- Capture condensate and recycle.

Maintain buildings:

- Read water meters and sub-meter all major water using systems. Notice trends.
- Locate and repair leaks.
- Maintain insulation on hot water pipes.
- Replace any water-using equipment or fixtures that wear out with water saving models or air cooled units, where possible.

In conclusion, the existing water crisis in the west requires proactive action to find opportunities to minimize water use. Use this opportunity to strengthen the partnership you have with your customers and as a means of generating new business.