



This crisis, however, is not limited to California; other states also are facing increased pressure to develop alternative water supplies. Although California has long been the leader in thinking outside the box when it comes to water, other affected states are slowly being forced to adjust their own regulatory regimes in order to adapt to changing circumstances.

More people means more watered lawns, more baths and showers, more drinking water and, of course, more crop irrigation for food. While growth continues, traditional sources of water supplies have not kept pace. Furthermore, the prospect of new facilities to store surface water—reservoirs, lakes and other large-scale water repositories—is dim given a variety of challenges (e.g., environmental issues, funding, available land, etc.).

This leaves areas such as southern California, with the bulk of the state's population growth, potentially subject to more "dry" water years. Because the bulk of the state's rain falls on the cooler northern part—not the parched south—getting water to the south has always been a challenge. The strong population growth of southern California only increases this significant problem for the state's water planners.

This situation has been exacerbated by cutbacks in the State Water Project (SWP) supplies. Recent court decisions have had a far-reaching impact on water supplies going to the state's southern region. In particular, on Aug. 31, 2007, a federal judge imposed interim rules to protect smelt in the Sacramento San-Joaquin Delta. Those rules drove the California Department of Water Resources (DWR) to announce that its 2008 allocation of SWP water for long-term water contractors would be 35%, not the 50% that would have been allocated if not for the court's decision.

Also in response to the court decision, the DWR revised its SWP Delivery Reliability Report to reflect substantial changes in water supplies. The report specifically looks at the DWR's ability to reliably maintain both its current and anticipated SWP deliveries. The outlook is not rosy.

New Regulations Yield 'New' Water

By Edward J. Casey & Tammy L. Jones

California leads the way in recycled water legislation

We have to face it: The water supply in California is under pressure on a number of fronts, and creative solutions will have to be fashioned to meet future water needs. Indeed, California will have to be quite clever to meet the growing needs of its expanding population, now at 38 million and expanding at a rate of nearly 500,000 a year.

Because of the delta smelt decision and expectations of future rises in sea levels due to global climate change, SWP pumping could become more restricted. As a result, the DWR has determined that annual SWP deliveries will decrease in the future, falling by as much as 20% from current levels for one-quarter of the time.

With such daunting legal and financial barriers, it will be increasingly necessary to "create" new water out of old.

Recycling Opportunities

One solution is to store various sources of water underground in groundwater basins. Groundwater storage has the potential to help the southern part of California satisfy its water needs. Through the concept of "conjunctive use," or storing water underground during wet years for extraction during dry years, some water districts are already securing their water future.

Depending solely on native water sources, though, is risky. A prolonged drought could leave some areas with insufficient water supplies. For this reason, recycled water—water used once, then recaptured for reuse—will play an increasingly important role in satisfying our water needs.

There are regulatory challenges to storing recycled water in groundwater basins. In California, for example, various regional water agencies and the State Water Resources Control Board (SWRCB) have often provided inconsistent guidance on the use of recycled water. Frankly, much of the current practice is often carried out on a case-by-case basis and could be undone or overturned by a court or regulatory decision.

To correct this, in February 2009, the SWRCB adopted a new recycling policy. Among the key components are:

- Increasing the use of recycled water by 1 million acre-ft from 2002 to 2020 and adding another 1 million acre-ft by 2030.
- Giving the California Department of Public Health (CDPH) a dominant position in prescribing requirements for protecting human health—a move meant to keep from having regional boards impose arbitrary requirements on water projects.
- Requiring every state water basin to have a salt/nutrient management plan within five years to ensure that water does not exceed mandated levels for total dissolved solids and fertilizer-related nitrates.
- Mandating the monitoring of so-called chemicals of emerging concern in groundwater recharge projects. Such chemicals include those that disrupt human endocrine function, personal care products and pharmaceuticals.
- Expediting permits for water recycling projects that use reverse osmosis (RO) before flowing the water onto spreading grounds to one year.
- Requiring proof that a specific project will not exceed 10% of the assimilative capacity of a water basin. This is done under the anti-degradation policy, which forbids changes in ambient groundwater quality unless there is a maximum benefit to the state.
- Providing streamlined approval for permits (120 days) for landscape irrigation projects that meet certain criteria.

A number of these programs are already being implemented. For instance, Orange County has adopted a salt/nutrient plan for the Santa Ana River Basin. The Central Valley Salinity Coalition is shaping a large plan for the many water basins that make up the Central Valley.

As with any new regulations, there are unresolved issues. For one, the CDPH, at a time of tight budget constraints, may not be capable of conducting thorough water quality reviews. Moreover, the regulations are unclear as to the extent of CDPH's involvement.

Another problem is that recharging groundwater basins with recycled water can raise concerns about water quality. For that reason, until a salt/nutrient plan goes into effect, any project that refills ground storage at more than 10% of the available assimilative capacity must undergo an anti-degradation analysis; in short, agencies have to make sure that the water quality does not degrade to the point that it may compromise public health. Some groundwater storage and recharge projects, therefore, may not be approved unless the water is both recycled and then further treated with RO—an enhanced filtration process that leaves water cleaner than most ordinary filtration processes.

With that said, these new policies will have a major positive impact in a number of areas.

Recycling Results

For one, the new rules promote the use of recycled water statewide and in doing so, uniform standards. Given that surface water supplies have been cut sharply to meet environmental rulings from the court, this additional supply of recycled water is absolutely essential to California for meeting its needs.

In addition, these regulations may encourage private developers to partner with local water agencies to work recycled water into their development plans—an activity that has not been regularly carried out in the past. Such creative water supply plans may also help the development community satisfy the water supply requirements under the state statute known as SB 610/221.

The regulations also serve to clarify the roles of the various regulatory agencies (a nest of conflicting jurisdictions and bureaucracies that historically have functioned at odds with one another). Now, the SWRCB, the DWR and the California Public Utilities Commission, to name just a handful, will presumably be reading from the same page. They will have a cohesive approach and will be discouraged from imposing regulatory burdens outside of the newly crafted framework.

With time, California's cohesive approach to developing recycled water supplies may seep into

other states. California is not the only state with a water supply crisis. Texas, for instance, is suffering from an extreme prolonged drought. In Georgia, Florida and Alabama, Lake Lanier's diminishing water supply is so critical that the states are suing each other over it. Unfortunately, however, those states have remained behind California in developing an identifiable regulatory regime.

While some states allow the beneficial reuse of wastewater under the term "gray water," the U.S. Environmental Protection Agency has not issued national standards out of concern that mandated reuse could lead to public health problems. One possibility may be for those states to rely on an existing regulatory regime, which could involve the use of National Pollution Discharge Elimination System (NPDES) permits. Applying NPDES permits to the transfer of recycled water to another surface body, however, is still an emerging area of law. No court has held that this type of regulatory regime should apply to groundwater, leaving those states with a significant amount of work yet to be done.

Water supply planning has simply become a whole new ball game. The infinite spigot that once seemed to fill our nation's swimming pools, bathtubs and farms is being turned down. Starting now, we will have to make wiser use of our water supplies and find ways not just to conserve but perhaps to reuse our most valuable resource—our water. **www**

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