

GOVERNMENT

Southern California Water Scarcity Affecting Growth?

In February, Metropolitan Water Board (MWB) in Southern California adopted a region-wide plan for sharing water during shortages that will guide the equitable distribution of water among its 26 member public agencies. The plan considers member agencies' dependency on MWD water and alternative sources of supply, and assesses "penalty rates" that increase as agencies exceed their allocations. Previously, MWB had determined allocation solely on "preferential rights" which were based on an agency's financial contribution.

Recent court-ordered reductions of water deliveries from the Sacramento Delta and ongoing drought were important factors in MWB cutting

supplies to its local water districts by up to 30 percent in early January, said the *Riverside Press-Enterprise*.

In response to the new plan, one of the affected member agencies, Eastern Municipal Water District (EMWD), placed new retail and community developments in western Riverside County on hold in January, saying it could not yet guarantee water for a warehouse proposed for Moreno Valley and a \$300 million hotel and retail complex in Murrieta, according to the *Press-Enterprise*. Seven other developments were already on hold because their water supply could not be assured.

A 2001 bill passed by the California legislature requires major developments to get "will-serve" letters from their water providers before they can proceed with construction, assuring a

supply for 20 years. The delays of new developments are considered the first time the law has had such an effect.

"It's a new paradigm," said EMWD Board Member Randy Record. "It's not water saying 'we're here for you,' but 'You have to do this for us,'" reported the *Press-Enterprise*.

Visit www.pe.com and www.mwdh2o.com.

New Mexico Senate Considers Regulation of Deep Aquifers

Just as developers are realizing the potential of using deep, brackish groundwater—currently unregulated—to support growth in New Mexico (see *Southwest Hydrology*, March/April 2008), legislators began thinking that regulation of that resource is warranted. Senator Carlos Cisneros of Questa introduced SB 262 to the New Mexico legislature earlier this year, calling for regulation of aquifers having "reasonably ascertainable boundaries" with upper surface 2,500 feet or more below the ground and dissolved solids concentrations greater than 1,000 parts per million.

Deep groundwater produced during oil and gas exploration or geothermal projects is already regulated through the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), although SB 262 proposed additional restrictions.

The bill did not pass, having faced opposition by EMNRD and the State Land Office, according to the *Santa Fe New Mexican*. However Cisneros told the newspaper that he plans to evaluate the opposing arguments and return with a new version of the bill in 2009. Supporters said that significant amounts of groundwater pumping at any depth should be monitored by the state engineer. For now, the developers are getting busy...

Visit www.nmsenate.com and www.santafenewmexican.com.

HydroFacts

Term most widely used internationally for recharging, storing, and recovering water from an aquifer:

Managed Aquifer Recharge (MAR)

Number of wells in Chennai, India (formerly Madras, pop. 7.5 million) used to recharge rainfall from mandatory rooftop harvesting systems:
Density of wells in Chennai:

400,000

15/hectare, or 6/acre

Source: Steve Gorelich, Stanford University

Estimated capacity of recharge facilities, by recharge methodology, in cubic meters:

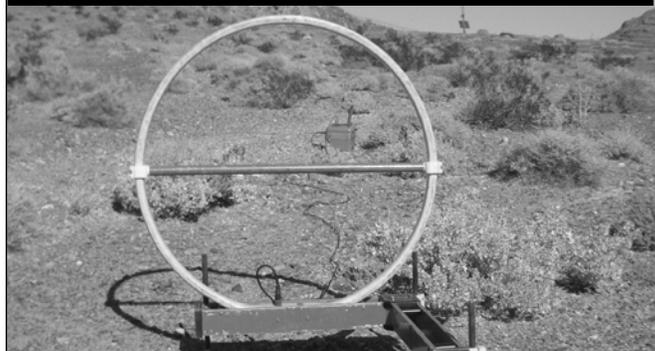
vadose zone wells (per well)	1,000 - 3,000
recharge & recovery wells (per well)	2,000 - 6,000
recharge basins (per hectare per day)	1,000 - 20,000

Estimated life cycle for recharge facilities, by recharge methodology, in years:

vadose zone wells	5-20
recharge & recovery wells	25-50
recharge basins	> 100

Source: *Prospects for Managed Underground Storage of Recoverable Water*, NRC 2008

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New Mexico and Texas Bury the Hatchet

Irrigation districts in Doña Ana County, New Mexico, and El Paso, Texas, have reached what Elephant Butte Irrigation District (EBID) Manager Gary Esslinger calls “a monumental agreement” on the apportionment of water from the Elephant Butte Reservoir, according to an *Associated Press* report in the *Las Cruces Sun-News*.

In February, the districts, which together comprise the Rio Grande Project, agreed to drop their separate lawsuits over water rights, following a 29-year dispute, said the *AP* report. El Paso County Improvement District No. 1 had claimed that unregulated groundwater pumping by New Mexico farmers was cutting into their share of reservoir water. Under the agreement, EBID will guarantee delivery of the El Paso districts’ water to the state

border, and the New Mexico farmers can continue to pump groundwater as long as the El Paso delivery requirements are met.

Visit www.lcsun-news.com.

Division Over Rio Grande Waters

A 1944 treaty that equally apportions Rio Grande waters to Mexico and the United States is proving inadequate to resolve disputes on both sides of the border. Under the treaty’s terms, water allocations to Texas farmers were severely curtailed from 1992 to 2002 because of low waters in the shared Amistad and Falcon reservoirs, with Mexico accumulating a deficit of 1.5 million acre-feet by the end of that period. The debt has been gradually repaid through water transfers from the dams every five years.

Farmers in northeastern Mexico are hurting and unhappy from the latest

transfers, reported *Reuters*, and lawmakers in Tamaulipas have asked the Mexican Supreme Court to rule on whether the most recent transfer, in 2007, was lawful. The farmers claim their harvests are ruined and farms must be abandoned every time a transfer is made. They argue that water from six western Mexican tributaries to the Rio Grande should be used instead to reduce the deficit, according to *Reuters*.

Meanwhile, the state of Texas has joined farmers, ranchers, and irrigation districts in continuing to seek redress from Mexico for uncompensated damages racked up from 1992 to 2002. Because individuals cannot sue Mexico or the United States under the 1944 treaty, the farmers sued Mexico for \$500 million through a tribunal of the North American Free Trade Agreement in 2004. The case was thrown out because NAFTA ruled it did not have

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jurisdiction. The farmers are particularly frustrated by the U.S. State Department's last-minute decision to side with Mexico, according to the *Associated Press*.

AP reported that the farmers planned to take their case to a Canadian judge to decide whether they received a fair hearing. They are seeking a decision from a Canadian judge because both sides had agreed to arbitration at a neutral location if the issue could not be resolved.

Visit www.ap.org and www.reuters.com.

Oil Shale Development a Threat to Colorado's Water?

International oil companies have substantial and growing water rights on the Western Slope of the Rocky Mountains and could be planning to use the rights for oil-shale development, according to an article in the *Durango Herald*. Evaluating potential impacts of industry development on the Colorado River is difficult because of a lack of studies on oil shale production and water needs. Most studies are vague, 20 years old, and do not reflect new in-situ development techniques.

But three major oil companies—Shell, Chevron, and EGL—recently obtained leases to demonstrate their in-situ methods on 160-acre parcels in Colorado. The technique requires water to process the shale oil, control dust, and wash leftover oil from underground formations.

According to the *Herald*, while Chevron has the biggest water rights in Colorado, Shell has done the most aggressive purchasing in the last five years, including a ranch in northwest Colorado with three large reservoirs, a land swap for Piceance State Wildlife Area, and an area west of Grand Junction adjacent to a coal mine. Shell is not divulging whether the purchases are for its oil-shale research project, the newspaper said.

The prospect of substantial oil-shale development has some legislators and

environmentalists worried, said the *Herald*. Potential water use estimates range up to 500,000 acre-feet per year. Colorado currently uses around 2.1 million acre-feet per year from the Colorado River Basin. The state's entire allocation of Colorado River water is 3.8 million acre-feet—a figure most water experts consider will never be available because of climate fluctuations and change.

A Shell spokesperson, Jill Davis, believes concerns are exaggerated. She estimates production of oil from shale would take two to three barrels of water per barrel of oil produced and believes that work force, air quality, the oil market, and water supplies will all be factors limiting the industry's size, according to the article.

Visit www.durango.herald.

EPA Calculates \$202 Billion Bill for Infrastructure

A recent report from the U.S. Environmental Protection Agency estimates \$202.5 billion in capital investment is needed nationwide to control wastewater pollution for up to a 20-year period. EPA conducts the Clean Watersheds Needs Survey every four years; the new report is based on a 2004 survey. The estimate includes \$134.4 billion for wastewater treatment and collection systems, \$54.8 billion for combined sewer overflow corrections, and \$9 billion for stormwater management.

The report provides information about pollution control needed to meet the environmental and human health objectives of the Clean Water Act. The figures represent documented wastewater investment needs, but do not account for expected investment and revenues. Wastewater treatment utilities pay for infrastructure using revenue from rates charged to customers and may finance large projects using loans or bonds.

State and federal funding programs, such as EPA's Clean Water State Revolving

Fund program, are also available to help communities meet their wastewater pollution control needs. The needs in this survey represent a \$16.1 billion (8.6 percent) increase over the 2000 survey report. The increase is due to population growth, more protective water quality standards, and aging infrastructure.

Visit www.epa.gov/cwvns/.

Los Angeles Reservoirs Experience Bromate Spike

Late last year, Los Angeles Department of Water and Power (LADWP) officials discovered unusually high concentrations of bromate in two reservoirs within its water distribution system. The reservoirs, which collectively held 600 million gallons of water, were immediately isolated from the rest of the system. According to the *Los Angeles Times*, bromate concentrations measured in October were 68 parts per billion (ppb) and 106 ppb in the two reservoirs. The U.S. EPA drinking water standard for bromate is 10 ppb calculated as an annual average of monthly measurements. Because the problem was addressed soon enough, no violations occurred.

Bromate is a suspected carcinogen that may cause adverse health effects after long-term exposure. It is known to form as a disinfection byproduct in public water systems when water containing naturally occurring bromide is purified using ozone. The LADWP reservoirs were being filled with local groundwater, and according to the agency's report, bromate formed unexpectedly when the reservoir water was treated with chlorine and exposed to sunlight. This was the first time such an occurrence had been observed.

After using some of the reservoir water for nonpotable uses, LADWP planned to drain and thoroughly clean the reservoirs. They are slated to be back in service by this summer.

Visit www.ladwpnews.com and latimes.com.