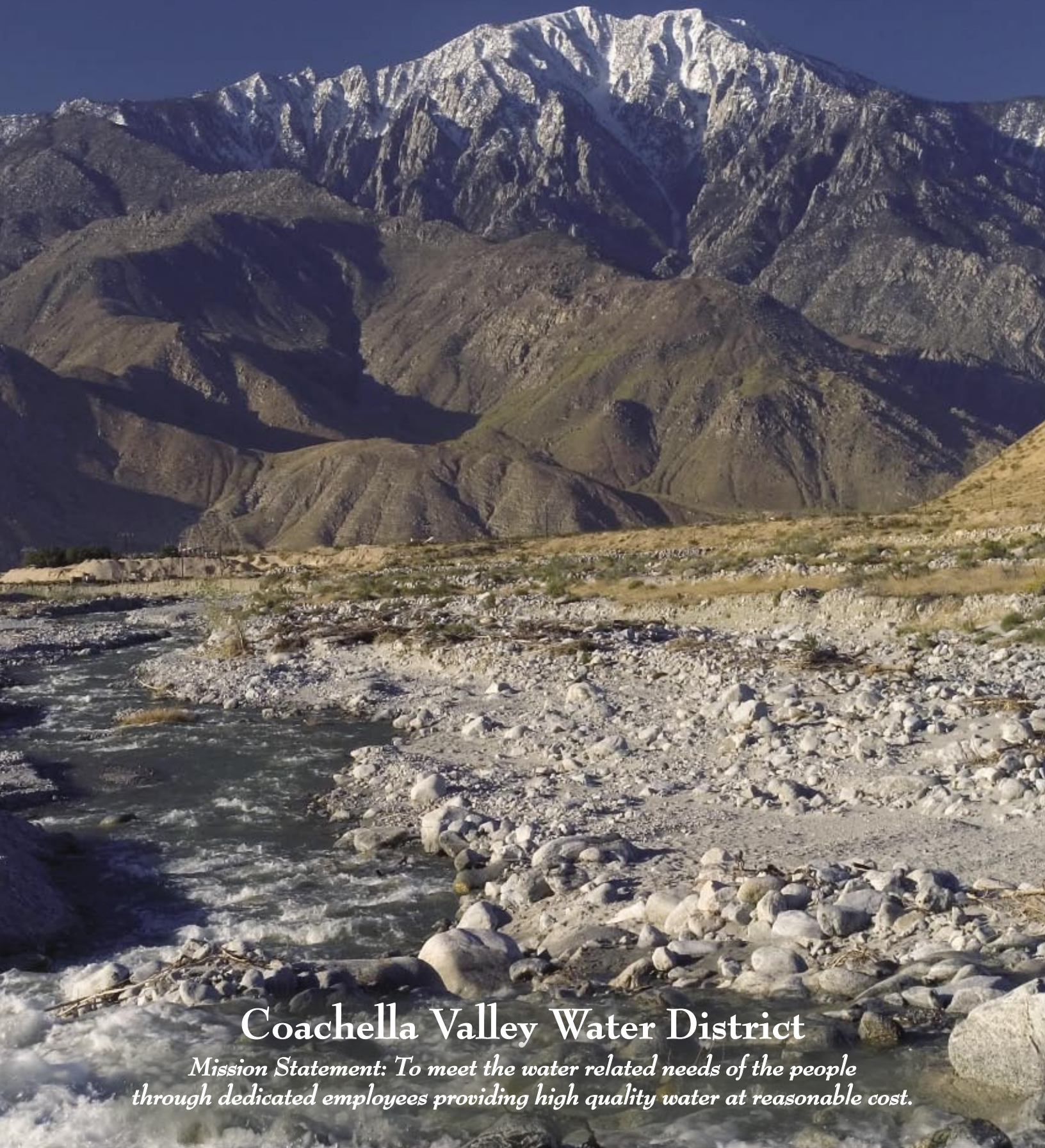
2004-05 Annual Review & Water Quality Report



Coachella Valley Water District

Mission Statement: To meet the water related needs of the people through dedicated employees providing high quality water at reasonable cost.

The Coachella Valley Water District is a government agency run by a five-member board of directors, elected at-large to represent the five divisions within CVWD's service area. They serve four-year terms.

Board meetings are open to the public and generally held on the second and fourth Tuesday of each month at 9 a.m. in Forbes Auditorium, at CVWD's Coachella office.

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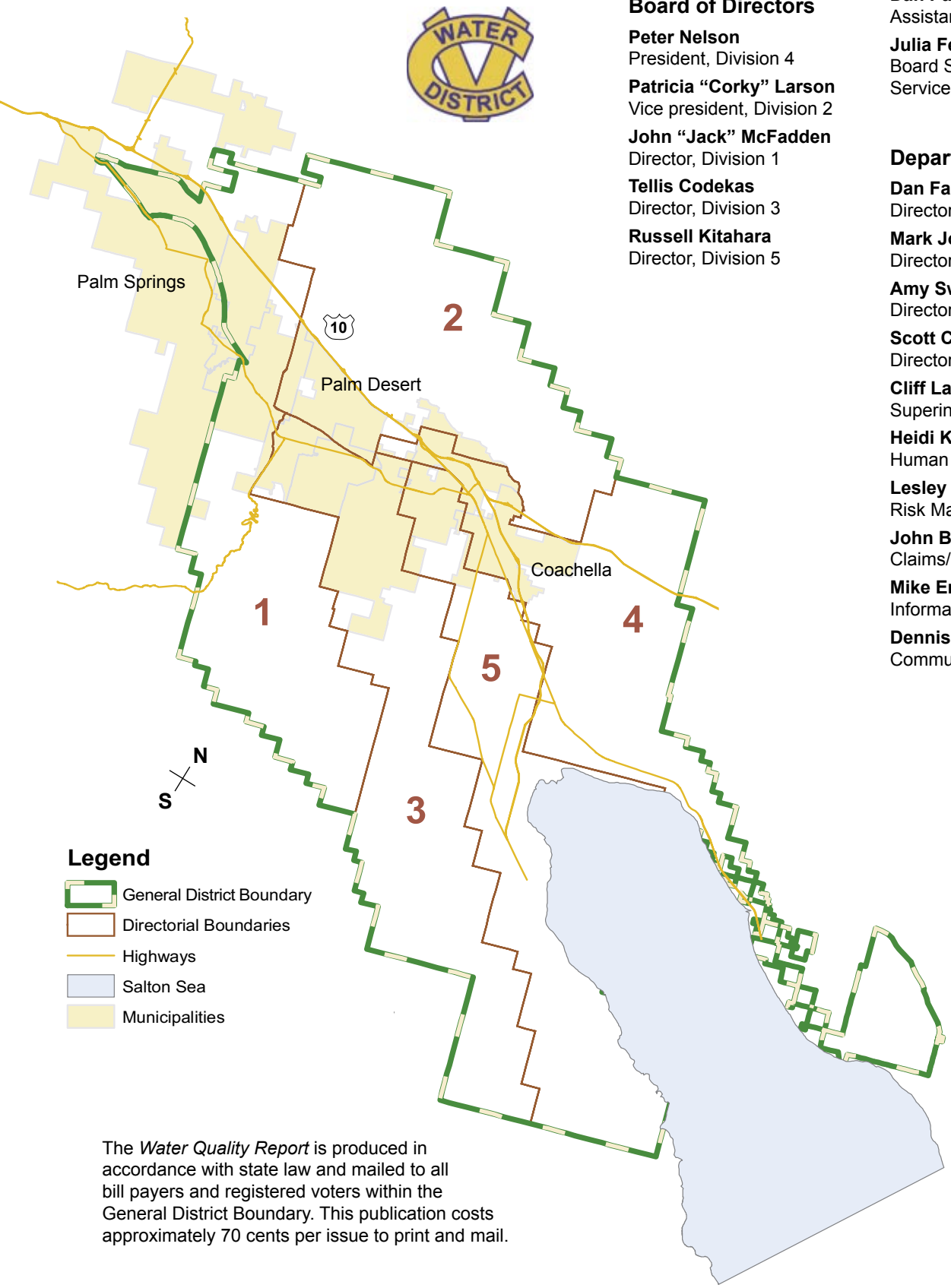

The *Water Quality Report* is produced in accordance with state law and mailed to all bill payers and registered voters within the General District Boundary. This publication costs approximately 70 cents per issue to print and mail.

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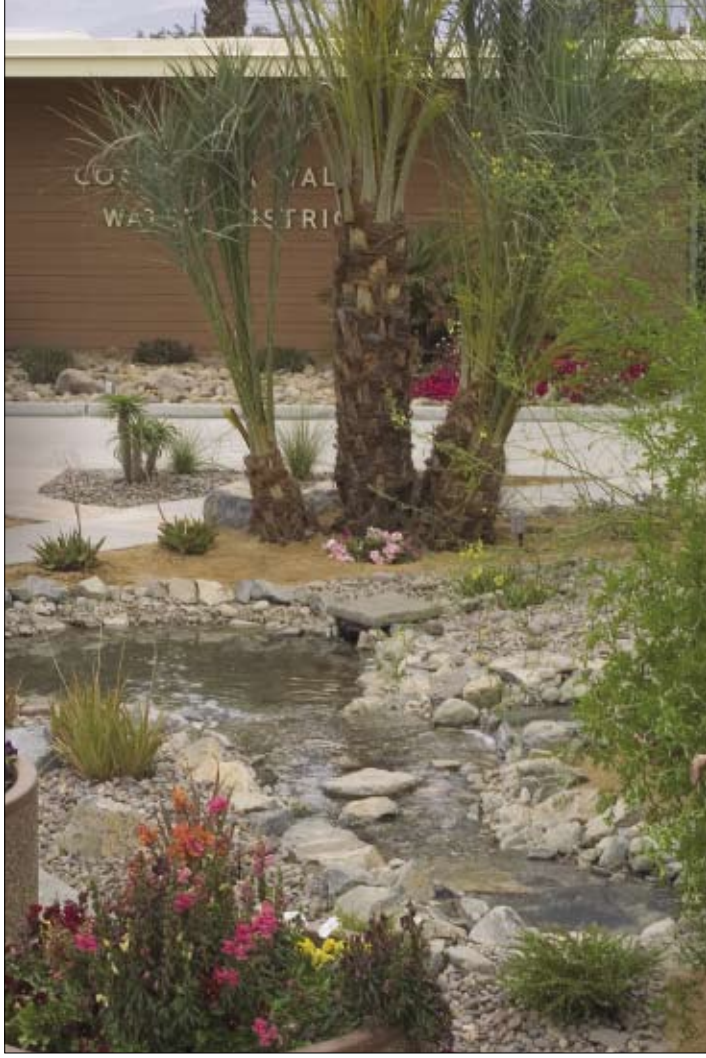

Cover photo: **Melted snow travels down the Whitewater River to the district's recharge facility at Whitewater.**

Top right: **Water-efficient landscaping was installed at the district's Coachella office to compliment the demonstration garden.**

Bottom right: **Meter Reader Jesse Felix takes a reading at one of more than 96,000 meters within the district.**

Back cover: **Dates are harvested at a local date garden.**

The *2004 Annual Review* is produced by the CVWD Communication & Legislation office.

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Editor

Robert Keeran & David Anderson
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General Manager's Message

Water Management Plan guides district into the future

When I talk to the public, one of the common concerns that I hear is whether there is enough water to sustain the rapid growth of the valley.

The short answer is "yes." Since the formation of the Coachella Valley Water District almost 90 years ago, its leaders have been insightful planners. Water is the lifeblood of the valley and the district's leaders know you are counting on them to ensure this valley remains a place where you can live, work and raise a family.

With that in mind, in 2002 the board of directors adopted the *Water Management Plan*, a 35-year blueprint of how the district will meet the valley's growing water needs. This detailed and ambitious plan calls for a combination of conserving water, finding new water sources and converting some groundwater users to other water sources. The goal is to ensure that sustainable supply of water, no matter how large the valley grows, without relying solely on the valley's precious groundwater.

It was last year that full-scale implementation of the *Water Management Plan* got underway. Because of its far reaching importance, the board in October hosted the first Coachella Valley Water Symposium, inviting community leaders and stakeholders from throughout the valley to discuss the plan's conservation goals — 10 percent by domestic users, 7 percent by agriculture and 5 percent by golf courses — and the steps those groups and the district need to take to meet those goals.

A by-product of the symposium was the formation of the *Water Management Plan* Implementation Task Force, which has since been divided into committees and is reviewing several projects and proposals included in the plan. The committee has been tasked with making detailed recommendations to the board of directors on how the projects should be prioritized, funded and implemented. In creating the task force, the board members said they felt the two-way communication was important because of the significant impact water will have on the valley's future. The task force's recommendations are expected to be made at the end of the year.

But the district isn't sitting idle in the meantime. The board is always looking for ways to reduce dependency on the aquifer. Over the past year, progress has been made in a number of ways, which you can read about here and throughout this document.

One of the most significant steps was ground breaking in October on the Coachella Canal lining project. This long-awaited, state-funded project will benefit the valley and other Colorado River water users in Southern California.

Groundwater replenishment got a big boost this year from increased natural and artificial recharge. The wet winter caused

On Oct. 20, the Coachella Valley Water District hosted the first Coachella Valley Water Symposium, bringing together more than 400 community leaders and stakeholders from across the valley to discuss the district's Water Management Plan. Elected officials from the local, state and federal levels, other water districts, tribal leaders and representatives of building, environmental, agriculture and golf courses, among others, attended and participated in panel discussions.

CVWD General Manager-Chief Engineer Steve Robbins, right, gives a ceremonial jug of Colorado River water to Jim Bond, vice chair of the San Diego County Water Authority board of directors, at the ground breaking for the Coachella Canal lining project Oct. 19.

heavy flow of the Whitewater River, which resulted in water being naturally percolated back into the aquifer.

The district was also able to purchase more water from the State Water Project than usual, in part because water districts throughout the state that saw their reservoirs filled by rain reduced the overall demand. In addition, the district purchased State Water Project entitlements from other water districts that have less of a need for the water. All this water was sent to the recharge ponds at Whitewater and Mission Creek.

Recharge also occurred at the new Martinez Canyon pilot project facility, which went into operation earlier this year. This facility is especially important because it recharges the aquifer in the lower valley, the fastest growing region in the area.

All the district's replenishment programs are funded in part by a Replenishment Assessment Charge, which is paid by all large water users who pump 25 acre-feet or more from the aquifer annually. Large water users in the upper valley have been paying this assessment for years to fund the recharge programs at Whitewater and Mission Creek, but it was a new assessment for lower valley users.

To help keep those water users informed about the recharge program they help fund, the district in 2005 formed the Lower Coachella Valley Joint Water Policy Advisory Committee, comprised of representatives from agriculture, golf courses, development and local government.

An agriculture conservation program in which a consultant was hired to teach scientific irrigation techniques to area farmers has been a huge success to date and will continue this year. Farmers utilizing the program saved nearly 20,000 acre-feet of water in 2004, which is well on the way to meeting the Water Management Plan conservation goal.

Looking to the future, 2005 will be an exciting time for the district. The district's priority will continue to be planning for the valley's future by starting to implement new programs and processes as outlined in the *Water Management Plan*.

New programs to help domestic users conserve water will focus on outdoor use, where homeowners typically use 70-80 percent of their water. Such programs include promoting the use of weather-based irrigation controllers, distributing materials that show proper irrigation scheduling and building a new demonstration garden at the Friends of the Coachella Valley Animal Campus, now under construction in Thousand Palms. This garden will compliment the existing water-efficient demonstration gardens at the district's Palm Desert and Coachella offices.

For golf course conservation, the district will continue to require water-efficient landscaping on new developments and the use of recycled water where possible. In 2004, the number of courses using recycled water increased to 13 with a 14th on the horizon.

Looking to convert some groundwater users to other water sources will take center stage as the board studies the proposed Mid-Valley In-Lieu Program. This pipeline project would move Colorado River water to the mid-valley so an estimated 50 golf courses there can stop using groundwater for irrigation.

The board also will study the feasibility of building a pipeline to bring water to the valley from the State Water Project aqueduct. This would give the district direct access to another water source other than the aquifer, which is in a state of overdraft, and Colorado River water.

Both projects would be costly and take years to become a reality, but may be important steps in ensuring a reliable water supply well into the future.

In late 2005 or early 2006, the water district's domestic service is expected to hit the milestone of 100,000 meters. With the growing population, the water district staff will need to grow. The 2004-05 operating budget included 26 new staff positions and the 2005-06 budget will likely have a similar increase. To accommodate new staff members, in 2004 the district purchased two large mobile office units and hired a consultant to recommend a more permanent expansion plan.

These are but a few highlights of the past year and a little insight to the district's future plans. I hope you now feel assured that with planning, conservation and the continuous search for new water sources, the district will be able to provide drinking and irrigation water to the entire valley for generations to come.

Public Outreach

Educating young and old the key to conservation

Public outreach has always played an important role at the district. By promoting wise water management and teaching water users how to conserve, the district is helping to ensure an adequate supply of quality water to meet the needs of the people of Coachella Valley.

Even before the district was formed — first as a stormwater agency in 1915 and then as a water district in 1918 — farmers and those who lived in flood-prone areas were encouraging their neighbors to support issues that would extend and supplement the valley's water supplies and control flooding.

Today, as increasing numbers make the Coachella Valley and the West home, demands have increased on traditional but finite water supplies like the Colorado River, the State Water Project and even Coachella Valley's tremendous aquifer. To stretch those supplies and assure there is water available for future generations, education as a means toward conservation is even more important today than it was in 1915.

This publication, a mainstay of the district's public outreach program for more than 40 years, is designed to keep the reader informed of local, regional, state and federal activities which can affect their water supplies. Knowledgeable voters can provide the necessary guidance to improve their water supply or remove threats to it.

Some of the information in this *Annual Review* of district activities, such as the *Water Quality Report*, is so important to the water user that federal law requires that it be distributed to every household. But this publication isn't the only means by which the district distributes news and educates the public about conservation and other water issues.

For more than 30 years, the district has had an active school education program with state certificated teachers visiting classrooms of public and private schools within the district boundaries teaching canal safety, water conservation and water science.

The district's two teachers now visit more than 16,000 students a year and provide educational materials, training and support for regular classroom teachers. Together with district engineers, biologists and water quality experts, they help judge science fairs and provide science fair awards for outstanding water-related projects. This year, the district has expanded its outreach by publishing *The Water Wheel*, a newsletter of water-related education ideas for teachers.

A water safety and conservation coloring and activity book featuring conservation mascot Tutor Tortoise was developed by district teachers this year for distribution during classroom visits. They also developed a coloring fan which was popular during Earth Day activities at The Living Desert.

While public education starts in the schools, the major push is toward adults. The district's *Water Management Plan*

Kevin Hemp, right, shows the district's Control Room to a group of visiting students.

Kathy Keeley, bottom, is one of the control operators who monitors safety systems, controls irrigation water deliveries and other operations throughout the district's 1,000 square -mile boundary from the state-of-the-art facility.

The water district works with area media outlets in order to keep the public up-to-date on important water district business. Here, television news cameras film a press conference announcing the launch of Spanish language weather alerts, broadcast by the National Weather Service on a CVWD transmitter.

calls for the reduced use of water by residents, farmers and country club managers, as well as finding new water sources and converting some groundwater users to other sources. While professional water users, such as farmers and golf course managers, have developed many innovations to reduce their need for water, most — with a little help — can do more.

For many years the district has provided technical expertise to large urban water users such as golf course superintendents and homeowners associations and the district has contracted with an irrigation engineering firm to provide water conservation expertise to farmers. As part of the conservation educational effort for these groups, the district has re-established the monthly publication of *Farm Water Watch* for agricultural users and *Water Wise* for major urban water users.

Getting the message to homeowners and other residents is equally important. In Coachella Valley, as much as 80 percent of water is used outside the home—most in an effort to keep plants alive that don't belong in a hot, dry desert climate.

To encourage water-efficient landscaping, the district instituted an annual landscape workshop nearly 20 years ago. Last year the district had to hold four of the half-day events to accommodate the more than 400 people who signed up. Details of the November workshop are included in water bills mailed prior to the event.

Because very few of the water-efficient landscaping books available applied to the harsh conditions of Coachella Valley summers, in 1988 the district published a 64-page plant and irrigation book, *Lush & Efficient: a guide to Coachella Valley landscaping*. As demand increased both for the book and the type of plants contained, it was expanded to 160 pages in 2001 and became available for sale as *Lush & Efficient Gardening in the Coachella Valley* through some bookstores and nurseries and directly from the district. As supplies of the popular book dwindled, the district contracted for a second revision to be completed in 2006 with additional plants that have become available since the last printing.

The district also has contracted for the production of an electronic tool to help home gardeners select the most water-efficient plants for their growing conditions. A CD-ROM with a plant encyclopedia similar to the book will give the user the ability to type in conditions for that difficult spot in the garden and retrieve a list of plant candidates for the location. This is expected to be available before the end of the year.

Water-efficient demonstration gardens are accessible to the public during regular business hours at the district's Coachella and Palm Desert offices.

To graphically demonstrate water savings with landscaping other than grass, a district designed and constructed display shows, with actual flowing water, the water requirements of grass, water-efficient landscaping and desert landscaping. The exhibit was used at the Riverside County Fair & National Date Festival, the landscape workshop, Living Desert's Earth Day and several conferences and workshops throughout the valley. It remains available for use at special events.

To help reach a wider audience with the district's wise water use message, it contracted with David Garcia to produce a series of half hour shows about water use in the desert to air several times a week on cable Channel 10. Garcia is an Emmy-winning environmental reporter from the Los Angeles area who has retired to the desert.

The district's web site, cvwd.org, contains a wealth of information about water issues and will soon be updated.

Tours of district facilities are conducted regularly for groups ranging from local middle school students to water professionals from other countries. The district also maintains a speakers' bureau to meet the needs of service clubs and other groups. Or, water-related exhibits can be arranged for community events, on an availability basis.

Call the district's communications staff for more details.

Groundwater Management

Fourth recharge facility boosts aquifer replenishment effort

There are now four groundwater recharge facilities in the Coachella Valley. Although two are still in the pilot phase, they have the potential to return a combined 80,000 acre-feet of water annually to the aquifer in the lower valley once full-scale facilities are built.

The newest pilot program became operational in April 2005 in an agricultural area known as Martinez Canyon. Although designed to recharge 3,000 acre-feet annually, the pilot site has the potential to return up to twice as much to the aquifer.

This facility joins the district's Dike 4 recharge facility, located just south of Lake Cahuilla, in tackling the challenge of recharging the aquifer where there is a difficult layer of clay with which to contend.

That clay layer, known as an aquatard, can be penetrated during well drilling to allow for the extraction of groundwater, but traditional recharge ponds (where the water is allowed to seep into the ground) do not work on the lower valley floor. Instead, the pilot recharge facilities have been built near the valley's edge, beyond the range of the aquatard, where the geology is more suitable for recharge purposes.

Since 1997, Dike 4 has returned more than 17,000 acre-feet of water to the aquifer. When full-scale recharge facilities are built at Martinez Canyon and Dike 4, it is anticipated that each will recharge 40,000 acre-feet into groundwater supplies.

Groundwater recharge is an important component of CVWD's *Water Management Plan*, which outlines the valley's water needs and how the district plans to meet those demands through 2035.

The Martinez Canyon pilot program is a crucial piece to the district's overall recharge efforts, because in the lower valley groundwater levels have dropped between 22 and 96 feet since the late 1960s.

In 2004, municipal groundwater use exceeded agricultural demand for what may be the first time, with additional growth expected to continue to increase the strain on the aquifer. If unchecked, overdraft leads to permanent reduced aquifer storage capacity, water quality issues and, in extreme cases, land subsidence.

To help offset the costs of recharging the aquifer, those who pump more than 25 acre-feet from the ground annually (including CVWD and the cities of Indio and Coachella) began in 2005 to pay a Replenishment Assessment Charge.

Groundwater Replenishment

2004 Calendar year

Natural recharge	
Area of the aquifer	Amount in Acre-feet
Upper basin	28,300
Lower basin	5,200
Total natural recharge	33,500
Imported water recharge	
Facility	Amount in Acre-feet
Whitewater	31,282
Dike 4	3,450
Mission Creek	5,564
Total from imported water	40,296
Total recharge	73,796

About the aquifer

Some people imagine an aquifer as a giant lake, but it's really more like a giant, saturated sponge. The valley's aquifer is bounded on the east by the San Bernardino and Little San Bernardino Mountains and on the west by the Santa Rosa and San Jacinto Mountains. The trace of the Banning fault on the north side of San Gorgonio Pass forms the upper boundary and the northwest shoreline of the Salton Sea forms the lower boundary. The aquifer is divided into four subbasins based on geographic borders: Mission Creek, Desert Hot Springs, Garnet Hill and Whitewater River.

Water jargon

Acre-foot — The amount of water needed to cover one acre of land one foot deep, roughly equal to 326,000 gallons.

Aquifer or groundwater — An underground layer of rock, sediment or soil that is saturated with water.

Overdraft — The condition that occurs in a groundwater basin when pumping exceeds the amount of replenishment over a long period of time.

Recharge or replenishment — An increase in groundwater storage from precipitation, infiltration from streams or human activity, such as putting surface water into spreading basins.

A CVWD employee monitors the water flow into the Martinez Canyon recharge facility, a pilot program that became operational in April 2005. The district's oldest recharge facility, located at Whitewater, has been percolating water into the aquifer since 1973.

The assessment charge in the lower valley is considerably less than in the upper valley because less expensive Colorado River water is used. In the upper valley the costs are tied to expenses related to obtaining State Water Project water, which costs in excess of $200 an acre-foot.

At the Mission Creek subbasin, in the Desert Hot Springs area, more than 5,500 acre-feet have been recharged in a program entering its third fiscal year. As is the case elsewhere, the aquifer subbasin in the region is in a state of overdraft.

Most of the valley is served by the Upper Whitewater River subbasin, where water has been returned to the aquifer artificially since 1973. More than 65 large-volume well users, including CVWD, golf courses, medical facilities, a college, school districts and other government agencies, pay the Replenishment Assessment Charge.

More than 1.8 million acre-feet has been returned to the aquifer in the upper valley at recharge ponds west of Palm Springs. Although the water is Colorado River water, released by Metropolitan Water District of Southern California from its aqueduct into the Whitewater River, costs are those associated with the Sate Water Project. That's because CVWD and Desert Water Agency exchange their State Water Project entitlements for Metropolitan's Colorado River water.

All subbasins within the Coachella Valley are estimated to have a capacity of about 39 million acre-feet, although the Whitewater subbasin is estimated at slightly less than 29 million acre-feet. There is an estimated five million acre-feet of storage capacity — 500,000 acre-feet greater than the size of Lake Shasta — not being utilized. This could become an asset to the Coachella Valley if groundwater banking programs can be developed.

The water district is studying the feasibility of constructing a pipeline that would extend the California Aqueduct into the Coachella Valley. In addition to having direct access to State Water Project water, another benefit would be that empty portions of the aquifer could be used to store other agencies State Water Project entitlements.

Other agencies could "bank" unneeded portions of their entitlements during "wet" years. Then, during "dry" years could utilize portions of CVWD entitlement, with Coachella Valley relying more on the use of groundwater that had been placed there by others.

Storm run-off flows down the natural washes and canyons at The Living Desert.

Stormwater Protection

Wet winter brings Whitewater River out of hibernation

Storms in late 2004 and early 2005 contributed to the fourth wettest winter on record in the Coachella Valley and the second wettest in all of Southern California. Local meteorologist Carl Garczynski suggests the rains may offer a hint that this area and the rest of Southern California are headed out of the drought.

"We've had an unusually long time, nine to 10 years of dryness, even for the desert" Garczynski said. "I think we may be returning to a pattern of wetter winters."

This could signal that at least some of the drought that has had most of the Southwest in a dry, parched grip for nearly six years could be coming to an end. Good news for most, but representing a greater challenge to those responsible for protecting life and property from flood waters.

It's especially challenging when you consider that agencies that provide regional flood control such as Coachella Valley Water District — like most local government entities in California — have been hit hard by shifts in property tax allocations made by lawmakers in Sacramento in their attempts to solve the state's budget crisis.

In fiscal year 2004-05, CVWD saw its property tax revenues reduced by $7.2 million by state legislators; a similar reduction is expected for the 2005-06 fiscal year. Flood control protection services, for which no fees are charged, rely almost entirely on local returned property taxes for revenue. Therefore, it was hit the hardest of all the services the district provides by losing an estimated $3.4 million. The net result when all budget factors are considered is nearly a 50-percent cut in funding.

The availability of funding doesn't impact whether or not there is going to be flooding, and flows through the areas stormwater channels earlier in the year were as great as they have been since January 1993. Imagine 6,000 basketballs roaring per second down the Whitewater River Stormwater Channel, and you get an idea what it means when engineers report flows of 6,000 cubic feet per second. This was the amount of water that flowed in the channel in early January.

This represents only 10 percent of the channel's designed capacity. The 50-mile storm channel runs from the Whitewater area north of Palm Springs to the Salton Sea. West of about Washington Street, it is called the Whitewater River Stormwater Channel. To the east, it's called the Coachella Valley Stormwater Channel.

Local rainfall was relatively light, but twice as much fell in the foothills, where runoff from dozens of canyons, washes and other sources helped give the Whitewater River's name some semblance of validity. Most of the time it is a dry riverbed.

Overall inconvenience in areas protected by regional flood control facilities was significantly less than it was 12 years ago,

but there was some damage. In late December 2004, several golf courses along the Deep Canyon Channel suffered flood damage. Courses within the Whitewater River Stormwater Channel also suffered damage.

Also, some motorists who ignored warnings got stuck — and in some cases had to be rescued — on roadways that flood because they cross directly through the riverbed. Communities within Coachella Valley have made vast improvements in transportation infrastructure since 1993. Bridges and improved crossings have been built across the Whitewater River and other flood control channels, especially in areas where there has been significant residential and business growth and development. The district has worked with several cities and Riverside County to expedite the construction of these bridges.

In February, flooding struck the Thousand Palms area, which because of environmental issues has been one of the most complicated areas in the valley to design and obtain funding for flood control protection. There is some developer-built flood protection in the area, but as of yet no regional flood control. The area is on an alluvial flood plain, subject to flash flooding from Indio Hills and the San Bernardino Mountains. Such flooding often occurs with little or no warning.

CVWD has been working with the U.S. Army Corps of Engineers on a series of levees and channels that will divert floodwaters without jeopardizing the natural supply of sand deemed crucial for the survival of several species, including the fringe-toed lizard. Significant federal funding is needed, however, before actual construction can begin.

When flooding struck the area in February, CVWD crews worked diligently with citizens and other government agencies to minimize damage to homes and businesses. Town hall-style meetings, organized by Riverside County Supervisor Roy Wilson's office, also were conducted to help residents understand the seriousness of flood risk, and the steps community leaders and agencies such as the water district can and are taking to be prepared.

Over the years, municipalities have replaced roads that travel through the Whitewater River bed with bridges, like this one that takes traffic on Washington Street safely over the fast flowing water.

At the peak of the storm, water was flowing at a rate of 6,000 cubic feet per second down the Whitewater channel.

Weather alerts now broadcast in English & Spanish

To better alert Spanish speaking residents of impending storms, the Coachella Valley Water District, through a partnership with the National Weather Service (NWS), started transmitting Spanish weather warnings and watches.

The district purchased, installed and maintains the transmitter and the NWS sends out the broadcast. By adding the service in Spanish, CVWD became only the second agency in the nation and first in California to utilize the NWS Spanish broadcast system. The district already maintains a transmitter for the English broadcasts.

The district has an extensive flood protection system, however there are areas of the valley that are not yet protected, including Thousand Palms and Oasis.

The broadcast system operates on a dedicated National Oceanic and Atmospheric Administration radio frequency. Hearing the information requires a special radio receiver or scanner capable of picking up the signal. Such radios are available for purchase at many electronics stores. Because of the high number of low-income residents in the Oasis area, the district has provided free radios to the Oasis Community Council, schools and residents in the area.

The NOAA presented a Mark Trail Award to the district for its support of the agency's weather radio program during a ceremony in Washington, D.C.

Water Quality

CVWD continues to provide quality drinking water

Ensuring that every drop of water it provides annually meets all federal and state standards for drinking water is a top priority at Coachella Valley Water District. This annual water quality report is published to document that extremely high quality water that meets all government standards is served to all constituents of the Coachella Valley Water District.

Data summarized here come from CVWD's most recent monitoring, completed between 2002 and 2004. The state allows the monitoring for some contaminants less than once a year because their concentrations do not change frequently.

All domestic water served by the Coachella Valley Water District is obtained locally from wells drilled into the Coachella Valley's vast groundwater basin.

Most water quality testing is done in the district's state-certified laboratory. A few highly specialized tests must be performed by other laboratories, which have the equipment to find minuscule amounts of some constituents.

In addition to the detected constituents listed in the table on the following pages, CVWD's water quality staff of biologists, chemists, engineers and technicians monitor for more than 100 other regulated and unregulated chemicals. All of these are below detection levels in CVWD's domestic water.

While all of CVWD's domestic water supply meets current requirements for arsenic, drinking water supplied to some service areas does contain low levels of this constituent. The standard for arsenic balances the current understanding of the chemical's possible health effects against the costs of removing the constituent from drinking water. The California Department of Health Services continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations, and is linked to other health effects such as skin damage and circulatory problems.

With respect to the presence of arsenic in drinking water in excess of 10 ug/L but less than 50 ug/L — which is the case for wells supplying the communities of Mecca, Bombay Beach, North Shore, Hot Mineral Spa and Valerie Jean — the state Department of Health Services warns that some people who drink water containing arsenic in excess of the maximum contaminant level (MCL) over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

Radon is a naturally occurring, radioactive gas —

Coachella Valley Water District provides drinking water to an estimated 240,000 people every day. This water comes from a huge aquifer, which is replenished by natural run-off from precipitation and melting snow and water imported from the Colorado River.

"Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/ Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline 1-800-426-4791 or www.epa.gov/safewater."

—California Department of Health Services

a by-product of uranium — that originates underground but is found in the air. Radon moves from the ground into homes primarily through cracks and holes in their foundations. While most radon enters the home through soil, radon from tap water typically is less than two percent of the radon in indoor air.

The federal Environmental Protection Agency (EPA) has determined that breathing radon gas increases an individual's chances of developing lung cancer, and has proposed a maximum contaminant level of 300 picoCuries per liter (pCi/L) for radon in drinking water. This proposed standard is far less than the 4,000 pCi/L in water that is equivalent to the radon level found in outdoor air. The radon level in district wells ranges from 80 to 360 pCi/L, significantly lower than that in the air you breathe.

To receive a summary of the district's source water assessments or for additional water quality data or clarification, readers are encouraged to call the district's Water Quality Division at (760) 398-2651.

Complete copies of these assessments may be viewed at Coachella Valley Water District, 85-995 Avenue 52, Coachella, CA 92236.

Nitrate in drinking water at levels above 45 milligrams per liter (mg/L) is a health risk for infants younger than six months old. High nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in serious illness; symptoms include shortness of breath and blueness of skin. Nitrate levels above 45 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider. Groundwater nitrate is the most closely monitored chemical in drinking water and nitrate levels do not change quickly in the district's deep wells used to supply drinking water. If the nitrate level in a well begins to increase, CVWD increases its monitoring frequency and, if necessary, wells are taken out of service before they become unsafe.

As noted, all drinking water served by CVWD comes from wells. The California Department of Heath Services requires water agencies to state, however, "the sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity."

"Contaminants that may be present in source water include:

• Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

• Inorganic contaminants, such as salts and metals, that can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

• Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.

• Organic chemical contaminants, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.

• Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities."

"In order to ensure that tap water is safe to drink, USEPA and the state Department of Health Services (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

"Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not

Continued on Page 14

Definitions & Abbreviations

AI or Aggressive Index — This is a measurement of corrosivity. Sources with AI values of 12 or greater are non-corrosive. AI values between 10 and 12 are moderately corrosive and AI values less than 10 are corrosive

AL or Regulatory Action Level — The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow

MCL or Maximum Contaminant Level — The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to public health goals or maximum contaminant level goals as economically and technologically feasible. Secondary MCLs are set to protect the odor, taste and appearance of drinking water

MCLG or Maximum Contaminant Level Goal — Level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the federal EPA

mg/L — Milligrams per liter (parts per million)

MRDL or Maximum Residual Disinfectant Level — The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap

MRDLG or Maximum Residual Disinfectant Level Goal — The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLs are set by the U.S. Environmental Protection Agency

N/A — Not applicable

NA — Not analyzed

ND — None detected

ng/L — Nanograms per liter (parts per trillion)

None — The government has not set a Public Health Goal or Maximum Contaminant Level for this substance.

NTU — Nephelometric turbidity units (measurement of suspended material)

pCi/L — picoCuries per liter

PHG or Public Health Goal — Level of a contaminant in drinking water below which there is no known or expected risk to health. Public Health Goals are set by the California Environmental Protection Agency

Primary Drinking Water Standard — Primary maximum contaminant levels and maximum residual disinfectant levels for contaminants that affect health, along with monitoring and reporting requirements

Secondary Drinking Water Standard — Based on aesthetics, these secondary maximum contaminant levels have monitoring and reporting requirements specified in regulations

ug/L—Micrograms per liter (parts per billion)

umhos/cm — Micromhos per centimeter

CVWD 2004 domestic water quality summary

CVWD analyzes more than 20,000 water samples annually to ensure that your drinking water meets state and federal standards. Every year, the district is required to analyze a select number of these samples for more than 100 regulated and unregulated substances. This chart lists those substances that were detected in the district's six service areas. Of these substances, 21 are state and federally regulated and six are not. The data on the chart shows CVWD continues to deliver high quality water that meets all water quality standards.

To read this chart: First, determine in which of the six service areas you live (columns 4-9). Then move down the column, comparing the detection level of each chemical or other constituent with the Public Health Goal, Maximum Contaminant Level Goal and Maximum Contaminant Level (columns 2-3). For example, if you live in La Quinta and want to know the level of fluoride detected in your service area, you would look down the Cove Communities column and stop at the fluoride row. The average fluoride level in that service area is 0.6 mg/L with the range of results varying between 0.2 and 0.9 mg/L. Compare these values to the MCL in Column 3. The 2 [mg/L] represents the highest level of fluoride allowed in drinking water. Since the values given for the service area are equal to or below 2 mg/L, the drinking water meets state and federal standards for fluoride.

1 Detected parameter, units	2 PHG or (MCLG)	3 Primary or (secondary) MCL	4 Cove Communities [1]	5 Indio Hills, Sky Valley & areas around Desert Hot Springs	6 Mecca, Bombay Beach, North Shore & Hot Mineral Spa	7 Desert Shores, Salton Sea Beach & Salton City	8 Valerie Jean	9 Thermal	10 Major Source(s)
Aluminum, mg/L	0.6	1.0, (0.2)	ND-0.05 (ND)	ND	ND	ND	ND	ND	Erosion of natural deposits
Arsenic, ug/L	0.004	50	ND-5.0 (ND)	ND	9.6-27 (17)	ND	8.1-16 (12)	2.5-3.5 (3.0)	Erosion of natural deposits
Boron, mg/L [2]	None	None	ND	ND	ND	0.4	ND	ND	Erosion of natural deposits
Chloride, mg/L	None	(500)	5.2-47 (13)	13-21 (16)	8.7-9.4 (9.0)	200-220 (200)	7.6-10 (8.7)	8.8-14 (11)	Leaching from natural deposits
Chlorine (as Cl_2), mg/L [4]	MRDLG 4.0	MRDL 4.0	ND-0.8 (0.3)	0.1-1.2 (0.3)	ND-0.4 (0.2)	0.05-0.6 (0.3)	ND-1.5 (0.8)	0.2-0.5 (0.4)	Result of drinking water chlorination
Chromium, ug/L	(100)	50	ND-20 (ND)	11-18 (15)	ND	ND	11-17 (13)	22-23 (22)	Erosion of natural deposits
Chromium VI, ug/L [2]	None	None	1.5-18 (8.1)	9.1-19 (15)	ND-6.7 (2.2)	ND	8.1-18 (13)	21-22 (22)	Erosion of natural deposits
Copper, mg/L [3] [homes tested/ sites exceeding AL]	0.17	AL=1.3	0.14 [50/ 0]	0.11 [20/ 0]	ND [20/ 0]	0.19 [13/ 0]	ND [10/ 0]	ND [12/ 0]	Internal corrosion of household plumbing
Copper, mg/L	None	(1.0)	ND-0.1 (ND)	ND	ND	ND	ND	ND	Leaching from natural deposits
Corrosivity, AI	None	(Non-corrosive)	11-13 (12)	12	11	12	12	11-12 (12)	Natural balance of hydrogen, carbon and oxygen
Electrical conductance, umhos/cm	None	(1,600)	220-730 (360)	580-750 (650)	220-250 (240)	1,300-1,500 (1,400)	220-230 (230)	250-290 (270)	Substances that form ions when in water
Fluoride, mg/L	1	2	0.2-0.9 (0.6)	0.5-0.7 (0.6)	0.9-1.1 (1.0)	0.4-1.8 (1.2)	0.8	0.6-0.7 (0.7)	Erosion of natural deposits
Gross alpha particle activity, pCi/L	(Zero)	15	ND-15 (ND)	ND-8.3 (4.8)	ND-3.8 (ND)	ND-7.8 (ND)	ND-10 (3.3)	ND-9.6 (ND)	Erosion of natural deposits
Haloacetic acids, ug/L [4]	N/A	60	ND-6.1 (1.8)	ND	ND	1.3	ND	ND	By-product of drinking water chlorination
Hardness (as $CaCO_3$), mg/L	None	None	23-310 (110)	120-190 (160)	14-22 (18)	160-220 (190)	8.9-15 (12)	34-47 (40)	Erosion of natural deposits
Iron, ug/L	None	(300)	ND-160 (ND)	ND	ND	ND-120 (ND)	ND-190 (ND)	ND	Leaching from natural deposits
Nitrate (as NO_3), mg/L	45	45	ND-40 (6.6)	ND-6.6 (3.9)	ND	4.6-6.8 (5.8)	ND	2.3-3.1 (2.7)	Leaching of fertilizer, animal wastes or natural deposits
Odor threshold, units	None	(3)	ND-1.0 (ND)	ND	ND	ND	ND	ND	Naturally occurring organic materials
pH, units	None	None	7.2-8.6 (7.9)	7.7-8.3 (8.0)	8.1-9.0 (8.6)	7.3-7.5 (7.4)	8.6-9.0 (8.8)	7.6-8.2 (7.9)	Physical characteristic
Sodium, mg/L	None	None	6.1-51 (27)	56-81 (68)	38-46 (43)	200-240 (210)	41-47 (45)	35-40 (38)	Erosion of natural deposits
Sulfate, mg/L	None	(500)	13-160 (35)	140-210 (170)	29-35 (32)	180-300 (230)	20-22 (21)	23-30 (27)	Leaching from natural deposits
Tetrachloroethylene (PCE), ug/L	0.06	5	ND-0.6 (ND)	ND	ND	ND	ND	ND	Discharge from dry cleaners and auto shops
Total coliform bacteria, % positive [5]	(0)	5% tests positive	ND-0.5% (ND)	ND	ND	ND	ND	ND	Naturally present in the environment
Total dissolved solids, mg/L	None	(1,000)	120-480 (210)	370-480 (420)	120-140 (130)	760-910 (820)	130-140 (140)	140-170 (160)	Leaching from natural deposits
Total trihalomethanes, ug/L [4]	N/A	80	1.4-2.2 (2.0)	7.7	4.8	12	8.9	0.6	By-product of drinking water chlorination
Turbidity, NTU	None	(5)	ND-0.9 (ND)	ND-0.3 (ND)	ND	ND-1.4 (0.7)	ND-3.5 (1.3)	ND	Leaching from natural deposits
Uranium, pCi/L	0.43	20	ND-12 (3.2)	ND-12 (5.7)	ND-2.6 (ND)	ND-5.2 (2.5)	ND-2.6 (ND)	3.0-3.1 (3.1)	Erosion of natural deposits
Vanadium, ug/L [2]	None	None	ND-39 (12)	5.8-24 (12)	3.4-29 (12)	22-28 (24)	26-46 (35)	26-31 (29)	Erosion of natural deposits

Footnotes

[1] Includes the communities of Rancho Mirage, Thousand Palms, Palm Desert, Indian Wells, La Quinta and portions of Bermuda Dunes, Cathedral City and Riverside County.

[2] Unregulated contaminants are those for which EPA and the California Department of Health Services have not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist both regulatory agencies in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

[3] Reported values are 90th percentile levels for samples collected from faucets in water user homes. No sample exceeded the regulatory action level.

[4] The reported average represents the highest running annual average based on distribution system monitoring.

[5] Systems that collect 40 or more samples each month (determined by the number of users on the system) are out of compliance when more than 5 percent of monthly samples are positive.

"Este informe contiene información muy importante sobre su agua potable. Tradúzcalo ó hable con alguien que lo entienda bien."

—California Department of Health Services

Continued from Page 11

necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (800-426-4791)."

The district has conducted source water assessments to provide information about the vulnerability of district wells to contamination. Those results are included here.

The Coachella Valley Water District is governed by a locally elected board of directors, who normally meet in public session at 9 a.m. on the second and fourth Tuesdays of each month at district headquarters, Avenue 52 & Highway 111, Coachella.

Cove Communities

An assessment of the drinking water sources for this water system was completed in August 2004. Water from wells serving this area is considered most vulnerable to the following activities associated with detected contaminants: known contaminant plumes, dry cleaners and irrigated crops. In addition, water from wells serving this area is considered most vulnerable to the following activities not associated with any detected contaminants: known contaminant plumes, dry cleaners, underground storage tanks-confirmed leaking tanks, high density septic systems, automobile gas stations, historic gas stations, historic waste dumps/landfills, automobile repair shops, illegal activities/unauthorized dumping, sewer collection systems, pesticide/fertilizer/petroleum storage, transfer areas and utility stations' maintenance areas.

The Cove Community water system, consisting of 89 wells, is the district's largest system. It serves the communities of Rancho Mirage, Thousand Palms, Palm Desert, Indian Wells, La Quinta and portions of Bermuda Dunes, Cathedral City and Riverside County adjacent to these communities. The drinking water served to these communities complies with all drinking water standards.

Valerie Jean

This assessment was completed in October 2003. Water from wells serving this area is considered most vulnerable to high density septic systems, which are not associated with any detected contaminants.

The wells are located in an agricultural area with some small residential areas. The number of septic systems is small. Future development in the area is expected to include centralized sewer collection which will replace existing on-site sewage disposal facilities. The drinking water served to these communities complies with all drinking water standards.

Thermal

This assessment was completed in December 2002. Water from wells serving this area is considered most vulnerable to activities not associated with any detected contaminants. These are airport maintenance and fueling areas, agricultural drainage, illegal activities/unauthorized dumping, low density septic systems and irrigation wells.

The two wells in this system draw from a confined aquifer where the thickness of confining sediments is more than 170 feet. The drinking water served to these communities complies with all drinking water standards.

Indio Hills, Sky Valley & areas adjacent to Desert Hot Springs

This assessment was completed in December 2002. Water from wells serving this area is considered most vulnerable to activities not associated with any detected contaminants. These are automobile repair shops, illegal activities/unauthorized dumping and low-density septic systems.

All four wells in the system are located in a rural area with a small amount of residential development. Although the possible contaminating activities listed exist, they occur in small numbers. The drinking water served to these communities complies with all drinking water standards.

Desert Shores, Salton Sea Beach & Salton City

This assessment was completed in September 2002. Water from wells serving this area is considered most vulnerable to the running of the wells themselves, which is not associated with any detected contaminants.

All three wells are located in a remote area surrounded by desert with some agriculture in the outer zones. CVWD owns and maintains the wells. The drinking water served to these communities complies with all drinking water standards.

Mecca, Bombay Beach, North Shore & Hot Mineral Spa

This assessment was completed in December 2002. Water from wells serving this area is considered most vulnerable to activities not associated with any detected contaminants. These are agricultural drainage and sewer collection systems.

These wells are located within agricultural and residential areas and draw from a confined where the thickness of confining sediments ranges from 100 feet to more than 400 feet. Drinking water served to these communities complies with all drinking water standards.

CVWD employees participate in a safety drill at one of the district's wastewater reclamation plants. Because of the presence of chlorine at four of the plants, employees there are required to undergo quarterly safety training exercises to ensure proper procedure in the unlikely event of a chemical leak.

Wastewater Collection & Reclamation

Population growth requires increased sewer capacity

Sewers may appear to magically carry away waste water, but in reality as much work goes into that "magic" as is necessary to make sure water comes out of the faucet when the handle is turned.

CVWD maintains a massive system of sewer lines to gather waste from homes and businesses and transport it to six reclamation plants where high quality water is reclaimed and sludge is dried and delivered to a private company for further treatment and use in the manufacture of soil amendments.

Since the district first entered the wastewater reclamation field more than 30 years ago, it has been a leader in the cleansing and reuse of water for golf course and green belt irrigation. The district now delivers recycled water to 13 large users, with a 14th soon to join the group, who would otherwise be using precious groundwater.

Toscana Country Club in Indian Wells signed a contract in September 2004 to use recycled water on its two 18-hole golf courses. NorthStar, the large development north of Interstate 10 at Cook Street also will use recycled water when completed.

The district currently is working on a computerized flow model which will show wastewater expansion needs based on new land use development.

To handle growth in the mid-valley, capacity is being increased at the district's regional plant in Palm Desert, which serves most of the cove communities. Improvements include construction of a $15 million 24 million gallons per day (mgd) sludge handling plant to be completed in mid-2007. The district's largest plant, the California Water Environment Association named this facility Wastewater Reclamation Plant of the Year for 2004 for its Colorado River Basin Section.

During the last year the district received a $1.48 million federal grant for providing a sewer system for farm worker housing in the Thermal area on Avenue 62 east of the stormwater channel. The district worked with the non-profit Desert Alliance for Community Empowerment to obtain the grant. The system, now in the design stage, is expected to be completed in about a year.

To handle the growth in La Quinta around PGA West, the district has been expanding its Thermal-area wastewater reclamation plant from 7 mgd to 9.9 mgd. The $18.9 million project for most of the expansion was to start in July and take about 1½ years to complete. A $3.6 million modernization of

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the chlorination facilities at the plant to handle the 9.9 mgd flow was to be completed this summer.

Because the Thermal-area reclamation plant is not located near golf courses and is in the agricultural area served by Colorado River water delivered through the Coachella Canal, there is less opportunity for reuse of the recycled water. The treated water instead is released into the Coachella Valley Stormwater Channel, blending with used irrigation water flowing toward the Salton Sea.

With the need to meet the reclamation demands of increasing growth comes the need to increase reuse throughout the valley. This is especially true in the area around the Thermal wastewater reclamation plant.

New reclamation facilities will enable the production of more high quality water from wastewater. Some of this may be used by agriculture but, as urbanization spreads to the agricultural area, opportunities will increase for the use of reclaimed water for golf course and greenbelt irrigation.

The last portion of the Coachella Canal to remain earthen is being lined with concrete to reduce water lost due to seepage. This massive project is expected to cost $83.6 million, including $71 million for construction alone.

Canal lining project on track for significant water savings

Construction on the massive canal lining project is well underway and on schedule for completion in 2007.

Once complete, an estimated 26,000 acre-feet of water — nearly 8.5 billion gallons — will be saved each year. That's enough water to meet the needs of more than 50,000 homes within Southern California's coastal communities for an entire year.

The project consists of lining the 34.5 miles of the 122-mile Coachella Canal that are still earthen. To do so, a parallel, concrete-lined waterway is being built adjacent to the remaining unlined portions of the existing canal. Once construction is completed water from the Colorado River will be diverted out of the old canal and into the new one.

Under the terms of the Quantification Settlement Agreement, the saved water will go to the San Diego County Water Authority and to settle a claim by the San Luis Rey

Continued on next page

Coachella Canal

Indians in northern San Diego County.

Coachella Valley benefits, however, because the savings mean that California will be better equipped to live within its limitation of 4.4 million acre-feet of Colorado River water, minimizing the possibility of reduced water deliveries such as what was experienced in 2003. In addition, adoption of the Quantification Settlement Agreement gave the Coachella Valley a quantified annual amount of Colorado River water and the opportunity to purchase additional water from Imperial Irrigation District at very reasonable costs, adding up to more than 440,000 acre-feet annually.

Also, the $83.6 million, state-funded project has helped the local economy by creating new jobs and increasing revenues from spending by canal workers in the local area.

A ground-breaking ceremony for the project was held Oct. 19, 2004 with actual construction beginning a short time later. One of the more demanding aspects of the project is earth moving — 5.6 million cubic yards total. When the original canal was dredged, the dirt was piled on the west side of the waterway. Since the new canal is being built along the west edge of the existing one, much of the previously removed dirt — more than two million cubic yards — has been moved further west, within the existing Bureau of Reclamation right-of-way.

At left, Executive Program Manager Kirk Dimmitt leads Assistant General Manager Mark Beuhler, center, and Assistant to the General Manager Dan Parks on a tour of the canal lining project. The project is expected to take more than two years to complete.

The first concrete work being performed at the project site is the construction of 25 siphons. These provide a way for stormwater to find its way down from the mountains and over the siphons without flooding or damaging the canal.

Rain earlier in the year delayed the work when excavated areas had to dry out and be excavated again, but virtually all canal work was on schedule by May.

On average, 330,000 acre-feet of Colorado River water annually is diverted into the Coachella Canal. The lining project is expected to prevent approximately 32,000 acre-feet of seepage into the ground, but that in excess of 26,000 acre-feet will be used to mitigate environmental issues such as the maintenance of existing habitat fed by canal water or to provide new water sources for area wildlife.

The canal's initial construction began in 1938, but was halted by World War II. Construction on the canal resumed in 1946 and was completed in 1948, with the first official deliveries to farmland made in 1949.

Use of Colorado River water is restricted mostly to the lower valley in a 136,500-square area known as Improvement District 1. ID-1 is where virtually all of Coachella Valley's nearly 60,000 acres of cultivated farmland is located.

Until the canal was built all farmland irrigation came from private wells, so a 500-mile, underground delivery system using concrete pipes known as laterals had to be built to bring the water to the crops. To provide for the attachment of these laterals to the canal, its last (northernmost) 39 miles were lined with concrete when it was built. The underground delivery system prevents the evaporation of water and keeps valuable farmland in production that otherwise would have had to be taken out of use for traditional, ground-level canals.

In the portion of the canal currently being lined, which begins north of Niland and concludes in an area north of the western terminus of the Salton Sea, east of Mecca, there is no farmland served by laterals and water provided only to one reservoir. This area was not as porous as the southernmost 49 miles of the canal. Those nearly 50 miles were replaced by a parallel canal in 1980 that saves about 132,000 acre-feet annually. This water is delivered to Mexico as part of a treaty to provide 1.5 million acre-feet to that county, at salinity levels that do not exceed those found at Imperial Dam.

The Coachella Canal is a branch of the 82-mile All American Canal, portions of which also are slated for lining. Colorado River water is diverted into the All-American Canal at the Imperial Dam, about 18 miles west of Yuma, Ariz. The Coachella Canal terminates in La Quinta at Lake Cahuilla, which serves as a regulatory storage reservoir.

Financial Statements

Rate Summary

As of July. 1, 2005 *

Area of service	Monthly charge per 100 cubic feet
Domestic	
Majority of the district, except area noted below	$0.69
Service Area 26 (includes Sky Valley & Indio Hills)	$0.87
Service Area 23 (includes east Salton Sea areas of North Shore and Bombay Beach)	$1.10
Improvement District 11 (includes Salton City, Desert Beach and Desert shores)	$0.92
Areas outside boundaries of the district or an improvement district, but served by the improvement district	$1.24
Residential Sanitation	
Area of service	Monthly charge per dwelling unit
Service Area 41 (bounded generally by Jackson, Calhoun and Avenues 52 and 56)	$22.70
Improvement District 80 (includes ID 53, 54, 57, Palm Desert Country Club and city of Indian Wells	$17.10
Improvement District 81 (includes area along I-10 from Thousand Palms to Indio)	$20.10
North Shore Beach	$24.60
Bombay Beach	$24.10
La Quinta and Mecca	$21.40
Irrigation	
Water rate per acre-foot	$18.25
Gate charge per day	$10.50

* This table represents anticipated rate increases that will be considered by the board of directors as part of the 2005-06 budget. The increases had not been determined before printing of this document. Call CVWD offices for the most up-to-date rates.

Coachella Valley Water District strives to keep consumer rates low through fiscal responsibility and sensible financial management policies. It's part of the mission statement.

In 2004, the board of directors approved an operating budget of $119,906,500, an increase of 2.7 percent, for the fiscal year 2004-05. That budget included rate increases for irrigation water, domestic water and sanitation service in large part to offset more than $4.1 million in lost property tax revenue resulting from efforts in Sacramento to solve the state budget crisis.

Computer Operator Vince Martinez runs the machine that prints domestic water bills and inserts them into an envelope for mailing

Condensed statement of revenues & expenditures

Fiscal year ended June 30, 2004

	Irrigation	Domestic	Sanitation	Stormwater	General	Total
Revenues						
Water sales	$5,785,967	$43,522,614	$0	$0	$0	$49,308,581
Service charges	992,359	1,990,889	18,190,015	0	0	21,173,263
Availability charges	462,565	707,459	109,495	0	0	1,279,519
Taxes	818,725	97,361	4,478,021	8,624,232	14,505,181	28,523,520
Interest	85,791	1,249,334	1,119,044	394,215	800,946	3,649,330
Other revenues	3,160	289,941	729,009	922,615	12,997,542[1]	14,942,267
Total	**$8,148,567**	**$47,857,598**	**$24,625,584**	**$9,941,062**	**$28,303,669**	**$118,876,480**
Expenditures						
Operation & maintenance	$3,952,375	$23,391,432	$10,478,578	$1,334,247	$0	$39,156,632
Engineering, admin. & general	5,040,192	13,634,989	6,105,108	2,608,538	18,783,391	46,172,218
Contract & bond payments	241	33,742	3,853,282	1,436,737	9,048,252	14,372,254
New construction	705,219	7,941,467	6,091,064	23,867	472,026	15,233,643
Reserves	(1,549,460)	2,855,968	(1,902,448)	4,537,673	0	3,941,733
Total	**$8,148,567**	**$47,857,598**	**$24,625,584**	**$9,941,062**	**$28,303,669**	**$118,876,480**

Comparative condensed balance sheet

Assets	**June 30, 2003**	**June 30, 2004**
Current assets:		
Cash in bank	$6,942,030	$4,360,615
Accounts receivable, inventory & prepaid expenses	13,036,292	12,102,030
	19,978,322	16,462,645
Deposits & other assets	3,053,099	7,879,792
Property, plant & equipment:		
All American Canal & distribution system (participating equity)	34,874,502	34,874,502
State Water Project (participating equity)	90,780,196	95,460,156
Land, facilities and equipment	700,594,786	745,934,144
	826,249,484	876,268,802
Less accumulated amortization & depreciation	(244,054,981)	(262,916,696)
	582,194,503	613,352,106
Construction work in progress	75,176,144	70,422,055
	657,370,647	683,774,161
Investments & other long-term assets:		
Assets restricted for development & other purposes	303,327,306	304,201,983
Notes & contracts receivable unrestricted	5,678,267	500
	309,005,573	304,202,483
Total Assets	**$989,407,641**	**$1,012,319,081**
Liabilities & equities		
Current liabilities:		
Accounts payable	$4,628,609	($1,826,725)
Customers' advances & deposits	18,804,926	18,832,225
Accrued salaries, interest, other expenses, & deferrals	4,690,714	9,392,945
	28,124,249	26,398,445
Long-term liabilities:		
Notes payable	5,677,667	0
Water & sanitation systems acquired	1,677,988	1,482,444
Refunding agreements (construction costs advanced)	88,401	80,191
State Water Project	8,274,104	9,834,982
	15,718,160	11,397,617
Bonds payable and certificates of participation	32,435,000	28,570,000
	48,153,160	39,967,617
Total liabilities	76,277,409	66,366,062
Taxpayers' equity in assets[2]	913,130,232	945,953,019
Total liabilities and taxpayer equity	**$989,407,641**	**$1,012,319,081**

[1]Most is groundwater replenishment assessment fees — well owners' proportionate shares of the cost of importing water to replenish the groundwater basin.

[2]Includes the taxpayers' equity in canal and irrigation distribution facilities, wells and reservoirs, treatment plants and stormwater facilities. This value includes facilities paid for by others and donated to the district. The value has been reduced by any outstanding debt (liabilities).

Agriculture irrigation

Conservation program results in significant water savings

Area growers who participated in a water district-funded agricultural irrigation conservation program saved nearly 20,000 acre-feet of water in 2004. This is enough water to serve the average needs of farms, golf courses, homes, businesses — any type of developed land — across 5.2 square miles of the Coachella Valley.

The conservation of 19,957 acre-feet in 2004 is in addition to the 12,179 acre-feet of water saved in 2003, when the district hired JMLord, Inc., a consulting firm that specializes in efficient irrigation practices, when the Coachella Valley's supply of Colorado River water was cut 31 percent by the federal government.

As part of the program, farmers attended free classes at the district's Coachella facilities and received various in-field consultations and other services. The success of the program in its initial year — which didn't start until April — led the district to take advantage of momentum created by what could have been a crisis, to jump-start programs designed to implement the Coachella Valley Water District's *Water Management Plan*. This plans calls for a 7 percent reduction in agricultural demand by 2015.

A significant challenge in implementing such a reduction is that area growers already are among the most water-efficient farmers in the world. The bottom line in farming in the Coachella Valley is maximum crop value, quality and yield. Despite limited acreage, farmers have been very successful for decades by growing early-season crops such as table grapes and niche crops that bring high prices.

When all of the factors in delivering canal water to their fields are considered, most farmers spend about $50 per acre-foot on irrigation. With average savings through the program at about one acre-foot per acre, the reduction in water costs alone is not sufficient financial incentive to participate in the conservation program. But the same techniques also improve crop production levels, and an increase of only five percent in this area can mean increased returns of up to $500 per acre, explains Byron Clark, an engineer with JMLord, Inc.

The water was saved by improved, scientific irrigation techniques, enhanced salinity control and the continued conversion of farmland from surface, or flood, irrigation to drip and other micro irrigation.

It is estimated that farmers who utilize scientific irrigation techniques on average can save 1.1 acre-feet of water for every acre of land; half an acre-foot of water per acre by applying better salinity control; and 1.6 acre-feet of water per acre by converting to drip irrigation.

Desert Mist Farm's Alex Sanchez, left, and Victor Vieyra inspect bell peppers, one of the valley's most common crops. In 2004, bell peppers were grown on more than 4,000 acres, yielding almost 74,000 tons.

An estimated 470 tons of mangos were grown in the valley in 2004. That's about a 400 percent increase over the previous year, yet the fruit remains one of the less common crops in the valley.

Several factors are considered with respect to scientific irrigation techniques. These include crop evapotranspiration data based on the crop grown and weather conditions, which help determine accurate amounts of water that should be delivered to the fields. Evapotranspiration is the process whereby water is converted to vapor and removed from the evaporating surface. Crops predominately lose their water through small openings on the plant leaf through which gases and water vapor pass.

Another factor is ensuring that the irrigation system delivers water uniformly. Even the most sophisticated drip irrigation systems need to be maintained to ensure all plants in the field receive the proper amount of water.

A common mistake homeowners make is overwatering their entire landscape to compensate for areas that do not get enough water (those familiar "brown spots" in a lawn) because of faulty sprinklers or other irrigation systems. The same scenario can occur in farming, but is easily correctable by ensuring that irrigation systems uniformly deliver water to the entire crop.

Salinity control is important, too, especially in the Coachella Valley. That's because between two-thirds and three-quarters of the agricultural irrigation water comes from the Colorado River, which has a moderate salinity level even before it is applied to farmland. As the crop uses this water to grow, its salt is left behind in the soil. Additional water is needed to leach these salts from the root zone. The amount of water required for leeching depends on crop and soil conditions specific to each field.

When the salinity of the soil increases, crop production may decrease. Many ancient, agriculturally based civilizations are believed to have perished because salinity was allowed to build up to a point where previously fertile farmland became useless to grow crops.

Leaching, the flooding of farmland after the crops have been harvested, has been the traditional method of dealing with salinity and is still widely in use. However, the JMLord, Inc., consultations have focused on working with farmers to ensure the amount of leaching is scientifically linked to such relevant factors as soil types, weather during the leaching process and the type of crops that will be grown in the future, since the next scheduled crop may be more salt-tolerant than the previous crop.

There have been a few instances when more water was needed than previously used, but in some cases the amount of water used for leaching has been reduced by as much as 50 percent. In other cases, growers have found that a field requires no leaching prior to planting the next crop.

An additional benefit of the agricultural irrigation conservation program is that it enables the district to accelerate its meeting of one of the more obscure elements of the Quantification Settlement Agreement. The agreement quantified Coachella Valley's entitlement to Colorado River water at 350,000 acre-feet annually and provides for the eventual purchase of slightly more than 100,000 additional acre-feet from Imperial Irrigation District.

Coachella Valley farms produce a large variety of fruits and vegetables. In 2004, farmers produced more than $556 million worth of crops.

Clockwise from right are: onions, watermelon being harvested, ripening dates and strawberries.

Agriculture is the original life blood of the Coachella Valley. Before the golf courses and spas, farmers were braving the heat in order to harvest earlier than other farmers in the state.

The farmers formed the water district, then called the Coachella Valley County Water District, in 1918 to ensure water rights well into the future. Domestic water service didn't become CVWD's responsibility until 1961.

2004 Crop Report

Calendar year figures for Coachella Valley land irrigated with Colorado River water
Value of year's production: $556,849,377
Total acreage irrigated (includes double cropping): 67,537
Average gross value per acre: $8,245

Crop	Acreage	Yield in tons	Value per acre[1]	Total value
Fruit	30,768	242,687.7	$8,561	$263,399,198
Cantaloupes	482	5,282.7	3,755	1,809,860
Dates	7,239	32,720.3	8,814	63,804,546
Figs	121	507.8	8,225	995,242
Grapes (table)	10,887	74,467.1	9,870	107,455,996
Grapefruit	1,466	23,635.6	5,536	8,116,460
Honeydew melons	59	601.1	3,965	233,956
Lemons and limes	4,583	51,930.0	3,141	14,394,989
Mangos	112	470.4	8,225	921,166
Olives	98	411.6	8,225	806,020
Oranges & tangerines	3,685	26,016.1	2,642	9,735,225
Peaches	38	100.3	2,880	109,441
Tomatoes	349	5,845.8	10,921	3,811,429
Strawberries	676	285.9	16,215	10,961,588
Watermelons	973	21,406.0	41,360	40,243,280
Vegetables	22,773	257,763.8	$7,107	$161,856,064
Artichokes	527	4,567.2	7,939	4,183,597
Asparagus	10	62.3	2,007	20,069
Bell peppers	4,342	73,801.0	12,224	53,077,661
Bok choy	136	847.6	2,007	272,934
Broccoli	2,109	13,938.4	3,726	7,858,459
Cabbage	61	1,148.3	3,742	228,287
Carrots	1,889	36,780.7	5,526	10,438,368
Cauliflower	905	8,862.7	6,066	5,489,535
Celery	349	9,101.2	6,639	2,317,171
Chili peppers	45	764.9	12,224	550,091
Corn (sweet)	1,941	731.8	2,399	4,656,755
Cucumbers	39	243.1	2,007	78,268
Eggplant	329	2,428.0	7,808	2,568,845
Green beans	927	6,335.6	7,690	7,128,796
Lettuce	4,317	44,972.3	6,000	25,904,072
Okra	284	1,127.5	5,558	1,578,472
Onions (dry)	328	5,116.8	6,864	2,251,392
Oriental vegetables	489	7,698.1	15,050	7,359,367
Peppers, miscellaneous	78	1,476.9	12,193	951,093
Potatoes	478	6,166.2	4,549	2,174,202
Radishes	232	2,867.5	6,682	1,550,181
Spices	1,038	1,221.2	5,880	6,103,593
Spinach	1,594	26,112.1	8,817	14,053,538
Squash	193	1,351.0	4,116	794,388
Sugar beets	133	41.4	2,007	266,930
Forage	3,014	14,294.3	$439	$1,323,659
Alfalfa hay	1,469	12,780.3	700	1,028,814
Barley	119	245.2	221	26,252
Sudan hay	244	1,268.8	510	124,342
Pasture (irrigated)	1,182	13,356.6 animal units/ month	122	144,251
Nuts	24	100.7	$8,225	$197,403
Pecans	24	100.7	8,225	197,403
Nursery	1,360	–	$31,644	$43,035,418
Fish Farms	1,228	1,839.7	$11,907	$14,622,042
Golf Courses	5,960	–	$8,652	$51,564,747
Polo Fields	422	–	$8,652	$3,651,061
Turf Grass	1,988	154,785.7	$8,652	$17,199,785

[1] Rounded off to the nearest dollar.

Planning for the Future

District studying ways to reduce dependency on aquifer

Two significant construction projects—one rejected as too expensive in the 1960s and 1970s, and still considered costly—are among the areas under review to enhance the supply of water available to the Coachella Valley.

At issue is not necessarily the direct conservation of existing water supplies or obtaining new ones, but the flexibility the water district needs with respect to making water from various sources more readily accessible in different areas. The goal in each instance, however, is to protect groundwater and reverse overdraft of the aquifer.

Protecting and reversing overdraft of the area's 39-million acre-foot capacity aquifer is a key component of the Coachella Valley Water District's *Water Management Plan*. The plan outlines the valley's water needs through 2035 and the way in which the district can meet those needs through a combination of conservation and the use of alternate water sources.

During special sessions in 2004, the district's board of directors and key staff studied the possibility of building a waterway to bring State Water Project water directly into the Coachella Valley and the construction of the Mid-Valley In-Lieu Program.

The mid-valley project proposes a series of pipelines and other facilities that would make it possible to move non potable water (that which does not meet drinking water health standards but is suitable for irrigation purposes) from the east valley to the mid-valley to reduce the mid-valley's demand for groundwater.

For example, if a golf course converts from using groundwater to Colorado River water for its irrigation needs, this in effect serves the same purpose as aquifer recharge because less groundwater is extracted. The same is true if a course converts from groundwater irrigation to recycled water.

There are several golf courses and a few homeowners associations in the lower valley that use canal water, but golf courses further west have no direct, physical access to Colorado River water. The mid-valley project addresses this and is heavily geared toward providing approximately 50 golf courses in areas such as Rancho Mirage and Palm Desert with alternative sources.

Since a golf course on average uses 1,000 acre-feet of water annually, the conversion of 50 golf courses from groundwater to the use of water provided by the project would save an estimated 50,000 acre-feet or more of groundwater.

Recycled water, a growing source of irrigation for golf courses in the Coachella Valley, typically is not available more than four or five miles from a treatment plant because separate delivery lines, pumping stations and support facilities must be constructed at considerable cost. The mid-valley project could also expand the availability of this water to areas currently not served.

Cost of the project is estimated at $52 million.

The other major construction project being considered is a connection to the California Aqueduct for direct access to the State Water Project.

The district is among the largest State Water Project contractors in California, with 121,100 acre-feet annually. Yet not a single drop of SWP water, which originates in Oroville and other facilities northeast of Sacramento, has ever been delivered to the Coachella Valley. In the 1960s the district and Desert Water Agency made arrangements to trade their State Water Project entitlements to Metropolitan Water District of Southern California (MWD).

MWD releases Colorado River water from its Colorado River Aqueduct, where it flows into the Whitewater River and is diverted into 19 recharge ponds. The first delivery was in 1973. To date, more than 1.8 million acre-feet has been recharged into the valley's aquifer.

In 1984, the program was expanded to allow MWD to "bank" surplus water in the valley's groundwater basin and as of the end of 2004 had "on account" 150,000 acre-feet. This is an amount of water MWD could claim from CVWD/DWA SWP entitlements, without having to provide a like amount of Colorado River water.

Staff presented the district's board of directors with three alternative routes for a pipeline through the San Gorgonio Pass (of between 42 and 60 miles at costs ranging from $687 million to $734 million) and one through the Mojave Desert (104 miles for $1.2 billion).

Although the pass alternatives are shorter, they present other challenges such as construction through urban areas, crossing obstructions (freeways, flood control channels, major utilities) and right-of-way. A 60- to 96-inch diameter pipeline capable of carrying more than 300 cubic feet of water per second would be required.

The major advantage would be greater flexibility in accessing State Water Project water. There can, for example, be a drought with respect to the Colorado River that might limit the amount of water MWD can deliver to the area. Yet at the same time there might be a surplus of SWP water that CVWD/DWA could purchase and use for groundwater recharge, or store for another agency now in exchange for giving up a portion of their entitlements in future years.

Both projects are still being studied for future board consideration.

By the Numbers

As of Dec. 31, 2004

General Information

Coachella Valley Water District is a local government agency formed in 1918 by the registered voters within the district. With its formation, it took over an existing stormwater unit formed in 1915.

Governing board: Five directors, elected at-large for a four-year term and representing five divisions

Service area: 639,857 acres; stormwater unit 377,776 acres

Employees: 477

Fields of service: Importation and distribution of domestic water; wastewater collection, reclamation and redistribution; regional stormwater/flood protection; importation and distribution of irrigation water; irrigation drainage collection; groundwater management and water conservation.

Property valuation: Property within CVWD boundaries had a total combined assessed value in 2004 of $34,530,793,475, as fixed by Riverside and Imperial County assessors and state officials. This figure is used to determine property tax funding for the district.

Domestic Water

Service information	
Population served:	240,573
Active meters:	96,229
Total water sales:	123,862 af
Average home use:	
Average use per person/ day:	245 gallons
Summer per person/ day:	321 gallons
System information	
Active wells:	117
Reservoirs:	69
Storage capacity:	121.2 mill. gallons
Distribution system:	1,872 miles

Irrigation Water

Service information	
Total irrigable acres:	78,530
Active accounts:	1,149
Total water sales:	235,842 af; 40 bill. gallons
Average daily consumption:	646 af
Maximum daily demand:	1,148 af
System information	
Reservoirs:	2
Storage capacity:	1,301 af
Distribution system:	485 miles
Pumping plants:	19
Length of canal:	122 miles

af = Acre-foot
An acre-foot of water is equal to 325,851 gallons, or enough water to cover one acre of land (about the size of a football field) one foot deep.

Stormwater Protection

System information	
Number of stormwater channels:	16
Length of Whitewater River/ Coachella Stormwater Channel:	48.5 miles
Length of all regional flood protection facilities:	133.3 miles

Agriculture Drainage

Total on-farm drains	2,298 miles
Acreage with farm drains	37,425
District open drains	21 miles
District pipe drains	166 miles

Wastewater Collection & Reclamation

Service information	
Population served:	216,265
Active accounts:	86,506
Average daily flow:	18.1 mill. gallons
Annual flow:	20,264 af; 6.6 bill. gallons
System information	
Wastewater reclamation plants:	6
Total daily capacity:	31.1 mill. gallons
Collection system:	92 miles

Groundwater Management & Conservation

Recharge from imported water:	40,296 af
Imported supply since 1973:	1,784,449 af
Natural recharge in upper basin:	28,300 af
Natural recharge in lower basin:	5,200 af
Reclaimed water used for irrigation:	14,840 af

Coachella Valley Water District
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