Coachella Valley Water District

2006-07 Annual Review & Water Quality Report

Preserving the aquifer by promoting conservation and importing alternative sources of water.

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. The directors 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.

Board of Directors

Peter Nelson
President, Division 4

Patricia "Corky" Larson
Vice president, Division 2

John "Jack" McFadden
Director, Division 1

Tellis Codekas
Director, Division 3

Russell Kitahara
Director, Division 5

Senior Administration

Steve Robbins
General Manager-Chief Engineer

Mark Beuhler
Assistant General Manager

Dan Parks
Assistant to the General Manager

Julia Hernandez
Board Secretary

Department Heads

Raul Aguirre
Director of Service

Amy Ammons
Director of Finance

Scott Coulson
Director of Business & Technology

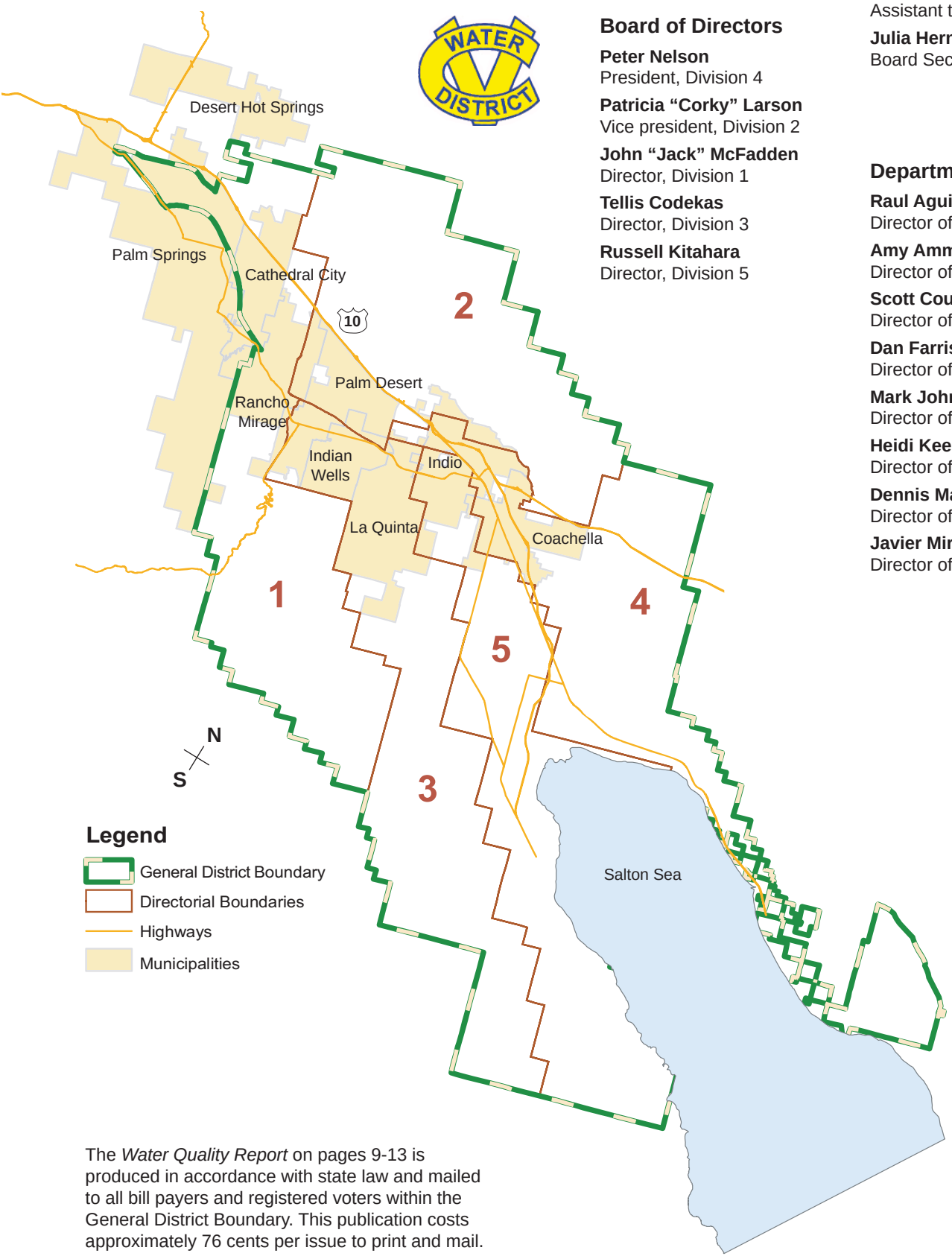
Dan Farris
Director of Operations

Mark Johnson
Director of Engineering

Heidi Keeran
Director of Human Resources

Dennis Mahr
Director of Communication & Legislation

Javier Miranda
Director of Trades & Support



The *Water Quality Report* on pages 9-13 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 76 cents per issue to print and mail.

Contact information

Payment Address
P.O. Box 5000
Coachella, CA 92236

Correspondence Address
P.O. Box 1058
Coachella, CA 92236

Offices
75-525 Hovley Lane East,
Palm Desert
85-995 Avenue 52,
Coachella

Main switchboard
(760) 398-2651

Job hot line
(760) 398-2661 ext. 2103

Weather hot line
(760) 398-7211

Fax: (760) 398-3711

Web site: www.cvwd.org

2-3 General Manager's Message

4-5 Conservation Information

6 Public Outreach

7 Stormwater Protection

9-13 Water Quality Report

14 Mid-Valley Pipeline

15 Wastewater Collection & Reclamation

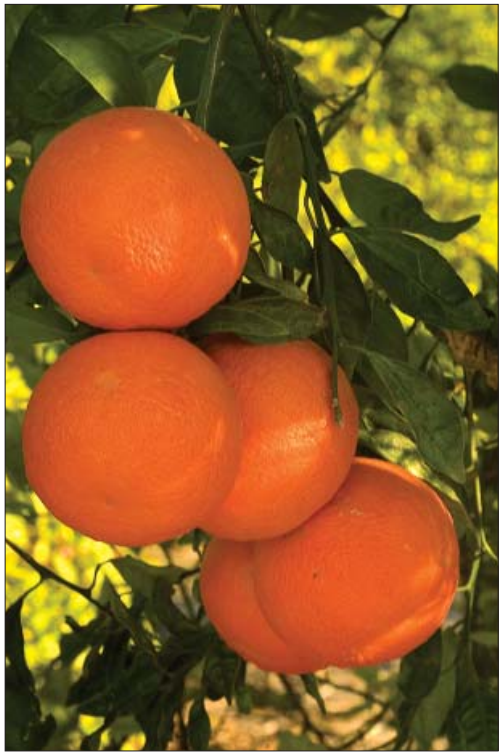
16-17 Financial Statements

18-19 Groundwater Management

20 Agricultural Irrigation

21 Crop Report

22-24 Coachella Canal



Front cover: More and more housing developments are using water-efficient plants instead of grass; the Coachella Canal runs through The Golf Club at Terra Lago, which is one of 15 courses irrigated with this imported water in lieu of groundwater.

Left: Oranges are among the many crops grown in the Coachella Valley.

The *2006-07 Annual Review* is produced by CVWD's Communication & Legislation staff.

Heather Engel
Editor

Robert Keeran & David Anderson
Photographers

Jack Porrelli, Heather Engel & Maureen Perry
Writers

Above: George Escobedo, a CVWD welder, helps to replace a portion of a domestic water main.

Left: Desert Springs Marriott in Palm Desert is one of 12 valley golf courses irrigated with recycled water instead of groundwater.

Back cover: New seedlings are planted; An aerial view from Cahuilla Hills.

General Manager's Message

Each year, the Coachella Valley Water District produces this *Annual Review & Water Quality Report* for the ratepayers and registered voters within the district. While we are legally obligated to distribute the information in the Water Quality Report, we're also proud to inform valley residents that they are drinking clean and healthful water.

The remainder of the information, including the financial statements, news about district projects and conservation tips are provided as a public service. Everyone who lives in or visits the desert wonders about the drinking water supply. This publication has always been a valuable tool for learning about the aquifer and the many steps the district has taken to ensure its sustainability.

For example, on Page 7 you can learn about the $70 million Mid-Valley Pipeline Project, which will have a greater impact on reversing the overdraft of the aquifer than any other district project since the recharge ponds went into operation in 1973. We're excited about the future benefits of this project and hope you will be, too.

When the district was formed in 1918, it was tasked with protecting the groundwater and finding supplemental sources of water. Over the decades, as the needs of the valley have expanded, so have the types of services provided by the district. It took over an existing stormwater protection unit in 1937 and started providing irrigation water to area farms in 1949. Domestic water delivery and wastewater collection and treatment and recycled water delivery came later. At the end of 2006, the district was serving domestic water to more than 103,000 accounts and providing sanitation service to more than 95,000 accounts.

You can find a little information about each of these areas of service within this publication. I hope you will take the time to look through it and find the information interesting and useful.

Sincerely,

Steve Robbins
General Manager-Chief Engineer
Coachella Valley Water District

Coachella Valley Water District offices are located at Highway 111 and Avenue 52 in Coachella (shown here) and at Hovley Lane East and Water Way in Palm Desert.

Countywide symposium focuses on common water issues

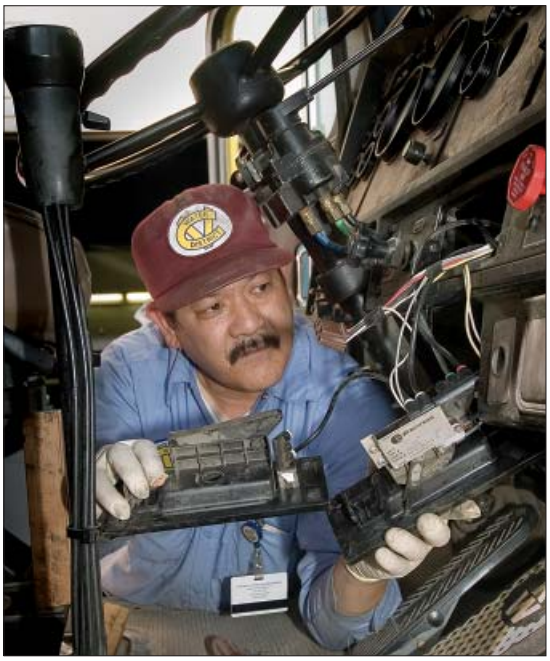
Community leaders from throughout Riverside County attended the third annual Riverside County Water Symposium in Indian Wells to discuss common challenges, successes and goals.

CVWD was one of the event's hosts and sponsors and General Manager-Chief Engineer Steve Robbins was one of the guest speakers. Panel discussions included statewide funding for water infrastructure projects, plans for restoring the Salton Sea and finding new ways to meet the water needs of the county's growing population.

Nearly 700 business and community leaders, politicians and officials from almost every water district and agency that serves Riverside County attended the one-day event, led by the Riverside County Water Task Force.

The 2007 symposium will be held at Morongo Casino Resort and Spa on June 21.

General Manager-Chief Engineer Steve Robbins was among the speakers at the third annual Riverside County Water Symposium, held in June 2006 in Indian Wells.



CVWD's workforce includes employees of several specialty trades, including auto mechanics like Tom Ogimachi, a 25-year employee. The Auto Shop maintains 500 pieces of machinery, including a fleet of vehicles, heavy equipment and small motor equipment.

CVWD keeping up with valley's growth

With the number of sanitation accounts nearing 100,000, a milestone that domestic accounts already reached in January 2006, the district workforce and facilities must also increase.

As of Dec. 31, there were 534 employees with more positions expected to be added with the 2007-08 budget. The number of employees must grow to keep up with the demand for everything from the installation and maintenance of new infrastructure to the review of new developments' landscaping plans.

Employees perform a wide variety of tasks in dozens of specialties, including information systems, financial accounting, carpentry, drafting, chemistry, electronics and customer service.

In 2006, the district started planning for a major overhaul of its outdated computer software system. A consultant was hired to make recommendations for a new system that's integrated among departments to help employees perform their jobs more efficiently and improve customer service. The overhaul will be implemented in three phases over the next several years.

Conservation

California Friendly campaign promotes water-efficient plants

In 2006, CVWD partnered with Metropolitan Water District of Southern California's California Friendly campaign to promote water-efficient landscaping.

CVWD sponsored radio advertisements that could be heard on several local stations. Television and newspaper ads were also designed specifically for the Coachella Valley market to expand the reach of the message.

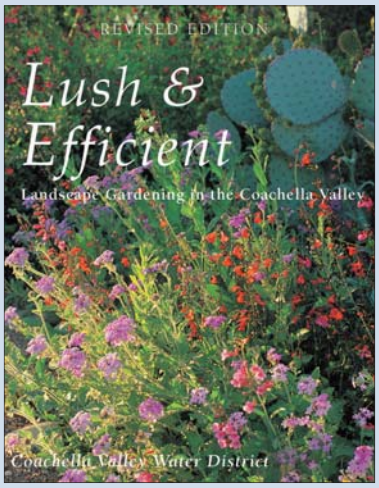
A billboard promoting water conservation through water-efficient landscaping has been rotating throughout the valley and will continue to be seen until at least October.

An important aspect of the campaign was to encourage local nurseries to stock water-efficient landscaping and label it to make it easier for residents to find. Eleven nurseries participated in the campaign. Through the partnership, CVWD gave the nurseries the materials to label the plants and display their participation.

In addition, the nurseries were given copies of CVWD's 2006 Calendar and the new interactive landscaping CD-ROM to distribute for free to their customers.

We want to help you convert to water-efficient landscaping

The majority of water being used by average Coachella Valley homeowners is used outside, therefore a major aspect of the district's conservation efforts focuses on water-efficient landscaping.



• In 2006, Coachella Valley Water District unveiled the third edition of *Lush & Efficient Landscape Gardening in the Coachella Valley.* The 160-page book includes more photos and information on hundreds of water-efficient plants and trees. You can order a copy for $15. The district also publishes a number of free newsletters and brochures with landscaping and other conservation information.

• The new interactive CD-ROM offers additional help with converting and designing a landscape and selecting the perfect plants, shrubs and trees.

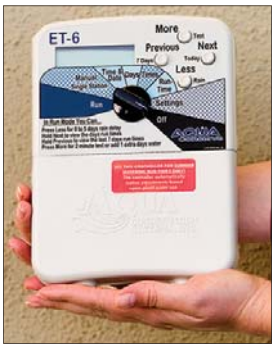
• Each fall, the district hosts its annual Landscape Workshop with classroom-style instruction for creating and maintaining a desert landscape. Look for sign-up information in your bill.

• The district maintains a demonstration garden at its Coachella office, open to the public 7:30 a.m. to 4:30 p.m. on weekdays (excluding holidays).

• Experts in water-efficient landscaping are available for scheduled tours of the garden or as guest speakers for your group or organization.

To obtain copies of these and other district publications, or to schedule a tour, either complete the postcard order form inside this book or call the district's Communication & Legislation staff at (760) 398-2661, ext. 2549. *Lush & Efficient* is also available online at www.cvwd.org.

Controller program celebrates first year of success



In late 2005, CVWD launched its Weather-Based Irrigation Controller Pilot Program in which the district offers homeowners a high-tech "smart" controller for a significantly reduced rate. CVWD staff also installs and programs the controllers to ensure proper usage.

The cost of the program and controller is subsidized by the water district and six partners (cities of Palm Desert, Rancho Mirage, Cathedral City, Indian Wells and La Quinta and Riverside County). As of April, there were more than 400 controllers installed in the partner jurisdictions.

A one-year review of the program showed an average 24 percent reduction in water use from before the controllers were installed. Most participants have been able to pay for the cost of the controller through water savings within one year of the purchase.

Weather-based controllers tend to be especially beneficial in the fall when many people leave their irrigation set on a summer setting even though the cooler temperature calls for less water. With the self-adjusting controller, you can simply program once then forget about it. The controllers adjust based on historical and current weather data. Both indoor and outdoor controllers are available through the program.

To participate in the program, you must own a home in a participating jurisdiction and have an existing irrigation system. For an application to participate in the program and a complete list of eligibility requirements, visit www.cvwd.org or call the district's Water Management staff at 398-2661 ext. 3562

Irrigation Guide

This table shows the approximate amount of water that different types of landscaping typically need each month. Individual watering times may vary due to soil and other conditions. Gradually reduce the amount of water you're using to find an adequate amount for your situation without being wasteful. Use this guide as a reminder to change your sprinkler system each month. **When there's measurable rain, turn your sprinkler system off and keep it off until the ground has dried.**

	Water-efficient shrubs	Water-efficient trees	Non-desert trees	Turf grass
January	.7 gal./day 2 days/week	14 gal./day 2 days/week	45 gal./day 2 days/week	Spray system: 4 min./day; 7 days/week Rotor system: 9 min./day; 7 days/week
February	.9 gal./day 3 days/week	21 gal./day 3 days/week	56 gal./day 3 days/week	Spray system: 6 min./day; 7 days/week Rotor system: 15 min./day; 7 days/week
March	.9 gal./day 4 days/week	16 gal./day 4 days/week	53 gal./day 4 days/week	Spray system: 9 min./day; 7 days/week Rotor system: 21 min./day; 7 days/week
April	1 gal./day 5 days/week	17 gal./day 5 days/week	59 gal./day 5 days/week	Spray system: 12 min./day; 7 days/week Rotor system: 27 min./day; 7 days/week
May	.9 gal./day 6 days/week	18 gal./day 6 days/week	60 gal./day 6 days/week	Spray system: 15 min./day; 7 days/week Rotor system: 33 min./day; 7 days/week
June	.9 gal./day 7 days/week	18 gal./day 7 days/week	59 gal./day 7 days/week	Spray system: 17 min./day; 7 days/week Rotor system: 38 min./day; 7 days/week
July	.9 gal./day 7 days/week	18 gal./day 7 days/week	59 gal./day 7 days/week	Spray system: 16 min./day; 7 days/week Rotor system: 38 min./day; 7 days/week
August	.9 gal./day 6 days/week	17 gal./day 6 days/week	57 gal./day 6 days/week	Spray system: 15 min./day; 7 days/week Rotor system: 33 min./day; 7 days/week
September	1 gal./day 5 days/week	18 gal./day 5 days/week	63 gal./day 5 days/week	Spray system: 12 min./day; 7 days/week Rotor system: 28 min./day; 7 days/week
October	.9 gal./day 4 days/week	16 gal./day 4 days/week	52 gal./day 4 days/week	Spray system: 9 min./day; 7 days/week Rotor system: 19 min./day; 7 days/week
November	.7 gal./day 3 days/week	14 gal./day 3 days/week	44 gal./day 3 days/week	Spray system: 5 min./day; 7 days/week Rotor system: 13 min./day; 7 days/week
December	.7 gal./day 2 days/week	14 gal./day 2 days/week	42 gal./day 2 days/week	Spray system: 4 min./day; 7 days/week Rotor system: 7 min./day; 7 days/week

Planning for the future

Assistant General Manager Mark Beuhler, left, is given a tour of the desalination pilot facility by a consultant from Malcolm Pirnie, Inc. Distillation and reverse osmosis technologies are being used on a small scale at the facility.

Two desalination technologies studied

CVWD launched an innovative pilot program in late 2006 to compare two popular methods of desalination, along with unique techniques designed to reduce overall expenses.

Some water industry experts believe desalination is the ultimate solution to ensuring that California has a reliable supply of potable water. However, there are major stumbling blocks, including the costs associated with desalination and the requirements necessary to dispose of the brine created by the process.

The district's pilot program is attempting to reduce costs by pre-treating agricultural drainage before it's desalinated and diverted for non-potable uses, such as irrigation or groundwater replenishment.

$1.2 million, half of which came from a state grant, has been budgeted for the pilot program. It has the potential to treat only a few hundred acre-feet of water annually, but the possibility of one day reclaiming tens of thousands of acre-feet of agricultural drainage makes the study worthwhile.

District honored for conservation programs

The Association of California Water Agencies (ACWA) honored the Coachella Valley Water District as a finalist for the 2007 Clair Hill Water Agency Award for Excellence.

The award is presented annually to recognize innovative programs in water resources management. CVWD was named a finalist for a combination of successful water conservation programs for homeowners, golf courses and agricultural water users.

All the programs fall under the umbrella of the district's Water Management Plan, which takes a three-tier approach to ensuring a sustainable water supply for future generations. The tiers are: conserving water, importing new water sources and helping non-domestic groundwater users convert to alternative sources.

The water district has always made conservation and groundwater preservation a high priority. However, the valley's population growth over the last decade has required the district to get more creative and proactive.

ACWA is the largest coalition of public water agencies in the country with nearly 450 public agency members. The association honored six finalists and named a winner during its spring conference, held in May 2007 in Sacramento.

New meters allow for increased efficiency

Following a successful pilot project, the water district in 2004 started upgrading its domestic water meters to ones that use the state-of-the-art Automatic Meter Reading (AMR) technology. By April 2007, nearly 7,500 of the district's domestic meters were AMRs.

The technology allows a meter reading employee to gather water use data from hundreds of homes in mere minutes through the use of an electronic receiver and laptop computer. This new technology is significantly more efficient and reduces the already small margin of error in reading a home's water use.

With the manual meter reading method, an employee physically removes the meter lid and visually reads the meter. The employee then inputs the data into a handheld electronic device. These devices record the data and transmit it to the billing department. If the water use is unusually high or low compared to the previous month's reading, the device will alert the meter reader to double check their entry, a valuable step in ensuring accuracy.

Meter reader Jimmy Tapia, a 21-year employee, uses the new AMR technology to read a neighborhood of meters in only minutes.

This process works well, but can be time consuming, especially when you include traveling from meter to meter. Some older developments have meters located in back yards, which are difficult and sometimes unsafe to access. Some people unwittingly cover their meter boxes with landscaping or heavy objects, making access difficult. AMRs are being installed mostly in new housing developments or areas where manual meter reading is especially time consuming.

With the AMR technology, the meter sends out a signal that can be read only by the accompanying receiver when it's within a ¼ mile. An employee can simply drive through a neighborhood with the receiver in the truck and let it collect all the information. The receiver is hooked up to a laptop with a special computer program that gives the meter reader instant access to all the addresses on the route, last month's meter reading and the current reading.

With the increased efficiency, the district's goal is to give employees more time to work with customers who want to lower their water use or suspect they may have a leak.

Treated surface water on the horizon?

In 2007, the water district started the preliminary study of treating Colorado River water for domestic use as a means of supplementing the drinking water supply.

The valley's groundwater basin stretches from about Windy Point to about the shoreline of the Salton Sea. Communities around the Salton Sea are beyond the groundwater basin's boundaries, so the water district must pump groundwater to those communities from the Thermal and Mecca areas. This practice is costly and, as all these communities grow, places a heavy burden on the east valley's groundwater supply.

To ensure a reliable source of drinking water well into the future, the district must start considering alternative drinking water sources for the residents of these communities. The practice of treating Colorado River water for drinking water and other domestic use is quite common. The Metropolitan Water District of Southern California relies on Colorado River water to fulfill as much as 35 percent of the needs of 18 million Southern California residents. San Diego, Las Vegas and many other cities also rely on treated Colorado River water to satisfy the needs of their residents.

The purpose of the preliminary study is to identify the most effective, economical and reliable water treatment solutions that will prove the most benefit to CVWD water users. The next step will likely be a pilot testing program to monitor one or more potential treatment technologies. This phase will take approximately one year to complete. All domestic water, regardless of the source, will meet federal and state drinking water health standards.

Public Outreach

Teachers take their water show on the road

On average, CVWD's two credentialed teachers visit about 500 classrooms and speak to more than 13,000 students each year. The educators' primary responsibilities are to go into the schools and deliver presentations focusing on water science, safety and conservation, framed in terms of relevant state educational standards for each grade.

To have engaging presentations that address state standards may sound daunting, but the cleverly developed PowerPoint presentations wow the children with animated graphics, video clips and humor. Students are guided through stories that always include the ever-important messages of conserving water and not swimming in the Coachella Canal.

Staff teachers Kevin Hemp, left, and Maureen Perry perform water-related science projects with students at the La Quinta Boys and Girls Club.

When not in the classroom, the teachers can be found judging science fair projects or attending after-school and weekend programs, bringing with them a variety of activities and experiments that are fun and engaging while helping the children better understand the importance of water. The teachers also provide customized tours for school groups and produce *The Water Wheel*, a four-page educator-oriented newsletter that provides teachers with relevant news about the district, interesting web sites with teacher-based resources and water facts.

Dan Parks, assistant to the general manager, gives a presentation to the Women's Council of Realtors on the Salton Sea and CVWD's involvement in the sea's restoration.

Staff share expertise with community groups

CVWD is often asked to make presentations to adults, too. Knowledgeable staff members are available to speak to community groups and organizations about a variety of topics ranging from water conservation, to the history of water in the valley, to environmental issues such as the Salton Sea restoration and Coachella Valley Multiple Species Habitat Conservation Plan.

The water district also provides a number of tours throughout the year. The popular Imperial Dam tour is open to the public on a first-come, first-served basis, while educational tours are organized for special groups not only from the valley, but worldwide.

CVWD employee Cindy Romero enjoys a refreshing glass of water.

CVWD provides high quality drinking water

The Coachella Valley Water District's Water Quality Division is tasked with ensuring that the drinking water meets all state and federal water quality standards. These highly trained employees collect drinking water samples that are tested at the district's state-certified laboratory. A few highly specialized tests are performed by other laboratories.

In addition to the detected constituents listed in the table on pages 12-13, CVWD's water quality staff monitors for more than 100 other regulated and unregulated chemicals. All of these are below detection levels in CVWD's domestic water.

The Water Quality Division staff are also responsible for reviewing the latest scientific studies on water contaminants and monitoring government action to change drinking water standards. CVWD is governed by a locally elected, five-member board of directors who normally meet in public session at 9 a.m. on the second and fourth Tuesdays of each month at the district's Coachella office at Avenue 52 & Highway 111.

This annual report documents that water served to all CVWD water users meets state and federal drinking water standards. All domestic water served by the Coachella Valley Water District is obtained locally from wells drilled into the Coachella Valley's vast groundwater basin.

Continued on next page

"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

Continued from previous page

While all of CVWD's domestic water supply meets current requirements, drinking water supplied to some service areas does contain low levels of arsenic. The standard for arsenic balances the current understanding of the chemical's possible health effects against the costs of removing this naturally occurring element 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 was the case for wells supplying the communities of Mecca 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. CVWD recently installed water treatment plants to treat water supplied to the communities of Mecca and Valerie Jean. These plants reduce arsenic levels in drinking water to below 10 ug/L.

Radon is a naturally occurring, radioactive gas — 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.

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

Is my tap water hard?

Hardness in tap water is caused by calcium and magnesium, which are common minerals found in Coachella Valley groundwater supplies. Most CVWD customers receive drinking water with low to moderate levels of hardness.

Do I need a water softener?

No. Regardless of your hardness level, your tap water meets all drinking water standards and does not need to be conditioned. CVWD does not prohibit the use of water softeners, but district ordinance does prohibit the discharge of excess salt down the drain. The discharged salt can harm the groundwater and may require additional treatment, which would increase future costs of providing sewer and water services. If you choose to soften your water, please check with your local water conditioning expert or the Pacific Water Quality Association to avoid installing a system that discharges excess salt down the drain.

Where can I find more information?

For more information about water hardness levels throughout the valley, read the water quality table on Pages 12-13. Questions may be directed to CVWD's Water Quality Division at (760) 398-2651.

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 source water assessments may be viewed at the Coachella Valley Water District office, 85-995 Avenue 52, Coachella, CA 92236.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo ó hable con alguien que lo entienda bien. También puede llamar al distrito de agua al número de teléfono (760) 398-2651.

Paul Zepeda, a domestic water service worker, takes a water sample from a CVWD well to perform a routine on-site test of the water's chlorine level.

runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

"• Pesticides and herbicides that 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 that 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 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)."

Drinking Water Source Water Assessments

The district has conducted source water assessments that provide information about the vulnerability of district wells to contamination. In 2002, CVWD completed a comprehensive source water assessment that evaluated all groundwater wells supplying the district's six public water systems. An assessment is performed on each new well added to CVWD's system. Groundwater from these district wells are considered vulnerable to activities associated with urban and agricultural uses.

Urban land uses include the following activities: known contaminant plumes, dry cleaners, underground storage tanks, septic systems, automobile gas stations (including historic), automobile repair shops, historic waste dumps/landfills, illegal/unauthorized dumping, sewer collection systems and utility stations' maintenance areas.

Agricultural land uses include the following activities: irrigation/agricultural wells, irrigated crops, pesticide/fertilizer/petroleum and transfer areas.

The following activities have been associated with detected contaminants: known contaminant plumes, dry cleaners and irrigated crops.

The drinking water supplied by CVWD's wells to our communities complies with all state and federal drinking water standards.

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 U.S. Environmental Protection Agency.

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

NL or Notification Level — Health based advisory level established by the California Department of Health Services for chemicals in drinking water that lack maximum containment levels (MLCs) as stated by CDHS.

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

PDWS or Primary Drinking Water Standard — MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirement.

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.

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)

uS/cm — Microsiemens per centimeter

CVWD 2006 domestic water quality s

CVWD analyzes more than 22,000 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, which summarizes results of the most recent monitoring completed between 1998 and 2006, shows that CVWD c standards.

To rea areas you the detect Public He Contamin and want

1 Detected parameter, units	2 PHG or (MCLG)	3 Primary or (secondary) MCL	4 Cove Communities [1] *Range (Average)*	Ind Valley Dese Ra
Aluminum, mg/L	0.6	1.0 (0.2)	ND-1.6 (ND)	
Arsenic, ug/L [2]	0.004	10	ND-4.7 (ND)	
Boron, mg/L [3]	None	NL = 1.0	ND	
Chloride, mg/L	None	(500)	5.3-49 (15)	1
Chlorine (as Cl_2), mg/L [5]	MRDLG 4.0	MRDL 4.0	ND-2.6 (0.3)	N
Chromium, ug/L	(100)	50	ND-19 (ND)	1
Chromium VI, ug/L [3]	None	None	1.5-18 (8.3)	9
Combined radium, pCi/L	(Zero)	5	ND-2 (ND)	
Copper, mg/L [4] [homes tested/ sites exceeding AL]	0.17	AL=1.3	0.12 [55/ 0]	
Copper, mg/L	None	(1.0)	ND-0.08 (ND)	
Corrosivity, AI	None	(Non-corrosive)	11-13 (12)	
Fluoride, mg/L	1	2.0	ND-1.0 (0.5)	0.
Gross alpha particle activity, pCi/L	(Zero)	15	ND-15 (3.8)	N
Hardness (as $CaCO_3$), mg/L	None	None	27-310 (120)	12
Iron, ug/L	None	(300)	ND-900 (ND)	
Nitrate (as NO_3), mg/L	45	45	ND-50 (6.8)	N
Odor threshold, units	None	(3)	ND-1.0 (ND)	
pH, units	None	None	7.2-8.3 (7.9)	7.
Sodium, mg/L	None	None	17-56 (28)	5
Specific conductance, uS/cm	None	(1,600)	230-730 (360)	58
Sulfate, mg/L	None	(500)	11-160 (38)	15
Tetrachloroethylene (PCE), ug/L	0.06	5	ND-1.4 (ND)	
Total dissolved solids, mg/L	None	(1,000)	130-480 (220)	37
Total trihalomethanes, ug/L [5]	None	80	ND-2.8 (2.0)	
Turbidity, NTU	None	(5)	ND-2.4 (ND)	
Uranium, pCi/L	0.43	20	ND-12 (3.8)	N
Vanadium, ug/L [3]	None	NL=50	ND-39 (12)	5

Footnotes

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

[2] Effective Jan. 23, 2006, the federal arsenic MCL is 0.010 mg/L (or 10 ug/L). The initial compliance MCL begins in 2007 for sources serving Mecca and Valerie Jean. A new state MCL has not yet b as 0.05 mg/L (or 50 ug/L).

summary

ontinues to deliver drinking water that meets all water quality

ad this chart: First, determine in which of the six service live (columns 4-9). Then move down the column, comparing tion level of each chemical or other contaminant with the ealth Goal, Maximum Contaminant Level Goal and Maximum ant Level (columns 2-3). For example, if you live in La Quinta 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 0.5 mg/L with the range of results varying between no detection and 1.0 mg/L. Compare these values to the MCL in Column 3. Fluoride levels in this water comply with the MCL of 2.0 [mg/L]. The range can show a level above the MCL and still comply with the drinking water standard when compliance for the detected parameter is based on average levels found in each water source.

5 lio Hills, Sky & areas around rt Hot Springs *nge (Average)*	6 Mecca, Bombay Beach, North Shore & Hot Mineral Spa *Range (Average)*	7 Desert Shores, Salton Sea Beach & Salton City *Range (Average)*	8 Valerie Jean *Range (Average)*	9 Thermal *Range (Average)*	10 Major Source(s)
ND	ND	ND	ND	ND	Erosion of natural deposits
ND	ND-15 (9.6)	ND-2.1 (ND)	8.1-16 (12)	2.5-3.5 (3.0)	Erosion of natural deposits
ND	ND	0.4	ND	ND	Erosion of natural deposits
3-21 (16)	7.6-51 (22)	200-270 (240)	9.6-12 (11)	7.5-17 (12)	Leaching from natural deposits
D-0.4 (0.3)	ND-0.6 (0.3)	ND-0.9 (0.4)	ND-0.9 (0.4)	0.1-0.5 (0.3)	Result of drinking water chlorination
3-18 (16)	ND	ND	13-15 (14)	ND-19 (ND)	Erosion of natural deposits
.1-19 (15)	ND-6.7 (2.2)	ND	8.1-18 (11)	21-22 (22)	Erosion of natural deposits
ND	ND	ND	ND	ND	Erosion of natural deposits
0.11 [20/ 0]	ND [20/ 0]	0.19 [13/ 0]	ND [10/ 0]	ND [12/ 0]	Internal corrosion of household plumbing
ND	ND	ND	ND	ND	Leaching from natural deposits
12	11-12 (12)	12	12	12	Natural balance of hydrogen, carbon and oxygen
5-0.8 (0.6)	0.8-1.0 (0.9)	0.2-1.5 (1.1)	0.8-0.9 (0.8)	0.6-1.1 (0.9)	Erosion of natural deposits
D-14 (7.5)	ND-3.0 (ND)	ND-9.4 (3.2)	ND-4.2 (ND)	ND-4.8 (ND)	Erosion of natural deposits
0-200 (170)	15-29 (21)	190-240 (220)	8.2-18 (13)	25-57 (41)	Erosion of natural deposits
ND	ND-220 (ND)	ND	ND	ND	Leaching from natural deposits
D-5.7 (3.7)	ND	4.6-6.1 (5.4)	ND-2.0 (ND)	2.3-3.4 (2.8)	Leaching of fertilizer, animal waste or natural deposits
ND	ND	ND-1.0 (ND)	ND	ND	Naturally occurring organic materials
7-8.0 (7.9)	7.4-7.7 (7.5)	7.7-8.2 (7.9)	7.6-8.7 (8.2)	7.7-8.0 (7.9)	Physical characteristic
58-81 (69)	35-46 (41)	200-230 (220)	43-45 (44)	37-50 (44)	Erosion of natural deposits
0-750 (650)	220-270 (250)	1,400-1,600 (1,500)	230-250 (240)	260-300 (280)	Substances that form ions when in water
0-210 (170)	0.7-32 (20)	200-300 (250)	20-28 (24)	28-32 (30)	Leaching from natural deposits
ND	ND	ND	ND	ND	Discharge from dry cleaners and auto shops
0-480 (420)	130-150 (140)	800-930 (900)	140-160 (150)	150-170 (160)	Leaching from natural deposits
ND	1.6	2.5	ND	ND	By-product of drinking water chlorination
ND	ND-0.5 (ND)	ND	ND-1.8 (0.9)	ND	Leaching from natural deposits
D-11 (5.6)	ND-2.6 (ND)	ND-5.3 (2.6)	ND-5.0 (3.8)	3.1-3.8 (3.5)	Erosion of natural deposits
.8-24 (12)	ND-17(7.2)	15-21 (18)	26-42 (34)	22-25 (24)	Erosion of natural deposits

uinta and portions of

e determination for this
been adopted and remains

[3] 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.

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

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

Mid-Valley Pipeline

Construction starts on much-anticipated project

Construction has started on the $70 million Mid-Valley Pipeline project, which will carry water from the Coachella Canal to 50 golf courses in Palm Desert, Rancho Mirage and Indian Wells.

This innovative project will help reduce demand on the groundwater supply by delivering golf courses a blend of water from the Coachella Canal and recycled water from CVWD's wastewater reclamation plant in Palm Desert. Without this project, the reclamation plant lacks the supply and infrastructure to add more customers.

The district has been working closely with cities and golf course professionals to address any concerns. The pipeline will be located on CVWD property adjacent to the Whitewater River and Coachella Valley Stormwater Channels, thereby minimizing any disruption to public roads or facilities.

The project, which broke ground in April, is divided into three construction phases. Phase I involves construction of a booster station at the Coachella Canal, where it crosses the Coachella Valley Stormwater Channel in Indio. It also includes a pipeline and receiving reservoir with the capacity to deliver at least 35,000 acre-feet of water to the reclamation plant to ultimately serve 50 golf courses. The first phase is scheduled for completion in early 2008.

All the drinking water in the valley comes from the aquifer, a massive underground supply of high quality, good tasting water. Currently, the Coachella Valley uses more of this water than we are able to put back through natural and artificial recharge, which is referred to as "overdraft." To eliminate overdraft of the aquifer, the water district promotes water conservation and finding alternate sources of water for non drinking purposes, such as irrigation. This project will do just that by providing 50 golf courses an alternative source of water.

Terra Lago in Indio is one of 15 golf courses that currently irrigates with water from the Coachella Canal.

Legislation helps district better manage water supplies

Coachella Valley Water District partnered with state Senator Denise Moreno Ducheny to author legislation specifically designed to help the district manage all sources of water more efficiently.

SB 1557, which became law Jan. 1, prohibits (only within CVWD boundaries) the use of potable water for non-potable purposes when non-potable water is available.

This means a large development, such as a golf course, is not allowed to use precious groundwater if an alternative source of water is made available. State law already indicated that using potable water for non-potable purposes is considered wasteful and thus unconstitutional, but often the definition of non-potable water had been restricted to recycled water. The legislation enhances the definition of non-potable water to include untreated Colorado River water.

This legislation was an important step in ensuring the success of the Mid-Valley Pipeline project. CVWD leaders went to Sacramento to rally support for the legislation and testify at hearings. The bill also received on-going support from representatives of local government and the building and recreation industries.

Wastewater facilities upgraded and modernized

Coachella Valley Water District is expanding three of its six Wastewater Reclamation Plants with more modern equipment for increased efficiency.

CVWD's largest plant, located in Palm Desert, is processing twice as much sewage in half the time thanks to a newly installed belt press used to squeeze water from sludge during the recycling process. Not only does this speed up the treatment process, but it significantly reduces the amount of energy required for the plant to operate. This plant treats and distributes recycled water to 13 large customers.

The treatment plant in Thermal is being expanded and converted from a lagoon style treatment process to the more efficient aeration process used at the district's other major plants. The new process will be fully operational by the end of the year, allowing the plant to treat a larger volume of wastewater to a higher standard. The improvements are necessary to accommodate the growth in the lower valley, including La Quinta, Mecca and Thermal.

A third plant, which is located north of Indio and delivers recycled water to two golf courses, is getting a back-up electrical distribution system for use during a power failure. All the plants have some back-up power capability and soon all but one will be able to operate fully in case of a black out or power disruption.

Carlos Paiz, a plant operator, performs a routine test of recycled water at an on-site laboratory.

The district's wastewater reclamation plant in Palm Desert is the largest of six plants. It has the capacity to treat 18 million gallons of wastewater a day.

Wastewater jargon

Recycled water — Water that once was municipal wastewater, put through a tertiary treatment process and is now virtually colorless and odorless. State health officials define this water of high enough quality for human contact, groundwater replenishment and irrigation purposes, but not human consumption.

Sludge — The solid residue separated during wastewater treatment.

Tertiary treatment — An advanced, multi-step treatment process that filters out solids, organic materials, chemicals and germs to make the water of high enough quality for human contact and irrigation purposes, but not human consumption.

Wastewater Reclamation Plant — The facility where wastewater is taken and treated. CVWD operates six such facilities.

Financial Statements

Coachella Valley Water District strives to keep water consumer rates low through fiscal responsibility and sensible financial management policies. In June 2006, the board of directors approved a $421 million operating budget for the 2006-07 fiscal year which includes approximately $176 million in capital improvements.

Rate Summary

As of July 1, 2007 [1]

Domestic	
Area of service	Monthly charge per 100 cubic feet
Majority of the district, except areas noted below	$0.82
Service Area 26 (includes Sky Valley & Indio Hills)	$1.00
Service Area 23 (includes east Salton Sea areas of North Shore and Bombay Beach)	$1.23
Improvement District 11 (includes Salton City, Desert Beach and Desert Shores)	$1.05
Areas outside boundaries of the district or an improvement district, but served by the improvement district	$1.27
Residential Sanitation	
Area of service	Monthly charge per dwelling unit
Service Area 41 (bounded generally by Jackson, Calhoun and Avenues 52 and 56)	$26.05
Improvement District 80 (includes ID 53, 54, 57, Palm Desert Country Club and city of Indian Wells)	$21.50
Improvement District 81 (includes area along I-10 from Thousand Palms to Indio)	$24.65
North Shore Beach	$29.40
Bombay Beach	$28.85
La Quinta and Mecca	$26.05
Irrigation	
Water rate per acre-foot	$22.30
Gate charge per day	$11.50

[1] This table represents proposed water rates for the 2007-08 fiscal year. At the time this publication was printed, the water district's board of directors had not yet approved the rate structure. Approval was pending the outcome of a public hearing and protest period. For confirmation of the most up-to-date rates, call CVWD at (760) 398-2651 or go online to www.cvwd.org/service/rates.php.

Director of Finance Amy Ammons gives a presentation to the board of directors on the district's budget.

Comparative Condensed Balance Sheet

Assets	June 30, 2006	June 30, 2005
Current assets:		
Cash and investments	$167,352,517	$149,390,908
Accounts receivable, inventory, prepaid expenses & other	37,965,838	38,544,436
	205,318,355	**187,935,344**
Property, plant & equipment:		
All-American Canal & distribution system (participating equity)	34,874,502	34,874,502
State Water Project (participating equity)	125,258,822	110,206,659
Land, facilities & equipment	869,936,445	824,914,298
	1,030,069,769	969,995,459
Accumulated amortization & depreciation	(317,706,374)	(294,190,013)
Construction work in progress	91,135,454	64,125,236
	803,498,849	**739,930,682**
Assets restricted for development & other purposes	**165,681,216**	**166,882,046**
Total Assets	**$1,174,498,420**	**$1,094,748,072**
Liabilities & Equities		
Current liabilities:		
Accounts payable	$9,415,163	$4,945,659
Customer advances & deposits	9,188,448	7,753,296
Accrued salaries, interest, deferral & other expenses	22,637,785	24,137,840
	41,241,396	36,836,795
Long-term liabilities:		
State Water Project & other	16,887,080	15,786,787
Bonds payable & certificates of participation	18,580,000	20,615,000
	35,467,080	36,401,787
Total liabilities	**76,708,476**	**73,238,582**
[1] Taxpayer' equity in assets	**1,097,789,944**	**1,021,509,490**
Total Liabilities & Equities	**$1,174,498,420**	**$1,094,748,072**

[1] 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).

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

[3] Utilization of resources.

Condensed Statement of Revenues & Expenditures

Fiscal year ended June 30, 2006

	Irrigation	Domestic	Sanitation	Stormwater	General	Total
Revenues						
Water sales	$4,649,596	$48,567,586	$0	$0	$0	$53,217,182
Service charges	1,032,587	3,344,007	24,096,488	0	0	28,473,082
Availability charges	865,053	744,902	118,229	0	0	1,728,184
Taxes	1,384,803	138,270	5,220,909	7,141,790	16,314,456	30,200,228
Interest	208,838	1,686,159	1,282,744	1,449,831	2,407,300	7,034,872
Other revenues	2,135,436	181,175	722,072	732,711	[2] 16,246,301	20,017,695
Total	**$10,276,313**	**$54,662,099**	**$31,440,442**	**$9,324,332**	**$34,968,057**	**$140,671,243**
Expenditures						
Operation & maintenance	$6,029,406	$32,618,864	$14,330,960	$1,608,784	$0	$54,588,014
Engineering, admin. & general	3,944,952	11,376,218	6,124,521	1,783,119	7,406,621	30,635,431
Contract & bond payments	303	29,661	3,844,002	1,438,590	26,440,592	31,753,148
New construction	713,987	9,026,984	6,922,234	20,433	1,120,844	17,804,582
Reserves	(412,335)	1,610,372	218,624	4,473,406	0	[3] 5,890,067
Total	**$10,276,313**	**$54,662,099**	**$31,440,442**	**$9,324,332**	**$34,968,057**	**$140,671,243**

Groundwater Management

New imported water rights will help the aquifer

An agreement was finalized in May 2007 that will result in an additional 7,000 acre-feet of imported water being delivered to the Coachella Valley's groundwater recharge facility west of Palm Springs, starting in 2010.

CVWD partnered with Desert Water Agency (DWA) of Palm Springs to pursue the additional water from Tulare Lake Basin Water Storage District as a means of increasing the amount of groundwater recharge. Groundwater is the region's most important resource, but demand exceeds what is returned to the aquifer through natural means, such as rainfall and snow melt.

That's why CVWD replenishes the groundwater supply at three separate facilities in the valley. The largest facility consists of 19 recharge ponds west of Palm Springs. Here, Metropolitan Water District of Southern California releases Colorado River water from its aqueduct in exchange for CVWD and DWA's State Water Project water rights. This equal exchange is necessary because there is no physical connection from the State Water Project to the Coachella Valley. This is the only way for imported water to be delivered.

When the State Water Project was first built, CVWD's initial entitlement was a modest 23,100 acre-feet, 19th among the 29 contractors. DWA was 15th with 38,100 acre-feet. During negotiations that resulted in the quantification of Colorado River water rights, Coachella Valley's efforts to offset aquifer overdraft received a boost when both water agencies obtained 100,000 acre-feet of State Water Project entitlement from Metropolitan Water District.

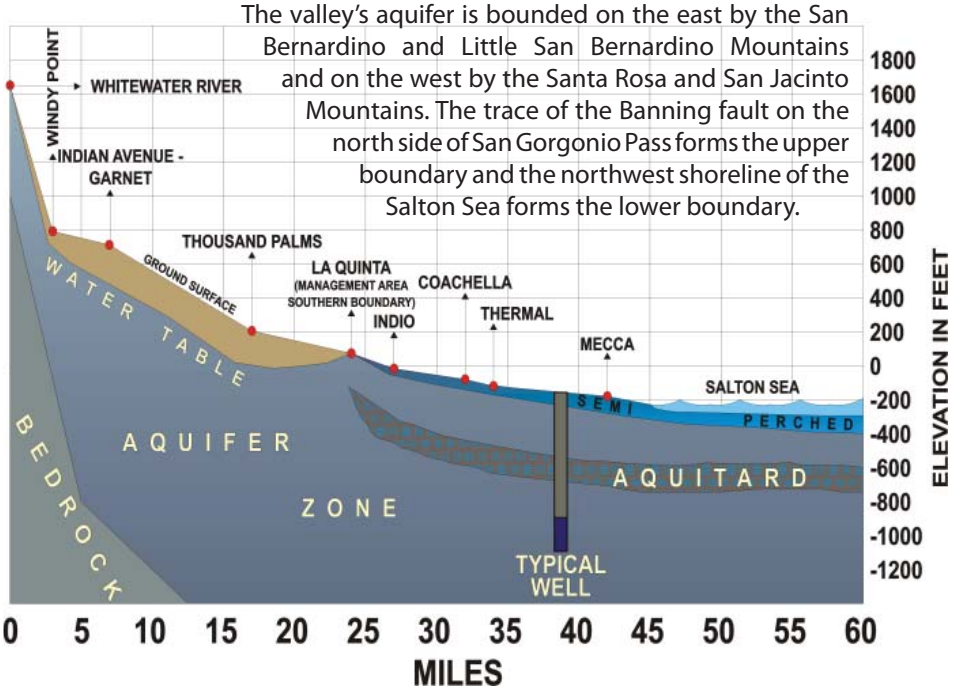
In 2004, CVWD obtained an additional 9,900 acre-feet of state water from Tulare Lake Basin Water Storage District. When combined, the entitlements of CVWD (126,350 acre-feet) and DWA (51,750 acre-feet) are now greater than all but two other districts among state water contractors.

Another agreement with a Northern California water district is still being finalized. Hopefully, it too will go into effect in 2010, adding 12,000 acre-feet to CVWD's entitlement and 4,000 acre-feet to DWA.

Although actual deliveries vary — depending upon Sierra Nevada snowfall and other factors — a 100 percent allocation will bring nearly 195,000 acre-feet of State Water Project Water annually to Coachella Valley. By comparison, nearly 132,000 acre-feet of water was used by all CVWD's domestic customers in 2006. Availability of imported water, combined with progressive conservation and innovative alternatives to groundwater, will result in a sustainable water supply for future generations.

Groundwater basin profile

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.



About the aquifer

Some people imagine an aquifer as a giant lake, but it's actually similar to a saturated sponge with water existing in small pockets around the dirt and sand.

Water jargon

Aquifer — 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.

Thousand Palms Flood Control project moves forward

Design work for the long-awaited Thousand Palms Flood Control Project is underway with CVWD and the U.S. Army Corps of Engineers receiving the final federal funds in 2007.

The design phase started in 2000, but approximately $1 million in funding was needed to complete the work. The federal government is funding 75 percent of the project's cost and CVWD is funding the remaining 25 percent. While CVWD has budgeted its portion, federal appropriations are sometimes redirected based on national priorities, including funding for the war in Iraq and cleanup following hurricane Katrina.

Rain in 2005 caused property damage, closed roads and stranded some residents in Thousand Palms. The community is one of the few areas left in the Coachella Valley without adequate flood protection.

Final funding for this project came a year after CVWD hosted a helicopter tour for Assistant Secretary of the Army (Civil Works) John Paul Woodley Jr., and his staff. The tour was designed to help them better assess the area's flood protection needs, especially in Thousand Palms.

The Thousand Palms Flood Control Project will ultimately remove 2,800 acres of land occupied by an estimated 9,500 residents from an alluvial floodplain. It is being designed to protect against flooding from a 100-year storm. The design consists of a series of earthen levees and channels which divert the flood flows away from the Thousand Palms area into the Whitewater River Stormwater Channel, which in turn carries the water to the Salton Sea. Flooding in 2005 showed first-hand the effects that even minor rain can cause in an area not protected from flooding. In addition to property damage, roads were closed and some residents were stranded.

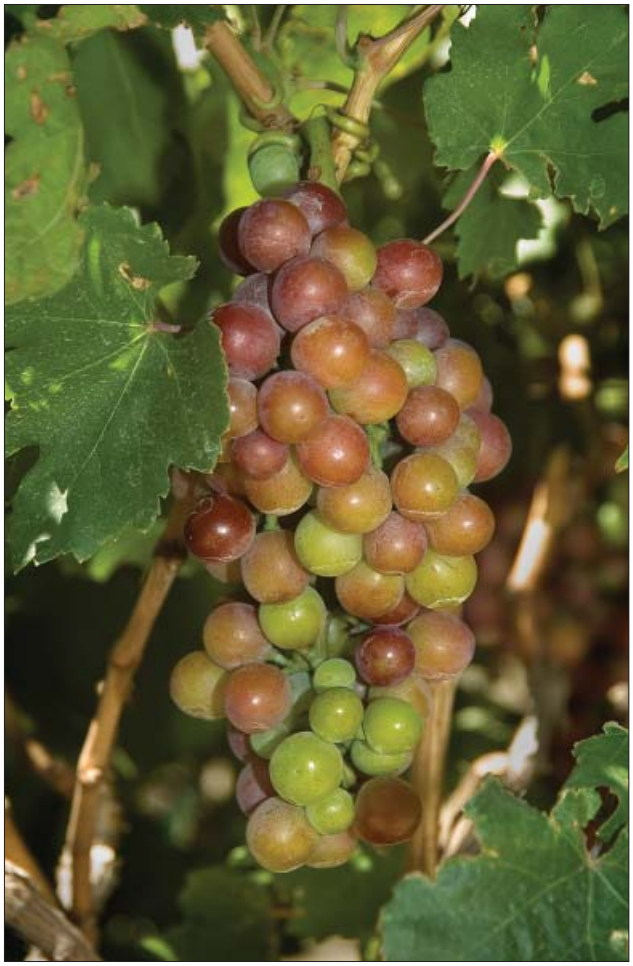
The design of the project is expected to take approximately one year to complete. Construction, once it begins, will take another two to three years. While the process has taken time, the project remains a high priority for the water district.

Levees being recertified for FEMA

CVWD is in the process of recertifying all levees depicted on Flood Insurance Rate Maps as required by the Federal Emergency Management Agency (FEMA). In order for a levee to be certified, FEMA must be satisfied that it will provide protection against a 100-year flood.

All of the district-owned and maintained flood control facilities will undergo an updated hydraulic and geotechnical analysis, as required for recertification. The district has hired a consultant to perform the necessary work by the late August 2009 deadline. If a levee is not certified, homes in the area will be designated as being inside a floodplain and homeowners will be required to purchase flood insurance.

Agricultural irrigation



Farmers reduce water use

Through the use of scientifically based irrigation scheduling and salinity control, area farmers conserved in excess of 55,000 acre-feet of imported Colorado River water in the past three calendar years.

Growers who participated in district-funded programs reduced water use on enrolled farmland well beyond the 7 percent goal for agriculture outlined in the district's *Water Management Plan*. In addition, several farmers have participated in the federally subsidized Water 2025 grant program to measure water consumption using a variety of irrigation techniques and conservation measures.

Peter Rabbit Farms, Inc., for example, used grant money to help build a reservoir. The company will compare water consumption for 36 acres of carrots irrigated by row irrigation with the same amount of the crop irrigated with sprinklers to help quantify which is the most water-efficient technique.

Effective conservation, however, means that less revenue is generated to fund the operation and maintenance of the 122-mile Coachella Canal and the nearly 500 miles of underground pipes that are used to deliver imported water to farms and a handful of recreational/resort consumers. Two-thirds to three-quarters of agricultural irrigation is Colorado River water; the remainder comes from private wells.

An estimated $4 million annually is needed to make necessary repairs, and the district is investigating several options to create capital improvement funding.

Steve Powell of Peter Rabbit Farms stands in front of a new reservoir, funded in part by a Water 2025 grant. The federal grant, administered by CVWD, is designed to quantify water consumption from different irrigation techniques.

2006 Crop Report

Calendar year figures for Coachella Valley land irrigated with Colorado River water

Value of year's production: $525,468,299

Total acreage irrigated (includes double cropping): 61,242

Average gross value per acre: $8,580

Crop	Acreage	Yield in tons	Value per acre	Total value
Fruit	**27,942**	**247,451**	**$7,745**	**$216,399,699**
Dates	7,425	39,798	5,515	40,948,875
Figs	49	7	2,957	144,893
Grapes (table)	10,299	84,555	10,490	108,033,119
Grapefruit	1,171	19,875	9,919	11,614,832
Honeydew melons	10	203	10,282	102,822
Lemons & limes	4,461	50,122	6,424	28,659,511
Mangos	98	659	2,957	289,766
Olives	89	598	2,957	263,155
Oranges & tangerines	2,879	24,414	4,549	13,095,138
Peaches	49	106	2,569	125,880
Tomatoes	133	622	4,335	576,510
Strawberries	353	3,899	18,769	6,625,465
Watermelons	926	22,594	6,393	5,919,733
Vegetables	**22,154**	**265,250**	**$8,517**	**$188,691,291**
Artichokes	677	5,447	8,751	5,924,312
Asparagus	10	41	2,888	28,875
Bell peppers	4,482	79,074	16,743	75,040,927
Bok choy	126	1,841	2,886	363,692
Broccoli	1,547	10,882	4,211	6,514,188
Cabbage	117	2,270	3,833	448,512
Carrots	1,775	36,210	8,058	14,302,950
Cauliflower	931	7,983	5,736	5,340,533
Celery	307	9,233	6,283	1,928,817
Corn (sweet)	1,946	944	4,134	8,044,659
Cucumbers	24	98	2,888	69,301
Eggplant	416	4,576	10,175	4,232,800
Green beans	884	4,950	7,437	6,574,132
Lettuce	3,612	35,723	6,525	23,569,824
Okra	297	1,179	5,558	1,650,726
Onions (dry)	254	7,906	7,283	1,849,946
Oriental vegetables	1,455	16,323	11,984	17,486,140
Potatoes	991	8,473	2,705	2,680,873
Radishes	301	5,367	3,570	1,075,560
Spices	1,075	15,426	3,843	4,131,150
Spinach	624	9,697	10,350	6,458,383
Squash	165	1,043	4,335	576,510
Sugar beets	138	564	2,888	398,481
Forage	**1,369**	**9,461**	**$780**	**$1,067,156**
Alfalfa hay	801	6,809	995	796,595
Sudan hay	568	2,653	476	270,561
Pasture (irrigated)	704	7,955 animal units/ month	121	$85,121
Nursery	1,141	—	$28,165	$32,136,265
Fish Farms	373	2,729	$34,238	$12,770,780
Golf Courses	5,571	—	$9,832	$54,772,523
Polo Fields	487	—	$9,832	$4,788,049
Turf Grass	1,501	127,825	$9,832	$14,757,415

All financial figures rounded off to the nearest dollar.

Coachella Canal

From left, Bureau of Reclamation Commissioner Bob Johnson and CVWD General Manager-Chief Engineer Steve Robbins open the gate to start the water flowing in the newly lined section of canal during a dedication ceremony in November.

Lining project complete

More than 932 million gallons of water that was once lost annually to seepage into the desert from the Coachella Canal now goes toward meeting the drinking water and irrigation needs of urban areas of coastal Southern California.

Completion of the two-year project was celebrated with a dedication ceremony in November. San Diego County Water Authority officials and a consortium of San Diego area Indian tribes were among the most enthusiastic participants, since they are receiving the rights to a portion of the conserved water as part of settling a long-term dispute over water rights. They receive the saved water as part of an accord reached during negotiations that led to the Quantification Settlement Agreement. That agreement in turn protects CVWD's annual entitlement to Colorado River water from possible encroachment by other agencies in the event of shortages brought about by drought or other circumstances.

A net of 26,000 acre-feet of Colorado River water is being conserved as a result of the lining project. That is enough water to meet the annual needs of about 120,000 people.

The $100 million project was funded by the state government. It involved construction of a 34.8-mile concrete waterway to replace the still earthen portions of the original canal, which was completed in the late 1940s. The remainder of the 122-mile canal was either lined when built or in the 1980s to conserve water.

Environmental mitigation efforts associated with the canal lining project include relocating fish; building scores of watering "holes," fed by the canal for deer and other animals; and constructing dozens of miles of fencing to keep mammals from wandering into the canal in search of water.

The newly lined section of canal was built parallel to the unlined version to avoid a disruption of service. The unlined section was taken out of use shortly after the lined version was completed.

Crew Chief Rod Nason, a 21-year employee, conducts a routine inspection of a large lateral pipe used to deliver Colorado River water from the Coachella Canal to area farms. These inspections, which require temporarily shutting down the water supply to allow employees to safely enter, are the perfect time to check for the existence of quagga mussels. To date, none have been found in CVWD's system.

Mussels invade Colorado River system

On January 6, 2007, the invasive quagga mussel, which was previously isolated to the eastern United States, was discovered in Lake Mead, Nevada. The mussels since have been found at several locations tied to the use and delivery of Colorado River water, including the aqueduct used by Metropolitan Water District to bring water from Lake Havasu into Southern California.

In the Great Lakes, along the Mississippi River and in other eastern waterways, the zebra mussel (a cousin of the quagga) has wreaked havoc on water delivery systems by clogging pipes and altering ecological conditions. Tens of millions of dollars have been spent addressing the damage caused by the mussel and attempting to control its spread.

In the Coachella Valley, the Coachella Canal delivers Colorado River water to area farms and golf courses for irrigation, so there is a concern that the mussels will harm the irrigation delivery system. The quagga attach themselves in clusters to virtually any surface and can obstruct water flow through small to medium pipes.

As this publication went to print, no quagga mussels have been discovered in the Coachella Canal or the nearly 500 miles of underground pipes used to deliver Colorado River water in the lower valley. Monitoring stations have been set up in the canal, however, and the consensus is that it isn't a matter of "if," but "when" the invasive species will find its way into CVWD's irrigation delivery system. Eradication is not considered a viable option once quagga mussels contaminate a waterway. Containment is possible through chemical treatments, but that would require the installation of specialized equipment. The potential costs are unknown.

Water delivered as part of the district's domestic water services will not be affected, since drinking water comes from groundwater sources and is delivered through a separate pipe system.

Quagga Facts

Name — Quagga mussels are named after a species of zebra hunted into extinction more than 100 years ago.

Size — 2-3 centimeters wide.

Lifespan — Adult mussels can survive out of water for as long as a week. It's believed they found their way into the Colorado River as unwanted stowaways on a boat.

Potential effects — The quagga will attach themselves to virtually any surface and can completely clog pipes used to deliver irrigation water to area farms and golf courses.

Catch & release on a massive scale

Coachella Valley Water District has a fair share of fishing enthusiasts among its more than 500 employees, and toward the end of 2006 about a dozen of them got the opportunity to participate in a most unusual "catch and release" program.

Completion of the parallel, nearly 35-mile concrete-lined waterway — built to replace still earthen sections of Coachella Canal — posed a unique challenge to the district: what do you do with thousands of fish "trapped" in the soon-to-be-abandoned portion of the canal?

Some fish living in the canal are introduced by the district to control aquatic vegetation growth, so these sterilized grass-eating carp represent a significant investment. Most fish in the canal, however, are varieties popular among anglers, such as catfish or stripped and large-mouth bass, which in some cases have traveled hundreds of miles. These are big fish, many in the 20-pound range, with at least one catfish tipping the scales at more than 60 pounds.

CVWD workers used nets and their hands to scoop up the grass-eating carp and relocate them into the new section of the canal. Although the waterway now is entirely lined with concrete, aquatic vegetation can still pose a problem, so the carp will continue to play an important role in canal maintenance.

Bass, catfish and other non-working species were taken to Lake Cahuilla to join the regularly stocked trout that make the man-made reservoir popular with anglers.

In all, 9 ½ tons of fish were relocated.

(Above) Employees relocate useful grass-eating carp from the old section of canal to the newly lined section. Bass, catfish and other fish species were subsequently relocated to Lake Cahuilla to the delight of anglers.

(Right) CVWD's staff biologist Dr. Monica Swartz, left, participated in the transfer in part to determine whether any federally protected endangered species were among the fish stuck in the older section of the canal where, in time, remaining water would be drained or allowed to seep slowly into the ground. No endangered fish were found during the two-week relocation effort.

By the Numbers

As of Dec. 31, 2006

General Information

Coachella Valley Water District is a local government agency formed in 1918 by the registered voters within the district.

Governing board: Five directors, elected at-large to four-year terms and representing five divisions

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

Employees: 534

Fields of service: Domestic water supply, treatment and distribution; wastewater collection and treatment; recycled water distribution; regional stormwater/flood protection; irrigation water importation and distribution; irrigation drainage collection; groundwater management and promotion of water conservation.

Property valuation: Property within CVWD boundaries had a total combined assessed value in 2006 of $40,207,334,324 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	274,650
Active meters	103,641
Average daily demand	118 mgd
Total water delivered	131,994 af
System information	
Active wells	114
Total well capacity	252 mgd
Distribution reservoirs	59
Storage capacity	120 mg
Distribution piping system	2,064 miles

Irrigation Water

Service information	
Total irrigable acres	78,350
Active accounts	1,113
Total water delivered	245,896 af
Average daily demand	674 af
Maximum daily demand	1,207 af
System information	
Reservoirs	2
Storage capacity	1,301 af
Distribution system:	485 miles
Pumping plants	19
Length of canal	122 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

Stormwater Protection

System information	
Number of stormwater channels	16
Length of Whitewater River/ Coachella Stormwater Channel	49 miles
Length of all regional flood protection facilities	134 miles

Wastewater Collection

Service information	
Population served	252,365
Active accounts	95,232
Average daily flow	18.3 mgd
System information	
Wastewater reclamation plants	6
Total daily capacity	31 mgd
Collection piping system	1,101 miles

Recycled Water

Service information	
Active accounts	16
Average daily flow	7.2 mgd
System information	
Wastewater reclamation plants producing recycled water	3
Total daily capacity	18 mgd
Distribution piping system	15 miles

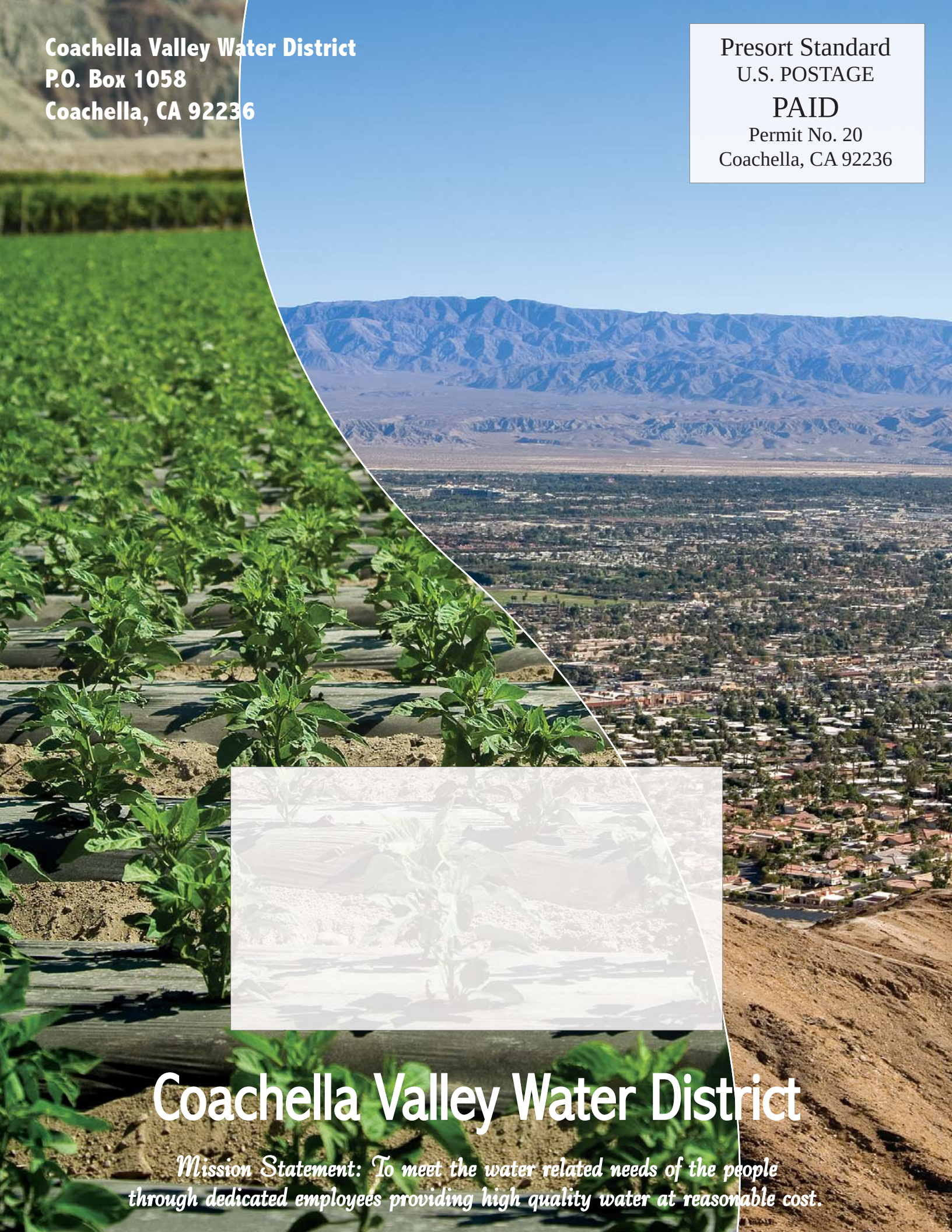
Groundwater Management

Recharge facilities	3
Recharge from imported water	121,508 af
Imported supply since 1973	2,142,101 af

mgd = million gallons per day.

af = acre-feet. An acre-foot of water is equal to 325,851 gallons, or enough water to cover one acre of land one foot deep.

Coachella Valley Water District
P.O. Box 1058
Coachella, CA 92236



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.