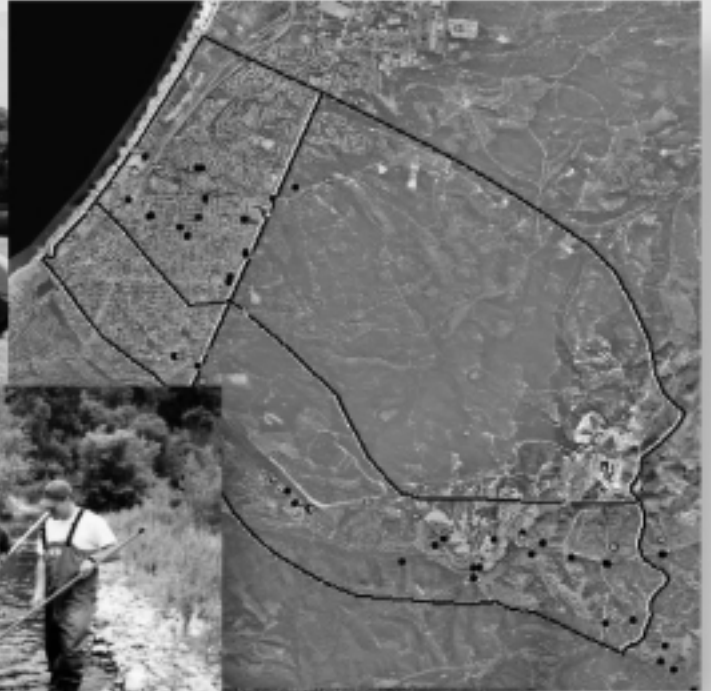


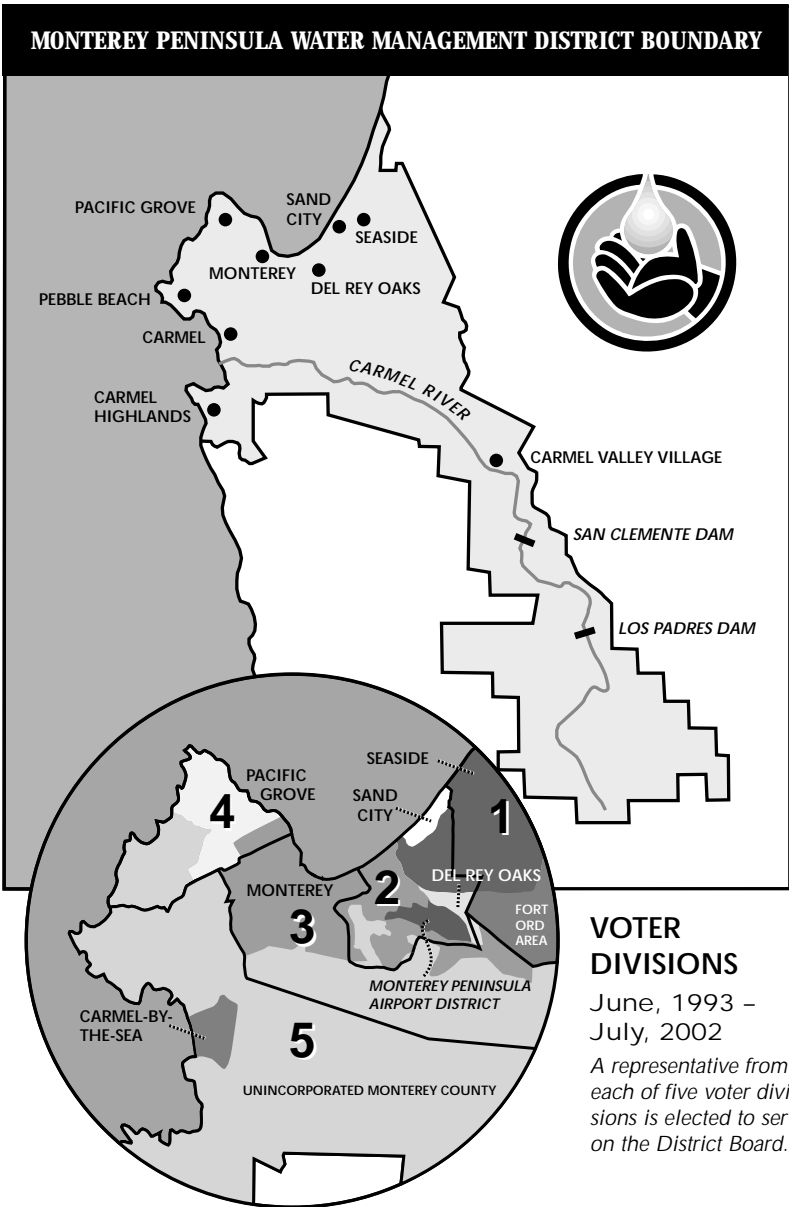


**MONTEREY
PENINSULA
WATER
MANAGEMENT
DISTRICT**



2002 ANNUAL REPORT





Mission Statement

The mission of the Monterey Peninsula Water Management District is to manage, augment and protect water resources for the benefit of the community and the environment.

2002 Board of Directors

- Kris Lindstrom, Chair – *Division 4*
- Alexander "Zan" Henson, Vice-Chair – *Division 5*
- Alvin Edwards – *Division 1*
- Judi Lehman – *Division 2*
- Molly Erickson – *Division 3*
- David Potter – *Monterey County Board of Supervisors*
- David Pendergrass – *Mayoral Representative*

District Management

- Ernesto A. Avila – *General Manager*
- Rick L. Dickhaut – *Administrative Services Manager*
- Andrew M. Bell – *Planning & Engineering Manager*
- Stephanie Pintar – *Water Demand Manager*
- Joseph W. Oliver – *Water Resources Manager*

COVER PHOTOS

Some highlights of MPWMD 2002 accomplishments. See various articles within for more information.

New Voter Division Boundary Map Approved in July, 2002

A new voter division boundary map was approved thanks to a hard-working committee of community members representing minority groups and jurisdictions within the District, who developed the map over a

four-month period. The Board of Directors unanimously adopted the map in January, 2002. Final approval was handed down by the U.S. Justice Department in July, 2002. The new voter divisions will be in effect for

the November 2003 Board member elections. The redistricting effort was prompted by state and federal laws that mandated a review of voter division boundaries based on the 2000 census results. The District first



District team rescues stranded steelhead, Summer 2002 (Page 10)

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OVERVIEW

Increasing the water supply while protecting the environment is the challenge for the Monterey Peninsula Water Management District and provides the framework for the District's future direction.

The Monterey Peninsula Water Management District

The Monterey Peninsula Water Management District (the District) regulates the water resources of 40 distribution systems and over 900 private wells. The largest system, operated by California-American Water Company (Cal-Am), provides water to 95 percent of the residents and produces about 80 percent of the total supply within the District. The State Water Resources Control Board (SWRCB) regulates most of Cal-Am's water production. The other smaller water suppliers in the District operate under varying rules and conditions.

District Promotes Environmental Protection

The District protects the Carmel River habitat and threatened species, such as the California red-legged frog and steelhead trout, monitors stream flow and its effects on these species, and measures groundwater levels in the Seaside and Carmel River basins to assess water quantity and quality. The District has constructed rearing facilities for steelhead and rescues up to 40,000 fish during dry months.

The District has developed a comprehensive monitoring program, which provides a solid environmental baseline and better understanding of the relationships between weather, hydrology, human activities and the environment. This knowledge empowers decision-makers to further the District's mission of benefiting both the community and the environment.



MPWMD large woody debris project (see page 11)

State Imposes Limits on Water Production

Water production within the District remains under careful state scrutiny since SWRCB Order WR 95-10 (Order 95-10) was issued in 1995. Order 95-10 requires Cal-Am to reduce the water pumped from the Carmel River by 20 percent now and up to 75 percent in the future, if no action is taken to replace unlawful diversions. Also, any new water that is developed must first completely offset previous unlawful diversions from the Carmel River, an estimated 10,730 acre-feet (AF), before any water can be used for new construction or remodels that intensify water use. In order to keep water use within established limits, the District developed innovative water conservation measures and adopted strict limits on the amount of water available for new building and remodel projects.

Board Seeks New Water Sources

The District has been seeking ways to increase the water supply since its inception in 1978. The proposals currently being evaluated include capturing excess winter stream flow and redirecting it from the Carmel River to the Seaside Basin for injection and storage, constructing a desalination plant, and reclaiming wastewater to use for irrigation. No new water source was approved during 2002 to serve Cal-Am customers within the District. About 163 AF of water remains available for new construction and remodel projects within the Cal-Am service area.

INCREASING THE WATER SUPPLY

The District's priority is to identify and evaluate options which have the potential to increase the water supply within the District. Cal-Am applied to the District in 1996 to construct the Carmel River Dam and Reservoir Project. The District proceeded to evaluate both the Cal-Am dam proposal and non-dam alternatives in year 2002. The primary goal is to comply with SWRCB Order 95-10.

Board Directs Staff to Proceed on Water Augmentation Initiative

The District Board and Staff have conducted a series of Strategic Planning Workshops, most recently in November 2002, which identified the following priorities to augment the Peninsula's water supply:

- Proceed with the Seaside Basin Aquifer Storage and Recovery (ASR) project while simultaneously evaluating other long-term water supply options, including the proposed Cal-Am Carmel River Dam and Reservoir and the storm water management plan;
- Develop a work plan to implement the Seaside Basin Groundwater Management Plan.

Seaside Basin Aquifer Storage and Recovery Program Tested

District staff completed their fifth season of testing the Seaside Basin Aquifer Storage and Recovery initiative. The Seaside Basin ASR, also known as the Seaside Basin Injection/Recovery Program, has the potential to improve drought protection for existing consumers and protect the Seaside groundwater basin aquifer from overdraft and seawater intrusion. The plan is to divert excess winter flows from the Carmel River through existing Cal-Am facilities

and inject the water into specially-designed injection wells in the Seaside Basin. This excess water would then be available for use during summer months.

The District previously constructed two test wells, one shallow pilot well and a 720-foot full-scale test well in the Santa Margarita Sandstone on former Fort Ord property. The SWRCB issued the District a temporary permit that allowed staff to divert water from the Carmel River between December 1, 2001 through May 31, 2002 as long as minimum flow standards were maintained in the Carmel River. A total of 310 AF of water was injected into the pilot and full-scale test wells. An injection rate of 6.6 AF/day was achieved.

District staff prepared permit applications to conduct expanded testing in year 2003 and began testing the recovery phase and completed design modifications to increase well efficiency in Summer and Fall 2002. In January 2003 the SWRCB approved a District application to resume diverting excess water to the wells during the 2002-2003 winter season.

District begins Water Supply Project Environmental Impact Report/Statement

District staff continued work on a comprehensive Water Supply Project Environmental Impact Report (EIR) to evaluate various proposals to augment the water supply within the District.

These alternative water projects include:

- Seaside Basin Aquifer Storage and Recovery (ASR);
- local seawater desalination;
- storm water reuse;
- off-stream storage;
- reclamation;
- the Cal-Am reservoir proposal; and
- the non-dam contingency plan known as "Plan B" (desalination at Moss Landing plus ASR).

All proposed scenarios, including the "No Project" scenario, must conform to the production limits imposed by SWRCB Order 95-10. The District Board, as well as other local, state and federal regulators, will use the EIR as a decision-making tool to evaluate the Cal-Am reservoir project application and the other options for the District to augment water production.

The Board in March 2002 authorized the Phase 1 EIR scope of work to be performed by Jones & Stokes Associates (JSA) and their engineering services subcontractor Camp, Dresser & McKee (CDM), for a not-to-exceed amount of \$724,000. Phase 1 used the Draft Plan B Report, issued by the California Public Utilities Commission (CPUC) in 2001, as its starting point.

District staff distributed the Notice of Preparation for an EIR (NOP) to local, state and federal agencies as well as many local groups and individuals in June 2002. Public hearings were held in July, and Board workshops in July and August addressed policy issues raised by comments on the NOP, including community water supply goals and water production options.

The interim results of Phase 1 engineering studies, including preliminary combinations of local non-dam projects to provide three levels of community water production, were presented at a Board workshop in November. The Phase 1 Engineering Report was completed in December 2002, and is being refined for presentation in March 2003.

CPUC Released its Final Plan B Report

The California Public Utilities Commission, working in conjunction with affected agencies and



Top photo: Injection well being examined prior to installation of an injection flow control valve in August 2002.

Bottom photo: MPWMD consultant collecting field data during injection testing in March 2002.

stakeholders, including the District, issued its Final Plan B Report in August, 2002. Assembly Bill 1182, authored by Fred Keeley in 1998, directed the CPUC to prepare a report, which would identify "Plan B", or a non-dam alternative to augment the Peninsula's water supply. The Final Report recommends the construction of a desalination plant in Moss Landing producing about 9,400 AF/year (AFY), combined with a smaller ASR project producing about 1,300 AFY. District staff and consultants reviewed the report from an environmental and engineering perspective. In November 2002, the District presented cost estimates for the work needed to evaluate Plan B in detail as part of the EIR on the District's Water Supply Project.

Carmel River Flow Threshold Report Drafted

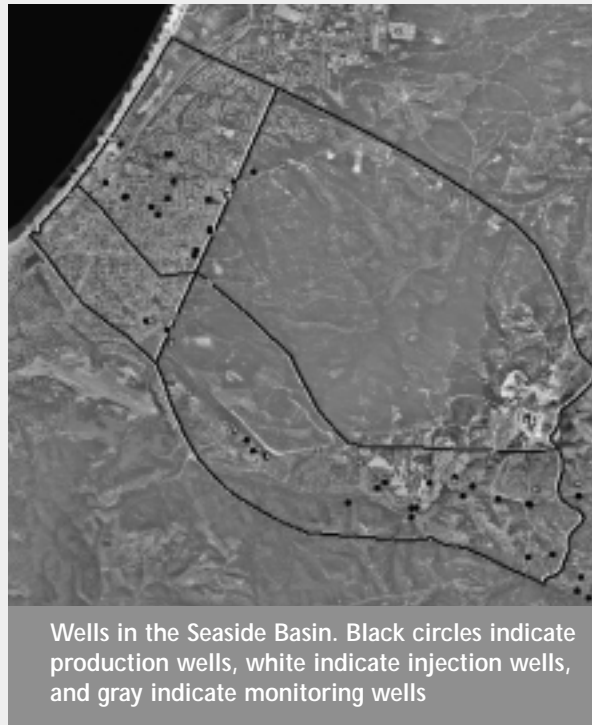
In Fall 2002, District consultants were retained to prepare the Carmel River Flow Threshold Report, which assesses minimum flows needed to support steelhead trout, red-legged frogs, and riparian plant populations. A draft report will be submitted to the Board in January 2003. Staff also updated and developed revised CVSIM computer model code to reflect stream flow requirements recommended by the National Marine Fisheries Service (NOAA Fisheries, formerly referred to as NMFS).

District Reviews San Clemente Dam Safety Issues

District staff participated in technical and policy review committees relating to San Clemente Dam seismic safety and sediment transport issues. The operation of San Clemente Dam will continue to affect the "No Project" alternative and is a component of the computer modeling for the water supply project EIR.

In August 2002, the California Division of Safety of Dams (DSOD) notified Cal-Am that, as an interim safety measure to reduce the risk of downstream flooding in the event of a significant earthquake, Cal-Am must reduce the water level in San Clemente Reservoir from the current spillway elevation of 525 feet to elevation 515 feet. This drawdown was scheduled to become effective January 1, 2003, and would leave approximately 140 acre-feet in storage.

District Seeks Long-Term Water



Wells in the Seaside Basin. Black circles indicate production wells, white indicate injection wells, and gray indicate monitoring wells

Rights

The SWRCB staff advised the District in 2001 to submit a Petition for Change to "borrow" from existing water rights, which the SWRCB issued the District for the New Los Padres Dam and Reservoir Project (NLP) in 1995 for a permanent ASR project. The SWRCB has requested detailed engineering information and other permit modification information before they will notice the ASR permit application.

The District submitted a second Petition for Change in April 2002 requesting that up to 7,909 AF per year of the NLP water rights be used for Carmel River diversions. The SWRCB requested that the District prepare a Water Availability Analysis to help determine when additional water rights may be available.

The SWRCB has requested an EIR from the District and concurrence by NOAA Fisheries Service before conducting formal hearings on the petitions. The District Board is considering adding an analysis of the impacts to the Carmel River under scenarios where different quantities of water rights are granted to the scope of work in the water supply project EIR.

Determining Future Water Needs

District staff estimated in May 2001 that water use associated with vacant legal lots of record within the Cal-Am service area, excluding County of Monterey data, will be 1,181 AF. In February 2002,

District staff estimated that the County of Monterey would require another 69 AF, bringing the estimated total to about 1,250 AF. Earlier estimates from each jurisdiction of future water needs through year 2020 totaled about 3,570 AF.

Seaside Basin Groundwater Management Plan

SWRCB Order #95-10 requires pumping to be maximized from the Seaside Basin in order to minimize pumping from the Carmel River. Today, the basin is exhibiting signs of stress from over-pumping. The District Board identified the need for a management plan to protect this resource.

- District staff issued a Request for Proposal for a technical, environmental and legal review of conceptual ordinances associated with a long-term groundwater management plan.

- The firm of Jones & Stokes Associates (JSA) was retained to help develop ordinances for the Seaside Basin Groundwater Management Plan.

- District staff began work to update agency agreements concerning Seaside Basin management signed in 1993. A key principle will be continued protection of the Seaside Basin by the District.

- The Phase III Hydrogeologic Update of the Laguna Seca Subarea of the Seaside Basin was completed. The study found that current water production is greater than predicted and exceeds the safe yield of the subarea. The Board directed staff to implement the action recommended in the report.

Wastewater Recycling Project in Pebble Beach

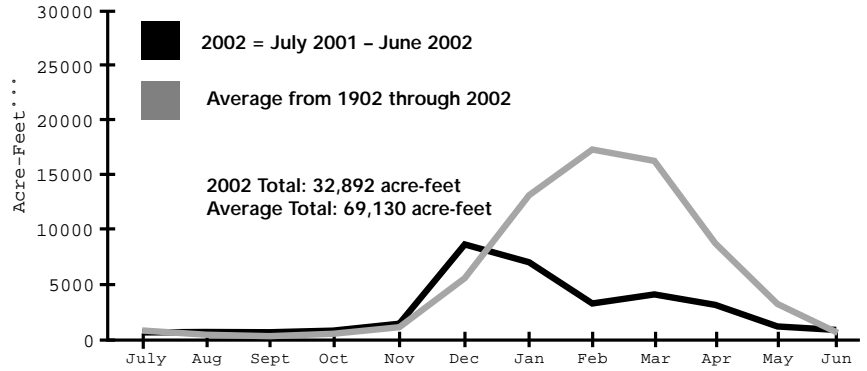
The Wastewater Reclamation Project, begun in 1994 by the Carmel Area Wastewater District and the Pebble Beach Community Services District (CAWD/PBCSD), uses reclaimed wastewater to irrigate golf courses and open spaces in the Del Monte Forest area, including Pebble Beach. The District collected about \$1,415,000 in 2002 from the sale of the reclaimed water to cover operating expenses and interest on bonds sold to finance the project. The District Board is evaluating funding options to expand the reclamation project.

WATER PRODUCTION REPORT, YEAR 2002



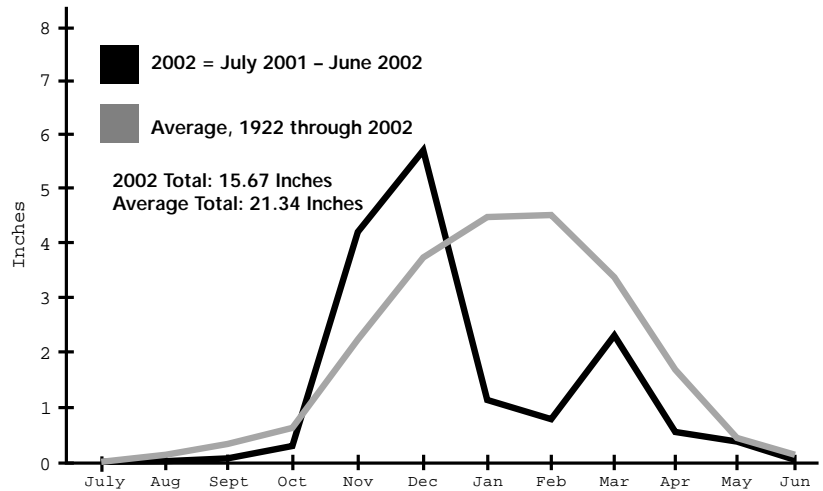
Garzas Creek, a tributary to the Carmel River, and important steelhead spawning stream

MONTHLY UNIMPAIRED INFLOW AT SAN CLEMENTE DAM



In reporting year 2002, 32,892 acre-feet of unimpaired inflow were estimated at San Clemente Dam, which is 48% of the average annual inflow. Unimpaired inflow refers to the flow that would have occurred under natural conditions without any diversions or storage facilities.

MONTHLY RAINFALL AT SAN CLEMENTE DAM

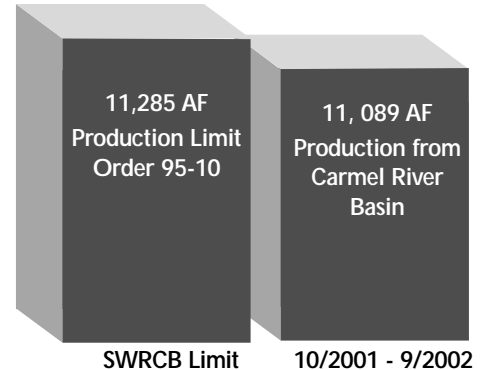


In reporting year 2002, 15.67 inches of rainfall were measured at San Clemente Dam, which is 73% of the average annual rainfall.

CAL-AM PRODUCTION FROM CARMEL RIVER BASIN

Cal-Am Production Below State Limits

Between October 1, 2001 and September 30, 2002, Cal-Am production from the Carmel River basin totaled 11,089 acre-feet. This is 196 acre-feet below the limit set by Order 95-10. Water production was within approximately 2 percent of the limit.



District-Wide Production

All owners of water-producing facilities within the District are required to report water production annually. This includes the registered water distribution systems within the MPWRS and independent wells. Total water production in the District for Water Year 2002 was 20,041 AF, which was seven percent higher than in Reporting Year 2001. In Water Year 2002 there were 652 active wells reporting production, an increase of 67 wells from Reporting Year 2001.

The District requires all new wells, and existing wells that produce 5 or more AFY per year, to have water meters. Ninety-nine percent of reported water production was metered in Water Year 2002.

Cal-Am Production Remains Below State and District Limits

Cal-Am is the largest of the 16 registered water distribution systems in the MPWRS. Cal-Am total production during Water Year 2002 was 14,611 AF. The District's Water Allocation Program limits production by Cal-Am to 17,641 AFY within the MPWRS.

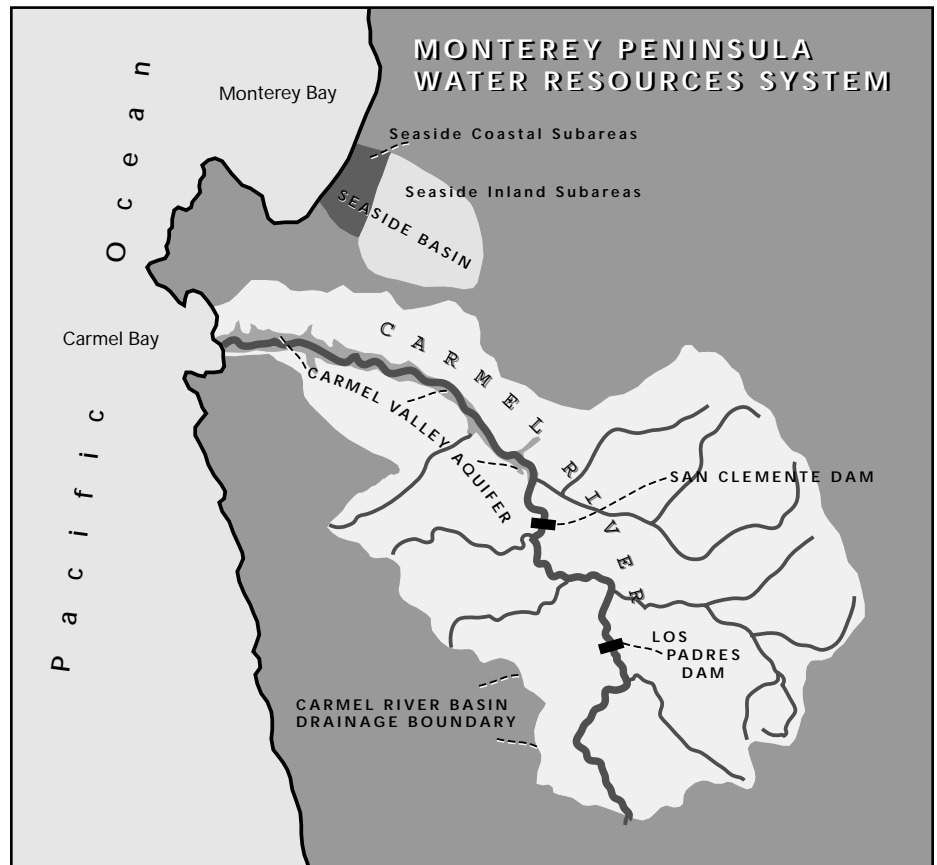
Cal-Am production from the Carmel River Basin between October 1, 2001 and September 31, 2002 was 11,089 AF, which is 196 AF below the 11,285 AFY limit established by the State Water Resources Control Board Order No. 95-10.

Permits Required for New Wells in Regulated Areas

The District adopted Ordinance No. 96 in March 2001, which requires a District permit for new wells within the MPWRS and within 1,000 feet of the Carmel Valley Alluvial Aquifer. The District issued four permits for new wells in the regulated area from April 2001 through December 2002.

Strategy Meetings with Cal-Am Held Quarterly

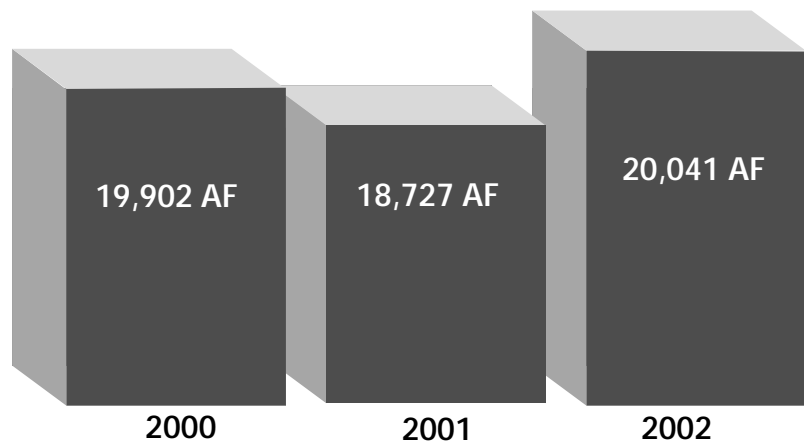
The District participated in a multi-agency Memorandum of Agreement and held quarterly water supply strategy meetings with Cal-Am to coordinate management of the community's limited water supply.



Monterey Peninsula Water Resources System (MPWRS)

The Monterey Peninsula Water Resources System (MPWRS) consists of the Carmel River and its tributaries, the Carmel Valley Alluvial Aquifer and the Seaside Coastal Subareas. Sixteen registered water distribution systems, including Cal-Am, derive their water from the MPWRS. Total water production within the MPWRS was 17,827 AF, which is 14 percent below the system-wide production limit of 20,687 AFY specified in the District's Water Allocation Program.

DISTRICT WATER PRODUCTION 1999-2001



Total water production in the District between October 1, 2001 and September 30, 2002 was 20,041 acre-feet, a 7 percent increase over the prior year (Note the reporting period changed from July – June to October – September this year).

WATER CONSERVATION

Monterey Peninsula residents are among the most water thrifty in the state and continue to support the conservation measures adopted by the District and Cal-Am.

Community Supports Conservation

The Expanded Water Conservation and Standby Rationing Plan was implemented in 1999 to:

- keep Cal-Am water production within limits set by State Order 95-10;
- establish mandatory water reductions for all water users when a physical water shortage such as a drought occurs; and
- mandate procedures to be followed in the event of a water supply emergency caused by a natural disaster or breakdown in the water distribution system.

The community remained at Stage 1 (the least restrictive stage) throughout 2002 because water production remained below year-to-date targets throughout the year.

New Water Rates in Effect

The California Public Utilities Commission approved the conservation rate schedule for Cal-Am customers in March 2000.

The schedule provides for a base water allowance for each full and part-time resident in a house, as well as lot size. If a water customer exceeds the water allowance by 150 percent, the water rate increases. Once these rates went into effect, the mechanism for Cal-Am to return to their standard rates was eliminated.

Water Permits Required for New Construction and Remodels

All residential new construction or remodeling projects that include the installation of water-using fixtures must

first obtain a water permit from the District. All commercial customers who change their usage from one type to another must obtain a water permit. Fees are based on the potential water use from new fixtures. The District maintains a record of the amount of water allocated to the jurisdictions for construction projects.

that are awaiting final planning department approval. No additional water will be allocated to the jurisdictions for water permits until State Order 95-10 is satisfied.

New construction continues, especially in the hillsides of Carmel Valley, along Highway 68, and along the coastline in Seaside and Sand City. Water for these

areas is not derived from the Carmel River and is not supplied by Cal-Am. These smaller water companies are not subject to Order 95-10. A total of 56 water permits were issued for projects in these areas, representing approximately 13 AF of projected annual water use.



Rob Cline, MPWMD, inspects a water heater in a Pacific Grove apartment building, as part of the District's conservation monitoring.

Toilet Retrofit Program Remains Integral to Conservation Plan

The District's toilet retrofit program is an integral part of its long-term conservation plan. Water saved by retrofitting toilets is set aside as permanent conservation savings to meet the Board's 1987 goal of achieving a 15 percent reduction in water use by the year 2020.

Refunds Offered for Replacing Inefficient Toilets

The Toilet Replacement Refund Program, jointly funded by the District and Cal-Am, refunds up to \$100 for each inefficient toilet replaced with an ultra-low flush model

in a residential or commercial building. Non-visitor serving commercial projects can receive the refund for up to 20 toilets per property. In 2002, refunds were issued for 251 toilets replaced under this program. The District estimates that these retrofits represent about 6 AF of water savings in 2002. Overall, the program has saved an estimated 149 AF annually since it began in 1997.

Toilets Retrofitted Upon Resale of Property

When a property is sold, staff inspects the building to make sure that inefficient plumbing fixtures have been replaced

Permits Issued in District Declined in 2002

In 2002, a total of 925 water permits were issued for projects throughout the District, 15% less than the number of permits issued in 2001. At the end of 2002, approximately 66 AF of water from the 1993 Paralta Well allocation remained available for new construction and remodel projects within the Cal-Am service area. In addition, 50 AF of water remained in the pre-Paralta accounts and 47 AF of public water credits were available. Most of this water has been reserved by the jurisdictions for projects

with ultra-low flush models. In 2002, about 1,721 properties transferred title within the District and staff inspected 950 of them for compliance with retrofit rules. The District estimates that about 31 AF of water were saved through the replacement of about 1,205 toilets under this program in 2002.

Water Credit Transfer Rules Deleted

Ordinance No. 102, adopted by the Board in February 2002, eliminated water credit transfers. The ordinance provides for transfer applications which were completed by December 31, 2002 to be processed under the old rule. One application was completed by this deadline.

Bathroom Ordinance Requires Deed Restrictions to Protect Community Water Usage

Ordinance No. 98, also known as "the second bathroom ordinance," allows a single-family dwelling on a single-family residential site to add a second full bathroom or make an existing half bath into a full bathroom, without debiting the jurisdiction's allocation of water. The ordinance requires two deed restrictions: (1) to provide public access to water use data for a period of five years before and after the permit is issued; and (2) to give notice to future property owners that no credit is available for fixtures added pursuant to this ordinance. District staff is responsible for reviewing and recording these documents. Since the ordinance was adopted in April 2001, permit processing times have increased from 2-3 weeks to 4-6 weeks when a deed restriction is required. In 2002, the District prepared and recorded 695 documents on property titles.



A drought-tolerant garden, such as this one fronting an old Pacific Grove apartment, has besides its beauty many advantages, among which are using little water and demanding minimum maintenance.



A cistern system at the Monterey Peninsula Museum of Art's La Miranda Adobe collects rainwater for later use in maintaining its gardens. The cistern's tanks are well camouflaged by foliage.



ENVIRONMENTAL PROTECTION

Since its inception, the District has been dedicated to protecting the Carmel River's banks against erosion; monitoring ground and surface water levels throughout the District; and protecting threatened species such as the Carmel River steelhead trout and California red-legged frog, as required by federal and state regulations. Approximately one-half of the District's budget is allocated toward environmental protection.

District Focuses on Protecting Threatened Species

Protecting Carmel River Steelhead Trout a Priority

The Carmel River steelhead trout population continued to increase in 2002. In spite of the progress made on the Carmel River in the last 12 years, steelhead trout continue to be listed as a threatened species on the Carmel River and areas throughout California under the federal Endangered Species Act. District fishery programs focus on maintaining a healthy environment for steelhead spawning and rearing. District staff coordinates with Cal-Am, the California Department of Fish and Game and NOAA Fisheries to control the amount of water released from reservoirs and pumped from wells so that adequate river flow is maintained for fish throughout most of the year.

Steelhead Numbers Continue to Rise

The adult steelhead population continued to recover from the impacts of the 1987-1991 drought. The District's automatic fish counter at San Clemente Dam recorded 642 fish between December 2001 and May 2002. The 2002 run was the fourth highest since the District began counting in 1991, but was below the peak of 861 in 1998. In 1992, following a four-year drought, only 15 fish were counted.

In October 2002 District staff surveyed the number of juvenile steelhead at ten stations below Los Padres Dam, including two new stations within the inundation zone of San Clemente Reservoir. Overall population density of juveniles was 76 percent higher than levels recorded in 2001, averaging 123 fish per one hundred feet of stream. These values are typical of well-stocked steelhead streams.

Improvements Made at Sleepy Hollow Steelhead Rearing Facility

The Sleepy Hollow Steelhead Rearing Facility includes a cooling tower for maintaining a safe water temperature in the rearing channel and holding tanks during the hot summer months. Monitoring data show that the cooling tower reduces daily maximums and daily mean water temperatures by five to eight degrees fahrenheit compared to conditions in the river.

The facility is monitored 24 hours a day by a computer system that monitors the power supply and five pumps, and automatically alerts District staff to potential problems when the Facility is not staffed. The alarm system was upgraded in 2002 to

measure water depth in the river pump gallery, water flow, temperature and pressure on the cooling tower side of the system. The system alerts staff if these measurements fall outside optimum range.

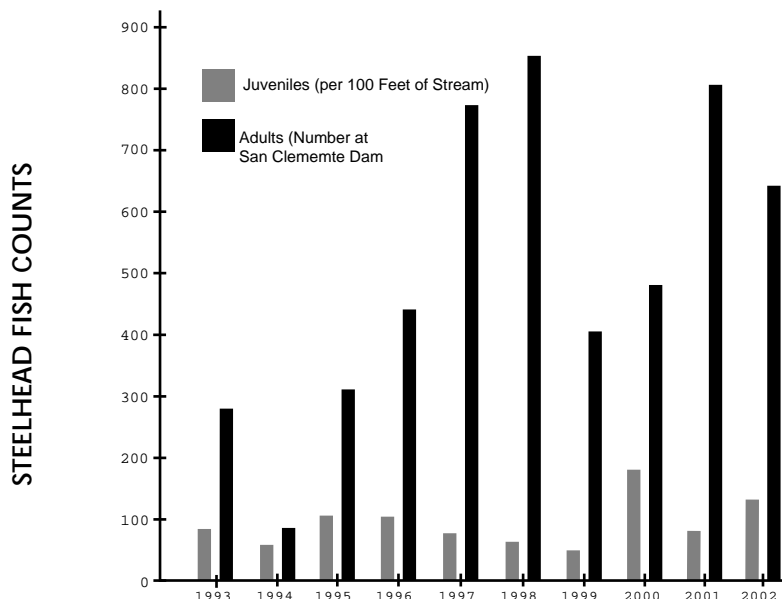
The rearing facility was out of service from March 2002 until August 2002 because the two river pumps were severely damaged by sand and fine silt abrasion in the pump housing. One pump was overhauled while the other was replaced. Therefore, no fish were held in the facility during the summer 2002 rearing season.



District team conducts steelhead rescue operation in the Carmel River.

Fish Rescue Operations Continued

District staff conducted 49 rescue operations in calendar year 2002, capturing a total of 36,398 steelhead from drying



reaches of the lower Carmel River. Of the total, 35,877 fish were released into viable habitats upstream of the Narrows (River Mile 9.6); and 521 fish (1.4% of total) died during rescue and transport operations.

Rescued Fish Released from Sleepy Hollow Rearing Facility

District staff released the 7,035 fish produced during the 2001 rearing season between November 2001 and March 18, 2002 when the facility was shut down for repairs to the pumps. Of the 7,035 fish released, 6,812 were young-of-the-year from the rearing channel and 223 fish were released from the rearing tanks. The survival rate of the young improved with the addition of a fish screen to prevent the larger fish from entering the rearing channel.

Federal and State Grant Funds Received

The District completed modifications to the Carmel River channel and the Old Carmel Dam to improve conditions for upstream fish migration with federal and state grant funds. The District received \$35,548 in 2000 from the California Coastal Salmon Recovery Program for three projects designed to improve conditions for Carmel River steelhead. These projects include modifying the Carmel River channel at four locations; improving the Rancho San Clemente Pond outlet works; and removing gravel from the San Clemente Reservoir and injecting it below San Clemente Dam to improve the spawning habitat. The remaining projects will be completed in March 2003.

California Red-Legged Frogs Protected

The District continued to monitor and document loca-

tions of California red-legged frogs within the Carmel River watershed. The U.S. Fish and Wildlife Service authorized several District staff members to move frogs out of harm's way during construction at specific restoration project sites.

District to Receive Long-Term Regional General Permit in 2003

The District first applied to the U. S. Army Corps of Engineers for a long-term Regional General Permit (RGP) in May 1999. This permit will allow the District to pursue riverbank restoration projects and complete routine maintenance for a

specified period of time, as well as oversee projects undertaken by private landowners. The District has resolved most of the concerns raised by the U. S. Fish and Wildlife Service and NOAA Fisheries to meet the stringent guidelines of the Federal Endangered Species Act to ensure that these activities would not harm or harass steelhead and California red-legged frogs. The District completed a detailed framework for conducting future activities in December 2002 and expects to obtain the RGP in 2003.

The Effects of Large Woody Debris on the Carmel River Studied

The District contracted with California State University at Monterey Bay to document and assess the effects of large woody debris (LWD) on the river. LWD, which is wood that is more than six inches in diameter and more than five feet long, can help create superior habitats for aquatic species and provide nutrients, shade, cover and substrate conditions suitable for steelhead, western pond turtles, and red-legged frogs.

During the past several decades public agencies and private landowners have routinely removed LWD to prevent flooding, bank erosion, and damage to bridges. The District is developing a baseline of data that will provide the information needed to balance environmental needs with protection of life, property, and public infrastructure.

Log/Rock Deflectors Installed at the deDampierre Restoration Project

The California Department of Fish and Game (CDFG) provided a grant of \$52,000 to install five large wood habitat structures along 400 lineal feet of



Installation of a large wood habitat structure near deDampierre Park in Carmel Valley Village (pictured: Mark Bekker and Matt Lyons, MPWMD)

the Carmel River near Carmel Valley Village. District staff worked with the University of California at Santa Cruz, Big Creek Lumber Company, the Monterey Peninsula Regional Park District and the CDFG to install the structures, which will improve habitat for steelhead trout and other aquatic species. The District contributed survey work, design, permit and right-of-way acquisition, and managed the construction. District biologists surveyed California red-legged frogs and relocated steelhead during construction.

Lectures and Field Trips

Highlight River Restoration Projects

District staff and local educators led field trips to the Carmel River and explained District-sponsored restoration projects. The District organized tours with Professor G. Mathias Kondolf of the University of California at Berkeley, Associate Professor Doug Smith of California State University at Monterey Bay, and Dave Rosgen of Wildland Hydrology, a leading U.S. expert in river restoration.

The Overall Condition of the Carmel River Inspected Annually

District staff routinely inspects the river every spring and summer to assess the overall condition of the river. Staff determined that an overgrowth of vegetation was constricting many areas of the river, especially upstream of the Quail Lodge Golf Course. Several large trees had fallen into the river and were threatening to block high flows. District staff received permission from state and federal regulators before removing the most critical blockage at the Boronda Road Bridge.

Native Plants Maintained Along the Riverfront

District staff maintains native vegetation along the Carmel River both for erosion protection and habitat enhancement. The staff collects seeds from native streamside trees and shrubs, which are then propagated by a local nursery. The seedlings are transplanted in restoration sites along



Baby buckeye tree, part of the District's streamside restoration program

the Carmel River to help diversify the restoration projects. Willow and cottonwood trees are also planted from cuttings. Altogether, District staff planted 890 natives such as willow, cottonwood, sycamore, gooseberry, box elder, buckeye and elderberry in 2002.

Native streamside vegetation is an important factor in maintaining a healthy, vigorous riparian corridor. The District's restoration approach uses all available technology to minimize the need for supplemental irrigation and mimic natural river environments. This approach includes designing low-lying floodplains adjacent to the river bottom, thus reducing the need for irrigation since plants are closer to the water table. Also, trees such as willows and cottonwoods are planted deeply with a backhoe, which allows the plants to tap into the water table.

Streamside Vegetation Monitored for Effects of Groundwater Pumping

District staff monitors the effect of seasonal drawdown of the water table by

measuring leaf and soil moisture during the dry season, determining moisture stress in riparian vegetation, and irrigating as necessary. District staff applied 7.3 AF of water through nine District irrigation systems to streamside vegetation in 2002 to offset impacts associated with groundwater pumping.

Staff also documents the height, growth rate and survival of plants at District restoration project sites. Trees at District restoration sites had an excellent survival rate during 2002. The close-to-normal rainfall of the past four years (1999-2002) and better management practices have helped protect the river environment from significant moisture stress during the dry months.

River Channel Cleared of Debris

District staff removed about 1,400 pounds of trash and debris from the river channel in 2002. The trash included plastic, metal, and auto parts.

Birds Monitored Along the Carmel River

The District's Carmel River Avian Monitoring Program documents the number and type of birds using the Carmel River riparian habitat for nesting, foraging, and cover. The information collected measures the performance of the District's restoration projects based on the principle that greater species diversity is a function of quality habitat. Results from the District's Avian Monitoring



Turkey vulture near Carmel River Lagoon

Program show that the Carmel River riparian corridor provides important breeding habitat for a wide variety of species, such as the green-backed heron, California quail and Nuttall's woodpecker.

Stream Flow, Water Quality, and Water Levels Monitored

Stream flow and precipitation data provide a scientific basis for managing the water resources within the District. District staff monitors the flow of water at four stations on the Carmel River and eleven stations on streams both within and outside the Carmel River watershed. Three new stations, one on the Carmel River, and two on other streams, were installed in 2002 to enhance the network.

Conditions at Carmel River Lagoon Monitored

The Carmel River Lagoon is very important rearing habitat for steelhead. The District maintains a real time water level sensor at the Lagoon, checks water quality of the surface water at the Lagoon twice per month, and annually checks water quality in nearby dedicated monitoring wells.

District staff also monitors vegetation in the Lagoon's wetlands to determine how water distribution practices upstream affect the wetland habitat. Annual channel bottom surveys measure sand supply



A ladybug rests on a streamside plant, Carmel River

within the main body of the Lagoon. No major trends in sand accumulation or depletion, which can affect Lagoon habitat, have been identified.

The District participates in interagency meetings regarding management of the Lagoon mouth during storm events and provides technical expertise for a lagoon restoration program.

Ground Water Quality Monitored

Each year the District samples ground water quality in 17 wells in the Carmel Valley Alluvial Aquifer and 12 wells in the Seaside Basin. Although the potential for seawater intrusion in coastal wells, and elevated nitrate levels in upper Carmel Valley are of primary concern, the samples are of primary concern, the samples are tested for a wide range of elements. Test results indicate that nitrate concentration remains well within State drinking water standards, and there is no evidence of seawater intrusion. The District has been collecting water quality samples in Carmel Valley since 1981, and from Seaside since 1990. These efforts supplement Cal-Am's extensive water quality monitoring program.

Ground Water Storage and Water Level Monitored

The District began tracking water levels and calculating changes in storage in both the Carmel River Basin and Seaside Basin in 1987. Each month the District checks water levels in about 50 wells in Carmel Valley and 34 wells in Seaside. Although the water levels in Carmel Valley fluctuate throughout the year, they remain relatively stable from year to year, especially when compared to the years prior to 1991. Better management practices, as well as more favorable hydrologic factors, have contributed to the improved conditions.

However, water levels have declined in the Seaside Basin since 1995 when the State ordered Cal-Am to maximize production from the Seaside Basin. The Seaside Basin production has exceeded its estimated safe yield in four of the past seven years. The District identified the development of the Seaside Basin Management Plan in 2001 as a priority, and recently prepared a set of draft ordinances to regulate future and existing water production from the Seaside Basin.

Downloading water level data, Carmel River (pictured: Greg James, MPWMD)





MPWMD staff conducting well “backflushing” at the test injection well. During backflushing, water from the well is pumped to an adjacent settling basin at up to 3,000 gallons per minute (gpm) to free up fine particles that can get swept into the well during injection.

FINANCIAL REPORT

FISCAL YEAR 2001-2002



REVENUES	\$3,489,164
User Fees	\$1,740,501
Connection Charges	\$373,001
Property Taxes	\$849,290
Other Fees/Reimbursements	\$301,947
Investment Income	\$214,766
Grants	\$9,659

User Fees – The fee paid by California-American and Seaside Municipal water system customers, which appears on water bills as “MPWMD Fee.” Currently, the rate is 7.125% of the water bill.

Connection Charge – A capacity charge paid when a water permit is obtained. The current charge is \$19,976 per acre-foot of water. Collections for the fiscal year were \$390,227 of which \$17,226 was refunded to customers who paid for conditional use permits that expired during the fiscal year. The net amount collected was \$373,001.

Property Taxes – The District receives 0.023926% of the \$1.00 parcel tax assessed to support special districts.

Other Fees/Reimbursements – These include water and well permit processing charges; fees for staff research and photocopying; reimbursements for various projects; and the Toilet Replacement Refund Program.

Investment Income – Earnings on assets paid by banks and investment firms.

Grants – Special funds and reimbursements paid by outside agencies to the District.

EXPENDITURES	\$3,513,466
Carmel River Mitigations	\$1,366,122
Water Augmentation	\$1,832,349
Water Conservation	\$314,995



Carmel River Mitigations – Mandated projects designed to offset damage resulting from water extractions along the Carmel River. These include protection of threatened species, vegetative and fishery enhancements, erosion control, and monitoring of water resources.

Water Augmentation – Research, environmental studies and other activities related to development of water supply projects.

Water Conservation – Supports conservation education, toilet retrofit program and water permit compliance activities.

Plans for Future Capital Improvements and for Maintenance and Operation of Current Facilities and Future Improvements

The District is not a purveyor of potable water. Potable water is supplied by public utilities, mutual water companies and privately owned wells. The District began selling reclaimed water in 1994 from the CAWD/PBCSD Wastewater Reclamation Project. CAWD/PBCSD plans to expand storage capacity by using the Forest Lake Reservoir in the Del Monte Forest. The reclamation expansion plan, which includes desalination facilities, has been presented to the District. Negotiations on how to fund the project are underway.

An Operation and Maintenance Reserve Fund exists to help pay for routine as well as extraordinary repairs and replacement. The reserve was \$276,695 on June 30, 2002. The reclamation project also has a Replacement and Renovation Fund that contained \$207,226 on June 30, 2002. The annual accrual in this fund of \$5,300 is sized to achieve a fund balance of \$1,000,000 in 2022, assuming 6 percent annual interest.

Aside from the Wastewater Reclamation Project, the District continues to plan for a range of other capital improvements.

Methods for Financing Capital Improvements:

The District continues to evaluate various means of financing water supply projects. When the District Board identifies



Tom Lindberg, MPWMD, pumping water prior to water quality sample collection from wells that are part of the District's Seaside Basin coastal monitor well network.

projects for the agency to pursue, staff will consider which of the various funding mechanisms permitted in its authorizing legislation (State of California Water Code Section 118 et seq.) is most appropriate.

Financial Analysis of the Water Utility Systems Operated by the District

The District does not operate any water utility system for which a financial analysis could be conducted. The reclamation project operated by the Carmel Area Wastewater District is the only water utility system in which the District is involved financially. The audited financial statements for the CAWD/PBCSD Wastewater Reclamation Project for the year ending June 30, 2002 are available for inspection at the District office.

Ground Water Zones

In January 1980, the District Board initiated the District-wide groundwater charge zone by adopting Resolution No. 80-2. The intent of this resolution was to trigger the powers in the District law regarding well registration, metering and reporting and not to raise revenues.

Inspecting water using fixtures (pictured: Rob Cline, MPWMD)



The District Board has identified storm water management as one of its top priorities.





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