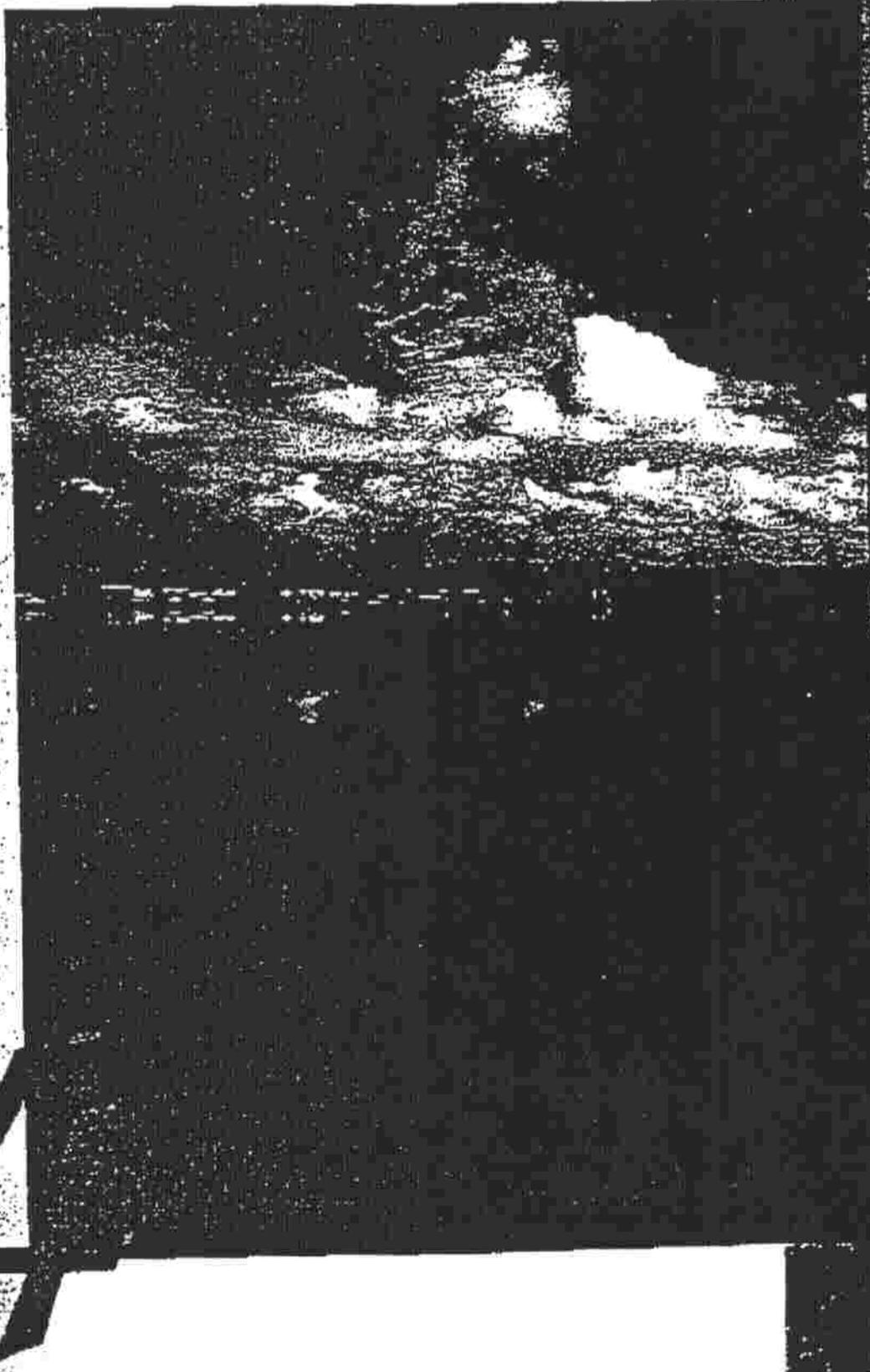


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*Orange County Water District  
1993-94 Annual Report*



'94

## Board of Directors

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### About the cover:

*Warner Basin, at full level after winter storms, is part of OCWD's 1,500 acres of recharge area in and near the Santa Ana River.*

The Orange County Water District (OCWD) covers an area of more than 350 square miles, virtually all of the northern half of Orange County, California. As manager of the groundwater basin, OCWD provides a reliable supply of high-quality groundwater to 23 cities, companies and water agencies. About two million Orange County residents rely on OCWD for 75 percent of their water needs.

Formed in 1933 by a special act of the California Legislature, the district has rights to the flow of the Santa Ana River below Prado Dam, which it captures and supplements with imported supplies for recharging the basin. OCWD owns 1,500 acres of recharge area in and near the Santa Ana River and 2,400 acres above Prado Dam, which it uses for water quality enhancement and conservation.

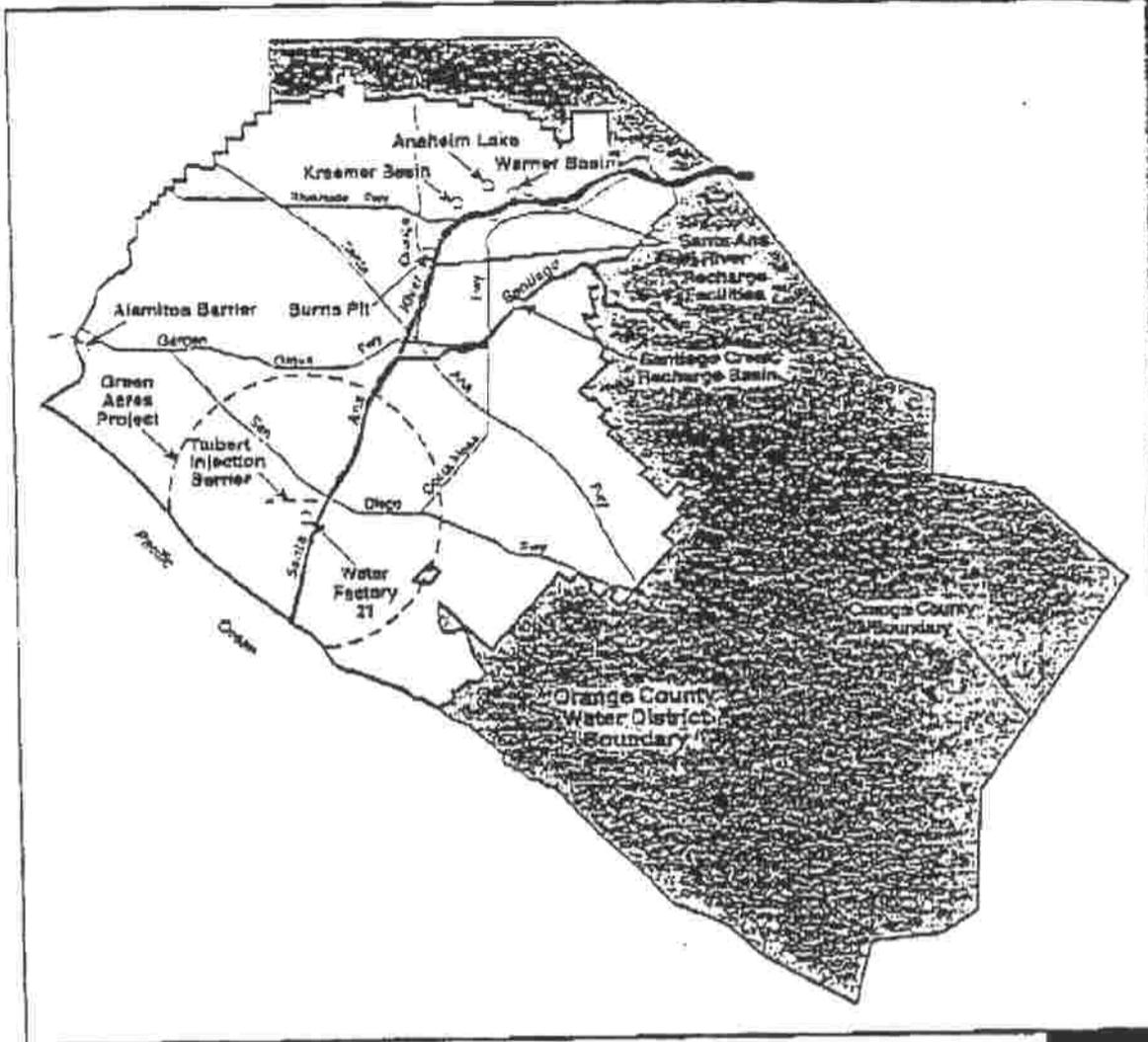


Figure 1 - OCWD reclamation and recharge projects assist in providing nearly 2 million residents with 75% of their water.

Recycling is an important component of OCWD's water management philosophy. At Water Factory 21, advanced treatment and reverse osmosis yield a product meeting drinking water standards that is injected into the groundwater basin to prevent seawater intrusion. The Green Acres Project provides filtration and chlorination for recycled water used in irrigation, toilet flushing, and industrial applications.

OCWD's groundwater monitoring and wellhead treatment programs ensure a water supply of the highest quality. The district's state-certified laboratory analyzes thousands of samples annually and uses sophisticated computer technology to pinpoint trouble spots. Several contaminated wells are being treated to remove nitrates and volatile organic compounds.

Research receives great emphasis at OCWD for solving problems of recharge, recycling, water quality enhancement and basin management. District microbiologists are developing natural treatment technologies that are both economical and ecologically sound. At the same time, OCWD's hydrogeologists are compiling data gathered from deep monitoring wells to aid in developing a numerical flow model of the groundwater basin.

OCWD is recognized as a leader in groundwater basin management, and its award-winning Groundwater Management Plan served as the model for state legislation in 1993. The district's administrative offices are in Fountain Valley and its field headquarters are in Anaheim. For further information, contact the public affairs office by mail, telephone, or in person. The address and phone number are printed on the back cover of this report.

## *A Message from the General Manager*

This annual report, covering the period of March 1993 through February 1994, highlights a number of innovative and exciting projects. Never given to resting on its laurels, OCWD constantly searches for more efficient and economical ways to manage and protect our precious water supply.

During the 1993-94 fiscal year, the district focused on:

- Refilling the groundwater basin after the long drought
- Maximizing water reclamation
- Increasing conservation and recharge
- Constructing wells for greater groundwater production
- Building and operating wellhead treatment facilities
- Investigating new, more efficient treatment technologies
- Improving overall basin reliability

The fact that producers were able to rely on groundwater for as much as 75 percent of demand during the drought attests to OCWD's expert management of the basin. Now, as we look to full recovery after six years of overdrafting the basin, we are developing projects to help ensure an even higher level of reliability.

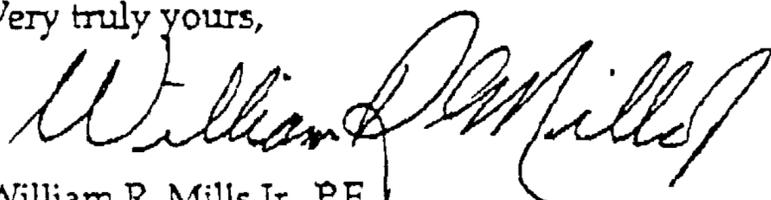
A permanent agreement for seasonal storage at Prado Dam allows greater conservation of Santa Ana River flows for recharge. More than a dozen new hookups to Green Acres Project recycled water means less drinking water is being used for irrigation. Completion of all major forebay projects, including an additional inflatable dam, has resulted in optimal recharge capability.

OCWD is working with agencies in Riverside and San Bernardino Counties on a number of projects to improve the quality of water in those areas, which in turn will improve Santa Ana River quality. On district land above Prado Dam, river flows are being routed through wetlands where plants remove harmful nitrates.

Groundwater affected by nitrates and industrial pollutants will soon be cleaned up by two large desalter projects now under construction. Meanwhile, research by district staff is focused on newer treatment technologies for water reclamation and the use of biotechnology to clean up groundwater contamination.

The following pages describe OCWD's multi-pronged approach to sound basin management and provide an overview of district income and expenditures during fiscal year 1993-94. In spite of the area's overall economic picture, I think you will agree that it was a very good year for water.

Very truly yours,



William R. Mills Jr., P.E.

OCWD, over a period of six decades, has developed an effective groundwater management strategy that other agencies are now studying and adopting as a model. This strategy encompasses a diverse spectrum of programs that include conservation, recharge, recycling, wellhead treatment, and research. All of these efforts are directed at increasing the reliability of local supplies so that groundwater producers can minimize their reliance on imported water. Achievement of that goal promises at least two crucial advantages: insurance against droughts, such as that of 1986-92, and protection from escalating costs.

### Historic Conservation Agreement Is Signed at Prado Dam

In a ceremony atop Prado Dam on January 11, 1994, OCWD celebrated the signing of a historic water conservation agreement with the U.S. Corps of Engineers (COE). Negotiated in cooperation with environmental agencies, the agreement ensures permanent seasonal storage behind the dam in Prado Basin. The signing marked the attainment of a goal OCWD had pursued for 20 years.



Figure 2 - An agreement between OCWD and the U.S. Army Corps of Engineers provides for gradually increasing storage of spring runoff behind Prado Dam. The agreement will save a long-term yearly average of nearly 5,000 acre-feet of water that would otherwise flow into the ocean.

Gradual increases in storage elevations over a period of several years will enable the District to conserve millions of dollars worth of water that would otherwise be lost to the Pacific Ocean. The goal for the next few years will be to raise the conservation pool to elevation 505 feet, for added storage capacity of 29,000 acre-feet and a long-term average gain of nearly 5,000 acre-feet per year (afy).

OCWD is setting aside more than 120 acres outside the storage pool as habitat for the least Bell's vireo, an endangered songbird. Prado's vireo population has grown 600 percent since 1986, largely because of OCWD's program to control cowbirds that prey on vireo nests. Ultimately, the district will develop more than 500 acres as wildlife habitat to qualify for conservation to the 505-foot level.



Figure 3 - The least Bell's vireo, an endangered songbird that nests in Prado Basin, is flourishing under OCWD's program to control predatory cowbirds and plant additional acreage in willow trees for nesting.

## Recharge Operations Are Greatly Improved

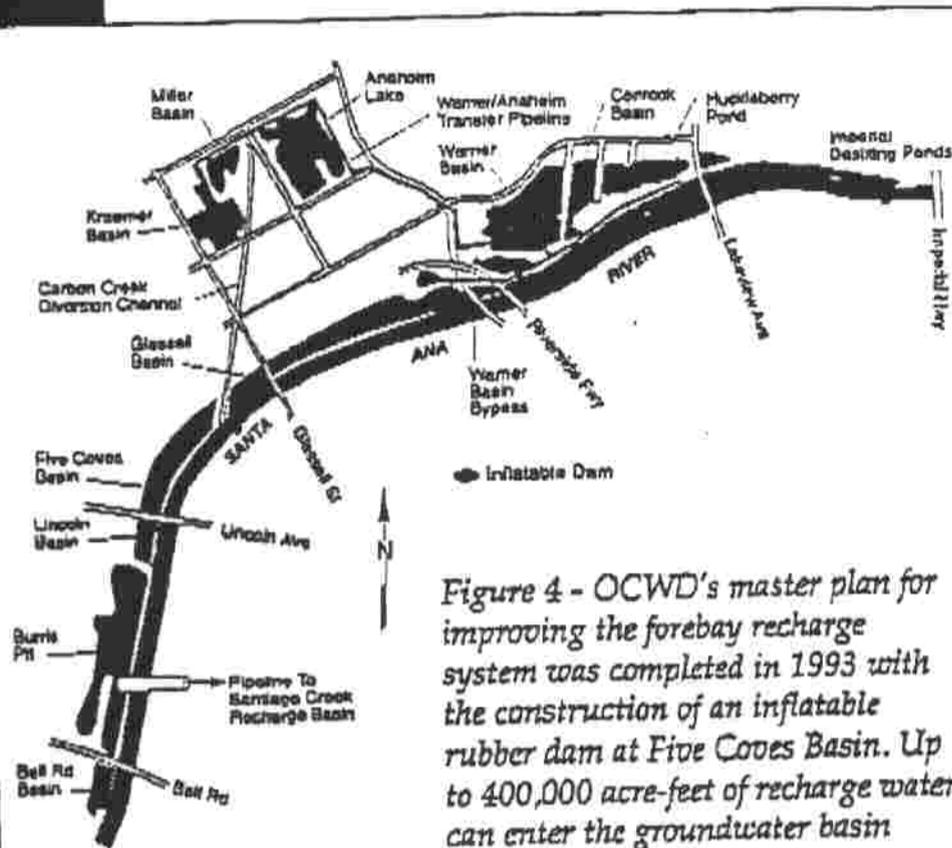


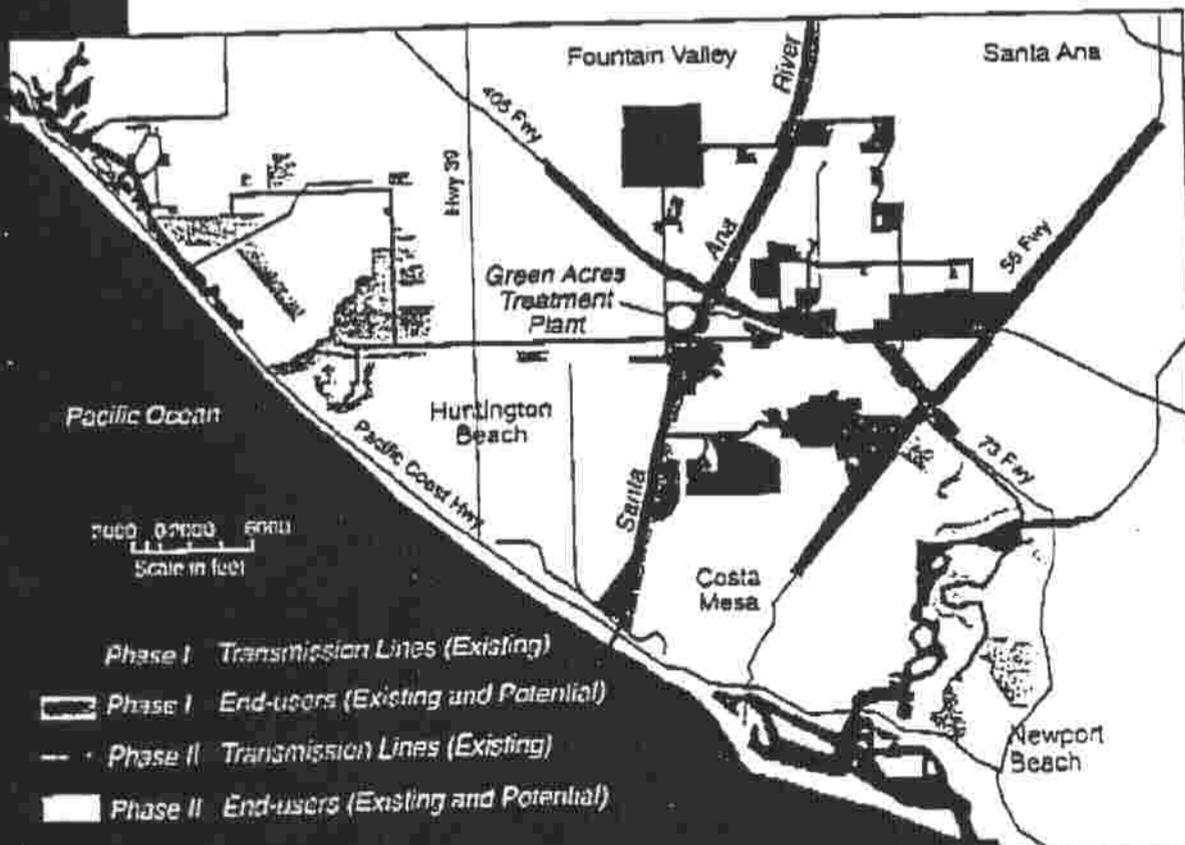
Figure 4 - OCWD's master plan for improving the forebay recharge system was completed in 1993 with the construction of an inflatable rubber dam at Five Coves Basin. Up to 400,000 acre-feet of recharge water can enter the groundwater basin through these improved facilities.

With the completion of a second rubber dam at Five Coves Basin in November 1993, the District has completed nearly all of the projects in its master plan for forebay recharge improvement. The highly efficient recharge system can now place as much as 400,000 acre-feet of replenishment water into the groundwater basin in a year's time. Figure 4 is a map of OCWD's recharge system.

A study is underway to determine the feasibility of increasing the water transfer capacity between Warner Basin and Anaheim Lake. Alternative methods are being evaluated to increase delivery capacity by 260 acre-feet per day, including additional pipelines and pumping systems. The existing pipeline cannot meet the percolation demands of Anaheim Lake, Kraemer Basin and Miller Basin.

## Green Acres Project Doubles User Volume

Thirteen new sites began receiving recycled water from the Green Acres Project during the 1993-94 fiscal year, bringing the total number to 24. Annual usage, which increased by 2,800 acre-feet this year, is now at 5,500 acre-feet. Users include city parks, a major commercial center, an athletic field, a large cemetery, and 100 acres of farmland.



The current service area includes Costa Mesa, Santa Ana, and Fountain Valley. Phase 2 of the project will increase production to 7,500 afy and will serve parts of Newport Beach and Huntington Beach. Figure 5 shows both current and future service areas.

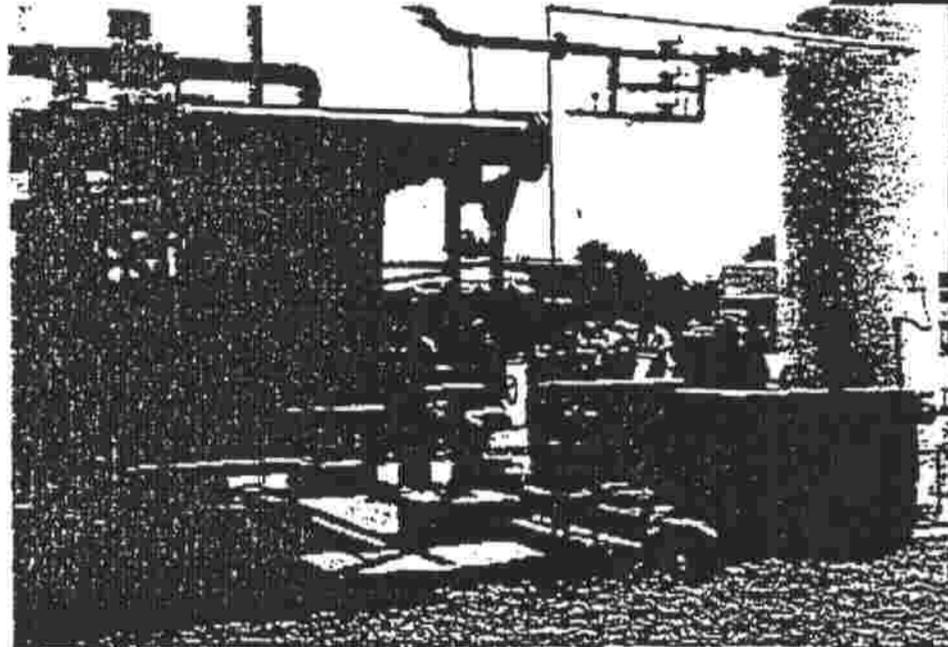
Figure 5 - Phase 1 of the Green Acres Project delivers recycled water to 24 sites in three cities, where local parks and other landscaped areas use more than 5,500 acre-feet per year for irrigation.

## *Microfiltration Is Studied as Pretreatment for Reverse Osmosis*

OCWD is exploring the potential for replacing Water Factory 21's lime clarification process with a membrane system such as microfiltration (MF). Although the lime system serves well as pretreatment for reverse osmosis (RO), it is expensive and takes up enormous space. A MF system using pressurized capsules containing hollow-fiber membranes (Figure 6) may provide a solution to these problems.

OCWD is constructing a 500-gpm MF project to obtain performance and reliability data on full-scale membrane components for one to three years. This project will demonstrate virus removal capability, the effects of chlorine on MF membranes, and membrane fouling. A 30-gpm unit that has been tested for a year will continue operating to help OCWD develop disinfection and cleaning strategies.

The Alamitos Barrier Project, Water Factory 21, the Green Acres Project, and the potential 100,000 afy Orange County Regional Water Reclamation Project are all candidates for MF pretreatment.

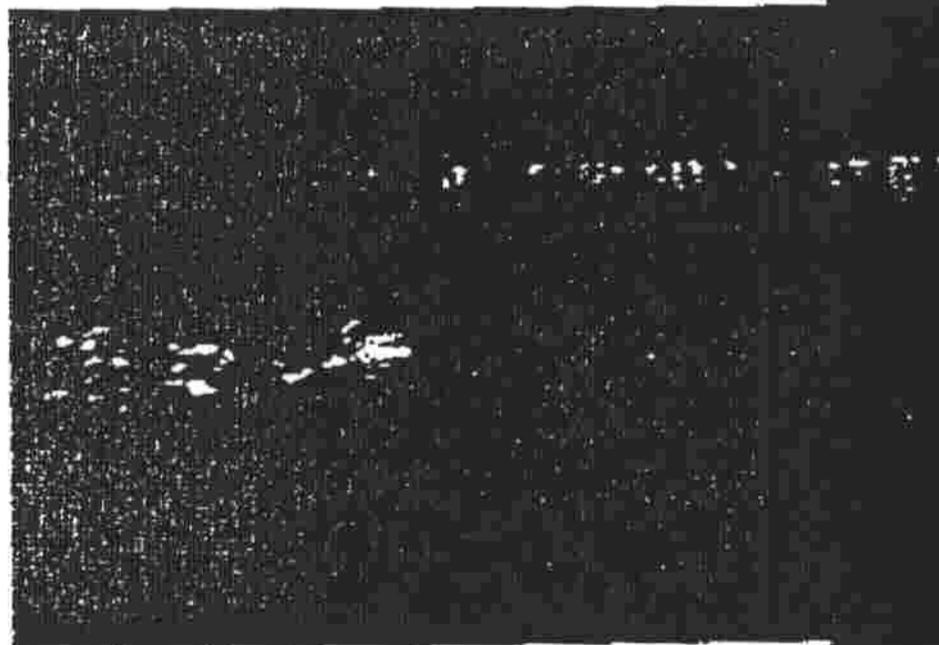


*Figure 6 - Microfiltration is under study at OCWD as pretreatment for reverse osmosis. Current and future wastewater treatment projects may benefit from this new technology.*

## *UV Disinfection May Replace Chlorine*

A 100-gpm pilot-scale ultraviolet light disinfection (UV) unit is being tested at the Green Acres treatment plant. The study, jointly funded by OCWD and the County Sanitation Districts of Orange County (CSDOC), will evaluate UV as an alternative method of disinfecting water after secondary or tertiary treatment. The UV unit will treat reclaimed wastewater seeded with viruses.

Chlorine disinfection is simple, effective, and relatively inexpensive, but it has drawbacks: It requires considerable space, creates troublesome byproducts, and presents safety hazards. OCWD believes UV would present fewer disadvantages if used in place of chlorination in the Water Factory 21 and Green Acres treatment trains.



*Figure 7 - Ultraviolet light (UV) disinfection may prove to be a favorable alternative to chlorine treatment of reclaimed water. OCWD is studying the effect of UV on seeded viruses in Green Acres Project filtered effluent.*

## Alamitos Barrier to Use Recycled Water

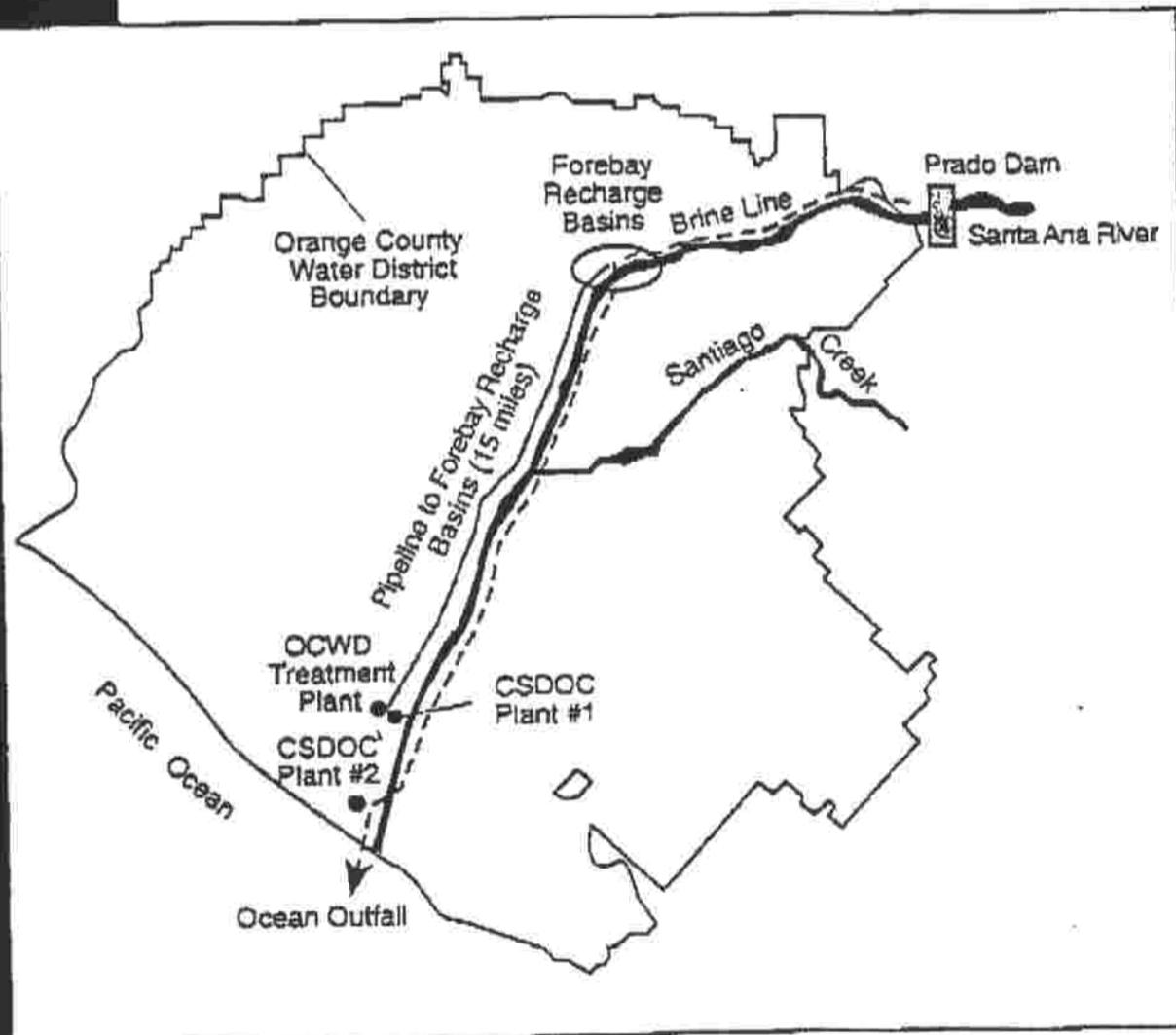
In December 1993, OCWD and the Water Replenishment District of Southern California (WRDSC) signed a cooperative agreement for construction and operation of a tertiary treatment plant at the Alamitos Barrier. The proposed facility, similar to Water Factory 21, will produce 5,000 afy of recycled water for injection at the barrier. The project currently relies on imported water.

Four injection wells were constructed in 1993 at a cost of \$358,000. OCWD and the Los Angeles County Department of Public Works each paid half. OCWD and WRDSC are applying for a low-interest state loan to fund the \$20 million construction cost for Phase 1 of the project.

## Regional Reclamation Project Takes Shape

OCWD and CSDOC are exploring a joint regional water recycling project that will provide up to 100,000 acre-feet of reclaimed water annually for groundwater replenishment. The proposed Orange County Regional Water Reclamation Project (OCR) will take advantage of

available capacity in OCWD's deep recharge basins, which are underutilized eight to ten months of the year. A feasibility study is underway.



Treated wastewater from CSDOC's Plant No. 1 will be piped northward along the Santa Ana River to OCWD's recharge facilities in Anaheim. (See map in Figure 8.) The OCR's new facilities will include a 15-mile pipeline along the river and a pumping station and treatment facilities at OCWD and/or CSDOC.

The OCR could produce recycled water at a cost competitive to imported supplies. As envisioned, the project will produce 50,000 afy in the year 2000 and increase in increments to the full 100,000 afy by the year 2020.

Figure 8 - A regional recycling project being explored by OCWD and CSDOC would reclaim 100,000 acre-feet of wastewater that is currently discharged into the Pacific Ocean each year, and deliver it instead to OCWD's forebay facilities for groundwater recharge.

## Colored Water Filter Removes Byproducts

OCWD's colored water experts have designed and constructed an innovative filtration system. The pilot-scale filter, installed at a production well in Costa Mesa, removes ozone-generated byproducts, resulting in greatly improved water quality. This 75-gpm pilot project will provide engineering data and information for the design and construction of a full-scale, biologically active filter to be used in a future project.

In addition to the Mesa project, OCWD is studying colored water from several monitoring and production wells in the Huntington Beach, Fountain Valley, Costa Mesa, and Irvine areas. Samples from these wells provide data to characterize the nature and size of different color molecules and to build a database for future projects. OCWD believes there is great potential for colored water treatment and use within the district.

## Irvine Desalter Will Clean up Contaminants

The Irvine Desalter Project, now in the design phase, will supply as much as 20 percent of the Irvine Ranch Water District's (IRWD) domestic water demand. Construction of the \$35 million desalter, a joint project of OCWD and IRWD, is expected to begin in early 1995 and be completed in 1996. The project is capable of producing 6,500 afy of high quality water that meets all state and federal drinking water standards.

The completed project will consist of a treatment plant, 7 source water wells, approximately 25,000 feet of pipeline connecting the wells with the plant, product water delivery facilities, and a brine disposal line. Three of the wells are existing irrigation wells that have become contaminated with TCE, and four were constructed in 1993 specifically for the project. Figure 9 is a treatment schematic for the project.

Under terms of an agreement between OCWD and IRWD, OCWD is paying for design and construction of the desalter, assisted by a \$19 million low-interest state loan. IRWD will be responsible for operation and maintenance of the facility and will repay OCWD's construction costs over a period of 20 years.

OCWD has asked the U.S. Department of the Navy to reimburse a major portion of the capital and operating costs to compensate for damage caused by the TCE spill at El Toro. The desalter project also qualifies for a subsidy of up to \$250 per acre-foot from MWD under its Groundwater Recovery Program.

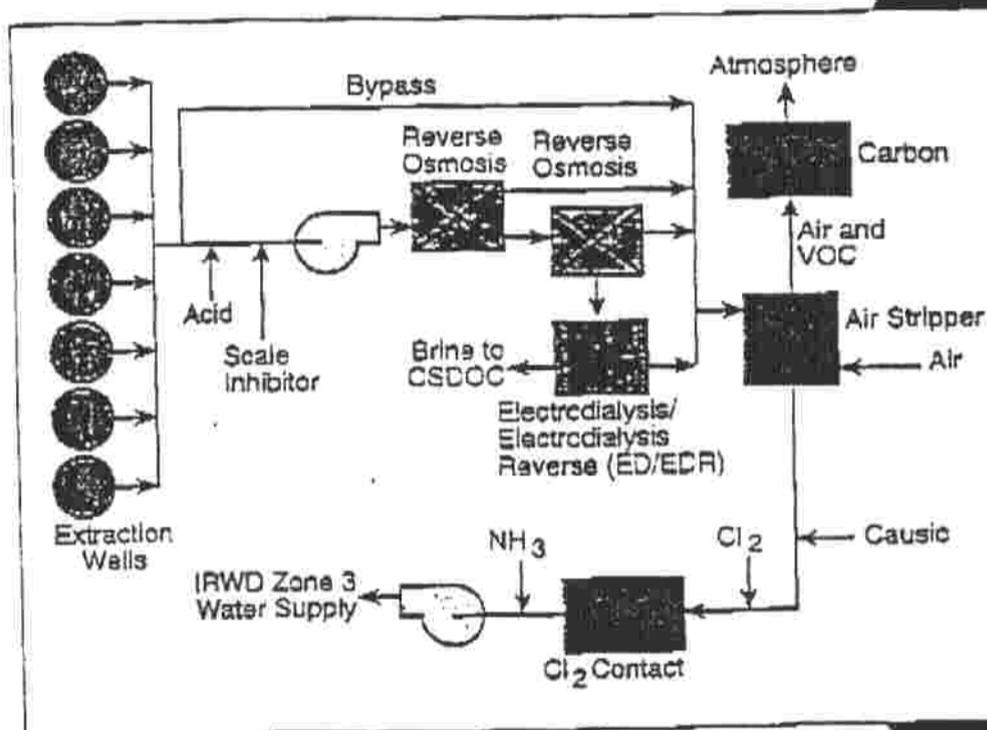
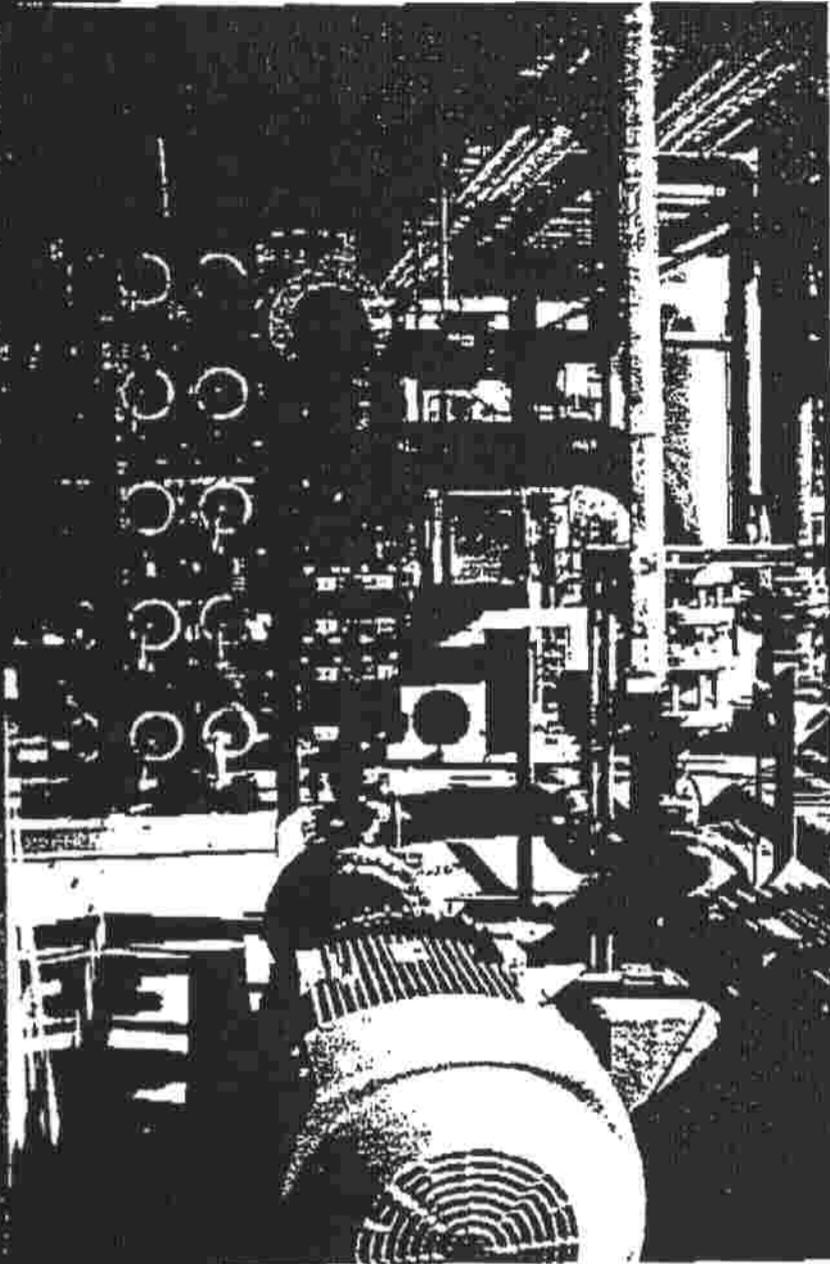


Figure 9 - The Irvine desalter, due for completion in 1996, will remove nitrate, salts and TCE from well water in the Irvine area, making about 7,000 acre-feet of additional water available annually for household use.

## *Tustin 17th Street Desalter to Reactivate Three Wells*



*Figure 10 - The Irvine Desalter, currently under construction, will use the same reverse osmosis technology as the pictured Tustin Plant 1 already in use.*

A new desalter to be constructed on 17th Street in Tustin will add more than 3,000 afy to the city's groundwater production capacity and will make service available in parts of the northern area for the first time. It is the second groundwater treatment plant to be constructed in Tustin, where excess nitrate and TDS have for many years hampered the city's water supply.

The desalter will pump groundwater from three inactive wells that have failed to meet drinking water standards. An RO plant will remove dissolved salts and nitrate, and the product water will be blended with additional supplies before entering Tustin's potable water distribution system.

Pumps and valves are being installed at all three wells, and a 2,000-afy RO plant and 1,200-afy bypass treatment system for blending have been designed for the 17th Street site. Construction began in the spring of 1994, and operation of the facility is expected to commence in the spring of 1995. The total capital cost for the Tustin desalter project is expected to be approximately \$6.6 million, with O&M costs at about \$1 million a year. The City of Tustin will repay the construction costs to OCWD over a period of 11 years, with a \$250/af subsidy from MWD.

## *Irvine Brine Pipeline Will Route Salt to Ocean*

OCWD is conducting a feasibility study on building a pipeline to carry reject brine from the Irvine and Tustin desalters directly to CSDOC's ocean outfall. By eliminating CSDOC charges for treating desalter brine reject streams, the pipeline would reduce the cost of operating OCWD's desalter projects. However, if the \$15 million project is not deemed feasible, the brine from the Irvine and Tustin desalters will be piped to CSDOC's plant No. 2 in Huntington Beach. In either case, OCWD would benefit from reduced salt in the secondary effluent from CSDOC plant No. 1 that feeds Water Factory 21 and the Green Acres Project.

## Biotechnology Research Looks to Nature for Solutions

The District has intensified its research efforts in recent years with the aim of finding economical, environmentally safe ways to improve water quality. Harmless bacteria that occur in the natural environment have been harnessed to destroy contaminants such as nitrate and petroleum hydrocarbons.

District microbiologists have harnessed special bacteria that convert nitrate to harmless nitrogen gas. A pilot-scale project being designed for a well in Garden Grove will use molecular hydrogen or elemental sulfur as a nutrient to stimulate growth and activity in nitrate-removing bacteria. OCWD and MWD are contributing about \$200,000 each to build and operate the project. A \$120,000 grant from the United States Environmental Protection Agency (USEPA) currently funds a study on sulfur-based biodenitrification.

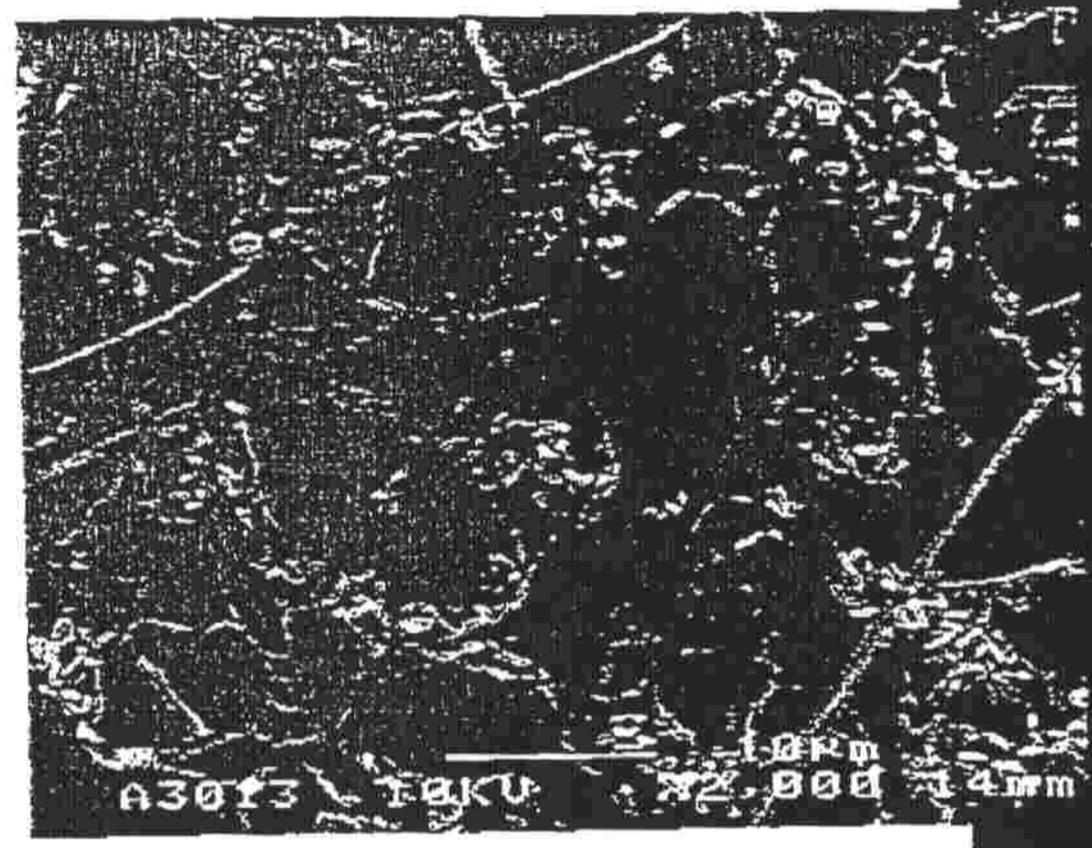


Figure 11 - The scanning electron micrograph illustrates actual nitrate bacterial growth on bioreactor material.

OCWD is focusing on vapor-phase biotreatment of volatile organic contaminants (VOCs) at the site of a gasoline spill in Seal Beach. Scientists, microbiologists, and engineers from OCWD and Montana State University are developing special bioreactors to destroy the VOCs after they are air-stripped from the contaminated soil or groundwater. Pressurized air transports the VOCs to the bioreactors where they are destroyed by hydrocarbon-degrading bacteria. A three-year grant from NWRI is providing half of the approximately \$1 million cost of this investigation.

In December 1993, OCWD received a \$250,000 grant from the American Water Works Association Research Foundation for a three-year study of membrane biofouling. District researchers hope to solve the problem of bacterial growth that clogs RO and MF membranes.

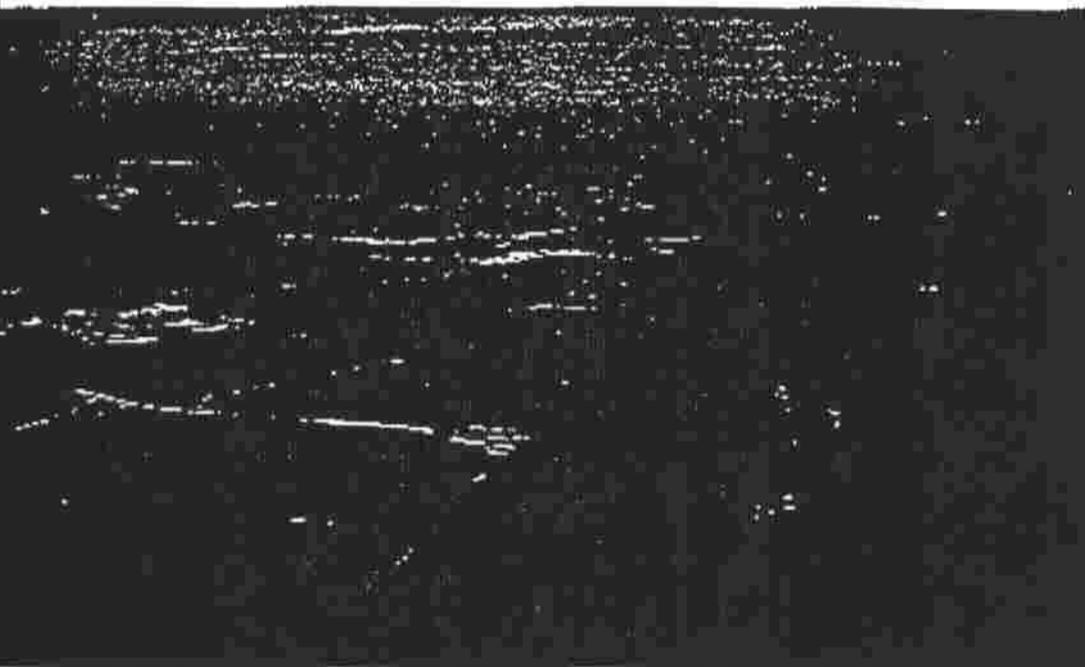
## *Santa Ana River Water Quality and Health Study is One-Third Complete*

The first year of the three-year Santa Ana River Water Quality and Health Study has produced interesting data on the microbial, chemical, toxicological, and hydrogeological characteristics of Santa Ana River water. Because OCWD anticipates increased future use of recycled water for replenishing the groundwater basin, this investigation will ensure that large-scale recharge with Santa Ana River water and recycled water does not pose a health threat or a negative environmental impact. The total cost of the study is \$3.5 million, and MWD is providing \$100,000 for the first year.

## *Prado Wetlands Project Provides Natural Water Treatment*

The Regional Water Quality Control Board is requiring reduced levels of nitrogen in the Santa Ana River, and OCWD has found an economical, natural way to remove it: by routing the river through a network of ponds behind Prado Dam. A study using a series of test ponds is comparing types of vegetation and retention times to achieve the best results. To date, approximately \$300,000 has been expended to develop this wetlands area, and future costs are expected to bring the total to some \$5 million.

About one-third of the base flow of Santa Ana River now meanders through the wetlands, and OCWD plans eventually to route nearly the entire base flow through this and other natural treatment systems. In accord with COE and U.S. Fish and Wildlife Service requirements, about 35 acres of wildlife and vireo habitat will be created by allowing selected ponds to revert to natural vegetation and by constructing islands for waterfowl nesting.



*Figure 12 - A network of shallow ponds in Prado Basin provides a natural water treatment system that removes excess nitrogen from Santa Ana River water before it reaches OCWD's recharge system. Nearly all of the river's flow will eventually be treated through wetlands processes.*

## Watershed Management Requires Teamwork

OCWD is cooperating in several projects sponsored by the Santa Ana Watershed Project Authority (SAWPA) to increase water supplies and improve quality throughout the watershed. A desalter in Chino, a wastewater treatment plant in western Riverside County, and a project to treat dairy wash water in the Prado wetlands will improve Santa Ana River flows used in OCWD's recharge operations. Plans also call for removing degraded groundwater from the Colton and Riverside basins and replacing it with higher quality water.

## Conjunctive Use Wells Increase Pumping Capacity

OCWD's conjunctive use well drilling program will make it possible for producers to increase their groundwater pumping by about 101,000 acre-feet per year. Now in its fifth year, the program is currently providing up to \$750,000 each for the construction of 28 wells. Participating agencies have agreed to reimburse OCWD for the low-interest loans over a 20-year term.

A number of cities and retail water companies are taking advantage of this highly beneficial program. Eleven new conjunctive use wells have been completed, and 17 more are in various stages of planning, design and construction. Figure 13 shows the potential increase in basin production capacity from the added wells.

With adequate pumping capacity, producers now unable to make full use of available groundwater supplies can take advantage of the maximum pumping limitation. Without the new wells, some producers must purchase more imported water at higher prices. Currently, OCWD is underwriting the construction of 28 new conjunctive use wells.

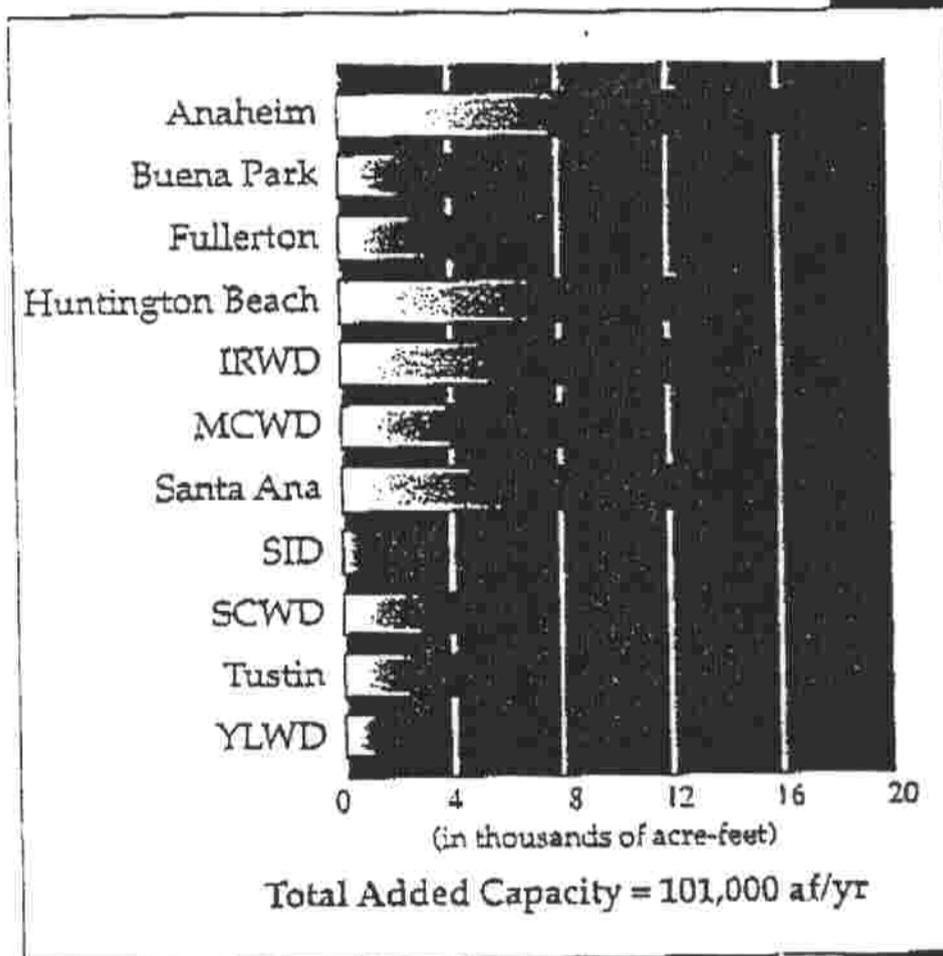


Figure 13 - OCWD is currently funding the construction of 28 wells to help producers reduce their dependency on imported supplies and during the summer, to participate in MWD's Seasonal Storage program.

### Computers Crunch Data from Monitoring Wells

OCWD geologists feed information from a wide network of monitoring wells into the district's Water Resources Management System (WRMS). This computerized information system provides the data they need to create a model of the basin. The last of 48 deep monitoring wells constructed under this program will be drilled during fiscal year 1994-95 in Los Alamitos. The wells reach depths of 1,500 to 2,000 feet, isolating as many as 18 separate aquifers. The capital cost for the basin management monitoring well construction program amounts to approximately \$9 million.

The wells also help the District determine the extent of colored water in deep aquifers and monitor basin water levels and the effects of the seawater barrier. The well construction program has also added 83 single-point monitoring wells, 150 to 500 feet deep, for water quality assessment in the forebay and Irvine areas.

WRMS data entry has significant historical value as well. In the past four years, data for more than 3,500 active and inactive wells has been entered into WRMS, some of it dating back more than 50 years. The information includes construction details, lithologic descriptions, and water level records.

A laboratory information management system, referred to as LIMS, is being implemented in OCWD's main lab. It allows water samples to be logged into the computer and the analytical results automatically posted to the WRMS database. This link with WRMS greatly enhances the accessibility of water quality data for use in making informed decisions about district programs.

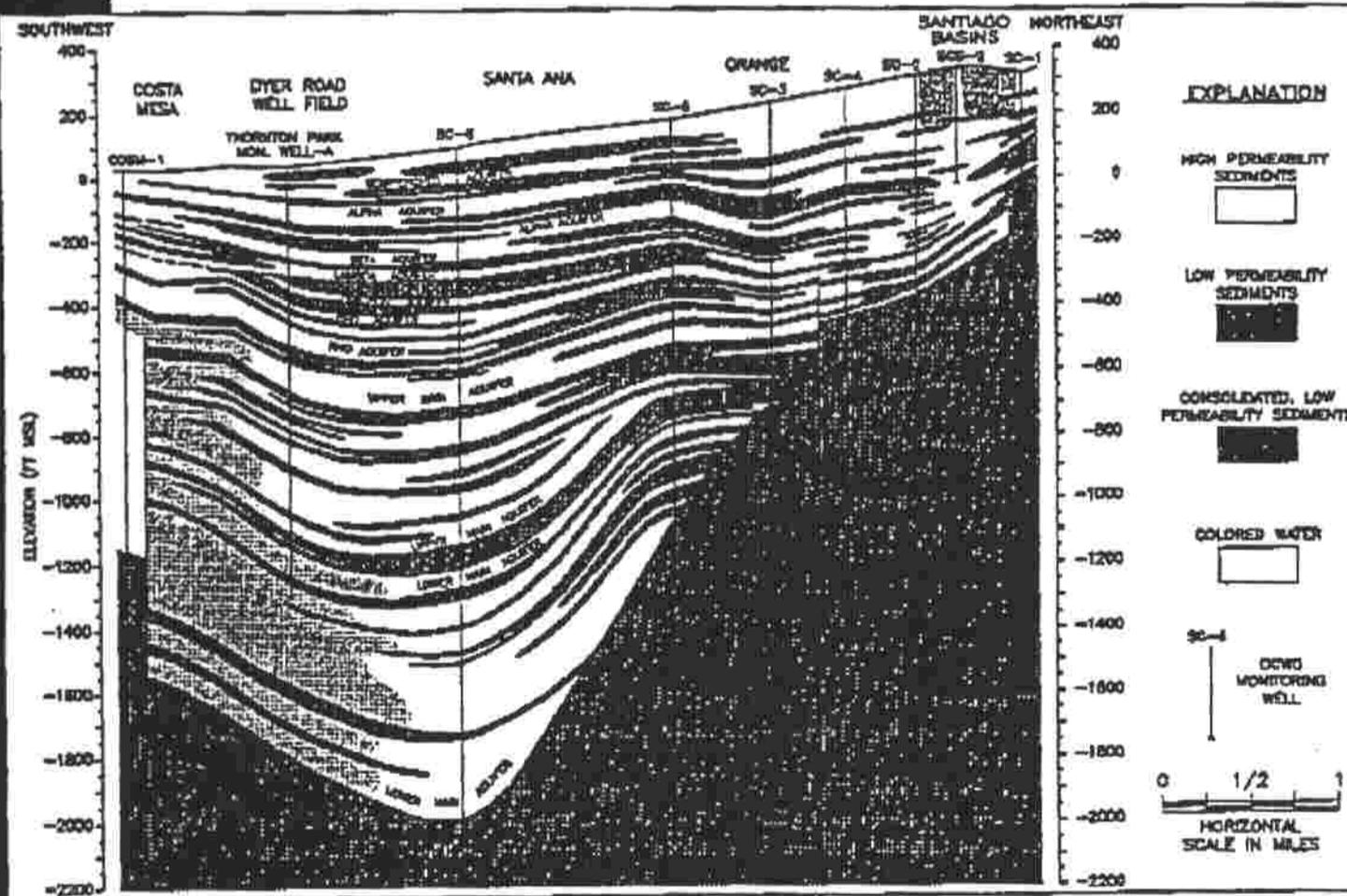


Figure 14 - Geologic cross sections, showing extent of colored water in deep aquifers based on data collected from OCWD's monitoring well network, are processed through WRMS and interpreted by District geologists.

## Financial Report Reflects Sound Management

In July 1993 the OCWD issued \$148,610,000 of Certificates of Participation (COPs) to partially advance refund the 1989 COPs and fully advance refund the 1990A COPs. In issuing the 1993A COPs, the District took advantage of the favorable market rates to reduce future debt service requirements by more than \$2.8 million and produce an economic gain of more than \$2.1 million.

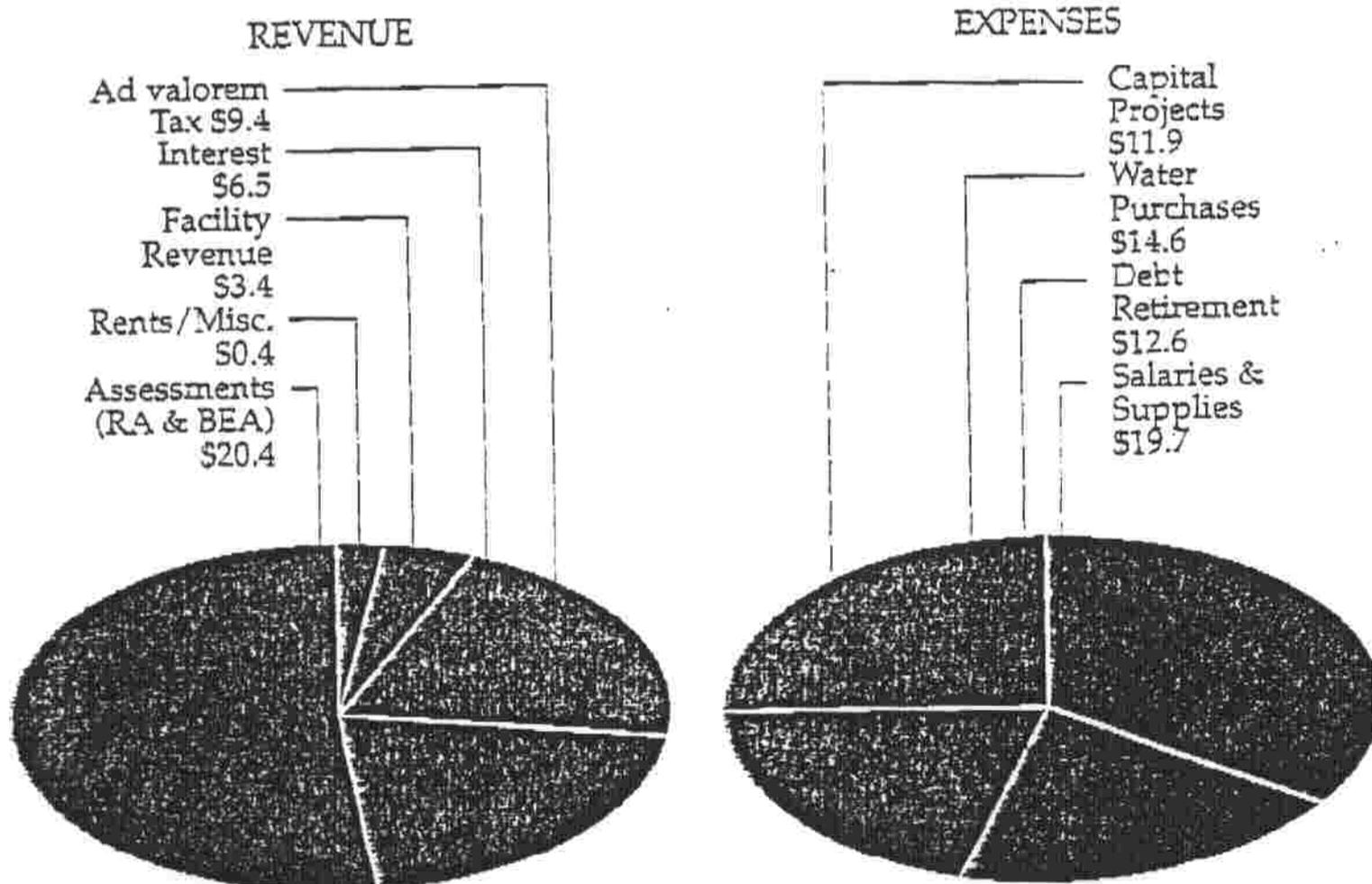
Bond proceeds in excess of the refunding will continue to be used to finance the acquisition and construction of capital projects to avoid rebate of arbitrage earnings to the U.S. Treasury. The District has already utilized the majority, in excess of 50 percent, of construction expenditures to draw-down the 1993A COPs bond proceeds. This will ensure that most, if not all, arbitrage earnings will be retained by the District.

In April 1994, the OCWD issued a tax and revenue anticipation note (TRAN) amounting to \$25,000,000 which secures District

Commercial Paper Certificates. These certificates were issued on behalf of the District to fund 100,000 acre-feet of Metropolitan Water District of Southern California (MWD) imported water purchases. The decision to buy the refill water using low-interest Commercial Paper made sense in terms of water management and financial strategy.

During the drought of 1986-92, OCWD allowed producers to pump 75 to 80 percent of their demand from the groundwater basin. This gave areas which have little or no potable groundwater greater access to limited supplies available from MWD. OCWD was fully aware that this arrangement would partially deplete groundwater supplies and expected to purchase large quantities of imported water once it became more plentiful. The Commercial Paper financing strategy gave the District the ability to finance the water purchase over a six-year period.

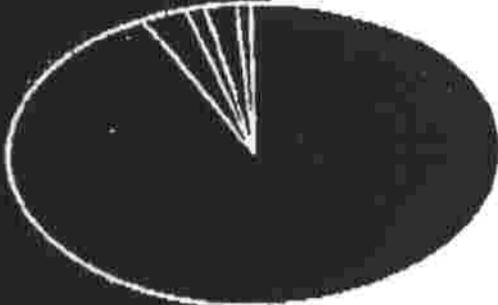
### 1993-94 Fiscal Revenues & Expenditures - All Funds March 1, 1993 - February 29, 1994 (in millions)



**1993-94 COMBINED STATEMENT OF REVENUES,  
EXPEDITURES, AND CHANGES IN FUND BALANCE**  
*March 1, 1993 - February 28, 1994*

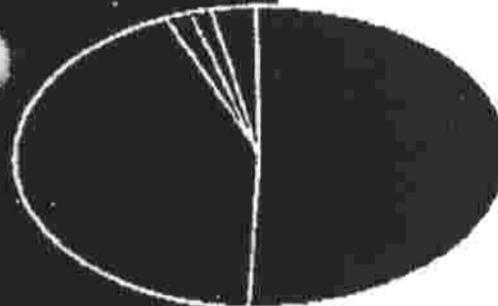
**REVENUE**

Replenishment  
Assessment for Ops.  
Facility Revenue  
Royalties, Rents, Misc.  
Interest  
Redevelopment Taxes/  
Annexation



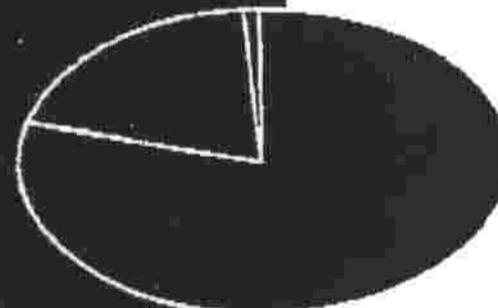
**EXPENSES**

Services and Supplies  
Joint Ventures  
Taxes / Assessments  
Other  
Salaries and Benefits



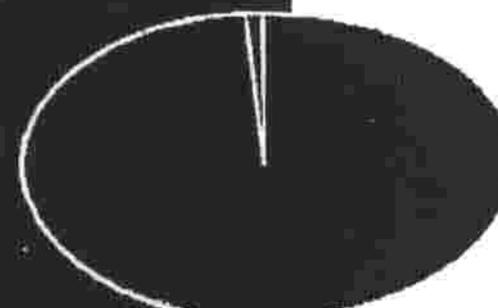
**REVENUE**

Replenishment  
Assessment  
Interest  
Misc.



**EXPENSES**

Water Purchases  
Other



**General Fund**

<b>FUNDS AVAILABLE</b>		
Fund Balance 3/1/93		\$ 3,800,259
<b>REVENUE</b>		
Redevelopment Taxes/Annexation	\$ 376,057	
Interest	649,524	
Royalties, Rents, Misc.	408,121	
Replenishment Assessment for Ops.	13,011,982	
Facility Revenue	924,753	
<b>TOTAL REVENUE</b>		<b>\$ 15,370,437</b>
<b>TOTAL FUNDS AVAILABLE</b>		<b>\$ 19,170,696</b>

<b>EXPENDITURES</b>		
Salaries and Benefits	\$ 9,288,681	
Services and Supplies	6,819,074	
Joint Ventures	285,688	
Taxes / Assessments	401,027	
Other	659,110	
<b>TOTAL EXPENDITURES</b>		<b>\$ 17,453,580</b>

<b>OTHER FINANCING SOURCES (USES)</b>		
Operating Transfers In	\$ 2,792,591	
<b>TOTAL OTHER FINANCING SOURCES</b>		<b>\$ 2,792,591</b>
<b>FUND BALANCE &amp; RESERVE 2/28/94</b>		<b>\$ 4,509,707</b>

**Replenishment Fund**

<b>FUNDS AVAILABLE</b>		
Fund Balance 3/1/93		\$ 23,959,000
<b>REVENUE</b>		
Replenishment Assessment	\$ 3,556,594	
Interest	961,244	
Misc.	6,871	
<b>TOTAL REVENUE</b>		<b>\$ 4,524,709</b>
<b>TOTAL FUND AVAILABLE</b>		<b>\$ 28,483,709</b>

<b>EXPENDITURES</b>		
Water Purchases	\$ 14,591,410	
Other	11,081	
<b>TOTAL EXPENDITURES</b>		<b>\$ 14,602,491</b>

<b>OTHER FINANCING SOURCES(USES)</b>		
Operating Transfers In	\$ 5,256,586	
Operating Transfers Out	-	
<b>TOTAL OTHER FINANCING SOURCES</b>		<b>\$ 5,256,586</b>
<b>FUND BALANCE &amp; RESERVE 2/28/94</b>		<b>\$ 19,137,804</b>

*Capital Project (Water Reserve) Fund*

FUNDS AVAILABLE

Fund Balance 3/1/93

\$ 16,823,058

REVENUE

Facility Revenue \$ 2,476,629  
 Replenishment Assessment 2,470,603  
 Interest 3,579,052  
 Other 12,631

TOTAL REVENUE

\$ 8,538,915

TOTAL FUNDS AVAILABLE

\$ 25,361,973

EXPENDITURES

Salaries and Benefits \$ 1,519,674  
 Structures and Improvements 8,645,167  
 Joint Ventures 91,324  
 Design 1,221,732  
 Land 1,125,103  
 Equipment 953,102  
 Other 366,263

TOTAL EXPENDITURES

\$ 13,922,365

OTHER FINANCING SOURCES (USES)

Net Bond Proceeds \$ 141,660,513  
 State Loan Proceeds 2,009,339  
 Operating Transfers In 4,131,193  
 Operating Transfers Out (96,171,645)

TOTAL OTHER FINANCING SOURCES

\$ 51,629,400

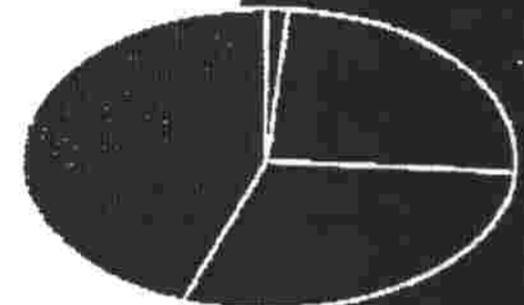
FUND BALANCE & BASELINE

CAPITAL PROJECT RESERVE 2/28/94

\$ 63,069,008

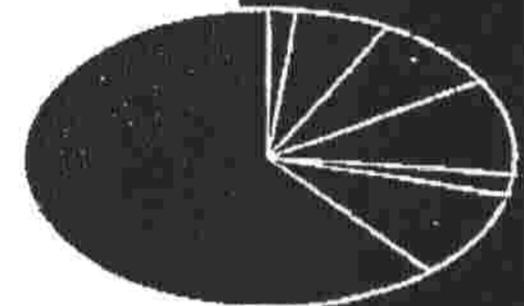
REVENUE

Replenishment Assessment  
 Facility Revenue  
 Other  
 Interest



EXPENSES

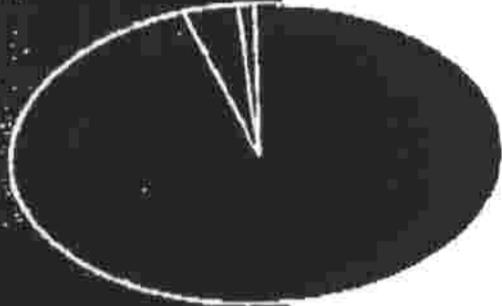
Salaries & Benefits  
 Joint Ventures  
 Design  
 Land  
 Equipment  
 Other  
 Structures & Improvements



## Basin Equity Assessment Fund

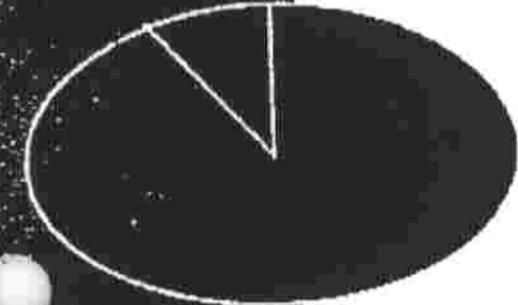
### REVENUE

Basin Equity Assessment  
Interest  
Misc.



### EXPENSES

Other Basin Equity Assessment Payment



### FUNDS AVAILABLE

Fund Balance 3/1/93

\$ 284,897

### REVENUE

Basin Equity Assessment  
Interest  
Miscellaneous

\$ 1,397,074  
82,649  
20,293

### TOTAL REVENUE

\$ 1,500,016

### TOTAL FUNDS AVAILABLE

\$ 1,784,913

### EXPENDITURES

Basin Equity Assessment Payments \$ 988  
Other 12,102

### TOTAL EXPENDITURES

\$ 13,090

### OTHER FINANCING SOURCES (USES)

Operating Transfers In \$ 280,994  
Operating Transfers Out (1,856,235)

### TOTAL OTHER FINANCING SOURCES

(1,575,241)

### FUND BALANCE & RESERVE 2/28/94

\$ 196,582

## Debt Service Fund

### FUNDS AVAILABLE

Fund Balance 3/1/93

\$ 17,745,455

### REVENUE

AV Tax  
Interest Income

\$ 9,011,233  
1,185,784

### TOTAL REVENUE

\$ 10,197,017

### TOTAL FUNDS AVAILABLE

\$ 27,942,472

### EXPENDITURES

Principal & Interest Debt Service \$ 12,073,328  
Arbitrage/Other 739,491

### TOTAL EXPENDITURES

\$ 12,812,819

### OTHER FINANCING SOURCES (USES)

Payments to Refunding (71,928,776)  
Bond Escrow Agent \$ 93,662,850  
Operating Transfers In  
Operating Transfers Out (8,096,334)

### TOTAL OTHER FINANCING SOURCES

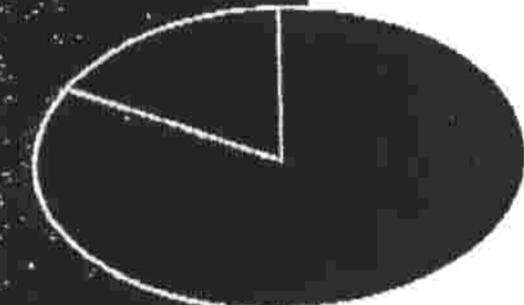
\$ 13,637,740

### FUND BALANCE & RESERVE 2/28/94

\$ 28,767,393

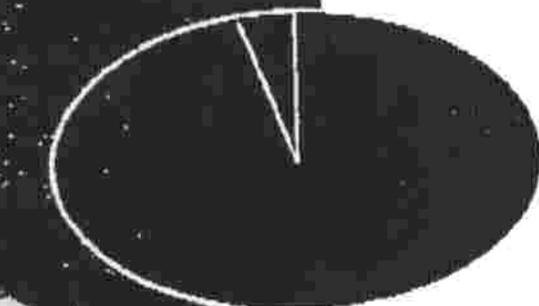
### REVENUE

AV Tax  
Interest Income



### EXPENSES

Principal & Interest Debt Service  
Arbitrage/Other



**Budget Summary-All Funds**  
(in thousands of dollars)

Fiscal 1992-93 through 1996-97

	1992-93	1993-94	1994-95	1995-96	1996-97
<b>FUNDS AVAILABLE</b>					
Prior Year Carry-over	\$ 81,947	\$ 62,613	\$115,681	\$102,010	\$ 75,173
Other Income - Tax & Revenue					
Anticipation Note (TRAN)	0	0	25,000	0	0
Proceeds from					
Long-term Debt	5,365	21,741	19,850	13,800	4,425
<b>REVENUE</b>					
Ad Valorem & Redevelopment Taxes	\$ 8,729	\$ 9,388	\$ 9,000	\$ 9,734	\$ 10,124
Capital Project Revenue	2,655	3,401	2,000	3,266	6,157
Assesments (RA & BEA)	17,170	20,436	24,880	30,076	32,863
Interest	6,094	6,458	4,100	4,450	4,698
Royalties, Rents, Misc.	776	448	1,000	1,500	1,500
<b>TOTAL REVENUE</b>	\$ 35,424	\$ 40,131	\$ 40,980	\$ 49,026	\$ 55,342
<b>TOTAL FUNDS AVAILABLE</b>	\$122,736	\$174,485	\$201,511	\$164,836	\$134,940
<b>EXPENDITURES</b>					
Salaries & Supplies	\$ 19,444	\$ 17,454	\$ 18,300	\$ 19,032	\$ 19,793
Capital Projects	22,806	13,922	41,011	48,564	4,425
Debt Retirement	10,118	12,813	12,300	15,120	23,807
Water Purchases	6,990	14,602	27,890	6,947	12,421
BEA Payments	765	13	0	0	0
<b>TOTAL EXPENDITURES</b>	\$ 60,123	\$ 58,804	\$ 99,501	\$ 89,663	\$ 60,446
<b>FUND BALANCE AT YEAR END</b>	\$ 62,613	\$115,681	\$102,010	\$ 75,173	\$ 74,494

**Total Expenditures**

