



PROTECTING *Our* GROUNDWATER

A History of the Water Replenishment District



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Our
GROUNDWATER

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Compiled by: The Water Replenishment District
Written by: Michael Gagan
Edited by: The WRD Ad Hoc History Committee
Foreword by: Robert Katherman
Designed by: Dakota Communications

Cover image: Aerial view from Pico Rivera to downtown Los Angeles with the San Gabriel and Rio Hondo Spreading Grounds in the foreground, February 20, 2003. *Image from the WRD archives.*

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FOREWORD

Shortly after taking office as a Water Replenishment District (WRD) Director in 2005, I asked Board President Willard Murray to create an Ad Hoc History Committee to examine the history of the district with the goal of bringing the written narrative current. Amidst swirling controversies at the time, accounts of WRD’s history were often apocryphal, sometimes fanciful and frequently tailored to advance a particular point of view about WRD’s groundwater management authority. To set the record straight, I thought it was important to establish what the record was in the first place.

To be sure, snippets of the WRD story were told in a few publications that remain valuable accounts. Carl and Ruth Fossette’s *The Story of Water Development in Los Angeles County* chronicled the formation of the Central and West Basin Municipal Water Districts, WRD and the Upper San Gabriel Valley Municipal Water District. Carl Fossette participated in the formation and subsequent management of all four districts. While it remains an excellent introduction to WRD and other water agencies in the area, it was published in 1986 and has not been updated since.

One of the case studies appearing in *Governing the Commons: The Evolution of Institutions for Collective Action* (1990), by 2009 Nobel Laureate Elinor Ostrom, cited the formation of WRD as an example of protecting what she called the Common Pool Resource of the Central and West Coast groundwater basins by pumpers voluntarily organizing “to avoid the adverse outcomes of independent action.”

Dividing the Waters: Governing Groundwater in Southern California by William Blomquist details the governance of eight groundwater basins in Southern California, including the two underlying WRD’s service area. Blomquist recounts how the governance of these basins evolved and matured by virtue of voluntary actions by groundwater pumpers, as opposed to intervention by the state. Since *Dividing the Waters* was published in 1992, Blomquist has written dozens of articles on groundwater development and management in the west and remains an authority on the subject.

These important books are recommended reading for anyone interested in the origin of many important water institutions in Southern California. But none tells the complete story of WRD, either with respect to the events leading to its formation or most of the developments of the past 60 years that have made WRD what it is today. *Protecting Our Groundwater: A History of the Water Replenishment District* tells that story, first more or less chronologically and then with an emphasis on subjects that have come to define WRD through the years.

The work of the Ad Hoc History Committee has resulted in several contributions to the WRD narrative, including the publication of a brief history on the occasion of the district’s 50th anniversary, the inclusion of a chapter on district formation in WRD’s annual *Cost of Service Report*, and the publication of *Our Road to Water Independence* on the occasion of the opening of the Albert Robles Center in 2019. Understanding the history of issues like basin equity has been invaluable in dealing with that subject in the legislature and the courts, so there have been practical benefits from the work of the committee as well.

Along the way, we have gained valuable insights from interviews conducted with former WRD Directors Daniel Glasgow, Tim Keleman, Kenneth Orduna, and Leo Vander Lans, and former West Basin Municipal Water District Director Ed Little. We also interviewed former General Manager John Joham, former District Counsel Marty Whelan and consulting engineer Richard Rhone, whose respective tenures with WRD started shortly after the district was formed in 1959. We also had the opportunity to interview Mervyn Dymally, a former state legislator, Lt. Governor, and Member of Congress whose Water Caucus supported the election of people of color to water district governing boards in the region, including WRD’s.

Protecting Our Groundwater was written by longtime WRD consultant Michael Gagan. My colleague on the committee, John Allen, and I guided the book's preparation and suggested the subjects that receive extensive treatment in the text. The committee met dozens of times in the past four years or so, reviewed outlines and drafts, changed wording here and there, shifted the emphasis of particular chapters and enjoyed robust discussions about historical matters of interest, large and small. It was a labor of love.

The work of the committee was greatly assisted by the participation of General Manager Robb Whitaker and Assistant General Manager, Chief Administrative Officer and Watermaster Ted Johnson, both of whom have played significant roles in the district's history for the past three decades. WRD Public Affairs Representative Kimberly Badescu tracked down hard-to-find documents and long-lost photographs, all the while making thoughtful observations. WRD Senior Public Affairs Representative Jennifer Swart shepherded the final assembly of images and permissions required to use them and was assisted in that effort by Stephanie Cuevas, Senior Government Affairs Representative. WRD Manager of External Affairs Angie Mancillas kept track of all the moving pieces the preparation of this book entailed, and was a gentle taskmaster throughout the process. On behalf of the Ad Hoc Committee and the Board, I thank them for their contributions to this book and their service to WRD. I also want to acknowledge and thank Rick Taylor, Jeff Taylor, and Makoto Mizutani of Dakota Communications for the book layout and design.

Finally, I want to acknowledge and thank the groundwater pumping community, our many public agency partners and the twenty-nine men and women who have served as Directors on the WRD Board over the past six decades for making the history we are pleased to recount in *Protecting Our Groundwater: A History of the Water Replenishment District*.

Rob Katherman, Chair
WRD Ad Hoc History Committee
November 1, 2021
Lakewood, California

INTRODUCTION



WRD headquarters in Lakewood, CA. *Image from the WRD archives.*

AVOIDING THE TRAGEDY OF THE COMMONS

In passing the Water Replenishment District Act in 1955, the California Legislature determined the measure was “necessary to the solution of a problem arising out of the following unique circumstances: The water supplies in the arid southern part of this

State... are insufficient to meet the water demands of the area, and, because of the geological conditions peculiar to this area, further excessive pumping without replenishment is certain to destroy the usefulness of these basins.” The legislature was talking about the Central and West Coast Basins in the Los Angeles Coastal Plain. The Central Basin runs from a surface feature on the north called the La Brea High; on the northeast and east the Elysian, Repetto, Merced, and Puente Hills; and on the southeast by the Orange County Line. The Pacific Ocean forms the western and southern boundaries of the West Coast Basin, which is bounded on the east by the Newport-Inglewood Uplift (also called the Newport-Inglewood Fault) and on the north by the Ballona Escarpment, which is west of Baldwin Hills.

To destroy “the usefulness of these basins” would be to bring about the “tragedy of the commons,” an expression used by economists to characterize the degradation or destruction of a natural common pool resource when individuals using the resource act independently from others using the same resource.

That was the case before the Water Replenishment District (WRD) was formed. Groundwater pumping was not regulated in the Central Basin, voluntary curtailment in the West Coast Basin was seeing limited success, no program or plan to replenish pumped water was in place, and massive volumes of seawater were intruding inland, rendering large swaths of groundwater unusable.

While the common pool resource of the basins was seriously threatened, its destruction was not inevitable, as the political economist Elinor Ostrom would point out in the mid-1960s.



Nobel Laureate Elinor Ostrom.
Image courtesy of On the Commons Magazine.

In October 2009 Ostrom, a professor at Indiana University, was awarded the Nobel Prize in Economics. The Nobel Committee cited Ostrom for developing a theory of “governance of complex economic systems as an alternative to conventional theories of the market and the state.” The award had special significance for the WRD.

In her Nobel Prize lecture Ostrom traced the origin of her “intellectual journey” to her study of “the efforts of a large group of private and public water producers facing the problem of an overdrafted groundwater basin on the coast and watching saltwater intrusion threaten the possibility of long-term use.” Ostrom was referring to her 1965 UCLA doctoral dissertation, “Public Entrepreneurship: A Case Study in Groundwater Basin Management.”

The culmination of those water producers' efforts was the "design and creation of a water replenishment district as a groundwater basin management enterprise," she continued. Even though the district was in its infancy when her dissertation was published, Ostrom predicted that WRD "will be an important long-term force contributing to the more efficient use of water resources in Southern California."

In *Governing the Commons: The Evolution of Institutions for Collective Action* (1990), Ostrom used the theory for which she would win a Nobel Prize to explain "how a group of principals who are in an interdependent situation can organize and govern themselves to obtain continuing joint benefits when all face temptations to free-ride, shirk, or otherwise act opportunistically." She cited the formation of WRD as an example of protecting what she called the common pool resource of the Central and West Coast groundwater basins by pumpers who had voluntarily organized "to avoid the adverse outcomes of independent action."

Without WRD and its work for the past six decades, two extraordinarily productive groundwater basins almost certainly would have suffered catastrophic collapse, resulting in the loss of resources that today supply over 42 percent of the water used by 11 percent of the state's population. Fifty-six percent of the water used by 2.5 million people in the Central Basin is groundwater.

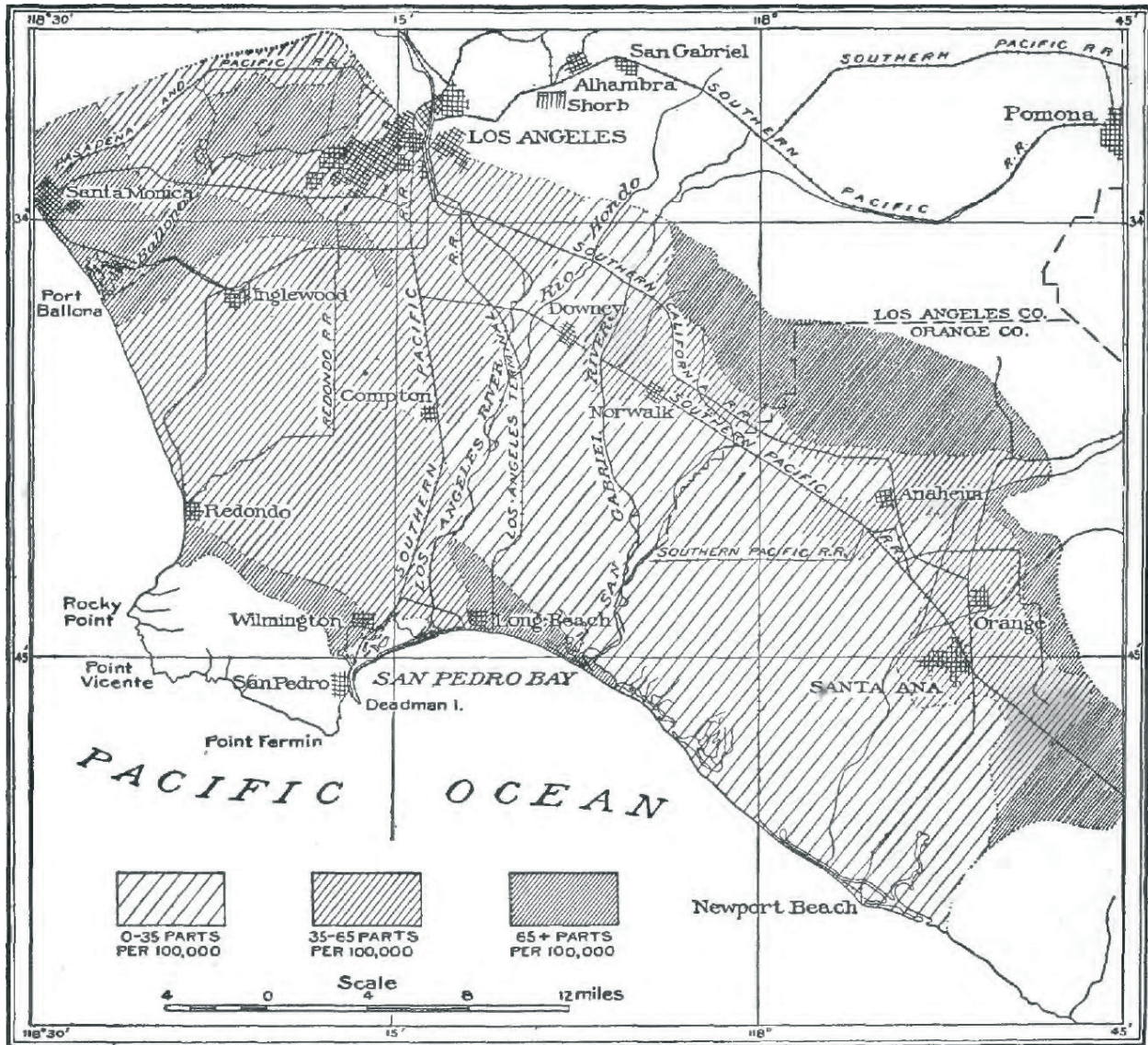
WRD's mission is "to provide, protect and preserve high-quality groundwater through innovative, cost-effective and environmentally sensitive basin management practices for the benefit of residents and businesses of the Central and West Coast Basins."

This is the story of how WRD came to be and of the people, programs, and projects that have enabled the district to protect and enhance the groundwater commons for more than sixty years.

CHAPTER

1

**GROUNDWATER BASINS WERE NEARING
CATASTROPHIC COLLAPSE**



Map showing approximate amounts of dissolved solids in underground water of coastal plain region of Southern California; map from Walter Mendenhall's *Development of Underground Waters in the Central Coastal Plain Region of Southern California*, 1905.

In their *Story of Water Development in Los Angeles County* (1986), Carl Fossette and Ruth Fossette described the basins of the coastal plain and the natural flow that replenished them prior to WRD formation:

Three large inter-connected groundwater basins underlie the coastal plain of southern Los Angeles County. The principal source of water supply for these inter-connecting basins is the San Gabriel River, originating in the San Gabriel Mountains. It first supplies the main San Gabriel basin, located at the base of the mountains. The river then flows through Whittier Narrows, a gap in the low range of hills, called Puente Hills, then, passing into the “Central Basin.” It replenishes that basin by both surface flow and underflow. The remaining flows, which, during heavy storms may be considerable, are discharged to the ocean by concrete flood control channels.

Rivers in this area are dry most of the time. But they are wet underneath because of the underflow through the basins, except for the Los Angeles River. Its supply is intercepted upstream by the city of Los Angeles under its claim of pueblo rights, granted by the King of Spain.



Artesian well in northern Long Beach early in the twentieth century. The aquifer that runs parallel to the San Gabriel and Los Angeles Rivers once produced more than a thousand artesian wells that flowed like this one. *Image courtesy of the Security Pacific National Bank Collection – Los Angeles Public Library.*

The West Coast Basin fronts the Pacific Ocean on the south and west. It is replenished by the underflow from the Central Basin through gaps in the Inglewood-Newport Fault, which separates the two basins. The Fault originates in the vicinity of Culver City and traverses the coastal plain in a southeasterly direction, crossing the San Gabriel River at Los Alamitos Bay, and ending in the vicinity of Newport Beach.

Generally speaking, water shortage problems move upstream. Those farthest from the source are the first to hurt, and those closest to the source have the first chance at interception and are the last to suffer.



Walter Mendenhall, ca. 1900.
Image courtesy of United States
Geological Survey (USGS).

By the time the Central and West Basin Water Replenishment District was formed in 1959, groundwater pumping within the district's boundaries had exceeded natural supply for more than sixty years, and seawater had been intruding inland for at least forty-five. In his pioneering 1905 study for the U.S. Geological Survey, *Development of Underground Waters in the Central Coastal Plain Region of Southern California*, Walter Mendenhall had lamented that “accelerating development” during the previous four decades and “increased stream diversion” were “two disturbing elements” that were destroying the natural balance between water supply and water demand. Large swaths of land served by artesian wells (that is, water flows to the surface without being pumped) were giving way to a growing urban environment, and wells for tapping groundwater were drilled deeper and deeper.

Mendenhall also noted elevated levels of saltwater in well water along the coast, extending in certain areas more than a mile inland. In 1912 the Pacific Light and Power Company, which was subsequently acquired by Southern California Edison, was forced to abandon a water well at its Redondo Steam Plant because the well was pulling saltwater. This was the first known instance of seawater intrusion rendering a production well unusable. Saltwater contamination also forced the abandonment of wells in Hermosa Beach in 1915, El Segundo in 1921, and Manhattan Beach in 1940. The first intrusion inland east of the Newport–Inglewood Uplift was reported by the city of Long Beach in 1949, “an alarming announcement for Central Basin people,” the Fossettes would recall in their book.

Even so, in 1905 groundwater availability was more than sufficient to meet the needs of the large farms and then-modest population of about fifty thousand. Indeed, Mendenhall characterized 94 square miles of what is now WRD's 420-square-mile service area as artesian, often resulting in natural springs. The city of Artesia, for example, derives its name from the artesian conditions in that area in the early part of the century.



The Pacific Light and Power Co. Steam Plant in Redondo Beach, 1912. In 1917, Pacific Light and Power Co. was acquired by Southern California Edison. *Image courtesy of Daily Breeze.*

The widespread introduction of the electric pump to replace windmills and steam generators made it possible to pump more water more quickly, and from deeper sources, as demand for groundwater continued to grow along with the population in the first decades of the twentieth century. The area saw spectacular population growth in the 1920s and 1930s, propelled first by the influx of people from the East and Midwest responding to the “health, wealth, and sunshine” promoted by the railroads and real estate speculators and then by Dust Bowl migrants looking for work in the region’s burgeoning factories and on the hundreds of farms and dairies that still dominated the landscape.

Oil drilling in the Signal Hill, Santa Fe Springs, and Long Beach areas in the 1920s and in the Wilmington oilfields in the 1930s spurred industrialization and population growth, which also increased groundwater extractions.



Vultee Aircraft in Downey, CA, ca. 1944. *Image courtesy of the Downey Historical Society.*

Water demand accelerated exponentially during World War II. Huge manufacturing facilities in what is now WRD's service area contributed thousands of aircraft, tanks, and ships to the war effort. Vultee Aircraft in Downey, North American Aviation and Douglas Aircraft in El Segundo, and American Aviation in Inglewood made everything from training planes to dive bombers. General Motors in South Gate turned out five hundred tanks per month. The ports of Long Beach and Los Angeles



The widespread introduction of the electric pump to replace windmills and steam generators made it possible to pump more water more quickly, and from deeper sources, as demand for groundwater continued to grow along with the population in the first decades of the twentieth century.



A windmill used to pump water for irrigation, Compton California, ca 1900. *Image courtesy of USC Digital Library - California Historical Society Collection.*

were home to massive shipbuilding and repair facilities.

Military personnel from throughout the country were deployed to the Pacific Theater from California ports, including Long Beach, and after the war many returned to the area to live. The population of what is now the WRD service area grew from 590,000 in 1930 to more than one million in 1940 and nearly two million by 1950, according to Carl Fossette's newsletter *Central Basin News* and the California Census Data Center. Throughout this period groundwater was the only source of supply for the majority of residents and businesses.

As demand increased, natural conduits for replenishment—undeveloped land, streams, and riverbeds—became sites for homes and factories and were paved over for roads, streets, and flood control. The resulting runoff made its way to the ocean rather than into groundwater supplies.

Groundwater pumping was unregulated. Anyone could sink a well and pump as much groundwater as the well could lift. No entity was responsible for replenishing the water pumped from year to year. No method was available to stop the intrusion of seawater into freshwater sources along the coast. Increasing demand in the face of rapidly disappearing supply was a recipe for disaster, and by the early 1940s a handful of what the political economist Elinor Ostrom called “public entrepreneurs” were starting to organize to do something about it.

CHAPTER

2

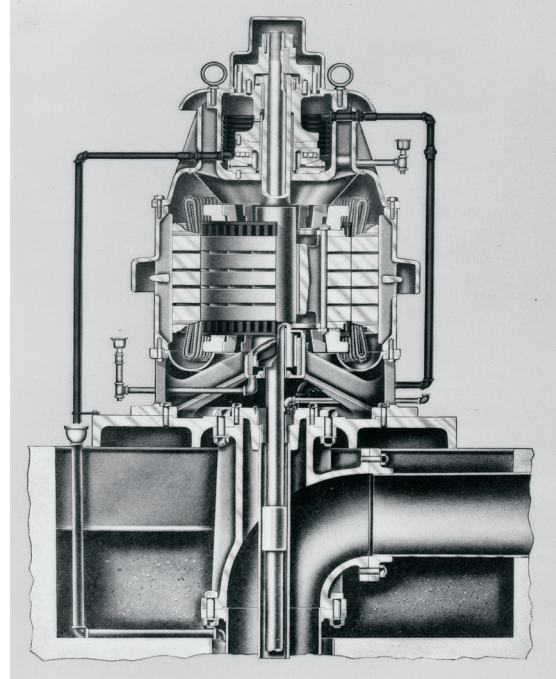
STEPS LEADING TO FORMATION OF THE WATER REPLENISHMENT DISTRICT

By 1940 groundwater extractions greatly exceeded natural replenishment. Pumpers in both basins were drawing water at ever-greater depths, and seawater intrusion was well underway in the West Coast Basin and in the early stages of migration in the Central Basin. Adverse conditions were more acute and pronounced in the West Coast Basin than in the Central Basin, and for that reason the steps that culminated in the formation of the Water Replenishment District began on the West Basin side of the region.

As Ostrom puts it in *Governing the Commons*, the process of institutional development in both basins was “incremental and sequential,” one step leading to another in a more or less orderly way. Although developments in the basins occurred at a different pace, both basins ended in the same place with a common replenishment district.

What culminated in 1959 with voter approval of formation of the Central and West Basin Water Replenishment District began in 1942 with formation of the West Basin Water Survey Committee.

O. A. Gierlich, public works director for Manhattan Beach, established the committee, which was principally concerned with quantifying the extent of overdraft and seawater intrusion in areas of the West Coast Basin. Three years later his small committee became the larger West Basin Ground Water Conservation Group, which consisted mainly of municipalities and oil companies. A subcommittee of the water conservation group produced a September 1945 report that recommended that the first step toward correcting a water imbalance that was “truly alarming” should be the creation of a nonprofit corporation. The nonprofit would be empowered to legally assess its members, who included water producers that supplied customers (i.e., municipalities and private water companies) and pumpers supplying their own businesses (i.e., oil companies and agricultural interests), for costs incurred to address common water problems. Among those expenses would be legal fees to fund the anticipated adjudication of water rights.



Cross section of water pump, Southern California, ca. 1931. *Image courtesy of USC Digital Library.*

Indeed, six weeks after the report was distributed to interested parties in the West Basin, the California Water Service Company, the city of Torrance, and the Palos Verdes Water Company filed an adjudication petition asking the LA Superior Court to determine who had rights to groundwater in the basin and the total amount that could be safely pumped annually.

Did You Know?

When groundwater pumpers within a basin do not have legal rights relative to one another to the water they pump, they can file a petition with the court to adjudicate their respective rights. The adjudication is complete when the court issues a judgment that determines who can legally pump how much groundwater. Adjudications are often contentious, expensive and lengthy. The West Basin adjudication resulted in a judgment 17 years after the petition for adjudication was filed.

FORMATION OF THE WATER ASSOCIATIONS

The West Basin Water Association was formed in early 1946, its paperwork prepared by a lawyer for the California Water Service Company. The association's first objective was to sponsor the creation of a municipal water district to provide imported water to areas of West Basin not already within the Metropolitan Water District's service area. Only the West Basin cities of Long Beach, Los Angeles, and Torrance were members of that district (Long Beach and Los Angeles include areas within both the West Coast and Central Basins). In 1947 voters approved the creation of the West Basin Municipal Water District, which was annexed to the Metropolitan Water District a year later.

Because the West Basin experience provided a template, the process of forming a water district was similar on the Central Basin side but occurred much more quickly. The Central Basin Ground Water Conservation Group formed in 1949. Its members appointed a committee to study water problems in the area. The committee promptly identified as major challenges the reduced natural replenishment, principally because of land-use changes in the Upper San Gabriel area and increased groundwater pumping in the Central Basin. The Central Basin was also at risk of seawater intrusion at the Alamitos Gap. In 1950 the committee recommended formation of the Central Basin Water Association.

The immediate objective of the Central Basin association was the creation of a municipal water district to provide imported water to serve areas of the Central Basin not already in the Metropolitan Water District's service area. The only Central Basin cities that belonged to the Metropolitan Water District were Compton, Long Beach, and Los Angeles. Voters approved formation of the Central Basin Municipal Water District in 1952, and it became part of the Metropolitan Water District in 1954.

Pumpers in the two basins had decidedly different objectives. West Basin pumpers thought that the annual overdraft of the West Coast Basin, which was roughly twice the rate of natural replenishment, would ease as a result of an eventual court order to curtail pumping.¹ They also expected that to meet their own needs many groundwater pumpers would

¹ Pumpers had good reason to believe this is what the LA Superior Court would do. In 1937 the city of Pasadena sued the city of Alhambra, asking the Superior Court "to determine the water rights of 31 parties and to curtail pumping in the Raymond Basin." The court then asked the California Division of Water Resources to determine who was pumping from the basin. Based on the state report submitted four years later, the court said continuous pumping for five years gave a pumper prescriptive rights, and the pumping of each could be curtailed pro rata to keep total withdrawal at a safe level. The court entered its judgment in late December 1944, and in 1950 the appellate court refused to take up the case. Thus the 1937 case became a major precedent for subsequent water rights cases in the West Coast and Central Basins. The case was *City of Pasadena v. City of Alhambra*, 33 Cal. 2d 909 (1949).



Directors of the West Basin Municipal Water District meet in 1948. From left: Kenneth K. Wright, attorney; W.C. Farquar, representative of Palos Verdes Estates; August H. Riese, treasurer; Robert E. Austin, president; Ralph W. Pitchard, secretary; Russell Hutchins; and Carl Fossette, general manager. *Image courtesy of Daily Breeze.*

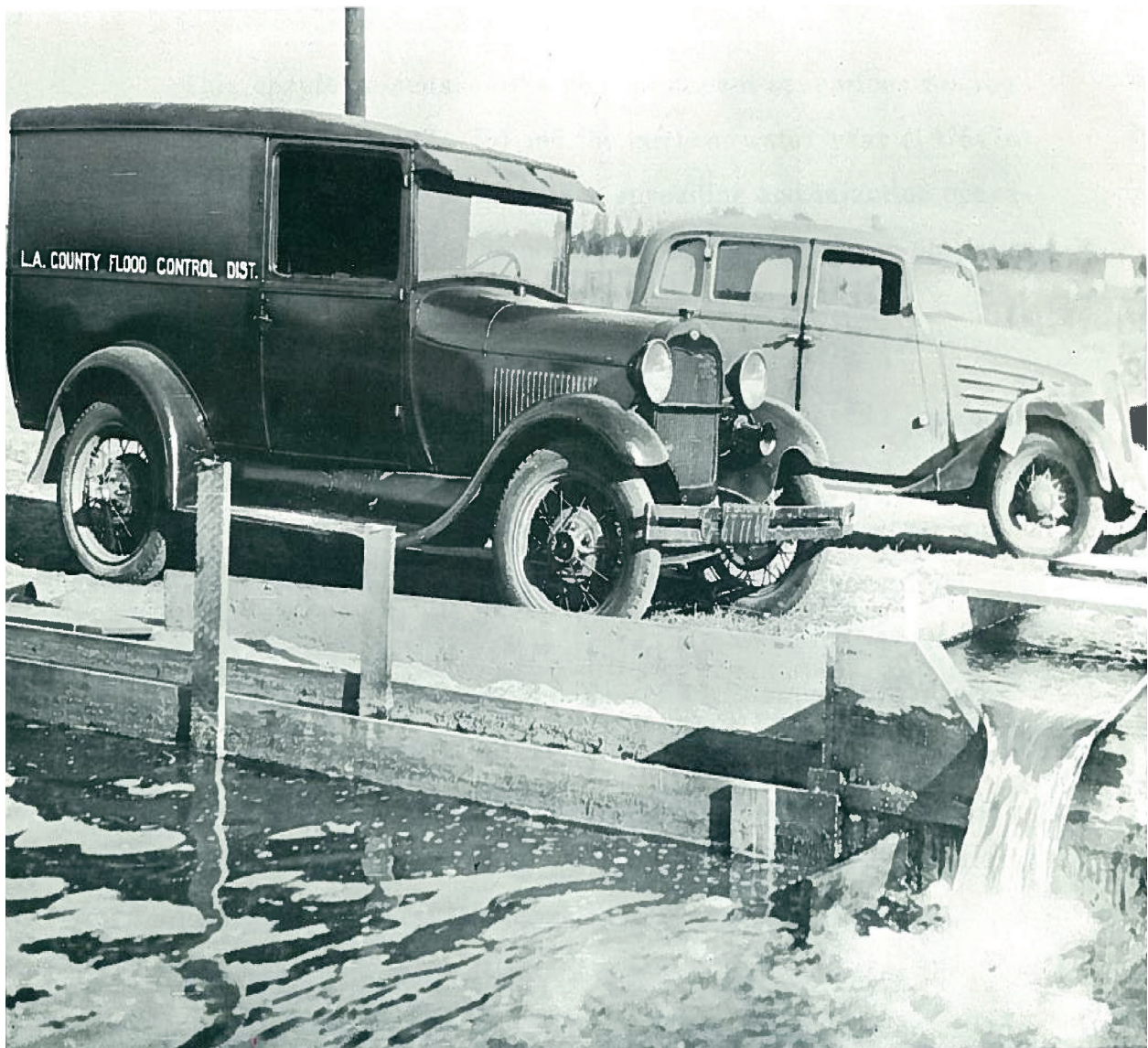
readily switch to imported water supplied by the West Basin Municipal Water District. The assumption was that the combination of less groundwater pumping and greater reliance on imported water would restore the basin to a natural balance and retard seawater intrusion.

Central Basin pumpers thought that the creation of the Central Basin Municipal Water District, combined with a proposed replenishment program to be undertaken by the Los Angeles County Flood Control District, would make both a court decision on water rights and curtailment of pumping unnecessary.

As it turned out, the assumptions of pumpers in both basins proved to be incorrect.

THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

Since the late 1930s the Los Angeles County Flood Control District had functioned on a limited basis as the de facto groundwater replenishment agency for the area. It opened the Rio Hondo Coastal Spreading Grounds in 1938 and the San Gabriel Coastal Spreading Grounds a year later. The spreading operations increased the volume of stormwater captured for replenishment. Although flood control was the main purpose of both sites, pumpers in the Central Basin understood the replenishment benefit of purchasing untreated imported water for spreading instead of relying entirely on stormwater.



Spreading water on the Rio Hondo Coastal Spreading Grounds, ca. 1938. *Image from the WRD archives.*



At the top of the photograph is Whittier Narrows Dam with the Rio Hondo discharging from it at left and the San Gabriel River at right. In the center of the photograph are the Rio Hondo and San Gabriel River Spreading Grounds, encompassing an area of more than 700 acres that provide the largest recharging area for groundwater in the district. *Image from the WRD archives.*



Most pumpers eventually realized that curtailing pumping based on a court's determination of who had water rights by virtue of their pumping history would not be enough to save the basins. Nor would forming municipal water districts to establish a supplementary supply of water be sufficient. Some form of groundwater replenishment, using a combination of imported and reclaimed water, would have to be devised.

At the same time pumpers in the West Basin saw long-term promise in sites the Flood Control District was testing for spreading operations in Redondo Beach and near Los Angeles Airport. West Basin pumpers also saw a future for spreading reclaimed water and for someday injecting it into barriers built to retard seawater intrusion.

By the early 1950s conditions in both basins were perilous. Pumpers feared a collapse from which neither basin would recover. The volume of natural replenishment coming from the Upper San Gabriel Basin, the main source of natural replenishment for both basins, was declining sharply from year to year. Well levels in both basins were dropping precipitously. Some were going dry. Seawater intrusion was migrating farther inland and contaminating West Basin wells at an alarming rate. Ironically, groundwater producers pumped more, not less, further jeopardizing the survival of the basins.



Orange groves in the San Gabriel Valley, ca. 1930. By 1960, the groves had been replaced by urban development, reducing natural replenishment of aquifers in the Central Basin. *Image courtesy of the Security Pacific National Bank Collection - Los Angeles Public Library.*

Most pumpers eventually realized that curtailing pumping based on a court's determination of who had water rights by virtue of their pumping history would not be enough to save the basins. Nor would forming municipal water districts to establish a supplementary supply of water be sufficient. Some form of groundwater replenishment, using a combination of imported and reclaimed water, would have to be devised.

What were the potential sources of supply for replenishment? What methods of replenishment could be expanded or developed? Who should pay for the water and the related costs of replenishment? What kind of agency should be responsible for the replenishment operation? What should the governance of that agency look like? These questions preoccupied the pumping community for the better part of the 1950s.

CHAPTER

3

HOW TO GOVERN?



Aerial view of West Basin looking west in San Pedro, ca. 1939. *Image courtesy of Los Angeles Public Library.*

In 1948 the Los Angeles Advisory Committee on Water Conservation, consisting of water interests, pumpers among them, recommended that the county Board of Supervisors ask the state legislature to create a special district for the purpose of conserving water and replenishing groundwater. In 1950 the West Basin Municipal Water District explored the idea of becoming a replenishment agency but was not certain of its legal authority to do so. Central Basin pumpers suggested the creation of “zones of benefit” to raise money to purchase water for replenishment. There was some sentiment in the pumper community that the Los Angeles County Flood Control District should formally become the replenishment agency for both basins and rely on a special property tax to fund its replenishment operations.

In announcing plans to campaign for formation of the Central Basin Municipal Water District, the Central Basin Water Association said an objective of the new district would be to buy imported water to spread and allow it to seep into the ground, thereby replenishing the aquifer. The Metropolitan Water District was exploring the idea of forming special replenishment districts to address the needs of overdrafted basins throughout its service area, especially in the Central and West Coast Basins.

THE SOUTHLAND

8 Part III—MONDAY, NOV. 26, 1951

2* Los Angeles Times

Officials Tell Central Basin Water Crisis

Major Purchase of Colorado River Supplies Proposed

SOUTH GATE, Nov. 25—A campaign for formation of what is proposed as the second largest component member of the Metropolitan Water District is under way here today with headquarters at 8440 State St.

The plan is backed by city engineers and officials of major water companies serving virtually all of Southeast Los Angeles County. They assert that this area, now entirely dependent on deep wells for its water supply, is facing a serious water shortage that can be met by obtaining Colorado River water.

Ballot Projected

Boundaries for the proposed Central Basin Municipal Water District have been tentatively set and the backers of the move hope to put the proposition before the electorate at the primary election next June.

As now proposed the new district would include virtually all property east from the Los Angeles city limits to the Orange County line and from Long Beach to Whittier Narrows, except for Long Beach and Compton which already belong to the MWD.

Overdraft Cited

Engineers assert this area, known as the Central Water Basin, is using more than 50,000 acre-feet of water per year over what is replaced through rainfall and water levels in the plain are dropping at an accelerating and dangerously rapid rate.

To promote the formation of the district, the water producers have organized the Central Basin Water Association and assessed themselves for a \$10,000 fund to initiate action for the necessary election.

Carl Fossett, 44, of Manhattan Beach, who directed the campaign to annex the beach area to the MWD, has been appointed field secretary for the association. He is preparing for circulation of petitions for the election.



WATER NEEDS—City Engineer Dan S. Miller, left, of South Gate, and City Engineer Hamilton E. Robinson of Huntington Park check State water maps showing alarming drop in Central Water Basin underground levels.

Times photo

Refugio Beach Park Plans Studied at Santa Barbara

GAVIOTA, Nov. 25—A survey today showed rural and urban residents in this section of Santa Barbara County divided on the master plan for the development of nearby Refugio Beach Park.

The County Supervisors first suggested the park be developed for both campers and picnickers since it serves a large area including Lompoc, Santa Maria, Goleta and Santa Barbara and many persons from more distant cities.

Residents here, in Lompoc and Goleta, generally, favor development of the park exclusively for campers. They claim there are many other parks in the area more suited for picnic parties.

The Lompoc Sportsmen's As-

sociation and several women's clubs in the county favor development principally for campers with possibly a small area developed for those who want to stop for a few hours.

Army to Build Harbor Wall at Seal Beach

SEAL BEACH, Nov. 25 — A rock wall to correct erosion of the beach at the Seal Beach Naval Ammunition and Net Depot will be constructed next year, it was disclosed today by Capt. A. E. Flaherty, officer in charge of construction.

Bids will be received until Dec. 13 at the Public Works Office, U.S. Naval Station, Long Beach.

The problem of continuing erosion along the Orange County coast, particularly in the Seal Beach-Surfside area, is under detailed study by the U.S. Army Corps of Engineers in Los Angeles. Among projects being considered is construction of a groin dividing the Seal Beach shore into two sectors and extensive dredging operations to pump sand to the beach at Surfside and Sunset Beach.

Meanwhile, Supervisor Heinz Kaiser of Newport Beach was named by County Supervisors to join a committee from the Orange County Coast Association on coast erosion problems. Others are Mayor Frank Shufelt of Seal Beach, Ralph P. Maskey of Newport Beach, Harry LeBard of Huntington Beach, C. G. Kimble of Laguna Beach and Mayor H. T. Read of San Clemente.

The county contends that engineering studies show the erosion problem is complicated by the Navy jetties at the entrance of the war-dredged Seal Beach harbor, as well as the extension of the Long Beach breakwater. Changing currents have threatened homes along the beach and swept away much of the sand.

Federal appropriations have been obtained twice to pump sand in building up the beach in front of Surfside.

Attorney's Aide Named

SOLVANG, Nov. 25 — Frank J. McCarthy, who has been commuting between his law office in Los Angeles and his ranch here, has been named a Deputy District Attorney for Santa Barbara County.

MONDAY—TUESDAY

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EXTRA SPECIAL

It would take a few years to sort out locally and in the legislature in Sacramento, but all parties saw clearly that something had to be done to protect both basins from permanent collapse. No one was quite sure what to do, although there was no shortage of ideas. Measures considered by the legislature between 1951 and 1955 reflected the growing sense of urgency among area pumpers, the state's interest in preserving the basins, and options for governing and financing groundwater replenishment. Ultimately, the approach preferred by pumpers in the West Coast and Central Basins gave rise to the Water Replenishment District Act of 1955.

THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT



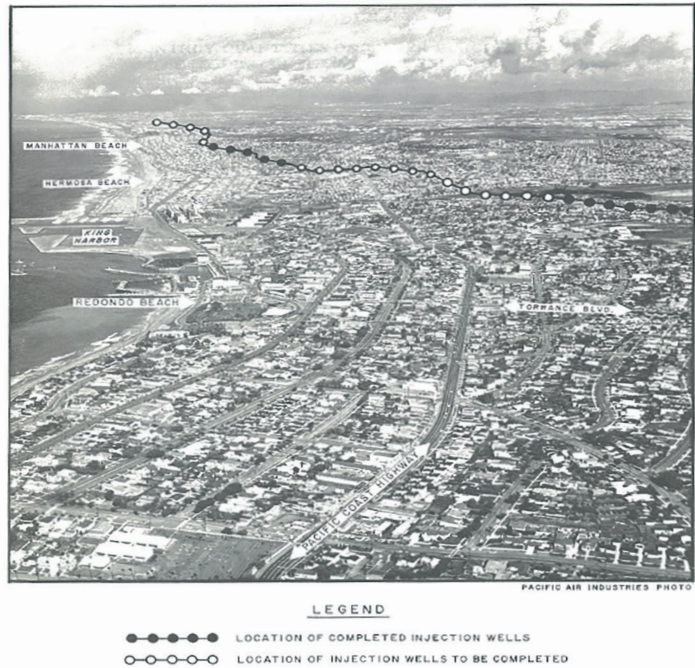
At the urging of both basin associations, in 1951 the Los Angeles County Flood Control District sponsored legislation to permit the Board of Supervisors to create one or more water conservation zones and to assess an ad valorem tax (property tax) not to exceed five cents per \$100 of assessed valuation to finance the purchase and spreading of water, imported or reclaimed, within the zones. Each zone could exist for no more than five years but could be renewed. The zones would provide the first mechanism for financing replenishment, but their existence would be temporary.

Neither the Board of Supervisors nor the Flood Control District was interested in requiring property tax payers to underwrite water costs long term. The pumpers would have to come up with a more permanent way to finance the substantial costs of purchasing water for replenishment.

EFFORTS TO SAFEGUARD THE WEST COAST BASIN

State legislation sponsored by the West Basin Water Association in 1951 included an appropriation of \$750,000 (\$7.5 million in 2019 dollars) for the state Department of Public Works to study seawater intrusion and figure out how to repel it. This led to the construction a year later of the West Coast Barrier Demonstration Project and the purchase of water to inject. The state would finance and initially own the barrier; the Flood Control District would build it under contract to the state and use state money to buy the water from the West Basin Municipal Water District. The demonstration project was to consist of five injection wells and thirty monitoring wells in Manhattan Beach and the south area of Hermosa Beach, areas that would become part of Conservation Zone II. West Basin pumpers anticipated that once Conservation Zone II was established, the Flood Control District would construct a more extensive barrier system and pay for the imported water required for injection.

In 1951 the West Basin Water Association also successfully sought legislation to establish that producers who reduced or stopped pumping and used an imported supply instead would not forfeit their established rights to groundwater. The request was prompted in part by the adjudication petition filed by the California Water Service Company, Torrance, and the Palos Verdes Water Company in late 1945 and in part by the formation of the West Basin Municipal Water District in 1947, although many people had assumed that forming the water district would encourage groundwater pumpers to reduce pumping and increase their reliance on imported water. Instead, pumpers were reluctant to reduce pumping, for fear they would lose their rights, and engaged in a race to pump even more.



Southerly portion of West Coast Basin Seawater Barrier Project, *WRD Engineering Survey Report on Groundwater Replenishment*, 1965.

MUNICIPAL WATER DISTRICTS AND REPLENISHMENT

To clarify the authority of municipal water districts to purchase water for replenishment, and acting at the behest of the West Basin Municipal Water District, in 1951 the state legislature amended the Municipal Water District Act to permit municipal water districts to cooperate or contract with other agencies for purposes of water conservation, reclamation, and replenishment. For a variety of reasons, notably the nonconforming boundaries of municipal water districts and the basins they partly overlie, municipal water districts never exercised the replenishment option. The water conservation and reclamation authority has been widely used.



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Two years later, because it was concerned about rapidly deteriorating groundwater basins throughout Southern California, especially in the urban core of Los Angeles County, the Metropolitan Water District sought remarkably comprehensive water

replenishment legislation. The legislation would authorize the district's member agencies to create "special replenishment districts" that would be based on territory "supplied with ground water from sources common to such territory."

The districts could include areas that were already part of the Metropolitan Water District or contiguous to it. They could be initiated by petition of groundwater producers (either 10 percent of the producers or producers pumping 10 percent or more of the groundwater in the proposed territory) or by the board of a member agency. The governing body of an initiating member agency would be the governing body of the special replenishment district and would have authority to adopt an annual replenishment assessment.

All wells would have to be registered with the district and their production reported quarterly. The district would produce an annual engineering survey report with detailed information about groundwater conditions, annual and accumulated overdraft, and the replenishment assessment required to pay for purchasing water. The district would be required to publish annual records of groundwater production and of replenishment assessments and charges.

Although the associations took no formal position on the legislation, major pumpers in both basins, including the city of Los Angeles, supported it. Carl Fossette, the executive secretary of both associations, wrote in his Central Basin News that the bill "may provide the most equitable means yet suggested for overcoming the overdraft upon ground waters of the Central Basin. Those using the waters of the basin would be assessed in accordance with the amount used and holders of property using no water would not be charged with the costs of basin replenishment."

Despite vigorous lobbying on its behalf, the Metropolitan Water District's replenishment district bill faced much opposition from an array of interests, including agricultural groups up and down the state, other water agencies in Southern California, and groundwater producers within the Metropolitan Water District's service area. The political reality was that the Metropolitan Water District's member agencies and the special replenishment districts that would be formed under the legislation did not have discrete sources of groundwater within their service areas.

In the end, the California Legislature's Joint Legislative Committee on Water Problems decided the bill needed further study, and it was not reintroduced. Many of its features, however, were incorporated into what became the Water Replenishment District Act two years later.

ORANGE COUNTY WATER DISTRICT GAINS AUTHORITY TO FINANCE REPLENISHMENT



The Orange County Water District was not a member of the Metropolitan Water District, had no interest in its approach to replenishment, and had in mind a different formula for financing replenishment. The Orange County district sponsored legislation in 1953 to permit an assessment on groundwater pumping that would finance the purchase of imported water to address the annual overdraft and the levying of an ad valorem tax on real property to purchase

imported water to address the accumulated overdraft. Carl Fossette noted in the Central Basin News that “the procedure contemplated is a departure from anything previously tried in overdrawn basins. The Orange County plan is being followed with interest in the hope that it may prove helpful to other ground water basins.”



Board of Directors, Orange County Water District, ca. 1965. *Image courtesy of Orange County Water District.*

Groundwater interests tried to expand the legislation to apply to overdrawn basins statewide, and in fact the original draft was made in consultation with some Central Basin pumpers who wanted to be included. Ultimately the bill applied only to the Orange County Water District service area because “interests outside of Orange County” wanted to prohibit assessments on pumpers with court-validated rights. Those interests included the California Farm Bureau and agricultural groups that opposed the very idea of having to pay to pump and to quantify and report their use of groundwater. During hearings on the bill in Sacramento, they argued that the bill established a dangerous precedent in California water law and expressed doubt about its constitutionality.

RUNNING OUT OF OPTIONS

When the 1953 legislation session ended, pumpers in both basins were in a quandary. Their groundwater conditions had worsened, yet their options for financing replenishment seemed to be disappearing. Setting up conservation zones, as the Los Angeles County Flood Control District had suggested, would be temporary at best, and even that option would not be implemented for another year because of opposition from the city of Los Angeles. Legislation giving municipal water districts the authority to purchase water for replenishment would not help, because it was impractical: district and groundwater basin boundaries did not coincide. Although it provoked robust and thoughtful discussion, the Metropolitan Water District’s proposal was politically impossible. And the legislature seemed uninterested in extending the Orange County Water District’s plan beyond that county.

COMMITTEE OF TWELVE

At this point Ben Haggott, president of the West Basin Water Association, approached W. S. Rosecrans, president of the Water Conservation Association of Southern California, with a suggestion. Haggott thought all segments of the water industry in the state should meet to discuss legislation to address critical groundwater problems.

Rosecrans convened a meeting of what he called the Study Committee of Underground Water Legislation in September 1954. He invited forty-five associations and agencies to attend and most did. One result of the meeting was the formation of the Committee of Twelve to develop groundwater legislation that might enjoy greater support than previous efforts.

Haggott, who was also president of the West Basin Water Association and the city of Torrance's representative on the Metropolitan Water District board, chaired the committee. The other members were:

- Louis Alexander, chief engineer, Southern California Water Company
- Paul Bailey, consulting engineer, Orange County Water District
- Warren Butler, city of Compton representative on the Metropolitan Water District's board
- Ransom Chase, Los Angeles representative on the Los Angeles Board of Water and Power Commissioners as well as the Metropolitan Water District's board
- J. J. Deuel, director of the California Farm Bureau
- Robert Dubrow, executive secretary, Irrigation Districts Association of California (predecessor to the Association of California Water Agencies)
- Rex Goodcell Jr., attorney for the Los Angeles Department of Water and Power
- James Krieger, founding partner of the law firm Best, Best & Krieger
- A. C. Reynolds, secretary, California Mutual Water Companies Association
- Ralph Taylor, Agricultural Council of California
- G. I. Wilde, engineer, United Water Conservation District of Ventura County

Max Bookman, who was the principal hydraulic engineer for the California Division of Water Resources and Watermaster for the West Coast Basin, served as a state-appointed adviser to the committee. Carl Fossette, general manager of the West and Central Basin Municipal Water Districts and executive secretary of both water associations, was secretary to the committee.

Despite its statewide composition, the committee was dominated by the five members representing the West Coast and Central Basin areas, and its final recommendations reflected their influence. Haggott and Alexander, representing the two associations, were the principal architects of those recommendations.

The Committee of Twelve met several times during the next three months, reviewing dozens of recommendations and struggling with issues that were often contentious within the committee and between committee members and the interests they represented.

JOINT LEGISLATIVE COMMITTEE ON WATER PROBLEMS OF CALIFORNIA

On December 14, 1954, the state legislature's Joint Legislative Committee on Water



The Committee of Twelve’s recommendations led to two significant and interrelated pieces of legislation that have remained essentially unchanged for more than six decades. Introduced during the 1955 session of the legislature, one required pumpers to annually document their water extractions and diversions in certain Southern California counties. The other was the Water Replenishment District Act under which the Water Replenishment District is organized.

Problems of California conducted a hearing in Los Angeles devoted to underground water problems. The Committee had met two years earlier to assess water conditions generally. Samuel B. Morris, general manager and chief engineer of the Los Angeles Department of Water and Power, spoke of the “need for groundwater basin management.” Brennan Thomas, general manager of the Long Beach Water Department, asked the committee to “give consideration to the critical conditions of the underground basins of Southern California and develop emergency legislation.”

Representing the Committee of Twelve, Haggott and Alexander presented the most significant testimony. Haggott described the work of the committee and said, “There is general agreement that legislation is needed to protect and replenish underground basins.” Alexander provided the committee’s preliminary recommendations, which included remarkably detailed procedures for organizing replenishment districts, what their authority should be, and a requirement that the state maintain groundwater extraction records to facilitate the adjudication of overdrawn basins.

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RECORDING WATER EXTRACTIONS AND DIVERSIONS

By 1955 adjudication proceedings in the West Coast Basin were in their tenth year with no end in sight. Much of the time and expense of the proceedings owed to the fact that there was no legally certain way to accurately quantify who pumped how much water. The legislation enacted that year required parties extracting twenty-five acre-feet or more to report to the Division of Water Resources by March 1 of each year the quantity of water taken in the previous calendar year and the method of measurement used. Failure to comply could result in a fine of \$500. More critically, the division could find that a non-reporter was guilty of “non-beneficial use” and could lose the water right it might otherwise have.

“The purpose of the bill,” Fossette wrote in *Central Basin News*, “was to provide accurate records of water extraction from the overdrawn basins of Riverside, San Bernardino, Los Angeles, Ventura and Santa Barbara Counties, and to reduce the high cost of water litigation in those areas.” Pumpers in Central Basin did not want to repeat the experience of West Basin’s ten-year lawsuit, which still was showing no signs of reaching a conclusion. Orange and San Diego counties were named in the original bill but were removed at the request of water interests in those counties.

The 1955 law requiring annual documentation of pumping worked as intended when the Los Angeles Superior Court was subsequently asked to make decisions about pumping in the Central Basin. Although the Central Basin stretched over a much larger area with far more groundwater producers, the Central Basin case took, from start to finish, fifteen years fewer than the West Basin case.



Water Problems Hearing Slated

An all-day hearing will be conducted by the State's Joint Legislative Interim Committee on Water Problems in Lakewood Country Club Wednesday, starting at 10 a. m.

Louis J. Alexander, vice president of Central Basin Water Association, will present detailed information on the need for a supplementary water supply in the southeastern section of Los Angeles County. Brennan Thomas, manager of Long Beach Water Department, will represent this city at the hearing.

Representatives of the West Basin and Orange County Municipal Water Districts also will appear before the committee to outline local water conditions.

Independent Press Telegram – Sunday, Oct. 26, 1952. Newspaper clipping on “Water Hearing Problems Slated.” Image from the WRD archives.

CHAPTER

4

THE WATER REPLENISHMENT DISTRICT ACT

The Committee of Twelve’s second important recommendation resulted in the Water Replenishment District Act. Sponsored by the two water associations, the 1955 legislation created a procedure for forming and governing a district and outlined the purposes and powers such a district would have and the financing tools it could use to perform those duties. In its essential provisions, it has remained unchanged since adoption.

Some of its provisions were borrowed from previous bills. The required engineering survey report, for example, mirrored language that was in the Metropolitan legislation in 1953. There were other similarities with significant differences. The provision authorizing a replenishment district to levy an ad valorem tax did not limit the tax to a specific purpose or

— 3 —

CHAPTER.....

An act to add Division 18 to the Water Code, relating to the incorporation, organization, dissolution, powers, government and management of water replenishment districts.

The people of the State of California do enact as follows:

SECTION 1. Division 18 is added to the Water Code, to read:

DIVISION 18. WATER REPLENISHMENT DISTRICTS

PART 1. INTRODUCTORY PROVISIONS

CHAPTER 1. SHORT TITLE

60000. This division shall be known and may be cited as the Water Replenishment District Act.

CHAPTER 2. DEFINITIONS

60001. The definition of a word applies to any of its variants.

60002. "Include" except when used in relation to the inclusion of land into a district does not necessarily exclude matters not enumerated.

60003. "District" means a water replenishment district formed under the provisions of the Water Replenishment District Act, or this division.

60004. "Board" means the board of directors of a district.

60005. "Land" means land in the district or proposed district involved.

60006. "President" means the president of the board.

60007. "Secretary" means the secretary of the board.

60008. "General water replenishment district election" means the election required to be held in each district at the time of the direct primary election in each even-numbered year.

60009. "Special water district election" means any district election other than a general water replenishment district election.

60010. "Elector," "voter," and "precinct board" have respectively the same meaning as in the Elections Code, but an "elector" or "voter" shall also be a resident of the district or proposed district involved.

Water Replenishment Act of 1955. *Image courtesy of Michael Gagan.*

beneficial use of persons or property within the district." To finance its operations, the act allowed a district to set a rate on water it sold and levy assessments on pumping and property. Many of these powers were tailored for conditions specific to the West Coast and Central Basins because their pumpers wanted the replenishment district to have maximum legal and financial flexibility to deal with groundwater conditions then existing or that might arise.

The procedure for forming a district, similar to that for municipal water districts, had not been set out in earlier legislation. The pumpers wanted "local control" to minimize

limit the duration of its imposition. The Orange County Water District legislation had limited the use of the tax to costs incurred in addressing the accumulated overdraft. The flood control district legislation limited to five years the length of time the tax could be imposed. The uses to which proceeds from a replenishment assessment may be used were similar to but not as limited as they were in the proposed Metropolitan legislation and the Orange County statute, and the requirement that the assessments had to be uniform for all groundwater produced was explicit in the Water Replenishment District Act but not in the others.

Major elements of the Water Replenishment District Act also were new, especially the sweeping array of legal powers it would have. For the purpose of replenishing groundwater supplies, the act allowed the district to buy, sell, and exchange water; distribute, spread, sink, and inject it; store, transport, reclaim, recycle, purify, and treat water, "or otherwise manage and control water for the



The measure was never about artificial replenishment alone. One of its most significant provisions authorized a replenishment district to pay the costs of adjudication proceedings. When asked why it was included, Ben Haggott, chair of the Committee of Twelve, said that “West Basin needed the provision in the act to permit adjudication of the upstream system of the Central Basin and in the Upper San Gabriel Valley in order to find some means to stop the cutting off of upstream replenishment of the West Coast Basin.”

the discretionary role of the county Board of Supervisors and the state in either the formation of a district or, once formed, its affairs. To cement a replenishment district’s independence as a special district with broad public support, they wanted formation of a district to be placed on the ballot by petition of voters. The pumpers also wanted a district to have police power to enforce groundwater reporting requirements as well as the collection of property taxes and replenishment assessments. The pumpers further wanted the district to have the power of eminent domain because the measure’s backers anticipated the new district would finance construction of a barrier system in the respective basins and undertake other construction projects.

The 1955 law also requires a replenishment district to investigate and determine the cost of using existing and available facilities of another agency “to avoid duplication of similar operations” before deciding to build facilities that meet the same purpose. The Los Angeles County Flood Control District had requested this provision to protect its investment in the spreading grounds and any future investment in seawater barriers (the state originally owned the West Coast Basin Barrier but had quickly turned ownership over to the LA County Flood Control District). The pumpers acknowledged the Flood Control District’s concern but saw to it that the final wording left to a replenishment district the decision to use or not use the facilities of another agency.

The measure was never about artificial replenishment alone. One of its most significant provisions authorized a replenishment district to pay the costs of adjudication proceedings. When asked why it was included, Ben Haggott, chair of the Committee of Twelve, said that “West Basin needed the provision in the act to permit adjudication of the upstream system of the Central Basin and in the Upper San Gabriel Valley in order to find some means to

stop the cutting off of upstream replenishment of the West Coast Basin.” Although this provision has never been used for that purpose, a 1961 amendment to the act authorized the recently created Central and West Basin Water Replenishment District to serve as plaintiff in the Central Basin adjudication. This allowed the district to pay the costs of bringing that action, as well as the costs of defending the judgment in the West Basin case against an appeal by the city of Hawthorne. In each instance property tax revenue to the district, not the replenishment assessment, paid the legal fees.

Even before adoption of the 1955 Water Replenishment District Act, pumpers were exploring how to create a district for each basin. Much on their minds was the question of boundaries. According to West Basin Water Association minutes, Haggott said shortly after



Flags at Hawthorne, ca. 1957, looking north from 133rd Street and Hawthorne Boulevard. *Image courtesy of USC Digital Library - Los Angeles Examiner Photographs Collection.*

the legislation was introduced that “a replenishment district could include the West Basin only or it could include the Central Basin and the upper San Gabriel Valley.” Shortly after the legislature approved the bill, R. R. Thorburn of Standard Oil of California, who was vice president of the West Basin Water Association, said, “West Basin receives its water from the Central Basin and the Central Basin in turn receives its water from San Gabriel Basin . . . the Upper San Gabriel Valley Basin was definitely a part of the replenishment problem and . . . perhaps a replenishment district should include all three basins.” As written, the Water Replenishment District Act made any of these options possible.

CHAPTER

5

ONE OR TWO BASINS?

The Water Replenishment District Act provided that a “district may be organized entirely within unincorporated territory, or partly within unincorporated territory and partly within incorporated territory, and within one or more counties of the state.” It did not require that a district’s boundaries correspond to those of a single basin or even that its boundaries include a complete basin. The law anticipated that the boundaries of a district would be political rather than hydrologic. Indeed, notwithstanding the realities of groundwater basin hydrology, any replenishment district in the Los Angeles County portion of the coastal plain would have to end at the Orange County line because the measure explicitly excluded the territory of the Orange County Water District.

By 1955 the annual overdraft in Central Basin was estimated at 100,000 acre-feet in

Department of Water Resources' reports. In the West Coast Basin state and local officials put the annual overdraft at 30,000 acre-feet. The question facing pumpers was not the necessity of a replenishment district or districts. The question was what form a district or districts should take. This was a more complicated question for West Basin pumpers than for those in Central Basin, mainly because Central Basin pumpers had an available source for artificial replenishment (raw water from the Metropolitan Water District) and a known means of replenishment (spreading at the Rio Hondo and San Gabriel Spreading Grounds). Central Basin pumpers also had a more or less reliable, though diminishing, natural supply flowing from the Upper San Gabriel area and had plans to legally secure their rights to a minimum flow.

The West Coast Basin's circumstances were entirely different. It had no readily available source of artificial replenishment, nor was there a way to get raw water to the area from the Metropolitan Water District. Despite conceptual plans for spreading, there were no realistic opportunities for doing so. The only natural replenishment of the West Coast Basin came from the limited infiltration of precipitation as well as underflow from the Central Basin across the Newport-Inglewood Uplift, and the volume of underflow was declining rapidly.

Both basins were beset by seawater intrusion, but the intrusion was far more advanced in the West Coast Basin than in the Alamitos Gap area of the Central Basin. The experimental West Coast Basin Seawater Barrier had been operating since April 1953, and its technology was beginning to show promise in retarding seawater migration and perhaps as a vehicle for artificial replenishment in both basins.

The Central and West Coast Basins were also quite different in landmass, population, assessed valuation, volume of pumping, and estimated replenishment needs. West Basin pumpers were operating under a voluntary curtailment program. Central Basin pumpers were not; indeed, pumping volumes were going up. West Basin pumpers talked openly in water association meetings about securing their rights to a minimum underflow across the Newport-Inglewood Fault by suing Central Basin pumpers.

Given the differences and the threat of litigation, one might expect the two associations to have a somewhat adversarial relationship or to work independently to form separate replenishment districts. As the process unfolded, that was not the case at all.

Did You Know?



An acre-foot of water is about 326,000 gallons, enough to cover a football field to a depth of one foot. Or enough to fill the balloon-like section of seven Goodyear blimps. Average per capita water use in WRD's service area is about 125 gallons per day, so an acre-foot meets the annual water needs of two families of four.

THE PROCESS

Groundwater pumpers in both basins formed water replenishment district committees in the summer of 1955, and the more engaged pumpers met often, in small groups and large, within one-basin forums and jointly. They prepared and shared thoughts and analyses, exchanged correspondence, talked to the California Department of Water Resources, the Metropolitan Water District, the two municipal water districts, the Los Angeles County Flood Control District, the U.S. Geological Survey, regional and state water pollution control authorities, state legislators, and county supervisors. They studied and drew maps of what district boundaries might look like and generally immersed themselves in the political, legal, structural, operational, and financial considerations that necessarily attached to any decision to form a replenishment district. Many pumpers in one basin attended association and committee meetings in the other. Those directly involved with replenishment district formation spent enormous amounts of time weighing the pros and cons of whether to establish one district or two and were deliberative and thorough in their work.

Communication among the pumpers in both basins was greatly facilitated by the overlapping roles of the administrator Carl Fossette, the attorney Ralph Helm, Max Bookman of the California Department of Water Resources, and Paul Baumann and Finley Lavery of the Los Angeles County Flood Control District. Louis Alexander of Southern California Water Company, which was a significant pumper in both basins, held leadership positions in both associations. Brennan Thomas, general manager of the Long Beach Water Department, moved freely among pumpers in both basins and often spoke at meetings of both associations. These men routinely interacted with one another in a variety of capacities and with pumpers on both sides of the Newport-Inglewood Uplift. All had demonstrated interest in the preservation and restoration of the basins and played indispensable roles in the eventual formation of the Central and West Basin Water Replenishment District.

Pumpers in the West Basin saw plenty of reasons to form a replenishment district limited to that basin, some of which were explicitly laid out by R. R. Thorburn, chair of the West Basin Water Replenishment District Committee. In a November 17, 1955, report to the West Basin Water Association, he listed them:

- The injection of replenishment water would be unique and necessary to West Basin. In a combined district, because of its much larger voting base, Central Basin would control that program in the West Basin and might not want to continue the well-injection method along the coast.
- Pumping was curtailed in West Basin but not in Central Basin.

- The degree of ultimate curtailment might not be the same in the two basins.
- Control of the local tax rate and amount of pumping assessment would be relinquished by West Basin.
- A district limited to West Basin could initiate proceedings to ensure financial replenishment from Central Basin.

West Basin pumpers had another reason to go it alone. Since the 1945 publication of *An Imported Water Supply for West Basin*, by Harold Conkling, the then–deputy state engineer for the California Division of Water Resources, West Basin pumpers had been trying to implement his recommendation that nominally treated sewage from the city of Los Angeles be acquired “to put underground and pumped out by users just as the natural groundwater now is.”

Even before the West Coast Basin Barrier was built in 1953, but especially after the need for its expansion and a reliable source of injection water had become apparent, West Basin pumpers thought the most promising and least expensive solution was to treat effluent from Los Angeles rather than import water for recharging the basin. In 1955 plans to form a replenishment district in the West Coast Basin were based on the fragile assumption that a 435-acre site west of the Los Angeles Airport would be available for spreading treated effluent from the Hyperion Water Reclamation Plant to a depth of ten to twenty feet. After being further cleaned to drinking water standards by percolation, the water would be extracted and injected at the West Coast Basin Barrier, and at what would become the Dominguez Gap Barrier, as well as directly into the aquifer elsewhere in the basin.



Artist impression of Los Angeles Airport (LAX), 1958. *Image courtesy of Los Angeles Airport.*

Despite an earlier agreement with Los Angeles Airport officials “to create a cooperative project designed to satisfy the drainage requirements of the area as well as the spreading needs for reclaiming the effluent,” airport officials in February 1956 told Thorburn they needed the land for airport expansion, so it would not be available for spreading. With this, the water supply rationale for establishing a separate replenishment district abruptly disappeared.

According to minutes of the board meeting of the West Basin Water Association later that month, Thorburn said that his committee “realized that the replenishment program in West Basin had been predicated upon the use of Hyperion effluent and that while use of such effluent had been discussed for a number of years, there was nothing to indicate that this water would be available or that it could satisfactorily be reclaimed and used in the Basin.” His committee “was starting over again in an attempt to evaluate the possibility of Basin replenishment from a dollar and cents standpoint.”

WEST BASIN: JOIN WITH CENTRAL BASIN

West Basin pumpers next concentrated on the advantages of forming one district with their Central Basin counterparts. Thorburn had laid out some of these at an association meeting in November 1955:

- The purpose would be the same in both basins: replenishment of the groundwater supply.
- Greater financial resources would be available; the tax rate and amount of pumping assessment could be lower.
- A large district would have greater political strength and would be more effective in dealing with Upper San Gabriel and various state bodies.
- The Long Beach harbor area offers a potential route for intrusion of seawater into West Basin and probably would be included in a combined district. It is doubtful that any of Long Beach could be included in a district comprising West Basin only.
- Extensive recharge of Central Basin might contribute free water to West Basin.

Another reason, not listed by Thorburn but frequently mentioned by others, was that replenishment in both basins would rely on less expensive untreated, or raw, imported water from the Metropolitan Water District. Basing its decision on that assumption, the Metropolitan Water District had invested several million dollars in pipelines in the West Coast Basin.

Central Basin pumpers never developed a plan for a stand-alone Central Basin replenishment district because the leading pumpers favored a combined district from the outset. They were nonetheless well aware of the advantages of a limited district, primarily given the relative costs of replenishment.

Louis Alexander prepared the cost analysis for both associations and presented it in November 1955. Excluding any capital costs the respective basin pumpers might incur to pay for additional barriers and use of Metropolitan Water District distribution lines, he estimated that purchasing treated water from the Metropolitan Water District for the West Basin side would be \$1.5 million per year. To raise that amount from the property tax alone would require a tax of twenty-five cents per \$100 of assessed valuation, five cents more than the law allowed. To raise that amount from the replenishment assessment alone would require an assessment of \$5.00 per acre-foot, more than twice the Metropolitan Water District's charge for treated imported water. A property tax set at five cents per \$100 would raise only \$300,000, leaving an impossibly high replenishment assessment of \$40 per acre-foot.

On the Central Basin side, the story was quite different. Replenishing the annual overdraft would require 100,000 acre-feet of water. Buying untreated water from the Metropolitan Water District at \$10 per acre-foot would cost about \$1 million. Paid by the property tax alone, that would mean a levy of seven cents per \$100 of assessed valuation or a replenishment assessment of four dollars per acre-foot. But the combination of a property tax of two cents per \$100 of assessed valuation and a replenishment assessment of \$2.70 per acre-foot would pay the entire bill, Alexander said.

If the two basins were combined into one district, water purchase costs would be \$2.5 million. A property tax of five cents per \$100 of assessed valuation would raise \$1.05 million. An assessment of five dollars per acre-foot would generate \$1.45 million, making up the difference. In a combined district, Alexander said, Central Basin property owners would pay \$750,000 more in property taxes and Central Basin pumpers would pay \$575,000 more in assessments than they would with a single-basin district.

Central Basin property taxpayers and pumpers would pay 82 percent of the costs; those on the West Basin side would pay 18 percent. "Such a scheme," Alexander concluded, "would be to the economic advantage of the West Basin and to the economic disadvantage of Central Basin."

From the outset, and even with the assumed relative cost implications, the leading pumpers in Central Basin wanted to form one district that included both basins. Back in August 1955,



“West Basin threatened to sue Central Basin producers unless they reduced pumping to allow water levels to recover, so replenishment would, again, reach the West Basin by underflow across the Fault dividing the two areas.”

Brennan Thomas, a member of the Central Basin Water Association Water Replenishment District Committee and general manager of the Long Beach Water Department, by far the largest pumper in Central Basin, had told the executive committee of the West Basin Water Association exactly what Alexander would report three months later. But the main reason that Central Basin pumpers favored a combined district was that it might forestall or eliminate the substantial costs and risks inherent in defending against the litigation threatened by West Basin pumpers to establish their rights to the underflow across the Newport-Inglewood Uplift.

In describing the formation of the Central and West Basin Water Replenishment District to the Houston Chamber of Commerce in December 1971, Carl Fossette said that “West Basin threatened to sue Central Basin producers unless they reduced pumping to allow water levels to recover, so replenishment would, again, reach the West Basin by underflow across the Fault dividing the two areas.”



The Santa Ana River feeds adjacent groundwater recharge basins in Anaheim, ca. 2012. The Orange County Water District’s 1951 lawsuit against cities farther up the Upper Santa Ana River was the template for the suit brought by Long Beach in 1965 against pumpers in the Upper San Gabriel River. *Image courtesy of California Department of Water Resources.*

The basis for bringing such litigation was widely known to groundwater producers. In 1951 the Orange County Water District had sued the cities of Riverside, San Bernardino, Redlands, and Colton, all of which produced water upstream on the Santa Ana River. In 1955 the Southern California water community expected that the court would protect the flow to Orange County by limiting pumping in these cities to an historic volume. Indeed, that is what the court did after the cities' appeals were exhausted in 1957.

On November 20, 1958, Brennan Thomas asked the West Basin Water Association to join litigation the city of Long Beach was preparing to file against pumpers in the Upper San Gabriel. According to the minutes of that meeting, he emphasized that “the geological factors were similar in the Upper San Gabriel Valley and the Santa Ana territory . . . the West Basin was in the same relative position as the Orange County Water District, that Riverside represented the same position as the Central Basin area and that the Upper San Gabriel Valley area occupied a position similar to that of the San Bernardino area.” Thomas made explicit in 1958 the legal concerns he and other Central Basin pumpers had with respect to West Basin pumpers in 1955.

From the perspective of a Central Basin pumper, it was far less expensive to pay more for a common replenishment district than to risk permanent financial exposure to a plausible adjudication of the underflow. That was especially true because the expectation at the time was that a property tax, rather than a replenishment assessment, would cover nearly half the costs of a new district.

As discussions proceeded through 1956, pumpers came to something of a consensus: the replenishment assessment levied by a new district would pay the cost of water needed to make up the annual overdraft. All other costs, including water purchase costs to address the accumulated overdraft, would be paid by the property tax the new district was empowered to levy.

Although the basis for financing the new district ultimately did not work out exactly as planned in 1956, property taxes—not the replenishment assessment—covered all costs except the purchase of water, and this remained the case until passage of Proposition



From the perspective of a Central Basin pumper, it was far less expensive to pay more for a common replenishment district than to risk permanent financial exposure to a plausible adjudication of the underflow.

13 in 1978. Property taxes footed the engineering and administrative costs of the district as well as the legal bills for the petition for adjudication of Central Basin rights filed by the Replenishment District.

It also happened that the city of Los Angeles, if it agreed to be part of a replenishment district at all, was more likely to lend its support if it was part of a combined district rather than a member of two districts, a rationale often cited in support of a single district. The city's position was that its pumping had not contributed to seawater intrusion in the West Basin or overdraft in the Central Basin. As a result, the city steadfastly refused to be a part of Conservation Zone I (Central Basin) or Zone II (West Coast Basin), which were administered by the Los Angeles County Flood Control District. Pumpers in both basins often said that having at least a portion of the city included in a replenishment district would be essential. Great pains were taken and massive compromises were made in 1958 to make sure that happened.

But there were two even more important reasons to have a single district cover both basins. Both reasons had to do with money—and lots of it.

FLOOD CONTROL DISTRICT COMMITS TO BUILD SEAWATER BARRIERS

When the legislature amended the Flood Control District law in 1951 to permit the LA district to purchase water only on an interim basis through the creation of temporary conservation zones, it was clear that the county Flood Control District would not become a permanent replenishment agency. It had nonetheless played an invaluable replenishment role since 1938–39 when it built the two spreading grounds and extended its role when it contracted with the state to operate the experimental West Coast Basin Barrier in 1953.

When discussions about forming a replenishment district began in 1955, the pumpers assumed that a new replenishment district or districts would have to bear the cost of any expansion of the West Coast Basin Barrier and the construction of new barriers in both basins. Early in those discussions, however, Flood Control District officials offered the pumpers a deal. If the pumpers formed a replenishment district or districts to buy the quantities of water necessary, the Flood Control District would urge the Board of Supervisors to extend the life of Zones I and II to build the barriers. While Flood Control District officials expressed no overt preference for one or two districts, they were clear that the problems of the two basins were interconnected and that it would be easier administratively to deal with one district.

As part of the deal, the pumpers would also have to agree that a new district or districts would commit to use the existing spreading grounds and future barrier system and not build similar facilities serving the same purpose. In August 1956 both associations agreed to the deal by passing appropriate resolutions. They included a request to the Board of Supervisors to authorize the Flood Control District to perform exhaustive studies of the cost of expanded and new barrier systems and the volume and cost of water necessary to maintain them. The resulting studies estimated the cost of the capital improvements at more than \$25 million (\$239.34 million in 2019 dollars).

METROPOLITAN WATER DISTRICT MAKES AN OFFER NO ONE COULD REFUSE

The pumpers did not know at the time whether the Metropolitan Water District would guarantee the delivery of sufficient water to meet the replenishment needs in both basins. Indeed, even if sufficient water was available, there was no Metropolitan connection to the spreading grounds or the West Coast Basin Barrier and the barriers envisioned for the Dominguez Gap and Alamitos Gap. Pumpers began discussions with Metropolitan officials in March 1956 that led Joseph Jensen, Metropolitan's board president, to appoint a subcommittee on groundwater replenishment chaired by W. C. Farquhar, president of the West Basin Municipal Water District and member of the Executive Committee of the West Basin Water Association.

The work of that subcommittee resulted in the statement of policy adopted on April 16, 1957, by the Metropolitan Water District board over the objections of all Los Angeles members

except Jensen: Metropolitan would, at its own expense, build a forty-five-mile distribution line and laterals to serve the coastal barriers, as well as a line and laterals to serve the spreading grounds on two conditions. One was that a future replenishment district or districts execute a contract with Metropolitan "to buy untreated Colorado River Aqueduct water for the replenishment of the local underground basins to the full amount of the revenues



A section of Colorado River Aqueduct pipeline set up by the Metropolitan Water District as a publicity booth in an outdoor public area, ca. 1930. *Image courtesy of Los Angeles Public Library.*

made available by charges on pumped water.” The second condition was that a water replenishment district or districts be organized in the Central and West Basins no later than April 16, 1961. The cost of the distribution pipelines and laterals was estimated at \$19 million (\$173.48 million in 2019 dollars). The money was important, but so was the deadline. For the first time pumpers had a defined window in which to form a district.



Los Angeles Mayor Fletcher Bowron and Joseph Jensen meet, ca. 1951. *Image courtesy of USC Digital Library - Los Angeles Examiner Photographs Collection.*

Jensen spoke to the Central Basin Water Association on May 2, 1957, and made clear his preference for one district. He said that “the storage of an adequate supply of water underground and the protection of the basins was as important as the Feather River Project,” as the California State Water Project was known at the time. (The 444-mile-long California Aqueduct, connecting Southern California to water from the Sacramento–San Joaquin Delta in Northern California, was a prominent feature of the State Water Project.) In his opinion “a single replenishment district should be formed to include the area of both Central and West Basins rather than to form a single district in each basin.” Referring to recent Orange County Water District litigation against the cities of Riverside, San Bernardino, Redlands, and Colton pertaining to the surface and underground flows of the Santa Ana River, Jensen noted that the judge in that case had ordered the cities to reduce pumping by 30 percent and to “pay back the excessive amounts of water taken since 1951.” Jensen declared that “West Basin was entitled to its fair share of the natural water... and that if a single replenishment district was formed including both West and Central Basins, the entire area could be regulated as a single unit.”

Not many pumpers in Central Basin needed to be persuaded that one district was preferable to two, but the Metropolitan Water District's decision and Jensen's presentation did convince the last holdout to change his mind. H. H. Harris of Compton, a member of the Central Basin Water Replenishment District Committee, noted that he "was one of the members who originally favored formation of a two-district system... but in view of the decision of the Metropolitan Water District to construct the necessary pipelines at an estimated cost of \$19 million," he had concluded that "a single district including the area of both basins would be the desirable recommendation." Harris further reported that the Replenishment District Committee had recommended support for one district "because it was believed that the costs in either instance would be similar, that it would be easier to fix boundaries for a single replenishment district and that it would take less time to form one district than it would two districts," according to the Central Basin Water Association's minutes.

Brennan Thomas, general manager of the Long Beach Water Department, reminded the Central Basin Water Association at its May 2, 1957, meeting that eighteen months earlier he had suggested a single replenishment district to the West Basin Water Association, "and at the time the West Basin people were definitely against the formation of a single district which would require joining with the Central Basin area." The West Basin pumpers had since changed their position. The minutes show that Thomas moved that the board of directors of the Central Basin Water Association accept the recommendation of its water replenishment district committee and its executive committee that "a single Unified Water Replenishment District be formed including therein the areas of both Central and West Basins." It was adopted unanimously. The West Basin Water Association had adopted a similar motion three months earlier.

A THREE-BASIN DISTRICT?

Led by Brennan Thomas of Long Beach, Central Basin pumpers started meeting with their counterparts in the Upper San Gabriel Valley in January 1955 to discuss "problems related to the invasion of Central Basin water rights by producers in the Upper San Gabriel Valley." Among other remedies they discussed was forming a common replenishment district, but at the time pumpers in the upper area were not well organized and disagreed about the best sources of supplemental water.

At the urging of Central Basin pumpers, the Upper San Gabriel Valley pumpers did form an association and named Carl Fossette executive secretary and Ralph Helm to serve as legal counsel. The pumpers also committed to seek formation of a municipal water district

and annexation to the Metropolitan Water District. This action caused Thomas and his colleagues to delay filing an action against Upper San Gabriel Valley pumpers. But when it developed that Alhambra, Monterey Park, Azusa, and Sierra Madre would try to block Upper San Gabriel Valley pumpers' formation of a district and the cities instead would establish their own district to buy water they hoped would be available from the Feather River Project, Thomas decided to sue the Upper San Gabriel Valley pumpers to force a court decision about allocations in what ultimately resulted in the Long Beach judgment.

In the Upper San Gabriel the circumstances were never quite right for joining what would amount to more of a watershed-based replenishment district. As events worked out, voters approved the Upper San Gabriel Valley Municipal Water District three weeks after voters approved the Central and West Basin Water Replenishment District in late 1959. At the same time voters in the four dissident cities formed the separate San Gabriel Valley Water District.

CHAPTER

6

THE CAMPAIGN

The campaign to form the Central and West Basin Water Replenishment District began in earnest in November 1958. The two water associations representing pumpers in the West and Central Basins met with a sense of urgency that month to learn details of a campaign that would conclude a year later.

The very idea of forming a replenishment district was especially exciting to pumpers in both basins who had worked for nearly a decade to develop a permanent solution to the steadily worsening problems of groundwater overdraft and seawater intrusion.

Now there was finally consensus to go to the voters to approve the state's first (and to date only) water replenishment district. The boundaries of the proposed 420-square-mile district would include all or portions of thirty cities whose residents accounted for 16 percent of



Both basins were in peril, hence the pumpers' sense of urgency. A drought cycle that had persisted since 1941 had coincided with the most explosive population growth any region of the country had ever seen. A region that for most of the century had been the agricultural capital of California was rapidly becoming the most heavily industrialized and urbanized part of the state. Seawater intrusion along the coast was contaminating production wells from El Segundo to Long Beach.

the state's population at the time. It would be the twenty-fourth voter-approved water district in Los Angeles County.

Both basins were in peril, hence the pumpers' sense of urgency. A drought cycle that had persisted since 1941 had coincided with the most explosive population growth any region of the country had ever seen. A region that for most of the century had been the agricultural capital of California was rapidly becoming the most heavily industrialized and urbanized part of the state. Seawater intrusion along the coast was contaminating production wells from El Segundo to Long Beach. Harvey Banks, the state director of water resources, told the Central Basin Water Association that "water levels in Central Basin are now so low that the groundwater flow has been reversed and is now moving from West Basin to Central Basin, contrary to the design of nature."

The 1955 Water Replenishment District Act specified the steps necessary to form a district. Ten percent of the proposed district's registered voters had to sign petitions supporting its formation. Once that requirement was satisfied, the Department

of Water Resources was required to conduct a hearing to determine whether the proposed district "will be of benefit generally to all persons or property which rely directly or indirectly upon the use of or right to use the groundwater supplies within such proposed district." If that finding was in the affirmative, the Los Angeles County Board of Supervisors would have to schedule an election to put the question before the voters.

After three years of rigorous exploration the boards of the two associations voted in August 1958 to form a single district. Meeting jointly in September, their executive committees immediately began to prepare their campaign. The West Basin Water Association had a campaign budget of \$10,500; the Central Basin Water Association had \$22,495. R. C.

Furlong, president of the Central Basin Water Association and mayor of Vernon, and Allan Harris, president of the West Basin Water Association and an executive at Johns-Manville, would co-chair the campaign committee.

The executive committees named petition chairs, one for each of the five election divisions the district would have, and engaged Ralph Helm, the attorney for the Central and West Basin Municipal Water Districts, to prepare the petition and related legal documents. Carl Fossette, executive director of both associations and general manager of the Central and West Basin Municipal Water Districts, would handle day-to-day campaign operations.

Finally, the executive committees hired Russell Pierce and Company, a San Francisco public relations firm, to professionally manage the campaign. The firm had managed the successful campaign to form the Central Basin Municipal Water District in 1952 as well as the 1954 campaign to annex it to the Metropolitan Water District. The firm had also served as the public relations adviser to the California Water Service Company since 1949.

Russell Pierce, the company president, outlined the challenges of the campaign at separate meetings of the two associations in November 1958.

One challenge was sheer numbers: the proposed district was home to 1.18 million voters. To obtain 118,000 valid signatures, or 10 percent of the total number of registered voters, the petitions would need 150,000 signatures. If the associations were to see an election by December 1959, the signatures had to be gathered and turned in by May. If the campaign relied on professional petition circulators, the cost would be \$60,000—twice the current budget for the entire campaign. According to the minutes of the joint meeting, Pierce said, “Your Board of Directors is therefore assuming that there are enough far-sighted people in this thirsty area who are dedicated to the solution of the water problem to secure—on a voluntary basis—the quota of signed petitions.”

Securing support for any measure with tax implications posed a challenge, and the proposed district would have the authority to levy a property tax. Voters had approved only about half of recent state and local bond and tax measures. “Voters are approving only those measures which have vital or critical significance,” Pierce said. The message of the campaign would have to be compelling. And the message could not risk being perceived as frivolous. Pierce noted that the successful campaigns to create the West and Central Basin Municipal Water Districts had stressed the threats of seawater intrusion in one case and lowered groundwater levels in the other. The replenishment district campaign would be making the same arguments to many of the same voters and would have to make clear how the new district would be different from the other two.

The associations had two final challenges to overcome, Pierce said. One was the general apathy toward water problems, as evidenced by low voter turnout in water district elections. The other was “the present confusion and frustration implicit in regional and jurisdictional squabbles over future supply, as well as self-seeking isolationism of certain communities,” Pierce said.

FIRST STEPS

The first step of the campaign, preparing for and securing sufficient signatures to put the question on the ballot, would take five months.

Fossette and Helm wrote the petition; its first page explained why the replenishment district was necessary:

You are living in an area under which lie the great Central and West Basins or underground reservoirs which hold the water being pumped daily to keep you and your family alive.

This area which now contains about 2,500,000 people has grown by a million since World War II and will grow a million and a half more in the next ten years.

We are pumping out of these Basin reservoirs billions of gallons more than nature puts back. If the level gets much lower, salt water will creep in and fill our wells, as is now the case in some localities. We must immediately restore this underground supply of fresh water which is our “bank account” on which to draw if an earthquake or bombing destroyed the surface supply.

Public officials, water companies and industry leaders are sponsoring a Water Replenishment District which would obtain money for restoring water needed by taxing the pumpers of water, not you, the average citizen. All it would cost you is about 25 cents a year to administer the District office.

The final section of the petition gave the following reasons for forming the replenishment district:

The continuing long-term overdraft on the ground waters within the boundaries of said proposed district has lowered the ground water levels therein many feet below sea level, resulting in the progressive encroachment of salt water from the ocean . . . which, if continued, will destroy the basins. . . . Such continuing

overdraft from, and the resultant depletion of, said ground waters, deprive the users within the area comprising said district of an indispensable carryover water supply that would be required to meet its needs in the event of a catastrophe caused by nature or by enemy action. The preservation of ground water storage in said proposed district to provide a reserve supply of water to meet peak demands and water requirements during dry years is vital to the health, safety and general welfare of inhabitants therein. The formation of the proposed Water Replenishment District is required in order to:

- Recharge the ground waters in said District,
- Repel the intrusion of salt water therein, and
- Reduce the pumping therein by all possible means, including necessary legal proceedings to adjudicate the rights of the users thereof.

The bulk of the petition consisted of exacting boundary descriptions that often defied easy understanding, such as: “Thence southerly along said westerly line of said certain tract of land

shown on Plat Showing the Property of George Stephenson to the southerly line of said certain tract of land, said southerly line being shown on said Plat as having a bearing of 81 degrees E and a distance of 7.03 chains.”



We are pumping out of these Basin reservoirs billions of gallons more than nature puts back. If the level gets much lower, salt water will creep in and fill our wells, as is now the case in some localities. We must immediately restore this underground supply of fresh water which is our “bank account” on which to draw if earthquake or bombing destroyed the surface supply.

With the petition language settled, the campaign had 180 days to circulate and submit petitions to the registrar of voters. The legal deadline was May 30, 1959. The petition, however, was just the first of the five steps required to finally put the question on the ballot.

After submission of sufficient signatures, the Registrar of Voters would have to validate the signatures and certify the petitions to the Board of Supervisors. The supervisors, in turn, had to certify the petitions to the California Department of Water Resources, whose director would then hold a hearing to determine whether establishing the district would benefit people and property within its boundaries. If the finding was yes, the supervisors would set the boundaries for the

five election divisions that would choose the directors and schedule an election to put the question to voters.

The campaign received some good news: after the Registrar of Voters purged the rolls of voters who had not voted in the previous election, the number of valid signatures required to get the petition on the ballot was only 90,675, which was 23 percent fewer than the original minimum of 117,877.

The pace of the campaign accelerated and its scope grew. Leaders of the campaign held training sessions for volunteer speakers, who would be sent to address chambers of commerce, service clubs, and major employers. Sixty-one companies circulated petitions to their employees. The five petition chairs recruited local chairs from among those attending luncheons held by the associations in the key communities—at Shangri-La in Whittier, Lococo's in Manhattan Beach, Marsal's in South Gate, Brower's in Long Beach, and Chalon's in East Los Angeles. The luncheons were advertised in forty-two newspapers and drew large and enthusiastic audiences. The local chairs in turn recruited neighborhood chairs. Thirteen chambers of commerce embraced the campaign and circulated petitions. All but two of the thirty cities in the proposed replenishment district adopted resolutions of support.

Petition circulators were given pamphlets to distribute titled “Your Water Security Plan,” which related the history leading to the district proposal, the geology of the basin, the problems of overdraft and seawater intrusion, and the need to protect the water supply from earthquake and enemy attack. Ninety-two newspapers circulated within the proposed district, and press coverage was extensive. Editorials were uniformly positive. The *Long Beach Press-Telegram* urged its readers to make signing the petition one of their New Year's resolutions.

GETTING ON THE BALLOT

For five months petition circulators, nearly fifteen hundred of whom were volunteers, seemed to be everywhere, as was the persistent message of the campaign. On May 25, 1959, the campaign turned in to the Registrar of Voters 2,560 petitions containing 147,038 signatures. On June 2 the registrar certified 116,275 of the signatures, far more than the 91,951 required by the registrar's most recent revision.

The petition campaign had cost \$30,030 (\$264,770 in 2019 dollars), with the Central Basin Water Association paying 60 percent of the cost and the West Basin Water Association paying 40 percent.



Petition chairs turn petitions into county registrar, May 15, 1959. *Image from the WRD archives.*

Next the director of the state Department of Water Resources had to hold the hearing to determine whether the proposed district would benefit residents within its boundaries.

Harvey O. Banks, the department director, held the hearing on July 6, 1959. His staff reviewed a draft report detailing the proposed district's geology and groundwater conditions, water supply, and use of "one of the most critically overdrawn groundwater sources in Southern California." The report described the replenishment

activities of the Flood Control District, the pilot project to "impose a barrier against inland movement of ocean waters," and the voluntary curtailment of pumping in the West Coast Basin.

"While these measures have been effective in averting more serious groundwater problems in the Central and West Coast Basins," the report continued, "they have been limited in scope. . . . The need exists for an area-wide application of remedial measures and the proposed Central and West Basin Water Replenishment District is intended to implement such measures."

Helm, the lawyer for the two water associations, called and cross-examined six witnesses in support of forming the district:

- Joseph Jensen, board chair of the Metropolitan Water District
- Robert Diemer, general manager and chief engineer, Metropolitan Water District
- Louis Alexander, vice president and chief engineer, Southern California Water Company
- Finley Laverty, assistant chief engineer, Los Angeles County Flood Control District
- Allen D. Harper, vice president, Pacific Mutual Life Insurance Company
- Howard Crooks, secretary and general manager, Orange County Water District

One property owner wanted Windsor Hills excluded from the district on the ground that property owners there already paid taxes to the Flood Control District and the Metropolitan

The campaign's speakers' bureau had fifteen members who delivered seventy-nine scripted speeches between September 14 and November 16. Resolutions of support poured in from cities, chambers of commerce, realty groups, church groups, service clubs, women's clubs, homeowner organizations, the Veterans of Foreign Wars, parent-teacher associations, civic clubs, and the AFL-CIO (Labor Federation) of Los Angeles County. Editorial support was widespread.

By Election Day it had not rained since April, and the region was in the middle of a three-year drought. Voters faced this question: "Shall the proposition to organize the Central and West Basin Water Replenishment District under the Water Replenishment District Act be adopted?"

The vote was 81,719 to 20,860 in favor of the district. On December 7 the Los Angeles County Registrar of Voters certified the results of the election. Two days later the California Secretary of State certified the incorporation of the water replenishment district. Its legal name was the Central and West Basin Water Replenishment District.



Voter approval of WRD formation celebrated on election night, 1959. *Image courtesy of Los Angeles Public Library.*

CHAPTER

7

THE PIONEERS

District formation and the events leading to it didn't just happen, of course. They were conceived, shaped, and implemented by people who were quite alert to the consequences of inaction in the face of rapidly depleting basins and the migration of seawater contamination in an area experiencing explosive population growth and increasing demand for water. Louis Alexander, chief engineer for the Southern California Water Company, often referred to these men as the pioneers of water replenishment.

THE BIG SIX

Taking into account the work of the hundreds of participants in developing institutions and taking steps that led to the Central and West Basin Water Replenishment District, six men

stand out for their indispensable contributions.



The “Big Six” whose actions led to the Water Replenishment District. From top left: Louis Alexander, Ben Haggott, W.C. Farquhar. From bottom left: Ralph Helm, Max Bookman, and Carl Fossette. *Images from the WRD archives.*

- Louis Alexander, idea guy and analyst
- Ben Haggott, man of action and accomplished lobbyist
- W. C. Farquhar, money man
- Ralph Helm, attorney
- Max Bookman, engineer
- Carl Fossette, administrator and manager who held all the pieces together

Alexander, Farquhar, and Haggott were active in the formation of the West Basin Water Survey Committee in 1942 as well as the water replenishment district in 1959. They had a hand in virtually all institutional developments during those seventeen years. All served on the Ways & Means Committee of the West Basin Water Conservation Group, and all were founding directors of the West Basin Water Association and served on its executive

committee. All but Helm helped form the West Basin Municipal Water District, and Alexander and Fossette were instrumental in forming the Central Basin Water Association and the Central Basin Municipal Water District.

Alexander and Farquhar served on the executive committees of both associations. Helm was the attorney for both associations, Bookman advised both associations, and Fossette was the executive secretary for both associations. Haggott chaired the Committee of Twelve. Alexander was a member. Bookman was the state adviser to the committee, and Fossette provided administrative support. Farquhar chaired the Water Replenishment District Formation Committee; Alexander and Helm were members. Helm was the committee lawyer; Bookman and Fossette provided engineering and administrative support. Farquhar led the petition drive to get district formation on the ballot.

Alexander was the senior vice president and chief engineer for Southern California Water Company. He was a member of the West Basin Water Survey Committee in 1942 and the Ways & Means Committee of the West Basin Water Conservation Group in 1945. He was an executive committee member of both the West Basin Water Association and Central Basin Water Association. He was the Central Basin Water Association's appointee to the Committee of Twelve and a principal architect of the Water Replenishment District Act. He drafted the Plan for Replenishment adopted by both associations and represented both associations on the Water Replenishment District Formation Committee. After retiring from the Southern California Water Company, he served as a West Basin Municipal Water District appointee to the Metropolitan board (1963–72).

Haggott was an officer of the Palos Verdes Water Company and later founded Haggott Realty. He was the president of the West Basin Water Association from its formation in 1946 through 1956, when he received the association's first honorary lifetime membership. He chaired the Committee of Twelve and was the foremost advocate for passage of the replenishment district act. He also lobbied for the conservation zone amendment to the Los Angeles County Flood Control District Act as well as state funding for the seawater



Haggott Reservoir nearing completion, ca. 1987. *Image courtesy of the city of Torrance.*

barrier demonstration project. He was recruited out of semiretirement in 1958 to broker the final replenishment district compromise with the city of Los Angeles. He was a West Basin Municipal Water District appointee to the Metropolitan Board (1953–56) and also represented the city of Torrance (1969–82) on that board. Haggott Reservoir in Torrance is named for him.



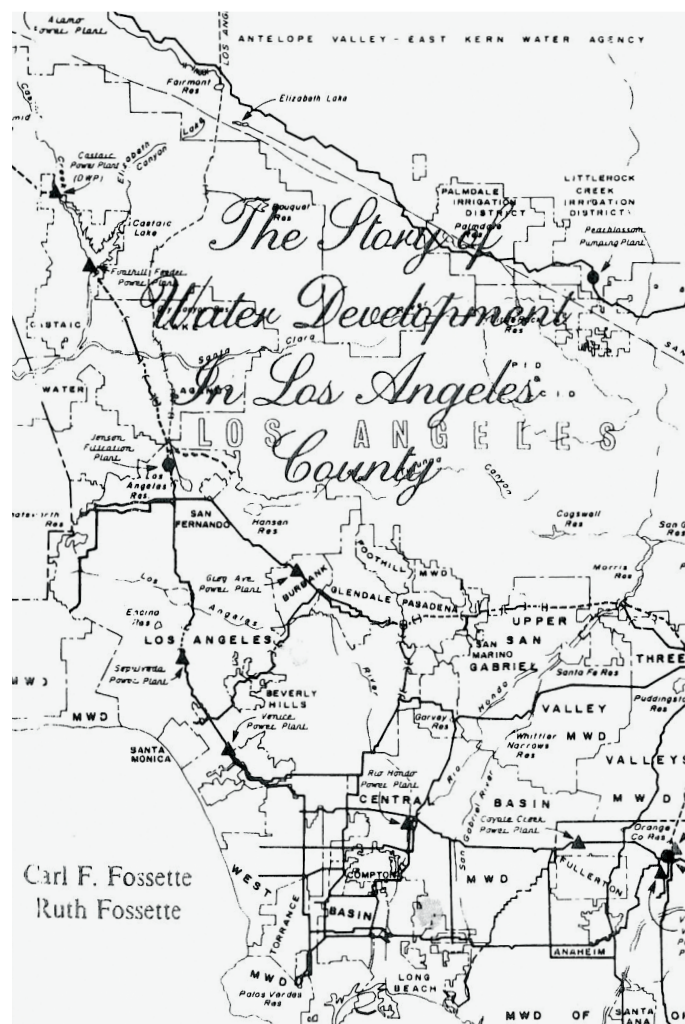
Haggott Reservoir in Torrance approximately half complete at a groundbreaking event, ca. 1986. *Image courtesy of the city of Torrance.*

W. C. Farquhar was an engineer and officer of the Richfield Oil Corporation. He was a member of the West Basin Water Survey Committee and the Ways & Means Committee of the West Basin Water Conservation Group. Like Alexander, he served on the executive committee of both associations. He was accorded life membership in the West Basin Water Association in 1957. He was a director of the West Basin Municipal Water District (1949–58) and one of its appointees to the Metropolitan Water District board (1949–76). He chaired the Metropolitan committee that crafted the plan to fund replenishment connections to the barrier system and the spreading grounds. He also chaired the Water Replenishment District Formation Committee. Farquhar Street in Los Alamitos is named for him.

Ralph Helm succeeded Kenneth Wright in 1953 as general counsel for both municipal water districts as well as lead attorney in *California Water Service Co. v. City of Compton* (which resulted in the West Basin judgment). He also represented both associations. He was the attorney on all matters related to replenishment district formation and prepared the petition language as well as the legal description of purposes and boundaries of the district. He argued the case for district formation during the hearing held by the director of the Department of Water Resources. Helm was also the city attorney for Vernon and

represented both the Upper San Gabriel Valley Water Association and the Upper San Gabriel Valley Municipal Water District.

Max Bookman was a hydraulic engineer who served in numerous capacities with the state Division of Water Resources and the state Department of Water Resources. He was the original watermaster in *California Water Service Co. v. City of Compton* and routinely reported to both associations on groundwater conditions and seawater intrusion. He was the state's adviser to the Committee of Twelve and contributed to the work of the Committee on Replenishment District Formation. Bookman devised what ultimately became the boundaries for the district. He authored the 1959 *Report on the Formation of the Central and West Basin Water Replenishment District* for the Department of Water Resources and became the new district's first consulting engineer.



Cover of *"The Story of Water Development in Los Angeles County"* (1986), by Carl Fossette and Ruth Fossette.

Carl Fossette became executive secretary of the West Basin Water Association on May 1, 1946, following a four-year stint in the U.S. Navy. For the next twenty-eight years he was the preeminent water association administrator and water agency manager in the region. In addition to administering the Central and West Basin Water Associations and the Upper San Gabriel Valley Water Association, he was the general manager upon formation of the West and Central Basin Municipal Water Districts, respectively, and of the Upper San Gabriel Valley Municipal Water District. He was the first general manager of the Central and West Basin Water Replenishment District. Fossette was indispensable to the development and formation of the municipal water districts as well as the Central and West Basin Water Replenishment District, essentially serving as the campaign manager for each. He published the *West Basin*

Water News and the *Central Basin Water News*, chronicling developments in both basins. He and his wife, Ruth, wrote *The Story of Water Development in Los Angeles County* (1986). After his retirement from association and agency work, he represented the Central Basin Municipal Water District on the Metropolitan Water District board (1973–86).

The reality, of course, is that the formation of the Water Replenishment District was the work of many hands. The contributions of the big six were supplemented, enhanced, or made possible by others whose roles were critical.

WEST BASIN

O. A. Gierlich was the public works director for Manhattan Beach. He founded and chaired the West Basin Water Survey Committee and served as chair of the West Basin Ground Water Conservation Group. He also chaired the Ways and Means Committee. He was vice president of the West Basin Water Association (1946–56). He introduced the proposal to seek state funding for the seawater barrier demonstration project in Manhattan Beach and was an early advocate of the use of reclaimed water for barrier injection and spreading in West Basin.

Allan Harris was vice president of the Johns-Manville Products Corporation. He was a member of the West Basin Water Survey Committee and the Ways & Means Committee of the West Basin Ground Water Conservation Group. He succeeded Ben Haggott as president of the West Basin Water Association in 1956 and was a member of the Water Replenishment District Formation Committee.

R. R. Thorburn was an engineer for Standard Oil Company of California. He was on the Executive Committee of the West Basin Water Association and was accorded honorary life membership in the association upon his retirement in 1956. He chaired the association's Committee on Water Replenishment District Formation and was a relentless advocate for the use of reclaimed water for spreading in West Basin as well as for seawater barrier injection. Thorburn prepared the detailed comparison of the advantages and disadvantages of one district rather than two that led to West Basin Water Association's support for a single district.

CENTRAL BASIN

Harlan A. Cate was president of the Cate Ditch Company, a private irrigation company serving mainly agricultural customers in the Pico Rivera area until World War II. He helped

organize the San Gabriel Protective Association to protect the flow and use of water from the San Gabriel River as well as the Pico County Water District, both in 1920. He was a director of the Pico County Water District until 1956, serving as president for most of his thirty-six-year tenure. As president of the Cate Ditch Company, he pioneered the first spreading of floodwaters below what is now the Whittier Narrows Dam, a model followed by the Los Angeles County Flood Control District when it constructed spreading grounds in the 1930s. Cate was the founding executive secretary of the Central Basin Water Association. As a member of the association's board, he was an advocate for the formation of both the Central Basin Municipal Water District and the Central and West Basin Water Replenishment District.

Brennan S. Thomas was general manager of the Long Beach Water Department (1944–67). He was a member of the Executive Committee of the Central Basin Water Association and represented the association on the Committee for Replenishment District Formation. He was the first person to propose a single replenishment district to include both basins and served on the Replenishment District Formation Committee. He also initiated the case of *Water Commissioners of City of Long Beach v. San Gabriel Valley Water Co.*, which resulted in the Long Beach judgment. The administration building of the Long Beach Water Department is named for Thomas.



Huntington Park City Hall, ca. 1938. *Image courtesy of Los Angeles Public Library.*

H. E. Robinson was the city engineer for Huntington Park. He was the first president of the Central Basin Water Association and active in the campaign to form the Central Basin Municipal Water District. He was the first president of the board of that district. He was a member of the Committee on Water Replenishment District Formation.

Leland R. Weaver was the mayor of South Gate. He chaired the Committee of Mayors and City Engineers in support of

the formation of the Central Basin Municipal Water District as well as the Central Basin Water Committee to circulate petitions and run the campaign. He also chaired one of the five replenishment district petition committees and ran but lost to another member of the South Gate city council in a bid to become a water replenishment district director. The main

library in South Gate is named for him.

R. J. Furlong was the mayor of Vernon. After the Metropolitan Water District denied Vernon's application to become a member, Furlong became active in the Central Basin Water Association, succeeding H. E. Robinson as president in 1953, after Robinson was elected to the Central Basin Municipal Water District board. Furlong actively pursued inclusion of the Upper San Gabriel Basin in a three-basin replenishment district and urged groundwater producers there to form an association. Furlong was a member of the Committee on Water Replenishment District Formation.



Leland R. Weaver, mayor of South Gate, at his desk, ca. 1960. He helped run the campaign to form the Water Replenishment District. *Image courtesy of Los Angeles Public Library.*



Cars travel in both directions on Atlantic Boulevard, south of Bandini Boulevard, in Vernon, June 22, 1938. At far left is a water tower; toward the middle of the shot are warehouses and a Foster and Kleiser billboard depicting a California mission to promote the "enduring value" of GM automobiles. *Image courtesy of Los Angeles Public Library.*

LOS ANGELES COUNTY

H. E. Hedger was the chief engineer for the Los Angeles County Flood Control District (1938–59). He was instrumental in drafting and securing legislation to establish conservation zones within which water may be reclaimed, acquired, imported, and spread to replenish the aquifer and to levy a property tax to pay for such activities. With A. M. Rawn of the Los Angeles County Sanitation Districts, he coauthored *The Reclamation of Water from Sewage and Industrial Waste*, a 1949 report. Hedger and Finley Laverty were credited by the West Basin Water Association “for undertaking the first constructive move to demonstrate the feasibility of saving the West Basin groundwater supply through replenishment.”

Paul Baumann was the assistant chief engineer for the Los Angeles County Flood Control District between 1939 and 1959. He is credited with designing, building, and successfully demonstrating the effectiveness of freshwater barriers for control of seawater intrusion into coastal groundwater basins. He pioneered the testing and ultimate use of reclaimed wastewater for spreading. His work proved the feasibility and effectiveness of large-scale water spreading to restore and replenish groundwater basins. He and Laverty often worked as a team and jointly made reports at the board meetings of the two associations.

Finley B. Laverty was the lead engineer for the Hydraulic Division of the Los Angeles County Flood Control District. He supervised the experiment to use treated wastewater from the Hyperion Water Reclamation Plant for spreading and barrier injection in the West Basin and oversaw the spreading grounds in Central Basin. Laverty and Bauman managed the conservation zone programs and coordinated the county’s substantial support for replenishment activities and formation of a replenishment district.

A. M. Rawn worked for the Los Angeles County Sanitation Districts from 1924 to 1958, much of the time as its chief engineer and general manager. He partnered with the Los Angeles County Flood Control District to test the feasibility of spreading reclaimed water for groundwater replenishment. He was the author of many technical reports on sewage disposal and reuse of wastewater. He wrote a history of the County Sanitation Districts (“Narrative – C. S. D.,” 1958) that documents their pioneering work to beneficially reuse wastewater and reclaimed water.

ATTORNEYS

Kenneth K. Wright was the plaintiff’s attorney in the Raymond Basin case, which



Model of Department of Water and Power headquarters in 1960s. Image courtesy of USC Digital Library - Los Angeles Examiner Photographs Collection.

established the doctrine of mutual prescription of water rights. His testimony before the Ways & Means Committee of the West Basin Water Conservation Group led to the filing of the West Basin Petition for Adjudication and his service as lead attorney in that case (*California Water Service Company v. City of Compton*). He subsequently became general counsel to both associations and the two municipal water districts. Upon his death in 1953, he was succeeded in these capacities by Ralph Helm.

James Krieger represented the Western Municipal Water District and was a member of the Committee of Twelve. He drafted the Water Replenishment District Act and the Water Extractions and Diversions Act. He appeared before both associations to urge support for a replenishment district to include both basins. He was a founding partner in the firm of Best, Best & Krieger.

Rex Goodcell Jr. was the assistant city attorney for Los Angeles assigned to the Department of Water and Power. He was one of two Los Angeles representatives on the Committee of Twelve. He chaired the settlement committee, which was instrumental in the voluntary curtailment of groundwater production in the West Basin, and often represented the city of Los Angeles at meetings of the association boards. He was a member of the Replenishment District Formation Committee.

METROPOLITAN WATER DISTRICT

Joseph Jensen was appointed to the board of the Metropolitan Water District (1946–74) by the city of Los Angeles, and he served as board president for most of his tenure. He was a petroleum engineer. Unlike his Los Angeles colleagues on the board, he was a staunch advocate for the replenishment district and orchestrated the Metropolitan Water District's Policy on Replenishment as well as its construction of a distribution system to the spreading grounds and seawater barrier system. He argued that a replenishment district was more important to the region than the state water project. He was a principal witness on behalf of the proposed

new district at the hearing by the California Department of Water Resources. Metropolitan Water District's Jensen Treatment Plant in the San Fernando Valley is named for him.

R. B. Diemer worked for the Metropolitan Water District from 1929 to 1961, the last ten years as its chief engineer and general manager. He oversaw the design and pricing for the distribution system to serve the spreading grounds and seawater barrier. He was also a witness on behalf of the proposed new district in the hearing held by the Director of the Department of Water Resources. The Metropolitan Water District's Diemer Treatment Plant in Orange County is named for him.



Metropolitan Water District's Jensen Treatment Plant in the San Fernando Valley, 1972. *Image courtesy of Metropolitan Water District of Southern California.*



Metropolitan Water District's Diemer Treatment Plant in Orange County, 1963. *Image courtesy of Metropolitan Water District of Southern California.*

ENGINEERS AND GEOLOGISTS

Joseph F. Poland was a geologist with the U.S. Geological Survey. His 1944 testimony before the Ways & Means Committee of the West Basin Water Conservation Group included a report, *Production, Replenishment and Overdraft*, that documented the progression of



Engineers at work at the Montebello Forebay Spreading Grounds, date unknown. *Image from the WRD archives.*

seawater intrusion and the idea of a freshwater mound to contain it. He was a principal coauthor of the 1948 USGS report *Geology, Hydrology and Chemical Character of the Ground Water in the Torrance–Santa Monica Area*, the 1956 report *Ground Water Geology of the Coastal Zone in the Long Beach–Santa Ana Area*, and the 1959 report *Hydrology of the Long Beach–Santa Ana Area*.

Harold Conkling was deputy state engineer for the California Division of Water Resources from 1921 to 1945. He supervised state reports for thirty groundwater adjudications, including Raymond Basin. As a private consultant, he prepared *An Imported Water Supply for West Basin*, a 1945 report to the West Basin Water Conservation Group that served as the main impetus for forming the West Basin Municipal Water District. He also prepared reports on overdraft conditions for the Central Basin Water Association.

CHAPTER

8

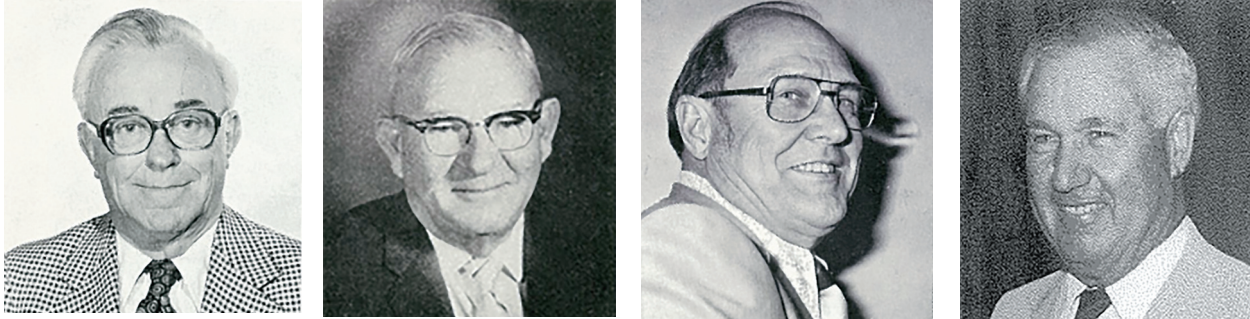
1960s: GETTING STARTED

The organizational meeting for the board of directors of the new Central and West Basin Water Replenishment District took place about six weeks after the election, on December 28, 1959, at the Central Basin Municipal Water District headquarters in the city of Downey.

In addition to approving formation of the replenishment district, voters on November 17 selected the first directors for its five divisions:

- Division 1. William P. Malloy, Los Angeles lawyer
- Division 2. Charles D. Barker, Standard Oil of California executive and West Basin Water Association director

- Division 3. Lloyd Leedom, a Long Beach Realtor, member of the Long Beach Water Commission as well as the Metropolitan Water District board since 1945, and a co-chair of the petition committee
- Division 4. Russell L. Hardy, South Gate council member and real estate appraiser for the Los Angeles County Sanitation Districts
- Division 5. D. W. Ferguson, president of Quaker City Savings & Loan in Whittier and a co-chair of the petition committee



First WRD Board of Directors, ca. 1959. From left: Charles D. Barker, Lloyd C. Leedom, Russell L. Hardy, and D.W. Ferguson (William P. Malloy not pictured.) *Images from the WRD archives.*

The elections of Malloy and Hardy were something of a surprise inasmuch as they had defeated association-backed candidates, each of whom had long been active in water issues in the region. Malloy had not participated in either water association or in the campaign to form the district. He defeated E. L. “Stubby” Lynn, a private water company executive, member of the Central Basin Water Association, and one of the five co-chairs of the petition committee. Hardy defeated Leland Weaver, another association member and petition committee co-chair who was the mayor of South Gate.



Iris Crochet, WRD Director, Division 1

The board’s first action was to elect Lloyd Leedom board president, a position he would hold for all but the last six months of his twenty-year tenure. The board also held a drawing to establish the initial terms of its members. Barker and Ferguson drew terms that would expire on December 31, 1960. The remaining directors drew terms expiring on December 31, 1962.

Ferguson would serve for thirty-one years, Barker for twenty-nine, and Hardy for twenty-five. Malloy would serve only one term, choosing not to run for reelection in 1962. He was succeeded by Iris Crochet, a member of the Inglewood City Council. Crochet was the first

woman elected to any water district governing board in Southern California. She served for sixteen years.

GETTING DOWN TO WORK

In early 1960 the board took out a bank loan of \$100,000 against the district's anticipated revenue, adopted a tentative budget, rented office space for \$40 a month from the Central Basin Municipal Water District in Downey, adopted a seal and letterhead, appointed staff, and hired a general counsel and consulting engineer.

Carl Fossette was appointed general manager, and John G. Joham Jr., an engineer in the state watermaster's office, was named assistant general manager. Fossette would serve until May 31, 1974; Joham would succeed Fossette and serve until December 1989.



Carl Fossette, WRD General Manager

Thomas Bewley of the law firm Bewley Lassleben was named the district's attorney. Bewley was a business lawyer, and one of his law partners was Richard Nixon, both before his entry into politics and for a brief period between his unsuccessful campaigns for president in 1960 and governor in 1962. Bewley and Ferguson, the Director for division 5, were residents of Whittier and active in civic affairs. Martin Whelan, an associate in Bewley Lassleben who had water expertise, became the de facto attorney for the district and, in 1967, its general counsel, a position he held until he retired in December 1989.



John G. Joham Jr., WRD Assistant General Manager

The firm of Bookman, Edmonston, and Gianelli was hired as the district's consulting engineer and would prepare its annual *Engineering Survey and Report* for the next thirty-two years.

Fossette and Joham were also general manager and assistant general manager of the Central and West Basin Municipal Water Districts. Bookman was the consulting engineer for all three districts. Whelan worked exclusively for the Central and West Basin Water Replenishment District. The three districts shared office space and a common staff until 1990. The replenishment

district changed its name to the Water Replenishment District of Southern California in 1991 and relocated to its own headquarters in Cerritos a year later.



The Associations had any number of choices for naming the new district they proposed to create. They chose the “Central and West Basin Water Replenishment District,” reflecting the names of two groundwater basins that largely underlie the district. In 1992, the WRD board renamed the district the Water Replenishment District of Southern California, mainly to avoid confusion with two municipal water districts respectively named for the two basins. In 2019, the WRD board shortened the name to “Water Replenishment District.” It is the only replenishment district in the state.

THE REPLENISHMENT DISTRICT'S MISSION AND OBJECTIVES

It is not as if the board, staff, and consulting engineer did not know what they were getting into. Most had years—in some cases decades—of experience that prepared them to move quickly to address the mission and objectives of the new district. The objectives had long been articulated:

- Recharge the groundwater
- Repel the intrusion of seawater
- Reduce pumping by all means possible, including petitions to adjudicate water rights

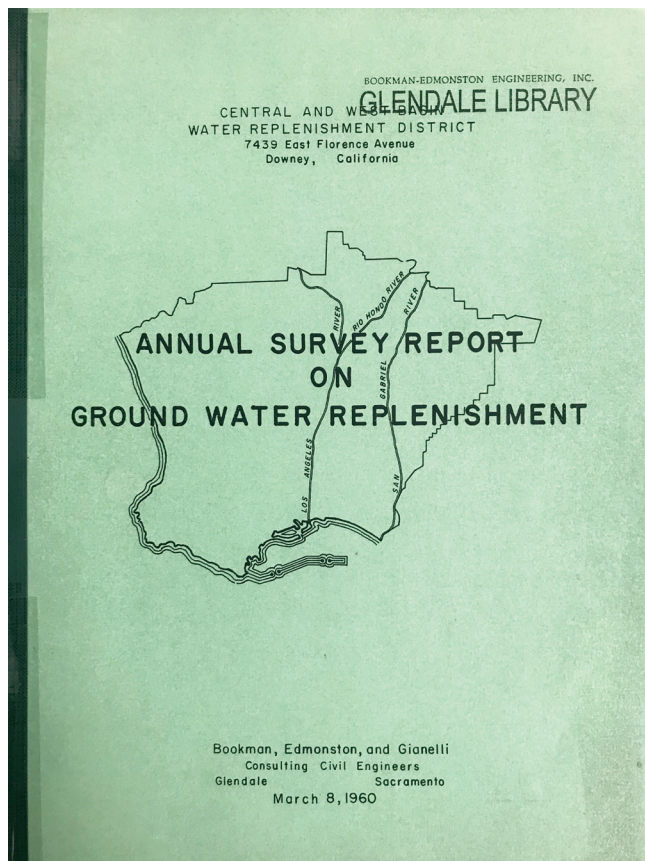
With almost laser-like focus, WRD took steps, systematically and relatively quickly, to

meet these objectives. Indeed, while recharging the groundwater remains a continuing purpose of the district, the agency achieved its other two objectives within eight years of its formation.

In his first *Engineering Survey and Report*, March 8, 1960, Max Bookman acknowledged the ongoing replenishment activities of the Los Angeles County Flood Control District. That district had constructed the Rio Hondo Coastal Spreading Grounds in 1938 and the San Gabriel Coastal Spreading Grounds a year later. Under contract to the state, the district had completed construction in 1953 of the West Coast Basin Seawater Barrier Demonstration Project in Manhattan Beach. In 1952 the Board of Supervisors had established Conservation Zone I, covering most of the Central Basin area. In 1953 the board had established Conservation Zone II, covering most of the West Basin area. An annual property tax of five cents per \$100 of assessed valuation was levied on all property owners within the zones to fund operations in both.

Under the Zone I program the Flood Control District had purchased imported Colorado

River water for the spreading grounds since 1953–54. The district had used zone I money to buy 403,300 acre-feet for spreading in the Montebello Forebay. Zone II had bought 25,090 acre-feet of treated imported water to inject into the West Coast Basin Seawater Barrier since 1952–53. The Central and West Basin Water Replenishment District took over the purchase of water for barrier injection on February 1, 1961. Zone II funds were also used in 1960–61 to fund the expansion of the West Coast Basin Seawater Barrier. In the six years before the replenishment district was formed, the Flood Control District had spent \$7.5 million to buy water for the spreading grounds and barrier injection, expansion of the West Coast Basin Seawater Barrier, and to investigate the feasibility of building



First Engineering Survey Report on Groundwater Replenishment, ca. 1960. *Image from the WRD archives.*



The reality was that in early 1960, as replenishment district personnel got down to work, groundwater extractions continued to outpace the combination of natural and artificial replenishment, and the West Coast Basin Seawater Barrier alone could not stem the relentless intrusion of seawater into the coastal areas of both basins.

additional seawater barriers in the Dominguez Gap and Alamitos Bay areas.

Bookman also saw value in the voluntary curtailment of pumping by certain West Coast Basin pumpers under an interim agreement reached in 1955 in connection with the ongoing West Basin adjudication.

According to Bookman's report, "While all of these measures have been of great value in protecting the groundwater resources of the area, they have not provided a complete solution to the problem of overdraft on the groundwater basin. A complete solution is necessary if the utility of this valuable resource is to be preserved." The reality was that in early 1960, as replenishment district personnel got down to work, groundwater extractions continued to outpace the combination of natural and artificial replenishment, and the West Coast Basin Seawater Barrier alone could not stem the relentless intrusion of seawater into the coastal areas of both basins.

In the first *Annual Engineering and Survey Report*, Bookman developed several estimates of the status of the two basins, while acknowledging he had limited data on which to base his calculations. He noted that ongoing investigations by the Los Angeles County Flood Control District and state Department of Water Resources might require modification of his calculations:

- The accumulated overdraft exceeded 700,000 acre-feet.
- In 1958–59 extractions totaled 334,600 acre-feet, with extractions of 338,800 acre-feet expected in 1959–60.
- In 1958–59 pumping by producers had led to an annual overdraft of 258,400 acre-feet, with the overdraft for 1959–60 likely to total 249,100 acre-feet.

Bookman's first-year recommendations to the board were relatively modest, in part because the distribution system of the Metropolitan Water District limited flows to the spreading

grounds to 150,000 acre-feet per year. Because the Flood Control District planned to use Zone I funds to buy 80,000 acre-feet of imported water to address the accumulated overdraft, he recommended that WRD purchase 70,000 acre-feet “toward the alleviation of the annual overdraft.” He also recommended that it purchase 5,000 acre-feet of treated water for injection into the West Coast Basin Seawater Barrier.

Given the rates charged by the Metropolitan Water District, he estimated all WRD’s water purchases (75,000 acre-feet) would cost \$994,375 (\$8.6 million in 2019 dollars). He estimated producers would pump 342,375 acre-feet in 1960–61 and recommended assessing the pumpers \$3.19 per acre-foot of water pumped in that first year; this would bring in just under \$1.1 million and allow the replenishment district a small surplus. The board adopted the recommendation.

Bookman’s recommendations in subsequent editions of the *Annual Survey and Report* and two other significant reports prepared at the board’s request would become much more aggressive.

First, he drew up what amounted to a strategic plan to more fully carry out the district’s mission. His *Report on Groundwater Replenishment and Basin Management in the Central and West Basin Water Replenishment District*, dated November 3, 1960, detailed the challenges facing the district and provided the blueprint for meeting them.

Bookman prefaced his report by noting that groundwater basin management is hard work, “much more complex than the operation of water supplies that are stored behind dams and reservoirs and then withdrawn for use. In the case of a dam and reservoir, the withdrawals are controlled by a single entity, whereas withdrawals from ground water basins are generally accomplished through the independent operations of numerous overlying owners. Management of ground water basins, therefore, requires close coordination of the operations of all the overlying owners in their use of both underground and imported surface water supplies.”

He recommended that WRD “immediately supplement its present program of groundwater replenishment and basin management” by:

1. Supporting efforts to secure money for the immediate construction of coastal barriers (at the Dominguez Gap and along Alamitos Bay).
2. Purchasing as much Colorado River water as possible for spreading in the Montebello Forebay. Bookman and officials at the Metropolitan Water District then assumed that the amount of Colorado River water for replenishment would

- reach its peak in 1965; availability would decline thereafter because of increased demands for potable water. He recommended Zone I and the replenishment district combined should buy as much as 250,000 acre-feet per year, or as much as the capacity of the spreading grounds and Metropolitan Water District's ability to deliver it would allow.
3. Encouraging producers to buy imported water instead of pumping groundwater. Embedded in this recommendation was the notion that Central Basin pumpers should emulate the voluntary cutbacks of their West Basin brethren and begin looking at the adjudication of water rights.

The report said, "Plans to construct a pilot wastewater reclamation plant in the vicinity of Whittier Narrows . . . are going forward. This plant will treat sewage flowing from the San Gabriel Valley, producing an effluent of reclaimed water which can be spread in the Montebello Forebay." The report was prescient, noting that "this source of spreading water may become an important element in the program in the years to come when available quantities of Colorado River water for spreading are reduced."



Colorado River Aqueduct, transporting water through the Mojave Desert, ca. 1970s. *Image courtesy of Metropolitan Water District of Southern California.*

CONTROLLING AND REDUCING GROUNDWATER PUMPING IN THE CENTRAL BASIN

The second report Bookman prepared, dated October 10, 1961, was *Control and Reduction of Ground Water Pumping in the Central Basin*. Shortly after his November 1960 report was published, the replenishment district's board asked Bookman to provide engineering support to the Central Basin Water Association as it considered a petition to adjudicate water rights. The resulting report became the principal engineering basis for the Central Basin adjudication. Among other things, the report quantified water use in calendar year 1957 and 1960–61 by pumper and calculated a possible 1961 prescriptive right for each pumper, allowing credit for imported water use by pumpers that were connected by pipeline to the Central Basin Municipal Water District. The report discussed what a 25 percent curtailment in pumping from 1960 levels would look like (214,000 acre-feet) and described

how an exchange pool would work for those pumpers without access to imported water. (Pumpers with unused rights would put them into the exchange pool, and a pumper wanting to pump more water than it had rights to could purchase water from the pool.)

“The objective,” Bookman’s report said, “will be to stabilize groundwater pumping in the District at an average annual amount equal to the average annual recharge from natural sources plus water spread or injected for replenishment purposes.”

When he was the principal hydraulic engineer for the state Department of Public Works (predecessor to the Department of Water Resources), Bookman had prepared the *1952 Report of Referee* in connection with the West Basin adjudication and served as watermaster for the 1955 interim agreement for voluntary curtailment of groundwater production by major parties to the adjudication. Not surprisingly, he based his prescriptive rights formula for Central Basin on the voluntary (and soon to be mandatory) curtailment on the West Basin side.

The estimates Bookman provided in his report turned out to be remarkably accurate, even though he had no empirical data on actual groundwater pumping, natural inflow, and retained local stormwater, and courts had at that point made no determination of rights in either basin.

Using his formula, he estimated a Central Basin judgment determination of rights collectively would be 214,000 acre-feet annually. The court ultimately allowed an annual pumping allocation of 217,367 acre-feet. On the West Basin side Bookman estimated the court would permit annual pumping of 64,000 acre-feet. The final judgment fixed

the rights at 64,468.25 acre-feet. Bookman estimated natural inflow for replenishment at 142,000 acre-feet per year. The 2017–18 *Engineering Survey and Report* determined the thirty-year average for natural inflow was 145,205 acre-feet. To support what Bookman estimated to be pumping rights over and above natural inflow, he estimated that average annual artificial replenishment through the spreading grounds and a built-out seawater barrier system would require 136,000 acre-feet. He was a bit off. Through 2017–18 the average



View of the San Gabriel Valley overlooking the Hacienda Heights area. In the foreground is the Pomona Freeway. At right center is Mount Wilson. Ca. mid-1960s. *Image courtesy of Los Angeles Public Library.*

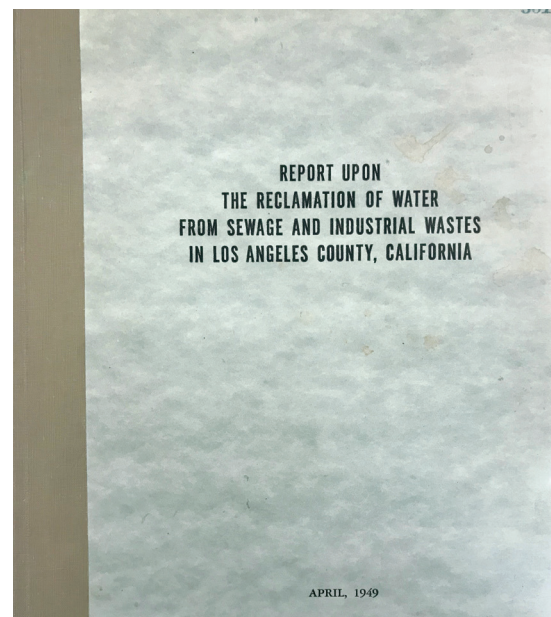
artificial replenishment over fifty-eight years was 161,000 acre-feet per year.

As it turned out, the *Report on Groundwater Replenishment and Basin Management in the Central and West Basin Water Replenishment District and Control and Reduction of Ground Water Pumping in the Central Basin* provided the strategic plan, the blueprint, and the guidance that enabled the Central and West Basin Water Replenishment District, along with its county partners and the pumping community, to bring the basins into a more healthy balance in a relatively short period of time.

The volume of water purchased for artificial replenishment at the spreading grounds and the West Coast Basin Seawater Barrier increased tremendously one year after Bookman's first report. In 1961–62 imported water purchases totaled an astonishing 212,582 acre-feet, 20,000 acre-feet more than the total imported water supply for direct use in WRD's entire service area. While never again reaching that peak, the investment in imported water for replenishment during the remainder of the decade was impressive. Nearly half (49.12 percent) of all imported water purchased for recharge in the Montebello Forebay Spreading Grounds since 1960 was purchased in the first twelve years of the replenishment district's existence.

SOLUTIONS

An alternative to using imported water for replenishment lay in a 1949 report by A. M. Rawn and H. E. Hedger of the County Sanitation Districts and Flood Control District respectively, along with C. E. Arnold, the Los Angeles County Engineer and Surveyor. Rawn, Hedger, and Arnold had written *The Reclamation of Water from Sewage and Industrial Waste*, a landmark study documenting the field tests their agencies had conducted in Whittier in 1948 to determine the large-scale feasibility of using treated wastewater as a replenishment supply. Results of those tests were the basis for WRD's decision in 1960 to invest in what became the Whittier Narrows Water Reclamation Plant. Under a three-party agreement the Flood Control



Landmark report on the use of reclaimed water for groundwater replenishment, April 1949. *Image from the WRD archives.*

District built the plant, the Sanitation Districts supplied the effluent and operated the facility, and WRD financed the \$1.7 million construction cost (\$14.5 million in 2019 dollars).

The plant began operations on August 20, 1962. WRD borrowed the money from the county and repaid the loan in full on September 27, 1975. WRD has used 630,000 acre-feet (more than 200 billion gallons) of treated water produced by the plant since

1962. This was the first water reclamation plant in the world built for the specific purpose of producing recycled water for groundwater replenishment.



Whittier Narrows Water Reclamation Plant. WRD began using recycled water from this plant in 1962. *Image from the WRD archives.*

Protecting the Volume of Natural Flow

On September 24, 1965, the city of Long Beach settled the suit it had brought against Upper San Gabriel Valley pumpers more than six years earlier to protect natural inflow to the Central Basin area in the face of increasing development and pumping. The court accepted the settlement and made its terms retroactive to October 1, 1963. According to the settlement, also known as the Long Beach judgment, the “Lower Area,” meaning the Central Basin area, was entitled to a long-term average of 98,415 acre-feet of usable water per year from the Upper San Gabriel area. The historic average was based on the average rainfall from 1935 to 1959.

Since 1965 pumpers in the Upper San Gabriel Valley have supplied 215,121 acre-feet of “makeup water” for periods when the rolling ten-year average fell below the 98,415 acre-foot entitlement.

Stopping Seawater Intrusion

The Alamitos Barrier, the first of two major expansions of the seawater barrier system, was completed in January 1964 and began operations in February 1965. Construction of the Dominguez Gap Barrier began in 1968 and was completed in 1971.

In-Lieu Replenishment Program

To encourage the use of Colorado River water in lieu of pumping in areas of the basins not easily recharged through surface spreading because of their distance from the

Montebello Forebay, WRD executed its first contract for “in-lieu” replenishment on November 18, 1965. The contract provided for paying the California Water Service Company for not pumping up to 1,000 acre-feet of water it had a right to pump under the court judgment in the West Basin case. The district arrived at the payment of \$12.33 per acre-foot by subtracting the replenishment assessment of \$7.31 per acre-foot from the average cost per acre-foot of imported water it bought to replenish the basin, or \$19.64 per acre-foot. Thus water left in the ground was deemed a form of replenishment at no net increase in cost to the district. Since 1965 WRD has replenished 873,321 acre-feet under this program.



LEGEND

- LOCATION OF COMPLETED INJECTION WELLS
- LOCATION OF INJECTION WELLS TO BE COMPLETED

ALAMITOS BARRIER PROJECT

Location of the Alamitos Seawater Barrier, 1966. *Image from the WRD archives.*

Limiting Groundwater Production

The petitions to adjudicate groundwater extraction rights in both basins were concluded by the mid-1960s. The final judgment in the West Basin case limits extractions to 64,468.25 acre-feet per year and was entered on August 22, 1961, nearly seventeen years after it began.

That case greatly assisted the similar petition to adjudicate groundwater extraction rights in the Central Basin, which had been filed on January 22, 1962. The final judgment for the Central Basin limits extractions to 217,637 acre-feet per year and was entered less than four years later, on October 11, 1965.

“GROUNDWATER BASIN MANAGEMENT IS AN ACCOMPLISHED FACT”

In his preface to the 1968 *Annual Survey Report on Ground Water Replenishment*, Bookman summarized the achievements and impact of the replenishment district in its first seven years. “The multibillion dollar economy in the Los Angeles Coastal Plain has prospered and grown with the assurance of a readily available supply of imported and underground water,” he wrote. Total water use in the district had increased 11 percent. “At the same time, groundwater production has been controlled and reduced from 339,000 acre-feet per year to 278,000 acre-feet per year, a decrease of . . . 18 percent.” The district purchased 1.06 million acre-feet of Colorado River water for replenishment, “providing \$16,300,000 in revenue to MWD,” which yielded \$5 million in revenue “over and above its costs.”

The report says, “The most critical case of sea water intrusion of ground water aquifers in California has been successfully halted by injection in fresh water barriers. Water levels in the District’s ground water basins have been raised and stabilized, providing a reliable ground water supply and a valuable ground water reserve. Reclaimed wastewater amounting to 73,000 acre-feet has been conserved. Inflow from the San Gabriel River has been adjudicated and fixed so that the natural supply will not be impaired by upstream users.

“In lieu pumping has been established to improve the pattern of pumping in critical areas and better the management program. Groundwater basin management,” he concluded, “is an accomplished fact and an outstanding example for many similar areas to follow in California and in many other localities in the United States.”

With almost dizzying speed, decisions the board made in the replenishment district’s first eight years, in collaboration with its Flood Control District and Sanitation Districts partners, provided the building blocks for the solid foundation upon which the district would stand for the decades to follow.

CHAPTER

9

1970s: RATE AND TAX UPHEAVAL

The 1970s saw the Central and West Basin Water Replenishment District dramatically increase its use of recycled water for spreading, and it seriously considered partnering with the city of Los Angeles to produce recycled water for barrier injection. The Metropolitan Water District's hikes in charges for replenishment water and the expiration of County Flood Control District Zones I and II funding resulted in increases in the replenishment assessment, which in turn led to challenges to the uniform replenishment assessment based on perceptions that it was unfair to charge pumpers in both basins the same assessment when costs of replenishment in each basin were different. The California State Water Project had more water than it knew what to do with, prompting the state Department of Water Resources to search for storage opportunities in Central Basin. In 1978 the passage of Proposition 13, which among other things cut property tax rates by 50



San Gabriel River Spreading Grounds, ca. 2015. *Image from the WRD archives.*

percent, put in doubt the continued operation of the spreading grounds, seawater barrier system, and the production of recycled water. WRD had to change the way it raised revenue to pay its bills. Also, between 1971 and 1980 it formally turned its attention to water quality monitoring and reporting, prepared its first environmental impact report under the California Environmental Quality Act, and experienced leadership changes at the board and staff levels.

AN EXPANDED COMMITMENT TO RECYCLED WATER

In 1971 WRD was using recycled water from the Pomona Water Reclamation Plant as well as the Whittier Narrows Water Reclamation Plant. In the face of higher rates set by the



Converting Waste Into Resources

Metropolitan Water District and concerns about the quality of water from the Colorado River, the replenishment district wanted to spread more recycled water as a less-expensive and higher-quality alternative to imported water. And because the

Metropolitan Water District was periodically suspending the availability of replenishment water, WRD also regarded recycled water as the more reliable option.



Pomona Water Reclamation Plant (left), an early source of recycled water for WRD, and San Jose Creek Water Reclamation Plant (right), which began supplying WRD with recycled water in 1972. *Images from the WRD archives.*

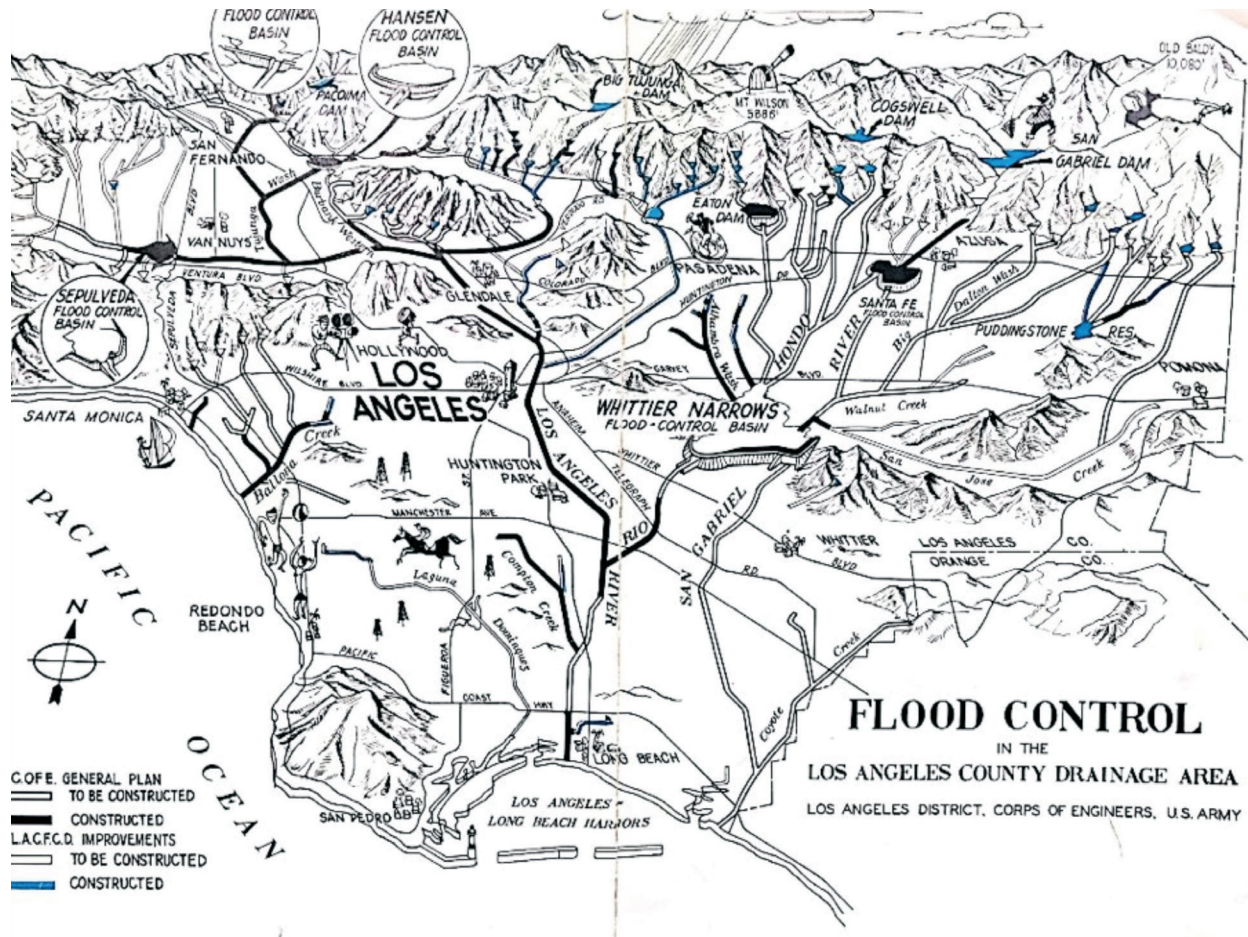
In early 1972 the replenishment district board adopted a policy prepared by Bookman entitled, *Management Principles Relating to Replenishment and Groundwater Quality*. Based on those principles, the board instructed the staff to seek “permanent rights to the output” of the Whittier Narrows Water Reclamation Plant once its expansion was completed, obtain more water from the newly constructed San Jose Creek Water Reclamation Plant, and participate in the construction of a demonstration plant at the Hyperion wastewater facility for tertiary treatment and barrier injection. The San Jose Creek Plant started water deliveries on November 1, 1972.

RECYCLED WATER FOR BARRIER INJECTION

Just as the Los Angeles County Flood Control District conducted tests in 1948 and 1949 to prove the large-scale feasibility of using treated wastewater for spreading, it also conducted pioneering tests from early 1955 through early 1958 of the potential for using treated water from the Hyperion Water Reclamation Plant for barrier injection. While pleased with the results, the Flood Control District concluded that “a third stage of treatment would be needed eventually” before injection into a seawater barrier.

Taking up where the Flood Control District left off, in 1968 the Los Angeles Department of Water and Power (LADWP) built a water injection pilot plant next to Hyperion to further test the feasibility of using





U.S. Army Corps of Engineers map: “Flood Control in the Los Angeles County Drainage Area,” ca. 1955.

reclaimed water for the West Coast Basin Seawater Barrier. The promising results prompted the department to propose a demonstration plant that would treat five million gallons per day just north of the barrier, with LADWP and WRD sharing equally the construction costs and operational risks and rewards, according to WRD minutes and LADWP reports.

Negotiations between WRD and LADWP began in 1969 and continued through 1974. Agreement appeared imminent on several occasions. On LADWP’s recommendation, in December 1972 WRD applied to the Los Angeles Regional Water Quality Control Board for a permit to use the water. However, a year later the California Department of Public Health released a position paper expressing reservations about the direct injection of treated wastewater.

The additional filtration required to satisfy the health department drove the estimated unit cost of the treated water from \$56.20 per acre-foot in 1972 to as high as \$153 per acre-foot in 1974. In 1974 the Metropolitan Water District was charging \$37.75 per acre-foot for

water for barrier injection. In January 1975 WRD formally withdrew from negotiations with LADWP.

WRD and the city of Los Angeles were perhaps twenty years too early. In 1992 advances in technology, along with regulatory and cost certainty, made it possible for the West Basin Municipal Water District to pick up where WRD and LADWP had left off. It built a facility to provide advanced treatment of Hyperion wastewater and in 1995 started producing recycled water that WRD purchased for injection into the West Coast Seawater Barrier.

In 2006 WRD completed construction of the Leo J. Vander Lans Advanced Water Treatment Facility to provide recycled water to the Alamitos Barrier. That same year the Los Angeles Bureau of Sanitation completed construction of the Terminal Island Advanced Water Treatment Plant to provide recycled water to the Dominguez Gap Barrier.

Fifty-one years after the Los Angeles County Flood Control District conducted the initial tests to prove the large-scale feasibility of treating wastewater and using it to counter seawater intrusion into the basins, all three treatment plants had expanded to provide advanced treated recycled water to meet 100 percent of the water the three barrier systems required.

STORING GROUNDWATER IN CENTRAL AND WEST COAST BASINS?

As construction of the infrastructure for the California State Water Project proceeded in the early 1970s, the Department of Water Resources was expecting the project would have 2.6 million acre-feet of surplus water during its first ten years of operation.

In August 1972 the Metropolitan Water District's general counsel asked WRD to participate in meetings of the Southern California Water Conference to explore proposals to store State Water Project water in certain Southern California basins, including the Central and West Coast Basins.



State officials meet in San Francisco on November 29, 1966 to discuss the State Water Project. *Image courtesy of Los Angeles Public Library.*



State officials and map depicting proposed aqueduct for the State Water Project, ca. 1959. *Image courtesy of USC Digital Library - Los Angeles Examiner Photographs Collection.*

The minutes of the WRD board’s meeting on January 4, 1973, reflect the agency’s skepticism of the idea, at least in the basins underlying the district: “During the discussion . . . it was noted that the ground water storage in both the Central Basin and West Basin were at sufficiently high levels to preclude storage of substantial quantities of State Project water for future emergency use.”

THE REPLENISHMENT ASSESSMENT AND BASIN EQUITY

For the first time since the replenishment district was formed, a pumper challenged the fairness of the replenishment assessment at the board’s replenishment assessment hearing on April 8, 1975. According to WRD board minutes, Bob Coates of the Downey Municipal Water Department asked “why Central Basin groundwater pumpers should have to bear a substantial burden of paying for water injected in the two coastal barriers in the West Coast Basin because assessments on pumping there did not raise enough to offset injection in that area.”

The board adopted the staff-recommended assessment for 1975–76, but in a subsequent meeting its members instructed Max Bookman, the consulting engineer, to explore alternatives to “the growing problem of financing the increasing cost of injecting water into the three coastal barriers.” They also asked him to review the “equity in the replenishment rate as applied to both the Central and West Coast Basin.”

Based on his review, the board’s minutes show that in December it adopted a resolution stating that WRD “is not aware of any inequity between the replenishment rate structure and the replenishment program in the Central and West Coast Basin areas.”

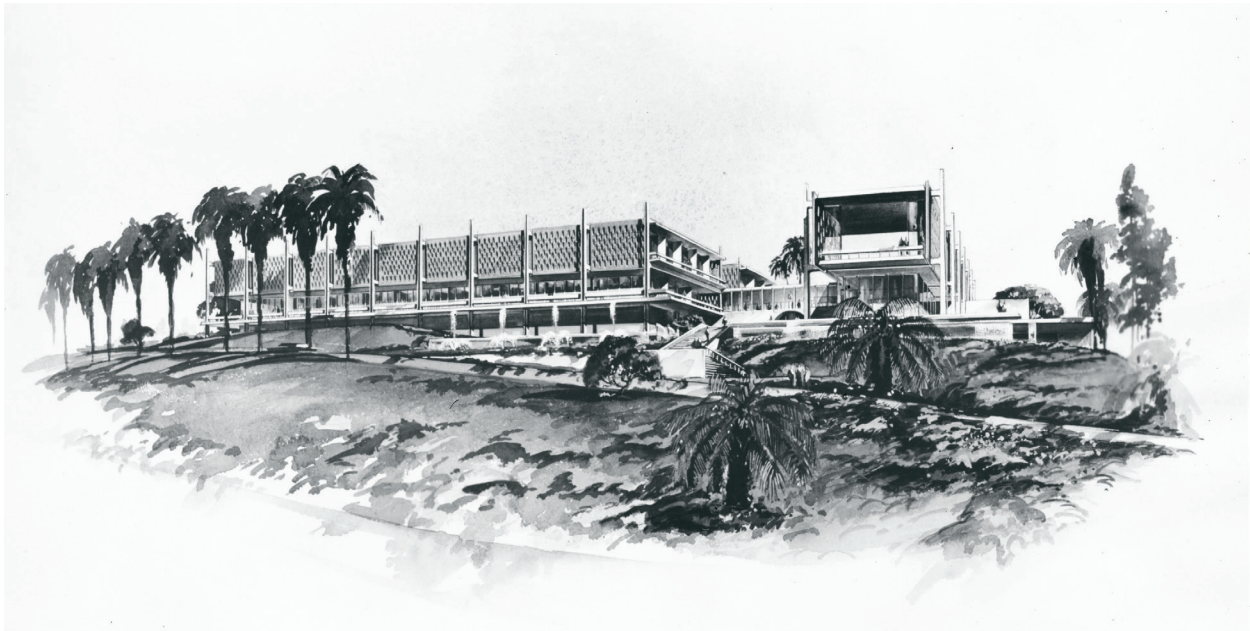
The question of basin equity and a call for separate assessments for pumpers in the two basins would be raised again by the city of Long Beach in 1987, the president of the WRD board in 1992, a state audit in 1999, the Southeast Water Coalition in 2006, a state legislator in 2007, additional legislation proposed in 2010, 2011, and 2014, and, starting in 2010, by a series of legal challenges stemming from provisions of Proposition 218 that required voter or property-owner approval of special taxes. (See Chapter 14)

METROPOLITAN WATER DISTRICT’S REPLENISHMENT RATE

The irony in the basin equity argument at the time was that some members of the Metropolitan Water District’s board thought the cost of replenishment water for spreading should be the same as the cost of filtered water for injection into the barriers. Were that the case, the cost of water for spreading in the Central Basin would have exceeded the cost of injection into the seawater barriers by \$1 million per year. As it was, the 1974–75 cost of water for injection was \$1.3 million; for spreading, it was \$1.7 million.

The Metropolitan Water District’s rate structure had been under attack by some of its own members since the early 1960s. Rates charged for all classes of water (filtered domestic, untreated replenishment, untreated agricultural) were low because property tax payers in the agency’s service area heavily subsidized its rates. The city of Los Angeles for years objected to the agency’s reliance on the property tax because the city purchased relatively little imported water from the district but contributed a disproportionate share of property tax revenue, thus underwriting much of the cost of water used by other members, including cities throughout the district’s service area. Los Angeles argued that water rates should be progressively increased as Metropolitan Water District property tax rates progressively declined.

Even as WRD was in formation, Los Angeles objected to any future replenishment assessment that was lower than the Metropolitan Water District's rate for potable water because a low replenishment assessment encouraged groundwater pumping at the expense of potable water sales and because Los Angeles property tax payers would be subsidizing artificially low replenishment rates to the benefit of pumpers predominantly outside the city.



Rendering of the Metropolitan Water District headquarters building in Los Angeles from 1961. *Image courtesy of USC Digital Library - Los Angeles Examiner Photographs Collection.*

Then, in 1971, agencies from the Riverside and San Bernardino areas that were members of the Metropolitan Water District filed a legal challenge to the replenishment rate (*Daar v. MWD*). The litigants sought to eliminate the price differential between potable water and replenishment water. After WRD joined the case in support of Metropolitan, the court granted WRD's motion for summary judgment in April 1976. The decision upheld Metropolitan's authority to charge different rates for different classes of water. A few months later, however, the city of Los Angeles sued Metropolitan, challenging the way the agency set its rates generally and alleging the agency was overly reliant on the property tax and the preferential replenishment rate. A settlement was reached in 1977, with Metropolitan agreeing to reduce its property tax rate over time. The settlement left intact the agency's authority to charge different rates for different classes of water.

Although Fossette or Bookman showed up to make the case year after year, seemingly lost in the annual debates at the Metropolitan Water District was that replenishment water was

untreated, seasonal, and subject to disruption at any time, thus warranting a significantly lower rate than treated, uninterrupted potable water.

Despite the controversy, Metropolitan's rate differential for replenishment and potable water would decline only slightly during the decade. In 1971–72 the Metropolitan rate for potable water was \$32 per acre-foot. In 1980–81 it was \$86.75, an increase of 271 percent in ten years. The charge for replenishment water was \$24 per acre-foot in 1971–72. In 1980–81 it was \$61.75, an increase of 257 percent. During the same period of time WRD's replenishment assessment went from six dollars per acre-foot to fifteen dollars, an increase of 250 percent.

PROPOSITION 13

The passage of Proposition 13 (the “Jarvis Initiative”) at the June 6, 1978, election fundamentally changed the property tax system in California. In addition to placing a limit on property tax assessments, it required a two-thirds vote of the electorate to increase property tax rates. Especially hard hit were local jurisdictions, including special districts that relied on property tax revenues to fund projects and programs. Assessed valuations of property were rolled back and frozen at their 1976 levels, with future increases limited to no more than 2 percent per year. The immediate impact was to reduce property tax rates by about 57 percent throughout the state, abruptly and sharply reducing revenue to local jurisdictions and special districts, including WRD.

OTHER CHANGES AT WRD

For its first twenty years, the makeup of WRD's board was remarkably stable, with only one incumbent (William Malloy) choosing not to run for reelection, and that was in 1962. Iris A. Crotchet, first elected in 1962, chose not to seek reelection in 1978. She was succeeded by Louis J. Kenny of Inglewood.

Lloyd Leedom, who had been president of the board since the agency's founding in 1959, stepped down in January 1979 but remained on the board until the following June when he resigned because of poor health. Russell Hardy was elected president of the board. The board appointed Clyde N. Moore, the retired general manager of the Long Beach Water Department, to replace Leedom that August. Three months later Warren Harwood, a member of the Long Beach City Council, defeated Moore in a special election and was sworn in on December 11.



Louis J. Kenny, WRD Director,
Division 1



Clyde N. Moore, WRD Director,
Division 3



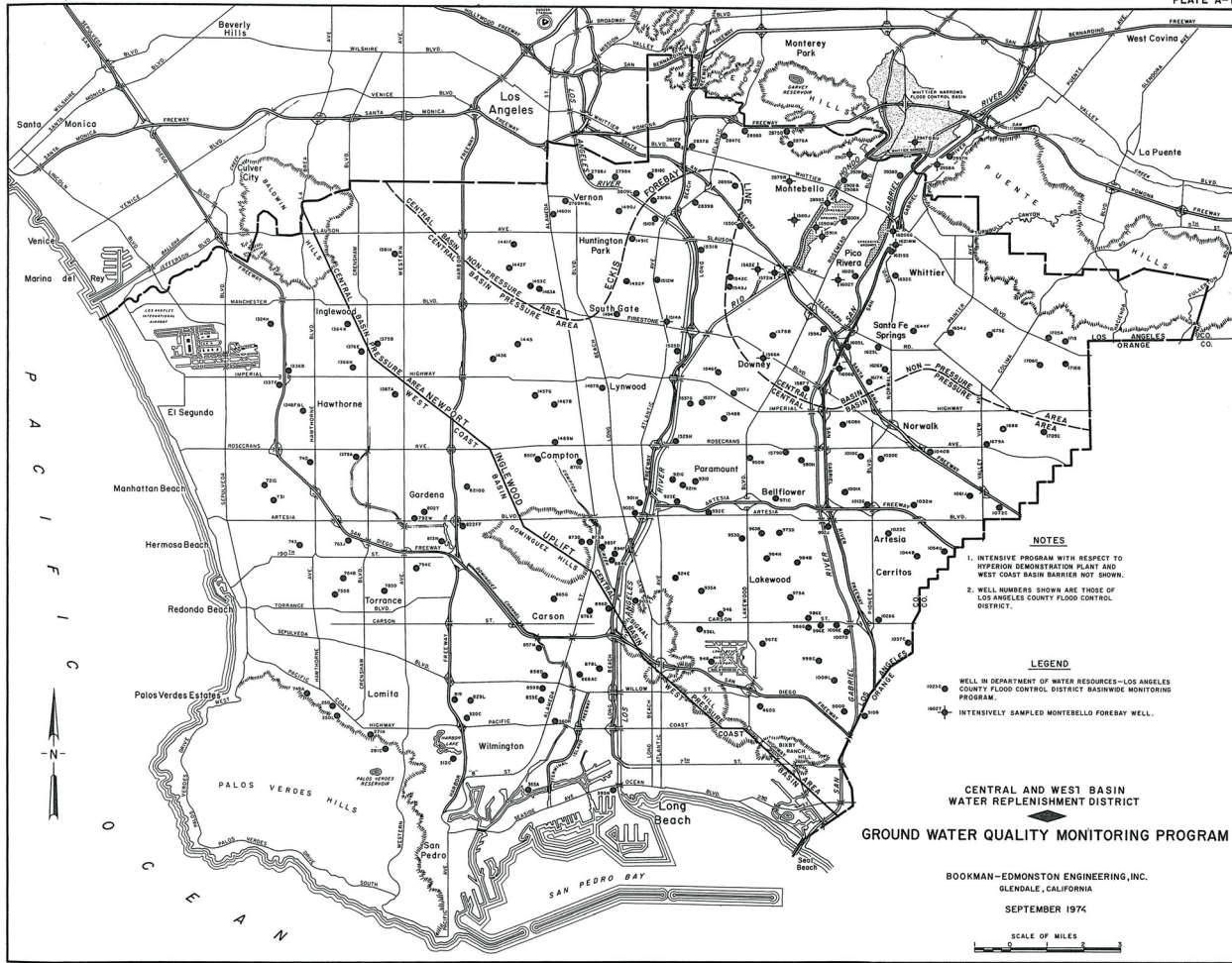
Warren Harwood, WRD Director,
Division 3

As Carl Fossette was reaching the state's then-mandatory retirement age of sixty-five for public employees, he stepped down from his position of general manager at four water districts, including WRD, on May 31, 1974. All four soon hired him as a consultant, and the Central Basin Municipal Water District appointed him to the board of the Metropolitan Water District. He served on that board until his death in 1986. Fossette was succeeded by John Joham, who would remain general manager of WRD until December 31, 1989.

THE CALIFORNIA ENVIRONMENTAL QUALITY ACT AND WATER QUALITY REPORTING

The California Environmental Quality Act (CEQA) took effect in 1971. Among many other things, it required state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those actions. WRD's first environmental impact report under CEQA was prepared in connection with the 1973–74 groundwater replenishment program.

Prepared by Bookman and Edmonston, the WRD's first *Annual Water Quality Monitoring Report* was published in 1974. Now called the *Regional Groundwater Monitoring Report* and relying on more than sixty thousand data points from WRD's elaborate network of monitoring wells, the report is the definitive source for information about existing groundwater quality conditions and elevations in the Central and West Coast Basins.



Map from the first Annual Report on Results of Water Quality Monitoring (now called the Regional Groundwater Monitoring Report) released in 1974 for the 1972-73 water year.

CHAPTER

10

**1980s: GROUNDWATER QUALITY AND
CHANGING OF THE GUARD**



Discussing the WaterReuse Project Partnership, from left: WRD Directors Daniel Glasgow and Kenneth Orduna; Central and West Basin Municipal Water District General Manager Rich Atwater; WRD Directors Robert Goldsworthy, Albert Robles, and Clarence Wong, 1994. *Image from the WRD archives.*

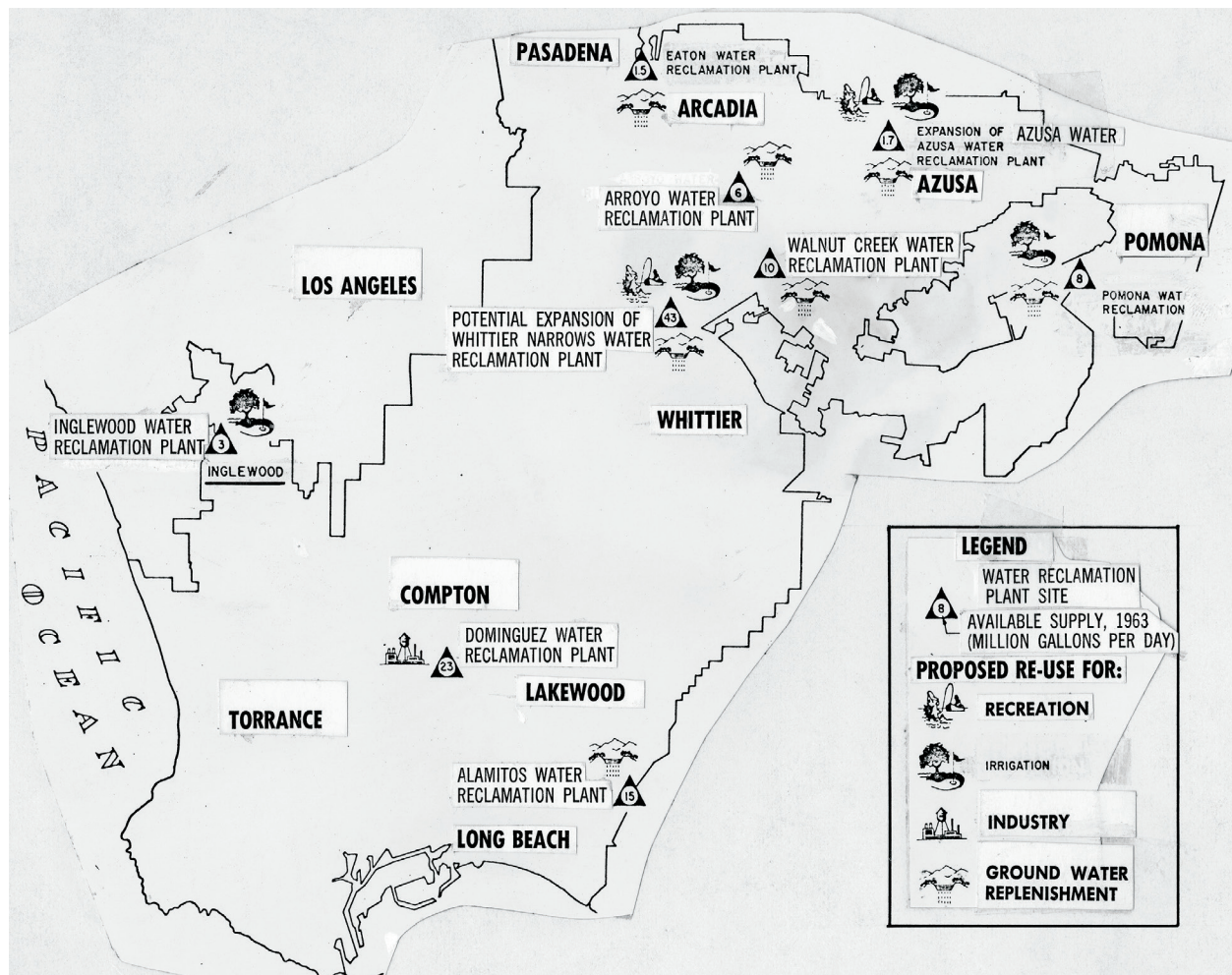
In the 1980s WRD continued along the path established in the 1960s, adjusting replenishment supply from year to year to correspond to pumping demand in alternating periods of drought and heavy precipitation. The predominant source of supply during the decade changed markedly, however, in a way that would shape much of WRD’s future.

The volume of imported replenishment water the district needed would ease as the volume of “makeup water,” as provided in the Long Beach judgment, increased along with the use of the district’s in-lieu program (this was the program that paid pumpers to purchase imported water instead of pumping water they had a right to pump). An ominous threat to groundwater quality in the Central Basin would emerge.

The decade would see a complete change in the composition of the WRD board, staff, and legal counsel. And for a variety of reasons, not the least of which was the Central Basin Municipal Water District’s incursion into the groundwater arena, WRD and the municipal water districts began going their separate ways.

USING RECYCLED WATER FOR REPLENISHMENT

Once totally reliant on imported water for artificial replenishment, WRD’s replenishment supply portfolio changed dramatically in the 1980s. For the first time the volume of recycled water applied to the spreading grounds (384,791 acre-feet) exceeded the volume of imported water (302,000 acre-feet). The Whittier Narrows, San Jose Creek, and Pomona Water Reclamation Plants were steady sources of supply; the volume of recycled water WRD used was limited only by the blending requirements of the Los Angeles Regional Water Quality Control Board (Regional Board). At the time the Regional Board required a 50–50 running average for blending recycled water with imported water and/or stormwater during a twelve-month period: WRD had to use a combined acre-foot of imported water and stormwater for each acre-foot of recycled water.



Map of Los Angeles County’s planned vast experiment in reclaiming of wastewater. Photo dated December 1, 1963. Image courtesy of Los Angeles Public Library.

WRD was increasingly attracted to recycled water as a source of supply for four reasons:

- WRD was confident of its safety because WRD and the County Sanitation Districts had demonstrated the relatively high quality of the recycled water since it was first introduced to the basin in 1962. Rapid improvements in filtration technology added to that confidence.
- The volume of water available from the Sanitation Districts' three plants continued to increase as the capacity of the plants increased.
- The supply was more reliable than the supply of imported water. During the drought between 1981 and 1984, the Metropolitan Water District limited the sale of replenishment water to WRD to a total of 8,100 acre-feet, far below the 50,000 acre-feet or so it had made available during each year of the 1970s.
- The cost of imported water relative to recycled water continued to rise precipitously. In 1981 WRD's cost for imported water was \$67 per acre-foot. Recycled water cost \$7 per acre-foot. In 1990 imported water cost \$126 per acre-foot. Recycled water cost \$10 per acre-foot.

The maximum permitted use of recycled water for spreading took a quantum leap before the decade was out. According to the *1987 Engineering Survey and Report*, "the policy of the Replenishment District has historically been to spread reclaimed water in the Montebello Forebay in an annual amount which does not exceed the maximum historical use of 32,700 acre-feet." In 1960, when the Regional Board first approved the spreading of recycled water that would be produced by the Whittier Narrows Water Reclamation Plant, it imposed conditions that addressed the quality, not the quantity, of the water delivered for spreading and imposed strict monitoring and reporting requirements for total dissolved solids (all organic and inorganic matter in a liquid), lead, cadmium, and other pollutants. An additional condition imposed by the Regional Board (then known as the Los Angeles Regional Water Pollution Control Board) in 1962, as stated in the permit, required "a minimum dilution of one volume of reclaimed water to one volume of surface water."



Once totally reliant on imported water for artificial replenishment, WRD's replenishment supply portfolio changed dramatically in the 1980s. For the first time the volume of recycled water applied to the spreading grounds (384,791 acre-feet) exceeded the volume of imported water (302,000 acre-feet).



Daniel Glasgow, WRD Director,
Division 3

With the publication of the County Sanitation Districts' 1985 "Health Effects Study" of recycled water use at the spreading grounds and a report by Bookman-Edmonston in 1986 that concluded that increasing the annual maximum to 50,000 acre-feet "will cause no significant adverse effect on the environment," the WRD asked the Regional Water Quality Control Board to establish the maximum annual volume based on a three-year running average of 50,000 acre-feet of recycled water. The Regional Board approved the request in 1987. In 1988–89 and 1989–90 recycled water use for spreading climbed to the permitted maximum of about 50,000 acre-feet each year.

Revisiting an idea WRD and the Los Angeles Department of Water and Power had considered nine years earlier, WRD Director Daniel Glasgow wondered out loud in 1983 whether "reclaimed water should be used for barrier supply to reduce operational costs." Ironically, the cost of recycled water relative to imported water had halted the earlier discussions between the two agencies.

In 1985 the WRD Board "discussed the cost of the water supply to the barriers and the potential for using reclaimed water . . . to supply the barriers." In 1988 the Board asked Bookman-Edmonston to submit a proposal for a "study of the potential use of tertiary treated effluent from the Hyperion Water Reclamation Plant . . . for injection water for the West Coast Basin Barrier." Seven years later, recycled water would, in fact, be delivered for injection into the West Coast Basin Barrier, although this water was treated beyond tertiary standards. As it happened, the water would be treated not by WRD but by the West Basin Municipal Water District.

Before the 1980s were out, the County Sanitation Districts and WRD would express interest in developing a project to provide recycled water to the Alamitos Barrier. In April 1990 they agreed to jointly fund the study that ultimately led to the opening in 2003 of WRD's Leo J. Vander Lans Advanced Water Treatment Facility.

Advanced treated recycled water, of course, is now preferable to imported potable water for injecting into all three barrier systems. But even as recycled water was proving an invaluable supply for both replenishing the basins and protecting them from saltwater intrusion, the Central Basin portion of the district was facing a threat from industrial solvents. Bookman-Edmonston informed the WRD Board in July 1985 that a toxic plume of industrial solvents,



Ceremony marking completion of the WRD Leo J. Vander Lans Advanced Water Treatment Facility, 2005. *Image from the WRD archives.*

including trichloroethylene, high levels of which can be fatal, was migrating from the San Gabriel Valley toward the Whittier Narrows; the plume had first been detected in 1979. Groundwater flows naturally from the San Gabriel Valley southward through the Whittier Narrows. In July 1986 Bookman-Edmonston characterized the plume as “a threat to Central Basin’s water supply.” The plume and efforts to remediate it would dominate the district’s water quality concerns for the next seventeen years.

The Long Beach judgment of 1965 paid handsome dividends during the 1980s. Under the Long Beach judgment the Central Basin area was entitled to a long-term average of 98,415 acre-feet per year from the Upper San Gabriel area. Deficits in the average were to be made up either by water purchases by pumpers in the upper area for delivery to the Central Basin or by cash from the Upper San Gabriel parties to the judgment for purchase of “makeup water.” Accordingly, the Upper San Gabriel Valley Municipal Water District and the San Gabriel Valley Municipal Water District provided or paid for 124,500 acre-feet of makeup water between 1981 and 1990. In fact, that decade saw delivery of 58 percent of all makeup water in the fifty-four years since the judgment.

Pumpers initially had expressed only modest interest in WRD’s twenty-year-old in-lieu replenishment program. But their use of the program increased markedly during the 1980s,

accounting for a drop of 279,359 acre-feet in replenishment demand. Under the program WRD paid pumpers the difference between their cost to pump groundwater, which included the WRD replenishment assessment, and what the Metropolitan Water District charged for potable water. The program kept pumpers whole financially while reducing WRD's need for replenishment water. Thirty-two percent of the total volume of the in-lieu program through 2019 was used between 1981 and 1990.

CHANGING OF THE GUARD

The stability that had characterized the WRD Board and staff for its first twenty years disappeared between 1981 and 1990. During that period three incumbent directors were defeated at the polls, three resigned, and two died in office. In all, twelve different directors served on the Board during this period. None of the directors sitting on the Board in 1981 was sitting on the Board at the end of 1990. The 1981 Board had a combined sixty-eight years of service; the institutional memory of three members went back to 1959. The 1990 Board had a combined eleven years of service. The longest-serving member had been on the Board for seven years. No ten-year period in the district's history had seen such Board turnover. Nearly 40 percent of all directors who have ever served on the Board served during these ten years.

In 1986 changes the legislature had made in special district election procedures took effect, although these may not have had anything to do with the Board's turnover. Candidates for special district boards, including WRD, would no longer appear on primary ballots, with the top two candidates facing off in the general election. Instead, the top vote-getter in the general election, regardless of the number of candidates, would win the contest.

The following Board changes occurred during this period:

- Russell L. Hardy, an original board member, died in office in 1984. John Kearney was appointed to fill Hardy's unexpired term in March 1984 and was defeated by Wesley Sanders Jr. in the 1986 general election.
- Lloyd C. Leedom, an original board member and longtime board president, resigned in June 1979. In August the board appointed Clyde Moore, the retired general manager of the Long Beach Water Department, to serve out Leedom's term. Warren Harwood, a member of the Long Beach City Council, defeated Moore in a special election and joined the board in December 1979. Daniel Glasgow, an employee of the County Sanitation Districts, defeated Harwood in the general election in 1982.

- Louis J. Kenney, who was elected to succeed Iris A. Crotchet as a director in 1978, lost to Emmet E. Brown in the 1982 election. Near the end of his second term, Brown resigned and was succeeded by Kenneth Orduna, who was elected in November 1990.
- Charles D. Barker, an original board member, resigned in 1988. Robert Goldsworthy won the election to succeed him. And D.W. Ferguson, another original board member, resigned in July 1990. Tim Keleman was appointed that August to fill Ferguson’s unexpired term.

The changes on the Board were accompanied by changes in district management and legal representation. John Joham, who had been assistant general manager and then general manager of the district since its formation, retired at the end of 1989. He was succeeded by John Norman. Marty Whelan, who had served as assistant general counsel and then



John P. Kearney, WRD Director,
Division 4



Wesley Sanders Jr., WRD Director,
Division 4



Emmett E. Brown, WRD Director,
Division 1



Ken Orduna, WRD Director,
Division 1



Timothy Keleman, WRD Director,
Division 5

general counsel since the district was first organized, retired at the end of 1989. The board named Jess Senecal and William Kruse of Lagerlof Senecal as general counsel and assistant general counsel, respectively, to replace Whelan as of January 1, 1990. The Lagerlof firm had represented the plaintiffs in the Long Beach judgment case and was highly regarded by pumpers and water officials throughout the region.



From left: John Norman, WRD General Manager from 1990-94, with WRD Directors Kenneth Orduna, Robert Goldsworthy, Daniel Glasgow, Tim Keleman, and Wesley Sanders Jr., 1991. *Image from the WRD archives.*

CHAPTER

11

1990s: CONFLICT, CHAOS, AND A TURNING POINT

The 1990s were a tumultuous time for WRD and the pumper community. The district's rate-setting and spending practices were coming under increasingly sharp criticism, relations with many pumpers became rancorous, the legislature ordered a state audit of the district, and the Little Hoover Commission, California's independent government watchdog agency, conducted a hearing and prepared a report on special districts that was especially critical of WRD.

The legislature put constraints on the district's handling of its reserves. The city of Downey, a Central Basin pumper that didn't want to pay for any projects benefiting West Basin, filed four unsuccessful lawsuits against WRD to stop construction of the Robert W. Goldsworthy

Desalter to treat saline water underlying the city of Torrance. Six cities notified the district they intended to use the Local Agency Formation Commission to withdraw from WRD's service area. And the Los Angeles County Board of Supervisors ordered a survey of pumpers to assess support for a takeover of WRD's functions by the County Department of Public Works.

Board turnover was high and relations among the directors were not good. Three general managers, two acting general managers, and one interim general manager came and went.

WRD was under siege from many quarters and often paralyzed by internal turmoil. Through it all, however, WRD adopted a water quality program that put into operation six wellhead treatment projects (designed to rehabilitate contaminated wells that had supplied drinking water), installed 170 new wells for monitoring groundwater conditions throughout WRD's service area, and approved and funded what would become two signature projects—the Leo J. Vander Lans Advanced Water Treatment Facility and the Robert W. Goldsworthy Desalter.

The process that ultimately led to the groundwater Storage Judgment Amendments in 2014 began at the urging of the state Department of Water Resources. And the first studies of the idea of using advanced treated recycled water for spreading—which eventually led to WRD's Groundwater Reliability Improvement Program and Albert Robles Center for Water Recycling and Environmental Learning in Pico Rivera—were completed before the decade came to an end.



WRD's Leo J. Vander Lans Advanced Water Treatment Facility in the city of Long Beach, 2015. *Image from the WRD archives.*

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By 2000 WRD had reached a turning point in its history; indeed, the direction WRD took was the root cause of much of the conflict. Vocal segments of the pumper community wanted the “old WRD” to continue as it had since its formation, as a relatively passive agency content to buy imported water from the municipal water districts and keep the replenishment assessment as low as possible. Amid the conflict and controversy, WRD went in a different direction. It made the deliberate decision to be an active manager of the basins, to take an assertive posture toward groundwater monitoring and cleanup, and to build facilities to produce WRD-controlled local sources of supply.



WRD's groundwater desalter in the city of Torrance, 2018. Image from the WRD archives.

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From left: WRD Directors Albert Robles, Robert Goldsworthy, Clarence Wong, Kenneth Orduna, and Daniel Glasgow, 1993. *Image from the WRD archives.*

BOARD TURNOVER AND MANAGEMENT SHAKE-UPS

The board turnover of the 1980s continued in the 1990s. Only one director on the board in 1991 (Robert Goldsworthy) was on the board in 2000. Ken Orduna, first elected in 1990, was defeated by Willard H. Murray Jr., a former State Assembly Member, in 1998. Daniel Glasgow retired from the board in 1994 and was succeeded by Leo J. Vander Lans, a lawyer and Long Beach water commissioner. Clarence Wong, first elected in 1992 to succeed the late Wesley Sanders Jr., lost to M. Susan Carrillo, a South Gate community activist, in the 1996 election. And in 1992 Tim Keleman, appointed to the board in 1990 after D. W. Ferguson resigned, lost to Albert Robles, a staff assistant to U.S. Representative Mervyn Dymally. In all, nine different directors served during this ten-year period.

District management was more unsettled in this decade than it has ever been, with more general managers and acting general managers than in the previous forty years. In its history, WRD has had eight general managers. Three served between 1991 and 2000. An acting general manager served for relatively brief periods in 1994 and 1998.

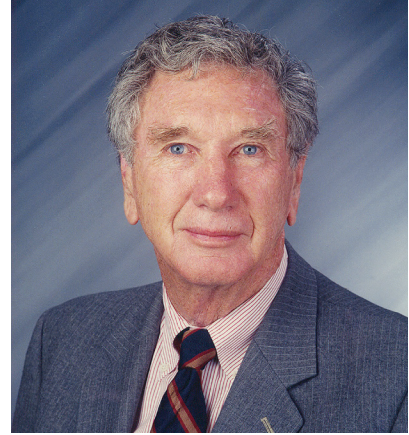
In April 1999, as relations with the pumper community became acutely strained, the board also changed the district's general counsel, replacing William Kruse of Lagerlof Senecal with Ed Casey of Weston Benshoof and Arnoldo Beltran of Beltran Medina. Kruse had served as general counsel since January 1990.



Robert W. Goldsworthy, WRD
Director, Division 2



Willard H. Murray, Jr., WRD
Director, Division 1



Leo J. Vander Lans, WRD Director,
Division 2



Susan Carrillo, WRD Director,
Division 4



Albert Robles, WRD Director,
Division 5

WRD NEARLY DOUBLES THE REPLENISHMENT ASSESSMENT

Long-simmering pumper concerns about what they regarded as budget surpluses, WRD's replenishment assessments, eyebrow-raising expenditures, and proposed projects and project funding led to a series of pumper-initiated actions that plagued the district in one form or another for the better part of two decades.

The once-cordial relationship between the pumper community and WRD began to sour in 1991 when the board adopted a replenishment assessment of \$100 per acre-foot, nearly doubling the assessment of \$54 per acre-foot of a year before. Sixty people showed up for

the annual replenishment assessment hearing, the largest audience WRD had ever had for a board meeting. WRD staff and directors explained that the increased replenishment assessment was needed to pay for the Metropolitan Water District's higher rates and newly imposed municipal surcharges and that \$19 of the assessment would fund an ambitious water quality program. The program included additional wellhead treatment projects and the adoption of a rebate program to pay pumpers for extracting and treating volatile organic compounds—commonly, dry-cleaning fluids, paint thinners, and gasoline compounds that vaporize and migrate to drinking water supplies—from their wells.

PUMPER IRE AT WRD RESERVES AND EXPENDITURES

WRD continued to raise the replenishment assessment, which hit a peak of \$162 per acre-foot in 1995–96. While the assessment was rising, however, annual budgets for the water quality program and water purchases did not meet annual budgeted forecasts. Instead of using unspent monies from the replenishment assessment of one year to reduce the assessment for the next year, WRD accumulated what it called reserves—and the pumpers called a surplus—for capital projects. Many Central Basin pumpers argued the surpluses should be used to reduce the replenishment assessment.

Pumpers were also increasingly concerned by how WRD was spending money. Starting in 1993, the board took a series of steps to educate the public about its mission and purpose and to raise its local profile. In June 1993 WRD mailed a newsletter with response cards to 516,000 residents, ostensibly to ask whether they wanted to continue receiving information from WRD. Critics argued it was done to enable the district to establish a mailing list that could come in handy around election time. Also beginning in 1993 and continuing for the next six years, the board sponsored seventeen breakfast and lunch meetings throughout the district. While these “community forums” attracted large numbers of people, they also angered many pumpers, who saw the forums as overtly political events designed to boost support for WRD directors at election time.

A breakfast attended by several hundred people at Hollywood Park in September 1998 featured swag bags and etched WRD goblets. This was seen as especially egregious, not simply because of the perceived opulence but also because the WRD director who sponsored it was seeking reelection less than two months later in a heated (and ultimately unsuccessful) bid.

And while the pumpers uniformly supported WRD's opposition to legislation in 1996 that would have eliminated WRD by consolidating it with the two municipal water districts (SB

1521 and SB 1354), they expressed reservations about WRD's spending of an estimated \$500,000 over a two-week period to kill a bill many pumpers believed was so poorly written that it would have died anyway.

As WRD conducted feasibility and engineering studies through the first half of the decade for what appeared to be increasingly certain capital projects, an apparent disagreement or change of heart among pumpers led to a misunderstanding with WRD about how those projects should be funded. At a pumpers' workshop in March 1995, the pumpers noted WRD's significantly positive cash position and recommended pay-as-you-go financing of WRD projects.

Based on that model, the staff a month later proposed a replenishment assessment of \$177 for 1995–96, which, combined with existing WRD reserves, would finance the recycled water project for the Alamitos Barrier and a groundwater desalter in Torrance with no long-term debt. Pumpers who spoke at the replenishment assessment hearing, however, said that a mix of funding “with more long-term debt . . . would be more equitable.” The board adopted a replenishment assessment of \$162 that assumed capital projects would be funded by a combination of cash and debt financing.

Pumpers began showing up routinely at WRD board meetings in 1997 and expressed concern about the district's growing public relations staff, increased expenditures on organizations not related to water, the growing size of WRD's reserves, its lack of a financial plan or even a financial officer, the number of lobbyists on retainer, and the elaborate breakfasts the district was sponsoring.

In an effort to placate the pumpers, in October 1998 the board adopted a “comprehensive financial action plan” that included what amounted to a \$30 million rebate to the pumpers, based on their respective average groundwater production during the previous three years. WRD paid half the rebate in November 1998 and the other half was paid in March 1999.

If WRD thought the rebate would buy forbearance from the pumper community, it was mistaken. Within a year the district would be subjected to a state audit, a Little Hoover Commission hearing and report, four lawsuits filed by municipal pumpers, and legislation that would restrict the district's financial flexibility and freeze its ability to issue debt.

THE STATE AUDIT

Pumper complaints about WRD became more pronounced in the first three months of 1999

about how it was spending money, the way it was conducting its meetings, and its budget procedures, staffing, and plans to debt-finance projects. Some pumpers challenged the value or propriety of the projects themselves.

At the request of State Senator Martha Escutia, in May 1999 the Joint Legislative Audit Committee approved an audit to:

1. Review and evaluate laws relating to WRD and issues raised by complaining cities
2. Review how the district determined and approved replenishment assessments
3. Review replenishment assessments imposed during the previous ten years to determine whether they were justified
4. Examine the district's expenditures and determine whether they were appropriate and reasonable
5. Review a sample of the district's contracts to determine whether the district complied with the *Public Contracts Code* and if contract amounts were reasonable
6. Review the district's staffing levels and compensation packages and determine whether they were comparable to other water districts'
7. Investigate specific allegations made by the cities of Pico Rivera, Santa Fe Springs, South Gate, and Downey

On December 15, 1999, the State Auditor issued a seventy-nine-page report, *Water Replenishment District of Southern California: Weak Policies and Poor Planning Have Led to Excessive Water Rates and Questionable Expenses*. Significant findings in the report related to reserves, capital projects, funding of capital projects, and administrative expenses.

Reserves. “During fiscal years 1989–90 through 1997–98, the district collected more than it spent from its Replenishment and Clean Water funds. As a result, the district finished each year with a surplus. Further, because the district did not apply enough of this surplus against subsequent year’s assessment, the fund balances simply grew each year and by June 30, 1998, the district had accumulated approximately \$67 million in its unreserved fund balance.”

Capital projects. The audit was skeptical of the economic benefits of the two capital projects WRD was building at the time and faulted the district for “poor analyses” in support of their financial feasibility.

Funding of capital improvements. The auditor found the district’s plan to fund

capital projects was disjointed, in part because its approach shifted from all cash to a combination of cash and debt. The audit found no documentation of how much money the district had actually collected or spent for capital projects during a ten-year period.

Procurement Practices. The auditor determined the district's procurement policy was woefully inadequate and frequently not followed. Fifty-five percent of vendor payments reviewed from a ten-year period were for services for which no contracts existed. Of the seven contracts for the district's two capital improvement projects, four used competitive bidding and three were sole source procurements.

Based on the findings in the report, the State Auditor made sixteen recommendations. Three related to WRD's practices for setting replenishment rates and the level of its reserves. The report recommended capping reserves at \$10 million and using unspent monies for replenishment and clean water to reduce the next year's replenishment assessment.

Five recommendations related to WRD's capital projects: determining and identifying the percentage of the replenishment assessment devoted to each capital project, implementing and refining a long-term plan for capital projects, standardizing policies and practices for cost-benefit analyses and budgeting of capital projects, and reevaluating the feasibility of the Alamitos Barrier recycled water project.

The report also recommended that WRD "work with other water agencies in the region" to identify basin priorities.

Seven recommendations were related to the district's administrative expenses. The audit recommended WRD strengthen its controls for administrative expenses, adopt additional procurement guidelines, ensure that a valid contract is in place before paying for contracted services, require all travel expenses be matched to approved travel documents, limit travel reimbursements to a specific geographic area and require board approval for travel outside the specified area, reassess its need for ten lobbying firms, and direct its independent auditor to review the propriety of the district's operating expenses.

In its formal response WRD noted that "the Audit Report finds no support for the vast majority of allegations that prompted the audit in the first place . . . no evidence of fraud, corruption, misappropriation of funds, misfeasance or malfeasance of office, or any instances of the District exceeding its statutory authority."

The response further noted that “the Report finds the basins to be an economical source of water and that through its replenishment activities, the District has been able to raise water levels in the basins to near optimum levels. The Report finds independent verification that the District is meeting these two principal objectives.”

WRD agreed with five recommendations, conditionally agreed with two, disagreed with four, and said five recommendations reflected current district policy or practice. Nonetheless, in its June 2000 update on the status of the recommendations, the district documented the implementation of fifteen of them and reaffirmed its disagreement with one.

WRD applied unused funds from its 1999–2000 replenishment assessment to a \$27 per acre-foot reduction for the following year’s assessment and adopted a target reserve of \$10 million. WRD’s 2000–2001 budget detailed actual costs of its capital projects, and it refined its long-term capital improvement program. And in a three-month period in early 2000 the board took actions to greatly strengthen controls over its expenses. It adopted the state *Public Contracts Code* to govern procurements, prohibited the payment of services for which contracts were not in place, required travel expense reimbursements to match approved travel documents, adopted the audit report’s language on travel, and, although this was



Although WRD had opposed the very idea of a state audit in 1999, that audit report and subsequent audits in 2002 and 2004 provided helpful blueprints for the financial controls, budget and accounting improvements, and procurement reforms that the WRD board put in place. Combined with capable management, the employment of a professional financial staff, and the institution of rigorous budgeting procedures, the audit made WRD a much more transparent and administratively disciplined agency whose practices and procedures would be recognized for excellence by professional peer groups in subsequent years.

not really responsive to the audit or WRD's critics, reduced the number of lobbying firms on retainer to seven.

WRD strenuously disagreed with the audit report's skepticism of the economic feasibility of the Alamitos Barrier recycled water project, arguing in its response to the audit that its assumption that the Metropolitan Water District would charge \$620 per acre-foot for water by 2020 mischaracterized MWD's long-range forecasting—WRD had based its calculation of the economic feasibility of the Alamitos Barrier project on a charge by MWD of \$959 per acre-foot by 2020. WRD also argued that because the water district's rates had long outpaced inflation, the Alamitos Barrier project was a prudent investment because it would allow WRD to control future costs by diversifying its risks.

Twenty years later the cost of importing water for the Alamitos Barrier was \$1,234.80 per acre-foot, making the assumptions in WRD's 1999 cost-benefit analysis considerably more conservative and significantly closer to the mark than the auditor's analysis.

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While the audit ultimately helped WRD, some of the criticisms that had sparked the audit continued to fester.

DOWNEY V. WRD

Groundbreaking for the Robert W. Goldsworthy Desalter in Torrance took place on August 10, 1998. WRD awarded the contract to design and build the desalter on January 21, 1999. Intent on stopping the project because of its perception of "basin equity," the city of Downey, joined by seven other cities, filed suit on May 5, 1999, and asked the court to issue an injunction. Undeterred by the court's prompt denial, Downey and the cities filed three additional lawsuits in June and July that promulgated different legal theories as to why the court should stop the project. WRD prevailed in every case.



Celebrating the opening of the WRD Robert W. Goldsworthy Desalter in 2002. *Image from the WRD archives.*

WRD AND AUTHORITY TO ISSUE DEBT

Over the objections of some of the pumpers, in January 1999 the WRD board approved plans to issue up to \$67 million in revenue bonds or certificates of participation to finance portions of the costs of the Alamitos Barrier Recycled Water Project and the Torrance desalter.

In early July WRD and its financing team learned that state legislation had been introduced that would prohibit WRD from issuing bonds, certificates of participation, financing leases, installment sales or purchase agreements, or other evidence of indebtedness without the approval of a majority of the voters participating in a districtwide election.

The city of Downey was behind the bill, which was not enacted. In fact no committee took it up, but its mere existence had the practical effect of making it impossible to issue debt because no rating agency would provide an investment grade for the debt. Only in late 2004 was the district finally able to issue its first debt in the form of revenue certificates of participation.

THE LITTLE HOOVER COMMISSION AND WRD

As part of its periodic review of special districts in California, the Little Hoover Commission conducted a hearing on August 26, 1999, on Sacramento County Fire Districts, the Midway

Sanitary District of Orange County, Orange County Water District consolidations, and, at the request of several cities led by Downey, the Water Replenishment District.

In May 2000 the commission issued its report, *Special Districts: Relics of the Past or Resources for the Future?* It concluded that special districts generally act in obscurity and should come under closer scrutiny by local officials and the legislature: “278 special districts [in the state] have reserves greater than five years of gross revenues.” Special districts generally lack oversight and accountability, the commission said, and they should have policies in place “to ensure prudent management of special district reserve funds.”

Echoing the audit report, the commission’s report faulted WRD for raising its replenishment assessment despite mounting reserves, its contract bidding procedure, and the size of its reserves.

As part of its critique of special district reserve funds in general, the commission’s report said, “The troubled Water Replenishment District exemplifies the problem—and its consequences. With no requirement for disclosing financial information in a way that is easily understood, the district over 10 years accumulated \$67 million in unreserved fund balances, an amount equal to 164 percent of its 1996–97 gross revenues.

“WRD is a telling example of the consequences of policies that permit districts to operate in obscurity. The district, however, is not the exception among enterprise districts when it comes to large reserves that have not been publicly scrutinized.”

Ironically, given the complaints about the district’s public relations expenditures, the commission said WRD could do a better job of “educating the public” about its activities.

SIX CITIES PROPOSE TO SECEDE FROM WRD

On September 9, 1999, the cities of Downey, Pico Rivera, Signal Hill, Santa Fe Springs, Cerritos and Lakewood served WRD with a notice of intent to detach from the district. The cities’ complaint was that “WRD no longer manages its funds for groundwater replenishment purposes for the best interest of the Cities. The WRD has (1) unjustifiably increased its assessment levy on the Cities, (2) engaged in excessive and wasteful administrative expenditures, (3) commenced massive expenditures on ill-conceived or unnecessary capital improvement projects, (4) commenced the issuance of bonded indebtedness which the Cities will be further assessed to repay and (5) impaired the Cities’ adjudicated water rights.” The cities said they planned to consider “the establishment of a subsidiary district to more

efficiently and economically accomplish groundwater replenishment.”

The cities each passed a resolution of detachment but never followed through by filing for secession with the agency that oversees such moves, the Los Angeles County Local Agency Formation Commission (LAFCO). The cities’ efforts to secure support from other cities were not successful. Given the enormous legal and logistical difficulties entailed in a detachment proceeding and the stated basis for it, LAFCO probably would not have acted favorably on the cities’ resolutions in any case. While the commission has the authority “to coordinate logical and timely changes in local government boundaries,” the cities would have had a difficult time arguing their political boundaries somehow corresponded to groundwater basin boundaries in a way that made a subsidiary district possible or plausible.

When it became apparent that their plan to detach was going nowhere, the dissident cities turned to the legislature and the County Board of Supervisors.

LEGISLATURE MOVES TO TIGHTEN CONTROLS ON WRD

In response to the 1999 state audit and continuing pressure from WRD critics, six bills were introduced early in 2000 that would have either forced implementation of the recommendations of the audit or changed the governance of WRD altogether by adding three producer members to its board.

A measure authored by Senator Charles Calderon would have added three producer members to the WRD Board and limited its authority to raise money exclusively for replenishment. The legislation also would have created a five-member board of groundwater producers to govern a southern Los Angeles County groundwater remediation agency with more expansive authority. The legislation did not get out of committee, but the idea of placing producers on the WRD board reemerged in proposed amendments to the two bills that were reported out of committee.

As introduced, the bills by Senator Martha Escutia and Assembly Member Sally Havice took a harsh approach to WRD reform. Escutia’s would have changed the purpose of WRD from a groundwater management agency to a water purchasing agency. It would have eliminated the district’s ability to sell water, effectively killing the desalter, and would have prohibited the district from participating in conjunctive use programs or seeking amendments to the judgments governing water rights, thus nipping in the bud the district’s emerging interest in groundwater storage. The measure also would have required approval by a two-thirds

majority of votes cast for any debt financing of capital projects that would have to be backed by an increase in property taxes.

The measure introduced by Havice would have prohibited WRD from imposing a replenishment assessment on “water suppliers” within the district if it maintained an undefined reserve of \$10 million or more.

As the state senate staff analysis of an early version of SB 1979 put it, “Sorting out the arguments between WRD’s critics and defenders won’t be easy for legislators. With so many bills moving through the Capitol process, some legislators think that policy committees can’t really sort through the conflicting claims and counter-claims. One strategy is for each house to send one bill to a conference committee where six legislators would thrash out a compromise.” SB 1979 (Escutia) and AB 1834 (Havice) became those two bills.

PEACE AGREEMENT WITH PUMPERS?

The issue of adding producers to the WRD board was playing out locally as well. Directors Susan Carrillo and Leo Vander Lans met on several occasions with some of the critic cities in July and early August of 2000 to try to work out a peace agreement.

On August 4 Carrillo and Vander Lans introduced four alternative resolutions for the WRD board to consider. The resolutions differed only in the number of producer members to add to the board and whether to require a supermajority of a reconstituted board for adoption of a replenishment assessment.

The resolutions had identical prefaces: “The persistent conflict between the Water Replenishment District of Southern California and the groundwater producers has required the expenditure of substantial time, energy, and resources by all parties.” The parties “jointly wish to put an end to the persistent conflict and to embark on a cooperative and productive course to better serve the statutory purposes of the District.”

Under terms of an agreement described in all four resolutions, the municipal producers that had sued the district would terminate all litigation, halt their planned detachment proceedings, and assist the district in resolving “the issue of desalter water rights.” For its part, the district would support legislation to codify the recommendations of the state audit report, subject the district to competitive bidding requirements, add producer members to the board, and require six affirmative votes on the reconstituted board “to adopt the annual

assessment, to take any actions to incur debt, and to approve any capital projects exceeding \$250,000 in value.”

The board adopted the alternative that would add two producer members and deleted the supermajority requirement for approval of the replenishment assessment.

On August 15 both SB 1979 and AB 1834 were in conference committee awaiting a hearing. Amendments to each bill had been prepared that reflected the terms of the WRD board’s resolution, except the amendments would add three producer members and require six affirmative votes of the reconstituted board to take action on key matters. One producer member would represent the Central Basin, another the West Coast Basin, and the third all producer cities in both basins.

LEGISLATURE REJECTS ADDING PUMPERS TO WRD BOARD

Much to the surprise of the cities, which were expecting easy passage by the legislature, key provisions of the peace agreement soon ran into trouble. Members of the conference committee did not buy the notion of having producer members or requiring a supermajority for board action on key matters. Assembly member Deborah Bowen blasted the idea of putting private pumpers on a public board. “Simply getting the agreement of the parties doesn’t mean that we agree,” she said. “My first preference is not to mess with governance.” State Senator Mike Machado added, “We don’t want to abridge voters’ rights . . . government can’t be an easy fix to laziness. We should be careful about treading into that process.” He said he would not support adding “producer members who appoint themselves.” State Senator Dave Kelley said that “adding members won’t solve anything” and recommended simply approving legislation requiring implementation of the auditor’s recommendations.

State Senator Jim Costa, chair of the Water Committee and the lead senate conferee, summed up the sentiment of the committee: “We are not saying governance is not important, but we can’t reach agreement, so let’s focus on reforms.” He suggested reforms that adhered to the state audit recommendations.

The final version of SB 1979 required all WRD contracts to be in writing, mandated that WRD perform a cost-benefit analysis “based upon reasonable assumptions” before embarking on a capital project, and limited the district’s reserves to \$10 million. The measure permitted annual adjustment of the reserve maximum to reflect percentage increases in the blended cost of water. At least 80 percent of the reserve had to be

earmarked for water purchases, and WRD would have to apply any overage in the reserve to a replenishment rate reduction. At the request of WRD the bill was changed to exclude from the reserve limitation funds in the capital construction account, thus shielding the \$19 million then in the district's construction fund.

SB 1979 also required the district to annually order an independent audit of its finances that would provide a statement by a certified public accountant of certain information, including the amount and source of district funds to be expended for any capital project, the propriety of the district's operating expenses, and any financial statement exceptions to standard accounting procedures and recommendations for improving WRD's management.

AB 1834 required the State Auditor to perform another audit of the operations and management of the district, along with an evaluation of the extent to which WRD had complied with the recommendations of the 1999 audit. Until a sunset provision took effect on January 1, 2003, the bill also prohibited WRD from issuing debt, required it to pay for capital projects from its existing reserves, limited annual increases in the replenishment assessment to the Consumer Price Index for the area plus 1 percent (but not to exceed 5 percent), and created a technical advisory committee to consist of three members appointed by each water association. The committee was to advise WRD and make recommendations about capital projects and water quality improvements.

All things considered, WRD was happy with the legislation. The critic cities were not. They wanted either the change in governance they thought the legislature would adopt or the dismantling of WRD. They next turned to the Los Angeles County Board of Supervisors.

SUPERVISORS EXPLORE COUNTY TAKEOVER OF WRD

On November 21, 2000, the Los Angeles County Board of Supervisors adopted a motion by Don Knabe, the supervisor overseeing the County Department of Public Works, that instructed the Director of Public Works to survey pumpers in WRD's service area "to assess their interest in having Public Works undertake the groundwater replenishment and water quality functions currently performed by the WRD . . . and . . . if such interest exists . . . to seek legislation to allow Public Works to take over the duties of the WRD with an Advisory Oversight Commission made up of representatives of the Cities and Water Purveyors."

The motion noted that "while WRD has responded to the [state] audit report, member agencies are still critical of WRD for not voluntarily embracing all the audit recommendations." Further, "WRD has ignored requests of member agencies to have a full



No longer content to mechanically set the replenishment assessment year after year to pay for imported water according to a time-proven formula, WRD became a bricks-and-mortar agency intent on reducing its reliance on imported supply. That decision marked a turning point in WRD's history and has shaped WRD decision making to this day.

community breakfasts, and newsletters that appeared close to election day. While WRD's precipitous increase in the replenishment assessment in 1991, its accumulation of a reserve with no coherent plan to spend it, and questionable spending practices gave critics plenty of ammunition, the root cause of the conflict was WRD's deliberate decision to become an active groundwater manager by building projects to address the saline plume in the West Coast Basin and to develop its own source of water supply in the Central Basin. For the Central Basin Municipal Water District in particular, that meant a gradual but steadily increasing loss of revenue from its single largest customer. For the pumper community that meant higher replenishment assessments into the future.

No longer content to mechanically set the replenishment assessment year after year to pay for imported water according to a time-proven formula, WRD became a bricks-and-mortar agency intent on reducing its reliance on imported supply. That decision marked a turning

discussion of the WRD rate-setting process that has led to past excessive surpluses. Member agencies still feel dissatisfaction with WRD and its Board of Directors and feels WRD continues to ignore the concerns of its member agencies and are seeking to withdraw from WRD.”

The Public Works Director sent the survey to 115 pumpers. An attachment to the questionnaire laid out arguments for and against the takeover of WRD's functions by Public Works. A survey report presented to the Board of Supervisors on January 18, 2001, said the Department of Public Works had received forty-eight responses, ten of which (20.8 percent) expressed an interest in having Public Works assume WRD's duties; twenty-five (52.12 percent) were opposed to the idea, and thirteen (27.1 percent) were undecided. Weighted by water rights held, pumpers opposed a county takeover by a margin of 2 to 1.

TURNING POINT

The decade-long conflict was not simply about increased replenishment assessments, lavish



WRD Director Robert W. Goldsworthy at the desalter facility in the city of Torrance that bears his name, 2001. *Image from the WRD archives.*

point in WRD's history and has shaped WRD decision making to this day.

A summary of the decade would show the district prevailed in the courts, became institutionally stronger as a result of a state audit, defeated decidedly hostile legislation, accepted two state laws that left its authority intact, remained untouched by isolated threats of secession, emerged relatively unscathed from a Little Hoover Commission hearing and report, and garnered majority pumper support in a county survey.

All the while, and against the swirling backdrop of controversy and chaos, an unsettled board, and revolving-door management, the district accomplished an extraordinary number of things.

With feasibility and engineering studies, environmental documentation and certification, and land acquisition in hand, the WRD board on September 21, 1998, passed a resolution affirming the district's readiness to proceed with both the Alamitos Barrier Advanced Treated Recycled Water Project (later named after Director Leo J. Vander Lans) and the already named Robert W. Goldsworthy Desalter Project. WRD awarded a contract for designing and building the Alamitos Barrier recycled water project in December 1998. And it awarded the design-build contract for two desalters (Goldsworthy and Orduna) in January 1999, although in May 2000 the board decided to proceed with the Goldsworthy Desalter only.

Although WRD had been in existence for nearly forty years, the Alamitos Barrier recycled water facility and the desalter were the first two projects WRD conceived, financed, and built. With the Alamitos Barrier project, WRD for the first time would begin to control a portion of its replenishment supply in Central Basin. And with the desalter, WRD would begin to treat to potable standards otherwise unusable water from the saline plume beneath the West Coast Basin.

In 1991 WRD sought and obtained approval from the Los Angeles Regional Water Quality Control Board to change its permit for recycled water in the Montebello Forebay to allow the use of 150,000 acre-feet during a three-year period rather than a cap of 50,000 acre-feet per year. This greatly increased WRD's ability to maximize the use of recycled water.



WRD directors Willard H. Murray, Jr., Patricia Acosta, Norm Ryan, former director Leo J. Vander Lans, and directors Robert W. Goldsworthy and Albert Robles, at the advanced water treatment facility that bears Vander Lans' name, 2003. *Image from the WRD archives.*

Also in 1991, the board instructed the staff to find a consultant to “study the use of reverse osmosis treatment to increase the spreading of reclaimed water in the Montebello Forebay.” The resulting Black & Veatch report and subsequent pilot study of treatment alternatives were the first steps toward what became the Groundwater Reliability Improvement Program (GRIP), which became the Albert Robles Center for Water Recycling and Environmental Learning (ARC). ARC is an advanced treated recycled water facility that opened in 2019. It is the final component of WRD's Water Independence Now (WIN) program, an initiative adopted in 2004 to eliminate the use of imported water for groundwater replenishment.

In 1992 WRD hired J. M. Montgomery to undertake the first feasibility study of recycled water use at the Dominguez Gap Barrier. This would become a joint study with the city of Los Angeles in 1993. The study led to the construction by Los Angeles of what is now called the Terminal Island Advanced Water Purification Facility, which began supplying recycled water for barrier injection in 2005.

In October 1994 the West Basin Municipal Water District's Advanced Treated Recycled Water Facility in El Segundo was dedicated. Shortly thereafter WRD started buying water from that facility, which is now called the Edward C. Little Water Recycling Facility, for injection into the West Coast Basin Seawater Barrier.

With WRD's approval of the Alamitos Barrier Advanced Treated Water Recycling Facility in 1998, a commitment to the use of recycled water instead of imported water at all three seawater barriers was firmly in place.

Although the caliber of top management at WRD during the 1990s was uneven at best, the growing technical and professional staff was quite capable, in some instances exceptionally so. They turned the policy initiatives of the board into the concrete programs and projects that make up a large part of WRD's identity to this day.

Especially reflective of the relatively new competence and confidence of WRD's staff is the annual *Engineering Survey and Report*. Since it was first published in 1960, the report had been prepared by Bookman-Edmonston Engineering, consulting engineers to the district. Thirty-three years later, in 1993, district staff prepared the report entirely in-house for the first time, and the staff has done so ever since.

Among the technical and professional staff who went to work for the district in



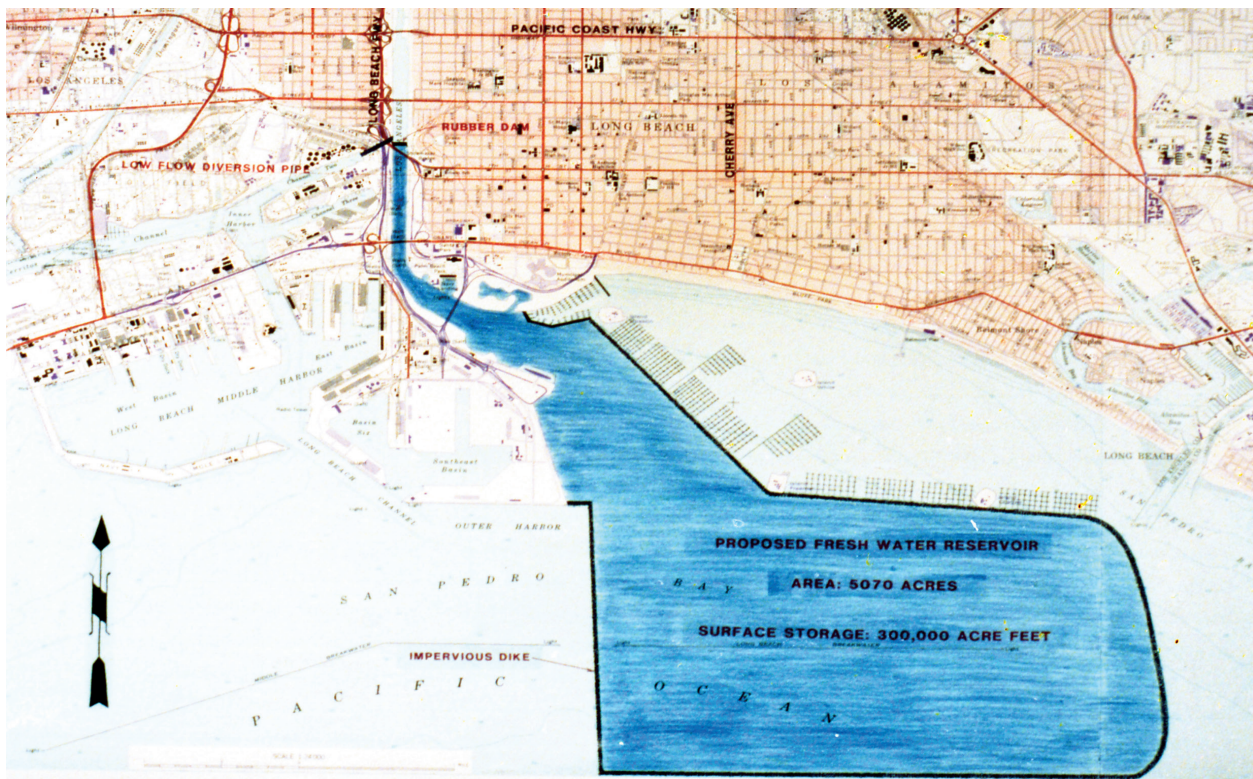
WRD staff in the 1990s. Bottom row, from left: Marcia Forkos, Shirley Robison, John Norman. Second row, from left: Jeff Helsley, Susan Fulton. Third row, from left: Mario Garcia, Melinda Sperry. Top row, from left: Jim Leserman, Gloria Evans, Robb Whitaker. *Image from the WRD archives.*



Robb Whitaker, WRD General Manager

the 1990s are two who would remain with WRD for three decades.

Robb Whitaker started as a water resources engineer for the district in 1991, became district engineer in 2000, assistant general manager and chief engineer in 2001, and was appointed general manager of WRD in November 2003. For three decades, he managed all of WRD's brick-and-mortar projects and conceived and implemented the Water Independence Now program, the goal of which was to replace imported water with locally sourced water for groundwater replenishment and seawater barrier injection. In May 2019 Whitaker became the longest-serving general manager in WRD's history. He retired from the district in March 2021.



“Offshore Freshwater Reservoir” conceptual plan for proposed freshwater reservoir and stormwater capture, 1995. This is one of many inventive ideas explored by General Manager Robb Whitaker during his WRD career. *Image from the WRD archives.*



Robb Whitaker with WRD Engineers Mario Garcia, Jim Leserman and Melinda Sperry view construction at the Leo J. Vander Lans Advanced Water Treatment Facility, 2001. *Image from the WRD archives.*

Ted Johnson joined the district as a senior hydrogeologist in 1996 and was appointed chief hydrogeologist in 2003. In 2019 Johnson was named assistant general manager, chief administrative officer, and watermaster under the Central and West Basin judgments. He served as president of the Groundwater Resources Association of California in 2015. Johnson retired from the district in July 2021.

Twenty-five years after the Metropolitan Water District first broached the idea, Tom Hannigan, director of the state Department of Water Resources, became interested in groundwater storage around the state as an alternative to the construction of surface dams. In a July 6, 1999, letter to Robert Goldsworthy, president of the WRD board, Hannigan said his agency was “very much interested in exploring opportunities which the Central Basin presents for local management and conjunctive use that is beneficial to the District, the Basin’s groundwater users, and the statewide water supply balance.”

A draft memorandum of understanding between WRD and DWR was crafted in October 1999. Susan Carrillo and Goldsworthy met with Hannigan on April 13, 2000 and agreed to form technical and policy groups to explore the idea in the near future. (See Chapter 17)



Ted Johnson, WRD Senior Hydrogeologist

CHAPTER

12

2000s: WRD COMES OF AGE

Much of what WRD is today was set in motion by events that occurred between 2001 and 2010. The first decade of the new century was challenging, especially during the early years and on multiple fronts:

- Los Angeles County conducted a second survey to gauge pumper interest in a takeover of WRD's functions by the County Department of Public Works.
- The district faced two additional state audits.
- The state legislature considered five bills hostile to WRD, including a serious assault on the uniform replenishment assessment.
- A group of pumpers went to court in an effort to privatize groundwater stored in the basins.

- Relations with the Southeast Water Coalition were strained to the breaking point, with WRD withdrawing its membership from an organization it helped found. The Southeast Water Coalition was a joint powers authority consisting of several cities and WRD. Its original purpose was to convince the U.S. Environmental Protection Agency to remediate the contamination heading to the Central Basin through the Whittier Narrows.
- WRD continued to challenge the administrative surcharges of the municipal water districts.
- Imported water for spreading was simply not available for extended periods.



Before the decade was out, however, WRD came of age with a series of actions that dramatically reversed nearly two decades of defensive uncertainty about its place in the regional and state water world. WRD embraced its Water Independence Now (WIN) program to eliminate the use of imported water for groundwater replenishment. The district committed to the Groundwater Reliability Improvement Program (GRIP), which resulted in an advanced water treatment facility (the Albert Robles Center for Water Recycling and Environmental Learning) that began operations in 2019. The center was the final piece of the WIN suite of projects. Several other projects contributing to the goal of local self-reliance for water replenishment were completed by WRD, co-financed by WRD, or funded by recycled water purchase agreements with other agencies, all during this ten-year period.

The WRD board had in place an exceptionally talented general manager and professional staff that steadily increased confidence in the district among state audit officials and legislators, the local pumper community, and water officials statewide. As a result of board decisions and its management team, pumpers and state legislators who once were critics became WRD's allies, and the district began to receive external funding.

WRD entered a new era of financing, for the first time securing outside grant funding to support planning and capital projects and, also for the first time, entering the public finance market to fund major capital projects.

The legislature's regard for WRD rose steadily. Five hostile bills introduced during the decade were defeated. As it happens, since 2000 the legislature has not approved any legislation adverse to WRD's interests. An initially tumultuous and occasionally rancorous process to develop a legal framework for groundwater storage ended with court decisions that enjoyed widespread support, even from many of the parties who had once asked the court to privatize storage space. The board extended the life of the pumpers' Technical Advisory Committee (TAC) to WRD, which had been due to go out of business in 2005. The TAC continues to function to the benefit of pumpers and WRD to this day. During this period the district also established budget processes and financial controls that state audits had recommended.

In 2007 WRD moved its headquarters from a leased building in Cerritos to a district-owned building in Lakewood. And WRD honored its connection to Elinor Ostrom, the 2009 Nobel Laureate in economics, for work that among other things cited WRD's formation as an example of public entrepreneurship to protect a common pool resource, the Central and West Coast Basins. A month after Ostrom's award was announced, WRD celebrated its fiftieth anniversary on November 17, 2009.



Directors and staff open WRD headquarters in Lakewood, 2007. *Image from the WRD archives.*

BOARD AND STAFF

The board saw significant turnover between 2001 and 2010. Only two directors on the board in 2001, Willard H. Murray Jr. and Albert Robles, remained in 2010. Rob Katherman defeated Bob Goldsworthy in 2004 and remains on the board today. M. Susan Carrillo resigned from the board on January 18, 2002, to pursue a career in law enforcement. On March 8, 2002, the board appointed Patricia Acosta, owner of a small business in South Gate, to fill the vacancy. She was sworn in on March 15, then elected to a full term later that year and served until being defeated by Sergio Calderon in 2006. Norm Ryan defeated Leo J. Vander Lans, a long-time board member, in the 2002 election. Ryan in turn would be ousted by Lillian Kawasaki in 2006.



Robert Katherman, WRD Director,
Division 2



Patricia Acosta, WRD Director,
Division 4



Sergio Calderon, WRD Director,
Division 4



Norm Ryan, WRD Director,
Division 3



Lillian Kawasaki, WRD Director,
Division 3



From left: WRD Directors Sergio Calderon, Lillian Kawasaki, and Willard H. Murray, Jr. in the WRD Board Room, 2011. *Image from the WRD archives.*



From left: WRD Directors Rob Katherman, Albert Robles, Lillian Kawasaki and Willard H. Murray, Jr. with WRD Hydrogeologist Tony Kirk at WRD monitoring wells, 2012. *Image from the WRD archives.*

Compared to the 1990s, WRD management was relatively stable for most of this period. Brian Brady, who was appointed interim general manager in May 2000, concluded his WRD service in June 2001. Bruce Mowry became general manager in June 2001 and served in that capacity until October 2003. He was succeeded by Robb Whitaker, a long-time WRD employee who had strong relationships with the pumper community.

In 2010, the law firm of Leal Trejo became the district's general counsel, with Francisco Leal and David Alvarez providing legal services to the district.

THE DECADE'S CHALLENGES

A majority of pumper responses to the 1999–2000 county survey did not support having the county Department of Public Works take over the functions of WRD. Nonetheless, the Board of Supervisors asked the department to survey the pumpers again after WRD set the 2000–2001 replenishment

assessment and adopted its budget for that fiscal year. A report forwarded to the board on April 24, 2002, concluded that “there is no clear mandate at this time to proceed with further actions to allow Public Works to assume WRD’s responsibilities. WRD has an important role to play in maintaining adequate and safe water supplies for its basin producers. However, to serve the best interests of its ratepayers and to be accountable to the communities it serves, it needs to restore lost confidence with a crucial element of its basin producers. While progress has been made, efforts are still required to restore the cooperative relationship that has historically governed WRD and its basin producers.”

State legislation adopted in the wake of the state audit required the state auditor to

evaluate “the extent to which the district has complied with the recommendations” of the December 1999 state audit report and to perform an audit “with regard to the operations and management of the district.”

The resulting audit report, dated May 2002, was titled *Water Replenishment District of Southern California: Although the District Has Eliminated Excessive Water Rates, It Has Depleted Its Reserve Funds and Needs to Further Improve Its Administrative Practices*.

It made twenty recommendations relating to the district’s reserves, its planning and development of capital improvement projects, and its accounting and administrative controls. The district did not object to any of the recommendations and had implemented many of them while the audit was in progress.

Two of the report’s findings and recommendations stand out because of their significant implications for the operation of the district in one case and the management of the basins in the other. The 1999 audit report had found that the district’s \$67 million in reserve funds was too high. Three years later the reserves had plummeted to \$6 million, a level the 2002 report concluded was too low: “We believe this significant depletion may pose a threat to the district’s ability to maintain the current quantity of groundwater in the basins.”

The report attributed the decline in reserves to the \$30 million Clean Water Grant program the district initiated in 1998, the appropriation of \$19 million to fund construction of the Robert W. Goldsworthy Desalter and the Alamitos Barrier Recycled Water project, and the steady reduction in the district’s replenishment assessment from a high of \$167 per acre-foot in the mid-1990s to \$112 per acre-foot in 2000–2001. The latter assessment was continued for the next year, “even though its annual Engineering Survey and Report and budget efforts indicated that it should have charged the maximum allowable rate of \$116 per acre-foot,” the state audit report said.

At the time state law limited WRD’s ability to raise the replenishment assessment by more than the increase in the Consumer Price Index and did not take into account the cost of the water the district purchased. Meanwhile, legislation also capped the size of WRD’s reserve fund at \$10 million. It also required WRD to use at least 80 percent of the reserve fund for water purchases.

The limit on increases in the replenishment assessment were due to expire on December 31, 2002. The cap on the reserves would remain an irritating constraint on the district’s financial flexibility for nearly two decades. As constraining to WRD as the cap itself was the requirement that 80 percent of the reserve fund had to be spent on water purchases. With

the district’s steadily increasing commitment to develop local supply to replace purchased imported water, the 80 percent requirement effectively limited WRD’s financial flexibility to 20 percent of the reserve fund. The reserve language was finally eliminated in 2018 by legislation introduced by State Senator Ben Allen at the district’s request.



State senator Ben Allen receiving WRD’s Champion Award—a water pitcher—at WRD’s Annual Groundwater Festival, 2015. *Image from the WRD archives.*

The 2002 audit report noted a decline of 110,000 acre-feet stored in the basins between October 1998 and September 2001, “eroding about 30 percent of the progress made in replenishing the basins since water year 1961–62” and called on WRD to “identify optimum or minimum quantities of groundwater it should store to assure an adequate supply. Knowing an optimum groundwater quantity is strategically important to the district because this quantity will provide the district with a clear objective when determining the direction and extent of its activities. A minimum groundwater quantity provides the district an early alert when usage and replenishment factors combine to stress the condition of the basins.”

This recommendation and its implementation would prove to be extremely important for the district and groundwater pumpers, because the district and its replenishment program would be guided by quantified benchmarks: “how low” the basins could be while ensuring

a reliable supply and “how full” they could or should be. The latter consideration ultimately made possible the storage amendments to the Central and West Coast Basin judgments.

The board moved quickly on the recommendation. Based on an examination of pumping volumes, pumping locations, and estimates of accumulated overdraft tracked in the annual *Engineering Survey and Report* since 1960, in June 2003 Ted Johnson, the district’s senior hydrogeologist, recommended optimum and minimum groundwater quantities. He said that the optimum groundwater quantity should be set at an accumulated overdraft of 400,000 acre-feet, the amount deemed to be sufficient to meet pumping demands during a major three-year drought without allowing the accumulated overdraft to fall below the

minimum groundwater quantity, which was deemed to be 900,000 acre-feet. (The optimum and minimum quantities are based on the historic accumulated overdraft in the basins: the higher the number, the greater the overdraft and the lower the water levels.) The board adopted the recommendation.

Those quantities were not set in stone. Discussions about groundwater storage and conjunctive use (the mix of groundwater and surface water for replenishment) had continued, and Johnson acknowledged that his earlier estimate of the optimum groundwater quantity was a conservative “worst case scenario.” In April 2006 Johnson asked the board to increase that number to 612,000 acre-feet. The revised figure took “storage projects into account.” He also proposed formulation of a plan, adopted by the board, to make up the deficit between the minimum quantity and the optimum quantity in case such a deficit should occur.

Within a month of the publication of the second state audit of the district, and just days before an appellate court was expected to issue a decision relating to groundwater storage, Assembly Member Tom Calderon slipped into a seemingly unrelated bill language that required yet a third audit of WRD. The real purpose, however, was to insert the legislature in the ongoing court battle and debate between WRD and some pumpers regarding who had the authority to manage the groundwater resources and future storage in the basins.

The legislation was designed to force WRD into a facilitated process with groundwater pumpers “to develop a mutually agreeable long-range water management plan.” The language also specified the legislature’s intent “to assist the district’s ratepayers in creating a long-term solution to managing the resources of the Central and West Basins and to ensure accountability to, and collaboration with, the district’s ratepayers.” It was a way for state law to supersede what was expected to be an appellate court decision rejecting the privatization of storage space in the basins and validating WRD’s management authority and discretion.

This was a decidedly hostile move by pumpers seeking to privatize storage. WRD would have none of it. As it turned out, neither would the state senate. The senate’s Local Government Committee stripped the bill of language WRD opposed and instead adopted language that retained the third audit requirement, to be paid for by WRD, but deleted the existing prohibition against the district’s incurring debt and instead required WRD to prepare a five-year capital improvement plan, and extended the life of the pumpers’ Technical Advisory Committee to January 1, 2005. The bill also noted, without comment, that the state Department of Water Resources had requested a facilitated process to address disputes relating to conjunctive use.

The revision of Calderon's bill was a significant victory for WRD and a reversal of fortune for an agency that had been in the legislature's crosshairs since 1996.

The third and final state audit report on WRD, *Water Replenishment District of Southern California: Although the District Has Addressed Many of Our Previous Concerns, Problems Still Exist*, was issued in June 2004. Taking a step that is rare for a state audit, it praised WRD for the budget preparation and review processes it had implemented and for the many management policies and administrative practices WRD had adopted upon the auditor's recommendation. The 2004 audit strained to find anything to criticize, so it devoted much of its attention to a discussion of the district's reserve fund, expressed alarm that it had continued to decline since the previous audit, and faulted the district for not seeking legislation to eliminate or increase the \$10 million cap.

The audit applauded the district's adoption of a policy on optimum and minimum quantities of stored groundwater and noted that "between the basins' optimum level and the historical high is potential space to store additional water." It concluded that "the entire region could benefit from groundwater storage by having water stored for future use."

The audit found value in the Technical Advisory Committee, observed that by law it would sunset on January 1, 2005, but also noted that "the district intends to revise its administrative code to ensure that the committee remains a part of the process for reviewing and approving its capital improvement projects." Indeed, the Board adopted that revision a month before the audit was published, extending in perpetuity the Technical Advisory Committee. The committee has worked well for the pumpers and the district since first established by legislation in 2000.

In many respects the audit results validated the board's commitment to get serious about implementing the audit recommendations of 1999 and 2002. They also reflected the confidence of state auditors in WRD's relatively new management and professional financial staff. Robb Whitaker, assistant general manager and chief engineer, became general manager in November 2003. WRD hired two internal auditors from the city of Long Beach Auditor's office, both CPAs, to manage the district's budget, finances, and contracting procedures. One was Laura Doud, a certified fraud examiner, who tightened the district's contracting protocols and purchasing procedures. She left the district in 2006 to successfully run for election as Auditor for the city of Long Beach. She is in her fourth term.

In 2004 Whitaker coined the term Water Independence Now, or WIN, to refer to a suite of programs and projects intended to allow WRD to meet its replenishment needs without the use of imported water.

This was a plausible objective because the local water supply for replenishment had seen phenomenal growth since 2000. By 2010 the district had available 49,299 acre-feet of new local water supply because of long-planned WRD projects, projects jointly funded with the Los Angeles County Department of Public Works, the expansion of an existing recycled water facility owned by the West Basin Municipal Water District, the construction of a new recycled water facility by the city of Los Angeles, fourteen new wellhead treatment projects, and a permit change by the Los Angeles Regional Water Quality Control Board.

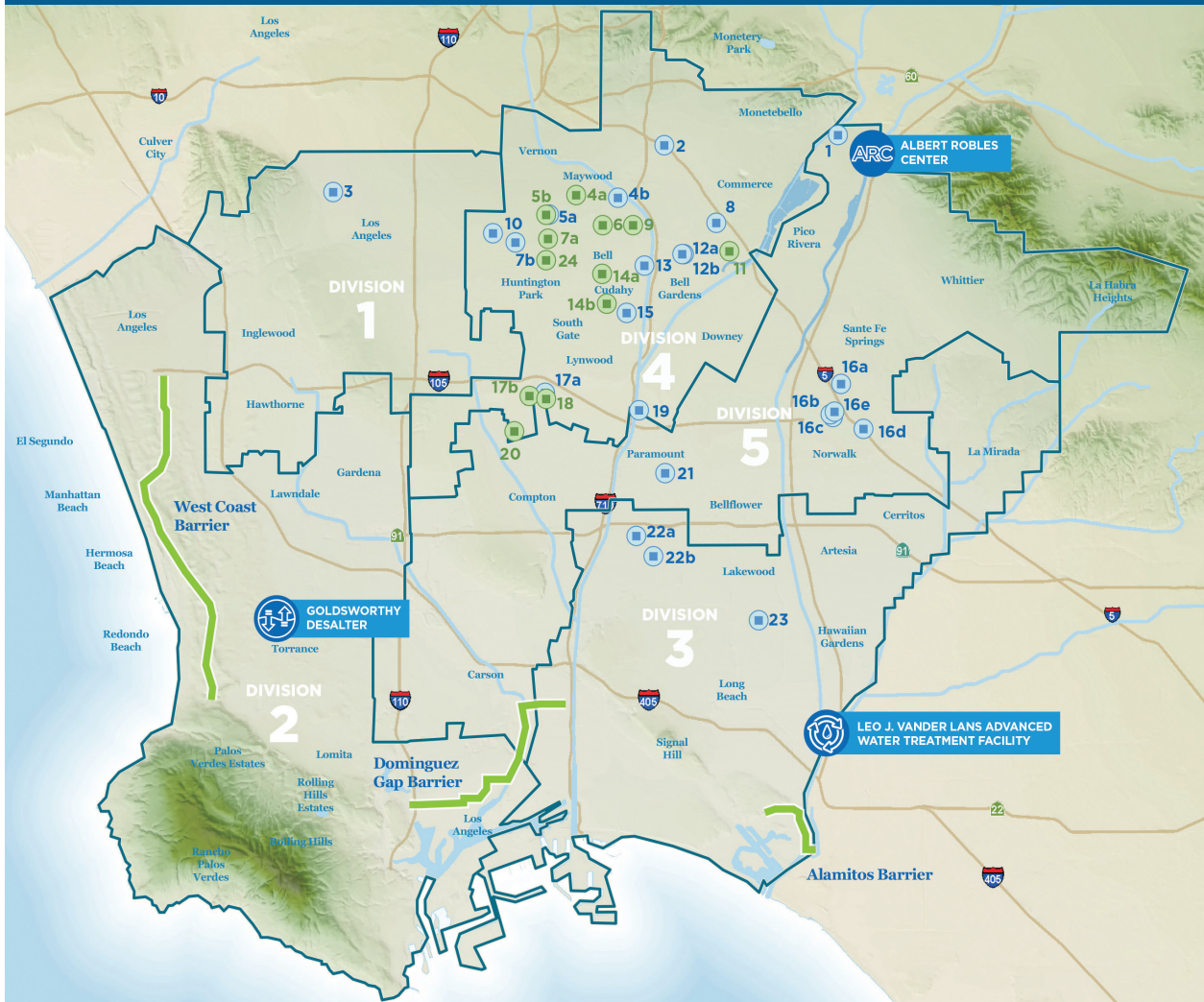
All contributed to WIN in a big way.

Since 1991 the WRD's Safe Drinking Water Program has completed twenty-one wellhead treatment projects. Fourteen were completed between 2001 and 2010. These projects account for 16,199 acre-feet annually, or 67 percent, of all water treated by all the wellhead treatment projects. Contaminants removed from the water include tetrachloroethylene (perchloroethylene, a dry-cleaning fluid), iron, manganese, arsenic, and hydrogen sulfide.

In 2019 wellhead treatment projects were under way in Bell, Bell Gardens, Commerce, South Gate, Huntington Park, Lakewood, Los Angeles, Norwalk, and Signal Hill. A project completed in 1994 in the city of Pico Rivera was deemed to be 100 percent successful and the treatment system was removed in 2007.

SDW & DAC MAP

SAFE DRINKING WATER (SDW) PROGRAM WELLS & DISADVANTAGED COMMUNITIES (DAC) PROGRAM PROJECTS



SAFE DRINKING WATER PROGRAM WELLS

PROJECT ID	CITY	GROUNDWATER PRODUCER
1	Pico Rivera	Pico Rivera, City of
2	Commerce	California Water Service Co.
3	Los Angeles	California-American Water Co.
4b	Maywood	Maywood Mutual Water Company No. 2
5a	Huntington Park	Huntington Park, City of
7b	Huntington Park	Huntington Park, City of
8	Commerce	Commerce, City of
10	Los Angeles	Golden State Water Company
12a	Bell Gardens	Golden State Water Company
12b	Bell Gardens	Golden State Water Company
13	Bell	Golden State Water Company
15	South Gate	South Gate, City of
16a	Norwalk	Golden State Water Company
16b	Norwalk	Golden State Water Company
16c	Norwalk	Golden State Water Company
16d	Norwalk	Golden State Water Company
16e	Norwalk	Golden State Water Company
17a	Lynwood	Lynwood, City of
19	Paramount	Golden State Water Company

SAFE DRINKING WATER PROGRAM WELLS (CONT.)

PROJECT ID	CITY	GROUNDWATER PRODUCER
21	Paramount	Paramount, City of
22a	Long Beach	Signal Hill, City of
22b	Long Beach	Signal Hill, City of
23	Lakewood	Lakewood, City of Water Dept

DAC PROGRAM PROJECTS

PROJECT ID	CITY	GROUNDWATER PRODUCER
4a	Maywood	Maywood Mutual Water Company No. 2
5b	Huntington Park	Huntington Park, City of
6	Maywood	Maywood Mutual Water Company No. 1
7a	Huntington Park	Huntington Park, City of
9	Maywood	Maywood Mutual Water Company No. 3
11	Bell Gardens	Bell Gardens, City of
14a	Cudahy	Tract Number 180 Water Company
14b	Cudahy	Tract Number 349 Mutual Water Company
17b	Lynwood	Lynwood, City of
18	Compton	Compton, City of
20	Willowbrook	Sativa LA County Water District
24	Walnut Park	Walnut Park Mutual Water Company

WRD's Safe Drinking Water Projects with wells in disadvantaged communities (DAC) depicted in green. *Graphic from WRD brochure, 2019.*

CHAPTER

13

**2010s: PHENOMENAL GROWTH
IN LOCAL WATER SUPPLY**



Grand opening of the WRD Albert Robles Center for Water Recycling and Environmental Learning in Pico Rivera, 2019. *Image from the WRD archives.*

Completion in 2019 of the Albert Robles Center for Water Recycling and Environmental Learning (ARC), whose major component is an advanced treated recycled water facility, marked the end of a major chapter in WRD’s history and the beginning of a new one. With the opening of the center WRD achieved a goal set fifteen years earlier to have the capacity to eliminate its reliance on imported water for groundwater replenishment and seawater barrier injection. A new chapter opened with WIN 4 ALL, WRD’s program for ensuring that by 2040 its entire service area has a locally sustainable water supply, with no need to purchase water imported from other areas.

While the history-making significance of the Robles Center’s completion as the centerpiece of WRD’s WIN program cannot be overstated, it was but one of several important local water supply projects completed in a decade that also saw major legal, regulatory, and legislative successes for the district. Substantial outside funding support, combined with exceptionally low interest rates on a state loan and tax-exempt debt issuance, greatly reduced the degree to which the replenishment assessment might otherwise have had to fund these projects.



WRD celebrates the completion of the Albert Robles Center on August 22, 2019 in Pico Rivera, CA. Attendees view the Lillian Kawasaki Demonstration Garden which features a working model of the LA County San Gabriel Spreading Grounds (top) and perform a ribbon cutting inside the advanced water treatment facility (bottom). *Images from the WRD archives.*

THE WRD BOARD

The decade saw unanticipated changes in the composition of the board. Lillian Kawasaki, who had served on the board since January 2007, died in July 2013. WRD's Eco Gardener Program, the demonstration gardens at the district's headquarters, and the demonstration garden at ARC all are named for Kawasaki, a long-time water conservation advocate in the region and champion of WRD's sustainable gardening initiatives. That September the board appointed Lynn Dymally, college instructor, to fill Kawasaki's unexpired term. In the November 2014 election, she lost to John D.S. Allen, a Long Beach water commissioner and retired Los Angeles County deputy district attorney.



The Eco Gardener Program as well as Demonstration Gardens at WRD's headquarters and at ARC are named for WRD Director Lillian Kawasaki. *Image from the WRD archives.*



John D.S. Allen, WRD Director,
Division 3



Vera Robles DeWitt, WRD
Director, Division 5

In May 2018 the Los Angeles Superior Court ruled that Albert Robles' service as a director of WRD was incompatible with his position as mayor of the city of Carson and declared his seat vacant. Robles had served on the board for twenty-five years and led the Groundwater Reliability Improvement Program, which resulted in the advanced treated recycled water campus in Pico

Rivera that bears his name. In August the board appointed Vera Robles DeWitt (no relation to Albert Robles), owner of a small business in Carson, to fill Robles' unexpired term.



WRD names the board room at the WRD headquarters in Lakewood, CA for Director Willard H. Murray, Jr. on September 28, 2017. From left: WRD Directors Sergio Calderon and John Allen, Melinda Murray, WRD Directors Willard H. Murray Jr., Robert Katherman, and Albert Robles. *Image from the WRD archives.*

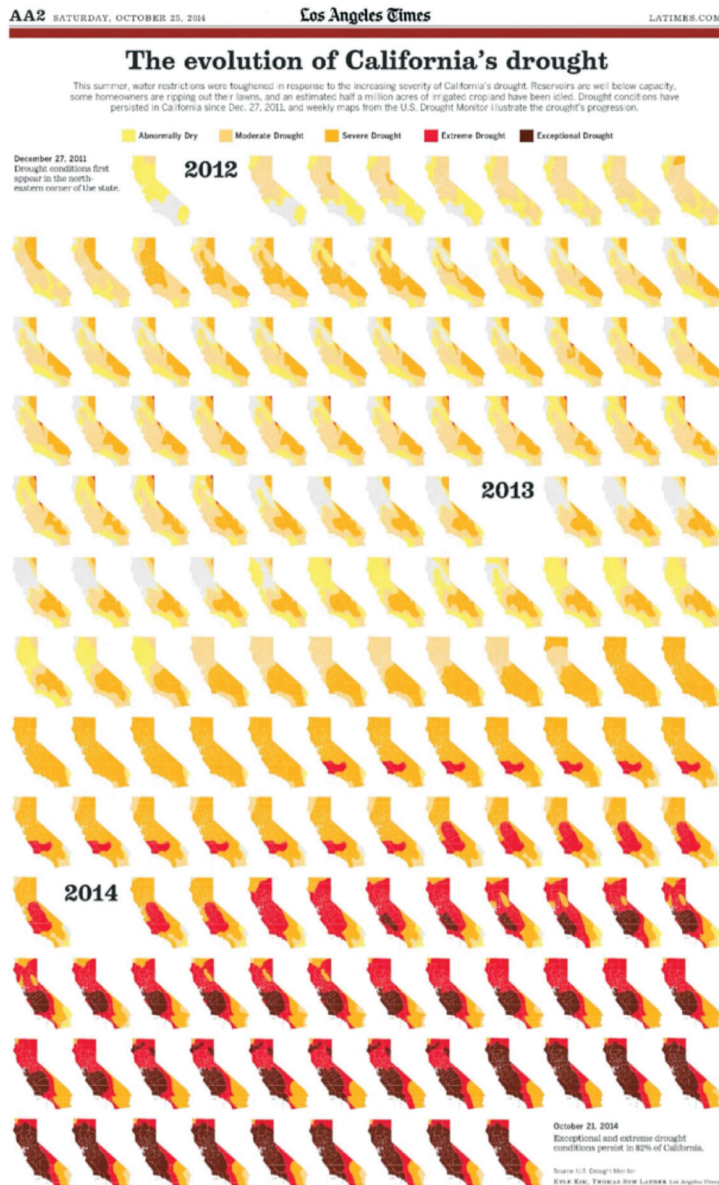
DROUGHT

California suffered the worst drought on record from 2011–12 through 2015–16. In WRD's service area, precipitation was about half of long-term average levels for each of the four years. In the driest year (2013–14), WRD for the first time received no acre-feet of natural replenishment from stormwater. With availability of water from the State Water Project and Colorado River severely curtailed, no imported water was available for replenishment for three consecutive years (2011–14).

Compounding the impact of the drought for WRD was a little-known shellfish. In early 2014 WRD had a pending order for 60,000 acre-feet of imported water, which it expected to buy from



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"The Evolution of California's Drought" shows worsening drought conditions from 2012-2014. Los Angeles Times, October 25, 2014.

the Central Basin Municipal Water District. Colorado River water happened to be available in 2014, but the presence of the quagga mussel, an invasive species native to Ukraine, in the river's water stopped the sale. Because the quagga mussel wreaks environmental havoc by depleting oxygen supply in bodies of water, the Los Angeles County Department of Public Works prohibited the use of Colorado River water in the spreading grounds.

Governor Jerry Brown first declared a drought emergency in January 2014 and called for voluntary conservation. In April 2015 he issued a second executive order with mandatory restrictions designed to reduce the urban use of potable water by 25 percent from 2013 levels. The use of imported water in WRD's service area declined by 25.49 percent in the next two years, while groundwater production declined by about 11 percent.

In addition to accelerating local water supply projects, WRD addressed the drought in other ways.

WRD's permit from the Regional Water Quality Control Board (Regional Board) required the district to use a mix of 35 percent recycled water and 65 percent imported water and/or stormwater, averaged over five years, in the spreading grounds. The virtual disappearance of imported water and greatly reduced stormwater flows meant that WRD would soon be

unable to use recycled water at the spreading grounds. To prevent a bad situation from becoming worse, in June 2013 the Regional Board granted WRD's request to extend the averaging period for recycled water at the spreading grounds from five years to ten years. This enabled WRD to continue using recycled water in periods when storm flows are nominal and imported water is unavailable.

Then, in April 2014, the Regional Board amended the district's recycled water permit at the Montebello Forebay to allow a 45–55 percent mix of recycled water to the imported water and stormwater blending requirement. That change made it possible for WRD to use an additional 6,000 acre-feet of recycled water at the spreading grounds.

The Central Basin judgment empowers the WRD board to declare a water emergency when groundwater resources risk being degraded because of drought conditions. Declaring a water emergency enables a pumper to carry over to another year as much as 35 percent of its legal pumping allocation it did not use during the declared water emergency, meaning the pumper retains the right to that water longer than it otherwise would.

At the request of the pumper community the WRD board had declared a water emergency during the drought of 2007–10, which made available 20,000 acre-feet of pumping rights that pumpers would otherwise have lost. Facing even more intense drought conditions, the WRD board declared a water emergency again in November 2014.

The 2010 water emergency declaration was challenged by the Central Basin Municipal Water District on grounds that it violated the California Environmental Quality Act. The cities of Cerritos, Downey, and Signal Hill also challenged the drought declaration, on grounds it violated the Central Basin judgment.

In a December 2012 published opinion, the appellate court ruled in WRD's favor. In addition to finding that the California Environmental Quality Act was not applicable to the declaration of a water emergency, the court found that the "physical solution" of allocating water rights provided by the judgment trumped the law in any case. The court also found the steps WRD had taken were consistent with the provisions of the judgment, rendering the cities' case moot.

The 2012 decision effectively shielded WRD's 2014 declaration of a water emergency from legal challenge. Ironically, the cities that had challenged WRD obtained the right to pump an additional 2,600 acre-feet that they would not have gained had they and the Central Basin Municipal Water District prevailed in court. They won by losing.

ROAD TO WIN

Between 2000 and 2010, projects with the capacity to produce 21,800 acre-feet of new local water supply annually were completed by WRD, jointly funded by WRD with the Los Angeles County Department of Public Works, or completed by WRD partners. The availability of 10,000 more acre-feet of recycled water for spreading was made possible by the change in WRD's permit by the Regional Water Quality Control Board (Regional Board). And an additional 16,900 acre-feet annually resulted from WRD's Safe Drinking Water projects.

In the next decade, between 2011 and 2019, projects with the capacity to increase the local water supply by 27,472 acre-feet each year were completed by WRD, jointly financed by WRD and the Los Angeles County Department of Public Works, or completed by a WRD partner (Los Angeles). As previously noted, a change to the Regional Board permit allowed WRD to spread an additional 6,000 acre-feet of recycled water.

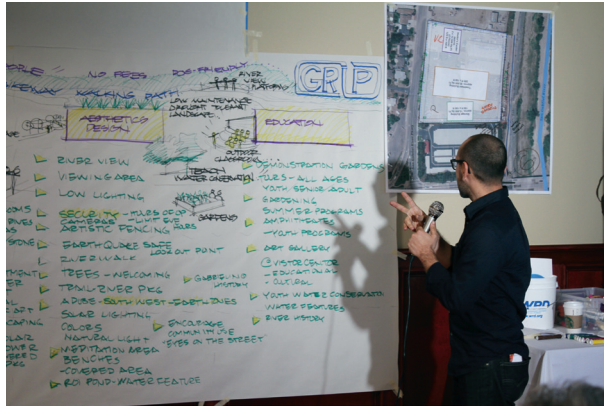
WRD and WRD partner projects and regulatory changes made by the Regional Board between 2000 and 2019 have added 82,172 acre-feet to the local water supply. That amount is in addition to the approximately 6,000 acre-feet of advanced treated recycled water that the West Coast Basin Seawater Barrier was receiving by 2000 and the 40,000 to 50,000 acre-feet of recycled water delivered to the spreading grounds between the late 1980s and 2019.

The result is that WRD has eliminated the need to buy imported water to meet the district's replenishment requirements at the spreading grounds and the capacity exists to do the same at the three seawater barriers. Water Independence Now, first articulated as a WRD goal fifteen years earlier, had become a reality.

No WRD project has captured the imagination of the state and region or commanded the attention and oversight of the WRD board quite like the advanced water treatment facility at what would become the Albert Robles Center (ARC).

The design, construction, and financing of the center are especially noteworthy. ARC was the first, and so far only, recycled water facility in Southern California to be built next to a residential community. All the more remarkable is that its construction had the support of the neighbors. Their support was the payoff of a door-to-door community outreach program that informed all residents.

More important, from the start the community was engaged in the design of the ARC campus and played a meaningful role in shaping its look and feel, including its landscaping, and incorporating a needed public meeting space. Its neighbors regard the center as a community asset, not an unwanted eyesore.



On June 6, 2015, WRD held a design charrette workshop to gather suggestions from local residents about what community features the Albert Robles Center should include. *Images from the WRD archives.*

As the decade began, WRD’s urgent need to wean itself from imported water became apparent to the pumper community. The reliability of the replenishment supply was a concern for pumpers. So was its cost.

In 2010–11 the Metropolitan Water District discontinued its seasonal storage rate, a discounted base rate that historically had applied to water purchased for replenishment. This meant that purchasing imported water for the spreading grounds would now be significantly more expensive, both because of Metropolitan’s rate and because of increasing surcharges imposed by the Central Basin Municipal Water District. Since WRD’s formation Metropolitan rates had increased by an average of 8 percent per year. The surcharges from the Central Basin Municipal Water District had increased by an average of 22 percent per year since they were first imposed in 1991–92. Then, in 2008–9 and 2009–10, the surcharges had jumped 40 percent each year.

The uncertain availability of imported water and Metropolitan’s rate increases, combined with what pumpers believed were excessive municipal water district surcharges, led the pumper community for the first time to vocally support WRD’s WIN program during the replenishment assessment hearing in April 2011. Jim Glancy, the city of Lakewood’s director of water resources and chair of WRD’s Technical Advisory Committee, told the board that the district’s commitment to provide a “more reliable, self-sufficient, independent water

supply is very important” and that its budget for environmental and design work for a new advanced water treatment plant would prove to be a key to “make self-sufficiency real for WRD and all of its customers.”

Instead of simply asking architects to propose a design under a formal request for proposals, the WRD board used the sort of design competition more familiar to museum boards and environmental nonprofits. Selecting six teams from those that had expressed interest, the board paid each to develop a design sketch that would capture the water-producing and educational purposes of the new center, that would be suitable for a site flanked by residential neighborhoods on one side and the San Gabriel River on the other, and was of a scale compatible with the residential neighborhood. After reviewing the proposals and hearing the teams’ presentations, the board chose a team led by SVA Architects of Santa Ana.

And instead of putting each stage of the project—design, engineering, construction, operation, and maintenance—out for separate bids, WRD decided to go with a holistic process, known as design-build-operate-maintain, for all the services under a single contract. That method reduced completion time by as much as two years. After a seven-month process that produced three competitive proposals, WRD awarded the contract to a team led by J. F. Shea Construction.

Financing for the center was also noteworthy. The California Water Resources Control Board awarded the project a \$15 million construction grant. Another \$4.34 million construction grant came from the U.S. Bureau of Reclamation. The Rivers and Mountains Conservancy, a state agency under the California Resources Agency that preserves open space, wildlife habitat, and watersheds, made a grant of \$1 million to pay for the center’s landscaping, which is designed to capture stormwater. The California Department of Water Resources chipped in nearly \$5 million in drought funding toward construction of the project-related spreading grounds inlet and outlet structures.

Even more significant was that the project received a thirty-year loan of \$80 million—at a one percent interest rate—from a fund administered by the California Water Resources Control Board. The low interest represents a savings of \$40 million over what WRD would otherwise have had to pay at the then current AA+ tax exempt rate.

WRD’s direct costs were financed by issuing \$75.2 million in tax-exempt bonds. \$18.6 million of that consisted of proceeds of Water Revenue Certificates of Participation issued in 2011 at an interest rate of 4.70 percent. Those certificates were refunded in 2015 with Replenishment Assessment Revenue Bonds bearing an interest rate of 3.49 percent. The

2015 bond proceeds were also used to fund \$31.2 million in ARC's capital costs. \$25.3 million of the 2018 Replenishment Assessment Bonds also went toward ARC construction. Those bonds sold at an interest rate of 3.88 percent.

Through its Local Resources Program, the Metropolitan Water District provides an operating subsidy for projects that create new local water supplies that replace existing demand for potable water. Sponsored by the city of Torrance, a member of the Metropolitan Water District, WRD sought and obtained a subsidy of \$36 per acre-foot for the 10,000 acre-feet of recycled water to be produced at the advanced water treatment facility. That amounts to a total payment to WRD under the program of \$9 million over twenty-five years.



The San Gabriel River (center) and the Los Angeles County San Gabriel Coastal Spreading Grounds (right), 2011. Recycled water from the Albert Robles Center is sent through a pipeline along the San Gabriel River and is delivered to the spreading grounds for groundwater replenishment. *Image from the WRD archives.*

LITIGATION

The district spent much of the decade in the middle of a litigation free-for-all, dealing with twenty-four lawsuits, half as a defendant and half as a plaintiff. It prevailed in nineteen, settled two, and did not pursue three others. And after fifteen years of facilitation, mediation and negotiation the courts approved amendments to the Central and West Basin

judgments, creating a legal framework for groundwater storage. (See Chapter 18)

STATE LEGISLATION

The second decade of the new century was an eventful and exceptionally productive time for WRD in Sacramento. The legislature enacted all bills supported by the District and rejected all bills the district opposed. Several bills of particular interest to WRD were introduced between 2011 and 2018.

Time Limit on Challenges to Replenishment Assessment

Assembly Member Sebastian Ridley-Thomas introduced a measure sought by WRD in 2014 that would require anyone challenging WRD's replenishment assessment in court to do so within 180 days of the WRD board's adoption of the assessment. Without a statute of limitations on filing such actions, WRD's financial stability was threatened at the time by long-standing (and ultimately unsuccessful) Proposition 218 legal challenges to replenishment assessments adopted years before the lawsuits were filed. The legislature agreed.

LA County Sanitation Districts, WRD, and Stormwater Programs

State Senator Ed Hernandez introduced legislation in 2015 to authorize the Sanitation Districts of Los Angeles County to acquire, build, operate, and maintain facilities for the diversion, management, and treatment of stormwater and dry weather runoff and use that water for beneficial purposes. WRD obtained an amendment that requires the Sanitation Districts to consult with WRD before initiating such a program within the boundaries of an adjudicated basin or within the service area of WRD.

WRD's Reserve Funds

After the legislature in 2000 placed restrictions on WRD's reserves following the 1999 state audit report critical of the district's practices, some of those restrictions became both problematic and outdated. One required WRD to spend 80 percent of its reserves to purchase water for replenishment. Another capped WRD's annual reserve at \$10 million, adjusted annually to reflect changes in the cost of purchased water.

The problems arose as WRD shifted from a predominantly imported supply of water for replenishment to predominantly local sources in the form of recycled water and enhanced stormwater capture. Both reserve provisions limited WRD's flexibility to finance capital projects to develop local supply.

In 2013 legislation sought by WRD and introduced by State Senator Rod Wright relieved WRD of the requirement to spend 80 percent of its unrestricted reserves for water purchases but only until the 2019–20 fiscal year. By 2015 only 20 percent of the water used for replenishment was imported, and by 2019 WRD expected to rely entirely on local sources that year and in the future.

In 2018 State Senator Ben Allen introduced legislation to repeal the reserve fund cap and water expenditure requirement entirely. Its passage was a major victory for WRD, freeing it of the financial straitjacket it had worn for eighteen years.

Allen’s bill included two provisions unrelated to WRD’s reserve funds. The new law created a seven-member pumper-selected Budget Advisory Committee to review WRD’s budget, replenishment assessment, finances and reserves and make recommendations to the WRD board. Another provided that if WRD took a pumper to court to force payment of a delinquent replenishment assessment, the prevailing party could collect legal fees from the loser. (After seven pumpers had refused to pay the replenishment assessment, the WRD took them to court and won, but at the time no state law allowed the district to seek payment of its legal fees.)

Other Measures

One new law made WRD eligible for site cleanup funds from the state Water Resources Control Board. Four bills related to the Central Basin Municipal Water District. One that would have given that district “oversight responsibility” for groundwater in the Central Basin was not enacted. Enacted was legislation to remove any authorization for groundwater storage from its enabling act; another prohibited the award of sole-source contracts except in specified emergencies; and another changed the composition of the Central Basin Municipal Water District’s board by adding three customer-selected members. (See chapter 15.)

CHAPTER

14

BASIN EQUITY: ONE RATE OR TWO?

The formation of the Water Replenishment District was the institutional alternative to litigating the underflow between the Central and West Coast Basins. The matter of basin equity was on the minds of groundwater pumpers in the basins before the Water Replenishment District was formed. Within weeks of passage of the Water Replenishment District Act, the respective basins' water associations formed Water Replenishment District Committees. Between July 1955 and July 1958 the advantages and disadvantages of two separate replenishment districts or a single district covering both basins were explored and discussed in detail by pumpers in the two basins.

While Central Basin pumpers from the outset favored a single district covering both basins, it was not such an obvious choice for West Basin pumpers. "At first, West Basin



The Newport-Inglewood Uplift (a fault) forms the boundary between the Central and West Coast Basins. *Graphic from WRD.*

producers presumed that they would go it alone and created a working committee with the association to draft a specific proposal to create a district,” Elinor Ostrom wrote in her doctoral dissertation. “The West Basin producers were physically disadvantaged because they were at the end of the groundwater ‘pipeline.’ They were concerned that their physical disadvantage could be exaggerated by the creation of a new public agency in which they would be politically dominated.”

In a November 17, 1955, report to the West Basin Water Association, R. R. Thorburn, chair of its Replenishment District Committee, listed reasons for a district that would cover only West Basin as well as reasons for a single district covering both basins. One reason for separate districts was that “a district limited to West Basin could initiate proceedings to ensure financial replenishment from Central Basin.”

“In other words,” Ostrom commented, “if the District comprised only West Basin, then the West Basin producers could sue the Central Basin producers to pressure them into



The referee’s report informed the court and the parties that West Basin depended on Central Basin for a certain amount of freshwater inflow each year. Such a finding from the court-appointed referee could easily form the basis of a legal claim by West Basin pumpers to a guaranteed annual inflow from Central Basin. Such a guarantee could force even greater reductions of pumping in Central Basin. In light of conditions that had already developed in Central Basin by that time, that was a very real prospect.

curtailing their production.”

A plan for a replenishment district limited to Central Basin was never advanced because the leading Central Basin pumpers favored a combined district even before the Water Replenishment District Act took effect. In August 1955 Brennan Thomas, general manager of the Long Beach Water Department—by far the largest pumper in Central Basin, appeared before the West Basin executive committee. Thomas was also a member of the Central Basin Water Association’s executive committee and its Water Replenishment District Committee.

Thomas said the Central Basin association was giving serious consideration to a district that would encompass both basins and what its boundaries might be. He explained that a combined district would have substantial financial resources to buy the water necessary for both basins and said that he recognized “certain advantages and disadvantages of such a plan.” He believed, however, that “a larger replenishment district would be able to accomplish more in preserving and protecting the underground supply than would be the case if a smaller district were formed.”

Central Basin pumpers were fully aware that a combined district meant a single replenishment assessment for pumpers in both basins. Under the Water Replenishment District Act, any replenishment assessment adopted by a replenishment district board had to be uniform and based on groundwater production.

Even in the face of whatever disadvantages Thomas meant, Central Basin pumpers supported formation of a single replenishment district covering both basins. The reason had to do with the volume of underflow from the Central Basin into West Basin and the

prospective obligation of Central Basin pumpers to maintain it.

THE UNDERFLOW

In *Dividing the Waters* (1992) William Blomquist describes the historic underflow and its importance to West Basin:

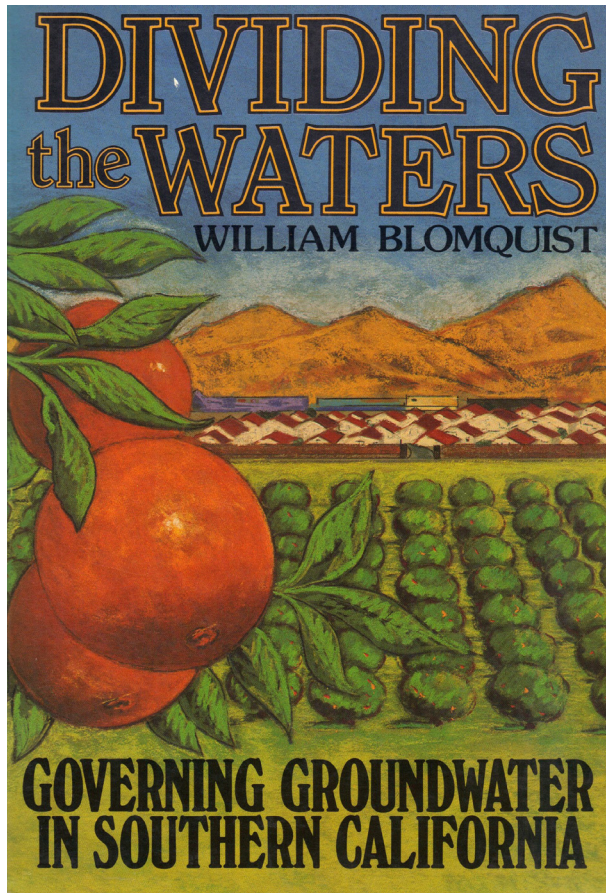
West Basin is the last in the series of interconnected groundwater basins of the San Gabriel River Watershed. Its ultimate source of freshwater is miles away, in the rainfall and runoff of the San Gabriel mountain range. Its entire supply of freshwater comes from subsurface flows across the Newport-Inglewood Uplift from Central Basin. The uplift “resembles a ground water cascade” and the rate of flow across it depends on the difference in water levels between Central Basin and West Basin. The greater the difference between the higher water levels on one side of the uplift and the lower water levels on the other side, the greater the volume flowing from one side to the other.

The 1952 *Report of Referee*, written in connection with the West Basin adjudication, documented the hydrologic continuity of the two basins and quantified the historic underflow West Basin received from Central Basin. Excerpts from the *Report*:

The West Coast Basin is not a unique, independent hydrologic unit, but is dependent on adjoining areas for practically its entire ground water supply. . . Fresh water is supplied by aquifers extending into the basin across the Newport-Inglewood uplift, which aquifers have their source in remote areas of recharge.

For all practical purposes, the sole source of continuing fresh water replenishment to the basin is the underflow across the Newport-Inglewood uplift. The rate of this replenishment is proportional to the hydrostatic head across the uplift, and during the period 1945–46 through 1949–50 the replenishment has averaged about 30,000 acre-feet per year. . . . The volume of fresh water replenishment will also be reduced in proportion to the resulting change in water level differential across the uplift.

The referee’s report informed the court and the parties that West Basin depended on Central Basin for a certain amount of freshwater inflow each year. Such a finding from the court-appointed referee could easily form the basis of a legal claim by West Basin pumpers to a guaranteed annual inflow from Central Basin. Such a guarantee could force even greater



Dividing the Waters (1992) by William Blomquist.

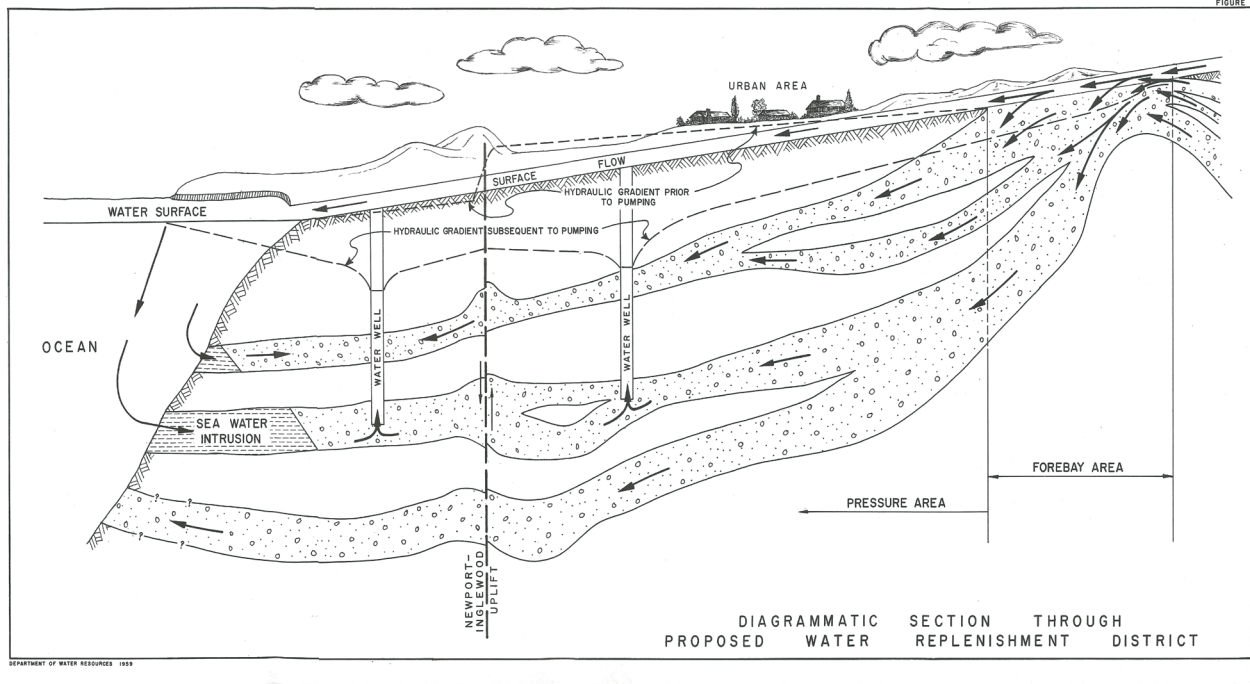
reductions of pumping in Central Basin. In light of conditions that had already developed in Central Basin by that time, that was a very real prospect.

Even before publication of the *Report of Referee*, West Basin pumpers had eyed with great interest Central Basin developments that might affect underflow. “The success of the effort to form [the Central Basin Municipal Water District] and to have it annexed to Metropolitan is of special importance to the West Basin,” Fossette wrote in a May 1952 edition of *West Basin Water News*. “The Inglewood-Newport fault separates the Central Basin from the West Basin and virtually all of the groundwater replenishment to West Basin accrues by underflow across the dividing fault line. A recent report of the Division of Water Resources (Bulletin 8) indicates that the Central Basin is now subject to an

overdraft of about 100,000 acre-feet per annum. It follows that as long as this overdraft continues, the replenishment to West Basin will be progressively diminished.”

Indeed, the replenishment to West Basin dropped precipitously in the next few years. In a February 23, 1956, presentation to the West Basin Water Association, Max Bookman, the West Coast Basin watermaster, said that “significant facts were being developed with reference to water levels across the Newport-Inglewood fault in Central Basin.” He said water levels on the Central Basin side were still receding rapidly and “when water levels on the Central Basin side were lower than levels on the West Basin side, replenishment to West Basin from Central Basin would be cut off.”

In a November 6, 1958, presentation to the Central Basin Water Association, Harvey Banks, director of the State Department of Water Resources, observed that “water levels in Central Basin are now so low that the ground water flow has been reversed and is now moving from West Basin into Central Basin, contrary to the design of nature.”



Geologic cross-section of the workings of the Central and West Coast Basins from the Montebello Forebay Spreading Grounds to the coast. Data source: California Department of Water Resources Report on Proposed Central and West Basin Water Replenishment District, 1959.

Bookman subsequently estimated that, to restore the underflow to anything approaching the historic volumes identified in the *Report of Referee*, pumping in the Central Basin would have to be limited to 170,000 acre-feet, more than 100,000 acre-feet less than pumping levels at the time.

BOTH BASINS LEAN TOWARD A UNIFIED DISTRICT

The prospect of adjudicating the underflow was on the minds of West Basin pumpers even as the Water Replenishment District Act was being crafted. Indeed, one of its provisions authorized a district to pay the costs of adjudicating water rights. “West Basin needed the provision in the act to permit adjudication of the upstream system in the Central Basin and in the San Gabriel Valley in order to find some means to stop the cutting off of upstream replenishment to West Basin,” said Ben Haggott, the West Basin Water Association president.

“West Basin threatened to sue Central Basin producers,” Fossette wrote in *The Story of Water Development in Los Angeles County* (1958), “unless they reduced pumping to allow



*“West Basin threatened to sue Central Basin producers,” Fossette wrote in *The Story of Water Development in Los Angeles County (1958)*, “unless they reduced pumping to allow water levels to recover, so replenishment would, again, reach the West Basin by underflow across the Fault dividing the two areas.”*

water levels to recover, so replenishment would, again, reach the West Basin by underflow across the Fault dividing the two areas.”

In his May 2, 1957, speech to the Central Basin Water Association, Joe Jensen, president of the Metropolitan Water District Board of Directors, put the formation of a single replenishment district covering both basins into a decidedly legal context. He said that “in his opinion, a single replenishment district should be formed to include the area of both Central and West Basins rather than to form a single district in each basin.” Referring to the Orange County Water District’s litigation against Riverside, San Bernardino, Redlands, and Colton, Jensen noted that the judge had ordered those cities to reduce pumping by 30 percent and to “pay back the excessive amounts of water taken since 1951.” Jensen

said that “West Basin was entitled to its fair share of the natural water . . . and that if a single replenishment district was formed including both West and Central Basins, the entire area could be regulated as a single unit.”

In making the case for a single replenishment district to West Basin pumpers six months later, Jensen again referred to the Orange County Water District litigation. From minutes of the November 1957 meeting of the West Basin Water Association: “Mr. Jensen referred to the recent court decision rendered in connection with the Orange County suit against San Bernardino, Riverside, Redlands and Colton, providing that those cities reduce pumping by 30% in order to insure that Orange County would receive its fair share of the ground water supply. He added that the decision further provided that the Upper Basin cities pay back the excessive amounts of water taken since 1951 and he compared the situation involved in that lawsuit with that existing in the West and Central Basin areas.”

The implication of Jensen’s message was not lost on Central Basin pumpers. Two years later Brennan Thomas, the Long Beach Water Department general manager, solicited the participation of the West Basin Water Association in litigation the city of Long Beach intended to file against pumpers in the Upper San Gabriel Valley. He emphasized that “the

geological factors were similar in the Upper San Gabriel Valley and the Santa Ana territory . . . the West Basin was in the same relative position as the Orange County Water District, that Riverside represented the same position as the Central Basin area and that the Upper San Gabriel Valley area occupied a position similar to that of the San Bernardino area.”

Thomas made explicit in 1958 the legal concerns he and other Central Basin pumpers had with respect to West Basin pumpers since publication six years earlier of the *Report of Referee* in connection with the West Basin adjudication.

From the perspective of a Central Basin pumper, it would be far less expensive to pay more for a common replenishment district than to risk significant reductions in pumping, the likely result of an adjudication of the underflow. According to Fossette, Central Basin pumpers supported a single replenishment district “to increase the yield of the basin by spreading and operating barriers to repel sea water intrusion. And finally, [to] adjudicate water rights and curtail pumping to the extent necessary to restore water levels and furnish reasonable underflow to West Basin—thus, avoiding another lawsuit.”

Like their Central Basin counterparts, West Basin producers came to see the formation of a single replenishment district as an attractive alternative to litigation. “After their costly experience with litigation,” Ostrom wrote in her 1960 dissertation (referencing the West Basin adjudication begun in 1945), “most West Basin producers hesitated to enter into prolonged adjudication concerning the respective rights of Central Basin producers and West Basin producers to the joint supply. The possibility of creating a management enterprise to include both basins offered the opportunity to negotiate a rationing agreement within the framework of a common public enterprise.”

THE REPLENISHMENT ASSESSMENT AND BASIN EQUITY

For the first decade or so of the district’s history, little attention was paid to the relative costs and benefits of the replenishment assessment. The assessment was low to begin with and stayed low. At six dollars per acre-foot, the assessment in 1970–71 was barely above the 1961–62 rate of \$5.75. (The half-year assessment in 1960–61 was \$3.19.)

Water purchases for spreading and barrier injection between 1960–61 and 1970–71 were heavily subsidized by property-tax payers through the County Flood Control District’s conservation zones. Forty-five percent of the untreated imported water purchased for spreading in the Central Basin between 1960–61 and 1970–71 was purchased with Zone I funds. During the same period 44 percent of the water for injection into the West Coast

Basin Seawater Barrier was purchased with Conservation Zone II funds.

At the time the administration, engineering, and legal costs of WRD were not paid by revenues from the replenishment assessment. Except for water purchases, all costs of the district were paid by the property tax assessed by the district in both basins.

Metropolitan Water District rates for untreated spreading water and treated barrier water started at \$12 per acre-foot and \$20 per acre-foot, respectively, in 1960–61 and increased modestly through 1970–71, when the untreated rate was \$20 per acre-foot and the treated rate for barrier water was \$29 per acre-foot. In the early 1970s the funding dynamics of replenishment began to change markedly, as did the costs of spreading water in the Central Basin and of barrier injection water in the West Coast Basin. Most significantly monies available through Zones I and II would be exhausted by the end of 1972 and the zones would not be renewed, thus ending the substantial financial support WRD's water purchases had enjoyed from property-tax payers since its formation.

Just as a significant source of funding for water purchases was disappearing, a new need for water purchases was emerging. In 1970 the Dominguez Gap Barrier began operations. While Zone II paid 61 percent of the costs for water purchases in 1970–71, in the future WRD would have to rely exclusively on funds from the replenishment assessment to pay for the water required for injection. (WRD already paid all the water purchase costs for the Alamitos Barrier since it became operational in 1964–65.)

Adding to a loss of funding support and a new demand for barrier water was escalation at an unprecedented pace of Metropolitan Water District rates. The rate for untreated water increased from \$12 per acre-foot in 1960–61 to \$20 per acre-foot in 1970–71. In five years the rate would be \$37.

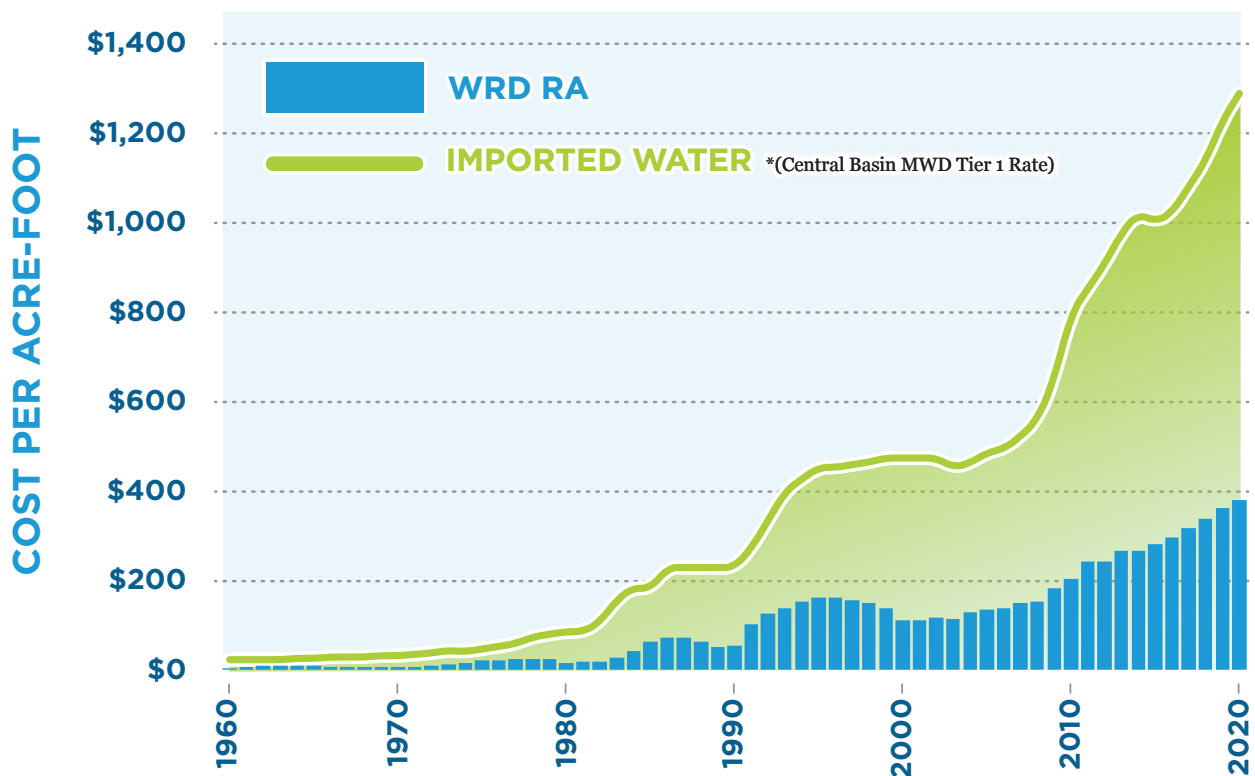
With the introduction of more expensive State Water Project water to the Metropolitan Water District system, Metropolitan published its "1974 Water Pricing Study," which called for steep rate increases for all categories of water over an extended period. As the rates increased, so would the cost difference between untreated replenishment water used for spreading and treated water used for barrier injection. The difference in the two prices had remained at \$8 for the first ten years but increased to \$9 in 1970–71, then to \$13 by 1976–1977. The higher the rates and the wider the spread between the two categories, the more attention WRD and the pumpers paid to the spread.

Other pressures on the replenishment program were at work as well. The city of Los Angeles wanted to move the Metropolitan Water District to a "user pays" pricing system because its

property tax payers had been heavily underwriting the district since 1929, and Los Angeles had purchased relatively little of the district’s water. Such a “user pays” formula would dramatically increase rates for all categories of water, including replenishment water.

Some Metropolitan member agencies did not want to continue the discounted water replenishment rate at all. In 1971 San Bernardino and Riverside member agencies sued to eliminate the replenishment rate altogether on the ground that member agencies that did not buy replenishment water subsidized those member agencies and their customers that did (*David Daar, A.C. Reynolds et al v. MWD*).

HISTORICAL WATER RATES WRD Replenishment Assessment vs. Imported Water*



It was not as if the pumpers and WRD’s board were unaware of the changing funding dynamics. Two members of the board, Lloyd Leedom and Charles Barker, were also members of the Metropolitan board, and since 1970 Metropolitan had been discussing the inevitable rate increases that would result from the introduction of State Water Project water. They were also aware of the pressures within the Metropolitan Water District to eliminate the special replenishment and barrier rates and to reduce the district’s reliance on the property tax.

WRD's general manager, Carl Fossett, was also the general manager of both municipal water districts in the area as well as both associations and was familiar with the funding issues relating to all three districts and the interests of members of both associations. The pumpers and WRD were also well aware in advance that Zones I and II would expire inasmuch as both associations and the district board had adopted resolutions in 1968 supporting the elimination of the zones when their then-current five-year terms expired on June 30, 1972.

CITY OF DOWNEY, 1975-76

The issue of perceived inequity in the replenishment assessment was a subject of quiet discussion among the pumpers and the district through the early 1970s, but it did not surface as a public issue until 1975. At a WRD board meeting on April 8, 1975, Max Bookman, the consulting engineer, defended his recommendation to increase the replenishment assessment by 42 percent, from \$14 per acre-foot to \$24 per acre-foot, to accommodate a large increase in the Metropolitan Water District's rate for spreading and barrier water.

Robert Coates, superintendent of the city of Downey's Water Department, questioned "why Central Basin ground water pumpers should have to bear a substantial burden of paying for water injected in the two coastal barriers in the West Coast Basin because assessments on pumping there did not raise enough to offset injection in that area."

Martin Whelan, the WRD's general counsel, replied that there was no provision for separate assessments in each basin and that when the district was formed, "it was anticipated that the District would provide replenishment water to the West Coast Basin area to make up for the reduced amount of subsurface water flowing into the West Coast Basin from the Central Basin due to heavy pumping in the Central Basin."

Bookman added that "during the early years of the District, the West Basin pumpers supported the cost for the purchase of imported water for spreading based upon the fact that water spread in the Central Basin area would eventually reach the West Coast Basin."

The board ended up adopting an assessment of \$21 per acre-foot for 1975-76. In a subsequent meeting the board instructed the staff to explore alternatives to "the growing problem of financing the increasing cost of injecting water into the three coastal barriers." It also asked Bookman to review the "equity in the replenishment rate as applied to both the Central and West Coast Basin."

At a closed session of the board on December 18, 1975, Bookman discussed the “confidential review” his firm had prepared for Martin Whelan of the “equity in the replenishment rate as applied to both Central and West Basins.”

The review was an evaluation of the “financial and economic aspects of the overall replenishment program” Whelan had requested while preparing for trial in the Daar case. The review was written by David O. Powell of Bookman’s firm. While the report was detailed with respect to calculating the relative costs and benefits of the replenishment program for each basin, Powell noted that a thorough evaluation of the question “would require a determination of the subsurface inflow from the Central Basin to which the West Coast Basin is entitled in comparison with the actual amount of inflow which exists. Such a determination would require an adjudication between the Central Basin and the West Coast Basin. In dealing with this question, it is also necessary to recognize that, in the absence of any pumping in the West Coast Basin, injection of water might still be required in order to protect the Central Basin against inflow of water degraded by sea water intrusion from the West Coast Basin.”

Powell concluded that “revenues from replenishment assessments levied on pumpage in the Central Basin are being utilized to purchase a portion of the water being injected in the West Coast Basin. In the absence of an adjudication of the rights to the natural local water supply between the two basins, it is not possible to evaluate the propriety of this. However, the amounts of water involved do not appear unreasonable.”

Following the closed session, the WRD board adopted a resolution stating that “it is not aware of any inequity between the replenishment rate structure and the replenishment program in the Central and West Coast Basin areas; however, in order to insure appropriate treatment” of the matter, the board told Bookman “to continue [his] review thereon and include same in the District’s Draft Environmental Impact Report for the 1976–1977 water year.”

Consistent with the board’s instructions of the previous December, the *Environmental Impact Report for the Groundwater Replenishment Program for 1976-77* addressed the issue of equity and the replenishment assessment:

The question has been raised as to whether there is financial equity between water replenishment assessments raised from ground water producers in Central Basin and West Basin, relative to expenditures for replenishment water for the two basins.

While approximately 20,000 acre-feet per year of replenishment water injected into the barriers in the West Basin [West Coast Basin Barrier and Dominguez Gap Barrier] is in effect paid for from water replenishment assessments generated from Central Basin producers, no financial inequity can be demonstrated in that: (a) the amount of underflow between Central Basin and West Basin is unknown, and there has been no legal determination of the quantitative rights, if any, which West Basin has with respect to flow from Central Basin; and (b) the West Coast Basin sea water barriers, employing replenishment water, are ultimately protective of Central Basin as well. While the immediate benefit therefrom may appear to be to West Basin, the immediacy of benefit also varies between various portions of Central Basin and West Basin.

CITY OF LONG BEACH, 1987-88

By 1986–87 the replenishment assessment had risen to \$71 with one dollar of that amount earmarked for administrative costs of the district. With the passage of Proposition 13 in 1978, the district’s reliance on the property tax for purchases other than water was curtailed. The untreated rate for imported spreading water was \$153, and the rate for treated barrier water was \$230. Since the last public discussion of the equity issue in 1975, the assessment had increased 296 percent, the rate for untreated water for spreading had increased 373 percent, and the rate for treated water for barrier water had increased 397 percent. The difference between the spreading rate and the barrier rate had increased 405 percent.

At the replenishment assessment hearing on what the rate should be for 1983–84, Larry Larson, general manager of the Long Beach Water Department, testified against WRD director Warren Harwood’s motion to reduce the proposed replenishment assessment, arguing that “the District has always been well managed and the RA had been fair and just.”

It was thus something of a surprise in June 1987 that Larson asked the Executive Committee of the Central Basin Water Association to request that WRD review the “apparent inequity” in the assessment and to report back to the executive committee. The district’s “replenishment assessment is uniform for both Basins yet the cost of replenishment varies widely between the two Basins. Central Basin receives replenishment from storm flows, waters from the San Gabriel Basin, reclaimed waters and imported waters while the West Basin is replenished primarily with imported water with some flow from the Central Basin through the Newport-Inglewood fault,” Larson said. He said the cost difference between the

two basins resulted in an “excess charge” to Long Beach of \$424,000 for 1985–86. “This inequity will become greater as more reclaimed water and less imported water is used to replenish Central Basin,” Larson warned.

Richard Rhone of Bookman-Edmonston and John Joham, the general manager of WRD, developed the review Larson had sought and shared it with the executive committee in September. “It is interesting to note,” the review said, “that although the initial levies for raising assessments for replenishment were mostly used for purchasing water for spreading in the Montebello Forebay, no one in the West Basin who was paying the same assessment for each acre-foot pumped as his counterpart in Central Basin asked whether there was equity in the way the assessment was used.”

The review said that “in addressing the question of relative balance between Central and West Basin, it must be recognized that making an accurate evaluation would require a determination of the subsurface inflow from Central Basin to which the West Coast Basin is entitled in comparison to the actual amount of inflow that exists. Such a determination would obviously require an adjudication.”

Further, “the actual prevention of sea water intrusion in the West Basin protects the continued inland pumping whether it be in the West Basin or the Central Basin; for without such protection, sea water intrusion would eventually move across the West Coast Basin and into the Central Basin through various areas across the Newport-Inglewood uplift as a result of pumping differentials causing reverse flow between the basins.”

The review chronicled some of the historical development of water institutions and adjudications in both basins and noted that over-pumping in Central Basin had continued for many years after the voluntary curtailment in West Basin. It outlined the various efforts WRD had made to try “to acquire a lower cost replenishment supply,” including an effort to acquire recycled water from the Hyperion Water Reclamation Plant for barrier injection.

The review then revisited the 1975 Bookman-Edmonston calculation that showed Central Basin pumpers in effect paying for 20,000 acre-feet of barrier water. Based on more recent costs of water and amount pumped, the number was now 17,000 acre-feet. “While the immediate benefit may appear to be to West Basin, any adjudication action between the Central and West Basin could lead to a precedent or a similar action between Orange County and the Central Basin. . . . It is quite probable that any such determination would end up being quite restrictive to the operations of both basins as well as extremely costly,” the review concluded.

The review ended by saying that “Central and West Basin should strive for greater cooperation to achieve common objectives. Seeking a more appropriate replenishment differential requires unanimity among replenishment interests.”

William Franklin, president of the Central Basin Water Association, was not satisfied with WRD’s review. On November 10, 1987, he wrote to President Daniel Glasgow, and the board. He recited the apparent assessment inequity and stated his belief that “if we are contributing more than our share of replenishment cost, Central Basin water users should be charged less on their pump assessment and West Basin users more.

“In the event the Replenishment District finds there is an inequitable distribution of costs for benefits received, a change can be sought in the way the pump assessment is collected. . . . An area of special benefit might be established over a certain portion of the District, and a special extra charge might be levied because of the extra benefit found to exist or prevail in that special area only.”

Franklin left the matter in the district’s hands, according to the minutes: “The Executive Committee believes this judgment is best left to the Board of Directors of the Replenishment District and that once a year at the time of the public hearing, or perhaps before, a determination of whether all assessments are equitable should be made and if found otherwise, adjustments should be sought in the method of collecting the replenishment assessments to re-establish that equity.”

The West Basin Water Association responded to the Central Basin Water Association’s letter of November 10 by asking its members for their comments and opinions and scheduled a meeting of the association for January 19, 1988. In his letter to the members, C. Marvin Brewer, the Association president, offered his opinion:

Originally the question of equity was raised when the Replenishment District was first formed because most of the replenishment funds would be spent in the Central Basin as neither the West Basin Barrier nor the Dominguez Gap had been built. But it was decided that working together to improve the entire area was much better than fighting over how the funds raised for replenishment purposes should be shared and spent on litigating over how much ground water Central Basin should supply either by direct payment or through the Inglewood-Newport Uplift. We believe that decision was a good one and should continue to be supported.

In a January 19, 1988, letter delivered to the West Basin Water Association meeting that

day, Robert S. O’Cain, superintendent of the city of Torrance water system, said:

Although the Central Basin Water Association believes there may be an inequity due to the difference in cost between operating the Replenishment Program in the West Basin by providing treated imported water for barrier injection as compared to using untreated imported water for spreading in the Central Basin, we believe this comparison does not fully take into account common benefits derived by both Basins from an implementation of these companion programs. The operation of the barrier injection not only protects the West Basin from seawater intrusion, but also the Central Basin. Without this program, eventually seawater intrusion would migrate into the Central Basin across the Inglewood-Newport Uplift.

In addition, any effort to reformulate the current method of assessing Replenishment fees must take into account a comprehensive evaluation of sub-surface inflow from the Central Basin to which the West Basin is entitled. This would require an adjudication be made between Central and West Basin. We believe this kind of procedure would be counterproductive to the interests of both Basins.

The Torrance letter appeared to have an impact at the West Basin Water Association’s meeting. WRD Director Charles Barker was also there and, according to Richard Rhone’s handwritten notes, played a significant role. The notes suggest that Barker’s argument was that before WRD was formed, West Basin pumpers had spent millions of dollars on an adjudication to curtail pumping and that over-pumping in Central Basin was causing a reversal of flow across the uplift. West Basin pumpers considered filing a lawsuit against Central Basin pumpers, but the solution, in the view of the West Basin Water Association, was creation of the Water Replenishment District instead. The Central Basin Water Association had concurred, with Long Beach taking a leading part. A “common manager” was an important part of the solution.

Following the West Basin meeting of January 19, Brewer wrote the WRD board:

We recognize that if you were dealing only with the question of who finances the West Basin Barrier without considering the other important replenishment responsibilities and objectives, we probably could agree that some change in the uniform assessment may be necessary. However . . . we conclude that you can’t isolate the operation of the West Basin Barrier as the sole responsibility of West Basin producers.

Despite the strong sentiments of Long Beach and perhaps other Central Basin pumpers, the assessment issue receded from public view and would not reemerge for another four years.

DANIEL GLASGOW, WRD BOARD PRESIDENT, 1992–93

The face of the Water Replenishment District changed dramatically between 1988 and 1992. Of the five directors on the board in 1992, only one, Daniel Glasgow of Long Beach, had been on the board four years earlier. John Joham resigned as general manager in 1989 and was succeeded on an interim basis by Richard Rhone of Bookman-Edmonston until John Norman was selected in July 1990. Martin Whelan, the attorney who had provided the district with legal services since its formation, first as assistant counsel and subsequently as general counsel, also retired in 1989 and was succeeded by Jess Senecal and then by Bill Kruse of Lagerlof, Senecal.

For 1991–92 the replenishment assessment increased from \$54 the previous year to \$100. Nineteen dollars of that sum was earmarked for WRD's new clean water program. The Metropolitan Water District's untreated rate increased from \$115 to \$130, and the treated rate for barrier water remained at \$230. Even greater increases were in store for 1991–92, with Metropolitan's untreated rate rising 23 percent, to \$168 and the barrier rate rising 16 percent, to \$261.

Two new cost variables were also introduced into the funding mix. For 1992–93 Metropolitan eliminated the special barrier rate WRD had enjoyed since 1960, and for the first time the two municipal water districts adopted surcharges on spreading and barrier water. The Central Basin Municipal Water District's surcharge would be \$5 per acre-foot. The West Basin Municipal Water District's surcharge would be \$15. With the surcharges the difference between the untreated rate and the barrier rate would be \$164. WRD was looking at a \$25 increase in the replenishment assessment, prompting renewed attention to the issue of equity.

Perhaps anticipating an eventual discussion of the split assessment issue, John Norman, WRD's general manager, asked Richard Rhone to prepare a draft memorandum on the estimated division of replenishment water purchase costs between the Central and West Coast Basins. The May 12, 1992, memorandum also included a copy of the December 9, 1975, letter Bookman-Edmonston had prepared for Martin Whelan.

Based on relative costs of water for spreading and barrier injection and the amount of

pumping in each basin, Rhone calculated that separate assessments to recover separate costs would be \$64 for Central Basin pumpers and \$270 for West Basin pumpers.

On June 22, 1993, Glasgow sent a terse instruction to Norman: “Please prepare an executive summary analysis of the cost to operate West Basin and the revenues received. I want to know precisely the cost being subsidized by the Central Basin. I think it’s time to seek legislation to establish separate replenishment rates. Then any difficulties created in the West Basin by [West Basin Municipal Water District] activities will be properly funded by those causing the difficulties. I expect your written report to be available to me at our Finance Committee meeting on June 29, 1993.”

What Glasgow was referring to was the virtual war that was underway between the Water Replenishment District and the two municipal water districts, partly because of their imposition of surcharges but also because the municipal districts, through their general manager, Rich Atwater, were perceived as encroaching on WRD’s functions in the groundwater arena.

Among other things, Atwater was viewed as the force behind the elimination of the Metropolitan barrier water rate and the imposition of surcharges as a means of forcing WRD to purchase recycled water from the West Basin Municipal Water District’s El Segundo facility. That district was also building a desalter in Torrance to treat groundwater in the saline plume. Its board had removed Bob Goldsworthy, a WRD director, as one of its appointees to the Metropolitan Water District board, leaving WRD for the first time since its formation without at least one director on the Metropolitan board.

The Central Basin Municipal Water District was installing a wellhead treatment plant in South Gate and tapping into the Los Angeles County Sanitation Districts’ recycled water supply for a major recycled water distribution program. WRD had always regarded that supply as subject to its approval for sale to others.

Glasgow scheduled a special board meeting for July 29, 1993, to discuss the possibility of establishing separate assessments in the West Coast and Central Basins. The staff prepared detailed reports of water extractions in each of the director divisions, as well as groundwater production and water purchase costs by basin going back to 1982–83. They also calculated the respective basin impact if the replenishment assessment was split.

Also in the staff presentation package was material providing a historical perspective on the issue. That material included the September 25, 1987, report, *Comparison of Equity*; the

HISTORY OF AVAILABLE UNDERFLOW NUMBERS - CENTRAL BASIN TO WEST COAST BASIN

No.	Original Source	As Reported by	Years Covered	Estimated Average Underflow (AFY)
1	Draft Report of Referee; California Dept. of Public Works, 1952	MW, 1993	1950/51-1955/56	24,000-42,900
2	USGS Water Supply Papers 1461, 1471 (Poland), 1959	MW, 1993	1903/04	27,000
			1945	15,000-20,000
3	Report of Referee; California Water Rights Board, 1961	Referee, 1961	1950/51-1955/56	24,018
4	DWR Bulletin 104-B, 1962	MW, 1993	1934/35-1956/57	15,600
5	CDM/JMM West Coast Barrier Project, 1989	MW, 1993	1964/65-1984/85	25,000
6	CDM West Coast Barrier Project, 1989	BE, 1993	1983/84	17,000
7	BE Groundwater Use and Recharge in the West Coast Basin, 1993	BE, 1993	1979/80-1991/92	20,700
8	JMM, CDM 1992 modeling for saline plume	MW, 1993	30 year future model run 1990-2020	6,700
9	USGS Water Resources Investigations Report O3-4065, 2003	USGS, 2003	1970/71-1999/2000	3,200
			1995/96-1999/2000	5,900
			2001-2025	3,600*
			2001-2025	1,200*
Total range of underflow estimates				1,200-42,900

*The 2001-2025 numbers are based on 25-year USGS model simulations under different pumping scenarios.

BE = Bookman Edmonston

JMM = James M. Montgomery

CDM = Camp Dresser & McKee

MW = Montgomery Watson

DWR = California Dept of Water Resources

USGS = U.S. Geological Survey

Compiled by Ted Johnson, WRD, April 3, 2007.

Central Basin Water Association's letter to the WRD board; the December 12, 1987, letter from C. Marvin Brewer to West Basin Water Association members; and the January 19, 1988, response by the city of Torrance to the Brewer letter. The minutes show the board meeting ended with instructions to Richard Rhone to prepare a "Summary of Actions Affecting the Central Basin–West Basin Differential." The matter was referred to the board's Groundwater Cleanup Committee.

Dated August 12, 1993, Rhone's summary documented reasons for the increase in the differential, ranging from rates for recycled water in the spreading grounds to imported water for barrier injection. He included a copy of a report his firm had prepared that gave the results of eight analyses that attempted to quantify the underflow from Central to West Basin in various time periods, showing the precipitous loss of underflow over time.

WRD's Groundwater Cleanup Committee met to discuss the issue on August 27. Present were directors Daniel Glasgow and Albert Robles; John Norman; Jeff Helsley, chief district engineer; Bill Kruse, general counsel; Richard Rhone of Bookman-Edmonston; Jim Glancy of Lakewood representing the Central Basin Water Association; and Terry Whitthoft of the California Water Service Company representing the West Basin Water Association.

After a robust discussion, documented in notes prepared by Helsley, the meeting resulted in an understanding among the parties that they would pursue avenues to reduce replenishment costs on the West Basin side, rather than legislation to require a split assessment.

STATE AUDIT REPORT 1999: "A UNIFORM RATE IS REQUIRED FOR THE TWO BASINS"

Six years later, an appendix in the State Audit Report concerning the district was devoted to the question of a uniform versus separate replenishment assessments in the two basins. While not part of the original scope of the audit, the audit addressed the subject because some Central Basin pumpers asked the auditors to take a look.

The audit found that "ratepayers in the Central Basin have more adjudicated groundwater rights . . . and pump a greater amount of groundwater than West Basin ratepayers . . . So it is not surprising that a greater percentage of the district's revenue comes from the Central Basin." Furthermore, "the California Water Code requires that the district levy its assessment at a uniform rate per acre-foot on groundwater pumped from within the district," and "the West Coast and Central basins are connected by a flow of groundwater. Consequently, replenishment and cleanup activities that occur in one basin can have a beneficial effect on the quality and quantity of groundwater in the other basin."

LEGISLATIVE CHALLENGE TO UNIFORM REPLENISHMENT ASSESSMENT, 2007

Southeast Water Coalition Study

Just as storage discussions were about to enter state-sponsored mediation (see Chapter 18), the Southeast Water Coalition (SEWC) released its *Replenishment Assessment Cost Allocation Study*. Prepared by HF & H Consulting and dated December 6, 2006, the stated goal of the study was "to determine whether the single uniform Replenishment Assessment (RA) is fair and equitable to the pumpers of both the Central and West Coast Basins, or whether the pumpers in one basin are subsidizing the pumpers in the other basin."



From the WRD staff's perspective it was not possible to empirically allocate costs and benefits as if the two basins were not connected. And legally and historically it was not possible to talk of basin equity without acknowledging the loss of underflow to West Basin, and the reasons for it, in that discussion.

At first glance, however, a study finding that ratepayers in the disadvantaged communities of Central Basin were subsidizing wealthy oil companies in the West Coast Basin was persuasive, especially if you were a legislator representing the disadvantaged communities.

The study used WRD's 2006–2007 budget of \$32.9 million and replenishment assessment of \$138 per acre-foot as the bases for analysis. The study allocated water purchase, program, and project costs to each basin based on perceived benefits to each basin. Administrative costs of WRD were then allocated based on each basin's proportion of costs and benefits of water purchases, programs, and projects.

The \$8.3 million cost of water for spreading and for injection at the Alamitos seawater intrusion barrier and the presumed benefit were allocated to Central Basin. The \$13.7 million cost of water for injection in the Dominguez Gap and West Coast seawater intrusion barriers was allocated to West Basin. Seventy-two percent of all the water purchased was allocated to Central Basin; 28 percent was allocated to West Basin. The cost of Central Basin water was \$106 per acre-foot; the cost for West Basin water was \$440 per acre-foot.

Adding the cost disparities of projects and programs, the study concluded that Central Basin pumpers were subsidizing West Basin pumpers to the tune of \$10.7 million for the 2006–2007 fiscal year. Instead of all pumpers paying \$138 per acre-foot, Central Basin pumpers should pay \$83 per acre-foot, and West Basin pumpers should pay \$366 per acre-foot, the study said.

WRD staff quickly pointed out flaws in the study, not the least of which were the mechanical allocation of benefits based on the basin in which the program or project was located and the study's failure to take into account past investments of all pumpers in both basins, notwithstanding the presumption that benefits accrued to only one basin.

The most significant flaw in the study, however, was its treatment of the hydrological connection of the two basins. “Water replenishment costs,” the study said, “were allocated to each basin *under the assumption that the two basins are hydraulically separate.*” Then came a disclaimer that effectively undermined the entire analysis: “This assumption simplifies the analysis, although, as previously noted, *it is likely that underflow occurs from the Central Basin to the West Coast Basin*” [emphases added].

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On March 28, 2007, Assembly Member Hector De La Torre gutted AB 640, a bill relating to waste discharge requirements and amended it to instead require WRD to impose separate replenishment assessments on pumpers in the Central and West Coast Basins. WRD would be mandated “to impose the assessment in an amount that is calculated to pay for costs that include the actual cost of replenishing [each] groundwater basin, removing contaminants from [each] groundwater basin, and the administrative costs of the district.” Revenue from the respective replenishment assessments could be spent only in the basin from which it was collected.



Assembly Member Hector De La Torre

Before the first hearing on the bill, a consultant to the Assembly Local Government Committee laid out the arguments in her bill analysis. She quoted supporters of the legislation, who argued that “the current, uniform district-wide replenishment assessment practice puts an undue burden on the Central Basin’s poorest communities, who are now subsidizing the high replenishment costs in the West Coast Basin, especially the groundwater production of several large oil companies. . . . This is particularly troublesome considering that the average median income in the West Coast Basin is nearly 45 percent higher than the Central Basin.”

Opponents argued that “one of the factors not taken into account by the SEWC report is how over-pumping by the Central Basin has resulted in the loss of natural groundwater recharge of the West Coast Basin and increases the costs to maintain the seawater barrier.”

Supporters of the bill included the Central Basin Municipal Water District, and eleven cities and three mutual water companies located in Central Basin. Opponents included the West Basin Water Association, two investor-owned water companies operating in both basins, and three cities located in West Basin. Oil refineries operating in the West Coast Basin opposed the bill behind the scenes.

After a contentious hearing on April 26, 2007, the bill passed the Assembly Local Government Committee by a single vote. Following a similarly contentious hearing on May 17, the bill passed the Assembly Appropriations Committee on a 9-to-5 vote and next went to the assembly floor. It would not be voted on until June 7, and only then after the author made significant changes to it.

WRD’s Position

Robb Whitaker, WRD’s general manager, testified before the Assembly Local Government Committee and described the district, its functions, and the Water Independence Now (WIN) initiative. He provided a brief history of past basin equity discussions and noted that on each occasion, the pumpers decided not to pursue a split assessment for two reasons: the rights West Basin pumpers had, if any, to the historic natural underflow from Central Basin across the Newport-Inglewood Uplift, and that injection of barrier water in the West Coast Basin ultimately protects Central Basin. He also informed the committee that 33 percent of all pumping in the West Coast Basin was by four oil companies for non-potable purposes and that WRD had been asked to quantify replenishment assessment savings if those companies had to pay the actual cost of injecting seawater in the barrier because of their pumping.

Whitaker thanked De La Torre “for bringing attention to the matter of assessment equity and prompting a thoughtful discussion of the many issues the matter of equity raises.”

Director Rob Katherman Weighs In

Director Rob Katherman sent De La Torre a letter on May 15 explaining his opposition to the bill. “In the first place,” Katherman wrote, “the Central and West Coast Basins are hydrologically connected sub-basins of the Los Angeles Coastal Basin. What happens in one sub-basin affects the other. It does not make sense to create a political boundary for rate-setting purposes across aquifers that are part of the same inter-connected basin.”

In regard to the underflow issue, Katherman said:

Nearly 50 years ago, the pumpers in both basins agreed to forego the litigation of West Basin rights to the underflow from Central Basin in exchange for one replenishment district rather than two and a uniform assessment rather than split. Inasmuch as AB 640 changes the terms of that agreement, a major reason for not filing an adjudication will have disappeared.

While AB 640 . . . has contributed to a forthright discussion of important issues in both sub-basins, its passage will lead inevitably to such an erosion of goodwill among the pumpers that prudent public policy and the best use of our local groundwater resources for the benefit of all will suffer as a result.

Because the bill had so narrowly passed out of two committees, it was not certain that it would have had enough votes to pass the full Assembly. More certain was that between approval of the split assessment mandate by the Assembly Appropriations Committee on May 17 and its being brought up for a vote on the Assembly floor on June 7, De La Torre himself had acquired a much better appreciation of the connection between the two basins and of the importance of the underflow in any calculation of equity between the two.

The Replenishment Assessment Working Group

In early February 2007, WRD formed the Replenishment Assessment Working Group “to provide balanced input to WRD to assist in the District’s response” to the many issues raised by the Southeast Water Coalition study and the anticipated split assessment mandate in De La Torre’s bill. The working group held several well-attended meetings to review materials prepared by WRD staff and to discuss both Central Basin pumper and West Basin pumper perspectives on the legislation. Among other things, the staff prepared a history of studies of the volume of underflow from the Central Basin to the West Coast Basin across the Newport-Inglewood Uplift. Those studies estimated a high average annual underflow between 1932 and 1950 of 42,900 acre-feet, steadily declining to a low average annual underflow between 1970 and 2000 of 3,200 acre-feet. The underflow had dropped precipitously over fifty years.

De La Torre Attends a Working Group Meeting

The working group invited De La Torre to attend a special meeting it had called at WRD headquarters on May 24, 2007, for supporters and opponents of his legislation. Nearly one hundred people attended.

De La Torre began by saying he had been approached by a number of cities to carry

legislation to implement a basin-specific replenishment assessment. “Initially,” he said, “I wasn’t going to carry the bill, but ultimately believed it was a question of fairness.” He said he was looking at amending his bill to phase in its provisions over a three-year period to “assure a smooth transition.” He said he had seen studies that indicated Long Beach ratepayers could save \$1.19 per month under his bill and that Inglewood ratepayers would pay \$6.56 per month more. “This is not the end of civilization as we know it,” he said, but he wanted “to collaborate with everyone” in preparing the language of the final bill.

What followed during the next two hours was a robust discussion of the replenishment assessment, why it was uniform, and what would happen if it was not. The discussion would have an impact on De La Torre and his bill.

Ted Johnson, WRD’s chief hydrologist, explained WRD’s service area, the role of groundwater in the region, the relative value of WRD’s replenishment assessment compared to the imported water rate since 1960, what project and program components made up the replenishment assessment, the Newport-Inglewood Uplift, and historical underflow numbers across the uplift.



WRD Consultant Michael Gagan

Michael Gagan, a WRD consultant, provided a history of past discussions of the split assessment in 1975, 1987, and 1993. He explained that in each instance the issue of basin equity was not pursued mainly because of the undetermined volume of the rights to the underflow of West Basin pumpers and “a seemingly uniform aversion to adjudicate those rights,” as well as the assumption that the injection of barrier water in West Basin ultimately protected Central Basin.

Steve O’Neill, general counsel to the West Basin Municipal Water District, said, “History ties into AB 640. The underflow has been institutionalized. The uniform RA is the way to compensate West Basin pumpers for water they are not receiving.” He said that splitting the replenishment assessment would have “big implications” and that adjudicating the underflow would be “a very expensive endeavor for all parties.” He warned that “experts and lawyers have already been contacted.”

Desi Alvarez, Downey’s public works director and a proponent of the split assessment,

reviewed the SEWC study and argued that the reduced underflow was caused by over-pumping in the West Coast Basin. In any case, “underflow is ultimately determined by WRD. I have never heard that West Basin is not getting its underflow.”

Rob Beste, public works director for the city of Torrance and president of the West Basin Water Association, responded that AB 640 was causing “an upheaval of uncertainty. I can’t go to my City Council to ask for \$3 million for new wells with this hanging over my head.” Jack Vander Linden, Beste’s second in command at Torrance’s Public Works Department, added that “the assumption in the SEWC report that the two basins are hydrologically separate is factually incorrect; its analysis is therefore incorrect.”



Desi Alvarez was director of public works for the city of Downey and a formidable WRD critic for several years.

Steve Hoch, a lawyer with the firm Hatch & Parent who was representing the Golden State Water Company, said the passage of the bill would have a “destabilizing influence on a stable situation,” and that if not dealt with politically, a split replenishment assessment “will be solved in the crucible of the courts.” The cost of the resulting adjudication would be monumental.

Lakewood’s director of water resources Jim Glancy said that the bill was written to give “WRD flexibility to consider underflow as an offset” when calculating the replenishment assessment and that “underflow should be identified and quantified by WRD. I want my residents to know what their money pays for.”

De La Torre’s questions zeroed in on the underflow. He asked Ted Johnson why WRD “had not funded underflow studies.” Johnson responded that WRD had, in fact, funded the last four underflow studies.

De La Torre then asked Desi Alvarez what his position was on “determining underflow and accounting for it.” “Underflow is what it is,” Alvarez said. “It goes from Central Basin to West Basin. We agree that we need to do an analysis and account for it. If they want to litigate it, then go ahead.” He added that “who is inducing underflow is a complex question.” His position was that “increased West Basin pumping relative to pumping in the Central Basin” reduced the underflow.

Lillian Kawasaki, a WRD director, pointed out that the bill did not address oil companies and the need for them to reduce pumping by using more recycled water. De La Torre said he had spoken to the oil companies about that and he was “working on a parallel track that could be folded into this bill.”

De La Torre concluded the meeting by saying he would like “agreement on how WRD goes about rate-making under AB 640” and that he “would like to put certainty into the bill in a negotiated way.” He said he “welcomed sitting down and talking it out” and said the bill had “provided a forum for a political solution.”

What he heard at the meeting clearly had an influence on his thinking, as developments two weeks later would illustrate. It was not so much that he changed his mind about the need for basin equity in the calculation of the replenishment assessment. But after putting his finger on the most significant flaw in the Southeast Water Coalition study, he realized that basin equity could not be quantified without quantifying the underflow.

De La Torre Amends His Bill

On June 6 De La Torre stunned bill supporters by amending the bill on the Assembly floor to delete the requirement for a split replenishment assessment. Instead the amended bill would “require the Department of Water Resources to conduct a study to determine the basin specific charges, including underflow, in each basin within the district.” As amended, the bill easily passed the Assembly on June 7, 2007.

The measure next moved to the Senate Committee on Natural Resources and Water, where it was heard on July 10. The committee staff report cited support for the bill from the Central Basin Municipal Water District. The bill “takes a critical step,” Art Aguilar, the district’s general manager, said, “in addressing the inequity of the uniform RA . . . with groundwater pumpers in the Central Basin paying over \$10.7 million annually to support West Coast Basin operations.” The West Basin Water Association argued that the Department of Water Resources “has no independent authority to adjudicate the underflow or any other matter involving these basins. . . . Under these circumstances, the legal effect of a DWR study is unclear.” The department, the association added, “is not an appropriate choice to study or address issues relating to the establishment of replenishment assessments.”

The committee staff analysis noted that a study by the Department of Water Resources “could create unknown legal consequences” and recommended instead that WRD be required to conduct an underflow study and include underflow data in its annual *Engineering Survey and Report*. The committee approved the bill without the suggested

amendment on a split vote and referred it to the Senate Committee on Appropriations.

On August 20, 2007, the Senate Committee on Appropriations voted to place the measure on the Suspense File, which is the usual course for all bills with a fiscal impact of \$150,000 or more in any fiscal year. The Department of Water Resources estimated it would need three new positions and an appropriation of \$4.25 million to conduct the study, including \$3 million for as many as thirty new monitoring wells to measure the underflow.

According to the committee staff report, De La Torre intended to amend the bill while on Suspense, “either to determine basin specific charges or study the rate of underflow and leave it to the courts to adjust the price schedule with any new information found in the study.” The staff report also said, “The state does not benefit directly from this and should not fund the study.” De La Torre responded by saying his intended amendment would “require the costs associated with the study be recovered by a one-time assessment added to the annual cost for watermaster services.”

De La Torre never introduced his intended amendments, and the bill never emerged from the Suspense File. Many key Central Basin pumpers that originally supported a split assessment changed their minds when shown a calculation of the costs of administering a split assessment with the value of lost underflow included in the calculation.

QUANTIFYING THE COSTS OF BASIN EQUITY

The debate accompanying De La Torre’s bill was the fourth time since 1975 that the matter of lost underflow had become the paramount issue in basin equity discussions. Yet no analysis had ever been prepared that assigned basin-specific costs; such a study could prove valuable if the value of lost underflow was adjudicated and taken into account. Central Basin pumpers raised the basin equity argument and focused exclusively on direct water costs, as did the SEWC study. They seemed to know intuitively that calculating the fairness of the replenishment assessment would generate a far different result if “fairness” included the costs of adjudicating the value of lost underflow. It was almost as if they did not want to go there for fear of what they would find.

The first analysis to quantify the costs of basin equity, including the value of lost underflow, was prepared by Robb Whitaker, WRD’s general manager, in early 2008. Starting with historic underflow numbers ranging from a low of 14,000 acre-feet annually to a high of 43,000 acre-feet, and subtracting the 3,000 acre-feet flowing from

Central Basin to the West Coast Basin at the time, Whitaker assembled lost underflow numbers that ranged from 11,000 acre-feet to 40,000 acre-feet. The midrange of lost underflow was 25,500 acre-feet.

Factoring in the estimated \$8 million in engineering and legal costs to adjudicate the underflow, \$16 million for forty underflow monitoring wells, an annual cost of \$1.95 million to administer the adjudicated underflow, the \$10.9 million disparity number in the SEWC study, and the then-existing \$576 per acre-foot cost of Tier 1 water from the West Basin Municipal Water District, Whitaker concluded that the net value of a split assessment would necessitate an annual payment of \$3.6 million from Central Basin pumpers to West Basin pumpers if adjudication fixed the underflow at the implausible low end of the historic range. At the more plausible high end, Central Basin pumpers would owe West Basin pumpers \$13.12 million annually.

Robb Whitaker and Jim Glancy Go to Lunch



Jim Glancy, director of water resources, city of Lakewood

At the Replenishment Assessment Working Group meeting featuring Assembly Member De La Torre, Jim Glancy, Lakewood’s water resources director, said that “underflow should be identified and quantified by WRD” and that WRD should “consider underflow as an offset” when calculating the replenishment assessment. Whitaker made the calculation and was prepared to share what Glancy had asked WRD to do.

Through years of discord between WRD and many Central Basin pumpers, Whitaker and Glancy had maintained a cordial relationship on a personal and professional level. Whitaker recalls inviting Glancy to lunch in early February 2008 at La Casa Mexican restaurant in Lakewood, one of their “go-to” lunch spots.

In extending the invitation, he had asked Glancy if he was interested in having “an objective discussion of realistic costs associated with a split assessment” and cautioned Glancy “to be careful what you wish for” and that “Central Basin pumpers could end up owing money to West Basin pumpers on an average annual basis.”

Whitaker shared a hard copy of his spreadsheet with Glancy, pointed out the cost of administering the Long Beach judgment with a one-mile interface between basins compared to the much higher cost of administering an underflow adjudication with an interface

between basins of twenty-five miles. They discussed the basis for the calculations and the dollar amounts associated with them. According to Whitaker, Glancy “could not find any significant fault with the facts and figures.”

Glancy reformatted Whitaker’s spreadsheet and came up with slightly different numbers for the total annual cost to administer an adjudicated underflow. Otherwise, the key numbers and their implications remained the same.

A similar calculation in 2019 would show potential Central Basin liability higher than \$25 million annually. In 2019, the West Basin Municipal Water District’s Tier 1 rate was \$1,405 per acre-foot, 2.44 times higher than it was in 2008.

Glancy was highly regarded by his peers and on multiple occasions over the years had been elected to leadership positions by the Central Basin pumping community. Indeed, he chaired the Southeast Water Coalition and was president of the Central Basin Water Association when the SEWC study was released in December 2006. He was an early advocate of De La Torre’s bill.

Glancy attached his calculations to an e-mail he sent to Bill Kruse, attorney for the Central Basin Water Association, on March 6, 2008, and said he had “worked over these numbers from Robb W. . . . I plan on passing this out when discussing the underflow/split assessment. It went over very well with the small pumpers at Orchard Dale Water District this afternoon. I passed it out when asked why I no longer supported AB 640.”

Glancy was telling his Central Basin peers that fighting for a split replenishment assessment was not a fight worth having. Put another way, it was a fight that Central Basin pumpers could not afford to win.

For all intents and purposes, De La Torre gave up on AB 640. It died without a hearing on August 28, 2008.

Additional Legislation

At the request of the Central Basin Municipal Water District, State Senator Ron Calderon in 2010 and Assembly Member Charles Calderon in 2011 introduced legislation identical to the original 2007 version of AB 640. Neither bill was heard.

In 2014 another Assembly Member, Cristina Garcia, took a novel approach to splitting the replenishment assessment, this time into hundreds of little pieces. AB 2189 would have

required WRD to determine a separate replenishment assessment for every parcel upon which a “water-producing facility” is located and would have prohibited use of funds raised by the parcel-specific replenishment assessment for a service not actually used by the water-producing facility on that parcel.

The bill would also have established a “one parcel, one vote” protest procedure. If a majority of parcel holders were to protest their respective replenishment assessments, the replenishment assessment would revert to the previous year’s. Garcia argued that her bill would bring WRD into “court-ordered” compliance with Proposition 218. WRD and other opponents of the bill argued that the courts had not ruled with finality on the application of Proposition 218 to assessments on the production of groundwater and that the legislation in that respect was premature. Furthermore, given the protest procedure in the bill, as few as eleven pumpers could kill any proposed replenishment assessment.

The staff of the Assembly Appropriations Committee estimated that the bill would require the state to reimburse WRD \$5 million to \$14 million, with ongoing annual reimbursements totaling \$100,000, for the additional monitoring, data gathering, and model development necessary to make the detailed rate determinations required by the bill. WRD and both water associations opposed the bill, which had been sponsored by the cities with pending Proposition 218-related litigation. Garcia’s bill died in committee.

PROPOSITION 218 LITIGATION

Enacted by the California electorate in 2006, Proposition 218 requires an agency seeking to establish or increase a property-related fee to notify all affected property owners of the proposed fee. If a majority of the affected property owners do not protest, the agency may adopt the proposed fee but only after submitting it to a vote and obtaining the approval of a majority of the property owners. Certain kinds of fees, including fees for “water service,” are expressly exempted from the property owner election requirement.

The measure also sets substantive limitations on the fees. Revenues raised by the fees, for example, may not exceed the funds required to perform the service, and fees must match the cost of service attributable to each property owner.

While fees for water service are clearly excluded from Proposition 218, it is not explicitly clear whether a fee imposed on the production of groundwater is also excluded and whether it would be subject to the majority protest and cost-of-service provisions. It would take ten years and dozens of lawsuits for the California Supreme Court to make a final determination

in *City of San Buenaventura v. United Water Conservation District* (2017).

Encouraged by a 2007 appellate court decision finding that “groundwater augmentation charges” were property-related fees subject to the provisions of Proposition 218 (*Pajaro Valley Water Management Agency v. Amrhein*), five actions were brought against WRD challenging the district’s replenishment assessments back to 2007–2008. If successful, the litigation would have required the district to adopt different replenishment assessments not only between the two basins but arguably within each basin as well.

The cities of Cerritos, Downey, and Signal Hill filed the first action in 2009, followed by a filing in 2011 by the Central Basin Municipal Water District. In 2013 the Tesoro Refining Company filed two Proposition 218 challenges covering different years, and the city of Pico Rivera filed another, although it did not pursue its case.

In April 2011, a Los Angeles superior court judge issued a provisional ruling in the cities’ case that concluded that the replenishment assessment was, in fact, a property-related fee subject to the procedural and substantive requirements of Proposition 218. In September 2012 the court issued a similar provisional ruling in the first Tesoro case.

WRD could not appeal either case until the court made a final ruling, and it could not make a final ruling until it held a trial on the alleged damages. Given the preparation required by all sides and the court’s scheduling docket, a damages trial was at least two years away.

The WRD board in the meantime maintained that the replenishment assessment was not subject to Proposition 218 but decided to conduct a Proposition 218-like majority protest election in connection with the 2013–2014 replenishment assessment. In May 2013 WRD mailed notice of the proposed \$268 per acre-foot replenishment assessment to 793,800 parcel owners and 175 water rights holders.

Before sending the notice, the district prepared and published a *Cost of Service Report* that describes the history of district formation, the unique geology of the district’s service area, the groundwater quality of the interconnected basins, and the dependence each basin had on the other to maintain healthy water levels and promote the underflow across the basins. The report provided details about the district’s programs and projects, administration, and water costs, including precisely what went into determining the proposed 2013–14 replenishment assessment.

A nominal number of protests was received from parcel owners. Only 2.3 percent of rights

holders protested. The WRD board adopted the proposed replenishment assessment.

Because of pending litigation that challenged earlier assessments, the WRD board in September 2014 initiated retroactive Proposition 218 compliance proceedings for the replenishment assessments for fiscal years 2010, 2011, and 2012. A majority protest hearing was held on October 30, 2014. The board received protests from five parties—the cities of Bellflower, Cerritos, Downey, and Signal Hill, and by Tesoro Refining—which represented 2.7 percent to 2.9 percent of the pumping rights holders in the respective years. The board ratified and readopted the replenishment assessments.

RESOLUTION OF THE PROPOSITION 218 UNCERTAINTIES

The uncertainties surrounding the implications of Proposition 218 began to resolve when the Central Basin Municipal Water District withdrew its Proposition 218 challenge in October 2014. That district was battling a budget deficit caused in part by enormous legal costs constituting 60 percent of its total general and administrative expenditures, and it now had two new board members and a new general manager.

The cities also were facing the prospect of crushing legal expenses for a damages trial and the appeal of its outcome by either party. They reached a global settlement agreement with WRD in May 2015 on all matters related to the Proposition 218 litigation.

In a joint statement the cities and WRD acknowledged that “the litigation has been extremely expensive and agree that their intent in settling the litigation and entering into the settlement agreement is to foster a new attitude of cooperation and enhanced communications. Cooperation and collaboration rather than conflict serve the common purpose we have to devote time, attention and resources to assuring healthy and robust groundwater basins in a time of historic drought.”

Under the settlement WRD agreed to pay the cities’ legal fees and related expenses. WRD also committed to fund \$5 million in basin improvement projects of the cities within seven years through any combination of state and federal grants or its own funding sources. Under the agreement all city projects must provide regional benefits, reduce reliance on imported sources of water, or enhance water security in the basin.

The California Supreme Court’s Landmark Ruling

In December 2017 the California Supreme Court issued its long-awaited ruling in the

CHAPTER

15

WRD AND THE MUNICIPAL WATER DISTRICTS

For its first thirty years WRD enjoyed a cordial relationship with the two municipal water districts that supplied imported water for spreading and seawater barrier injection. WRD had its own general counsel from its earliest days but otherwise shared staff and consulting engineers with the municipals and shared office space with Central Basin Municipal Water District (CBMWD). During this period the Central Basin Municipal Water District and West Basin Municipal Water District (WBMWD) appointed WRD directors to represent them on the Metropolitan Water District board. Occupying dual roles, the municipal water district staff that sold water to WRD was the same WRD staff that bought water from the municipal water districts. Directors of the three districts were social friends and routinely mingled with the pumper community at water association dinners and other water-related events.



Joint meeting of WRD and Municipal Water District directors, 1996. In attendance: West Basin Municipal Water District directors Mark Dymally, Carl Zeise, Ed Little, Larry Gallagher, and Keith MacDonald; Central Basin Municipal Water District directors Gary Morse and Richard Mayer; WRD directors Robert Goldsworthy, Ken Orduna, M. Susan Carrillo, and Albert Robles; WRD general manager Fred Cardenas and WRD assistant general manager Jeff Helsley; Central and West Basin Municipal Water Districts general manager Rich Atwater. *Image from the WRD archives.*

The relationship was more a marriage of convenience, however, than a formal partnership, and the friendships and social relationships among directors disappeared with the passage of time. The districts were, in fact, independent legal entities, with different governing boards, different customer interests, and distinct perspectives on water supply and costs.

In September 1999, Joseph Young, a vice president of the Southern California Water Company, sent a letter to the Little Hoover Commission, California’s independent watchdog, following its hearing on special districts that included testimony favoring the consolidation of WRD and the municipals. Young succinctly described the differences from the perspective of a customer of all three: “There is an inherent conflict in managing a district whose fulfillment of projects is sales-dependent (CBMWD) and a district whose projects are dependent on adjudicated extractions (WRD). Furthermore, the wholesaler (CBMWD) has a conflict in assisting pumpers to maintain extractions when those very extractions pose a threat to the wholesaler’s sales of imported water. The wholesaler’s relationship with the Metropolitan Water District further compounds the problem.”

In other words, the more groundwater pumped by a customer of a municipal water district, the less imported water that customer buys. The more WRD projects provide a local supply of water for replenishment to meet adjudicated demand, the less imported water WRD has to buy for replenishment. Young captured the flaw in the municipal water district model

that assumed WRD would be a captive customer for significant quantities of imported water in perpetuity.

It was not coincidental that the cordial relationships began to change, especially that with the Central Basin Municipal Water District, because in the 1980s WRD had changed its water supply portfolio for replenishment water for spreading. Since 1960-61 WRD had been the Central Basin district's biggest customer by far. Between 1981 and 1990, however, WRD bought more recycled water from the Los Angeles County Sanitation Districts than imported water from Central Basin, and it was clear that trend would continue.

TENSIONS SURFACE

The underlying tension first surfaced in 1981. The Central Basin Municipal Water District asked WRD to approve a ten-year lease, through January 1, 1991, for its shared office space in Downey. The WRD board refused, insisting instead on a year-to-year lease on a flat monthly basis, suggesting that it at least wanted to keep its options open for finding its own office space. It was a relatively small matter, but it presaged more intense conflict about larger matters as the decade wore on.

In 1985 Daniel Glasgow, WRD's board president, reported that the board's Personnel Committee, consisting of himself and Director Emmet Brown, were concerned "over action taken by the WBMWD regarding salary adjustments for 1985."

Seeking to establish with the public that WRD's identity was separate from the two municipal water districts', the board hired a public relations campaign consultant for six months in 1984 and 1985. In 1985 the board asked WRD General Manager John Joham to organize public tours of water reclamation facilities and the spreading grounds to demonstrate WRD's distinctive mission.

Bill Zastrow, a Central Basin Municipal Water District director who was also a groundwater pumper (the Peerless Water Company), began routinely appearing before the WRD board in 1988. In addition to criticizing the district's replenishment assessment as a pumper, as a CBMWD director he urged the board to participate in a joint personnel committee meeting with the two municipals to discuss what appeared to be serious disagreement about the management of the three agencies going forward. The result of the first meeting was a discussion of the possibility of a management audit for the three agencies and what was likely to be a contentious discussion of a CBMWD workshop calling for "one district controlling the staff and properties of the three districts."

At its own workshop in June 1989, the WRD board adopted a mission statement that, among other things, called for the consideration of “a Joint Powers Authority with equal representation through a single representative from each participating agency.” The minutes reflect that “the Board was agreeable to holding quarterly meetings with its sister agencies as long as a specific agenda could be prepared.”

MUNICIPALS MAKE MOVES WITHOUT WRD

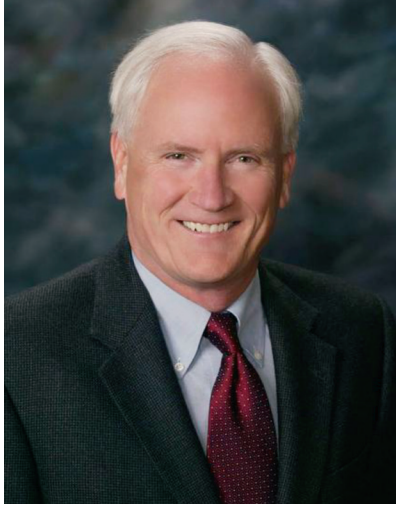
November and December 1989 were decisive months in the relationship between WRD and the municipal water districts. The municipal districts approved a management audit without WRD’s participation. And John Joham announced his retirement, effective December 31, 1989. He would continue as interim general manager of the two municipal water districts through January 1990 and would serve as a consultant to the municipals and WRD through December 1991.

With no desire to share future general managers with the two municipals, the WRD board promptly appointed its long-time consulting engineer, Richard Rhone, as interim general manager, as of January 1, 1990; the board stipulated he would serve through June 30, 1990, or until a new general manager was appointed. At the same time the board instructed Joham to inform the CBMWD that the “terms and conditions of the proposed lease agreement [for the shared office space] were unreasonable.”

In December 1989 Zastrow told the WRD board about the “Central and West Basin Water Assessment Study.” Glasgow objected to the assessment study because WRD had not been advised of or consulted in its preparation.

THE CENTRAL BASIN MUNICIPAL WATER DISTRICT MOVES INTO THE GROUNDWATER ARENA

Since its formation in 1952 the Central Basin Municipal Water District had a singular mission. As a Metropolitan Water District (MWD) member agency, it bought imported water provided by the Metropolitan Water District and sold it to as many as forty customers in Central Basin’s southeast Los Angeles County service area. And since WRD’s formation the understanding in the southeast Los Angeles County water community was that the Central Basin Municipal Water District was the imported water agency and WRD was the groundwater management agency. But in 1990 the Central Basin Municipal Water District began to redefine itself as much more than an imported water agency.



Richard Atwater, former general manager, Central and West Basin Municipal Water Districts.

In February 1990 Rich Atwater introduced himself to the WRD board as the new general manager of the two municipal water districts and said he “would continue joint cooperation between the three districts.” In addition to moving aggressively to develop a recycled water delivery system, however, the Central Basin Municipal Water District initiated programs and projects in rapid succession that were in conflict with the groundwater management role of its largest customer.

In February the Central Basin Municipal Water District selected J. M. Montgomery Partners to conduct a Central and West Coast Basin water resources management study. The study itself was without the benefit of WRD’s participation, but then Central Basin voted to fund the study with trust funds from the Long Beach judgment, a significant departure from the historical purpose of those funds, which was to purchase imported water for groundwater replenishment.

In March Central Basin’s assistant general manager reported on the municipal water district’s “Basin-Wide Cooperative Water Quality Monitoring Program.” WRD had chosen not to participate inasmuch as it had been preparing and publishing groundwater quality monitoring reports for both basins since 1974.

Also in March Atwater asked for his board’s support to encourage the Metropolitan Water District to modify its Local Projects Program to “delete the requirement for new water, which would allow for applying this program to groundwater projects.” He recommended that a “program be developed to deal with brackish groundwater desalting.”

A month later Atwater told his board that Central Basin had applied to the U.S. Environmental Protection Agency for a grant “to initiate a data management program of the near surface groundwater.”

In May Atwater reported that the Metropolitan Water District, the Upper San Gabriel Valley Municipal Water District, and the Central Basin Municipal Water District were cooperating on a plan that would have MWD serve as the lead agency and finance the cleanup of the plume of contamination heading toward the Whittier Narrows “in view of how slowly EPA is moving on this cleanup. The value of the groundwater basin as a storage facility,” Atwater said, “has prompted Metropolitan to take this action.” While never implemented, the plan

would, for the first time, have made Metropolitan a player in the groundwater arena.

In June 1990 Glasgow wondered why Central Basin “is seeking a consultant to prepare an annual report on groundwater monitoring” that would duplicate much of the work already done by WRD. He was also concerned by a letter Atwater had sent concerning the preparation of a “Central Basin Groundwater Model.” Glasgow said the groundwater model “was redundant” and that “WRD and CBMWD should be able to concur on this matter.” He was also alarmed that Central Basin had instigated a “Cooperative Central Basin Wellhead Treatment Program,” yet another incursion into what the WRD board regarded as its purview.

Robert Goldsworthy, a WRD director, said the board needed to address actions of other districts, because “other entities are taking on the Replenishment District’s responsibilities for groundwater.”

MUNICIPAL WATER DISTRICTS IMPOSE SURCHARGES, CONTINUE INTRUSION INTO GROUNDWATER ARENA

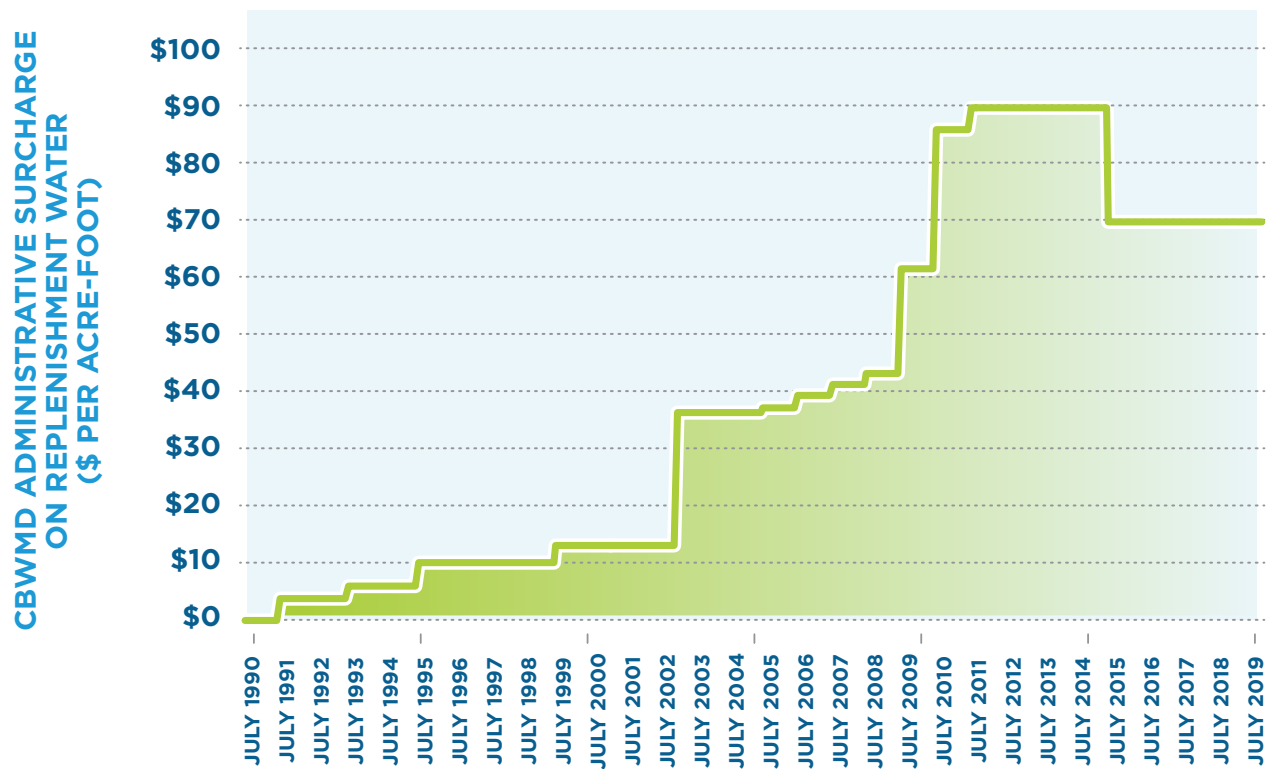
As of July 1, 1990, the Central and West Basin Municipal Water Districts assessed surcharges of one dollar and five dollars per acre-foot respectively on all water purchased by WRD, the first time they had levied such surcharges on water purchased by the replenishment district. Inasmuch as the surcharges did not pay for costs incurred in the supply of replenishment or barrier water, WRD objected to their imposition.



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CENTRAL BASIN MUNICIPAL WATER DISTRICT HISTORIC ADMINISTRATIVE SURCHARGES ON WRD REPLENISHMENT WATER FOR THE SPREADING GROUNDS



Graph: Central Basin Municipal Water District Historic Administrative Surcharges on the WRD Replenishment Water for the Spreading Grounds, from July 1990 to July 2019. *Source: WRD.*

Also in July Atwater told his board that the Central Basin Municipal Water District was considering a wellhead treatment project in South Gate. The same month he told the WRD board that a “management assessment report” should be out shortly. Goldsworthy challenged Atwater as to why WRD was not involved in preparing the report inasmuch as it had addressed the potential of using recycled water at the West Coast Basin Seawater Barrier. Atwater said he didn’t know why.

WRD HIRES PERMANENT GENERAL MANAGER; TENSIONS INCREASE

WRD hired John Norman as its general manager effective August 13, 1990. The board's first instruction to him was to look for new office space.

In August Zastrow proposed a joint meeting of the directors of the Central and West Basin Municipal Water Districts and WRD. Rather than relieving the rising tension, he contributed to it by recommending a discussion of five specific items, all of which WRD regarded as within its purview:

- Central Basin Cooperative Wellhead Treatment Program
- Water Resource Management Assessment Paper
- West and Central Basin groundwater modeling
- Saline plume problem in West Basin
- Coordination of groundwater monitoring programs

Nothing came of Zastrow's proposal. The West Basin directors chose not to participate, and the one sparsely attended meeting of WRD and Central Basin directors was more of a courtesy get-together than a substantive discussion.

In October 1990 Atwater reported that CBMWD had drafted three agreements with the Metropolitan Water District for groundwater modeling, wellhead treatment assistance, and a Whittier Narrows protection strategy. Metropolitan also agreed to provide \$100,000 to Central Basin for "cooperative groundwater programs."

In November contracts with CH2M Hill to perform work under the agreements with Metropolitan were before the Central Basin board for approval. Norman, WRD's general manager, asked the board to defer action on all three items, arguing with respect to the wellhead treatment program that what Central Basin proposed was "a duplication of work." Central Basin's general counsel, Wayne Lemieux, said there was no duplication of work inasmuch as "WRD is not currently doing any work on this."

On the contract for the Whittier Narrows protection strategy, Norman said he had met with ten cities shortly after he became general manager and "briefed them on what plans the Replenishment District had and that they were not going to wait for E.P.A. to clean up the Montebello Forebay." Zastrow asked if the "Replenishment District was ready to begin this work tomorrow." Norman said he "wouldn't want to get into details without counsel present."

Zastrow noted that “in the West Coast Basin the Saline Plume problem has not been addressed for many years. Central Basin is initiating this study so that action can be taken in the near future to ameliorate the problem.” The Central Basin board awarded the contract to put together a plan and strategy.

When asked if he had any comment on the proposed Central Basin groundwater modeling contract, Norman replied that he did not. According to the minutes, Zastrow said WRD “should be involved in this, but a letter had been received from the President of that Board of Directors [WRD’s] stating they are not interested in participating at this time.” The board awarded the contract to CH2M Hill and Loyola Marymount University.

“Each Tended to Its Own Knitting”

In subsequent interviews conducted by the WRD Ad Hoc History Committee in 2006 and 2007, some of the participants characterized what happened to the relationship between WRD and the municipal water districts in the late 1980s and early 1990s. Joham said that before the turmoil, the three districts recognized and respected their roles. “There was clear jurisdiction,” he said, “and each tended to its own knitting.”

Glasgow, who was WRD board president between 1987 and 1993, attributed the turmoil to the municipals’ desire to hire their own general manager as early as 1986. “That led to an erosion in the relations between WRD and the municipals, exacerbated by the effort of the general manager of the municipals to take over the functions of WRD” starting in 1990.

Tim Keleman, who served on the WRD board for just two years (1990 and 1991), said WRD was ill-prepared to deal with challenges to its jurisdiction. “We were slow, confused and bewildered,” he said, “not armed to take action. . . . We were playing checkers; they were playing chess.”

The relationship between WRD and the municipals would remain taut, if not strained, for the next three decades.

WRD MOVES OUT AND AWAY FROM THE MUNICIPALS

Six months after the WRD board told its new general manager to find office space outside the Central Basin Municipal Water District’s headquarters in Downey, the board met for the first time on February 21, 1991, at the district’s new headquarters in Cerritos. On November 7, 1991, the board voted to change the name of the district from the Central and West Basin Water Replenishment District to the Water Replenishment District of Southern

California in order to avoid any similarity between its name and the names of the two municipal water districts. And on December 5, the board approved a new logo. The physical and symbolic separation of WRD from the two municipals was thus complete by the end of 1991.

In August 1991 Atwater had taken the unprecedented step of ordering 25,000 acre-feet of spreading water from the Metropolitan Water District and then billing WRD for the costs. The order was placed without WRD's knowledge or approval. Even as he announced that WRD would nonetheless pay for the water, Norman told the board in September that "the purchase of water under these conditions . . . poses an unacceptable risk to the District." Glasgow noted that "the water purchase crisis could have been avoided had Central Basin staff contacted the District." He was concerned that "such difficulties were impacting the District's ability to procure water for basin replenishment." As he did on many other occasions, Glasgow instructed Norman "to investigate the utilization of other local MWD agencies as an additional source of MWD water for the District."

Throughout the decade WRD opposed the steady increases in the Metropolitan Water District's rates and took vociferous exception to the surcharges imposed by the municipals on WRD water purchases. The district felt that it was unfairly criticized by the pumper community for increases in the replenishment assessment attributable to increased municipal rates and surcharges



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WRD's headquarters in the city of Cerritos, 1991. *Image from the WRD archives.*

that WRD as a de facto captive customer was powerless to control. The surcharges, and in 1998–99 Metropolitan's new "readiness-to-serve" charge, were viewed by WRD as contrivances that had no relationship to the cost of water provided. WRD felt that it was being used as a piggy bank for Central and West Basin Municipal Water District projects whose revenues fell short of the projections each had included in bond documents prepared to issue debt to finance their projects.

An especially brazen attempt to usurp WRD's groundwater management role came in 1999. While WRD was preoccupied with responding to a state audit and other matters, Darryl Miller, general manager of the Central and West Basin Municipal Water Districts, was seeking federal funding for its Central Basin Water Quality Project. On September 29, 1999, in testimony before the House Subcommittee on Water Resources and Environment, Miller said, "The Central Basin Municipal Water District delivers groundwater" and, after describing the underlying aquifer, said that "over two-thirds of the freshwater supplies delivered by the District originates from this groundwater basin."

He also claimed that the Central Basin Municipal Water District was "involved in the development and implementation of a network of monitoring wells in the Whittier Narrows

area.” He said that “the contamination that is threatening the San Gabriel Valley is moving toward the Central Basin along with the groundwater” and that a Whittier Narrows treatment facility was needed “far ahead of the EPA’s timeline.” Central Basin was awarded \$10 million for the project in 2000.

WRD strenuously objected to Miller’s misrepresentation of the Central Basin Municipal Water District’s groundwater role and was skeptical of the need for the project.

As it turned out, the Central Basin Water Quality Protection Project, as it came to be called, did not receive a domestic drinking water permit from the California Department of Health Services until 2004, two years after the EPA built the Whittier Narrows Operable Unit. The threatened contamination of groundwater in the Central Basin never appeared and by 2005 the project had become a financial albatross for the Central Basin Municipal Water District, with operating and maintenance expenses greatly exceeding project water sales to the cities of Pico Rivera, Santa Fe Springs, and Whittier. An anticipated \$1 million annual operating subsidy from the San Gabriel Basin Water Quality Restoration fund was never provided.

IMPORTED WATER COSTS CLIMB DRAMATICALLY IN THE 1990s

The cost to WRD of spreading water purchased from the Central Basin Municipal Water District increased 88 percent, from \$135 per acre-foot in 1991–92 to \$254 per acre-foot in 2000–2001. The surcharge component of that cost went from one dollar per acre-foot to fourteen dollars per acre-foot. The cost of water for the Alamitos Barrier increased 98 percent, from \$230 per acre-foot to \$455 per acre-foot, with the surcharge component increasing from five to seventeen dollars. The West Basin Municipal Water District’s charges for barrier water rose 130 percent, from \$230 per acre-foot to \$528 per acre-foot, with the surcharge component doubling from fifteen to thirty dollars per acre-foot.

For the same ten-year period WRD’s replenishment assessment started at \$100 per acre-foot, peaked at \$162 per acre-foot in 1995–96 and 1996–97, and then declined to \$112 per acre-foot in 2000–2001. The replenishment assessment would continue to decline for the next four years as WRD used its substantial reserves to reduce the assessment, even as municipal rates continued to rise. While an apples-to-apples comparison of the replenishment assessment to the municipal rates during this period is meaningless except on a year-to-year basis, it is clear that increases in the municipal rates for the decade greatly outpaced increases in the replenishment assessment, which has been true throughout WRD’s history.



The cost of replenishment water had been a concern as early as 1983, when Glasgow had openly expressed WRD’s interest in expanding recycled water use to “reduce the operational costs” of replenishment. As relations between WRD and the two municipals continued to deteriorate and the cost of water to WRD continued to rise, Norman was even more emphatic about the need ten years later. “We’re trying to get away from MWD water,” he told an audience of pumpers at the April 1993 board meeting to adopt the replenishment assessment for 1993–94.

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In May 1993 Norman said the planned city of Los Angeles Terminal Island Recycled Water Project “will help reach the District’s objective of water independence,” clearly referring to independence from imported water.

By 1996 WRD represented 51 percent of the Central Basin Municipal Water District’s total water sales and 18 percent of the West Basin Municipal Water District’s total water sales. Both districts had issued debt on the assumption that WRD would simply continue to buy water from them in perpetuity. WRD’s agreements with both districts to purchase water for the barriers expired on June 30, 1996. Year after year, as MWD rates and municipal surcharges rose, WRD would ask the municipals to eliminate or reduce their surcharges. And every year the municipals were dismissive of WRD’s request.

In July 1996 Ken Orduna, the WRD board president, asked the staff “to research alternative

reliable water sources at lower rates.” He was not looking for independence from imported water. He was looking for independence from the two municipal water districts that historically had supplied it.

Two weeks later and over the objections of the general counsel for the municipals, the WRD board on July 26 authorized Fred Cardenas, the General Manager, to enter into a purchase agreement with the city of Compton, a Metropolitan member agency, to supply water to the West Coast Basin Barrier. Three days earlier the Compton City Council had passed a resolution expressing interest in such an agreement. Incrementally increasing the use of recycled water supplied by the Los Angeles County Sanitation Districts and the city of Los Angeles was one thing, even with its long-term implications for the municipals’ pocketbook. However, WRD’s buying water from another member agency of the Metropolitan Water District meant an immediate loss of revenue for the municipals, with ominous implications especially for the West Basin Municipal Water District’s debt covenants and long-term financial condition.



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WEST BASIN MUNICIPAL WATER DISTRICT SEEKS TO ABOLISH WRD

With lightning speed the West Basin Municipal Water District struck back. At the request of the lobbyist for West Basin, State Senator Richard Polanco on July 29, 1996, introduced language to consolidate WRD with the two municipals and foreclose WRD’s representation on a reconstituted Southern Los Angeles County Municipal Water District. Under the proposed amendment to SB 1521 the new agency would assume the duties, assets, and liabilities of the three districts. Of



the three districts, only WRD had a sizeable reserve and no debt. Under amendments to a companion bill, (SB 1354) the new board would consist initially of three representatives from each of the two municipals, and one apiece from the cities of Compton, Torrance, and Long Beach. WRD would not be represented. This board would be succeeded by a board consisting of nine members elected at the November 2008 election.

In an August 7, 1996 letter to Senator Polanco, Larry Gallagher, president of the West Basin Municipal Water District board, heaped praise on the two municipals for investing \$300 million to build “several water supply projects” and scorned WRD for studying but not implementing some projects and pursuing other projects that have “questionable water resource value.” The letter concluded by pledging to work with the state senator “on this important piece of legislation which can potentially save water rate payers \$30 million in future water rate increases, and provide currently misdirected funds to fix our local water infrastructure.”

In an August 8, 1996 memorandum soliciting support from Central Basin Municipal Water District customers, Virginia Grebbien, general manager of the Central and West Basin Municipal Water Districts, claimed that, pursuant to the legislation, “WRD’s \$30 million surplus reserve account will be rebated to local water retail agencies (i.e., City Water Departments)” and will result in “administrative and other savings” that would generate an estimated \$7 million per year “for local infrastructure improvements.” Remarkably, nothing in the proposed amendments would result in either outcome.

WRD saw the proposed legislation as a power and money grab, pure and simple. In an August 9, 1996 statement, Orduna called the bill a “smoke and mirrors attempt to shift more than \$267 million in debts from a water district serving some of the richest residents in L.A. County to residential and small business water users in low-to-moderate working class communities.”

Coming late as it did in the legislative session in the form of “gut-and-amend” language to two otherwise innocuous bills, the effort was “sneaky and conniving,” M. Susan Carrillo, a WRD director, said. WRD director Albert Robles said, “It’s just a power grab by term-limited legislators who want to create a super-agency so they can run for another office.”

WRD quickly mobilized a massive effort to kill the bills, hiring five lobbying firms to join the two it already had and engaging a public relations company known for hard-hitting tactics. The mass mailers, phone banks, and ads on cable television and in Spanish-language newspapers had the desired effect: legislators were bombarded with letters, postcards, and

phone calls in opposition to the legislation. Area legislators reported receiving seventy to two hundred calls in a one-week period.

Formal opposition to the proposed legislation grew to include virtually the entire pumper community, dozens of city councils, area Members of Congress, the Los Angeles County Board of Supervisors, and the Association of California Water Agencies.

After a hearing on August 13, 1996 attended by hundreds of people, with twenty-eight testifying in opposition to the bill, the Central Basin Municipal Water District board voted to oppose SB 1521. And a split West Basin board could not muster three votes to support the legislation its lobbyist had asked Polanco to carry.

In the end, with no official support and almost no traction with his legislative colleagues, the votes for the waiver never materialized. On August 19, 1996, less than a month after the amendments surfaced, the bills were dead.

Polanco said he would continue the consolidation effort with interim hearings and new legislation to be introduced in the 1997–98 session. He also blasted WRD for its opposition efforts. “In all likelihood,” Polanco told the *Whittier Daily News*, “this water district has spent hundreds of thousands of rate-payer dollars on what is clearly a political campaign.” On August 21 he filed a complaint with the Fair Political Practices Commission asking for a “full investigation” into the potential misuse of public funds. The commission a week later said “public agencies’ use of taxpayer money for lobbying efforts falls outside the purview of the state’s Political Reform Act.”



Richard Polanco, CA State Senator

There was no interim hearing and no new consolidation legislation. Before the year was out, Polanco had gone from critic to supporter of WRD. On January 9, 1997, the state senator appeared at WRD’s headquarters to swear in Albert Robles, who had been reelected as a director in November 1996.

On August 30, 1996, the West Basin Municipal Water District and its president, Larry Gallagher, filed for a restraining order and injunction against WRD to prohibit WRD “from

expending public funds on alarmist and misleading advertising designed to influence voters concerning potential or pending legislation.” (*Gallagher and WBMWD v. WRD*) The complaint also alleged that “the false and defamatory statements contained in the mass mailings and television advertisements are harmful to West Basin in that they attack the financial integrity of the District. The false accusations contained in the media campaign could potentially jeopardize West Basin’s bond rating and its potential to issue further bond offerings.”

Given that the WRD’s activities allegedly harmful to the West Basin Municipal Water District had ceased when the proposed legislation died, the Superior Court denied West Basin’s motion on October 30, 1996. West Basin then amended its complaint to bar anything negative WRD might say in the future about the West Basin Municipal Water District and its financial condition.

On October 10, 1996 West Basin filed a second suit. In *WBMWD v. WRD and the City of Compton*, the district alleged that the proposed water purchase agreement between WRD and Compton was a “disruption of the 30-year business relationship between WBMWD and the Replenishment District” and, if that relationship were severed, there would be “financial consequences for WBMWD.” Acknowledging the facts were in dispute, West Basin asked

the court “to issue a declaration of rights and duties so that the parties can ascertain their respective rights, duties and obligations.”



On July 1, 2006, the Central Basin Municipal Water District and the West Basin Municipal Water District formally abandoned the shared staffing model that had been in place since 1952. Each promptly appointed its own general manager, staff, and legal counsel.

WRD sued the West Basin Municipal Water District on August 21, 1997, alleging that it had failed to pass on to WRD rebates on water that the West Basin had purchased from the Metropolitan Water District.

The three cases rattled around the Superior Court, with the Gallagher and WBMWD cases finally reaching settlement on December 16, 1997. The settlement provided that the two agencies and their directors “will refrain from making any defamatory statements regarding the other and the other’s operations, directors, officers and/or employees.” The settlement also provided that WRD and the

West Basin Municipal Water District would enter into a five-year agreement under which WRD would purchase up to 7,500 acre-feet of recycled water from the West Basin for injection into the West Coast Basin Seawater Barrier at a price of \$430 per acre-foot.

The principles of an agreement in the Compton and MWD rebate cases were reached at a mediated joint board meeting of WRD and the West Basin Municipal Water District on January 29, 1998. Under the agreement the “agencies will acknowledge that WRD may obtain non-Metropolitan Water District water from any source at whatever price may be freely negotiated. The agencies will agree to consult with one another as to any water WRD proposes to transfer through West Basin’s facilities. In addition, the agencies will agree to jointly study the purchasing of non-Metropolitan Water District water at a reduced cost for use within the West Basin service area.”

West Basin agreed to credit WRD \$275,000 against future water purchases to settle the rebate case. The two cases were formally dismissed by the court on April 16, 1998.

The Municipals Divorce

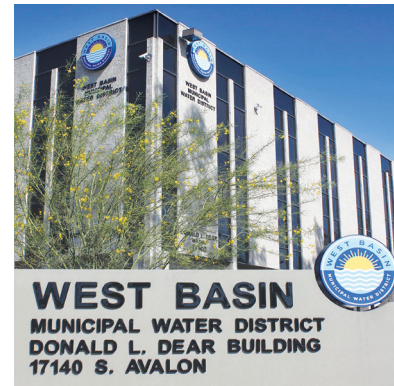
On July 1, 2006, the Central Basin Municipal Water District and the West Basin Municipal Water District formally abandoned the shared staffing model that had been in place since 1952. Each promptly appointed its own general manager, staff, and legal counsel.

While many reasons accounted for the split, an operational difference between the two played a role. The recycled water projects of each district were enjoying decidedly different degrees of success. In the early 1990s the West Basin Municipal Water District built an advanced recycled water treatment plant and had a reliable customer in WRD for much of the water produced. By the end of the decade, WRD was purchasing 10,000 acre-feet annually from that facility for injection into the West Coast Basin Seawater Barrier. The Central Basin Municipal Water District, on the



The Whittier Daily News; March 21, 2006.

other hand, built pipelines to convey water produced by the Los Angeles County Sanitation Districts. West Basin was a producer and supplier; Central Basin was simply a supplier.



In July 2006, the two municipal districts hired separate general managers, staff, and legal counsel. From left: The Central Basin Municipal Water District headquarters and the West Basin Municipal Water District headquarters. *Images: Left, from the WRD archives; right, courtesy of West Basin Municipal Water District.*

CENTRAL BASIN MUNICIPAL WATER DISTRICT CLAIMS GROUNDWATER STORAGE AUTHORITY



Robert Apodaca, president of the board of directors, Central Basin Municipal Water District

In the 1980s and 1990s both the Central Basin Municipal Water District and the West Basin Municipal Water District had made periodic incursions into the groundwater arena. When it came to groundwater storage, however, both districts had deferred to WRD. In a memorandum of understanding that accompanied the December 20, 2004, water purchase agreement between WRD and the Central Basin Municipal Water District, Central Basin recognized that “WRD should serve as the lead agency for all storage and conjunctive use projects in the Central and West Coast basins.”

Months later Robert Apodaca, president of the Central Basin board, wrote to Willard H. Murray Jr., the WRD board president, to express frustration with the pace of the facilitated Conjunctive Use Working Group process (discussed in detail in Chapter 17) and urged WRD to take action on its own. “The WRD has the authority to manage the storage space in the basins,” said Apodaca’s letter of March 10,

2005. “Central Basin encourages your Board to move forward and adopt a reasonable set of rules and regulations under which storage can be accessed for a public and regional benefit.”

Both districts supported WRD’s positions throughout the facilitated Conjunctive Use Working Group process. In a joint letter to WRD dated April 29, 2006, as the facilitated process was winding down, both districts expressed support for WRD’s “Interim Rules for Conjunctive Use and Storage.”

Soon after the municipal water districts split from one another, however, things changed. For its part, the West Basin Municipal Water District participated in a state-sponsored storage mediation and became a supportive intervenor in the petition to amend the West Coast Basin judgment. The Central Basin Municipal Water District, however, went in an entirely different direction, competing with the mediation and aggressively opposing the storage petition to amend the Central Basin judgment.



Presentation cover slide from the WRD Interim Rules for Groundwater Storage meeting with the Torrance Water Commission, May 18, 2006.

Central Basin Municipal Water District became preoccupied with groundwater storage, fixated on WRD’s growing prominence in the mediation process, and intent on asserting a preeminent role for itself in the management of groundwater storage in Central Basin. Central Basin’s long slide toward near insolvency began when it discarded its singular mission of fifty-four years’ standing as a wholesaler of imported MWD water by trying to usurp WRD’s statutory and court-sanctioned groundwater storage role. Most of the resulting damage would play out in the next decade with debilitating consequences for CBMWD.

Did You Know?



Conjunctive use is the planned and intentional use of both surface water and groundwater to maximize the total water availability in a region. WRD has been practicing conjunctive use since its inception by participating in the capture of surface water, including stormwater, imported water and recycled water, for diversion and storage into the groundwater basins for later withdrawal as needed to help meet the region’s overall water demands.

“Central Basin Conjunctive Use Working Group”

Ignoring the mediation process altogether as it was moving into its second year, in August 2007 the Central Basin Municipal Water District invited a select group of Central Basin stakeholders to the inaugural meeting of what it called the Central Basin Conjunctive Use Working Group. “As groundwater storage gains greater attention in supplementing the region’s water management efforts,” the invitation said, “it is important now more than ever that we determine the fate of our region and work together to protect the interests of those who are impacted. . . . We look forward to an equitable solution in developing our region’s groundwater conjunctive use storage program.”

Consisting of the Central Basin Municipal Water District, nine cities, one mutual water company, and two water districts, the group would meet periodically to develop “storage program concepts.” (As time went on, key members abandoned Central Basin’s effort in favor of mediation.) For its part, the Central Basin Municipal Water District tried to develop standing as the preeminent player in the groundwater storage arena, if not by its actions, then by virtue of claiming to be.

Central Basin Municipal Water District Buys “Water for Storage,” Groundwater Pumping Rights

In November 2007, and without WRD’s knowledge, Central Basin Municipal Water District purchased 1,510 acre-feet of spreading water “for storage” for the cities of Downey, Lakewood, and Cerritos. Ironically, the water could not be considered “stored” water and therefore couldn’t be pumped without its counting against the cities’ annual pumping allocations precisely because there was no legal framework in place for them to store it. (The Central Basin Judgment Storage Amendment subsequently credited 500 acre-feet for each city toward their individual storage allocations.)

That same month Central Basin purchased 63.31 acre-feet of water rights (50.65 acre-feet of annual pumping allocation) from the San Gabriel Valley Water Company. The rights were never used. (The Central Basin judgment amendment relating to storage required Central Basin “to reduce its APA [annual pumping allocation] to five acre-feet or fewer by December 31, 2018.” Central Basin agreed, by stipulation, “not to acquire any additional water rights.” The district sold all but 4.65 acre-feet of its pumping rights in 2017.)

Central Basin Municipal Water District’s Alternate Reality

By mid-2008, Art Aguilar, general manager of the Central Basin Municipal Water District, was chafing at the significant progress and increasing pumper support enjoyed by the mediation since his competing Central Basin Working Group was formed. On June 3 he

sent a remarkably Orwellian letter to Central Basin stakeholders. “It is a primary mission of our District,” Aguilar said, “to promote and manage the use of the storage capacity of the Central Basin. Our District has a statutory authority and duty to undertake and accomplish that purpose. Our District cannot and will not allow that authority to be delegated, circumvented or assigned to any other party.”

Aguilar even claimed his district had primary authority for groundwater replenishment: “The Water Replenishment District has authority, *to the extent that authority is not exercised by our District through its concurrent and primary powers, to undertake replenishment activities to ensure that the Central Basin is not depleted below safe yield.* Management of the storage capacity beyond those parameters lies within the sole statutory authority of our District” (emphasis added). These are “fundamental truths,” he said.



Art Aguilar, general manager of Central Basin Municipal Water District. *Photo credit: Allen J. Schaben, Cerritos Community News.*

He attacked other participants in his own working group as well as the Waldo (mediation) process for not according the Central Basin Municipal Water District the respect it deserved: “Neither the Waldo process, nor the discussions reached thus far in the Central Basin Working Group, have reflected or even recognized our District’s statutory role or authority. For our District to support any process, it must reflect and incorporate our District’s statutory authority as the manager and shepherd of the storage capacity of the Central Basin.”

The falseness of so many “fundamental truths” and the exaggerated claims of self-importance served to further isolate Central Basin from the mediation process and the pumper community generally.

As the final meeting of the mediators approached, the Central Basin Municipal Water District and its allies in the competing working group submitted a letter to the mediators proposing alternative “storage program concepts.” Dated November 12, 2008, the proposal tied storage rights to water rights, allocated 38,000 acre-feet of “regional storage space for CBMWD,” and kept the Department of Water Resources in place as a “ministerial” watermaster. WRD was limited to a replenishment function only and would be required to adopt a split replenishment assessment for the two basins.

Neither the mediators nor the moving parties (principal plaintiffs in the petitions to amend the judgments) paid much attention to what seemed to be a hurriedly prepared and shopworn list of ideas discarded by the courts in the case of privatizing storage rights, the legislature in the case of a split replenishment assessment, and the vast majority of the pumper community itself in the case of the Central Basin Municipal Water District.


Considering that nothing it did or tried to do had any impact on the storage amendments ultimately adopted by the courts, and despite the inordinate expense incurred, the efforts of the Central Basin Municipal Water District to move into the groundwater storage arena did not end well.

Central Basin Municipal Water District's preoccupation with groundwater storage started the district down a path that would lead to FBI investigations of its procurements, a state audit that found violations of state law in its financial practices, extraordinarily critical press attention, multiple losses in court, legislation that erased storage authority from its statute, legislation to require customer-appointed directors on its board, multiple credit downgrades, and lingering financial damage that would take several years to repair.

Los Angeles Times

CALIFORNIA

FBI continues probe into Central Basin water district's records



The offices of the Central Basin Municipal Water District in the city of Commerce. (Damian Dovarganes / Associated Press)


By HECTOR BECERRA
AUG. 21, 2013 12 AM PT

The FBI served new subpoenas on the Central Basin Municipal Water District this month, expanding a corruption investigation that began with a raid on state Sen. Rep. ...

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POLITICS

Central Basin Water District drowning in legal fees



DAMIAN DOVARGANES/AP

Karen Foshey February 3, 2014

The Central Basin Municipal Water District in Southeast Los Angeles, which has been trying to account for a **\$2.7-million chunk of public funds**, has spent an additional \$300,000 on lawyer fees to track down the missing money, according to invoices reviewed by KPCC.

State Revokes the Central Basin Municipal Water District's Storage Authority

At the request of the Central Basin Water Association and the cities of Lakewood and Long Beach, State Senator Alan Lowenthal in 2012 introduced SB 1386 to call a statutory halt to Central Basin's predatory ambitions. The measure deleted all language in the Municipal Water District Act relating to groundwater storage that was specifically applicable to the Central Basin Municipal Water District and in its place inserted the following language:

For a district located in a county with a population greater than 8 million persons, and where 80 percent of the area of the district is included within the boundaries of a replenishment district organized pursuant to [the Water Replenishment District Act], the district shall have no authority to do any of the following:

- (1) Manage, control, or administer the importation of water for the storage of groundwater;
- (2) Store water except pursuant to either of the following:
 - (A) A contract with an independent holder of adjudicated groundwater extraction rights within the boundaries of the district and for the account of the water rights holder.
 - (B) A court order issued by a court having jurisdiction over the adjudication of groundwater extraction rights within the groundwater basin where storage is sought.

In the analysis of the bill, the consultant for the Senate Committee on Natural Resources cited as typical a comment letter on the bill received from the Bell Gardens Chamber of Commerce:

For more than 50 years and until quite recently, the "groundwater" role of the Water Replenishment District of Southern California and the "imported surface water" role of the Central Basin MWD have been acknowledged and respected by the two districts.

This bill is necessary because in recent years, the CBMWD has inserted itself into the groundwater arena, first by purchasing groundwater extraction rights it does not use and then by relying on those rights to file or intervene in groundwater litigation. The District has sponsored unsuccessful legislation naming itself the groundwater overseer of Central Basin. And, most recently, the Central Basin MWD has funded a Programmatic Environmental Impact Report to control all groundwater in the district, an action opposed by the vast majority, if not every groundwater producer in both groundwater basins.

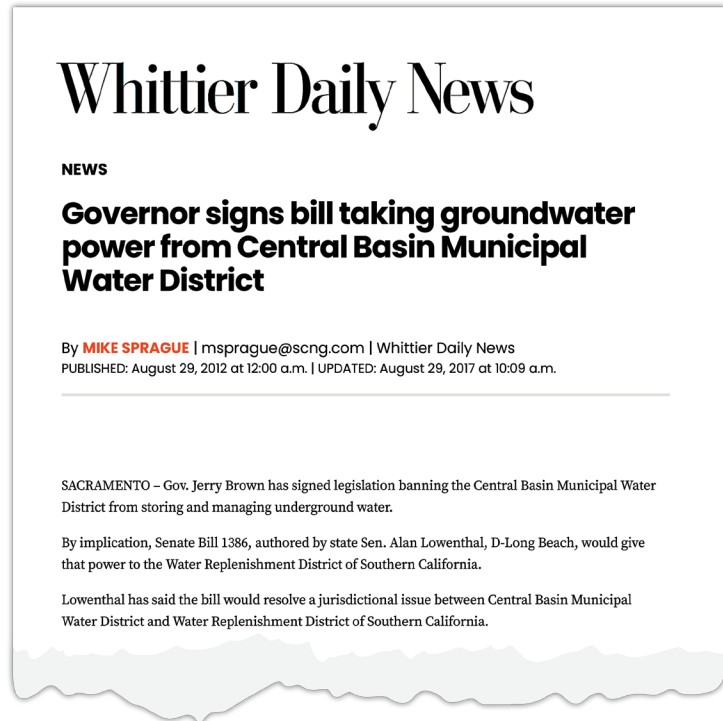
The Central Basin Municipal Water District argued that the bill “sets a dangerous precedent for all California water agencies. We have yet to see any justification for the targeted attack this bill makes on a single water district. The passage of this legislation would unduly impede Central Basin’s ability to perform its core functions and would pave the way for future attempts to usurp the power of one agency and provide it to another.”

With the overwhelming support of the two water associations and the groundwater pumping community in both basins, as well as WRD, the bill breezed through the legislature, with only token opposition joining Central Basin in trying to stop it. Of the thirty-eight municipal water districts in the state, the Central Basin Municipal Water District is the only one prohibited from managing, controlling, or administering the importation of water for groundwater storage.

State Audit of the Central Basin Municipal Water District

In September 2014 the Los Angeles County Board of Supervisors asked the legislature to order a comprehensive state management audit of the Central Basin Municipal Water District. The resulting state audit was released in December 2015: *Central Basin Municipal Water District: Its Board of Directors Has Failed to Provide the Leadership Necessary for It to Effectively Fulfill Its Responsibilities*.

The legislature responded to the audit in 2016 by adopting AB 1794 by Assembly Member Cristina Garcia to establish a new governance structure for the Central Basin district. The legislation changed the makeup of its board from five elected directors to four elected directors and three appointed directors representing, respectively, large water purveyors, municipalities that are water purveyors, and small water purveyors. That provision takes effect at the November 8, 2022 election. In the meantime, three directors selected by water purveyors joined the board in 2017, resulting in an eight-member board.



Whittier Daily News; August 29, 2012.

WRD's Peaceful Coexistence with the Municipal Water Districts

Relations between WRD and the West Basin Municipal Water District have been relatively cordial since the two districts resolved their legal disputes in 1998 following West Basin's legislative effort to eliminate WRD through consolidation. No litigation has been filed by either district against the other, and since 1998 WRD's water purchases have been made pursuant to longer-term agreements that obviate the impact of surcharges. West Basin supported the storage amendment and for the most part supported WRD's position throughout the facilitated and mediated process that resulted in the amendment. WBMWD is a stakeholder and active participant in WRD's Regional Brackish Water Reclamation Program, a program whose goal is to make beneficial use of a substantial portion of the 600,000 acre-foot brackish water plume that was trapped inland before the West Coast Seawater Barrier was completed in the 1950s.

Even though WRD is no longer a customer for imported water, its relations with the Central Basin Municipal Water District improved when Kevin Hunt became general manager of Central Basin in 2014. A former consultant to WRD, Hunt took steps to repair the damage caused by his agency's attempted incursion into the groundwater arena. In 2019 CBMWD turned over to the city of Whittier, without compensation, the Water Quality Improvement Project. And it ceded to WRD its role as petitioner and trustee in the Long Beach judgment. While it retains less than five acre-feet of allowed pumping allocation, the Central Basin Municipal Water District is now out of the groundwater business, for the first time since 1992.

CHAPTER

16

FINANCING WATER REPLENISHMENT

The costs of groundwater replenishment and the infrastructure that supports it have relied on a variety of agencies and funding sources over the years. Before WRD was formed, the Los Angeles County Flood Control District built the Rio Hondo Spreading Grounds in 1938 and the San Gabriel Spreading Grounds a year later. Built initially for flood control purposes (in March 1938 a deadly flood caused catastrophic damage to the region), they also became replenishment facilities in 1954 when the district started purchasing imported water for spreading with Conservation Zone I funds.

The Flood Control District built the first segment of the West Coast Basin Seawater Barrier in 1953 with \$750,000 (\$7.2 million in 2019 dollars) in state funds. In 1954 the state, the district, and the West Basin Water Association shared the cost of imported water purchased for injection into the barrier.



Whittier Narrows Dam Project while under construction, ca. 1957 (left) and filled with captured stormwater in 2007 (right). *Images from the WRD archives.*

Additional facilities to supply recycled water for spreading were built by the Sanitation Districts of Los Angeles County in 1972 (San Jose Creek Water Reclamation Plant) and WRD in 2019 (Albert Robles Center for Water Recycling and Environmental Learning). Facilities to supply recycled water for seawater barrier injection were built by the West Basin Municipal Water District in 1992 (Edward C. Little Water Recycling Facility), WRD in 2005 (Leo J. Vander Lans Advanced Water Treatment Facility), and the Los Angeles Bureau of Sanitation in 2006 (Terminal Island Advanced Water Purification Facility). All relied on a mix of funding. In WRD's case sources included state and federal grants and tax-exempt financing backed by the replenishment assessment.

CONSERVATION ZONES

Conservation Zones I and II predated WRD, of course, but they continued to provide funds after WRD was created. Zone I corresponded to the Central Basin area and Zone II corresponded to the West Coast Basin area. A tax of five cents per \$100 of assessed valuation was levied by the Flood Control District on all properties within the respective zones, except for those properties located in Long Beach and Los Angeles. Those cities refused to allow conservation zone taxes on property owners in their jurisdictions.

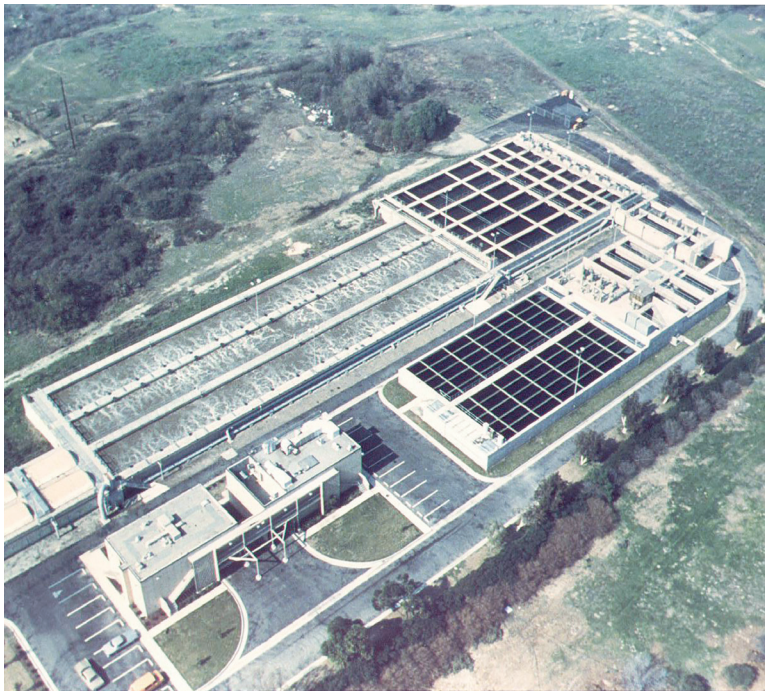
Zone I funds were used to fund imported water purchased for spreading and initially were intended to address the accumulated overdraft. Between 1960–61 and 1969–70, Zone I funds purchased 447,400 acre-feet of imported water for recharge in the spreading grounds. Zone 1 funds were used to construct the “Zone 1 Ditch”, an important conduit for replenishment water to flow from the San Gabriel River over to the Rio Hondo. Zone I funds were also

used to pay some of the construction costs of the Alamitos Seawater Barrier, which was completed in 1964. Zone I expired in 1971–72.

Zone II funds were used to complete the expansion of the West Coast Basin Seawater Barrier and the planning, engineering, and some of the construction costs for the Alamitos Seawater Barrier, and some of the costs of the Dominguez Gap Seawater Barrier, which began operations in 1971. (Most of the costs for the Dominguez Gap Seawater Barrier were borne by Los Angeles County’s general fund). Until 1971, when WRD assumed all water purchase costs, some Zone II funds were used to buy imported water for the seawater barriers. Zone II also expired in 1971–72.

The spreading grounds and seawater barriers continue to be owned, operated, and maintained by the Flood Control District, which is now part of the Los Angeles County Department of Public Works. Revenue to support spreading grounds and barrier expenses comes from a combination of the Flood Control District’s annual property tax allocation and a benefit assessment imposed on all parcels in its service area.

THE REPLENISHMENT ASSESSMENT



Whittier Narrows Water Reclamation Plant, ca. 1970s. *Image from the WRD archives.*

The replenishment assessment has been by far the single largest source of revenue for WRD since its formation. In the early days the replenishment assessment was used to fund imported water purchases for spreading and barrier injection and to finance the construction and water purchase costs of the Whittier Narrows Water Reclamation Plant, which opened in 1962. A nominal amount of the assessment was used in 1960 and 1961 to fund “insect control research.” Compared to alternative Metropolitan Water

District rates, the replenishment assessment has been a relative bargain for groundwater pumpers. The replenishment assessment, however, has not been the only source of revenue for the district.

WRD PROPERTY TAX

Before passage of Proposition 13 in 1978, special districts in California had authority to assess property taxes through their respective county boards of supervisors. WRD assessed a property tax to pay virtually all non-water expenses—administrative and staff salaries, engineering consultant fees, and legal fees. The property tax but not the replenishment assessment paid for some of WRD’s early capital costs. For example, the district used the property tax in 1969 to finance installation of the connection that delivered recycled water to the spreading grounds from the Sanitation District’s San Jose Creek Water Reclamation Plant.



Howard Jarvis, a businessman and tax policy gadfly, speaking at Proposition 13 victory party in 1978. *Image courtesy of Los Angeles Public Library.*

The passage of Proposition 13 significantly changed WRD’s revenue options in a way that put more pressure on the replenishment assessment and ultimately led WRD to seek external sources of funding for its capital projects. Passage of Proposition 13 also nearly resulted in the loss of the spreading grounds and the seawater barrier system.

PROPOSITION 13

When voters approved Proposition 13 (the Jarvis-Gann initiative) in the election of June 6, 1978, their decision fundamentally changed the property tax system in California. In addition to placing a limit on property tax assessments, it also required a two-thirds vote of the electorate to increase property tax rates. Especially hard hit were local jurisdictions, including special districts that relied on property tax revenues to fund projects and programs. Assessed valuations were rolled back and frozen at their 1976 levels, with future increases limited to no more than 2 percent per year. The immediate impact was to reduce property tax rates by about 57 percent throughout the state, abruptly and sharply reducing revenue to local jurisdictions and special districts.

Previously the Los Angeles County Board of Supervisors had the discretion to raise property tax rates on uncapped assessed valuations. The Flood Control District, the Sanitation Districts, and WRD each year would simply ask the board to establish whatever property tax rate they wanted for the succeeding year.

Three months before the election, a Flood Control District engineer told the WRD board that if the Jarvis initiative passed, “the Flood Control District’s tax rate would be lowered from 12 cents [per \$100 of assessed valuation] to 3.5 cents, necessitating a layoff of 600 to 650 employees and a complete curtailment of spreading and injection of imported water as well as termination of spreading of reclaimed water.”



The passage of Proposition 13 significantly changed WRD’s revenue options in a way that put more pressure on the replenishment assessment and ultimately led WRD to seek external sources of funding for its capital projects. Passage of Proposition 13 also nearly resulted in the loss of the spreading grounds and the seawater barrier system.

Spreading and Barrier Operations at Risk?

The day after the election the Flood Control District sent a letter to the director of the State Department of Water Resources advising that “passage of the Jarvis-Gann Initiative now makes it impossible for the Flood Control District to continue its present level of flood control and water conservation services” and that “the operation of the coastal seawater barriers would be terminated beginning June 26, 1978.”

In late June the County Sanitation Districts informed WRD that, effective July 1, 1978, deliveries of reclaimed water from the Whittier Narrows and San Jose Creek water reclamation plants would be curtailed.

As the summer wore on, a combination of money left over from Zone I assessments and surplus state funds would be used to keep the spreading and barrier injection operations going through December 1978. Early in 1979, however, the financial condition of the Flood Control District became so dire that in February it recommended to the Board of Supervisors that the district sell its headquarters in Alhambra for \$8 million (\$28.2 million in 2019 dollars) to pay its obligations.

On February 15 WRD’s general manager, John Joham, told the WRD board that “the three coastal barriers were in the process of being shut down.” Larry Larson of the Long Beach Water Department reported at the same meeting that “the Alamitos Barrier would be shut off as of tonight.”

During the next two months WRD explored multiple options, including sharing the cost of spreading operations with the Upper San Gabriel Valley Municipal Water District, jointly operating the Alamitos Barrier with the Orange County Water District, and taking over and assuming the costs of the spreading ground and barrier operations. The board rejected a request from the Flood Control District to assist it financially and rejected suggestions that either the state or the Metropolitan Water District take over barrier operations.

At the board’s April hearing to adopt the 1979–80 replenishment assessment, David Powell of Bookman-Edmonston reported that the cost to the district of taking over the operation and maintenance of replenishment facilities would be \$2.3 million annually, which equated to \$8.50 on the replenishment assessment (\$8.1 million and \$30, respectively, in 2019 dollars). With little appetite for more than doubling the replenishment assessment and an eye on fast-moving and promising developments in Sacramento, the WRD board approved a replenishment assessment of \$24 per acre-foot for 1979–80, the same as it was in 1978–79.

Legislature to the Rescue

In July 1979 the legislature adopted emergency legislation that provided for the levying of benefit assessments for flood control districts. It authorized the board of supervisors in the county where the district is located to levy the assessment for one year, with approval by two-thirds of voters required to continue the assessment in subsequent years. Richard Ostrom of the Flood Control District told the WRD board that the Los Angeles County Board of Supervisors planned to approve an assessment that would raise \$20 million for 1979–80. The assessment could be used only for flood control purposes, he said, but a portion of the ad valorem tax devoted to flood control could be directed toward water conservation. The Board of Supervisors approved the assessment on August 14. Voter approval for continuing the assessment was obtained on November 6, 1980. It has been renewed annually by the Board of Supervisors ever since.

Impact on WRD

WRD took several actions to adjust to the fiscal impact of Proposition 13. For the short-term the board voted to scale back water quality monitoring activities in the Montebello Forebay to reduce costs from \$13,500 to \$6,000 per year. Like virtually every jurisdiction in California, WRD put staff salary increases on hold.

As of September 1, 1978, proceeds from the replenishment assessment, not property taxes, would pay all future general and administrative expenses of the district, a practice that remains in effect to this day.

The property tax had generated \$230,313 in revenue for the district in the 1975–76 fiscal year. Because the tax rate is frozen at 1976 levels, it generated just over \$400,000 in 2019. WRD uses property taxes to fund community education and outreach activities.

THE LONG BEACH JUDGMENT

The Long Beach judgment, adopted by the court in 1965, was also a source of revenue for replenishment. Under the terms of the judgment, if the volume of flow into the Central Basin fell below an average of 98,415 acre-feet in a rolling ten-year period, pumpers in the Upper Area of the San Gabriel River Watershed would have to make up the deficit by purchasing and providing water or by making cash payments to the Central Basin Municipal Water District, which in turn would buy water for replenishment. On behalf of the Upper Area, the Upper San Gabriel Valley Municipal Water District provided 6,500 acre-feet of imported water to the spreading grounds in 1965–66 and by 1969 contributed more than

\$800,000 toward the purchase of makeup water. To date 215,121 acre-feet of makeup water has been provided or purchased since the judgment was adopted in 1965.

WRD PROPERTY TAX ASSESSMENTS 1960-61 - 1977-78

Year	Rate per \$100 of Assessed Taxable Property Value	Assessed Taxable Property Value	Revenue to the District
1960-61	\$0.005	\$3,414,000,000.00	\$170,700.00
1961-62	\$0.002	\$3,740,698,000.00	\$74,813.96
1962-63	\$0.002	\$3,951,600,000.00	\$79,032.00
1963-64	\$0.004	\$4,061,986,000.00	\$162,479.44
1964-65	\$0.005	\$4,278,600,000.00	\$213,930.00
1965-66	\$0.0025	\$4,512,000,000.00	\$112,800.00
1966-67	\$0.002	\$4,762,450,000.00	\$95,249.20
1967-68	\$0.0005	\$5,170,056,000.00	\$25,850.28
1968-69	\$0.0035	\$5,488,321,428.57	\$192,091.25
1969-70	\$0.003	\$5,765,177,666.67	\$172,955.33
1970-71	\$0.0012	\$6,091,191,666.67	\$73,094.30
1971-72	\$0.004	\$6,287,361,250.00	\$251,494.45
1972-73	\$0.004	\$6,470,550,000.00	\$258,822.00
1973-74	\$0.004	\$6,692,225,000.00	\$271,689.00
1974-75	\$0.0015	\$7,156,273,333.33	\$107,344.10
1975-76	\$0.003	\$7,677,124,000.00	\$230,313.72
1976-77	\$0.0025	\$8,716,400,000.00	\$217,910.00
1977-78	\$0.0027	\$9,371,111,111.11	\$253,020.00
Total			\$2,963,589.03

Though property tax amounts fluctuated over the years, WRD benefited from a total of \$2,963,589.03 dollars up until 1978 when Proposition 13 was passed and the tax rate was frozen at 1976 levels. Sources: Minutes. WRD. 1960 – 1978. *Records of the Los Angeles County Assessor.*

FINANCING CAPITAL PROJECTS

Except for the payment over time of the \$1.7 million loan it obtained from Los Angeles County to finance construction of the Whittier Narrows Water Reclamation Plant in 1962, WRD operated on a pay-as-you-go basis for capital projects like monitoring wells and received no grant assistance from state or federal agencies. That changed in 2002 when WRD secured its first state and federal grants. Two years later the district undertook its first debt financing. External funding and debt financing have been important components of WRD's finance operation ever since.



Groundwater treatment equipment at one of WRD's Safe Drinking Water Program projects. From left: Three officials from the Golden State Water Company, WRD general manager Robb Whitaker and directors Willard H. Murray, Jr., Robert W. Goldsworthy and Albert Robles. *Image from the WRD archives.*

While California's local water districts received the occasional congressional earmark or direct appropriation for specific projects by the legislature, they historically relied on revenue generated by their own rates to fund projects and programs. That changed in 2000 with the adoption by voters of the \$1.97 billion Safe Drinking Water, Clean Water, Watershed Protection and Flood Control Act (Proposition 13), followed two years later by the adoption of the \$3.4 billion Water Quality, Supply and Safe Drinking Water Act (Proposition 50).

Along with relatively new categories of funding provided by the U.S. Bureau of Reclamation, these bond measures created new opportunities for financial support for local districts like WRD. The district secured more than \$66 million in state and federal grants between 2002 and 2019.

Nearly \$7 million in grants went toward construction of the Robert W. Goldsworthy Desalter, more than \$9 million went toward construction of the Leo J. Vander Lans Advanced Water Treatment Facility, and \$15 million went toward the construction costs of the Albert Robles Center for Water Recycling and Environmental Learning.

Almost as good as a grant was the \$80 million, thirty-year, one percent loan from the State Water Resources Control Board State Revolving Fund for construction of the Albert Robles Center that WRD received in July 2016. The low interest rate saves the district \$40 million when compared to fully financing the center using the AAA pricing the district received when issuing its 2015 Replenishment Assessment Revenue Bonds at 3.49%. As interest rates in the tax-exempt market rise, of course, the savings become even greater.

WRD's success at obtaining grants for its projects has greatly reduced the remaining capital project costs it needs to finance. And the district's success in the tax-exempt market has helped to hold down the replenishment assessment because the district has been able to spread its debt service payments at attractive interest rates equitably over time. The district has gone to the tax-exempt municipal bond market five times.

The district issued its first Revenue Certificates of Participation in October 2004. It used the proceeds of the \$15.41 million to fund WRD's share of costs for the construction (with the Los Angeles County Department of Public Works) of rubber dams on the San Gabriel River; the expansion of the Whittier Narrows Conservation Pool; improvements to the Leo J. Vander Lans Advanced Water Treatment Facility; and the purchase of a new administration building for WRD. The bonds received a rating of AA from Fitch and AA- from Standard & Poor's, exceptional ratings for a first-time issuer. The district had come a long way from the conditions that had led to the 1999 state audit. (See Chapter 11).

WRD entered the market a second time in November 2008 with the issuance of \$17.6 million in Revenue Certificates of Participation. The proceeds paid the district's costs for the Rio Hondo–San Gabriel Spreading Grounds Interconnection Pipeline, regional groundwater monitoring wells, administration building improvements, reimbursement of expenses related to the building, and four Safe Drinking Water projects. Reflecting growing confidence in the district's financial and political stability, the bonds retained the AA rating from Fitch and received a two-notch upgrade from Standard & Poor's, from AA– to AA+.

In December 2011, WRD issued \$69.2 million in Water Revenue Certificates of Participation at an interest rate of 4.70 percent to fund expansion of the Leo J. Vander Lans Advanced Water Treatment Facility, Phase 1 of the Groundwater Reliability Improvement Program, groundwater monitoring wells, and the pipeline linking the spreading grounds.

WRD issued \$148.4 million in Replenishment Assessment Revenue Bonds in December 2015. At the attractive interest rate of 3.49 percent, most of the proceeds (more than \$109.7 million) were used to refund outstanding debt issued in 2004, 2008, and 2011 that carried higher rates. The refunding resulted in a net present value savings of \$9.72 million. The lion's share of the remaining proceeds (\$31.2 million) went toward construction costs of the Robles Center.

WRD issued \$73.1 million in revenue bonds at an interest rate of 3.88 percent in November 2018. More than half the proceeds went toward construction of the Robles Center and a pipeline for the Vander Lans facility.

While the bonds were rated AA+ by Fitch and S&P, the interest rates obtained on the debt issuances in 2015 and 2018 were comparable to those obtained by AAA rated Metropolitan Water District debt issued at about the same time.

CHAPTER

17

GROUNDWATER STORAGE

As construction of the infrastructure for the State Water Project proceeded in the early 1970s, the State Department of Water Resources was forecasting that the project would provide a surplus of 2.6 million acre-feet of water during its first ten years of operation.

In August 1972 the general counsel for the Metropolitan Water District asked WRD to participate in meetings of the Southern California Water Conference to explore proposals to store some of that excess State Water Project water in certain Southern California basins, including the Central and West Coast Basins.

The WRD board minutes for January 4, 1973, reflect WRD's skepticism of the idea, at least



In August 1972 the general counsel for the Metropolitan Water District asked WRD to participate in meetings of the Southern California Water Conference to explore proposals to store some of that excess State Water Project water in certain Southern California basins, including the Central and West Coast Basins. The WRD board minutes for January 4, 1973, reflect WRD’s skepticism of the idea, at least in the basins underlying the district: “During the discussion . . . it was noted that the ground water storage in both the Central Basin and West Basin were at sufficiently high levels to preclude storage of substantial quantities of State Project water for future emergency use.”

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The Ad Hoc Committee of Local Ground Water Management Agencies was formed “to develop criteria, estimated costs, and to coordinate the implementation of a first phase study to investigate the feasibility of operating Southern California Ground Water basins conjunctively with the State Water Project.” Notwithstanding its doubts about storage capacity in the basins underlying the district, the WRD board acted on the recommendation of the two water associations and appointed Max Bookman to serve on the committee.

John Joham, WRD’s assistant general manager, attended the November 8, 1973, meeting of the ad hoc committee and reported to the board that “one of the major topics discussed was the need for preparation of an inventory of the institutional constraints in certain local ground water basins which could restrict the storage of surplus State Water Project water within those basins.” He added that “the West Basin does not have any capacity for groundwater storage because it is a pressurized aquifer area” and that “the Los Angeles Forebay was the only available area to store surplus State

Project water in the Central Basin.” He concluded his report by saying that “ground water levels in the Montebello Forebay normally were maintained at an elevation which would preclude any further storage of water in that area.”



Governor Edmund G. Brown California Aqueduct, outer Los Angeles, ca. 1970.

GROUNDWATER STORAGE BECOMES A POLICY OBJECTIVE

By 1999 twenty-six years had passed since WRD concluded that the basins did not have sufficient capacity to store surplus State Water Project water. In a letter dated July 6 to Robert Goldsworthy, president of the WRD board, Tom Hannigan, director of the State Department of Water Resources, again brought up the idea of groundwater storage. DWR “is very interested,” Hannigan said, “in exploring opportunities which the Central Basin presents for local management and conjunctive use that is beneficial to the District, the Basin’s groundwater users, and the statewide water supply balance.”

For nearly three decades neither WRD nor the pumper community had expressed interest in using the basins for storage, even as the Metropolitan Water District was executing groundwater storage agreements in distant basins and paying a lot of money to do so.

When WRD expressed interest in Hannigan’s offer, however, suddenly everybody became interested. Representatives of the Metropolitan Water District and the Central and West Basin Municipal Water Districts showed up uninvited at the first exploratory meeting between WRD representatives and Hannigan’s office in August 1999.

A draft memorandum of understanding between WRD and the Department of Water Resources was crafted in October 1999. Goldsworthy and M. Susan Carrillo, another WRD director, met with Hannigan on April 13, 2000, and agreed to the formation of a technical group and a policy group “in the near future.” Shortly after that meeting, however, and with many pumpers expressing alarm that “MWD wanted to take over our basins,” the Department of Water Resources abandoned the memorandum process in favor of discussions that included public and private pumpers.

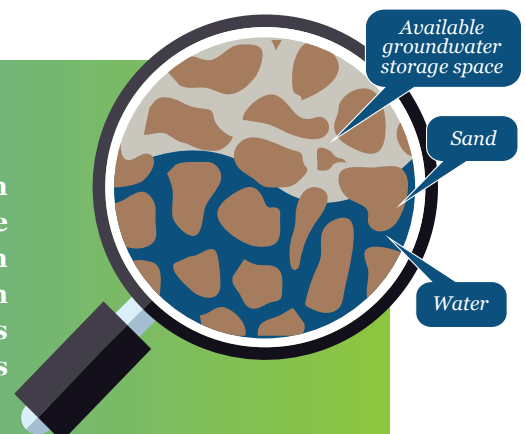
Those discussions, mainly between WRD and a handful of Central Basin pumpers led by Southern California Water Company (which became the Golden State Water Company in 2005) and the cities of Cerritos, Downey, Lakewood, Long Beach, and Signal Hill began in the fall of 2000 and continued through the summer of 2001. The seemingly amicable discussions ended abruptly, however, and the resulting ill will lasted for years.

On August 21, 2001, Brian Brady, WRD’s interim general manager; Robb Whitaker, the district’s assistant general manager and chief engineer; and Ed Casey, co-counsel for WRD, were called to a meeting in Downey with several Central Basin pumpers. The WRD team and the pumpers were discussing ideas for structuring a groundwater storage program when WRD’s representatives were stunned to learn that twelve pumpers, including many at the meeting, had filed a petition earlier that day to amend the Central Basin judgment to tie storage rights to adjudicated rights. “They dropped a bomb on us,” Casey said.

In a water community not known for its ability to keep secrets, it was remarkable the petition was prepared, approved by seven city councils, two publicly traded water companies, and three mutual water companies without word leaking to WRD. From WRD’s perspective the timing of the petition, coming as it did as discussions were ongoing, was a move made in bad faith.

Did You Know?

What is groundwater storage? Groundwater is stored in layers of sediment or rock beneath the surface in what are called aquifers. Within an aquifer, the water is found in the pore spaces between sand and gravel or in fractures in bedrock. When groundwater is extracted, available space is created that can be replenished either naturally or by humans with stormwater, imported water, or recycled water.



More significantly, as a policy and legal matter the petition itself was a direct attack on WRD. It attempted to privatize storage by linking storage rights to adjudicated rights. In other words, the petitioning pumpers wanted to “own” the storage space, which they could then monetize by selling. The petition gave no consideration to Hannigan’s objective, which was “local management and conjunctive use that is beneficial to the District, the Basin’s groundwater users, and the statewide water supply balance.”

Led by the Southern California Water Company, the petitioners included the cities of Long Beach, Downey, Lakewood, Signal Hill, Santa Fe Springs, Pico Rivera, Paramount, the California Water Service Company, Montebello Land and Water Company, South Montebello Irrigation District, and Tract 349 Mutual Water Company. They were represented by several law firms and city attorneys, with Hatch & Parent as lead counsel.

The petitioners did not fare well in court. It would have been one thing if the courts simply rejected their petition. That would allow the petitioners to argue another day the notion often expressed by WRD pumper critics at the time that WRD’s authority under state law was limited exclusively to replenishment activities. In denying the petition, however, the courts validated WRD’s authority to manage storage space, a finding as disheartening to WRD pumper critics as was the ruling against the privatization of storage space.

“The Court’s adjudication of water rights did not confer ownership of storage rights in the Central Basin,” the Superior Court ruled on October 9, 2001, in regard to the petition to amend the Central Basin judgment. The “basin’s storage space is a public resource. . . . Movant’s [applicant’s] attempted privatization of this valued public resource is contrary to legal precedents. . . . This Court will not sanction movants’ desire to violate WRD’s Enabling Act.”

The court concluded that “a basin’s storage space is a public resource and as such, the Legislature has provided a framework for that public resource to be administered in this region by WRD.”

The petitioners promptly appealed.

In a twenty-seven-page opinion in *Central and West Basin Water Replenishment District v. Southern California Water Co. et al.*, published on June 12, 2003, the appellate court was even more expansive than the Superior Court:

This appeal presents two principal issues: who has the right to utilize unused storage space in the Central Basin . . . and who has the right to manage the subsurface storage space. These issues arise in the context of a motion that



This appeal presents two principal issues: who has the right to utilize unused storage space in the Central Basin . . . and who has the right to manage the subsurface storage space. These issues arise in the context of a motion that sought to allocate all of the useable storage space to the 148 public entities and private persons with the adjudicated right to extract water from the basin. The trial court denied the motion. It concluded that the unused storage space is a public resource, and that the Water Replenishment District of Southern California (WRD) is authorized to manage it. We affirm.

sought to allocate all of the useable storage space to the 148 public entities and private persons with the adjudicated right to extract water from the basin. The trial court denied the motion. It concluded that the unused storage space is a public resource, and that the Water Replenishment District of Southern California (WRD) is authorized to manage it. We affirm.

Central to the petitioners' argument was the claim that "the right to use storage space [is] an element of their water rights. . . . If that were correct, it would follow that a prescriptive right to water necessarily encompasses a right to storage. However, Appellants' water rights are based on prescription, which in turn, is based on and limited to the property actually used."

The appellate court agreed that the storage space in the Central Basin is a public resource and ruled that the right to water in California is constitutionally usufructuary, meaning that no one in the state owns water; they merely have the right to use water for beneficial purposes. "The State of California owns all of the groundwater in California, not as a proprietary owner, but in a manner that empowers it to supervise and regulate water use," the appellate court said. "Water rights holders have the right to 'take and use water,' but they do not own the water and cannot waste it." Further, the "Central Basin Judgment does not grant storage rights," and the "proportional allocation aspect of the motion does not guarantee beneficial use."



The Legislature also granted WRD authority to “manage and control water for the beneficial use of persons or property within the district.” This broad power necessarily encompasses management of at least some portion of the storage space because the water WRD is authorized to manage and control is located in the basin’s storage space. The plain meaning of the statute governs where the language is unambiguous. Here the plain language of the statute grants WRD management authority.

The appellate court also addressed the question of WRD’s management authority:

WRD has authority to store water for conjunctive use and has authority to manage the storage space in the Central Basin. . . . Storing water for replenishment purposes is essentially the same as storing water for conjunctive use. . . . Because there is no meaningful distinction between storing water for replenishment purposes and storing water for conjunctive use, WRD’s authorization to store water for replenishment purposes includes conjunctive use projects.

The Legislature also granted WRD authority to “manage and control water for the beneficial use of persons or property within the district.” This broad power necessarily encompasses management of at least some portion of the storage space because the water WRD is authorized to manage and control is located in the basin’s storage space. The plain meaning of the statute governs where the language is unambiguous. Here the plain language of the statute grants WRD management authority.

The opinion is an erudite primer on California groundwater rights, how they are obtained, and what those rights confer and prohibit. It is also a coherent explanation of groundwater management in the context of adjudicated basins underlying a water replenishment district whose duties and authorities are fixed by state law. WRD, of course, is the only water replenishment district in the state.

The court’s determination of WRD’s management authority upended claims made for

years by WRD critics that WRD was merely an entity whose duties were passively limited to raising money to buy water to replace water that producers pumped. That narrow view was expressed during the consolidation fight by the West Basin Municipal Water District; by pumpers seeking a state audit of the district; in testimony by Ed Little, director of the West Basin Municipal Water District, before the Little Hoover Commission; by pumpers seeking a county takeover of WRD's functions; by legislators putting constraints on WRD; and by pumpers led by the city of Downey in litigation to stop the desalter project.

While the appellate court had seemingly put to bed the question of WRD's management authority, some pumpers (ultimately joined by the Central Basin Municipal Water District) nonetheless continued to challenge that authority until the courts adopted storage amendments to both basin judgments twelve years later.

WRD was represented in this and in all subsequent storage cases by Ed Casey of Westin, Benschopf (now Alston & Bird).

THE FACILITATED CONJUNCTIVE USE WORKING GROUP PROCESS

Even as the storage petition was winding its way through the courts, the Department of Water Resources was exploring ways to get WRD and the pumper community to come up with an agreement that would make possible the implementation of a groundwater storage program in the basins. The department dangled the possibility of Proposition 50 funds to support storage projects as an inducement that might get the parties, then locked in a legal battle, to collaborate and cooperate.

Despite the litigation most interested stakeholders, including WRD and its legal adversaries, agreed in spring 2002 to participate in a conjunctive use working group that the Department of Water Resources would sponsor and hire a professional facilitator to run. The department spelled out the goals of the working group process in the agency's contract with Rauch Communication Consultants, the facilitator.

The general goal of this project is to provide facilitation that assists the [working group] by:

- Identifying the diverse interests and capabilities of the parties involved in the Basins;
- Developing alternative ways by which the parties' strengths can be constructively combined; and,

- Reaching agreement among the parties of the [working group] on acceptable methods to accomplish conjunctive use management in a manner that maximizes the reasonable and beneficial use of water resources that are available to the region.

Given the fundamental differences between WRD and particular pumpers that had played out in the legislature and the courts for several years, any expectation that the facilitator could help the parties reach such agreement at least anytime soon, was a bit naive.

The Department of Water Resources knew that any discussion of groundwater storage in the Central and West Coast Basins was fraught with peril, so the goals were doubtless crafted in deliberately vague terms, with the hope that once the parties started meeting, undefined terms would take more shape and everything would work out. The department reasoned that a facilitated process to get the stakeholders to at least meet and talk away from the judicial and legislative battlefields was worth a try.

A Flawed Process

The ultimate collapse of the working group process had as much to do with how the facilitation was conducted as it did with the participants' fundamental differences over basin ownership and management. The process began on July 24, 2003, and failed to resolve principal points of contention by the time the participants abandoned the process for good on April 19, 2005.

Robert Rauch, who had extensive experience conducting planning retreats for the boards of various water districts, including WRD and the two municipals, seemed out of his element in the groundwater storage arena. "The process will strive for consensus," he announced at the first meeting, introducing an implausible objective that would dog the process from one meeting to the next. "We will give everyone a voice," he said, empowering infrequent participants with little at stake to speak on an equal footing with attendees with a lot at stake and who never missed a meeting.

Given the fundamental differences about basin management and the strained relationship between WRD and WRD pumper critics at the time, it is entirely possible that no facilitator could have succeeded in bridging the gap between the two forces or helping them reach "agreement on acceptable methods to accomplish conjunctive use management." But passive management of an inherently contentious process was destined to fail.

An Anti-WRD Platform

The very first meeting on July 24, 2003, said a lot about how the process would end twelve meetings and nearly two years later. Rauch used the occasion to provide a written synopsis of stakeholder interviews he had conducted during the previous two months. “None of the key players was spared in the description of what was called a ‘power struggle’ in the Basins,” he said. Of the fifty-nine interviews he listed, only ten had anything to do with groundwater storage or the management of it. Most of the rest were taken up by critiques of WRD and the municipals, thus laying out in the preface to the meeting an anti-WRD and anti-municipals refrain that a core group of pumpers would repeat at virtually every meeting from beginning to end.

Of the seventeen entities represented at the first meeting, twelve were pumpers: the cities of Downey, Lakewood, Long Beach, Los Angeles, Manhattan Beach, Signal Hill and Torrance, California American Water, the California Water Service Company, Southern California Water Company, Montebello Land & Water Company, and South Montebello Irrigation District. Eight of the twelve were parties in the unsuccessful petition to privatize storage space and three were co-plaintiffs in four Downey-led lawsuits against WRD.

The other six entities represented were WRD, the two municipal water districts (as a single entity), the Central Basin Water Association, and the Los Angeles County Department of Public Works. The Department of Water Resources and the Metropolitan Water District sent observers. Of the twenty-four participants in the meeting, five were officials or attorneys for Southern California Water Company. WRD was represented by Director Norm Ryan, Whitaker, and Casey.

Given who was in the room, the atmosphere was one of distrust and for good reason. Many of the pumpers and the municipals had been battling WRD on multiple fronts for a decade. WRD had defeated a legislative effort by Assembly Member Tom Calderon and many pumpers in the room to give pumpers the upper hand in basin management and storage and had prevailed against many of the same pumpers in court. WRD was in no mood to compromise away anything. It would not cede any of its statutory and judicially validated authority to manage the basins or abide any effort to privatize storage space. That was WRD’s position from the first meeting to the last. And to the end, a core group of pumpers, led by the city of Downey and the Southern California Water Company, tried to do both.

Despite the lofty goals the Department of Water Resources established for the process, the passive facilitation effort, the anti-WRD platform, the combative relationship and distrust between WRD and many participants, and the fundamental differences about basin

governance, storage management, and storage as a public resource or private asset would punctuate much of the debate and discussion for two years.

Major Issues Identified

The process did a good job of identifying the major issues that accompany any consideration of a groundwater storage program, and generally they fell into two categories, technical and institutional. From a technical standpoint what did *conjunctive use* mean, how much water can be stored, where in the basins can it be stored, and how can it be stored in a way that no harm results either to the basins or other parties? Institutionally, who can store how much water and how will storage be managed? How are storage allocations determined? What role should the pumpers have in basin governance and storage management? Can a storage program be crafted without amending the judgments? Dozens of sub-issues attached to these questions throughout the facilitated process.

Significant progress was made on the technical issues, so that by the end of the process the participants had reached consensus on the question of just how much water could be stored in each basin. The process broke down by virtue of the sharp disagreements about institutional and governance issues. On technical issues, even WRD's critics deferred to the expertise of the district's professional staff. On institutional and governance issues, WRD and its critics remained far apart.

A Peace Agreement

To reduce tension, early in the process many participants, including WRD, agreed to something of a peace treaty. Until at least April 2004, the participants agreed that none would:

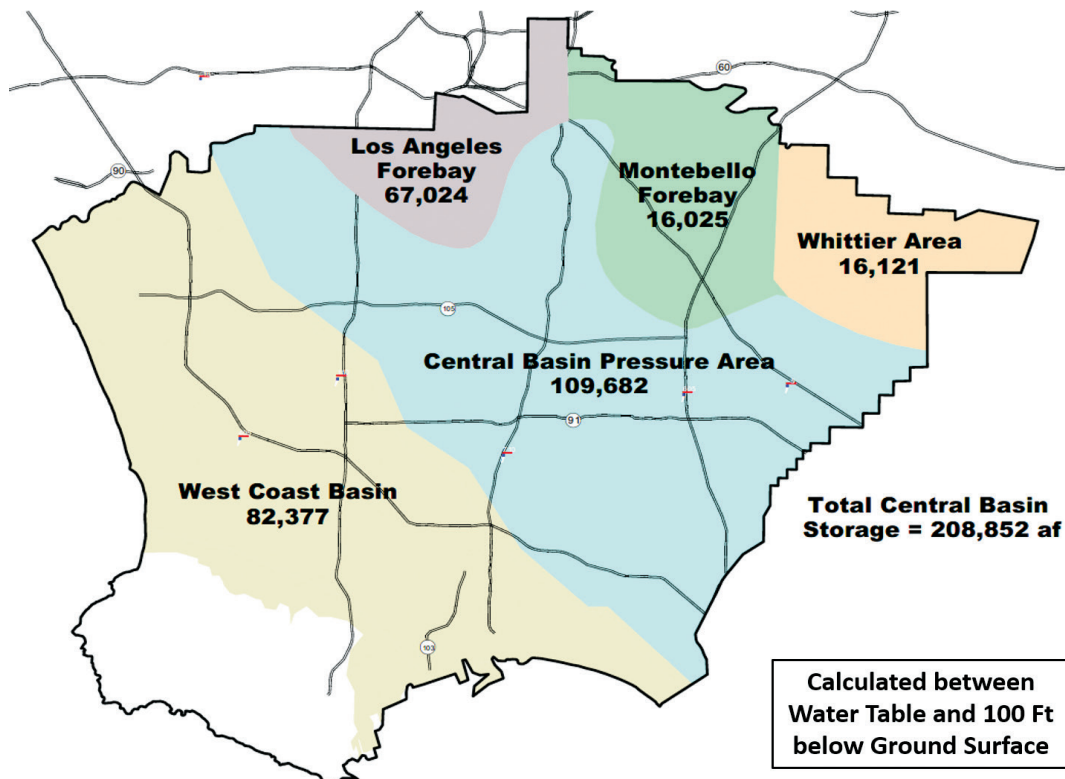
- file any motion seeking to amend the judgments;
- pursue legislation concerning conjunctive use in the basins, or the roles, responsibilities, or powers of any of the participants; or
- approve any new water supply project in the basins without first informing the working group.

Determining How Much Water Can Be Stored in the Basins

On December 15, 2003, Ted Johnson, WRD's senior hydrogeologist, gave a presentation to the working group about the WRD–U.S. Geological Survey's Groundwater Flow Model and Storage Calculations of the Central and West Coast Basins. The model was based on extensive hydrogeologic data collected for thirty years and the application of numerous and complex variables. The analysis looked at the storage availability in the basins in the open

space between the water table and two levels; a point 50 feet below the ground surface and 100 feet below the ground surface.

At 50 feet storage availability was calculated to be 464,840 acre-feet in Central Basin and 155,329 in the West Coast Basin. At 100 feet storage availability was calculated to be 208,852 acre-feet in Central Basin and 82,377 acre-feet in the West Coast Basin.



Available storage capacity in both basins calculated to 100 feet below ground surface, 2003. *Graphic from WRD.*

Johnson concluded his presentation by saying there was “about 450,000 acre-feet of available storage for 75 feet from the ground surface.”

After extensive discussion during several meetings, participants agreed that seventy-five feet was the most feasible regional water level to use for storage calculations. A depth of fifty feet could cause shallow water issues in parts of the basins, and one hundred feet was too conservative and would unnecessarily limit available storage space.

Participants also agreed that storage space for 450,000 acre-feet was available, 330,000 acre-feet in the Central Basin and 120,000 acre-feet in the West Coast Basin. Those numbers carried over into the eventual judgment storage amendments. This was the only milestone reached by consensus during the entire facilitated process.

AVAILABLE STORAGE CALCULATIONS

(ALL VALUES IN ACRE-FEET)

	50' Analysis	100' Analysis	Average (Approx. 75')	75' Result Rounded
Montebello Forebay	70,715	16,025	43,370	40,000
Los Angeles Forebay	162,195	67,024	114,610	115,000
Central Basin Pressure Area	200,367	109,682	155,025	155,000
Whittier Area	31,563	16,121	23,842	20,000
Central Basin Total	464,840	208,852	336,846	330,000
West Coast Basin	155,329	82,377	118,853	120,000
Total Both Basins	620,169	291,229	455,699	450,000

Available storage calculations showing 50-foot, 100-foot and 75-foot elevations, 2003. *Graphic from WRD.*

Alternative Frameworks for Storage

At the March 15, 2004, meeting of the working group, Gerry Gewe, assistant general manager for water at the LA Department of Water and Power, unveiled a proposal that would undertake storage projects for up to 200,000 acre-feet of the available capacity in the basins. Proposed projects would be evaluated by a twelve-member technical review committee with representatives of the four municipal members of MWD (Compton, Long Beach, Los Angeles, and Torrance), two representatives from each of the water associations, one representative for both of the municipal water districts, Los Angeles County Department of Public Works, and State Department of Water Resources. WRD's representative would chair the committee. Projects agreed on in committee would be subject to approval by a seven-member board consisting of the four municipal members of MWD, the two municipal water districts, and WRD.

WRD would serve as the manager and administering agency for the joint powers agreement that established the board and committee and would analyze and negotiate all proposed projects, serve as the lead agency for reviews under the California Environmental Quality Act, account for stored water, and act as the board administrator. The board could enter into contracts for storage programs that bring "new water . . . that involve water, facilities or funding from MWD or a member agency in these Basins." Agencies that were not members

of MWD could participate in programs by contract with the board. The agreement would not cover conjunctive use programs that involve “carryover” of adjudicated water rights.²

The proposal triggered a robust discussion, with many of the WRD critics focused on what they saw as the outsized management role of WRD, while others accepted WRD’s role if guided by defined rules and regulations to govern project approval. Many expressed reservations about the dominance of Metropolitan Water District member agencies on the committee and the presumed disadvantage the projects of non-MWD agencies would have given the makeup of the committee and board.

What emerged with a surprising degree of support, even from many WRD critics, was a proposed alternative structure with WRD serving as the entity with the power to consider all storage projects by pumpers, whether they belonged to MWD or not, if the projects had been reviewed and approved by at least eight members of a twelve-member project review committee. This committee would have three members from each of the water associations, two members representing the four MWD member municipal pumpers, one member representing the two municipals water districts, and one member apiece for Los Angeles County Public Works and State Water Resources. WRD would chair the committee.

An institutional structures committee was charged with developing a preliminary outline of an agreement incorporating the concepts discussed, with the understanding that the committee and power bestowed on WRD were subject to further discussion and resolution.

Stranded Assets

At the working group meetings of April 27 and June 15, 2004, old issues were revisited and new ones started to emerge, as participants discussed draft rules and regulations prepared by Ed Casey on behalf of WRD. Ed Little, director of the West Basin Municipal Water District, voiced concern that storage projects could result in stranded assets (assets that turn out to be worth less after a change in circumstances) for his district if the demand for barrier water declined. He said the loss of sales was “material physical harm.” Representing the Central Basin Water Association, Bill Kruse acknowledged the issue but said, “We are trying to stay away from an open checkbook.” Several pumpers expressed alarm that the municipals appeared to want to get into the water rights business and argued that all storage projects had to be sponsored by a retail water agency that was a party to the

²At the time a pumper could carry over to the succeeding year as much as 20 percent of its unused water right. In ensuing years the cumulative carryover could not exceed 20 percent, meaning a pumper used or lost any amounts exceeding 20 percent. In times of drought an emergency declaration meant whatever amount a pumper carried over would not count toward that 20 percent cumulative maximum.

judgments. “I can’t envision West Basin wanting to store water,” Little said, “but it doesn’t make sense to prohibit it.” The issue of linking water rights and storage rights surfaced once again. Even with these issues, the participants seemed to be on track to reach some form of agreement.

Time: The Enemy of All Deals

Nearly five months elapsed before the next meeting, providing time for WRD critics to rethink their positions on what Gerry Gewe had proposed back in March. In something of an understatement, Rauch, the facilitator, started the working group meeting on November 8, 2004, by saying that “some folks are confused, others are impatient.” Since the last meeting Bill Kruse had developed a proposal on behalf of the Central Basin Water Association that changed the makeup of the committee by adding a third member for the association and virtually eliminated any discretionary role for the committee or WRD. “We want a process driven by science, not politics,” he said.

The proposal would limit a single pumper’s participation in storage projects to 175 percent of that pumper’s annual allocation in both basins, thereby once again creating a linkage between groundwater rights and storage rights. If WRD were to become watermaster, it “would be prohibited from advocating the approval of any of its own projects” and could not “advocate or support any change in the court’s policy or amendment to either Judgment, *without concurrence of the applicable water association*” [emphasis added].

In response Robb Whitaker said, “You just want us to be a rubber stamp.”

WRD’s Proposal

For its part WRD had prepared and distributed to the group its own proposed rules and regulations for conjunctive use, with the committee serving in an advisory role to the WRD board with responsibility to review proposed projects for technical feasibility, material physical harm, financial feasibility, compliance with law, priorities among competing projects, and terms of any storage agreements. WRD board decisions would require a four-fifths vote to overturn a committee recommendation. WRD would have primacy at the spreading grounds.

Storage space for 200,000 acre-feet would be reserved for larger projects with regional benefits. The remaining 250,000 acre-feet of available space would be subject to a pumper partnering rule and would focus primarily on carryover conversion. To address the possibility that the West Basin Municipal Water District and the Los Angeles Department of Water and Power might be stuck with stranded assets, WRD would continue to pay for

recycled water under its existing contracts with both agencies until those contracts expired or five years, whichever was sooner. And WRD would simply “step into the shoes of the watermaster,” mirroring with few exceptions the existing duties of State Department of Water Resources in that role.

An attorney for the California Water Service Company responded, “I don’t read the litigation as giving WRD authority it doesn’t have.” Desi Alvarez of Downey said, “Several of us don’t buy into the financial feasibility of the ‘regional benefits’ discretion of WRD in your proposed Rules and Regulations. We never had agreement on regional benefit.” Chris Frahm, a lawyer representing Southern California Water Company, said, “I thought we agreed the process should be technical,” without the need for discretionary action by the WRD board. “We need to take political machinations out of the process,” Alvarez added.

Other contentious items surfaced. Returning to an earlier refrain in disregard of the appellate court decision, the attorney for California Water Service Company said, “Storage rights should be based on pumping rights.” Kruse asked, “Is there any good reason to have any Met [MWD] member on the [committee] who is not a pumper?” “The municipals are regional suppliers,” Ed Little of the West Basin Municipal Water District responded. “We have a view of everybody. That’s why we should be on the [committee].” Several pumpers argued that the municipals had no business being in the groundwater storage arena. They shouldn’t be on the committee and they should not undertake storage projects, except through a party with adjudicated rights (pumper partnering rule).

While they did not agree on what the next steps should be, Bill Kruse volunteered that the Institutional Structures Committee would continue working on “areas of disagreement.” The meeting ended with Willard H. Murray Jr., a WRD director, and Pat Scanlon, a vice president of the Southern California Water Company, exchanging angry words, symbolizing if not reflecting the public-private divide that was a constant throughout the process.

WRD and Central Basin Make a Deal but Facilitated Process Begins to Fall Apart

The facilitated process began to unravel at the January 31, 2005, meeting. In addition to rehashing familiar disputes, representatives of the water associations, the cities of Downey and Lakewood, and the Southern California Water Company harshly criticized WRD for approving earlier in the month a five-year water purchase agreement and memorandum of understanding with the Central Basin Municipal Water District. It was almost as if critics were looking for an excuse to crater the working group discussions.

Under the purchase agreement, WRD would make a single annual payment of \$800,000

to Central Basin, and pay the Metropolitan Water District commodity rate, without a surcharge, for each acre-foot of spreading water purchased. The annual payment was based on the then-current Central Basin surcharge of \$37 per acre-foot multiplied by a baseline quantity of 21,622 acre-feet, which represented the ten-year historical average of WRD purchases of water for spreading.

For its part the Central Basin Municipal Water District wanted revenue stability during years when WRD might buy less imported water than anticipated or budgeted for. WRD wanted economic flexibility to purchase additional imported spreading water when available for groundwater replenishment and wanted to be free of surcharges that could, and often did, spike from one year to the next.

A catalyst for the agreement from WRD's perspective was that Central Basin had nearly tripled the surcharge in a single rate adjustment (from \$14 to \$37 per acre-foot) just two years earlier. At the same time it had lowered its surcharge on potable water from \$40 to \$37 per acre-foot. "They funded a rate reduction to all of their other customers, solely on the back of a significant rate increase to WRD," Whitaker would say later.

Under the terms of the memorandum of understanding, WRD acknowledged Central Basin's role as the supplier of interruptible imported water for spreading and pledged to continue to buy that water from the Central Basin Municipal Water District. For its part Central Basin recognized that "WRD is authorized to manage

DRAFT 12/20/2004

**MEMORANDUM OF UNDERSTANDING
BETWEEN THE CENTRAL BASIN MUNICIPAL WATER DISTRICT
AND THE WATER REPLENISHMENT DISTRICT OF
SOUTHERN CALIFORNIA**

As of _____, 2004, Central Basin Municipal Water District ("CBMWD") and the Water Replenishment District of Southern California ("WRD") agree to the following understanding:

A. PURPOSE

The parties propose to enter into a separate agreement for the provision of imported spreading water by CBMWD to WRD. This memorandum of understanding constitutes an agreement of the parties to meet and confer in a good faith attempt to reach agreement consistent with the points set forth below.

B. TERMS OF THE MOU

1. CBMWD recognizes that WRD is authorized to manage storage in the Central and West Coast groundwater basins in accordance with applicable law. Accordingly, the Parties recognize that WRD should serve as the lead agency for all storage and conjunctive use projects proposed for the Central and West Coast groundwater basins.
2. WRD recognizes CBMWD's historical role as the supplier of interruptible imported water for use as spreading water in the Montebello Forebay and for in-lieu purposes. WRD pledges to support this role by continuing to purchase interruptible imported water for use as spreading water and for in-lieu purposes from CBMWD.
3. CBMWD agrees to forego its requirement of assessing any lost revenue charges against any MWD subsidy payments for the WRD Leo J. Vander Lans Recycled Water Project for the Alamitos Barrier.
4. CBMWD shall cooperate to the extent possible in advocating the transfer of ownership of the Brewer Desalter to WRD.
5. The Parties shall cooperate with each other and use their best efforts to secure MWD's agreement to sell imported water to WBMWD for injection into the Barrier at a rate (a "Barrier Rate") that is significantly less than MWD's rate for non-interruptible water sold at Tier 1 rates.
6. CBMWD shall negotiate in good faith for the transfer of operation of the Central Basin Water Quality Protection Project to WRD in accord with WRD's groundwater quality role as defined by the California State Water Code.

Source: Minutes from the WRD Board Meeting, December 20, 2004.

storage in the Central and West Coast groundwater basins . . . and that WRD should serve as the lead agency for all storage and conjunctive use projects proposed for the Central and West Coast groundwater basins.” The Central Basin Municipal Water District also agreed to support the transfer of the Brewer Desalter from the West Basin Municipal Water District, a special Metropolitan Water District “barrier rate,” and Central Basin pledged to “negotiate in good faith the transfer of operation of the Central Basin Water Quality Protection Project to WRD.”

Speaking for the two associations and noting that the “peace agreement” of the working group required participants to notify the group of any planned projects in advance, Kruse characterized the memorandum of understanding with Central Basin as a “breach of faith and a huge step backwards” for the working group. He added, “Our mutual confidence and trust is undermined by echoes of the past.” A formal written statement that Kruse submitted on behalf of the two associations said WRD’s board had taken actions that “have shaken the confidence of our retail water suppliers, to say the least. Some of our members who very reluctantly agreed to consider WRD as watermaster now chafe at the idea.

James Glancy of Lakewood said the “breach of trust was that the issue was forced through the WRD board on a 3 to 2 vote and that due diligence was not performed by the board. I have a breach of confidence that the board was being even-tempered and thoughtful.” Talking later about a potential storage framework, Glancy said, “WRD as watermaster is a deal-breaker for me.”

Whitaker responded that “WRD is not looking to buy more than our historical average. We want to save money now. None of this interferes with the conjunctive use process.” Ed Casey added, “The [memorandum of understanding] simply says that WRD has groundwater storage and management authority pursuant to applicable law.”

As it happened, based on the volume of imported water WRD purchased from the Central Basin Municipal Water District through 2006–2007, the purchase agreement saved WRD at least \$3,653,343 in surcharges it would otherwise have paid. By virtue of the drought and regulatory curtailments on the Metropolitan Water District system, only 1,500 acre-feet of imported water for replenishment was available in the final two years of the agreement. As for the memorandum of understanding, the Central Basin Municipal Water District never honored any of its provisions. It subsequently claimed to be the groundwater storage manager for Central Basin. (See Chapter 15.)

WRD directors Norm Ryan and Willard H. Murray Jr. stoutly defended their board’s action, and it was clear as the meeting wore on that WRD directors and staff had grown a bit weary

of the continuing anti-WRD bias of a cadre of Central Basin pumpers and was in no mood to further compromise on either a management structure for groundwater storage or WRD's opposition to the continuing attempt to privatize storage, no matter how those attempts were disguised.

In a firmly worded letter of February 23, 2005, to Rauch, Ed Casey said WRD would be approaching the upcoming March 1 meeting of the working group "as the best opportunity for the stakeholders to reach final resolution. . . . Accordingly, at this meeting, WRD will be fully prepared to discuss, receive, consider and act on *specific* propositions relating to key issues." He noted a quorum of the board would be present as part of a publicly noticed board meeting and was prepared to take action. "We strongly believe that the facilitated process can be a success only if *all* stakeholders approach the March 1 meeting with the same goal and objective in mind—to reach a final resolution concerning conjunctive use for our basins."

Despite the facilitator's establishing ground rules for who could speak and courteous behavior and lecturing attendees about the "principles of successful deal-making and some ideas to consider when conducting a negotiation," discussion at the March 1 meeting was contentious, with acute disagreements by participants about key provisions of the WRD–Metropolitan Water District member agency proposal, the Central Basin Water Association's proposal, and WRD's proposed rules and regulations. As they had been for some time, the issues remained the privatization of storage, WRD as watermaster, whether to require partnering on storage projects, and the composition and authority of the program review committee.

"The Central issue," Rauch concluded, "is sharing of authority and decision-making." He identified "two sides" that had emerged in the process as the "CBWA side" and the "WRD/MWD member agency side." He asked them to put their counterproposals in writing.

On March 8, 2005, Kruse submitted a counterproposal on behalf of the Central Basin Water Association. The WRD board considered the proposal at a meeting on March 16. "This proposal is going backwards," Albert Robles said, capturing the sentiment of all directors.

WRD Takes a Stand

On March 23 Robb Whitaker sent Rauch WRD's formal response to the Central Basin Water Association proposal. The proposal "ignores unambiguous court rulings with respect to storage as a public resource and the storage management authority of WRD," Whitaker said. "It unwinds tentative understandings reached through three years of state-funded facilitated deliberations. And it brings back concepts discarded long ago and introduces concepts that have not been discussed at all.

“Ignoring court rulings, the proposal would privatize 350,000 out of 450,000 acre-feet of available storage in the basins. By virtue of its proportionality and sponsorship provisions, the CBWA proposal would hold significant regional projects hostage to the whim of individual pumpers, making their implementation implausible. The proposal would eliminate the existing statutory storage authority of WRD as a locally elected body and transfer it by fiat to a non-elected state department employee [watermaster]. . . . Under the proposal, the manager would become the record-keeper and the record-keeper would become the manager. Such a reversal of roles is not envisioned by the Judgments, recent court rulings or state law. WRD will not support the usurpation of its statutory authority.

“WRD cannot support the proposal and is fundamentally opposed to its major features. WRD will not allow the proposal to stand in the way of well-developed and imminent storage projects that will benefit both individual pumpers and the region. Indeed, a number of stakeholders have formally requested WRD to move forward and adopt rules for the review and approval of such projects. Accordingly, WRD will immediately begin the public process of evaluating and formulating interim rules for conjunctive use management.”

The Associations Respond

In a joint letter to Rauch, Jim Glancy, president of the Central Basin Water Association, and Shad Rezai, president of the West Basin Water Association, said they were “extremely disappointed by WRD’s letter and its obvious disregard of the on-going cooperative Working Group process to develop a conjunctive use program. . . . WRD does not have a monopoly on protecting the public interest, . . .” and “WRD does not have the statutory authority to manage the Central and West Groundwater Basins.” As a parting shot, they accused WRD of being too cozy with Metropolitan Water District member agencies: “WRD’s recent alignment with the Metropolitan Water District agencies poses significant conflict issues, and appears calculated to try to protect and benefit some area MWD member agencies at the expense of other non-MWD member agencies.” (At the March 16 WRD board meeting, Glancy had expressed “fear that MWD was hijacking our basins.”)

The WRD board made good on Whitaker’s pledge to move forward on interim rules for conjunctive use management. The first hearing on an ordinance to adopt interim rules on conjunctive use management was held on April 6, 2005.

Last Working Group Meeting

A final, more or less perfunctory meeting of the working group was held on April 19, 2005. “What’s going on with WRD?” That was a question Bill Kruse asked at the outset. “The pumper proposal was a big step backward,” Robb Whitaker responded. “WRD in the top

box went away. The appeal process went away. Proportionality was reintroduced. There was nothing salvageable in your proposal, so we've decided to move forward."

Participants went back and forth, tussling mainly about WRD's basin management authority. Kevin Wattier of Long Beach was especially vocal in support of WRD's authority and its proposed interim rules, as were the representatives for Compton and Los Angeles. Kruse said if the rules were put in place, "we won't continue with the negotiations." Ryan, a WRD director, said, "We intend to move forward while engaging in the process." Kruse said that by adopting rules "it looks like WRD out of largesse is willing to share something they don't have."

All the punching and counterpunching is like "rope-a-dope," Rob Katherman, a WRD director, said. A few participants agreed to continue discussions in smaller group settings. They never did. The facilitated process was over. With the expressed support of Long Beach, Compton, and Los Angeles and over the objections of WRD critics, the WRD board adopted the interim rules on May 18, 2005.

Los Angeles Times

CALIFORNIA

LOS ANGELES EDITION

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Tuesday, May 17, 2005

stations for the first time and eventually add about 370 officers to the Los Angeles Police Department.

But it was talk about rubbish that provided the liveliest moments of the day.

The budget, which passed on a unanimous vote, includes a provision calling for city staff to launch a study on whether charging for garbage pickup might be a good idea. Such talk has been kicked around City Hall for years, although most times the idea was booted right out the front door, often for reasons of political convenience.

[See Budget, Page B10]

INSIDE

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Fighting over water storage

Some local cities are challenging the Water Replenishment District of Southern California's control of the underground aquifers, or natural water storage areas, that lie beneath the region's surface. Below are areas within the Gage and Gardena aquifers, two aquifers in the district with the largest available capacities.

Available storage areas within aquifers Ponds trap surface water to refill aquifers Underground water flow from surface ponds

Source: Ted Johnson, Water Replenishment District of Southern California

RAOUL BAROJA Los Angeles Times

Water Wars Move Underground

Cities seek to refill aquifers emptied by extensive pumping. But another agency claims control over reserves.

By JIA-RUI CHONG
Times Staff Writer

Since Southern California was settled, communities have lived and died on their access to water, fighting mercilessly for their rights to pump it. Now, the focus has shifted as cities see the depleted underground aquifers as a potentially valuable resource.

A group of cities in southeast Los Angeles County, including Downey and Lakewood, are asserting their rights over the vast aquifers and hope to eventually use the porous sediments to store portions of their water supply. They believe they can save money by pumping imported water into the ground rather than pay for expensive water storage facilities and pipelines.

Water storage can be expensive: The Metropolitan Water

GINA FERAZZI Los Angeles Times

ALLURE FOR FISHING: David Casarez fishes at Diamond Valley Lake, a \$2-billion reservoir that was produced by flooding a valley in Riverside County and holds 800,000 acre-feet of water.

District, the region's main water wholesaler, spent \$2 billion completing Diamond Valley Lake, a reservoir that holds 800,000 acre-feet of water and required flooding a valley in Riverside County. An acre-foot is enough water to supply two average families for a year.

"I could spend a lot of money, find land, build a pipeline to that land because there's no land around here, but it would be very expensive," said Desi Alvarez, the director of public works in Downey. "Why would I give up a relatively inexpensive resource right under our jurisdictional boundaries?"

[See Water, Page B10]

Los Angeles Times; May 17, 2005.

Lessons Learned

While most participants, including WRD, expressed frustration and disappointment with the working group process, it proved to be a necessary step on the road to an eventual court-sanctioned agreement on groundwater storage. And the lessons learned from the process would be invaluable to the subsequent mediation process that resulted in the Judgment Storage Amendments.

Going through the process crystallized WRD's approach to storage and its role in managing it as a public resource. It learned what it must have in the way of an agreement, what would be nice to have, and what it could do without. It also articulated what it would not allow in any agreement: privatization and usurpation of its statutory authority. WRD came away from the process knowing more about groundwater storage as a subject than any other participant, thus enabling the outsized role it would play in helping the mediator craft an eventual framework. Indeed, many of the concepts WRD introduced in the working group process and carried through to its interim rules ended up in the Judgment Storage Amendments nearly nine years later.

The working group process put WRD's technical proficiency on the map as well. The important work completed by WRD professional and technical staff was never challenged, even by WRD critics, and made it possible for the mediator to put technical issues to the side and focus on the paramount institutional issues that had eluded working group resolution.

And groundwater storage, as it went through the multiple iterations of the working group process, engaged the time and attention of WRD board members as no other issue before or since. Directors Acosta, Goldsworthy, Katherman, Murray, Robles, and Ryan participated in working group meetings and frequently participated in institutional committee meetings. The board's Ad Hoc Conjunctive Use Committee, consisting of various directors over time, met thirty-two times. And the committee also met twelve times with the Metropolitan Water District's Member Agency Ad Hoc Conjunctive Use Committee. The net result was that the WRD board institutionally and WRD directors individually became groundwater storage policy experts, comfortable in advocating WRD's position before legislators, editorial boards, and the public. Board engagement in the working group process also enhanced the weight of WRD's positions, as expressed by Whitaker and Casey in the subsequent mediation process.

The working group process also made the soon-to-be-appointed state mediator's difficult job easier than it might otherwise have been. Reviewing the voluminous working group and

committee minutes and documents ten months after the final working group meeting, the State Department of Water Resource's newly appointed mediator could isolate those issues that genuinely mattered from those that were extraneous to an eventual agreement. Storage as a public resource versus a private asset was an issue that mattered. Stranded assets resulting from storage projects? Not so much. The governance and management of storage mattered. Partnering did not.

The mediator also learned from the facilitated process how not to conduct meetings. Unstructured, freewheeling, large group meetings were clearly not effective. Individual or small group meetings, occasionally in person but more often by telephone, with specific topics to discuss were the preferable alternative.

In many respects the failure of the facilitated process made the success of the mediation process possible. Much-maligned in the facilitated process, WRD emerged as the most persuasive voice in helping the mediated process craft the final storage framework, with former critics ending up as foremost allies as that framework went to court.

MEDIATION

For nearly a year after the last meeting of the working group, allies and adversaries continued to talk, more often among themselves but occasionally with one another. In September 2004 the Metropolitan Water District member agencies and WRD softened an earlier version of their proposal for a joint powers authority to accommodate some pumpers' concerns about the makeup and voting requirements of the project review committee. Kruse, the Central Basin Water Association attorney, in October 2004 floated proposed judgment amendments that incorporated most provisions of the association's March proposal, with some tweaks to address a handful of WRD's concerns. Neither side liked each other's revised proposals, but they were still talking.

WRD continued to bring the many benefits of its interim rules on conjunctive use management to the attention of pumpers, legislators, and editorial boards, but tentative efforts to take advantage of the rules (by the city of Compton, for example) were stalled by threats of litigation from the Central Basin Water Association. The watermaster did not help matters by expressing doubt at the last working group meeting about the ability of any party using WRD's rules to extract stored water without the extraction counting against that party's adjudicated right.

Notwithstanding its confidence in the legal soundness of its interim rules, WRD and its allies realized that to succeed, a storage framework had to enjoy something of a consensus, if not unanimity, among the pumper community and, to assure legal certainty, would need to be incorporated as an amendment into the respective judgments.

For its part, the Department of Water Resources continued to believe that the best opportunity for storing a substantial volume of groundwater anywhere in the state was in the Central and West Coast Basins, if only the stakeholders in those basins could agree how to do it.

In a June 14, 2005 letter, State Department of Water Resources director Lester Snow asked WRD if it was willing to participate in a “more focused forum to reach timely agreement on a permanent Conjunctive Use Storage Program for the Central and West Coast Basins.” Three days later directors Rob Katherman and Norm Ryan, accompanied by WRD staff and legal counsel, along with water department managers from Los Angeles and Long Beach and a co-general manager of the Central and West Basin Municipal Water Districts, met in Sacramento with department officials to review the failed facilitated process, WRD’s interim rules, and potential storage projects of interest to Long Beach and Los Angeles. The Department of Water Resources also wanted to test the willingness of the attendees to more formally restart discussions with groundwater pumpers.

On June 20, WRD accepted Snow’s invitation. “We have consistently believed that continuing dialogue would be helpful,” Whitaker said, “and that is why the Rules we have adopted are characterized as ‘interim.’” Whitaker went on to say, “We defer to the Department to determine the forum and the format” for further discussions.

THE “WALDO PROCESS” BEGINS

Another six months would go by before Snow informed all interested parties that his department had selected James Waldo of Gordon, Thomas, Honeywell to mediate storage discussions. Based in the law firm’s Tacoma, Washington, office, Waldo had successfully mediated complex water disputes in California for the Department of Water Resources and the Metropolitan Water District. Waldo was assisted through most of the mediation by his colleague Lara Fowler.

Whitaker and Casey had an introductory meeting with Waldo on February 16, 2006, at the Southern District office of the Department of Water Resources in Glendale. They reviewed WRD’s enabling statute, the storage litigation, the facilitated process, why that process had

failed, what the issues were likely to be as Waldo went forward, and the red lines that must not be crossed to gain WRD support for any future agreement. The red lines, of course, related to the privatization of storage, no matter how disguised, and any diminution or dilution of WRD’s statutory authority to manage storage in the basins.

For his part Waldo said he was in a listening mode and wanted to have a series of individual and small group meetings in the next several months to “refine the issues” before making any recommendations for resolving them. Initially the Department of Water Resources paid for Waldo’s services. In May 2006, however, Snow asked WRD to pay for the mediation to “distribute costs to everyone equitably.” WRD, with the support of the two water associations, readily agreed.



Jim Waldo of Gordon, Thomas, Honeywell Law Firm

What became known as the “Waldo Process” was everything the facilitated process had not been. Waldo’s was purpose driven, deliberative, and rigorously managed by the mediators, with each step meticulously documented. Written mediator progress reports went out to all pumpers of record and not simply to the relative few who expressed interest. Mediator meetings were either one-on-one or in small group settings and often by phone. General pumper meetings came relatively late in the process as increasingly refined storage frameworks with increasing pumper support were on the table for discussion.

Waldo conducted the mediation in three phases. Phase I consisted of forty interviews with interested parties between June and December 2006 to develop an initial assessment of the “basic issues and possible options” for addressing them. He also used that time to digest the voluminous documents WRD provided him, including all documents relating to the facilitated process.

In a two-hour “pre-interview” telephone conversation with Lara Fowler in July 2006, Whitaker and Casey said that despite the contentious manner in which the facilitated process cratered, there appeared to be agreement on several significant items:

- The storage capacity in the basins was 450,000 acre-feet.
- Storage and recovery programs should operate “above the baseline,” that is,

above adjudicated rights.

- Extraction of stored water should be outside the judgments (that is, it would not count against anyone's rights).
- The basins should be operated as one for purposes of storage and recovery.
- The sequence of pumping should be adjudicated rights first, then carryover, then stored water.

They also identified the major issues likely to surface as the mediated process moved forward:

- Storage as a public resource versus private right
- The attempt to link storage rights to pumping rights
- WRD's authority
- WRD's authority to store
- The role of the municipal water districts, both in the mediated process and under any agreement
- How to deal with the West Basin Municipal Water District's stranded costs and perhaps those of the city of Los Angeles
- The governance of storage, the role and composition of a "project review committee," if any, and the role of the WRD board
- Whether an agreement would require amending the judgments
- WRD as watermaster



Lara Fowler, attorney with Gordon, Thomas, Honeywell

Phase II consisted of continuing discussions with interested stakeholders as well as a written questionnaire that was sent to all pumpers of record in November 2006, asking for perspectives on key issues, prior events, and storage projects. In a May 3, 2007, progress report the mediators provided a synopsis of responses to the questionnaire and identified several critical issues that are of import. First is the question of ownership of water; some view the storage resource as one that can be owned, which is different from the potential ownership of the ability to store water.

The second major question is whether storage is the same as replenishment and whether the

WRD can charge the replenishment assessment . . . on [the extraction of stored water] or not. The institutional structure and who gets to make decisions is obviously a key concern. Finally, how to close a deal is a big issue, where some parties suggest that amending the actual judgments is a critical step, while other parties suggest that taking an agreed upon set of ideas to court may be the best way to proceed.

From January to early March 2006, the mediators met with a “variety of participants” to “refine ideas” learned from Phase I and the Phase II questionnaire and to “consult on moving the process forward as expeditiously as possible.” The variety to which they referred consisted mainly of WRD, representatives of the two water associations, an attorney for the Southern California Water Company, and the general manager of the Long Beach Water Department.

Mirroring much of what Whitaker and Casey had told them would be the case fifteen months earlier, the mediators in their May 3, 2006, progress report concluded that while dozens of questions applied to the details, the key questions in need of resolution boiled down to two: Is the potential storage space a public resource or a private commodity? And who should have the authority to evaluate, approve, and manage storage?

Phase III would consist of “refining a set of ideas” the mediators intended to explore in depth with stakeholders, with a view toward developing a framework that could be the basis for further discussions leading to an agreement.

Breakthrough

In October 2006 a phone call from Jim Waldo to Robb Whitaker led to a breakthrough in discussions and subsequent negotiations between WRD and many of the entities that, through legislation and litigation, had sought to privatize storage space and minimize WRD’s groundwater and storage management role. If Whitaker could get the WRD board to share approval authority for regional storage projects, Waldo said he thought he could get the Southern California Water Company and the Central Basin Water Association to drop the effort to privatize storage space.

During the next two months the WRD board considered relenting on its assertion of exclusive approval authority and, somewhat warily, in December agreed to what it termed a bicameral arrangement under which regional projects would have to be approved by both the WRD board and some sort of pumper forum. At about the same time key pumpers relinquished their quest for privatization.

The concessions made former adversaries into allies, making possible what ultimately

became the Storage Amendments to the Central and West Coast Basin judgments.

Developing a Framework

On November 6, 2007, the mediators held a general meeting and asked those attending whether it was worth continuing the mediated process by preparing and circulating a straw proposal for a groundwater storage framework. The majority response was that the ability to use the existing storage space was a valuable asset that should not be wasted and that it was worth another try to put together a potential proposal for review by January 2008.



Rob Beste, director of public works for the city of Torrance and president of the West Basin Water Association.



Ed Casey of Weston Benshoof, now Alston & Bird, represented WRD in storage negotiations and litigation.



Chris Frahm, partner at Hatch & Parent, now Brownstein Hyatt Farber Schreck, represented Golden State Water Company.



Russell McGlothlin, partner at Hatch & Parent, represented Golden State Water Company.



Scott Slater, partner at Hatch & Parent, represented Golden State Water Company.



Bill Kruse of Lagerlof Senecal, represented the Central Basin Water Association in negotiations and the cities of Lakewood and Long Beach in litigation.

Following that meeting the mediators formed a small working group to help develop the proposal. The group consisted of:

- Rob Beste, president of the West Basin Water Association and public works director for the city of Torrance
- Ed Casey, attorney for WRD
- Chris Frahm, attorney for the Golden State Water Company
- Bill Kruse, attorney for the Central Basin Water Association
- Russell McGlothlin, attorney for the Golden State Water Company
- Scott Slater, attorney for the Golden State Water Company
- Kevin Wattier, general manager of the Long Beach Water Department
- Robb Whitaker, general manager of WRD
- Carol Williams, executive director of the Central Basin Water Association

Moving quickly and in regular communication with the working group, the mediators discussed a draft framework in closed session with the WRD board on December 17, briefed key pumpers during the holidays, and in early January 2008 circulated to all pumpers of record what the mediators called “a conceptual proposal with interlocking ideas on how to cooperatively store groundwater in the Central and West Coast Basins and avoid future conflicts.” The proposal was accompanied by a detailed question-and-answer document and a highlights summary. In the proposed framework, the highlights summary said, “helps address a critical need, provides a complete package, provides for producer choice and flexibility, improves basin management, and provides for local control of groundwater.”

The Proposed Framework

The proposed framework established categories of storage with provisions for automatic carryover of 20 percent of a party’s right up to a cumulative total of 43,500 acre-feet in Central Basin and 12,900 acre-feet in West Basin, as well as allowance for increased carryover and conversion to storage of as much as 80 percent of a party’s adjudicated right up to 82,500 acre-feet in the Central Basin and 30,000 acre-feet in the West Coast Basin. This category was called “community storage,” and no discretionary approval of WRD was required in order to take advantage of it.

A “regional storage” category was established for the construction of projects to physically put water into storage, with 25,000 acre-feet set aside in each basin for this purpose. Projects in this category would require the approval of both the WRD board and a five-member pumper water rights panel to be set up for each basin.

A “basin management reserve” category was established, giving WRD first priority to use up to 169,500 acre-feet in the Central Basin and 61,500 acre-feet in the West Coast Basin, with a provision enabling WRD to obtain and spread water in excess of its replenishment requirements (“replenishment surplus” category) and sell the water to rights holders for their own storage accounts. The proposed framework said that “WRD’s first priority right to this storage category is absolute” and that “WRD has the prior and paramount right to the use of the spreading grounds.”

The framework also established a “water augmentation” category. Here the framework said, “To the extent that WRD or parties to the Judgments in coordination with WRD implement a project that adds long-term reliable water supply to the Central Basin or West Basin, the pumping rights in the Central Basin and West Basin respectively will be increased commensurately to reflect the actual yield enhancement associated with the project, with no economic impact to other pumpers.”

THE GRAND BARGAIN

As noted, a regional storage project would require the approval of both the WRD board and a pumper water rights panel for the basin in which the project is located. Given the history of legislative and courtroom combat, and the sharp disagreement between WRD and some members of the pumper community about WRD’s groundwater and storage management authority, this provision for a bicameral approval process was one of several remarkable features of the proposed framework. The mediators reported that they “received comments that people did not believe that WRD would ever agree to the type of shared governance outlined in the Proposed Framework.”

But WRD did agree to it, and that provision was part of the grand bargain struck between WRD and significant storage litigants, including the Southern California Water Company and the city of Long Beach. The framework also included these components of the bargain:

- Storage space was deemed to be a public resource as opposed to a privately owned asset. There was no linkage between water rights and storage rights. This represented a major shift in thinking on the part of several of the litigants in the storage case and a vindication of WRD’s long-held position on the matter.
- WRD was to become the administrative watermaster for both basins, assuming a role that a critic had said during the former working group process was “a deal

breaker” for him. WRD’s statutory role as the groundwater management agency for the two basins and WRD’s primacy for use of the spreading grounds were embedded throughout the proposal.

For its part WRD gave up its insistence that it had ultimate and unilateral discretionary authority for storage projects. In exchange, key pumpers dropped the privatization of storage as an objective and acknowledged WRD’s statutory groundwater management role. WRD and key pumpers both wanted the “peace treaty” language, not only to put the perennial issue of a uniform replenishment assessment to bed but also to assure a legally certain storage framework for years into the future.

Responses to the Framework

An interested parties meeting was held on January 14, 2008, to receive initial responses and comments on the proposed framework. The mediators solicited and received additional comments through mid-March and issued a summary of comments and responses on March 21.

“In crafting a proposal,” the mediators said in the summary, “we relied on information and feedback we had received from a number of sources, including the first facilitated process, our interviews with interested participants and responses to questionnaires we mailed to all water rights holders, reports and data provided to us, [and] our experience with water issues elsewhere in California and the West, and the experience and perspective of work group members.”

Pumpers’ comments pertained to the potential effect of the framework on existing water rights, small pumpers, the lease market, and how and by whom the proposed framework was developed. Some commenters said the framework “provides a disproportionate benefit to WRD by granting powers it does not have by statute.” Additional comments related to technical provisions of carryover and carryover conversion, individual storage allocations, the “community pool,” water augmentation, regional benefits, and inter-basin transfers of stored water.

In response to many of the comments, the mediators and the working group revised portions of the proposed framework, a process that would continue until May, when attention shifted to preparing more formal language for a petition to amend the judgments.

At the January 14, 2008, meeting, Larry Forester, a member of the Signal Hill City Council, objected to the framework, what he claimed was the secret process by which it had been

prepared, and the outsized role it gave to WRD. He followed up with written comments in a February 1 letter to Albert Robles, the WRD board president, with copies to the mediators and legislators. Forester summarized his objections by saying the framework was disingenuous, developed “by a small self-selected group of unidentified stakeholders,” “installs WRD as the new super regulator of the two basins,” and contains “extremely obnoxious provisions” relating to a peace treaty.

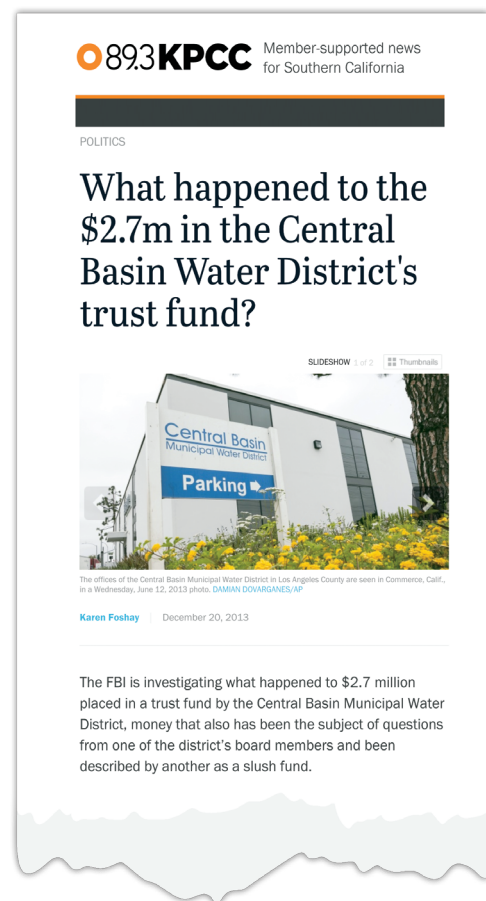
The cities of Signal Hill, Downey, and Cerritos did not participate in the subsequent deliberations of the mediators and instead joined the Central Basin Municipal Water District in its ill-fated effort to become the groundwater storage authority in Central Basin.

Central Basin Municipal Water District’s efforts to undermine the mediation and assert itself as the groundwater storage authority backfired. In June 2010 Central Basin’s board, meeting in closed session, approved a \$2.75 million “legal trust fund” to pay costs related to a groundwater storage programmatic environmental impact report, among other things. A state audit subsequently determined that the board’s decision was unlawful, and it became the subject of a whistleblower lawsuit settled in September 2019, with the law firm of the district’s former general counsel making monetary payments to various parties.

Between November 2010 and September 2011, the Central Basin Municipal Water District paid a public relations consultant to produce and place news stories critical of WRD and flattering to the district and its “groundwater storage leadership.” The stories were unmasked as bogus by the *Los Angeles Times*. A Public Relations Society of America board member blasted the district for its “fake news disguised as independent media coverage and egregious breach of ethical standards for public relations.” (See Chapter 15)

Framework Gathers Momentum

By late April 2008 the framework had been fine-tuned to the point the mediators felt



KPCC; December 20, 2013.

it was time to prepare formal judgment amendments. In order to take that next step, however, they needed an expression of support from a critical mass of stakeholders.

On May 1 the membership of the Central Basin Water Association voted by better than 2–1 to move forward. Pumpers with an allowed pumping allocation holding 107,423 acre-feet collectively also voted to move forward. Pumpers representing 42,536 acre-feet of allocation were opposed. Significantly, six of the twelve storage litigants voted to move forward (Long Beach, Lakewood, Paramount, the California Water Service Company, Tract 349 Mutual Water Company, and the Golden State Water Company, (formerly the Southern California Water Company). One of the litigants, the city of Santa Fe Springs, chose to abstain.

At a meeting on May 3, 2008, the board of directors of the Central Basin Water Association voted 8–1 to support taking the next step. The city of Downey cast the sole vote against it. On May 16, 2008, the WRD board voted to support “the development of the necessary amendments to the Judgments and any other implementing documents consistent with the Framework.” On May 21 the West Basin Water Association voted unanimously to move forward with judgment amendments.

Mediation Concludes

Between May and November 2008, individual and small group discussions continued as attorneys for WRD, the Central Basin Water Association, the Golden State Water Company, and the cities of Long Beach and Lakewood drafted and redrafted judgment



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amendment language for each basin.

On November 19 the mediators concluded their work by holding a meeting “to formally conclude the mediation process on groundwater storage in the Central and West Coast Basins.” Drafts of the judgment amendments were circulated at the meeting and were discussed by Kruse, the lawyer for the Central Basin Water Association.

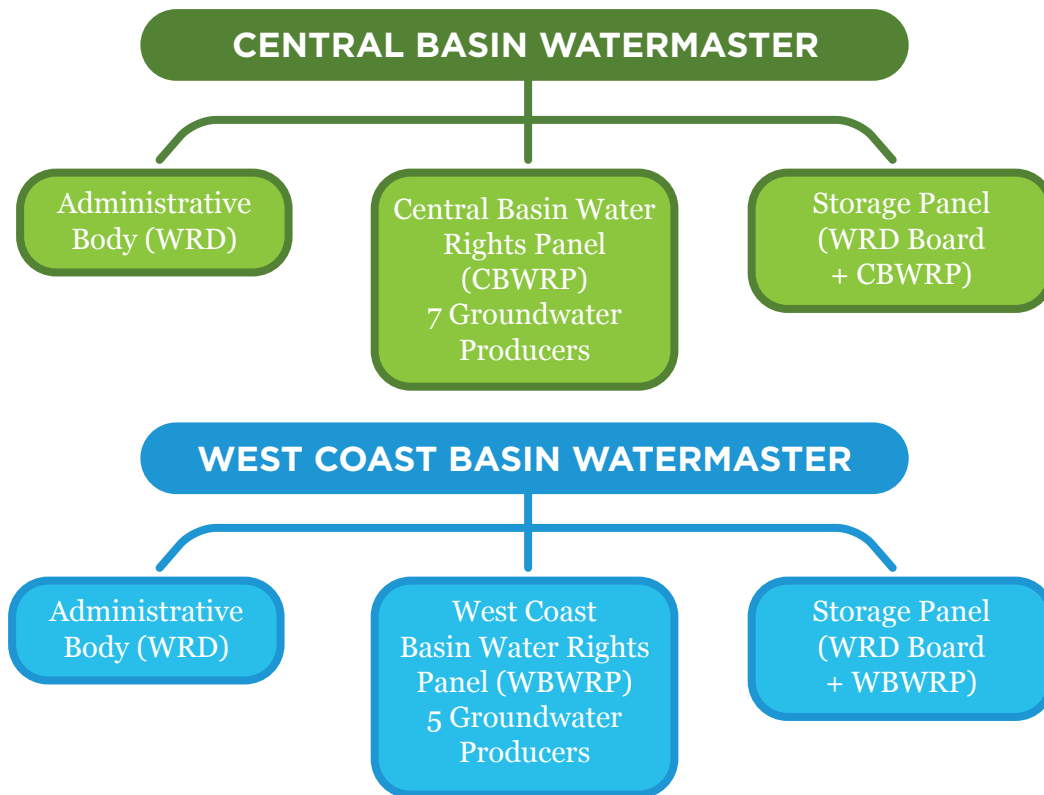
Changes from the original draft framework included a basin operating reserve for WRD of 174,100 acre-feet instead of 196,500 acre-feet and a provision that WRD could use that reserve for replenishment functions only. Reflecting practical limitations in the West Coast Basin, the regional storage category was reduced from 56,300 acre-feet to 32,600 acre-feet. Individual storage accounts were increased from 20 percent to 40 percent, with the maximum allocation totaling 112,800 acre-feet instead of the previous 56,400 acre-feet.

Three watermaster entities were identified for each basin. Small producers (those with 3,000 acre-feet or less of allowed pumping allocation) were assured a seat on the seven-member Central Basin Water Rights Panel and the Central Basin Storage Panel. WRD was the administrative watermaster, replacing the State Department of Water Resources in that capacity. Regional projects would require the approval of both the storage panel and the WRD board.

“In-lieu storage,” or the conversion of unused pumping rights into storage, would work like this:

- The pumper pays WRD for each acre-foot of water rights (or allocation) not pumped and put into storage.
- WRD purchases replenishment water as though that acre-foot had been pumped, thus creating an acre-foot of storage.
- Each acre-foot stored results in a one-for-one increase in groundwater pumping availability.
- The subsequent extraction of stored water is not subject to a replenishment assessment.

Parties stipulating to the amendment are bound by the following language: “For a period of twenty (20) years following entry of the final Order, no Stipulating Party shall seek further amendment of the amended Judgment in a manner inconsistent with this Stipulation or the Order, nor shall any Stipulating Party: (i) seek modification of WRD’s replenishment assessment in a manner that would result in the imposition of a replenishment assessment that is not uniform as between Central Basin and West Basin; or (ii) seek to quantify,



Watermaster structure under the Judgment Amendments. *Graphic from WRD.*

adjudicate or otherwise determine the amount of water flowing beneath or between the Basins.” Twenty years from entry of the final order would be December 20, 2033, in the Central Basin case and November 20, 2034, in the West Basin case.

In concluding the November 19 meeting, Jim Waldo told the attendees their options were to support the amendments by becoming a moving party, sign a stipulation of support, oppose the amendments by hiring counsel and fighting it out in court, or stay neutral.

HEADING TO COURT

Securing substantive amendments to a water rights judgment is almost as demanding from a legal perspective as obtaining the judgment in the first place. It can be extraordinarily expensive as well, especially if there is opposition. The question for proponents was who had the resources to be moving parties and share the legal costs.

On the Central Basin side, WRD, the Golden State Water Company, California Water Service Company, and the cities of Long Beach, Lakewood, Los Angeles, Huntington Park, and Vernon became the moving parties. The Maywood Mutual Water Company #2 and

Suburban Water Company were supportive intervenors on the date the petition was filed. Each party paid its own legal costs.

The WRD board took formal action to become a moving party on April 3, 2009. In a statement for the press, Rob Katherman, the director who chaired the district's Ad Hoc Committee on Groundwater Storage, said that court rulings that fixed groundwater rights more than forty years earlier had been silent on the subject of storage. "The rulings established who could pump how much water from the basins, but left unresolved the question of who can store, when, and how. These Judgment Amendments create the legally certain framework that will permit a groundwater producer to store water for subsequent use. The whole idea is to store imported water when and if it is available for use in times when imported water is not."

On the West Basin side the Golden State Water Company, California Water Service Company, WRD, and the cities of Torrance, Inglewood, Manhattan Beach, Long Beach, and Los Angeles became the moving parties. The West Basin Municipal Water District was a supportive intervenor. The West Basin Water Association underwrote the legal costs.



The editorial "A Big Gulp for water users" appeared in the Daily Breeze, the Whittier Daily News, the Pasadena Star-News, and the Long Beach Press-Telegram in April 2009.

Attorneys

While many attorneys represented the various parties in getting the judgments amended, the principal attorneys through the trial court and appellate court process on the Central Basin side were Ed Casey for WRD and William Kruse for the cities of Long Beach and Lakewood.

As on the Central Basin side, many attorneys represented the various moving parties, but the principal attorney who would argue the West Basin case through the appellate process was Stephanie Osler Hastings of Hatch & Parent. She formally represented the West Basin Water Association, but as a practical matter she represented all West Basin petitioners.



Stephanie Osler Hastings, a partner at Hatch & Parent, represented West Basin petitioners

Economics and Messaging

The moving parties engaged the prominent water economist David Sunding to prepare a report on the plausible economic benefits of the judgment amendments to the basins and pumper community. In a February 2009 report Sunding estimated the total net benefits to the basins for a twenty-year period would range from a low of \$560 million to a high of \$944 million. During that same period the value of water rights could go as high as \$3,318 per acre-foot in the Central Basin and \$3,449 per acre-foot in the West Coast Basin.

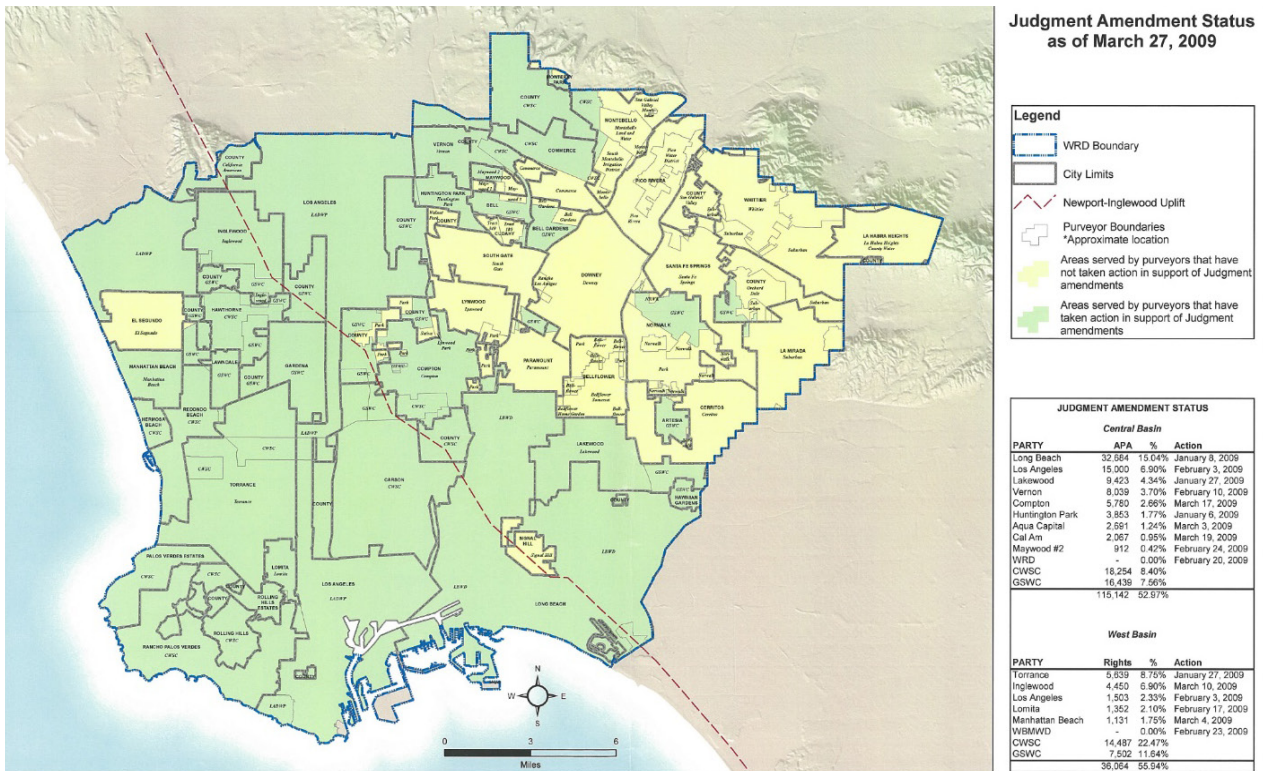
That message was part of a suite of arguments used by an outreach and advocacy committee before editorial boards, legislators, the governor's office, and uncommitted pumpers. Other messages included these points:

- Groundwater storage capacity is the most underused water management resource in the most urbanized area of California.
- The use of groundwater storage capacity in this area has been limited by complex legal and institutional issues.
- For two years a state-sponsored mediation process brought the various parties closer to an agreement than ever before.
- The amendments provide a legally certain system of groundwater storage governance along with different categories of storage for individual and regional projects large and small.



Kevin Wattier, former general manager, Long Beach Water Department

Formed before the judgment amendments were filed and continuing through the appellate process, the advocacy committee consisted of Robb Whitaker and Michael Gagan for WRD; Chris Frahm and Paul Rowley for the Golden State Water Company; Rob Beste, president of the West Basin Water Association and public works director for the city of Torrance; Kevin Wattier, general manager of the Long Beach Water Department; and Jim Glancy, public works director for the city of Lakewood. Wattier and Glancy would come to play an indispensable role in securing a settlement with cities opposed to the judgment amendments, just as both men had in securing the support of the Central Basin Water Association for the preparation of the Central Basin judgment amendment in the first place.



Map depicting Judgment Amendments Status as of March 27, 2009. Image from the WRD archives.

By the time the petitions to amend the judgments were filed, fifteen parties representing 54.16 percent of allowed pumping allocation in Central Basin and seven parties representing 55.94 percent of all water rights in West Basin formally supported the judgment amendments.

What the Courts Decided

The petitions to amend the judgments were filed on May 4, 2009.

On the Central Basin side, and in rapid fire succession, the cities of Cerritos, Downey, and Signal Hill challenged the storage petition on May 13 as a violation of the California Environmental Quality Act (CEQA). On May 26 the cities and the Central Basin Municipal Water District challenged the Superior Court's jurisdiction to hear the storage petition at all.



Jim Glancy, former director of water resources, city of Lakewood.

On the West Basin side the Tesoro Refining & Marketing Company and Hillside Mortuary filed opposition briefs challenging the petition on the grounds of both jurisdiction and CEQA.

In head-spinning decisions separate judges in the trial courts on the Central Basin side ruled that the state environmental law did not apply to the storage petition, but that the trial court had no jurisdiction to hear the petition itself, and the proposed judgment amendment “impermissibly expands WRD’s powers beyond its enabling act.”

On the West Basin side the trial court ruled that it had jurisdiction and that state environmental law did, in fact, apply to the storage petition.

The moving parties appealed the jurisdiction ruling on the Central Basin side and the environmental law ruling on the West Basin side.

On September 27, 2011, the appellate court overruled the trial court in the West Basin case, finding that the state environmental law did not apply to the storage motion. In response to the briefs of Tesoro and Hillside Mortuary, the appellate court said that the trial court

indeed had jurisdiction over the storage motion and remanded the case to the trial court. That court entered the Storage Judgment Amendment on November 14, 2014, five years, six months, and ten days after the petition was filed.

On January 18, 2012, the appellate court overruled the trial court in the Central Basin case and remanded the case back to the trial court with instructions to hear the petition based on its merits. Six months later, and in exchange for amendment language providing for the development of a “regional disadvantaged communities incentive program” that gives those communities a priority right to as much as 23,000 acre-feet of storage space for their use or benefit, the cities dropped their opposition to the petition. Shortly thereafter the Central Basin Municipal Water District withdrew from the case. The court entered the Storage Judgment Amendment on December 20, 2013, four years, seven months, and sixteen days after the petition was filed.

THE STATUS OF GROUNDWATER STORAGE

As of October 1, 2019, eleven parties in the Central Basin had converted 43,249.27 acre-feet of carryover into storage. The city of Los Angeles had filed an application with the Water Rights Panel to obtain storage credit for its Broadway Stormwater Capture project, and the city of Long Beach planned to submit an application for aquifer storage through injection wells. Storage credit was to be based

on annual quantifiable infiltration into the aquifer. Two of the eleven storage parties were Cerritos and Downey, cities that initially opposed the judgment amendment that made conversion of carryover possible.

On the West Basin side two parties had converted 11,194.10 acre-feet of carryover into storage. The city of Torrance was preparing an application to obtain storage credit for one of its stormwater capture projects.



Long Beach Press-Telegram; December 18, 2013.

CHAPTER

18

WATER INDEPENDENCE NOW

Water Independence Now, or WIN, is a program that represents a radical departure from the conventional thinking that has governed water planning in Southern California since water from the Colorado River Aqueduct was first imported to the Los Angeles region in 1941.

Almost from the time of its formation, WRD had expressed interest in reducing its reliance on imported water for artificial replenishment by increasing local supply. Indeed, its \$1.7 million investment to pay the construction costs of the Whittier Narrows Water Reclamation Plant in 1962 demonstrated that interest early on.

At the time, however, the universal assumption was that imported water would always be the predominant supply for artificial replenishment. That assumption was a significant part



View of Downtown Los Angeles, ca. 1990. *Image from the WRD archives.*



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of all long-range forecasts of water demand by water planners at the Metropolitan Water District and by Max Bookman, WRD's engineering consultant. The business models of the Central and West Basin Municipal Water Districts assumed the sale of imported water to WRD in perpetuity.

The increased use of recycled water and increased capture of stormwater might reduce WRD's imported water use, but those local supply options would never eliminate altogether WRD's need for imported water. The assumption that imported water as a replenishment source was here to stay began to change in the 1990s as the municipal water districts began to pile surcharges onto dramatically increasing rates for imported water sold to WRD.

At an April 1, 1993, board meeting to consider a sharp increase in the replenishment assessment to reflect Metropolitan’s precipitous spikes in its rates and the municipal water districts’ surcharges, John Norman, WRD’s general manager, told the board and an audience of concerned pumpers, “We’re trying to get away from MWD water.”



Whittier Narrows Water Reclamation Plant, 2006.
Image from the WRD archives.

The expression “water independence” first surfaced a month later when Norman told the board on May 20, 1993 that Los Angeles’s planned Terminal Island Recycled Water Project “will help reach the District’s objective of water independence” by producing recycled water for injection at the Dominguez Gap Barrier.

Independence from imported water was a bold but far-fetched objective in 1993 because WRD did not have a plausible, coherent plan to reach it. Indeed, WRD did not have a capital improvement plan at all in 1993.

That changed a decade later. WRD had two legacy projects, the Robert W. Goldsworthy Desalter already in operation in 2000 and the Leo J. Vander Lans Advanced Water Treatment Facility opening in 2005, which were producing a combined 5,200 acre-feet annually of local water to replace a like amount of imported water. Rubber dams on the San Gabriel River in 2003 and enhancements to the Whittier Narrows Conservation Pool in 2004 added another 6,600 acre-feet to the local supply portfolio. The expansion of West Basin Municipal Water District’s advanced water recycling facility would add 7,500 acre-feet to its existing 5,000 acre-feet of supply for injection into the West Coast Basin Barrier. And the Terminal Island project Norman had mentioned in 1993 was under construction in 2004, with an additional 5,000 acre-feet of locally produced water on the way.

In the relatively brief span of ten years, projects were in place or under construction that would produce 24,300 acre-feet of local water to replace a like amount of imported water for spreading and barrier injection.

What had been outlandishly far-fetched in 1993 was becoming realistic in 2004. The concern about imported water was not simply cost, as it had been in the 1990s. Increasingly, the concern was reliability and the uncertain availability of imported water for replenishment.

WATER INDEPENDENCE NETWORK BECOMES WATER INDEPENDENCE NOW

In late 2003 Adan Ortega, a WRD communications consultant, “challenged me to be more creative as it related to our recycled water project efforts,” recalled Robb Whitaker, WRD general manager. “Until then, when we were in Sacramento pitching our projects, we would simply say we’re building this project for this barrier or that project for the spreading grounds. Adan encouraged us to talk more about the purpose than the project.

“I can recall sitting in our conference room in Cerritos with Ted [Ted Johnson, the chief hydrogeologist], Mario [Mario Garcia, assistant general manager] and Jason [Jason Weeks, water resource planner] listing words to use to define *purpose*. We bundled our efforts under an umbrella of purpose and quickly came up with ‘Water Independence Network,’ or ‘WIN.’ We wrestled with whether we needed to be specific about independence from imported water, but that got to be much too wordy. Later, a University of Southern California marketing class suggested we change *network* to *now*.”

WRD embedded “Water Independence Now, or WIN” in planning documents, presentations to legislators, and, toward the end of the decade, in speeches by staff and directors. Since 2009 WIN has been used in the annual *Engineering Survey and Report* to describe the suite of projects that produce local supply to replace imported water.



Since WRD brought WIN into the water resource vocabulary in the mid-2000s, other agencies have adopted it outright (Santa Monica in 2007) or made it a big part of their planning efforts (the Los Angeles mayor’s Directive #5 in 2014, “One Water” in 2017, and the Los Angeles County Countywide Sustainability Plan in 2019).

The suite of projects that created the capacity that eliminated WRD’s need for imported water include three that enhance stormwater capture, three that produce advanced treated recycled water for injection into the seawater barriers, and one that produces advanced treated recycled water for delivery to the spreading grounds.

ROAD TO INDEPENDENCE: THE WHITTIER NARROWS WATER RECLAMATION PLANT

If WRD’s road to independence from imported water for replenishment ended with the opening of the Albert Robles Center in 2019, it began on August 20, 1962, with the opening of the Whittier Narrows Water Reclamation Plant.

The Los Angeles County Sanitation Districts had been interested in the beneficial reuse of sewage effluent since the 1930s and saw its potential for groundwater replenishment.

In 1949 A. M. Rawn and H. E. Hedger, along with C. E. Arnold, the county engineer and surveyor, coauthored *Report on the Reclamation of Water from Sewage and Industrial Wastes in Los Angeles County, California*, a landmark study documenting the field tests their agencies had jointly conducted in Whittier in 1948 to determine the large-scale feasibility of using treated wastewater as an artificial replenishment supply.

Results of those tests were the basis for the 1960 decision by the newly formed Water Replenishment District to invest in what became the Whittier Narrows Water Reclamation Plant.



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Under a three-party joint powers agreement, the Flood Control District built the plant, the sanitation districts supplied the effluent and operated the facility, and WRD financed the \$1.7 million capital cost (\$14.5 million in 2019 dollars).

WRD borrowed the \$1.7 million from the county in 1961 and repaid the loan in full in 1975. Completed in 1962, the Whittier Narrows was the first water reclamation plant in the world built for the specific purpose of producing recycled water for groundwater replenishment. Since it began operation, more than 630,000 acre-feet of recycled water (more than 200 billion gallons) from that plant has been spread for groundwater replenishment.

The use of recycled water at the spreading grounds has always been subject to stringent public health requirements. The original 1962 permit from the Regional Water Control Authority placed a limit of 11,200 acre-feet per year on the volume of water originating from the Whittier Narrows plant. The permit also required that every acre-foot of recycled water be diluted by a like amount of imported water and/or stormwater. Over time permit limitations on the volume of recycled water were eliminated and the dilution requirements were eased, enabling the use of ever-increasing volumes of recycled water for spreading.

WRD began purchasing recycled water from the sanitation districts' Pomona Water Reclamation Plant in 1970 and the San Jose Creek plant in 1972. The combined spreading of reclaimed water from the three plants totaled more than two million acre-feet (650 billion gallons) by 2019.

WIN AND STORMWATER CAPTURE AT THE SPREADING GROUNDS

Historically, captured stormwater has accounted for approximately one-third of the groundwater recharge at the spreading grounds. In addition to its relatively good quality, the economic advantage of stormwater for replenishment is that it's free in perpetuity, once the investments to increase its capture have been made. In partnership with the Los Angeles County Department of Public Works, WRD has invested in three projects that significantly



Rubber dams on the San Gabriel River can be inflated to retain water for infiltration into the substrate below the river's channel or can be deflated to facilitate flood control measures, 2007. *Image from the WRD archives.*

enhance stormwater capture for replenishment purposes.

WRD and DPW co-financed two rubber dams on the San Gabriel River. Their installation was completed in 2005, enabling controlled releases of stormwater that would otherwise be lost to the ocean. These dams have increased natural replenishment by an average of 3,600 acre-feet annually.

The Whittier Narrows Dam, in operation since 1961, has been a reliable means of capturing stormwater flows in the conservation pool behind the dam that can be released to the Montebello Forebay Spreading Grounds for replenishment purposes. Until 2003 the capacity of the conservation pool was limited by the activities of five oil companies. That year Los Angeles County and WRD sued the companies to halt their oil production activities; they reached a settlement in 2004. The increased capacity of the conservation pool increases the capture of stormwater for recharge by 3,000 acre-feet per year.



Whittier Narrows Conservation Pool, an area behind the dam that captures stormwater for groundwater replenishment, 2007. *Image from the WRD archives.*

Also jointly funded by DPW and WRD, was construction of a pipeline connecting the Rio Hondo and San Gabriel Spreading Grounds, greatly enhancing the operation and effectiveness of both. The pipeline, completed in 2012, enables the capture of an additional 1,300 acre-feet of stormwater annually as well as the storage of an additional 5,700 acre-feet of recycled water.

These collaborative efforts and joint funding resulted in nearly 8,000 acre-feet (2.6 billion gallons) of additional annual stormwater capture for groundwater replenishment.

WIN AND RECYCLED WATER AT THE SEAWATER BARRIERS

The Flood Control District conducted pioneering tests from early 1955 through 1958 to study the potential of using treated reclaimed water from the Los Angeles Hyperion Water Reclamation Plant for barrier injection. While pleased with the test results, the district concluded that “a third stage of treatment would be needed eventually” before the water could be injected into a seawater barrier.

Taking up where the Flood Control District left off in 1958, the Los Angeles Department of Water and Power (LADWP) built a Water Injection Pilot Plant next to Hyperion to further test the feasibility of using reclaimed water for the West Coast Seawater Barrier. The promising results prompted the department to propose a five-million-gallon-per-day demonstration treatment plant just north of the barrier, with LADWP and WRD sharing the construction costs and operational risks and rewards.

Negotiations between the two agencies began in 1969 and continued through 1974. Agreement appeared imminent on several occasions. On LADWP’s recommendation, in December 1972 WRD filed an application with the Regional Water Quality Control Board for a permit to use the water for injection. In 1973, however, the California Department of Health released a position paper expressing reservations about the direct injection of treated wastewater.

The additional filtration required by the State Department of Health drove the estimated unit cost for the treated water from \$56 per acre-foot in 1972 to \$153 per acre-foot in 1974. In comparison, in 1974 Metropolitan Water District water cost less than \$38 per acre-foot. The next year WRD formally withdrew from the proposed project.

Eighteen years later, advances in technology, along with regulatory and cost certainty, made

it possible for the West Basin Municipal Water District to pick up where LADWP and WRD had left off. In 1992 it built what is now called the Edward C. Little Water Recycling Facility to treat Hyperion water, and in 1995 the facility started producing advanced treated recycled water that WRD purchases for injection into the West Coast Seawater Barrier. Originally producing 7,500 acre-feet annually, the facility was expanded several times and now produces up to 17,000 acre-feet for barrier injection.



West Basin Municipal Water District's Edward C. Little Water Recycling Facility in El Segundo, CA, 1995. *Image courtesy of West Basin Municipal Water District.*

In 1992 WRD undertook the first study of recycled water use at the Dominguez Gap Seawater Barrier. A year later this became a joint study with the Los Angeles Bureau of Sanitation. The study led to construction by the Bureau of Sanitation of the Terminal Island Advanced Water Purification Facility to provide recycled water that WRD purchases for injection into the barrier. Water service began in 2006 at an original capacity of 5,000 acre-feet per year. The plant was expanded to 8,000 acre-feet per year in 2017.

Then, in 1998, with feasibility, engineering, and environmental studies as well as land acquisition completed, the WRD board decided to proceed with construction of the Alamitos Barrier Advanced Treated Recycled Water Project, subsequently renamed the Leo J. Vander Lans Advanced Water Treatment Facility. A prominent attorney and resident of Long



WRD's Leo J. Vander Lans Advanced Water Treatment Facility, Long Beach, 2015. *Image from the WRD archives.*

Beach, Leo J. Vander Lans served on the WRD board from 1995 to 2002. The project was completed in 2005 with a capacity of 3,000 acre-feet annually. The capacity was expanded to 9,000 acre-feet per year in 2015.

State Recycled Water Permits for Seawater Barriers

The first permit for the injection of advanced treated recycled water at any barrier was issued by the Regional Water Quality Control Board to the West Basin Municipal Water District in 1995. The permit applied to the West Coast Basin Seawater Barrier and authorized the use of up to 50 percent advanced treated recycled water in any given year, matched by a like amount of imported water. In 2006 the permit allowed use of 75 percent recycled water for injection, which rose to 100 percent in 2015.

In 2005 WRD's permit for the injection of advanced treated recycled water into the Alamitos Seawater Barrier required the blending of 50 percent recycled and 50 percent imported water. The city of Los Angeles was issued a permit that year with the same blending requirement for the injection of advanced treated recycled water into the Dominguez Gap Seawater Barrier. In 2015 the Regional Board increased WRD's permitted use of recycled water for injection at the Alamitos Barrier to 100 percent. In 2016 the city of Los Angeles permit for injection into the Dominguez Gap was also increased to 100 percent.



City of Los Angeles Terminal Island Advanced Water Purification Plant, completed in 2006 to provide recycled water to the Dominguez Gap Barrier. *Image courtesy of the City of Los Angeles.*

More than sixty years after the Flood Control District conducted pioneering tests to assess the potential use of treated reclaimed water from the Los Angeles Hyperion Water Reclamation Plant for barrier injection, three treatment plants have the capacity and the

permits to produce advanced treated recycled water to meet 100 percent of the water required for injection into the three seawater barriers.

THE FINAL STEP ON THE ROAD TO INDEPENDENCE: THE ALBERT ROBLES CENTER

In 1991 the WRD board instructed its staff to seek a consultant to “study the use of reverse osmosis treatment to increase the spreading of reclaimed water in the Montebello Forebay.” The resulting study and subsequent pilot testing of treatment alternatives were the first step on the path toward WRD’s Groundwater Reliability Improvement Program (GRIP), which was the final step toward achieving the objective of Water Independence Now.

Twenty-five years after the original study, the WRD board approved construction of GRIP, which was renamed the Albert Robles Center for Water Recycling and Environmental Learning.

In 2012 the WRD board began to methodically and relatively quickly move from project planning to project execution. WRD completed the preliminary design and engineering, environmental documentation, land acquisition, and a long-term water purchase agreement with the sanitation districts. Especially noteworthy was the support the project enjoyed from



More than sixty years after the Flood Control District conducted pioneering tests to assess the potential use of treated reclaimed water from the Los Angeles Hyperion Water Reclamation Plant for barrier injection, three treatment plants have the capacity and the permits to produce advanced treated recycled water to meet 100 percent of the water required for injection into the three seawater barriers.



its residential neighbors. A robust community engagement plan was developed and implemented by Dakota Communications, supported by door-to-door educational outreach by CCE Consulting. A neighborhood charrette was conducted and the ultimate design reflected the many suggestions received. The board awarded the final architectural design contract in 2015, followed by a final design-build-operate contract one year later. WRD received \$34 million in state and federal grants and an \$80 million one percent loan from the state's Water Recycling Funding Program, which covered many of the costs of the Robles Center.



The Learning Center at the WRD Albert Robles Center, 2020. *Image from the WRD archives.*

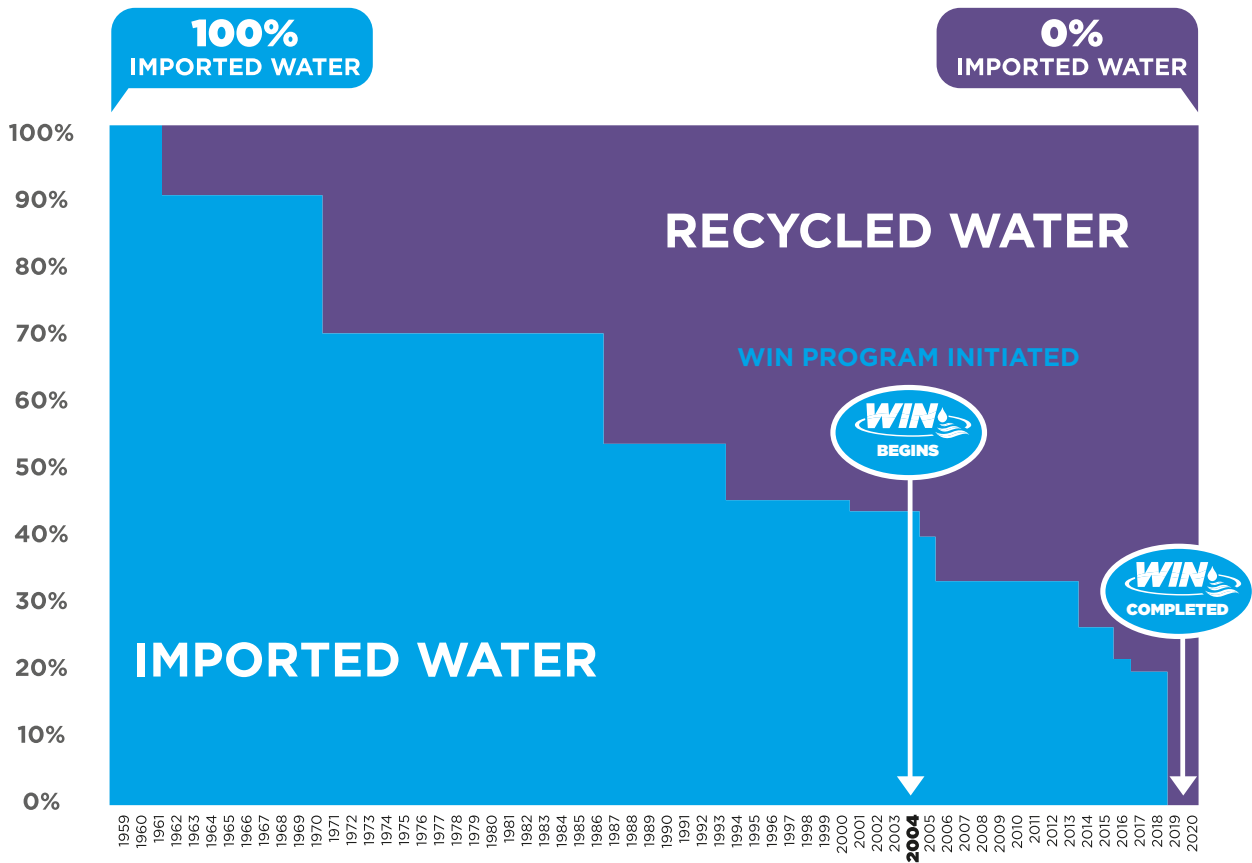


Aerial view of the 5-acre WRD Albert Robles Center for Water Recycling and Environmental Learning, 2019. *Image from the WRD archives.*

Formally opened in August 2019, the Albert Robles Center produces 10,000 acre-feet per year of advanced treated water for percolation in the Montebello Forebay Spreading Grounds.

The plant is named for Albert Robles, who served on the WRD board from 1993 to 2018. Robles was a relentless project proponent and chaired the WRD committees that brought the project from concept to fruition.

GRAPH OF DECREASING RELIANCE ON IMPORTED WATER BY YEAR, 1959-2020



With the completion of the Albert Robles Center and the transitioning to 100% advanced treated recycled water for the seawater barriers, the WIN objectives were achieved. WRD successfully offset the final 45 percent of imported water it was purchasing at the time the WIN initiative was launched. The Central and West Coast basins now have the capacity to be replenished with a local and sustainable supply of captured stormwater and recycled water, creating regional drought-resiliency for decades to come.

CHAPTER

19

THE FUTURE OF WRD: WIN 4 ALL

In 2019 the WRD board updated its strategic plan and five-year capital improvement plan and for the first time formally introduced the goal of WIN 4 ALL, the 2040 Plan for Regional Water Independence. WIN 4 ALL is an expansion of WRD’s Water Independence Now (WIN) objective to further reduce the region’s reliance on imported water to meet its needs. WRD’s WIN 4 ALL program aims to increase resiliency in replenishment operations and expand extraction capacity in the basins to ensure that the pumping community sees the full



benefit of its pumping rights. In addition, WIN 4 ALL will take advantage of available local recycled water and stormwater resources to recharge available groundwater basin storage space and provide another avenue for increased regional reliance on local water supplies. The feasibility of WIN 4 ALL is documented in the Groundwater Basins Master Plan.

THE GROUNDWATER BASINS MASTER PLAN

As early as 2010, the board made regional self-reliance an objective for the district, at least in concept, when it approved preparation of a groundwater basin master plan. The timing was remarkable because the board had not yet committed to the projects that would fully implement WIN, WRD's authority for groundwater management and storage was under assault by the Central Basin Municipal Water District and a handful of pumpers, and trial court hearings on challenges to the Judgment Storage Amendments were just starting.

Following a six-year process that engaged stakeholders and the detailed modeling of basin use concepts, scenarios, and alternatives, the board published its master plan and a related programmatic environmental impact report in 2016. By then the establishment of WIN was in sight, WRD's authority for groundwater management had been recognized, and the Judgment Storage Amendments were in place.

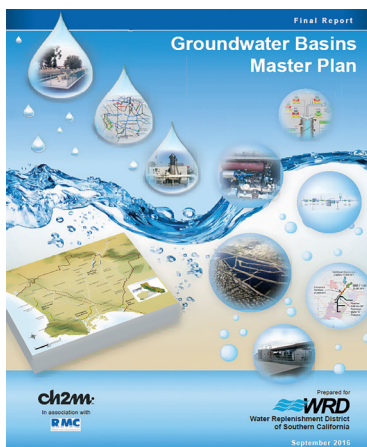
The intent of the master plan is to provide a single reference document for parties operating in the Central and West Coast groundwater basins. It complements the efforts of WRD's WIN program by identifying projects and programs that enhance basin replenishment,



WRD's WIN 4 ALL program aims to increase resiliency in replenishment operations and expand extraction capacity in the basins to ensure that the pumping community sees the full benefit of its pumping rights. In addition, WIN 4 ALL will take advantage of available local recycled water and stormwater resources to recharge available groundwater basin storage space and provide another avenue for increased regional reliance on local water supplies.



WRD’s WIN 4 ALL Projects, which will ensure that by 2040 WRD’s entire service area relies on a locally sustainable water supply. *Graphic from WRD.*



Cover of WRD’s Groundwater Basins Master Plan, September 2016.

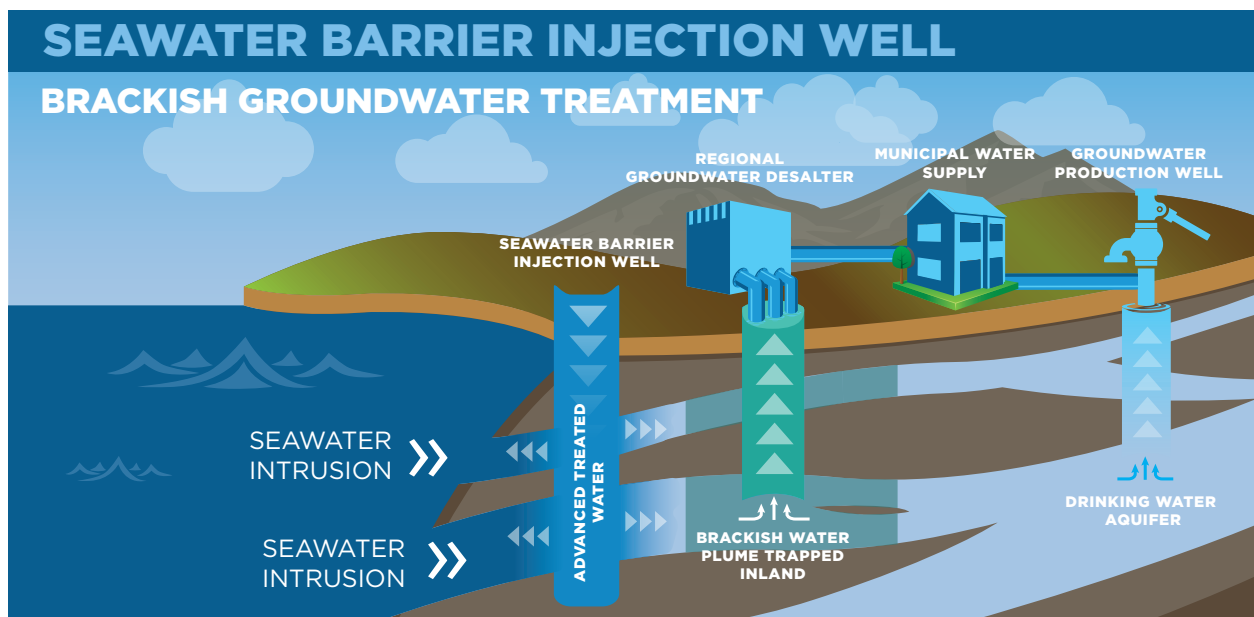
increase reliability of groundwater resources, improve and protect groundwater quality, and ensure that the groundwater supplies are suitable for beneficial uses.

The Groundwater Basins Master Plan is a blueprint for regional independence from imported water. For example, the master plan identifies projects for increasing supply that will enable pumpers to produce 320,617 acre-feet of groundwater in Central Basin, 103,250 acre-feet more than currently allowable in the Central Basin judgment, and 94,468 acre-feet of groundwater production in the West Coast Basin, or 30,000 acre-feet more than allowable pumping limits in the West Coast Basin judgment.

REGIONAL GROUNDWATER SUPPLY INITIATIVES

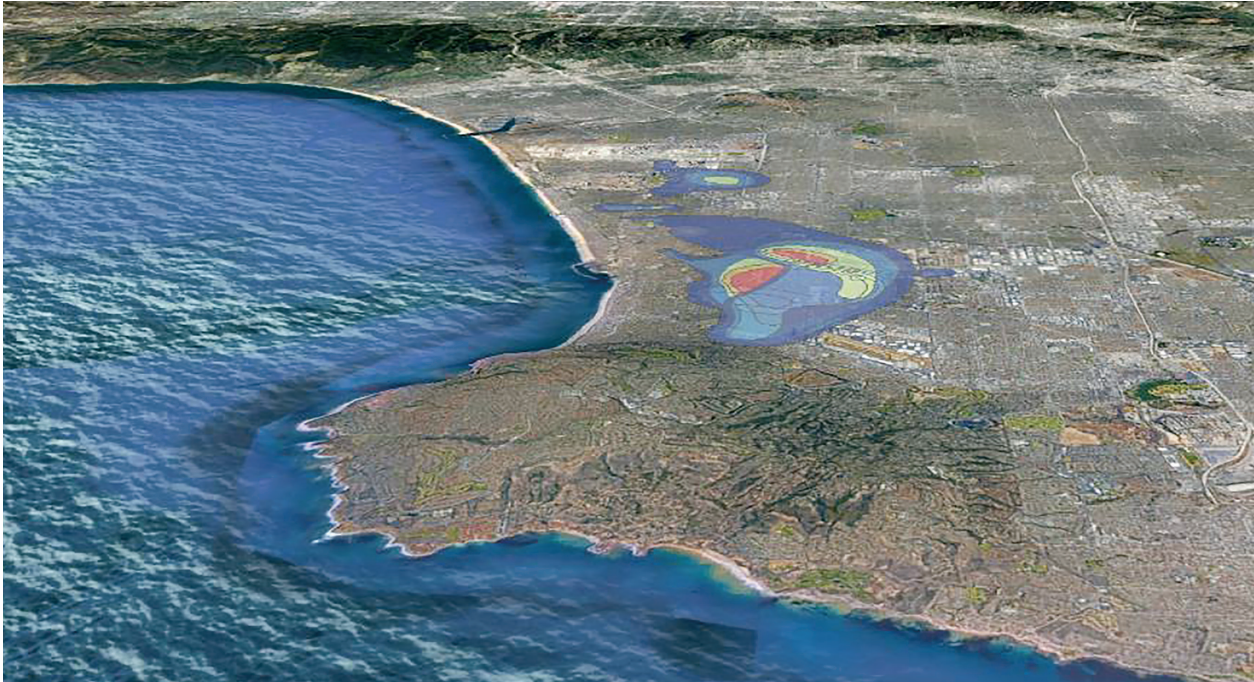
Regional Brackish Water Reclamation Program

Groundwater production that exceeded natural replenishment in the Central Basin in the 1940s and 1950s greatly reduced flows across the Newport-Inglewood Uplift, effectively reversing the freshwater pressure gradient, which in turn resulted in massive intrusion of seawater into a large swath of the West Coast Basin. Although the West Coast Basin Seawater Barrier, completed in the 1950s, succeeded in creating a pressure ridge to halt the intrusion, it also effectively trapped the seawater that had already made it inland. In 1962 the extent of the brackish water plume containing high total dissolved solids was estimated by the State Department of Water Resources to be 600,000 acre-feet.



After the construction of the Seawater Barrier system, a plume of brackish (salty) groundwater was trapped inland. The Regional Brackish Water Reclamation Program will treat water from the plume. *Graphic from WRD.*

The plume also constrains capacity in the West Coast Basin for groundwater storage. Properly extracted and treated, those 600,000 acre-feet represent a significant potential water resource for the region. As a first step toward understanding how to remediate the plume, the WRD board in May 2018 awarded a contract for a regional brackish groundwater feasibility study. While the master plan envisioned a regional project for treating 15,000 acre-feet per year, the feasibility study was to evaluate potential sites and technology options for the remediation of 20,000 acre-feet per year, along with the costs of a recommended remediation plan.



Graphic overlay of the trapped brackish water plume in the West Coast Basin. WRD's Regional Brackish Water Reclamation Program will help treat the 600,000-acre-foot plume, creating a new water supply while creating new space for groundwater storage. *Image from the WRD archives.*

Significantly, while WRD is using grant money and its replenishment assessment revenue to fund the study, seven stakeholders who pump and wholesale potable water are partners in the feasibility study. They include the Los Angeles Department of Water and Power; the cities of Manhattan Beach, Lomita, and Torrance; and the Golden State Water Company, California Water Service Company, and the West Basin Municipal Water District.

WRD/LADWP Explore Local Supply Opportunities

WRD and the Los Angeles Department of Water and Power (LADWP) are also collaborating on an investigation of the potential for using new local water sources for sustainable replenishment and extraction of groundwater from the Central and West Coast groundwater basins. LADWP has access to flows from the Hyperion Water Reclamation Plant as a potential source of replenishment water. LADWP and the city's Bureau of Sanitation are building a pilot membrane bioreactor system to explore the feasibility of advanced treatment of as much as 78,400 acre-feet of effluent from that plant.

LADWP is working with WRD to find locations for getting a significant portion of advanced treated Hyperion water into the basins. Recycled water from Hyperion, which is now treating more than 200 million gallons per day, could be a key component of a sustainable

groundwater strategy. But to develop a specific strategy, LADWP and WRD must develop and evaluate a comprehensive list of potential project opportunities for meeting these goals.

While the investigation has promising implications for producing significant regional groundwater supply, it also has pragmatic implications for the specific needs of LADWP, which has 17,236 acre-feet of allowed



Hyperion Water Reclamation Plant, Los Angeles, ca. 2000. *Image courtesy of the city of Los Angeles.*

pumping allocation in Central Basin and 1,503 acre-feet of water rights in the West Coast Basin. In 2016–17 LADWP pumped only 3,005 acre-feet of this water in the Central Basin and touched none of that water in the West Coast Basin. Figuring out how to more fully use the allowed pumping allocation and water rights will help the city of Los Angeles meet the objective of reducing imported water use by 50 percent by 2024, as called for in Mayor’s Directive No. 5 (October 2014).

WRD and LADWP awarded a contract in February 2019 for a study of ways to maximize the use of water treated at Hyperion, identify and maximize all groundwater replenishment locations in the Central and West Coast Basins, identify additional sources of replenishment water and additional infrastructure and potential associated stakeholders, and develop conceptual projects and associated strategic implementation schedules. The mandate of the study is to develop real projects and identify the steps needed to implement them. The contract is jointly funded and managed by the two agencies.

Metropolitan/LA County Sanitation Districts’ Water Treatment Facility

The third groundwater supply initiative, undertaken by the Metropolitan Water District of Southern California and the Sanitation Districts of Los Angeles County, is a demonstration plant at the Sanitation Districts’ wastewater treatment facility in Carson to produce 500,000 gallons per day, or 560 acre-feet per year, of advanced treated recycled water. The Regional Recycled Water Advanced Purification Center was completed in 2019 and will generate information needed for design and construction of a full-scale advanced water treatment plant producing as much as 150 million gallons per day, or 168,000 acre-feet per year. Since 2016 WRD and the Metropolitan Water District have collaborated to

evaluate potential groundwater recharge and storage opportunities that will take advantage of this new source of recycled water. Metropolitan’s ideas include sending water from Carson to the Montebello Forebay for injection or spreading, to the West Coast Basin as a potential replenishment source for extraction associated with WRD’s Regional Brackish Water Reclamation Program, to the Long Beach area for injection and storage, to other groundwater basins, to oil refineries, or perhaps to water treatment facilities as a new raw water augmentation source.

Metropolitan estimates total cost of the plant at \$3.1 to \$3.4 billion. It would take eleven years to complete, once Metropolitan and the Sanitation Districts decide to move forward. In April 2016 the WRD board agreed to perform groundwater modeling in connection with the project.

Los Angeles County’s Safe, Clean Water Program and Other Programs

Los Angeles County voters in November 2018 approved the “Safe, Clean Water” ballot measure, which imposes a 2.5-cent tax on each square foot of impermeable surface on the roughly 2.2 million privately owned parcels in the Los Angeles County Flood Control District’s service area. The service area includes the entire county, except for the Antelope Valley.

According to the ordinance included in the ballot measure, the Safe, Clean Water Program “is a multi-benefit Storm Water and Urban Runoff capture program intended to increase water supply, improve water quality, and provide community investments.”



River near the Sixth Street Bridge, 2012. *Photo credit: David Zanzinger.*

The tax would generate approximately \$300 million per year. Forty percent of the money would go to municipalities in proportion to their parcel tax contributions. Fifty percent would fund “regional projects.” Ten percent help underwrite the county’s administrative costs. Not counting the city of Los Angeles, which will receive approximately \$35 million per year under the program, cities in WRD’s service area will receive approximately \$32 million per year to fund projects that will help them

comply with stormwater and urban runoff prohibitions and requirements adopted by the Los Angeles Regional Water Quality Control Board pursuant to the federal Water Pollution Control Act.

The ordinance creates nine watershed area steering committees with significant responsibility for establishing stormwater management targets, reviewing proposed projects, and identifying potential partners for projects that are proposed. WRD is a designated member of three, the Lower Los Angeles River, the Lower San Gabriel River, and the South Santa Monica Bay watershed area steering committees.

In promoting passage of the measure, proponents argued that projects undertaken would capture for beneficial use a good portion of the two billion gallons of stormwater lost annually to the Pacific Ocean.

Additional Initiatives

Historically, the recycled water connection fees WRD has paid to the sanitation districts came from revenue that was not dedicated to particular projects or programs. The connection fees can be quite high—\$15 million in the case of the Albert Robles Center, for example. In a series of meetings, WRD’s general manager, Robb Whitaker, proposed to Grace Hyde, the Sanitation Districts’ general manager that their respective agencies would be served by the creation of a replenishment fund to provide a dedicated stream of money for recycled water projects that necessarily involve Sanitation Districts’ facilities. Hyde agreed and proposed to make changes to the Sanitation Districts’ ordinance related to the connection fee. In September 2018 the Sanitation Districts’ board formally approved the Joint Outfall Replenishment Fund for that purpose, providing significant benefits to the region.

The Well Construction and Rehabilitation Loan Program is designed to allow pumpers to use their unused pumping rights through a zero-interest loan program for new well construction or rehabilitation of existing wells. The program stipulates that pumpers must increase their five-year extraction average by 10 percent to receive funding. WRD opened the program to applications for the first time in the summer of 2018 and received four applications with a total of \$10 million in requests. WRD planned to expand this program to provide additional loans and ensure the pumping community is able to realize the full benefit of their pumping rights.

WRD has an unused allocation of 10,000 acre-feet per year at the Los Coyotes Water Reclamation Plant. Connecting the Leo J. Vander Lans Advanced Water Treatment Facility

to the Coyotes plant through either a direct connection or interconnection will allow WRD to use its unused allocation as an alternative source of water for the Vander Lans facility, which would give the district operational flexibility. WRD has initiated planning studies to determine the best way to connect these two facilities.



Aerial view of the Los Angeles County Sanitation Districts' Long Beach Water Reclamation Plant (foreground) and WRD's Leo J. Vander Lans Advanced Water Treatment Facility (red-roofed structures), 2015. Local wastewater is treated at the water reclamation plant before further treatment at the advanced water treatment facility. *Image from the WRD archives.*

WRD's Safe Drinking Water Program promotes the cleanup of groundwater resources by installing wellhead treatment facilities at existing production wells and working with well owners. The facilities remove contaminants from the underground supply and deliver the extracted water for potable purposes. The program has completed sixteen such facilities, all of which are in operation, and one facility has successfully completed removal of the contamination and no longer needs to treat. The Safe Drinking Water Program includes the Disadvantaged Communities Outreach Assistance Program, which provides water systems in disadvantaged areas with assistance in applying for state funding. Several projects are in various stages of implementation and new candidates for participation are under evaluation, with four projects currently under construction.



Wellhead treatment equipment for the Southern California Water Company's (now Golden State Water Company) Century Well in Paramount, CA, 2006. Groundwater is pumped to the surface and is treated for iron, manganese and arsenic through the use of chlorination, oxidation, adsorption and filtration. *Image from the WRD archives.*

Many potential groundwater contamination sources exist within the district's boundaries because of its large and diverse industrial and commercial presence. WRD established its Groundwater Contamination Prevention Program to minimize or eliminate threats to drinking water aquifers. The first project in this program is the Perchlorate Remediation Project in the city of Vernon that in 2019 received funding from the state Water Resources Control Board.

REGIONAL PARTNERSHIPS

Several relationships, agreements, and understandings complement WRD's vision for making the regional water supply self-reliant. These relationships greatly enhance WRD's understanding of the region, its water supply needs, and where WRD can help meet those needs. In the world of water, as elsewhere, relationships matter, and WRD in the past decade has cemented many preexisting relationships and forged new ones.

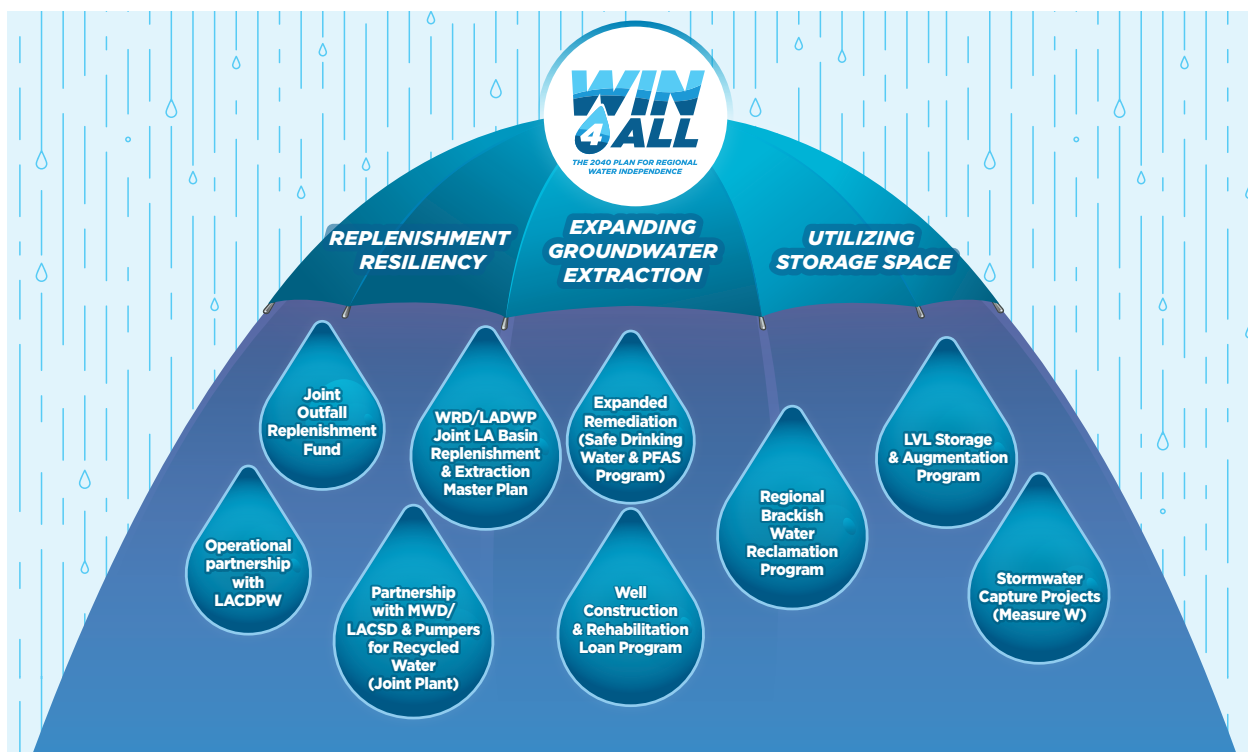
The technical and budget advisory committees were first mandated by statute but continued through WRD board action; all are pumper-selected panels that have become components of WRD's decision-making process for capital projects, long-term planning, and finance and budget matters.

Pursuant to the storage amendments to the judgments, WRD serves as the administrative watermaster for both basins, routinely interacting with members of their respective water rights panels.

These four entities create institutional relationships between the district and a significant swath of pumpers, many of whom increasingly articulate a regional focus.

WRD has long been a member of the Lower San Gabriel and Los Angeles Rivers Sub-Region, which is responsible for integrating regional watershed planning in relation to water supply and conservation, as well as project funding recommendations under Proposition 84. In June 2015 the WRD board voted to also join the Gateway Water Management Authority. Organized as a joint powers authority, Gateway consists of twenty-nine cities in southeastern Los Angeles County, all of which are in WRD's service area. WRD is also a long-time member of the Greater Los Angeles Integrated Regional Water Management Plan Leadership Committee.

Contaminated groundwater that cannot be used affects the available storage of supply, areas of groundwater production, and the capacity of the basins, even though it is not directly related to regional water supply. In February 2018 the WRD board voted to execute a memorandum of understanding with the Regional Water Quality Control Board to work collaboratively on groundwater contamination issues in the Central and West Coast Basins. It is the first such memorandum entered into by either agency.



The WIN 4 ALL program includes a suite of projects with regional partners that will increase the region's reliance on groundwater while bolstering sustainable replenishment supplies. *Graphic from WRD.*

NEW CHALLENGE

While WIN 4 ALL and its associated program and project components govern WRD's longer-term vision, more immediate challenges have emerged, the most significant of which involves PFAS (per-and polyfluoroalkyl substances), an alphabet soup of man-made chemicals that became more generally known to the public by virtue of the 2019 movie, *Dark Waters*.

PFAS have been manufactured and commonly used globally since the 1940s. While certain PFAS chemicals are no longer manufactured in the United States, they are still produced internationally and can be imported in consumer goods such as carpet, leather and apparel, textiles, paper and packaging, coatings, rubber and plastics.

Drinking water can be a source of exposure in communities where these chemicals have contaminated water supplies. Such contamination is typically localized and associated with a specific facility. An industrial facility where PFAS were produced or used to manufacture other products, or an oil refinery, airfield or other location where PFAS were used for firefighting are examples.

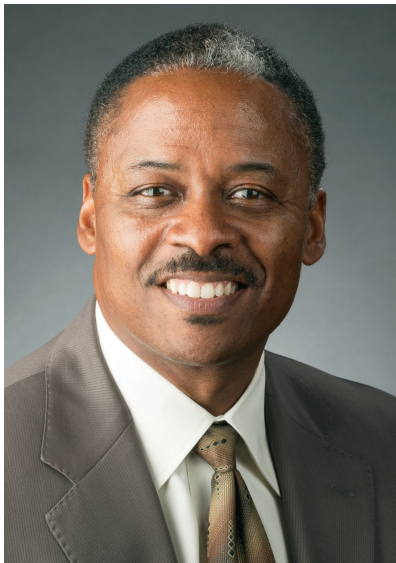
The State Water Resources Control Board has established Response Levels for certain PFAS chemicals. State legislation effective January 1, 2020 requires community water systems, including groundwater pumpers, to either notify their customers of PFAS detections exceeding Response Levels or remove from service drinking water sources with PFAS exceeding the Response Level.

Water produced from several wells in WRD's service area exceed the Response Levels. The WRD board of directors in August 2020 established the PFAS Remediation Program to provide either grants for groundwater pumpers to install treatment systems or for WRD to construct the treatment systems on behalf of the pumpers preferring that alternative. The board approved \$34 million for the program. Through the summer of 2021, thirteen pumper applications for the program were deemed to be qualified. Funding agreements were under negotiation with many of them.

WRD has monitored groundwater quality using a network of more than 300 wells for over 50 years.

NEW LEADERSHIP

After a career spanning 30 years with WRD, General Manager Robb Whitaker retired in March 2021. Virtually every legacy project or program completed by WRD over the past three decades, including the Water Independence Now (WIN) initiative, was conceived, developed, or implemented by Whitaker. He also led the ultimately successful 17-year effort to create a legal framework for the storage of groundwater, an accomplishment that enabled WIN 4 ALL, a term he coined to describe the suite of programs and projects to eliminate the need for imported water in the region by 2040. At more than 17 years, Whitaker was the longest-serving General Manager in WRD history.



Stephan Tucker, WRD General Manager

The Board appointed Stephan Tucker as Acting General Manager effective April 1, 2021 and General Manager effective July 1, 2021. Tucker is a 30-year veteran of the Los Angeles Department of Water and Power, where most recently he was Assistant General Manager in charge of the department's Corporate Program Management Office. Prior to that assignment, Stephan was the Manager of LADWP's Project and Construction Management Section.

On Tucker's appointment, WRD director Rob Katherman said, "Mr. Tucker's extensive experience and specialized skill in project management holds a promising future for WRD. Our goal is to build a drought-proof supply of water in the region. Mr. Tucker's talent will surely bring us closer to that goal."

EPILOGUE



Students learn about stormwater infiltration at the ARC Learning Center, 2020. *Image from the WRD archives.*

When the Water Replenishment District was created in 1959, protecting the common pool resource of the Central and West Coast basins meant three things:

- Recharging the groundwater basins
- Stopping the intrusion of seawater into inland aquifers
- Reducing pumping by all means possible

Relatively early in its history, through aggressive replenishment programs, WRD restored balance to the basins, reversing the dangerous mismatch between water extractions and groundwater supply. It worked with the County Flood Control District to expand the barrier system and it purchased the injection water necessary to stop seawater intrusion. And WRD petitioned the court to limit pumping by adjudicating groundwater rights in the Central Basin and defending the adjudication of rights in the West Coast Basin.

In contrast to the continuing struggles that afflict over-drafted groundwater basins in many other parts of the state, WRD is a success story of groundwater basin governance and stewardship, of innovative and sustainable approaches to replenishment supply. Through its own signature projects and in partnership with others, WRD found ways to replenish groundwater without relying on imported water from the Colorado River and Northern California. And it led the effort to establish a legal framework for the storage and extraction of groundwater, an accomplishment that greatly expands the usefulness of the basins to the region and the state.

For more than six decades, WRD has protected the common pool resource of the Central and West Coast basins to meet the needs of the pumper community and the growing densely urban population it serves. More than that, however, it has developed a vision and a template for expanding the benefits of that common pool resource to enable a greatly increased local supply of groundwater to offset the need for imported water in the region.

The three original WRD objectives may be recast this way:

- Protect and recharge the groundwater basins with sustainable local water supplies
- Maximize the use of groundwater storage and pumping rights to reduce the need for imported water in the region

In her 1965 doctoral dissertation, Elinor Ostrom predicted that the recently-formed Water Replenishment District “will be an important long-term force contributing to the more efficient use of water resources in Southern California.” It was impossible to know at the time, of course, just how right she would turn out to be.

A. CHRONOLOGY

- 1905 U.S. Geological Survey releases study by Walter Mendenhall, *Underground Waters in the Central Coastal Plain Region of Southern California*.
- 1912 Southern California Edison abandons a water well infiltrated by saltwater in Redondo Beach, the first known instance of seawater intrusion's rendering a production well unusable.
- 1913 The Los Angeles Aqueduct begins to deliver water.
- 1929 The Metropolitan Water District of Southern California is formed.
- 1937 *Pasadena v. Alhambra* is filed; the suit became known as the Raymond Basin case and was the first basinwide adjudication of groundwater rights in California. The court ruled on December 23, 1944, and its decision was upheld on appeal by the California Supreme Court in 1949. The Raymond Basin case established the doctrine of adverse prescriptive rights, which is the basis for the West Basin and Central Basin judgments.
- 1938 The Rio Hondo Coastal Spreading Grounds begin operations.
- 1939 The San Gabriel Coastal Spreading Grounds begin operations.
- 1941 The Colorado River Aqueduct begins to deliver water.
- 1942 The West Basin Water Survey Committee forms.
- 1945 The West Basin Ground Water Conservation Group succeeds the Water Survey Committee.
—West Basin petition for adjudication is filed to establish water rights of pumpers (*California Water Service Co. v. City of Compton*).
- 1946 The West Basin Water Association forms.
—Superior Court appoints state Department of Public Works to serve as referee in the West Basin adjudication. The agency is to investigate and report on groundwater conditions in the West Coast Basin.
- 1947 Voters approve formation of the West Basin Municipal Water District.
- 1949 Saltwater is detected in Long Beach water wells, in the first known instance of seawater intrusion in the Central Basin.
- 1950 The Central Basin Water Association forms.
- 1951 State legislation is adopted to permit the Los Angeles County Board of Supervisors to create one or more conservation zones within the Flood Control District and to levy an ad valorem tax not to exceed five cents per \$100 of assessed valuation for the purpose of acquiring and spreading or injecting water within the zones.
—The state legislature appropriates \$750,000 for the state Division of Water Resources to build and operate experimental injection wells in Manhattan Beach (West Coast Basin Seawater Barrier).

- 1952 The state Public Works Department publishes *Report of Referee* on West Coast Basin groundwater conditions.
- The state Water Resources Board publishes *Bulletin #8*, “Central Basin Investigation,” which documents over-pumping of 77,000 acre-feet per year as of 1949–50.
 - Construction begins on the West Coast Basin Seawater Barrier Demonstration project.
 - Voters approve formation of the Central Basin Municipal Water District.
- 1953 The West Coast Basin Seawater Barrier test begins in Manhattan Beach.
- 1954 Los Angeles County Board of Supervisors creates Water Conservation Zone II to construct additional seawater barriers and to purchase imported water for barrier injection. The supervisors also create Water Conservation Zone I to purchase imported water for spreading, a program that introduces the first imported water into the Central Basin.
- The Committee of Twelve is formed.
- 1955 Superior Court approves the West Basin Adjudication Interim Voluntary Curtailment Agreement and Order. Most pumpers agreed to voluntarily limit their pumping to the court-approved amounts.
- The Central Basin Municipal Water District delivers the first Colorado River water in its service area for use by customers in East Los Angeles.
 - California legislature adopts the Water Extractions and Diversions Recordation Act requiring pumping volumes in most Southern California counties to be reported to the state.
 - California Legislature adopts the Water Replenishment District Act.
 - Water associations form replenishment district committees.
 - The Whittier Narrows Dam is dedicated.
- 1957 MWD adopts a policy statement calling for formation of a water replenishment district and execution of contracts to buy water by April 16, 1961.
- 1958 Boards of both water associations approve the proposal to form the Central and West Basin Water Replenishment District.
- 1959 The cities of Long Beach and Compton and the Central Basin Municipal Water District file the complaint in what becomes known as the Long Beach Judgment.
- The Los Angeles County Registrar of Voters certifies the petition calling for formation of the Central and West Basin Water Replenishment District.
 - The State Department of Water Resources holds a hearing on the proposed boundaries for the replenishment district and to determine whether everyone living within its boundaries will see at least indirect benefits as a result.
 - The Board of Supervisors extends Conservation Zones I and II for five more years.

- Voters approve formation of the Central and West Basin Water Replenishment District and elect directors.
- 1960 Voters approve a \$1.75 billion bond issue for construction of the state water project, which would provide water to areas of the state south of Sacramento, including the Bay Area.
- 1961 The Board of Supervisors approves the spreading agreement between WRD and the Los Angeles County Flood Control District.
 - WRD, Los Angeles County, the Sanitation Districts, and the Flood Control District enter a joint exercise of powers agreement to finance, construct, operate, and maintain the Whittier Narrows Water Reclamation Plant.
 - Legislation is adopted to authorize WRD to file a petition for adjudication of water rights in Central Basin.
 - The Whittier Narrows Dam begins operations.
 - The court enters the West Basin Judgment, the final step in the adjudication of water rights. The city of Hawthorne appeals, but the decision applies to all producers as of October 1, 1961.
 - The Board of Supervisors extends Conservation Zone I for five years.
- 1962 WRD files a petition for adjudication of water rights in Central Basin.
 - The court accepts an interim agreement to limit pumping in the Central Basin. Parties to it are forty-nine producers that represent more than 75 percent of production.
 - The Whittier Narrows Water Reclamation Plant goes on line. Water delivery begins on August 20, 1962.
- 1963 The Board of Supervisors renews Conservation Zone II, continuing funding of the estimated \$1.9 million construction costs of the Dominguez Gap Seawater Barrier.
- 1964 The Alamitos Seawater Barrier begins operations.
- 1965 The Long Beach Judgment is entered.
 - The California Supreme Court upholds the West Basin Judgment.
 - The Central Basin Judgment is entered.
- 1966 The second West Basin Judgment is entered, adding additional pumpers and 439.1 acre-feet of rights.
- 1969 Judgment on the Santa Ana River is entered (*Orange County Water District v. City of Chino*).
- 1970 The Dominguez Gap Seawater Barrier begins operations.
- 1972 The State Water Project sends water to Southern California.
 - Spreading of water from the San Jose Creek Water Reclamation Plant begins.
- 1974 WRD publishes its first *Annual Water Quality Monitoring Report* (now called the *Regional Groundwater Monitoring Report*).

- 1978 Voters adopt Proposition 13.
- 1982 Voters reject the proposed Peripheral Canal, which would have diverted water around the Sacramento–San Joaquin Delta for use in the Central Valley and Southern California.
- 1991 State legislation is adopted giving WRD the authority to clean up groundwater.
–The Southeast Water Coalition forms.
–The Central and West Basin Water Replenishment District changes its name to the Water Replenishment District of Southern California.
–WRD moves to a new headquarters building in Cerritos.
- 1995 The West Basin Municipal Water District’s Advanced Treated Recycled Water Facility (now named for Edward C. Little) begins delivery of recycled water to the West Coast Basin Seawater Barrier.
- 2001 The Robert W. Goldsworthy Desalter in Torrance is dedicated.
- 2002 The Robert W. Goldsworthy Desalter begins operations.
- 2003 The Leo J. Vander Lans Advanced Water Treatment Facility in Long Beach is dedicated.
- 2004 The conservation pool behind Whittier Narrows is expanded.
–WRD embraces Water Independence Now (WIN), its program to eliminate the use of imported water for groundwater replenishment.
- 2005 Leo J. Vander Lans Advanced Water Treatment Facility in Long Beach begins sending recycled water to the Alamitos Seawater Barrier.
–Two rubber dams to capture stormwater for replenishment are installed on the San Gabriel River.
- 2006 Los Angeles’s Terminal Island Advanced Water Purification Plant begins sending recycled water to the Dominguez Gap Seawater Barrier.
–The boards of the Central and West Basin Municipal Water Districts vote to terminate their joint operating agreement and split their staff. The separation becomes official on July 1, 2006.
- 2007 WRD begins to manage the Title 22 Water Quality Monitoring Program for eighty four wells of twenty-two pumpers.
–WRD moves into its new headquarters building in Lakewood.
- 2012 The pipeline connecting the Rio Hondo and San Gabriel Spreading Grounds is completed.
- 2013 The Superior Court adopts the storage amendments to the Central Basin Judgment, WRD named Administrative Body of the Watermaster for Central Basin.
- 2014 The Superior Court adopts the storage amendments to the West Coast Basin Judgment, WRD named Administrative Body of the Watermaster for West Coast Basin.

- 2016 Ground is broken for the Groundwater Reliability Improvement Program Advanced Water Treatment Facility in Pico Rivera.
- 2018 Acting on WRD’s motion, the Superior Court dismisses the last of the Proposition 218 lawsuits challenging WRD’s replenishment assessments (*Tesoro v. WRD*).
- Los Angeles County voters approve the Safe, Clean Water Program
 - Groundwater Reliability Improvement Program renamed as the Albert Robles Center for Water Recycling and Environmental Learning.
- 2019 The Albert Robles Center starts delivering advanced treated recycled water to the spreading grounds, completing WRD’s 15-year Water Independence Now (WIN) initiative.

B. WRD DIRECTORS

Division One

William P. Malloy, 1959–62
Iris A. Crochet, 1963–78
Louis J. Kenney, 1979–82
Emmet E. Brown, 1983–90*
Kenneth Orduna, 1990–98
Willard H. Murray Jr., 1999–

Division Two

Charles D. Barker, 1959–88*
Robert W. Goldsworthy, 1989–2004
Rob Katherman, 2005–

Division Three

Lloyd C. Leedom, 1959–79*
Clyde N. Moore, 1979*
Warren P. Harwood, 1979–82
Daniel L. Glasgow, 1983–94
Leo J. Vander Lans, 1995–2002
Norm Ryan, 2003–2006
Lillian Kawasaki, 2007–13*
Lynn Dymally, 2013–14
John D. S. Allen, 2015–

Division Four

Russell L. Hardy, 1959–84*
John P. Kearney, 1984–86*
Wesley Sanders Jr., 1987–92*
Clarence Wong, 1992–96
M. Susan Carrillo, 1997–2002*
Patricia Acosta, 2002–2006
Sergio Calderon, 2007–

Division Five

D. W. Ferguson, 1959–90*
Tim Keleman, 1990–92
Albert Robles, 1993–2018*
Vera Robles DeWitt, 2018–*

*Emmett Brown resigned on September 6, 1990, because he no longer lived within the division. In November 1990 Kenneth Orduna was elected to fill Brown's unexpired term.

Charles Barker resigned effective June 30, 1988. Robert Goldsworthy was elected to fill the seat and was sworn in on January 7, 1989.

Lloyd Leedom resigned June 30, 1979. On August 2, 1979, the board appointed Clyde Moore to replace Leedom until a special election could be held. Voters chose Warren Harwood to fill Leedom's seat, and Harwood replaced Moore on December 11, 1979.

Lillian Kawasaki died in office, and on September 11, 2011, Lynn Dymally was appointed to fill the vacancy.

On March 1, 1984, the board appointed John Kearney to fill Russell Hardy's seat because Hardy had died.

Wesley Sanders Jr. also died in office. Clarence Wong was elected to fill the vacancy and was sworn in on November 5, 1992.

Susan Carrillo resigned on January 18, 2002, and on March 15, 2002, the board appointed Patricia Acosta to fill the vacancy.

D. W. Ferguson resigned on July 19, 1990, and Tim Keleman was appointed to fill the seat on August 16, 1990.

On May 24, 2018, the Superior Court ruled that Albert Robles's serving as a director of WRD was incompatible with his office as mayor of Carson. On August 25, 2018, the WRD board appointed Vera Robles DeWitt, a former Carson mayor and council member, to fill the Division Five vacancy created by the ruling.

DIRECTORS' OCCUPATIONS AND CITIES OF RESIDENCE

Division One

- William P. Malloy, attorney, Los Angeles
- Iris A. Crochet, former council member, Inglewood
- Louis J. Kenney, Inglewood
- Emmet E. Brown, Los Angeles
- Kenneth Orduna, chief of staff for state legislator, Los Angeles
- Willard H. Murray Jr., retired engineer and former state legislator, Los Angeles

Division Two

- Charles D. Barker, manager for Standard Oil, El Segundo and Los Angeles (San Pedro)
- Robert W. Goldsworthy, Chevron engineer, Torrance, San Pedro
- Rob Katherman, engineer and land use consultant, Palos Verdes

Division Three

- Lloyd C. Leedom, Realtor, Long Beach
- Clyde N. Moore, retired general manager, Long Beach Water Department, Long Beach
- Warren P. Harwood, city council member, Long Beach
- Daniel L. Glasgow, employee, Los Angeles County Sanitation Districts, Long Beach
- Leo J. Vander Lans, attorney, Long Beach
- Norm Ryan, investment banker, Long Beach
- Lillian Kawasaki, assistant general manager, Los Angeles Department of Water and Power, Long Beach
- Lynn Dymally, college professor, Long Beach
- John D. S. Allen, retired attorney, Long Beach

Division Four

- Russell L. Hardy, city council member and real estate appraiser for the Los Angeles County Sanitation Districts, South Gate.
- John P. Kearney, South Gate
- Wesley Sanders Jr., Compton
- Clarence Wong, congressional aide, South Gate
- M. Susan Carrillo, community activist, South Gate
- Patricia Acosta, small business owner, South Gate
- Sergio Calderon, vocational education teacher and former city council member, Maywood

Division Five

- D.W. Ferguson, bank president, Whittier
- Tim Keleman, chiropractor, Artesia
- Albert Robles, attorney and mayor of Carson, Carson
- Vera Robles DeWitt, small business owner, former mayor of Carson

PRESIDENTS OF THE BOARD

Lloyd Leedom, 1959–78

Russell Hardy, 1979–82

D.W. Ferguson, 1983–86

Daniel L. Glasgow, 1987–93

Kenneth Orduna, 1994–96

Robert W. Goldsworthy, 1997–99

M. Susan Carrillo, 2000–2001

Leo J. Vander Lans, 2001–2002

Willard H. Murray Jr., 2003–2006

Albert Robles, 2007

Rob Katherman, 2008

Albert Robles, 2009–10

Sergio Calderon, 2011

Albert Robles, 2012–13

Rob Katherman, 2013–14

Sergio Calderon, 2014–15

Willard H. Murray Jr., 2016

Rob Katherman, 2017

John D. S. Allen, 2018–19

Vera Robles DeWitt, 2020–21

John D. S. Allen, 2021–

C. WRD GENERAL MANAGERS

Carl Fossette, 1960–74

John Joham, 1974–89

John Norman, 1990–94

Fred Cardenas, 1995–98

Robert Campbell, 1998–2000

Bruce Mowry, 2001–2003

Robb Whitaker, 2003–2021

Stephan Tucker, 2021–

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Back cover image: Aerial view of the San Gabriel River, ca. 1930s. *Photo credit: Los Angeles Flood Control District.*

PROTECTING OUR GROUNDWATER

In the 1950s, groundwater was the main source of water supply for the 2.5 million people who lived in southern Los Angeles County at the time. That supply was in peril. Groundwater elevations in the Central and West Coast Basins were dropping precipitously. Massive quantities of seawater were contaminating aquifers. Groundwater pumping was unregulated and the basins were unmanaged.

The Water Replenishment District was created in 1959 to restore and protect the groundwater resources of the basins. Today, the basins provide over 42 percent of the water supply for 4 million people in all or parts of 43 cities. Groundwater elevations are at healthy levels, who can pump how much water is fixed, seawater is held at bay, and the basins are sustainably managed and replenished with local supply. *Protecting Our Groundwater* tells the story of how that came to be.



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