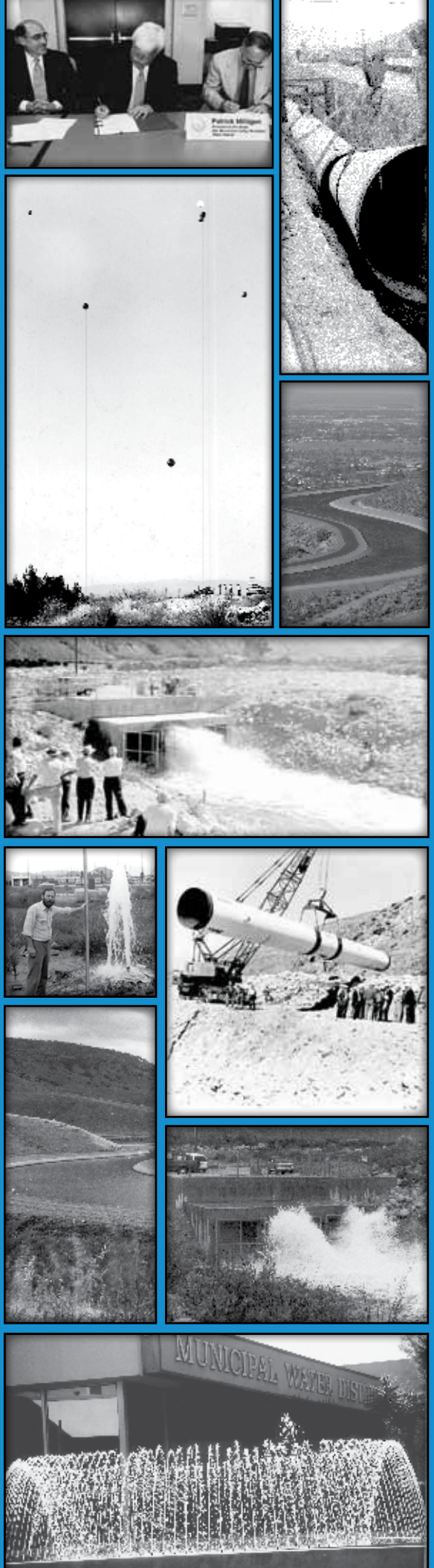

DELIVERING THE FUTURE

60 YEARS OF VISION AND INNOVATION
AT SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

1954 - 2014

SAN BERNARDINO Valley MUNICIPAL WATER DISTRICT

JEFF CRIDER

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| by JEFF CRIDER

ACKNOWLEDGMENTS

This book is made possible by the board of directors of San Bernardino Valley Municipal Water District, who felt it was important to create a historical account of Valley District's history to help educate the public about the district's history as well as the reason why water conservation is important. Current board members include board President Pat Milligan; Steve Copelan; Mark Bulot; Gil Navarro; and Ed Killgore.

In addition to the board members, I would also like to thank current and former Valley District officials, especially General Manager and Chief Engineer Douglas Headrick and his predecessors, including Louis Fletcher, Bob Reiter and Randy Van Gelder for their assistance. I also owe a great deal of thanks to Don Harriger, former general manager of Western Municipal Water District in Riverside, Suzie Earp, archives manager at the Water Resources Institute at California State University, San Bernardino; Ron Gastelum, former general manager of Metropolitan Water District of Southern California in Los Angeles; Stacey Aldstadt, general manager of the City of San Bernardino Water Department; Tim Moore, of Rockvale, Tenn.-based Risk Sciences, Inc.; and Mike Huffstutler, general manager of Bear Valley Mutual Water Co. in Redlands, for their time and assistance in explaining the intriciacies of water rights, court judgments and critical developments in the evolution of Valley District's involvement in San Bernardino Valley's water history. I would also like to thank Maria Carrillo and her colleagues, Katie Montemayor and Erin Selby at The Heritage Room at the A.K. Smiley Public Library in Redlands, for their assistance in researching numerous historical newpaper reports and photos. Additional assistance provided by Steve Shaw, president of the San Bernardino Historical Society, and Claire Teeters, president of the Yucaipa Valley Historical Society. While I have attempted to make the book as accurate as possible, any errors in facts or interpretation are my own.

— Jeff Crider

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT PROUDLY DEDICATES THIS BOOK TO PATRICK MILLIGAN.

Patrick Milligan was born in San Bernardino in 1937 and grew up on one of the original citrus farms in Rialto. He graduated with honors from San Bernardino High School in 1955, and went on to earn degrees from Stanford University and Stanford Law School. He returned to his hometown and began practicing trial law in 1961 at a law firm he started, and where he continues to practice today.

In 1964, at the age of 28, Mr. Milligan was elected to the Board of Directors of San Bernardino Valley Municipal Water District. He was served on the Board for over 41 years, spending 19 years, nearly half his tenure, as Board President. Valley District was just 10 years old when he was elected. Mr. Milligan has been deeply involved in building this agency from the ground up.

The leadership and vision Mr. Milligan has provided over the years has helped Valley District earn its reputation as an agency that prioritizes service, commitment and collaboration. He has helped shape the history of this agency and leaves it poised to deliver long into the future.

SAN BERNARDINO Valley MUNICIPAL WATER DISTRICT

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Plunge pool downstream from Seven Oaks Dam.

Photo courtesy of Western Municipal Water District

PREFACE

As San Bernardino Valley Municipal Water District celebrates its 60th anniversary, California is in the third year of one of its worst droughts in history.

At the time of this writing, 82 percent of California was experiencing extreme drought conditions, according to the U.S. Department of Agriculture's National Drought Mitigation Center.

The state Department of Water Resources was only able to deliver only 5 percent of the water that Valley District and other water importers have contracted to receive through the State Water Project, which carries water from Northern California to the most densely populated areas of Southern California.

Thirteen water agencies serving more than 700,000 western San Bernardino County residents and businesses in Yucaipa, Redlands, Loma Linda, Highland, Mentone, San Bernardino, Colton, Grand Terrace, Bloomington and Rialto each depend on Valley District for anywhere from 15 to nearly 40 percent of their respective water needs.

In fact, the growth and developement that has taken place in the San Bernardino Valley since the early 1980s would not have been possible without imported water.

This brings up some interesting questions. Why do cities across the San Bernardino Valley depend on Valley District for so much of their water? Why do Valley District and its customers depend on imported water from Northern California? Moreover, what has Valley District done to ensure that local residents and businesses will always have the water they need? Has Valley District tried to develop other local water supplies or water banking strategies?

The Santa Ana River, which flows from the San Bernardino Mountains westward to the Pacific Ocean, is the largest river system in Southern California. It is also one of the most litigated.

Photo courtesy of Jeff Crider

1893 photo of spillway on Santa Ana Canal between Southern California Edison powerhouse #2 and Warm Springs Canyon in Santa Ana Canyon.

Photo courtesy of A.K. Smiley Public Library

While these are topics that should be of ongoing concern and interest to Inland Empire residents, they are rarely discussed outside of water agency circles, hence the need for this book.

> *"We import State Water Project water from Northern California to recharge the Lytle Creek and Bunker Hill groundwater basins, which are the primary sources of water for local water agencies"*

"Few people are aware of the Inland Empire's water history, let alone the strategies Valley District has employed to ensure that we have the water we need," said Suzie Earp, archives manager of the Water Resources Institute at California State University, San Bernardino.

"Few people know about the bitter struggles between cities and water agencies in San Bernardino, Riverside and Orange counties over water rights involving the Santa Ana River, the largest river system in Southern California, let alone the battles we've had over groundwater rights. Nor do they know about Valley District's role in developing long-range water conservation strategies for this region or our dependence on water imports from the Sacramento-San Joaquin Delta."

Inland Empire residents need to know our water history to understand why it's imperative that we conserve water and why major environmental and infrastructure improvement projects such as the Bay Delta Conservation Plan have a major effect on water supplies in this region.

We have a great deal of work to do in this regard.

A March 2014 telephone survey of 400 Inland Empire residents by Newport Beach-based Probolsky Research found that few knew that water agencies in

San Bernardino and Riverside counties depend on the Sacramento-San Joaquin Delta for water.

Virtually no one had even heard of the Bay Delta Conservation Plan - a proposed collaborative effort to restore Delta ecosystems while diverting critical drinking water supplies through tunnels to aqueducts on the south end of the Delta.

"We import State Water Project water from Northern California to recharge our groundwater basins, which are the primary sources of water for local water agencies," said Douglas Headrick, Valley District's general manager.

"We also develop long-range strategies to improve water security and reliability for agencies throughout our service area," Headrick said, adding, "Somebody has to be thinking not only about how we're going to get our water today, but how we're going to get it 20, 30, or even 50 years from now."

This book is an attempt to bring to life Valley District's history and the critical roles the agency has performed during the past 60 years to ensure that cities across western San Bernardino County have the water they need to prosper and maintain their quality of life.

Using published reports and interviews with current and former officials from water agencies across Southern California, this book explains the reasons for Valley District's existence and provides insights into the thinking behind the decisions that have guided the district's water management strategies and its relationships with other water agencies.

After providing a brief overview of the San Bernardino Valley's early water history, the book traces the evolution of the major political, environmental, legal and engineering challenges that have shaped Valley District and its management of local and imported water resources from its inception to the present day.

Included are descriptions of Valley District's legal battles with Orange County Water District, the city of Riverside and other agencies over Santa Ana River water; its political conflicts with Metropolitan Water District of Southern California; its decision to bring State Water Project water to the San Bernardino Valley, as well as its successful effort to secure construction of the Seven Oaks Dam and the right to capture Santa Ana River floodwaters for water conservation purposes. The book also provides an overview of Valley District's support for U.S. Geological Survey research to pioneer new methods for monitoring and tracking groundwater, which are now used by water agencies around the world.

The book also provides some discussion of the engineering challenges that Valley District faced as it designed a network of pipelines and pump stations to efficiently transport State Water Project water from Devil Canyon across the San Bernardino Valley to Yucaipa.

The book concludes with interviews with members of Valley District's current Board of Directors, who share their thoughts about the lessons the district has learned during the past 60 years as well as their ideas about how the district can best address new and emerging water management opportunities and challenges in the 21st century.

History will soon determine if they've made the right decisions.

— Jeff Crider

1893 photo of spillway on Santa Ana Canal between Southern California Edison powerhouse #2 and Warm Springs Canyon in Santa Ana Canyon.

Photo courtesy of A.K. Smiley Public Library

San Bernardino Flood, March 3, 1938

Photo courtesy of Flood Water Resources Institute

Early photo of Santa Ana Canyon

Photo courtesy of A.K. Smiley Public Library

Looking down the flume of Bear Valley Water Company, 1890s. | *Photo courtesy of A.K. Smiley Public Library*

CHAPTER 1

Valley District's Mission:

To provide Inland Empire water agencies with a supplemental water supply

Since it was established on Feb. 17, 1954, San Bernardino Valley Municipal Water District's mission has been to find and deliver water to supplement surface water and groundwater supplies in the most densely populated areas of San Bernardino County.

Its customers are the water agencies that serve the cities and communities of San Bernardino, Redlands, Colton, Loma Linda, Rialto, Bloomington, Highland, East Highland, Mentone, Grand Terrace and Yucaipa — none of which could reliably meet the demands of their residents and businesses today without imported water.

Of course, the problem of not having enough water isn't unique to the communities that populate Valley District's 350-square mile service area.

Most of Southern California has a relatively dry Mediterranean climate and cannot naturally sustain much more than chaparral or sagebrush, let alone one of the highest concentrations of people in the United States. The past, present and future of the San Bernardino Valley, and all of Southern California, for that matter, are inextricably linked to the availability and management of water.

Agriculture was the initial mainstay of the San Bernardino Valley's economy. Early settlers nourished their crops by diverting water from the Santa Ana River and its primary tributary, Mill Creek.

The valley's earliest and most famous man-made irrigation ditch, the Mill Creek Zanja, was built in 1820 by local Serrano Indians working under the direction of Pedro Alvarez, a priest from the Mission San Gabriel who had some engineering skills.

A National Historic Landmark, the Mill Creek Zanja ultimately stretched 12 miles from what is now Mentone through Redlands to Loma Linda, providing water for the cultivation of fruit trees, grape vines, pumpkins, squashes and grains.

Early settlers also took advantage of natural springs and high groundwater across the Bunker Hill Basin, which was common during and after periods of high runoff from the San Bernardino Mountains.

Before California became a state, the Mexican government placed settlers in the San Bernardino Valley with a colonizing effort led by Jose del Carmen Lugo in 1839.

The Lugos originally focused on raising livestock, but had only limited success and sold their Rancho San Bernardino to a group of Mormon settlers in 1851, a year after California became a state.

An 1895 postcard showing people boiling eggs in 186 degree water at Arrowhead Hot Springs in San Bernardino.

Photo courtesy of A.K. Smiley Public Library

The Mormons were only in the valley for six years, when they were recalled to Salt Lake City by Brigham Young. But the Mormons built the fort that became the heart of modern San Bernardino. They also continued to develop the valley's water resources.

> *"The mild, clear climate and the opportunity to make one's fortune through agriculture were idealized, but no mention was made concerning the difficulty in securing water."*

This was a critical period in San Bernardino's history. San Bernardino County itself was created in 1853 from parts of Los Angeles and San Diego counties, while the city of San Bernardino was incorporated in 1854.

But as more settlers moved into the San Bernardino Valley, conflicts over water and water rights intensified. Robert G. Griffin, a graduate student at the University of Redlands, identified water rights lawsuits and judgments dating back to 1861 as well as water disputes involving Mormon settlers and other groups in the 1850s.

In fact, legal disputes over water rights were taking place in the San Bernardino Valley and across Southern California even as real estate developers promoted the region's mild climate and burgeoning citrus industry.

"The 1870's and 1880's were a boom period in Southern California with farms appearing overnight and a population that was increasing rapidly," Griffin wrote in his study of early San Bernardino County water history. "Several Easterners began to flock out to the West. The mild, clear climate and the opportunity to make one's fortune through agriculture were idealized, but no mention was made concerning the difficulty in securing water."

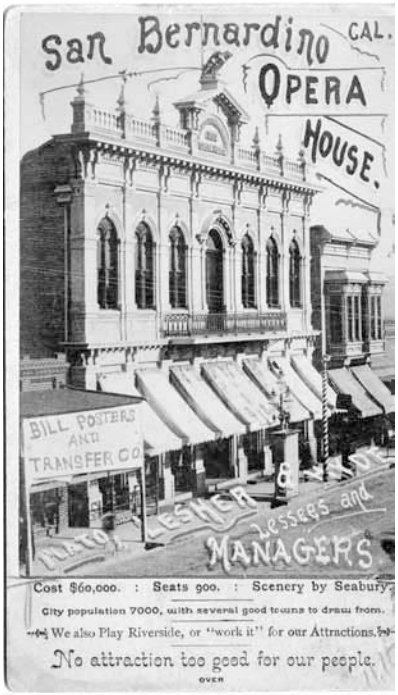
Despite these early concerns over water supplies, entrepreneurs managed to establish citrus, such as Washington navel oranges, as well as wine grapes and other crops across the San Bernardino Valley and the region's population grew.

By the late 1800s, San Bernardino had become a thriving business and farming community with significant cultural attractions that included Southern California's first opera house, built in 1882.

As the population of the San Bernardino Valley continued to grow, local residents and businesses increasingly questioned the extent of their local groundwater supplies

High groundwater provided recreational opportunities at Urbita Hot Springs in 1903. The site is now the location of the Inland Center Mall in San Bernardino.

Photo courtesy of San Bernardino Historical Society



San Bernardino was the site of Southern California's first opera house, which was built in 1882.

Photo courtesy of A.K. Smiley Public Library

Newly dug and opened well in the San Bernardino Valley, 1885.

Photo courtesy of A.K. Smiley Public Library

and whether they would need to import water from elsewhere. This, of course, is a question faced by every community in Southern California.

Since the early 1900s, Southern California has been in a perennial search for supplemental water supplies to fuel its economy, nurture its residents and ensure its quality of life.

The Los Angeles Department of Water and Power made its agenda clear following the formation of the agency in late 1904. "The time has come," the agency said in its first public report, "when we shall have to supplement the supply from some other source."

By 1913, a 233-mile-long aqueduct was diverting melting Sierra snows from the Owens Valley to Los Angeles. But even that wasn't enough.

In 1931, Southern California voters approved a $220 million bond initiative that would enable Metropolitan Water District to channel Colorado River water into the Los Angeles Basin.

But as Southern California's population continued to grow, water agencies started paying more attention not only to the limits of their surface water supplies, but to the limits of their groundwater supplies as well.

Concerns about potential groundwater overdraft in San Bernardino's Bunker Hill Basin prompted residents of San Bernardino and Riverside counties to form the Upper Santa Ana River Water Study Committee, which studied the local water situation from 1950 to 1954.

In addition to advocating the establishment of a new water district to import supplemental water into the San Bernardino Valley, the Committee paid for a study by the Pasadena engineering firm of Baker and Conkling, which concluded that the Bunker Hill Basin was in a state of overdraft and that imported water would be needed to make up for the shortfall.

Valley District was formed in San Bernardino in February of 1954, just six months after the key findings of the Baker and Conkling report were published in the *Redlands Daily Facts.*

1892 photo of the south portal of the first tunnel on the Bear Valley Mutual Water Company Highline Canal south of the forebay to the Southern California Edison Santa Ana #3 powerhouse.

Photo courtesy of A.K. Smiley Public Library

Group of women on boat and on shore at Urbita Hot Springs, 1903.

Photo courtesy of A.K. Smiley Public Library

San Bernardino Courthouse, 1880's.

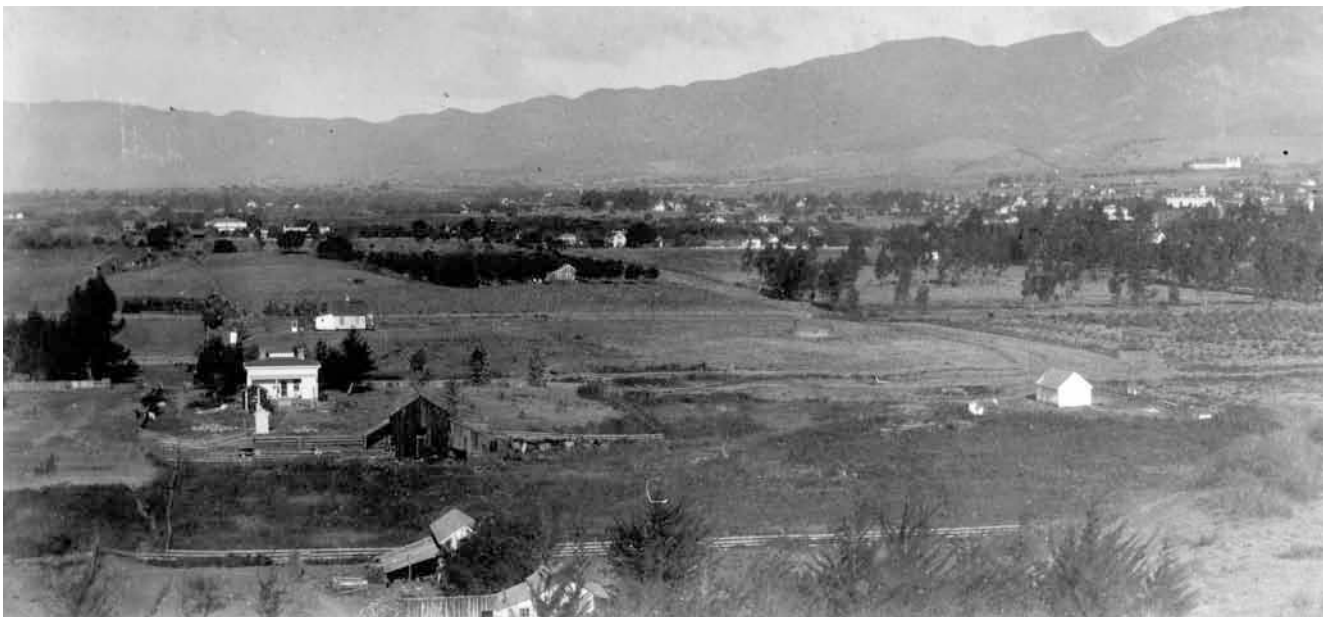
Photo courtesy of San Bernardino Historical Society

Santa Fe Depot, San Bernardino historical post card.

Photo courtesy of San Bernardino Historical Society

Looking northwest across San Bernardino in the 1880s.

Photo courtesy of A.K. Smiley Public Library



Testing of the city of San Bernardino's first pressured water system in 1890.

Photo courtesy of San Bernardino Historical Society

Flooding in San Bernardino in the early 1900s.

Photo courtesy of San Bernardino Historical Society

Testing of the city of San Bernardino's first pressured water system in 1890.

Photo courtesy of A.K. Smiley Public Library

Third Street in San Bernardino, 1901.

Photo courtesy of A.K. Smiley Public Library

Towne's Drug Store, Interior soda fountain, 1910's

Photo courtesy of A.K. Smiley Public Library

Washed out railroad tracks in San Bernardino show the after effects of the 1938 flood.

Photo courtesy of San Bernardino Historical Society

Waters and Brinkmeyer Opera House in San Bernardino, 1890s.

Photo courtesy of A.K. Smiley Public Library

Downtown San Bernardino during a flood in the 1880's.

Photo courtesy of San Bernardino Historical Society

1892 photo of Bear Valley Mutual Water Company Highline Canal crossing Greenspot Road area.

Photo courtesy of A.K. Smiley Public Library

Drawing of colonists' cabins in San Bernardino, 1852.

Photo courtesy of A.K. Smiley Public Library

View of 2nd and E Street in the 1950s. | *Photo courtesy of A.K. Smiley Public Library*

CHAPTER 2

TO JOIN OR NOT TO JOIN?

The Formation of Valley District and Early Political Debates Over the Merits of Joining Metropolitan Water District

San Bernardino Valley voters approved the formation of San Bernardino Valley Municipal Water District during a special election, which took place on Jan. 26, 1954.

But while many San Bernardino Valley residents and businesses supported the creation of a new water district that could import supplemental water into the valley, there was also strong opposition to the idea.

According to a Jan. 27, 1954 article in the *San Bernardino Sun*, "The election followed a hotly debated campaign in which advocates of the district pictured it as facing a future water crisis and opponents said the rich area was trying to be 'grabbed' by Metropolitan Water District."

But the voting solely involved the question of whether to form a municipal water district, which would have the legal power to contract with the best possible source of additional outside water, the *Sun* said. Five directors were also chosen in the same election, each representing a different geographic area of the district.

Valley District's initial supporters included the chambers of commerce of San Bernardino, Colton, Highland, Redlands, Yucaipa and Mentone, along with many local service clubs. Prominent politicians, including James E. Cunningham, a member of the State Senate Water Resources Committee, and San Bernardino Mayor George C. Blair, also supported Valley District's formation.

"The opposition groups were the Citizens' League, headed by Earl Beach, San Bernardino real estate dealer, and a large group of valley mutual water companies and independent well owners," the *Sun* wrote.

The election results varied by jurisdiction and reflected the widely varying opinions that San Bernardino Valley residents held regarding the merits of forming a new water district to import supplemental water into the valley.

According to the *Sun*, the formation of Valley District was approved by a vote of 12,344 to 11,342.

"An overwhelming majority in favor of the district in Redlands and a substantial majority in Colton were major items in turning an early tide of adverse votes," the *Sun* wrote.

"The vote in Redlands was 2,379 for and 814 against formation, while Colton approved the area 940 to 625. In San Bernardino, where a nip and tuck battle continued throughout the count, the final tally turned the district down by 53 votes. The total was 5,215—YES, 5,268—NO. Rialto gave the district a slight favorable edge, 288 to 273, while the east valley unincorporated areas of Yucaipa and Mentone, and the central valley Mission district, including Loma Linda, gave substantial approval."

In Yucaipa, the vote in favor of creating Valley District was 955 yes, 635 no, while Mentone favored the district by 435 to 216. The Mission district, for its part, approved formation by 479 to 388.

Redlands resident A.B. Drake, who was part of the Upper Santa Ana River Water Study Committee, told the *Sun* that the establishment of Valley District was hard fought. "This climaxes four and a half years of hard work," he said, adding, "What the people have done regarding future water is just like what has been done in setting up a new school district. First you have to form the district and elect a school board."

And that is exactly what San Bernardino Valley area voters did when they set up Valley District.

Valley District was officially established on Feb. 17, 1954 with a locally elected board of directors that represented different geographic areas within the district's service area. Valley District's first directors included Horace P. Hinckley of Redlands; Howard L. Holcomb of San Bernardino; James F. McDill of San Bernardino; Woodrow Miller of Colton; and Maurice S. Schumaker of Yucaipa.

The view looking over the San Bernardino Valley from the San Bernardino Mountains.

Photo courtesy of San Bernardino Historical Society

THE METROPOLITAN QUESTION

While the formation of Valley District and the election of its directors were key areas of focus for the January 1954 election, lurking in the background was the critical question of whether the San Bernardino Valley should annex itself to Metropolitan Water District, thereby gaining access to Colorado River water.

> *"... we wonder, why some of our best informed citizens are willing to exchange our pure mountain water for inferior water supply at three times the cost of our now pure supply"*

But that question was to be resolved in a special election at a later date. "Any question of annexation to the MWD, which would be necessary in order to obtain Colorado River water, would have to be settled at a subsequent election," the *Sun* wrote in its Jan. 27, 1954 description of the election.

The idea of annexing the San Bernardino Valley to Metropolitan's service area for the purpose of gaining access to Colorado River water had been proposed before.

In fact, 26 years before the formation of Valley District, a majority of the residents of San Bernardino and Colton said they wanted to be part of Metropolitan Water District.

That was back in 1928, when an election was held giving communities across Southern California a chance to decide whether they wanted to join Metropolitan, which was publicizing its plans to import Colorado River water into the region.

"An affirmative vote will signify a desire to enter, but will not bind any municipality in the matter of investment," the *Sun* wrote in a Nov. 2, 1928 story, adding, "The problem of the bond issue will again be submitted to the residents of the various cities for approval or rejection."

Several local officials supported Metropolitan, including State Senator Ralph E. Swing.

"While this city is not now in need of water," Swing told the *Sun*, "the construction of this aqueduct and the bringing of water into this vicinity will make it possible to develop thousands of acres of land now undeveloped. I do not mean by this that any of the water can be used for irrigation, but all the foothill territory can be developed into residential sections and make the whole coastal plain one great metropolitan area."

J.W. Catick, a San Bernardino city water board commissioner, was similarly enthusiastic about the plan. "I'm heartily in favor of it," he told the *Sun*. "Anything to get the water here. It is the best plan we have heard so far and the water must be brought here because the supply in the basin is dropping lower each year."

View of the California Hotel, 1950s.

Photo courtesy of San Bernardino Historical Society

But while voters in Colton and San Bernardino initially supported the idea of joining Metropolitan, they eventually changed their minds as local residents raised concerns about the costs and quality of Colorado River water, which was considered to be inferior to the mountain runoff San Bernardino Valley communities already had within their midst.

Colton City Engineer C.A. Hutchinson told the *Sun* in a Dec. 1, 1929 interview that much of the Colorado River water that Metropolitan brought into Southern California would be stored in groundwater basins that would benefit communities that had not joined the district. He noted that Redlands and Riverside had not joined Metropolitan, yet they would likely receive the same benefits as cities that had joined the district and paid for the Colorado River aqueduct.

Anti-Metropolitan sentiment continued to intensify in the months leading up to the August 1931 election, when residents of Colton and San Bernardino voted against the $220 million Colorado River aqueduct bond initiative while also opposing continued membership in Metropolitan.

A.L. McNutt of San Bernardino summed up local concerns about the idea of importing Colorado River water in a July 28, 1931 letter to the editor of the *Sun*.

"… we wonder," McNutt wrote, "why some of our best informed citizens are willing to exchange our pure mountain water for inferior water supply at three times the cost of our now pure supply pumped from the best filter cistern in the world, sand and gravel. We, like Denver and other mountain cities, have been proud of our supply of mountain water and we have an abundance of water for future use of generations to come if we conserve

America's first McDonald's fast food restaurant was built on E Street in San Bernardino.

Photo courtesy of San Bernardino Historical Society

it as we should. It seems that a good number of our leaders are always designing to load our fair city with indebtedness and tax us taxpayers for things we do not need."

San Bernardino residents continued to question the need for water imports even after the Pasadena engineering firm of Baker and Conkling issued their report in early 1954 in which they concluded that the Bunker Hill Basin was in a state of overdraft and that imported water would be needed to make up for the shortfall.

A majority of San Bernardino voters, in fact, opposed the formation of Valley District when the question of forming a special district to import a supplemental water supply into the San Bernardino Valley was put before voters, as noted earlier. Once Valley District was formed, however, many assumed that the agency would join Metropolitan Water District so that it could tap into the Colorado River water that Metropolitan was providing to cities throughout Southern California.

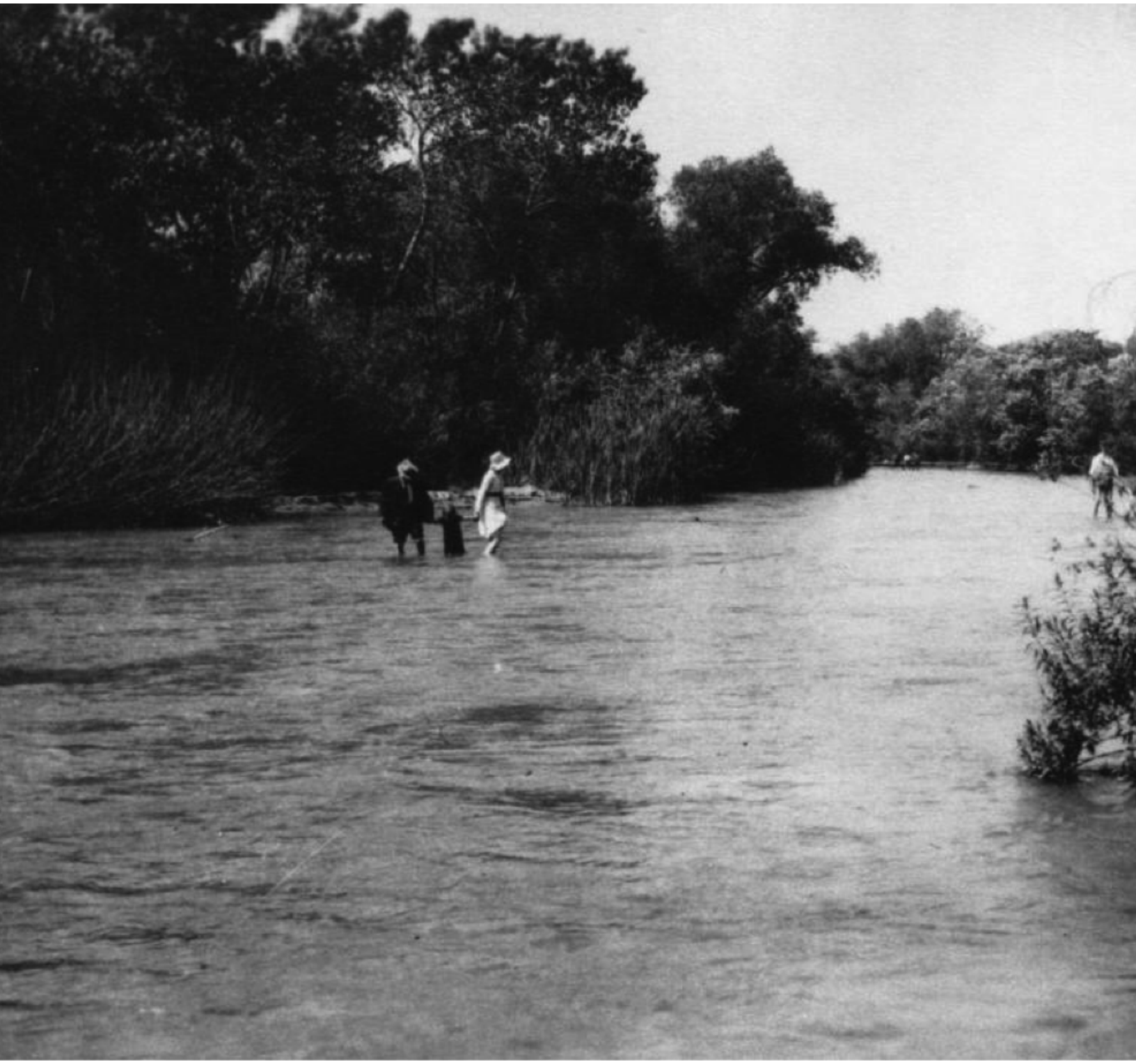
"It is expected that the district board will negotiate with the Metropolitan Water District to find out the exact cost of annexation so that Colorado River water can be brought to this basin," the *Redlands Daily Facts* wrote in a Jan. 27, 1954 report, adding, "When the board has completed these negotiations, it will be in a position to bring the matter of joining Metropolitan before the voters at a special election."

It wasn't just the problem of groundwater overdraft that was prompting Valley District to consider joining Metropolitan. The District also faced legal pressure to do so from Orange County Water District, which continued throughout the 1950s and early 1960s.

The Fountain Valley-based water agency wanted to make sure that upstream water agencies were paying for enough imported water so that they could ensure that there would always be significant amounts of Santa Ana River water flowing from San Bernardino and Riverside counties into Orange County. Orange County Water District also wanted Valley District's customers to help shoulder the cost of bringing Colorado River water into Southern California.

"When you think about it, what stimulated a lot of the angst in the 1950s and 60s was the tremendous growth that Southern California experienced following the end of World War II," said Don Harriger, a former general manager of Western Municipal Water District who worked at the agency from 1975 to 2003.

These fears were held by water agencies throughout Southern California, but particularly in Orange County, which worried about its future access to surface water and groundwater water supplies in western San Bernardino and Riverside counties.



Santa Ana River in 1889 | *Photo courtesy of Water Resources Institute, California State University, San Bernardino*

CHAPTER 3

ORANGE COUNTY PRESSURES INLAND WATER AGENCIES TO JOIN METROPOLITAN WATER DISTRICT

While Inland Empire water agencies were over-drafting their groundwater basins, Orange County faced triple threats to its own water supplies. These included Orange County's own groundwater overdrafts, reductions in Santa Ana River flows—as Inland Empire agencies increased their use of river water—as well as salt water intrusion, which was contaminating some of Orange County's groundwater.

In the decade leading up to the formation of Orange County Water District in 1933, groundwater levels had dropped by an average of 77 feet in some areas of the Orange County groundwater basin.

"Artesian wells, once a common sight in areas of Tustin, Irvine and Fountain Valley, had gradually disappeared," Orange County Water District writes in its own online historical account of that period, adding, "A largely agricultural community was siphoning more than 200,000 acre-feet of groundwater annually from wells punched through the sand and clay of the semi-desert landscape."

In 1932, a year before Orange County Water District was formed, Orange County agribusiness baron James Irvine Jr. took matters into his own hands and filed suit against several San Bernardino County cities and water agencies in an effort to limit their use of mountain runoff for groundwater recharge purposes.

"The suit was filed by James Irvine, who owns approximately one third of the land in Orange County, to prevent the spreading of surplus water on the debris cones of Mill Creek, the Santa Ana River (above Mentone) and Lytle Creek," the *San Bernardino Sun* wrote in a Feb. 3, 1942 account of the lawsuit.

The *Sun* said there were originally 16 defendants, including the city of Redlands, the East Lugonia Water Company, and the Water Conservation Association.

The San Bernardino Water Conservation Association, the precursor of today's San Bernardino Valley Water Conservation District, was subsequently admitted as a party to the suit, as well Orange County Water District, which entered the litigation as an intervenor.

"Out-of-court settlement of the suit has been sought intermittently since 1932," the *Sun* wrote in its Feb. 3, 1942 report. "At several times, it appeared that an agreement could be reached, but failure followed in each instance. **The basic point of disagreement at the present time involves the question of how much water is available for spreading in the Santa Ana River here without injury to Orange County."**

The Irvine lawsuit was eventually settled in 1942, with the Conservation District agreeing to limit its spreading operations in San Bernardino County for the benefit of Orange County.

But while Orange County Water District began using imported Colorado River water from Metropolitan Water District to recharge its groundwater basins in 1948, the agency continued to file lawsuits against cities and water agencies in Riverside and San Bernardino counties in an effort to limit their use of Santa Ana River water.

In fact, the litigation served a dual purpose: to place limits on upstream agencies' use of Santa Ana River water while also pressuring them to join Metropolitan and share the cost of bringing Colorado River water into Southern California.

In 1951, Orange County Water District filed a lawsuit against San Bernardino, Redlands, Colton and Riverside in an effort to have the courts determine the amount of water that the four cities could take from the San Bernardino Valley's groundwater basin.

But while many Riverside and San Bernardino County opinion leaders thought joining Metropolitan was a logical course of action, voters across the Inland Empire were divided on the idea.

> *"the black truth is that we are involuntary partners with San Bernardino. And that city is the most backward around here. It is a cruel jest of fate that we are teamed with her."*

Riverside's voters supported annexation to Metropolitan when the question was posed in a Sept. 29, 1954 election, while a majority of voters in Valley District's service area opposed joining Metropolitan. Voters in Redlands, Yucaipa and Mentone were the only ones who supported annexation to Metropolitan.

Newspaper accounts said the ballot initiative failed in San Bernardino County because there was no specific plan that had been articulated to bring water to the Inland Empire. Many voters also questioned whether the water shortage in the San Bernardino Valley was real.

There were legal consequences to opposing annexation to Metropolitan, however, namely the continuing lawsuit with Orange County Water District, which some felt could have been avoided had Valley District joined Metropolitan.

"If annexation had been approved, I am certain this suit would have been amicably settled," said James L. King, counsel for San Bernardino, in an Oct. 14, 1954 interview with the *Sun*, adding, "I don't think we can avoid the trial now that annexation was turned down."

But when the idea of joining Metropolitan was presented to voters in Valley District's service area again in 1957, it failed again, and by even wider margins than it had in the 1954 election — with 119 of 124 precincts opposing annexation.

A Nov. 27, 1957 headline in the *Redlands Daily Facts* summed up the election results as follows: "They fear higher taxes more than water shortage."

The *Facts* was bitter over the repeated failure of San Bernardino County voters to join Metropolitan.

"The negative water vote yesterday was a tragedy for this valley," the *Facts* wrote in a Nov. 27, 1957 editorial. "In Redlands, we have only one consolation. Our community has proved itself to be the most progressive one in the area. The people understand the need for supplemental water and in spite of the cost that would be involved, voted to join Metropolitan. But the black truth is that we are involuntary partners with San Bernardino. And that city is the most backward

San Bernardino Valley seen from the mountains, 1920s.

Photo courtesy of A.K. Smiley Public Library

> *"It was believed by the people here that L.A. would just try to take over the Bunker Hill Basin."*

around here. It is a cruel jest of fate that we are teamed with her. We can only wish that it were possible to 'divorce' San Bernardino and to 'marry' Riverside, a city that is more like our own in spirit and temperament. Riverside annexed to Metropolitan in 1954 at the same time the issue was losing here."

But some San Bernardino County residents felt that Valley District might get a better deal by importing water from Northern California through the Feather River Project, which would later become known as the State Water Project.

The Feather River Project was first authorized by the State Legislature in 1951. Initial plans called for construction of a 710-foot dam near Oroville that would store 3.5 million acre feet of Feather River water as well as a canal system to bring several million acre feet of water to Southern California.

Bonds for the project were eventually approved by California voters in 1960, and Valley District signed a contract with the state Department of Water Resources for Feather River water on Dec. 30, 1960.

But Feather River water was not expected to arrive in Southern California until 1972. Some San Bernardino County residents felt that the water would not arrive soon enough to address San Bernardino's immediate water shortage, which was intensifying as a result of drought and continuing litigation from Orange County. Orange County succeeded in obtaining a judgment that would set the city of San Bernardino's water rights at 14,625 acre feet, which was about 40 percent below the city's estimated water needs for 1965.

But many feared that Metropolitan was itself becoming overextended by promising to deliver imported water to too many water agencies.

Patrick Milligan, who served on the Valley District board from 1964 to 1976 and again from 1984 to 2014, said Metropolitan's opponents believed the agency might try to use the Bunker Hill Basin for its own purposes.

"A group of people felt that Los Angeles was already just existing on supplemental water that they were bringing in from the Colorado River and the Owens Valley," he said, adding, "It was believed by the people here that L.A. would just try to take over the Bunker Hill Basin."

Conspiracy theories took root. Some people questioned whether there would be enough water available to sustain growth and development in San Bernardino County.

The *San Bernardino Sun-Telegram* urged voters to support the ballot initiative to join Metropolitan. The paper also repeatedly warned that the Orange County judgment set the city of San Bernardino's water rights at 14,625 acre feet, which, as noted earlier, was about 40 percent below the city's estimated water needs for 1965.

Many city officials, including San Bernardino Mayor Donald G. Mauldin, spoke out in favor of joining Metropolitan.

"We must attempt to join with the rest of Southern California urban areas and partake of the supplemental water supply that is now and has been serving them for many years," Mauldin said in a *Sun-Telegram* article from Oct. 7, 1962.

> *"Your friends hope you will take off your rose-colored glasses ..."*

The *Sun-Telegram* also highlighted an engineering report by Los Angeles-based Stetson, Strauss and Dresselhaus. The report, commissioned by the city of San Bernardino, concluded that there were only two options to deal with the water shortage: Either have Valley District annex to Metropolitan or have the city withdraw from Valley District and annex to Metropolitan on its own.

But Valley District officials believed that its contract for 90,000 acre feet of Feather River water offered a more economical and more reliable solution for Inland Empire residents.

"Our contract for 90,000 acre feet of Feather River water will in time solve any shortages in the San Bernardino Valley," Valley District Director Horace P. Hinckley said in an Oct. 7, 1962 interview with the *Sun-Telegram*.

Hinckley added, "The total entitlement to both Colorado River and Feather River water by the San Bernardino Valley Municipal Water District, if it were a member of MWD, would be less than the 90,000 acre feet our present contract gives us." It simply didn't make sense, he argued, for San Bernardino Valley residents to pay $28 million in back taxes and interest to MWD so that they could end up with less water than they have under Valley District's contract for Feather River water.

A Sept. 12, 1962 report in the *Del Rosa Times* noted that San Bernardino's entitlement to MWD water would be 6,000 acre feet, which was less than half of the city's supplemental water needs. "If the entire Valley District annexed to MWD," the paper wrote, "its total entitlement by 1990 would be less than 75,000 acre feet, whereas the district's contract with the state for Northern California water guarantees 90,000 acre feet."

In addition to contracting with the state for Feather River water, Valley District sought to increase its control over Inland Empire water supplies by purchasing water rights, condemning mutual water companies and by attempting to spread sewage effluent, later called recycled water, to recharge groundwater basins.

But many worried about potential delays in receiving Feather River water. They also wondered whether Valley District could really get the job done that it was created to do.

"City officials considered its program unsuccessful," the *Sun* wrote in an April 29, 1964 summary of Valley District's efforts in the Metropolitan campaign. "They said it had not won a single major condemnation suit—and if it did, damages would have to be paid to all water users deprived of water by its condemnation action."

The newspaper cited estimates that it would cost $40 million if Valley District ever won the Gage Canal Co. condemnation suit. The *Sun* also noted that the sewage spreading program was blocked by an anti-pollution lawsuit.

Meanwhile, there was the constant legal pressure from Orange County Water District, which sought to force San Bernardino and other Inland Empire cities into Metropolitan's camp.

This wasn't merely litigation for litigation's sake on Orange County's part. By the time Disneyland opened its doors in 1955, Orange County's groundwater levels had fallen to their lowest levels in history. "With the accumulated basin

overdraft estimated at 700,000 acre-feet, salt water was now found in aquifers as far as five miles from the ocean," Orange County Water District writes in the historical section of its website.

Orange County, in short, was in a panic, and stepped up its pressure on cities and water agencies across the Inland Empire.

James Michael, counsel for Orange County Water District, went so far as to warn Inland Empire residents that they could face "seven years of water famine" if they failed to join Metropolitan.

"It needn't be," he said in a speech to members of the San Bernardino Chamber of Commerce's Water Study Committee, "if the San Bernardino Valley will take off its rose-colored glasses."

The speech, as reported by the June 8, 1962 edition of the *Sun*, contained numerous instances in which Michael appeared to mock Inland Empire residents for even considering another course of action besides joining Metropolitan.

"It seems to us in Orange County that you in this valley have developed a bad habit of over-optimism," Michael said. "If it comes to rainfall, you hope for a run of good years. But the good years may not come. If it comes to the Feather River and the High Line, you figure that it will arrive right on time—or even ahead of time. But it might not arrive on time. Construction delays do spring up. Snags are encountered. Ask any man who's ever built anything if everything went smoothly and according to plan. You residents of San Bernardino Valley should start asking your leaders now: Where is the water coming from between 1965 and 1972, or 1975, perhaps? How many drops of water will you squeeze out of the dry and dusty papers of legal litigation?"

Now for the jab.

"Your friends hope you will take off your rose-colored glasses," Michael continued. "They invite you to join Southern California in solving our mutual water problem. Your Bunker Hill Basin isn't a bottomless pit that can be mined of water forever. Already you have a quality problem in some wells."

Michael also charged that opposing the Metropolitan annexation would hurt the Inland Empire economy, while politically isolating the region from the rest of Southern California

"The course some of your leaders have put you on is already hurting your growth," he said. "It has, to some extent, cost you good will among your neighbors. And five years from now the crisis will be much more severe."

Orange County Water District wanted Inland Empire residents to help Metropolitan pay for the cost of bringing Colorado River water to Southern California. "Orange County is taking the long viewpoint in urging you to join MWD," Michael said. "Actually, such an action might curtail the amount of water available to us. But Orange County recognizes the long-range good effect it would have on our watershed. We are human—and we don't like the idea of one part of the watershed subsidizing another part."

Even Riverside County water agencies saw a need to place legal limits on the amount of water San Bernardino County's cities and water agencies could extract from the Bunker Hill Basin.

On March 1, 1963, Western Municipal Water District filed a 240-defendant lawsuit on behalf of Riverside County water agencies with a history of pumping "to fix the rights of every water user in the San Bernardino Basin," according to a front page report in the *San Bernardino Daily Sun*, which was published a day after the lawsuit was filed.

"Our suit contends that the basin is being overdrawn and (that) the interests of everyone (are) endangered," Western General Manager Everett L. Grubb said of the suit, which alleged that the basin had been overdrafted since at least 1958, if not earlier.

A March 1963 report in the *Riverside Enterprise* said the suit also attempted to address the issue of fairness. "Western's claim is that it's unfair for Riverside County users of basin water to pay $700,000 a year for supplemental water from the Colorado River while San Bernardino County users refuse to do so and merely dip deeper and deeper into the San Bernardino Basin."

Orange County Water District, which had already obtained judgments limiting the San Bernardino Basin water rights of Riverside, Colton, Redlands and San Bernardino, soon followed with another lawsuit of its own, which named every water producer in the Inland Empire east of Prado Dam.

By the time of the 1964 election, the debate over whether or not Valley District should join Metropolitan had spiraled into the most bitter political campaign in San Bernardino history, with politicians and water agency officials making charges and counter-charges.

This wasn't just a theoretical debate about which agency could do a better job of delivering imported water to the Inland Empire. Voters faced a deluge of headlines warning of the threat of water rationing, resulting not only from the ongoing drought, but the imposition of major limits on San Bernardino's water rights as a result of previous litigation by Orange County Water District as well as headlines stemming from the additional water related lawsuits filed in 1963 by Western and Orange County Water District.

Voters were inevitably caught in the middle of a media battle for the hearts and minds of Inland Empire residents and businesses regarding the question of joining Metropolitan.

Feeling that its side of the story was not being adequately told by local news media, Valley District created its own weekly newspaper, the *Independent Press*, which repeatedly alleged that Metropolitan was behind a conspiracy to gain access to San Bernardino County's water supplies.

"In order to have their views presented, if they differed from the editorial policy of The *Sun-Telegram*, citizens were compelled to resort to handbills and circulars," the *Independent Press* wrote in an April 26, 1964 editorial, which appeared just before voters would decide whether to join Metropolitan.

The *Independent Press* described its mission and the reason for its existence in the same editorial: "As a final resort, supported by the dollars, the nickels, the dimes and the stamps of an aroused and angry community, citizens were forced to found and edit and financially support a small weekly newspaper of their own, to get 'the other side' before the voters who were to decide for the fourth time, a matter they had decided three times before. And all the time there was a constant, twice-a-day barrage of 'scare' propaganda disguised as news to falsely try and convince them that only by joining MWD could a 40 percent

Rainbow at Prado Lake.

Photo courtesy of Orange County Water District

cutback in the city's water supply be prevented on Oct. 1 of this year. This was all part and parcel of the conspiracy that was hatched almost 14 years ago and which has kept the communities along the Santa Ana River locked in the torments of mortal combat ever since."

Water agency officials across San Bernardino County also raised powerful arguments against Metropolitan.

Venn Botts, president of East San Bernardino County Water District, cited a lawsuit that Arizona had filed with the U.S. Supreme Court that could ultimately limit the amount of water Metropolitan could obtain from the Colorado River.

The lawsuit, which Arizona filed with the U.S. Supreme Court in 1952, was intended to resolve ongoing disputes between Arizona and California over their respective allocations of Colorado River water.

Valley District highlighted the threat this litigation posed to Metropolitan in a Sept. 5, 1962 brochure titled "An Introduction to The Metropolitan Water District of Southern California."

In it, Valley District warned that it would have to give up its contract for 90,000 acre feet of Feather River water if voters opted to join Metropolitan.

"Annexation would only mean an entitlement from MWD, and not a guarantee of a firm water supply," Valley District wrote, adding, "We might even be paying for a 'dry ditch,' in the event the Supreme Court upholds the present recommendations by the Special Master (Rifkind) in the allocation of Colorado River water. If we annex to MWD, our obligation would remain to pay for the 'ditch,' whether water is there to deliver or not."

Valley District also warned that the "use of Colorado River water in our basin will impair existing water quality by adding a large volume of various dissolved salts."

Feather River water, by contrast, has a much lower salt content.

Valley District also warned that if voters joined Metropolitan, they would have little control over its decisions. "Your district would possibly have one director on the Board of Directors of MWD and not enough power or position to be recognized due to the voting block of the original 13 MWD cities through their unit voting procedure."

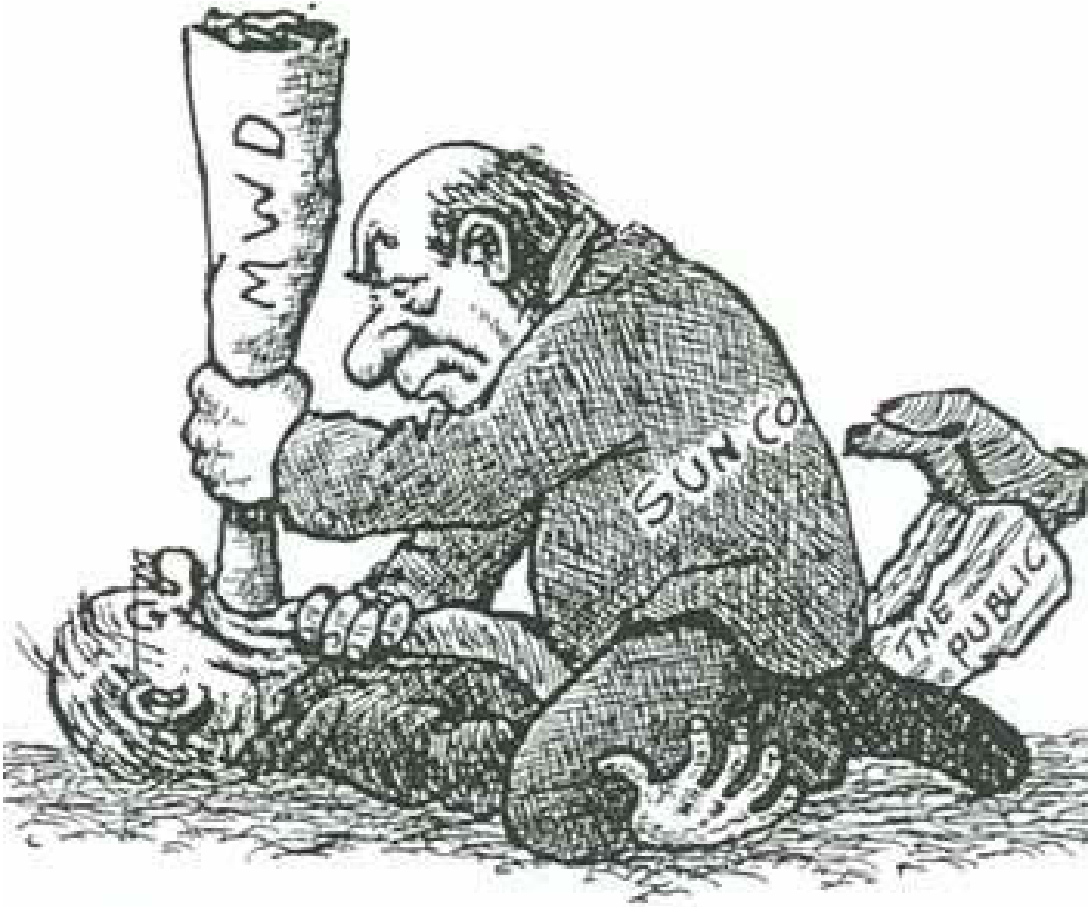
Then there was the issue of cost.

To join Metropolitan's service area, San Bernardino Valley residents would have to pay for their share of the Metropolitan's costs going all the way back to 1929. That figure was estimated to be $28 million — a huge sum in those days.

Botts of East San Bernardino County Water District noted that Valley District would only be able to obtain water from Metropolitan based on the proportion of back taxes Valley District's customers paid each year. So even if Valley District joined Metropolitan, it could be many years before the district would receive the full amount of supplemental water it had contracted for.

Meanwhile, forces on both sides of the issue rallied voters.

A group called the Water Action Council, led by William E. Leonard, organized 400 volunteer workers in a year-long campaign in support of a Metropolitan annexation.



DOWN OUR THROATS

VOTE NO MWD

CHAPTER 4

THE 1964 ELECTION:

VOTERS REJECT ANNEXATION TO METROPOLITAN WATER DISTRICT WITH THE LARGEST TURNOUT IN SAN BERNARDINO HISTORY

> *"The vote was an overwhelming repudiation of the city's current government leadership"*

The April 28, 1964 election drew 68.2 percent of San Bernardino's voters to the polls, the highest in the city's history, with 57 percent of them opposing annexation to Metropolitan.

"It may have been the rain," said Stacey Aldstadt, the present general manager of San Bernardino's city water department, who wondered about the extent to which a late spring storm that struck on Election Day might have given undecided voters the confidence to say no to Metropolitan once again.

But regardless of the weather, the sentiments of San Bernardino voters were clear. The *San Bernardino Daily Sun* was stunned.

"The vote was an overwhelming repudiation of the city's current government leadership, a big majority of its business and financial leaders, its civic organizations and this newspaper," the *Sun* wrote in an April 30, 1964 editorial.

"Instead, the voters have transferred this mantle of leadership to a new group which must now accept full responsibility for finding sufficient, litigation-free water to spare San Bernardino from the inevitable economic disaster of water rationing."

But the *Sun* nonetheless vowed to support Valley District and the people who supported the district:

"This newspaper pledges to support them in any constructive plans they undertake. Likewise, we will hold them strictly accountable for any decline in the stature or prosperity of the community. Perhaps, however, even though we give no advice, no one will begrudge us the right to hope. We hope water rationing can be avoided."

Meanwhile, W.R. Holcomb, co-chairman of the opposition group known as the Water Truth Committee, accepted victory on behalf of Metropolitan's opponents. "Let us suture our wounds," Holcomb told the *Sun*, "and move forward as a united community. There will be no rationing."

FINAL

The San Bernardino Daily Sun

A Newspaper for San Bernardino County

VOL. LXX—38 PAGES, 2 SECTIONS

Telephone Tilmar 9-9666

WEDNESDAY MORNING, APRIL 29, 1964

VOTERS DEFEAT JOINING MWD

5 Workers Die In Flash Fire On Ferry Ship

Huge Flareup Is Confined to Hold, Crew Unhurt

Total Votes Recorded By Precincts

Hand Decisive Victory to Foes Of Annexation

Education Board Pushes Initiative Rule

By LEIF ERICKSON

SAN FRANCISCO (AP)

Newspaper articles

Courtesy of Water Resources Institute, California State University, San Bernardino

Holcomb's calming words were important, not only to assuage local concerns about the management of San Bernardino Valley's water supplies, but to improve confidence in the local economy.

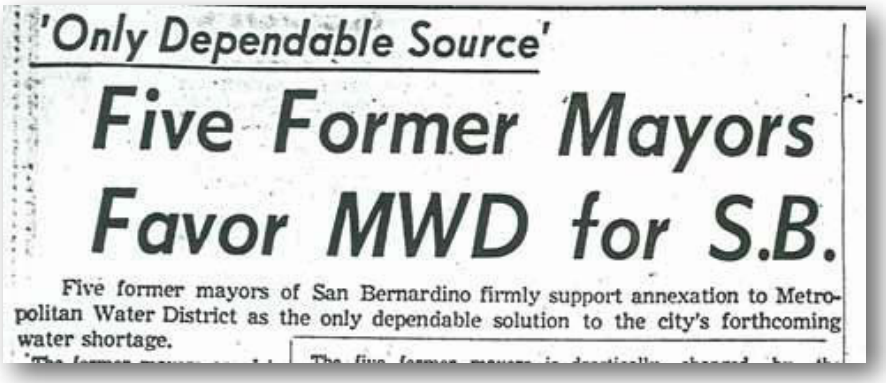
"The very heart of our policy," Holcomb said in a May 15, 1964 article in the *Independent Press*, "will be to try and undo the economic damage which has already been done by depicting the city and the valley as a water deficient area."

It was not possible to undo all of the political damage, however. The election results, combined with the intensity of the anti-Metropolitan campaign, soured relations between Valley District and Metropolitan and created a rift of hostility between the two agencies that would last for 35 years.

"When we won, MWD thereafter had a very nasty relationship with our district," said Patrick Milligan, who served on Valley District's board from 1964 to 1976 and again from 1984 to 2014. "They would not under any circumstances join in any joint projects with us. They insisted that any pipelines that were built to Southern California by the state be under their control and they resisted any joint control of lines."

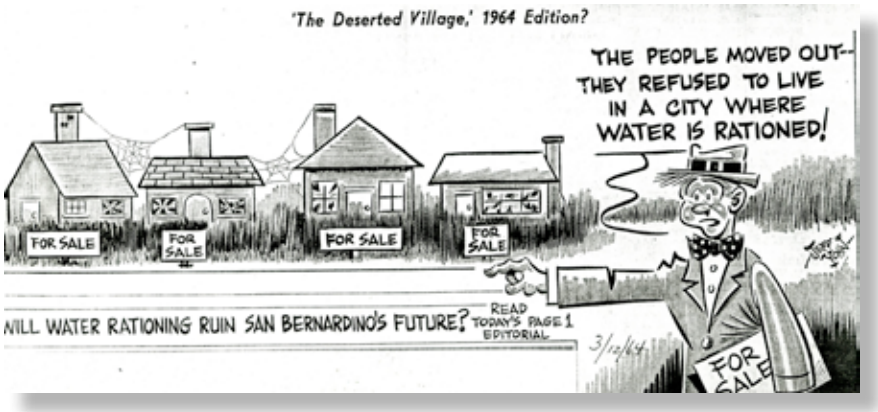
In fact, when State Water Project water arrived in the San Bernardino Valley through a pipeline called the East Branch of the California Aqueduct, MWD built its own pipeline from the East Branch to its customers in Los Angeles County rather than partner with Valley District and San Gabriel Valley Municipal Water District to build a single pipeline that could serve all three agencies' customers.

"They were so angry with people from our district, they literally rejected us as a source of supplemental water," Milligan said. "The hatred between the two districts led to a boondoggle of spending millions of dollars of taxpayers' money that didn't need to be spent building two separate lines."


'Only Dependable Source'

Five Former Mayors Favor MWD for S.B.

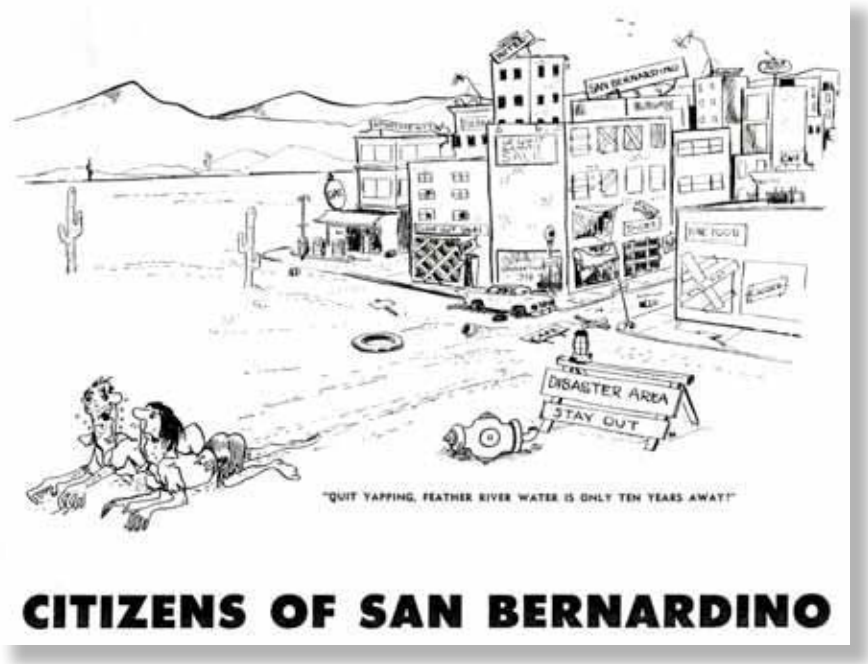
Five former mayors of San Bernardino firmly support annexation to Metropolitan Water District as the only dependable solution to the city's forthcoming water shortage.




STOP M.W.D.

VOTE NO APRIL 28

WEST SIDE
Committee Against M. W. D.
SAMUEL MARTIN




New water board assures new water policy for city

"Truth" takes over operation of San Bernardino's water program

Newspaper articles and cartoons.

Courtesy of Water resources Institute, California State University, San Bernardino

San Bernardino Valley Municipal Water District's headquarters at 1350 S. E Street in San Bernardino.

Photo courtesy of San Bernardino Valley Municipal Water District

CHAPTER 5

TOO CLOSE FOR COMFORT

VALLEY DISTRICT BUILDS A NEW HEADQUARTERS IN 1966 AND MOVES AWAY FROM THE SAN BERNARDINO COUNTY SUN

The tension between San Bernardino Valley Municipal Water District and the *San Bernardino County Sun* in the years leading up to the 1964 election was not only fueled by their opposing viewpoints over whether the district should be annexed by Metropolitan Water District.

Valley District and the *Sun* also had offices adjacent from one another on Fourth Street, which some felt was too close for comfort given the recent clashes between the two organizations.

As a result, following the 1964 election, one of the first actions by newly elected Valley District Director Patrick Milligan was to convince his colleagues to relocate the district's headquarters from 384 Fourth Street to another location. "I felt that it was important that we depoliticize the downtown venue that we had and move out of the Sun building," Milligan said.

Valley District soon found an opportunity to do so when San Bernardino Mayor Al Ballard approached the district about building a new headquarters at 1350 South E Street, near the 215 freeway.

"Ballard said that San Bernardino is 'a city on the move.' He said, 'We are redeveloping the entire area of downtown San Bernardino, and we would like your water district to build a new building at the entrance of the city on the south.' He wanted us to build a new building on city-owned property in the south part of San Bernardino at the entrance right along the freeway. He said, 'That entrance is an eyesore and we will give you a 50-year lease for a dollar a year. In return for that we want you to build a building and construct a water feature on that property that will be seen from the freeway that will announce to the people coming into the town in a nice way that we have water here.' "

Milligan said he convinced the board to take Ballard up on the city's offer and a contract to commence construction was signed in 1966. The new office complex was nicely landscaped. It even featured an existing missile shell, which was emblematic of San Bernardino's involvement in the military and aerospace industries in the 1960s. The office complex also had a major water feature, as Mayor Ballard had requested.

San Bernardino Valley Municipal Water District's headquarters at 1350 S. E Street in San Bernardino.

Photo courtesy of San Bernardino Valley Municipal Water District

"We built this huge fountain that could shoot water maybe 50 feet in the air," Milligan recalled. "It was beautiful, truly gorgeous, and it did properly announce that this was a city with water, not a city on the verge of water rationing. The water district had a very important function in improving the image of this valley and improving the image of San Bernardino. And we undertook that responsibility willingly to help this community move forward. It did help destroy this image that we could be short of water."

> *"We built this huge fountain that could shoot water maybe 50 feet in the air"*

But while Valley District complied with Mayor Ballard's request to build a significant water feature, it didn't turn out quite like the district had planned.

"Nobody had done a wind study," Milligan said. "These days everything is so environmentally checked that there are no surprises. But nobody had checked that particular location and there is a lot of wind that comes through there. The wind would hit these 50-foot high streams of water that were shooting up into the air and it would blow it all over the place. You couldn't walk on the patio because it was so slippery. It blew it all

Water fountain at San Bernardino Valley Municipal Water District headquarters in the late '60s.

Photo courtesy of San Bernardino Valley Municipal Water District

Current San Bernardino Valley Municipal Water District headquarters at 380 E. Vanderbilt Way in San Bernardino.

Photo courtesy of San Bernardino Valley Municipal Water District

over the windows. We started lowering it and lowering it and finally the 50-foot high stream of water was maintained at a level of about six feet."

The fountain wasn't the only challenge Valley District faced with its new headquarters. It also confronted problems with high groundwater.

"We were a district that was formed when water was at its all time low," Milligan said. "But after moving into our new building the high groundwater in the valley returned, and the high groundwater returned at that location with unbelievable force. So when the water came up at the intersection of E Street and Orange Show Road, the water was actually at ground level in that area. It came up with such force that it actually cracked the foundation on our Operations Building. We had to put a well on the site for dewatering purposes to lower the groundwater level under our building so that it wouldn't do further damage."

Valley District continued to use its office at 1350 S. E Street until July of 2008, when it relocated to its current location at 380 Vanderbilt Way in San Bernardino.

Yucaipa Regional Park and the Yucaipa Lakes. | *Photo courtesy of Nathan Diones for Yucaipa Valley Water District*

CHAPTER 6

VALLEY DISTRICT'S FIRST WATER CRISIS: YUCAIPA

Engineering reports about falling groundwater levels led to the establishment of Valley District as the agency that would be responsible for importing water to supplement local surface and groundwater supplies.

But while several engineering reports warned that groundwater basins in Valley District's service area were in a state of overdraft, the most alarming reports involved the Yucaipa basin.

> *"...water levels have been decreasing constantly since 1930...*

Valley District commissioned a Stanford Research Institute report, which found that the Yucaipa groundwater basin was being overdrafted at a rate of 4,000 acre-feet per year, and that the basin had been in a state of overdraft for decades, according to an April 28, 1960 report in the *Yucaipa News-Mirror.*

"A hydrograph from a well in the north central part of Yucaipa Basin shows that water levels have been decreasing constantly since 1930 with little effect from the wet years of 1937-1944," the *News-Mirror* said.

Valley District officials became further alarmed when they learned that the privately owned water companies that supplied water to Yucaipa residents and businesses were not properly maintaining their water pumping and distribution systems.

Facing a true water crisis within its service area, Valley District's board voted on Aug. 16, 1961 to form two assessment districts, which would raise funds to pay for improvements to Yucaipa's water delivery system.

According to an Aug. 17, 1961 report in the *San Bernardino County Sun*, one improvement district encompassed 3,500 acres served by Yucaipa Water Company Number 1 and Yucaipa Domestic Water Company. The second improvement district covered 5,000 acres served by Western Heights Mutual Water Company.

Valley District subsequently took over the operations of Yucaipa Water Company Number 1 and Yucaipa Domestic Water Company in March 1962, because both systems were "in ill repair," according to Wayne Beers, who describes Yucaipa's early water history in the 1976 book, *Yucaipa Valley California*, edited by Morse G. Archer.

"Many of the main lines were fifty years old, were rusting through and a crew was kept busy repairing leaks," Beers wrote, adding, "Many of the lines were undersize and needed replacement. Storage facilities were minimal and low line pressure was a source of complaint. Fire hydrants were few and far between. Most of income from taxes was used to reduce the indebtedness leaving little for capital improvements."

Valley District did not take over Western Heights Mutual Water Company. However, the two improvement districts laid the foundation for the establishment of today's Yucaipa Valley Water District, which provides both water and sewer service to business and residential customers in a 50-square mile service area that includes Yucaipa, Calimesa and adjacent areas of Riverside and San Bernardino counties.

"After the Yucaipa Valley County Water District took over in November 1971, it authorized a Feasibility Study and Water Master Plan by VTN engineers. Water rates were increased, which with increased income from taxes, provided more working capital. A general improvement plan was adopted. Old, undersized, and leaky lines were replaced. Water storage tanks of up to 2 million gallon capacity were installed at strategic locations throughout the district. Water production capacity was substantially increased through the renovation of old wells, new wells and a filtration plant with a capacity of a million gallons per day in the Oak Glen area."

Valley District also enhanced Yucaipa's water security by developing three recreational lakes at Yucaipa Regional Park, which were intended to serve as an emergency water supply. Valley District originally proposed a 46-acre lake in 1967, but the district later changed the project to three smaller lakes after earthquake faults were discovered nearby.

Yucaipa Regional Park, which opened July 4, 1981, was built with a combination of funds from Valley District as well as grant funding provided through the Davis-Grunsky Act, which encourages development of water projects that can also serve a recreational purpose.

Valley District also implemented a water swap agreement in 1981 called the Santa Ana River-Mill Creek Cooperative Water Project Agreement, which resulted in Yucaipa Valley Water District obtaining water from Mill Creek, a tributary of the Santa Ana River, while it waited for the East Branch Extension of the State Water Project to be constructed from Devil Canyon to Yucaipa.

Valley District compensated other local water agencies for Mill Creek water delivered to Yucaipa by providing them with State Water Project water in exchange.

The East Branch Extension was completed in 2003 as a cooperative project between the state Department of Water Resources, Valley District and the San Gorgonio Pass Water Agency.

View of San Timoteo Canyon and Yucaipa Basin from a point one mile south of Redlands Heights in San Bernardino County, California, 1904.

Photo courtesy of the U.S. Geological Survey

View down San Timoteo Canyon from Smiley Heights near Redlands in San Bernardino County, California, 1904.

Photo courtesy of the U.S. Geological Survey

Yucaipa Valley from Redlands Heights in San Bernardino County, California, 1904.

Photo courtesy of the U.S. Geological Survey

California Aqueduct | *State Water Project. Photo courtesy of the California Department of Water Resources*

CHAPTER 7

THE STATE WATER PROJECT: BACKGROUND

The State Water Project is the largest man-made water conveyance system in the United States, providing water for 25 million Californians and 750,000 acres of irrigated farmland.

The project includes 34 storage facilities, reservoirs and lakes, 701 miles of open canals and pipelines and five hydroelectric power plants, including the hydro-electric plant at Devil Canyon near California State University, San Bernardino.

The five hydroelectric plants along the State Water Project collectively make the state Department of Water Resources the third largest producer of electricity in California after Southern California Edison and San Diego Gas & Electric.

Originally called the Feather River Project, the State Water Project started with the construction of the 770-foot Oroville Dam, the highest dam in the United States and the highest embankment dam in the world.

But the unprecedented engineering achievements that made up the State Water Project didn't stop there.

Indeed, while the project conveyed water more than 600 miles from Lake Oroville southward through the Sacramento-San Joaquin Delta to Southern California, it also had to lift water more than 3,000 feet up and over the Tehachapi mountains before the water could be delivered to water agencies serving the heavily populated areas of Southern California.

Once the water is conveyed over the Tehachapis, the State Water Project splits into two sections with the West Branch heading down the mountains to Pyramid Lake, near Castaic, where it serves Los Angeles County. Meanwhile, the East Branch of the State Water Project conveys water across the high desert and then pumps the water uphill another 540 feet near Pearblossom before it flows downhill into Lake Silverwood in the San Bernardino Mountains. From Lake Silverwood, State Water Project water is then conveyed 1,430-feet down the mountain and into the Devil Canyon Powerplant near California State University, San Bernardino.

Valley District documents from the 1960s indicated that construction of the East Branch of the California Aqueduct from the Tehachapi Mountains to Perris Reservoir would be a major project that must be ready to receive Northern California water by 1972.

STATE WATER PROJECT: EAST & WEST BRANCH

STATE WATER PROJECT FACILITIES AND PUMPING PLANTS IN CALIFORNIA

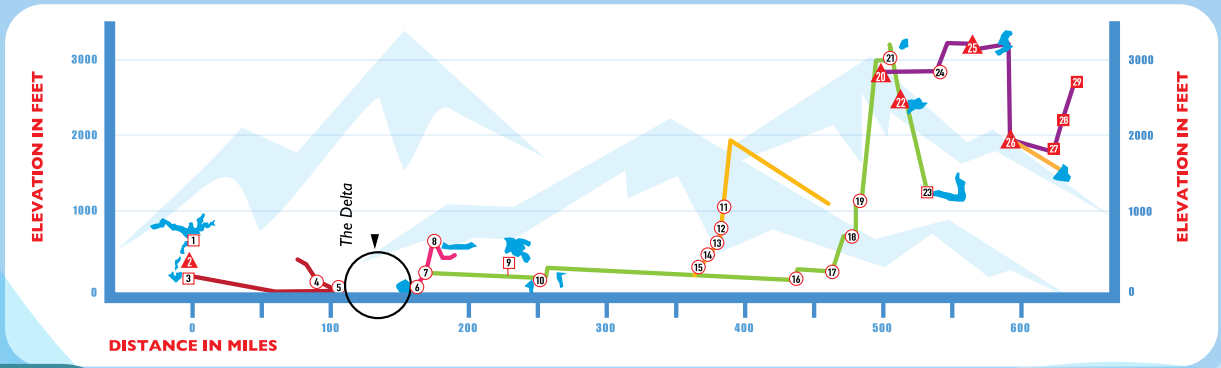
Devil Canyon Power Plant.

Photo courtesy of the California Department of Water Resources

WHERE DOES OUR WATER COME FROM?

The biggest cost in water is the electricity to move it. The water itself is free.

SIERRA SNOWMELT → THE BAY-DELTA → MOVED WITH HELP OF SWP PUMPS → TRAVELS MORE THAN 600 MILES → PROVIDES WATER TO INLAND EMPIRE



SAN BERNARDINO VALLEY WATER SUPPLIES:

GENERALLY 60% LOCAL SUPPLY
UP TO 40% STATE WATER PROJECT DEPENDING ON THE AGENCY

DISTANCE ISN'T THE ONLY CHALLENGE

IN ADDITION TO CONVEYING WATER **600 MILES** FROM LAKE OROVILLE SOUTHWARD TO SOUTHERN CALIFORNIA, THE STATE WATER PROJECT HAS TO PUMP WATER **UP AND OVER 3,000 FOOT MOUNTAIN** AND HIGH DESERT PASSES BEFORE IT IS DELIVERED TO **THE SAN BERNARDINO VALLEY.**

Interior view of Valley District's Foothill Pump Station, which houses eight 300-horsepower pumps. The Foothill Pump Station is part of a network of pumping facilities that lift State Water Project water to Yucaipa.

Photo courtesy of Rick Strobaugh for San Bernardino Valley Municipal Water District

CHAPTER 8

EARLY ENGINEERING CHALLENGES FOR VALLEY DISTRICT

The 1964 election settled once and for all the issue of whether the San Bernardino Valley would import water from the Colorado River, as Metropolitan Water District had proposed, or whether it would get its water from the Feather River Project in Northern California, as Valley District had recommended.

But while voters made it clear they did not want to see Valley District annexed to Metropolitan, their decision also had the effect of burning Valley District's bridges with Metropolitan to the point where Valley District could not call on the Los Angeles agency for advice on how to develop a network of pipelines and pump stations to deliver State Water Project water from Lake Silverwood to Valley District's retail water agency customers from Yucaipa to Rialto.

"We had this huge water contract and it was going to be brought right to our doorstep at Lake Silverwood," Valley District Director Patrick Milligan recalled. "But now the question was, 'How do we get it around the valley?' We didn't have anyone to guide us. We had politicians that had been in charge of the bureaucracy of the district. So we realized we needed to bring in people that could really do a fine engineering job."

Valley District soon hired some of the best engineers it could find. In 1966, the district hired Louis Fletcher as its chief engineer. Widely described as a brilliant thinker and graduate of the California Institute of Technology in Pasadena, Fletcher took a strategic approach and set about the task of designing a highly efficient water system that would serve the entire San Bernardino Valley.

"We severed the leadership of this water district from people who were politically motivated and brought in people with a rich amount of engineering knowledge," Milligan said, adding, "Water decisions need to made by people with a huge amount of engineering knowledge and very few political obligations or debts, and Louis saw that they could pioneer a water deliver system for this valley."

One of Fletcher's first decisions was the placement of Foothill Pipeline, now known as the East Branch Extension, which would convey water from Devil Canyon eastward to Cherry Valley. The Foothill Pipeline was 75 to 78 inches in diameter, far larger than any pipeline that had ever been laid in the valley.

"We were laughed at for building such big pipelines," said former Valley District engineer Bob Reiter, who worked at the district from 1966 to 2006, the last six years as general manager and chief engineer. "People would say, 'You'll never use a big pipeline like that. You guys are crazy.' "

But Fletcher, Reiter and their colleagues were undeterred.

Of course, they didn't come up with designs on their own. They worked closely with state Department of Water Resources, which offers consulting services to water districts across the state.

"We worked with Ernie Weber of DWR, who was one of the premier thinkers in the state," Reiter recalled.

Valley District also hired the best consulting engineering companies.

"After our engineers decided where they wanted the pipeline to go, we went to the biggest and best engineering firms in the United States and we employed Bechtel Corporation to get the Foothill Pipeline started," Milligan said.

"We had the great fortune to get Logan Hardison," Reiter recalled. "He was the resident engineer from Bechtel. He coordinated all of the staff. He was our construction engineer."

Louis Fletcher, who joined Valley District in 1966 as chief engineer and served as the district's general manager from Aug. 1, 1980 to June 30, 2001, also noted that while the district hired consultants and engineering firms to design pipelines and other infrastructure to bring State Water Project water to its customers, Valley District itself was intimately involved in overseeing engineering design work throughout its service area.

"We always felt that we were ultimately accountable for the engineering work that was done within our service area," Fletcher said.

Valley District also studied the groundwater basins across the San Bernardino Valley to an extent that had never been done before.

"When it first was formed, we spent a lot of time studying this area," said Bob Tincher, Valley District's manager of water resources. "We have engineering reports that are our own home grown engineering reports. This district really took the lead in trying to study the local resources."

The district also hired outside experts, including the U.S. Geological Survey, to not only develop thoroughly researched reports on the area's groundwater basins, but to provide recommendations on how best to manage them.

Valley District's early engineering projects were significant.

"The first major project in our local area is scheduled to begin in August 1967," Valley District stated in documents from the 1960s. "The outlet tower and the San Bernardino Tunnel from Cedar Springs Reservoir to the outlet in Devil's Canyon, north of San Bernardino, will be a $24 million project and will take until April 1971 to complete. Some 125 underground miners will be employed on this tunnel and about 25 other workers will participate with them in just this portion of the work. Soon after, Devil Canyon Powerplant will be started and the San Bernardino Siphon project advertised for bids. Then Perris Reservoir construction will begin."

Aerial photo of Lake Perris in Riverside County, which is fed by State Water Project water.

Photo courtesy of California Department of Water Resources

Photo of Lake Silverwood in San Bernardino County, which feeds Devil Canyon Power Plant.

Photo courtesy of the California Department of Water Resources

Devil Canyon Power Plant

Photos courtesy of the California Department of Water Resources

A crane lowers a 6.5-foot diameter pipe for the Central Feeder.

Photo courtesy of the California Department of Water Resources

Aerial view of the Prado Dam, Corona, Calif., 2005
Photo from NASA Earth Observatory

CHAPTER 9

TWO MAJOR LAWSUITS SETTLE SURFACE WATER AND GROUNDWATER PUMPING RIGHTS ACROSS THE INLAND EMPIRE

The biggest Inland Empire water rights battles of the 20th century began on March 1, 1963 when Western Municipal Water District filed a 240-defendant lawsuit on behalf of Riverside County water agencies with a history of pumping in San Bernardino County "to fix the rights of every water user in the San Bernardino Basin," according to a front page headline in the *San Bernardino Sun-Telegram*, which appeared the day after the lawsuit was filed.

> *"As part of the settlement, the annual safe yield of the basin was determined to be 232,100 acre feet"*

Orange County Water District, which had already obtained judgments limiting the San Bernardino Basin water rights of Riverside, Colton, Redlands and San Bernardino, soon followed with another lawsuit of its own, which named every water producer in the Inland Empire east of Prado Dam.

"Orange County Water District filed the '63 lawsuit because they found they really didn't have water use by Riverside, Colton, Redlands and San Bernardino under control because they couldn't control their ability to acquire water from somebody else within the same watershed," said Don Harriger, a former general manager of Western Municipal Water District who worked at the agency from 1975 to 2003.

"The cities would acquire stock in mutual water companies and take delivery of water by exercising their stock rights, thereby legally pumping more water from the basins to meet increasing demand without exceeding the pumping limits imposed on the cities by the court. The Orange County effort to force the use of imported water in the upstream area by limiting pumping of native water by just the four cities failed. So Orange County Water District felt the only way to really control all of the pumping in the upper watershed was to file against every producer."

When the Western and Orange County lawsuits were finally settled on April 17, 1969, procedures were established to determine how water from the San Bernardino Basin Area should be allocated.

The Orange County settlement specified minimum amounts of Santa Ana River water that Inland Empire agencies were required to provide to Orange County Water District via the Santa Ana River.

In response to the settlement, Valley District signed an agreement with San Bernardino that guarantees that the city would continue to discharge treated effluent into the Santa Ana River at levels that would meet the flow requirements of the settlement. Valley District agreed to provide Orange County Water District with a minimum amount of Santa Ana River flow upstream of the Van Buren Bridge at a place called the Riverside Narrows, which includes groundwater that naturally flows into the river in that area.

The settlement gave retail water agencies in Riverside and San Bernardino County autonomy in managing their water use as they saw fit. Valley District in particular wanted to have flexibility in managing water supplies across the San Bernardino Valley.

Meanwhile, water agencies in Riverside and Orange counties wanted a settlement that included firm numbers that established their respective water rights, said Bob Tincher, Valley District's manager of water resources.

"The 1969 settlements gave the opposing parties what they wanted," he said.

As part of the settlement, the annual safe yield of the basin was determined to be 232,100 acre feet and was divided between Valley District and Western on behalf of their respective customers in the San Bernardino and Riverside areas. Valley District received a 72.05 percent allocation of the safe yield while Western received a 27.95 percent allocation.

A trigger point for groundwater recharge was also established for Valley District based on an ongoing comparison of cumulative extractions to Valley District's portion of the safe yield, which was determined to be 167,238 acre feet per year. If cumulative extractions exceed the cumulative safe yield, Valley District is required by the settlement to recharge the basin.

The settlement gave Western's customers a 27.95 percent allocation, which gave them the ability to collectively pump up to 64,862 acre feet of San Bernardino Basin Area groundwater per year.

"All of the retail water agencies were pleased because we took the lead in the judgment and came up with a settlement that didn't put any limits on their individual rights to pump from the basin," said Bob Reiter, a Valley District executive who worked for the agency from 1966 to 2006, the last five years of which he served as general manager and chief engineer.

Harriger noted that the Western judgment establishes the rights to San Bernardino Basin pumping for use within Western's service area and further implements the Orange County settlement.

"The Western and Orange county judgments jointly provide for implementation of the physical solution," he said. "Western said to San Bernardino, 'We will let you manage your resources however you want over there, and we will allow you to pump whatever water you need, so long as you, San Bernardino Valley Municipal Water District, provide, in the form of imported water, an amount of recharge to the basin equal to the amount by which users within your area exceed their pro-rata share of the safe yield of the basin.' "

Prado Dam.

Photo courtesy of the California Department of Water Resources

Prado Dam.

Photo courtesy of the California Department of Water Resources

The Western and Orange County judgments are also significant because they give water agencies in Riverside and San Bernardino counties the right to all of the storm flow that does not reach Prado Reservoir.

"In other words," Harriger said, "to the extent that upper Santa Ana River water districts can capture storm flow before it gets to Prado Reservoir, it's theirs. If it gets to Prado Reservoir, it belongs to Orange County Water District. It's that simple. It's because of these judgments that water districts in Riverside and San Bernardino counties can move forward with storm water capture projects without any interference from Orange County."

Compliance with the terms of the Western and Orange County judgments is monitored on an annual basis by two watermaster committees who report their findings to the court.

The Western-San Bernardino Watermaster Committee is made up of one representative from Valley District and one representative from Western.

The Orange County Judgment is overseen by a five-member Santa Ana River Watermaster that reports annually to the court and to the four representative water agencies. Valley District, Western and Inland Empire Utilities Agency each nominate one member to the Watermaster, while Orange County Water District nominates two. The members are then appointed by the court.

Prado Dam.

Photo courtesy of Brooks O. Hubbard IV, Public Affairs Specialist U.S. Army Corps of Engineers, Los Angeles District

First afterbay at the base of Devil Canyon Power Plant in San Bernardino.

Photo courtesy of the California Department of Water Resources

CHAPTER 10

THE STATE WATER PROJECT ARRIVES IN SAN BERNARDINO

Valley District was involved in so many high-profile political battles and lawsuits during the first two decades of its existence that it was easy to overlook the fact that the district's primary mission was to bring supplemental water into the San Bernardino Valley.

"We have an inside joke that engineering is actually the easiest job we do," said Douglas Headrick, who has served as Valley District's general manager since 2010.

But when the State Water Project water finally arrived at Devil Canyon near California State University, San Bernardino, Valley District's *raison d'être* was once again apparent in headlines across western San Bernardino and Riverside counties.

"It was a great day when that water first arrived," said former Valley District General Manager Bob Reiter, who was a 25-year-old engineer at that time. "It was a phenomenal feeling."

Former General Manager and Chief Engineer Louis Fletcher put Reiter in charge of water district operations at Devil Canyon. "They had a schedule of flow tests," Reiter recalled. "I had to keep my crews opening and closing valves so the state Department of Water Resources could run their tests."

Department of Water Resources Director William R. Gianelli threw the switch that turned on a hydroelectric power plant at Devil Canyon in a Dec. 7, 1972 dedication ceremony, according to a *San Bernardino County Sun* story from the following day.

The production of hydroelectric power at Devil Canyon is significant, Fletcher said, because it helps reduce the cost of water for Valley District's customers.

"The big cost in water is electricity," he said, adding that the water itself is free.

In the case of State Water Project water, Valley District's customers pay for the cost of electricity needed to pump water from Northern California to the San Bernardino Valley. But, according to the state Department of Water Resources, those electricity costs are reduced by 25 percent because of the amount of hydroelectric power produced at Devil Canyon.

"That's a big benefit to Valley District's customers," Fletcher said.

State Water Project water is stored at Silverwood Lake in the San Bernardino Mountains before it flows down the mountain into the San Bernardino Valley. The hydroelectric plant receives the water before it reaches the pipelines where it is diverted for use by Valley District, Metropolitan Water District and San Gabriel Valley Municipal Water District.

When State Water Project water first arrived in the San Bernardino Valley, Valley District had built 4.5 miles of the Foothill Pipeline, which carried the water from Devil Canyon to spreading grounds at Waterman Canyon, where the water was used to recharge the Bunker Hill Basin.

By 1974, Valley District had extended the Fotthill Pipeline nearly 15 miles to the Santa Ana Low, which is downstream of the Seven Oaks Dam.

Bond initiatives were subsequently used to raise funds so that the pipeline could be extended eastward into the San Gorgonio Pass.

Valley District partnered with other water agencies - including San Gorgonio Pass Water Agency, Desert Water Agency in Palm Springs and Coachella Valley Water District in Coachella - to share the cost of the Foothill Pipeline, which would later be renamed the "East Branch Extension" because it extended the reach of the State Water Project eastward to Yucaipa and the San Gorgonio Pass. The desert agencies subsequently withdrew from the partnership, however, opting instead to import their supplemental water from the Colorado River. At the time of this writing, the East Branch Extension had been built as far east as Beaumont.

> *"Their response was not only no, but 'Hell no,' "*

Reiter said the East Branch Extension was unique in a couple of respects. For starters, it was unusually large —ranging from 75 to 78 inches in diameter, which gave Valley District the ability to transport not only water needed for retail customers, but additional water - whenever it became available - for spreading and groundwater recharge efforts.

Fletcher had also designed the East Branch Extension so that it could move water in either direction. "It was such a foreign concept that state operators questioned if water could really run backward," Reiter said. "But it worked."

And while water is not generally moved both ways, it gives agencies flexibility in moving water throughout the San Bernardino Valley. Valley District, in fact, has had to move water backward through the East Branch Extension when the Department of Water Resources needed to make repairs.

Valley District approached Metropolitan Water District about sharing the cost of the Lytle Creek Pipeline, which runs westward from Devil Canyon to San Gabriel, but Metropolitan wanted nothing to do with Valley District because of lingering hurt feelings over the results of the 1964 election.

"Their response was not only no, but 'Hell no,' " Reiter recalled.

Undeterred, Valley District moved ahead with the partnership concept and put together a joint venture agreement with San Gabriel Valley Municipal Water District Water to share the cost of a pipeline that would carry State Water Project water to Rialto and beyond to San Gabriel.

"Louis Fletcher believed in the economies of scale and the idea that everyone should work together," Reiter said.

The actual cost of building the facilities necessary to bring State Water Project water to the San Bernardino Valley is about $1.2 billion.

Aerial photo of Lake Silverwood, which serves as a reservoir for State Water Project water just above Devil Canyon.

Photo courtesy of the California Department of Water Resources

Devil Canyon's first afterbay (below) and second afterbay (above).

Photo courtesy of the California Department of Water Resources

Photos include a ceremonial laying of the pipe for the State Water Project and a flow test at the Santa Ana Low turnout with the first drops of State Water Project water being delivered to the San Bernardino Valley from more than 600 miles away in Northern California.

Photos courtesy of San Bernardino Valley Municipal Water District

Seven Oaks Dam | *Photo courtesy of Rick Strobaugh for San Bernardino Valley Municipal Water District.*

CHAPTER 11

VALLEY DISTRICT CONVINCES THE U.S. ARMY CORPS OF ENGINEERS TO RELOCATE THE MENTONE DAM

While Valley District spent literally decades in litigation with Orange County Water District over water rights, the 1969 settlement yielded Valley District something of significant value: The right to capture and use as much storm water as possible.

This meant that Valley District could apply to the State Water Resources Control Board for the right to obtain additional Santa Ana River water, so long as Orange County Water District and other agencies received the amounts of water to which they were entitled, as outlined in the 1969 settlement agreement.

But while the concept of obtaining additional water rights was obviously appealing, Valley District officials didn't begin to develop those rights until the U.S. Army Corps of Engineers announced plans to construct a dam in Mentone to provide additional flood control protection to residents of Orange County.

ORANGE COUNTY STRIKES AGAIN: THIS TIME THEY WANT FLOOD CONTROL

While Orange County Water District has a history of filing lawsuits to protect its access to Santa Ana River water for groundwater recharge purposes, Orange County also has concerns over flood control.

Some of the heaviest rain ever recorded in Southern California took place in 1938. "A storm hit February 27 and did not subside until five days later," Orange County Water District writes in its online historical account of the storm. "Ten inches fell on the fourth day alone, at times measuring two inches an hour. Sadly, roads and bridges washed out and 19 people perished."

Construction of Prado Dam near Corona became a high priority after the 1938 flood. The dam was completed in 1941.

But Prado Dam alone was not enough to assuage Orange County's concerns about flooding along the Santa Ana River.

And, as Orange County became one of the most heavily populated areas of Southern California, it wasn't long before concerns over 100 year floods on the Santa Ana River prompted officials to call for construction of a flood control dam - this time at the foot of the San Bernardino Mountains in Valley District's service area.

The U.S. Army Corps of Engineers proposed building a 250 foot tall, 3.5-mile long earthen dam in Mentone, which would serve as Orange County's first line of defense in the event of heavy rains and flooding.

It was Valley District General Manager and Chief Engineer Louis Fletcher who led the opposition to the Mentone Dam. He did so not only because it would be an enormous eyesore, but because it was to be built right on top of critical water percolation basins that Valley District and other water agencies used to recharge local groundwater basins.

Using the detention basins for flood control purposes would invite excessive silting, eventually clogging up the percolation basins and reducing their effectiveness. So while a dam in Mentone would provide Orange County with flood control protection, it would also deprive local agencies of their ability to recharge local groundwater supplies.

But Fletcher didn't limit his focus to simply finding another place to build a flood control project for Orange County. He looked at the Santa Ana River from a strategic perspective and saw it as a crucial water resource for Inland Empire agencies. He also believed that the sole focus on flood control was short sighted and that what was really needed was a dam that helped capture drinking water for use by local agencies in addition to providing flood control protection for cities downstream.

Fletcher hired consultants to search for alternative dam sites that would serve both water conservation and flood protection needs. Through their research, they located a 1928 state of California Engineers report, which proposed 14 San Bernardino Mountain locations as potential dam sites, one of which was the site where the Seven Oaks Dam was eventually built.

Convincing the U.S. Army Corps of Engineers to change its plans was no easy task, however. Under Fletcher's leadership, Valley District hired consultants, lobbied members of Congress, and worked closely with other local agencies, including the San Bernardino Valley Water Conservation District, East Valley Water District, the cities of Redlands, San Bernardino and Loma Linda, and the San Bernardino County Board of Supervisors to persuade the U.S. Army Corps of Engineers to relocate the Mentone dam to the mountains so that it could be used for both flood control and water conservation purposes.

Prado Dam.

Photo courtesy of Orange County Water District

Seven Oaks Dam.

Photo courtesy of Western Municipal Water District

Construction of Seven Oaks outlet tunnel (Louis Fletcher, Pat Milligan and Bob Reiter)

Photo courtesy of San Bernardino Valley Municipal Water District


Opposition to Mentone Dam 'balloons'

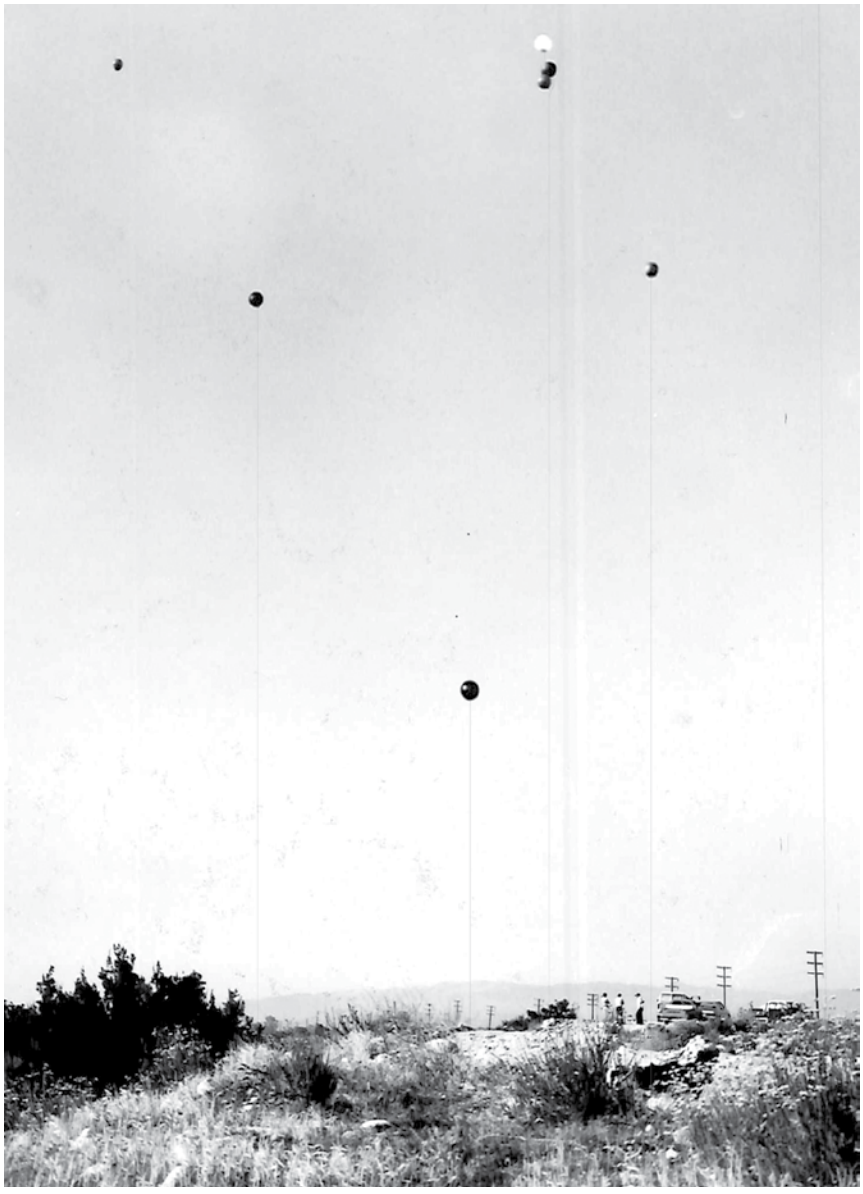
Article in the *Redlands Daily Facts* about the use of balloons to protest the building of a dam in Mentone, California.

Image coutesy of Water Resources Institute, California State University, San Bernardino

Fletcher also threatened legal action, noting that the loss of its spreading grounds could force Valley District to reopen litigation with Orange County Water District. "There would be more of a financial burden on us if we suddenly had to buy water to meet our obligations" to Orange County, Fletcher told the *San Bernardino County Sun* in a Feb. 2, 1982 interview.

The turning point came when former Valley District General Manager and Chief Engineer Bob Reiter came up with the idea of calling an outdoor news conference using a series of weather balloons as a backdrop to highlight the location and height of the proposed Mentone dam.

"We were trying to figure out how to get people's attention about how terrible this 250-foot tall Mentone dam was going to be for the valley," said Reiter, who was an engineer for Valley District at the time of the Mentone Dam controversy. "So we tied red, black and off-white weather balloons together and raised them 250 feet high. So every quarter of a mile along the proposed dam site there were red, white and black weather balloons tied together. This gave people a way to visualize what the dam would look like."



Balloons used to protest the building of a dam in Mentone, California.

Photo courtesy of Water Resources Institute, California State University, San Bernardino

The balloons did the trick. People were outraged when they saw where the dam would actually be.

"The balloons and the resulting publicity were what finally got Jerry Lewis and George Brown, our two congressmen at the time, to get on board with us and push for the relocation of the dam," Reiter said. Congress ordered the Army Corps of Engineers to study alternative dam sites in 1983. The U.S. Army Corps of Engineers finally agreed to relocate the dam in April 1986.

After an intensive, four-year effort, Valley District and its water district partners had convinced the U.S. Army Corps of Engineers to build the Seven Oaks Dam instead.

This was a critical achievement, not only because it provided local agencies with a means to increase their ability to capture runoff from the local mountains, but because it set the stage for Valley District and Western Municipal Water District to use the dam for water storage and conservation purposes.

"Louis saw that if we could move that dam, we could really turn it into something valuable for water," said Valley District Director Patrick Milligan, who served on the district's board from 1964 to 1976 and again from 1984 to 2014. "To get a free dam, this gave us an opportunity that was beyond belief. How could Riverside or San Bernardino have ever raised the money to build a $1 billion dam? I don't think so. It never would have occurred."

The value of the Seven Oaks Dam has become even more apparent in recent years as State Water Project water deliveries have been increasingly affected by droughts and environmental court judgments, which reduce the amount of water that the state Department of Water Resources can deliver to its customers.

Seven Oaks Dam plunge pool.

Photo courtesy of Western Municipal Water District

Seven Oaks Dam.

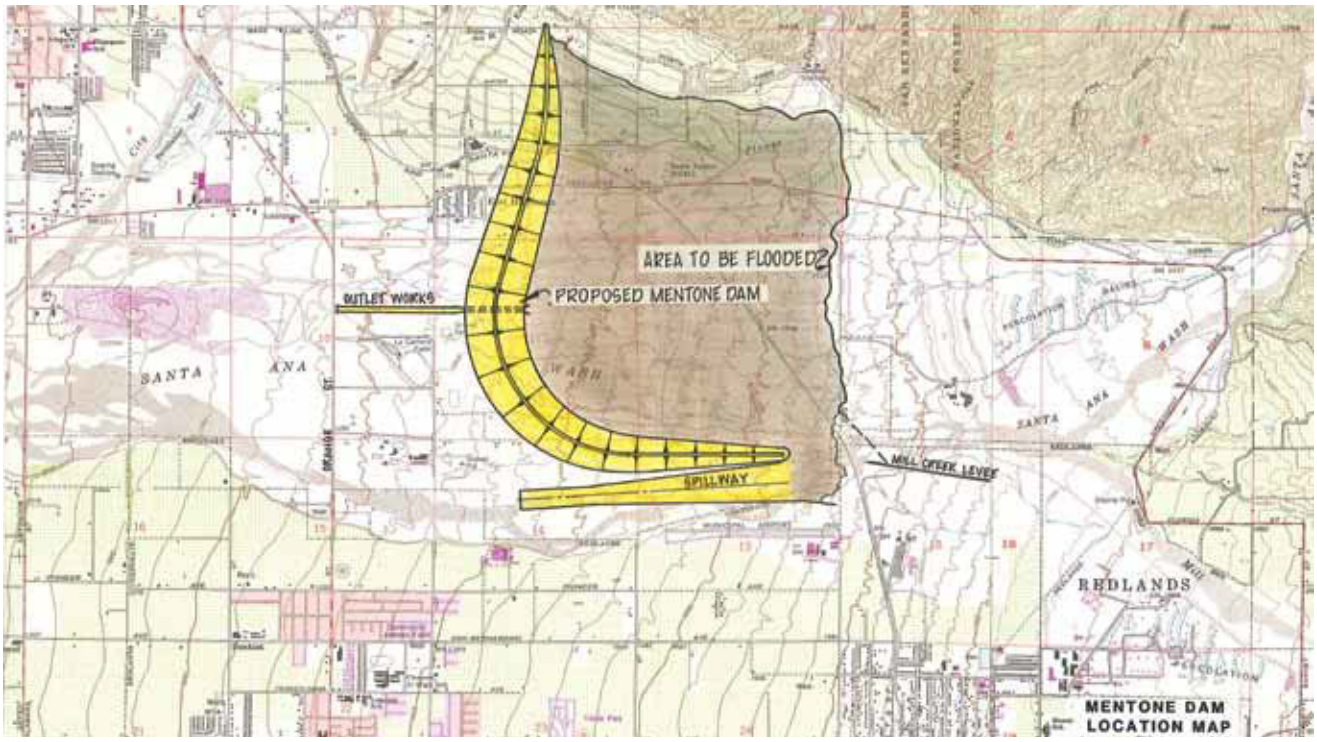
Photo courtesy of Western Municipal Water District

Seven Oaks Dam flow test at 6,000 cubic feet per second.

Photo courtesy of Heather Dyer, San Bernardino Valley Municipal Water District

Map showing the location of the Mentone dam.

Courtesy of San Bernardino Valley Municipal Water District



Artesian wells in the Tippecanoe area of San Bernardino show water naturally shooting up out of the ground without pumps.

Photo courtesy of A.K. Smiley Public Library

CHAPTER 12

TOO MUCH OF A GOOD THING: HIGH GROUNDWATER

From the 1980s to the early 1990s, the biggest problem facing Valley District wasn't a shortage of water, but too much of it.

"You'd dig a hole four or five feet deep and you'd hit groundwater," said Randy Van Gelder, a former Valley District general manager who served as the agency's director of finance when the high groundwater problem was at its peak.

High groundwater was particularly problematic in a 20,000 acre area of San Bernardino and Redlands over the Bunker Hill Basin, which extended from Interstate 10 northward to 10th Street and from the 215 Freeway eastward to Alabama Street.

"There was a theatre down on Orange Show Road and E Street that had water seeping into it," Van Gelder recalled. "They had to rope off the first few rows in the lower part of the theatre because there was water running through the building. And there was also a regional post office on E Street. They had a lot of trouble. They had two levels of basements and there was water running into it, so you had all of their electrical equipment sitting in water."

Even the basement of San Bernardino City Hall, which housed the city's emergency command center, was below the high water line. And when water seeped into the storage area of the California Court of Appeals downtown, staff members had to relocate the files and, in some cases, hand dry documents that had gotten wet to keep them from becoming mildewed. The Court of Appeals was subsequently relocated to Riverside in part because of the flooding problems, said former Valley District General Manager and Chief Engineer Bob Reiter, recalling conversations he had with court staff.

High groundwater wasn't only a nuisance, however. It also increased the likelihood that the ground itself would liquefy in the event of a major earthquake, transforming the soil into an unstable fluid like quicksand.

Valley District's management was acutely aware of the risks, having read several studies published by UC Berkeley Professor Harry Bolton Seed, a civil engineer whose pioneering studies on soil behavior and ground responses during earthquakes formed the basis for many of today's earthquake resistant designs and regulations.

"We brought him down here," Van Gelder said, "and he told us we could reduce the risk of liquefaction by lowering the groundwater table by 30 feet." Valley District set out to do just that by launching a coordinated effort with the cities of San Bernardino, Redlands and Riverside and other water agencies to pump additional water out of the basin. "Most of it was used by the city of Riverside," Van Gelder said. "But there was also a fair amount of water that was delivered to Orange County Water District."

High groundwater in San Bernardino in the mid-1980s.

Photo courtesy of Water Resources Institute, California State University, San Bernardino

High groundwater in San Bernardino in the mid-1980s.

Photo courtesy of Water Resources Institute, California State University, San Bernardino

The strategy worked. By lowering the groundwater levels, the problems with water seepage disappeared and the risks of liquefaction in the event of an earthquake were greatly reduced.

To this day, Valley District remains the lead agency working with other agencies through a Basin Technical Advisory Committee to manage both the surface water and groundwater resources of the upper Santa Ana River basin.

But while Valley District has developed an effective strategy and procedures for managing excessive water levels in the basin, it now faces challenges of a much different sort as the Inland Empire's population has boomed and the water demands of retail water agencies have increased.

"We really have a balancing act," Van Gelder said. "Our challenge has been to try to figure out how to reduce the liquefaction risk without causing undo harm to others by reducing their water supply."

High groundwater in San Bernardino flooded the basement of Valley District's headquarters at 1350 S. E Street and cracked the floor.

Photo courtesy of Water Resources Institute, California State University, San Bernardino

Former San Bernardino Valley Municipal Water District General Manager Randy Van Gelder

Photo courtesy of San Bernardino Valley Municipal Water District

Former Valley District General Manager Randy Van Gelder stands beside an artesian well.

Photo courtesy of A.K. Smiley Public Library

Springs sprung

S.B. has lots of underground water — maybe too much

It's been a wet year

SAN BERNARDINO This year — just a little over 3½ months old — already ranks as the seventh wettest of this century according to statistics from the San Bernardino Valley Municipal Water District (SBVMWD)

Working on the basis of calendar years rather than the usual weather year that runs from July 1 to June 30 the SBVMWD has determined that 26 83 inches of rain has fallen from January to the present

That is 303 percent of normal said Larry Rowe SBVMWD water resources engineer

But the rainfall amounts — and the year's ranking — could easily move up the scale

The Orange Show is coming next month and you've got to figure that it's good for another inch of rain Rowe said

Rain is an annual tradition for the Orange Show—no matter what month of the year it is held If Rowe is right that would put the yearly rainfall at 330 percent of normal

On top of that long range weather forecasters have said more rain might fall from June thunderstorms and tropical storms in September It would take only about nine more inches for 1980 to become the wettest year of the century

Using a computer Rowe compared rainfall amounts by calendar year from 1900 to 1980 The wettest year was 1941 with 35 45 inches Next was 1943 33 33 1969 31 95 1978 30 68 1938 29 57 and 1936 27 36

The driest year was 1947 when only 5 95 inches fell

From the San Bernardino Sun Telegram April 20, 1980

USGS scientists conduct hydrogeomorphology measurements while assessing the vegetative community in the Rialto Channel, a tributary of the Santa Ana River. | *Photo coutesy of Scott Wright, USGS*

CHAPTER 13

VALLEY DISTRICT FUNDS U.S. GEOLOGICAL SURVEY RESEARCH TO PIONEER NEW METHODS FOR TRACKING GROUNDWATER

High groundwater has not been a problem for Valley District in recent years because of increased groundwater pumping coupled with multiple years of drought, which have reduced the amount of storm water that would otherwise seep into the Bunker Hill Basin.

But because Valley District bears most of the responsibility for maintaining the integrity of the Bunker Hill Basin as a result of the 1969 Western and Orange County judgments, the district has worked with the U.S. Geological Survey to develop sophisticated groundwater monitoring and modeling tools that not only track the groundwater levels, but the movement of both local runoff and imported water through groundwater basins.

In fact, the USGS groundwater modeling research that Valley District has funded during the past several decades is used not only by other agencies in Riverside and San Bernardino counties, but by water agencies across the U.S. and around the world, according to Wes Danskin, a Stanford-educated geologist who has worked with Valley District on multiple research projects for the USGS since the 1970s. These studies have involved:

The development a three-dimensional groundwater monitoring capability: Valley District paid for the USGS to develop a three-dimensional groundwater monitoring capability decades before such techniques would be adopted by other water agencies. The USGS installed four multiple-depth monitoring wells across the San Bernardino Valley in 1975, which provided a visual representation of subterranean water and helped answer questions about the movement of groundwater as well as questions about whether groundwater quality changes with depth. By the 1990s, Valley District had paid for USGS to expand this research effort to include more than 50 well sites throughout the San Bernardino Valley to more fully describe the three-dimensional character of the aquifer and groundwater flow. By 2000, Valley District's three-dimensional monitoring wells comprised about 10 percent of all such wells monitored by the USGS across the United States.

The development of real-time groundwater level monitoring via satellite data transmission: No such automated techniques had been developed by the USGS until Valley District paid for the development of this research. USGS has since developed software that Valley District uses to plot its wells on a single graph, which gives it the ability to determine the direction of vertical groundwater movement as well as the response of the aquifer to earthquakes.

Valley District has funded pioneering studies in groundwater tracking and modeling research by the U.S. Geological Survey, which Wes Danskin has shared in workshops with water agencies around the world, including parched regions such as Jordan and Ethiopia.

Photo Courtesy of Wes Danskin

The tracking of groundwater flow with environmental tracers: "We can tell the difference between water imported from Northern California and local runoff," Danskin said. "Each has slightly different amounts of hydrogen and oxygen isotopes in the water molecules. So we can track where imported water is recharged and flows through the aquifer. This allows for more accurate and reliable use of expensive imported water to recharge the basin."

The development of computer models that simulate the groundwater system of the Bunker Hill Basin: The computer model, which takes into account recharge, discharge and the flow of groundwater, can be used to test different future conditions and the results of different management strategies. "In one notable case," Danskin said, "the computer model of the Bunker Hill Basin was used to test how effective the U.S. Environmental Protection Agency barrier wells would be at intercepting the Newmark contamination plume. Model results suggested that the barrier wells would not be 100 percent effective, an unpopular conclusion at the time. But now the conclusion is widely accepted and the model is being used to develop mitigation and monitoring strategies."

The development of satellite radar techniques to measure the levels of subsidence across groundwater basins: Valley District's support for Interferometric Synthetic Aperture (InSAR) Radar research attracted worldwide attention. "The basic idea of InSAR," Danskin said, "is that a radar signal is sent from a satellite to Earth, measuring the distance. Then this process is compared

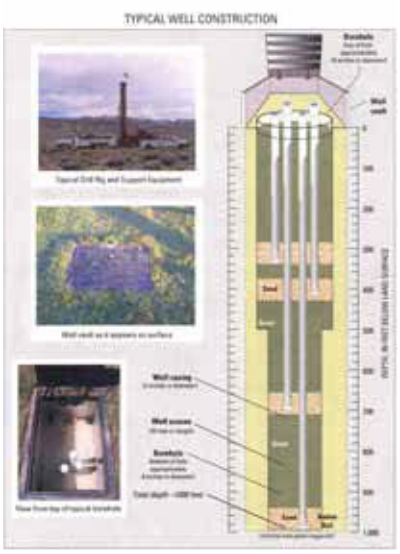


Illustration of a multi-depth monitoring well that enables Valley District to chart water levels at various depths in aquifers.

Photos courtesy of Wes Danskin

at a future time and the distance is compared to show whether the land surface of the Earth has gotten closer or moved further away. In our study, we found that the land surface rose about 6 centimeters or 3 inches in 1993 during a period of abundant runoff. Water from streams sank into the ground and pushed the sand grains slightly apart, which in turn caused the land surface to rise slightly. The end result of our analysis was that we could use InSAR to infer where recharge was occurring in a semi-arid or desert environment. We concluded that this newly documented technique, tested in San Bernardino, might have significant applications to the desert regions of the Middle East and Africa. The topic got picked up by the national news and we were interviewed by Charles Osgood as part of his nationally syndicated radio show."

> *"If successful, we could deploy the equipment and monitor helium in real time, like the groundwater levels, ideally giving us an early warning system to predict major earthquakes."*

Danskin said key research findings from San Bernardino form the basis of an optimal water management course that the USGS uses to teach its own employees. The same research findings and groundwater management techniques that guide water agencies in Riverside and San Bernardino counties are also being used by water managers in Africa and the Middle East, including Jordan, Ethiopia, Kenya and Egypt, he said.

"Many times over the past 20 years, Valley District has hosted international scientists and water managers who visited the USGS office in San Diego, but wanted to talk with 'real' water managers," Danskin said. "The executives and staff of Valley District have been wonderfully supportive of these international outreach efforts, both with field trips and with roundtable discussions focusing on how they have effectively managed their groundwater supplies with a focus on science and innovative techniques."

Because the USGS is considered an impartial third party, the gold standard for scientific research, the federal agency also monitors nearly all of the surface water that enters or leaves the San Bernardino area. "This is required by the Western-San

Photos of a U.S. Geological Survey researcher performing well monitoring in the San Bernardino Valley.

Photos courtesy of Wes Danskin

Bernardino Watermaster as part of the 1969 adjudication of the basin," Danskin said, adding that the USGS also monitors groundwater levels throughout the basin. "This is not required (as part of the adjudication), but it has become a routine way to track the condition of the basin, essentially how full the basin is, and to let us know where and how much water should be recharged to avoid high groundwater conditions."

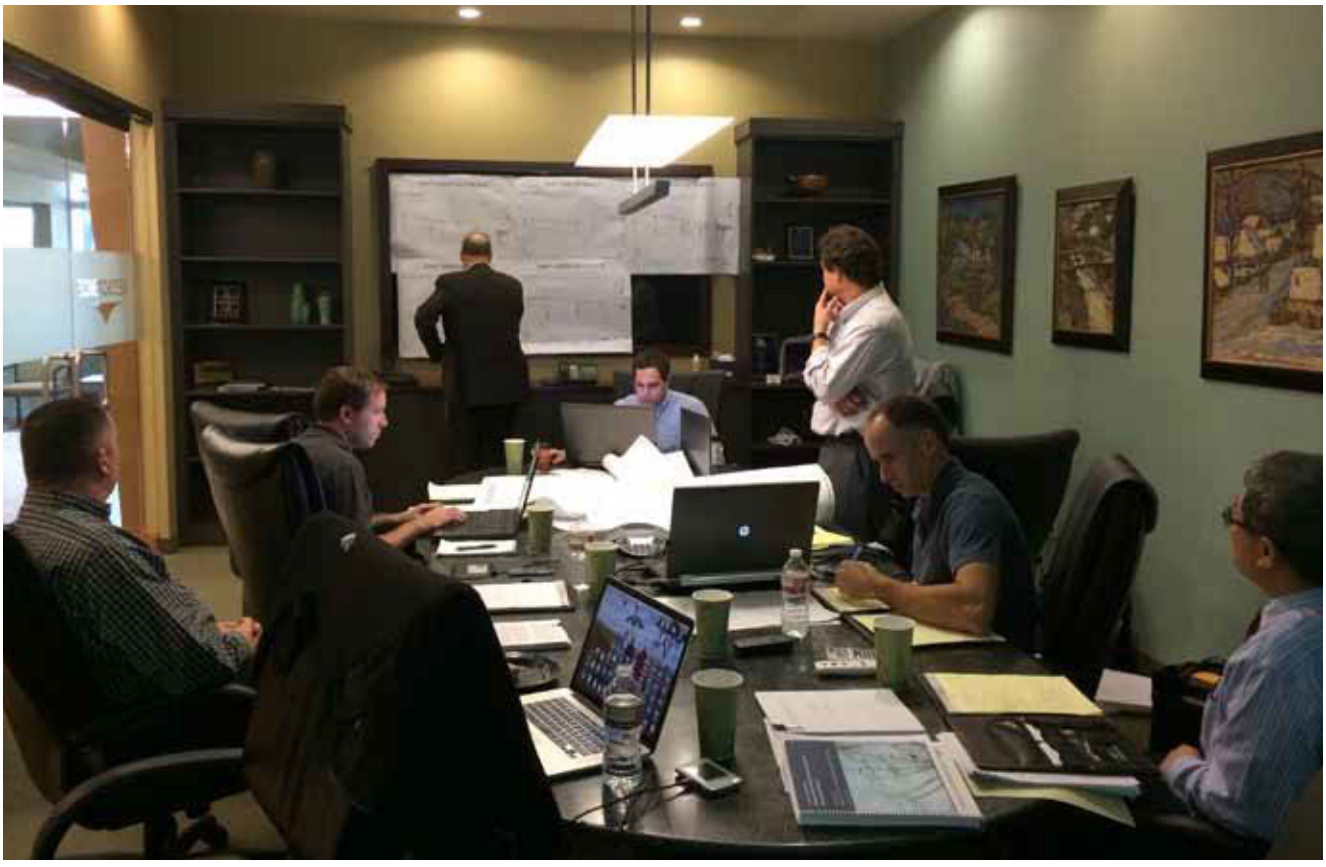
Valley District uses USGS monitoring information to determine recharge rates and uses it to manage groundwater basins with other agencies across western San Bernardino and Riverside counties.

A more recent USGS research project, partly funded and strongly supported by Valley District, involves the use of helium to anticipate earthquakes. "The San Bernardino Basin, because of the major faults and abundant wells, is an ideal laboratory to test our idea, which is that we believe the rate of helium being released by the mantle of the earth may change if a fault is becoming more active, possibly releasing its stored energy," Danskin said.

"The technique involves sampling small amounts of water from a deep production well, saving the water samples in a curled copper tube, and then testing the samples, especially if an earthquake occurs. If successful, we could deploy the equipment and monitor helium in real time, like the groundwater levels, ideally giving us an early warning system to predict major earthquakes."

USGS briefing Valley District officials on their findings.

Photos courtesy of Wes Danskin



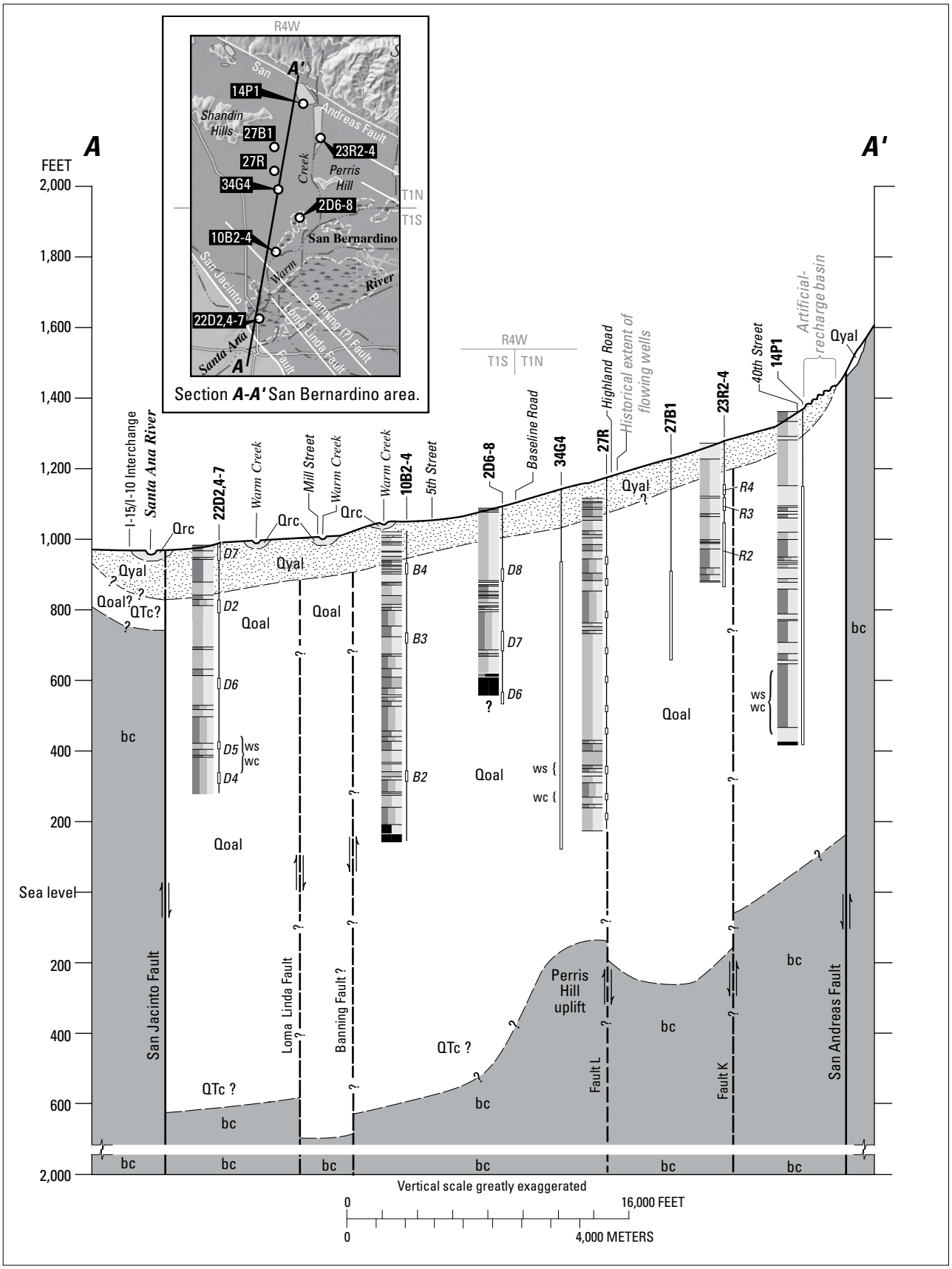


Chart from USGS report highlights a cross section of the San Bernardino Basin Area.

Lake Silverwood | *Photo courtesy of the California Department of Water Resources*

CHAPTER 14

A BREAKTHROUGH IN RELATIONS WITH METROPOLITAN WATER DISTRICT

The stage was set for the re-establishment of positive working relationships between Valley District and Metropolitan Water District in the spring of 1999, when the latter hired Ronald Gastelum as its new general manager.

Although he was a former MWD attorney and member of the district's board of directors, Gastelum came to the job with a new vision and a new way of doing business.

"When I was hired by the board, I think the board members were looking for some new approaches," Gastelum recalled. "There were internal disputes within the organization. There was a feeling that the workforce may not have been as efficient or focused as they would have liked. And I think they were generally in favor of a more businesslike approach to doing business, while always recognizing that they were a public agency and would always have to comport themselves as a public agency."

Gastelum wasted no time in setting a new tone for MWD, which serves a six-county area of Southern California, and he laid out his vision of how California's largest water wholesaler should operate in a speech in San Francisco that was picked up by the *Los Angeles Times*.

When Valley District Director Patrick Milligan read the *Los Angeles Times* report, he was stunned by what Gastelum said. "He said he believed that we should have a free water market in California because he said there are some of us that have too much water at a given point in time and some of us that don't have enough water at a given point in time," Milligan recalled. Water is owned by the people of this state and we ought to be getting together as good human beings and try to help each other out. It was kind of a generous speech that indicated clear thinking—that taxpayers in this state should love other taxpayers and try and help them."

The idea of water agencies buying and selling water between themselves was critically important to Valley District, which, because of the occasional high groundwater levels in the Bunker Hill Basin, had more water than it needed at periods, which it wanted to sell to other agencies.

Valley District, in fact, had previously tried to sell its excess water to MWD, but was rebuffed because of MWD's long-standing hostility over the outcome of the 1964 election.

"I started off with the thought that we had some surplus water, nuisance water, that we were just pumping away and wasting by pumping it into the Santa Ana River and I started off by trying to sell that water to MWD," Milligan said. "And so I asked formally. I made a formal request that they send out a member of their board. And they sent out a man from a committee that sets their rate structure. He came out to the meeting, but from the minute I started talking with him his arms were locked in this position where I noticed this unbelievably negative manner, where you could almost see him gritting his teeth. When I got to the end of making a presentation to help them out by selling water he said, 'I want you to know we have enough water for the next hundred years and we're not going to have you interfering with our rate structure by letting the word go out that you'll sell us water.' He said, 'We want nothing to do with your district.' And that was the end of that and I said, 'Wow!' There was no peace pipe available."

Valley District General Manager Louis Fletcher (left) with Bill Leonard (center) and Valley District Director Patrick Milligan.

When Valley District tried to sell its excess water to other water agencies within MWD's service area, MWD filed lawsuits against Valley District alleging, among other things, price interference.

> *"'He said, 'We want nothing to do with your district.' And that was the end of that and I said, 'Wow!' There was no peace pipe available."*

By the time Gastelum took charge at MWD, the regional water agency had filed a dozen lawsuits against Valley District.

"So I called Gastelum up," Milligan said, "and I told him, 'I was impressed by your speech. And I'm of the opinion that speech was heartfelt.' I said I feel the same way. I said we have a lot of surplus water from time to time that we would like to be able to sell. I told him that I tried to sell our surplus water to the former general manager of MWD, John R. 'Woody' Wodraska, and he sent me an insulting letter saying that if we would deliver the water to them they would pay us $25 per acre foot, which of course would be less than the cost of transportation. And I said it was just an insult and he knew it was an insult. And so I told Gastelum that I would like to renew that offer with you based on what I read you say. And he said, 'Well, it probably isn't politically possible for us to sit down with you at this particular point in time, sit down board to board.' But he said, 'I would like to meet with you and discuss this in detail.' "

Valley District General Manager Louis Fletcher attending a water industry meeting.

SECRET MEETING MARKS A TURNING POINT

Gastelum and Milligan both agreed to meet secretly at a restaurant in Claremont.

"He needed it to be secret and I needed it to be secret," Milligan said. "And the reason we needed it to be secret is there were all these political hotshots in both communities that would have seen something sinister or tried to submarine any developing relationship and we needed to see if we could make a decent truce and gain some common ground."

During their meeting, Milligan told Gastelum that the hostility MWD had toward Valley District was hurting both agencies, particularly when it came to the concept of selling surplus water. But during their two-to three-hour meeting, Gastelum told Milligan that he was encouraged by what Valley District was proposing.

"He said, 'I see nothing about the things that you are proposing that would not be an absolute win for us as a water district, that we could get an abundance of water at times when we really need it, and that you are proposing that we pay a fair value, which I think is right,' " Milligan said.

Gastelum also responded favorably to Milligan's offer to sell MWD State Water Project annual entitlement water, which it wasn't using in some calendar years, and was going to the turn back pool. MWD was already trying to buy water from the turn back pool.

"Ron then told me, 'There isn't one thing that you are proposing that is threatening. It's all to our advantage. We are buying at a reduced price. Why should we care that you make millions while you are waiting for your population to grow to the point where you need all your water? If you have extra, we should be buying it from you.' And then he said, 'What about all these lawsuits where you've tried to go in over the years and tried to sell water to retailers in our district?' I said we're going to drop every one of those lawsuits and we'll sign an agreement that we will never ever again attempt to deal with your customers because I agree with you that it either is against the law or, if not, should be, and that we will make all sales, if any, directly to you. That will mean that we will not undercut, under any circumstances, your price structure. But we want the same agreement, that you won't attempt to sell to our retailers."

Gastelum told Milligan he would need about six months to lay the political groundwork within MWD to make the changes take effect.

"He told me he had to go back and start talking to individual board members and do that until he felt he had a consensus, and he did that. It only took three months. And he said, 'The chairman of my board, Phil Pace, is willing to stake his political career on making an agreement with you, that there are some of the old guard people that will probably oppose him, but we believe the new guard people are probably sufficient so that they can just discard historical fights and start off a new relationship."

Gastelum, for his part, said he trusted Milligan and felt he could deliver. "I think that both Pat and I knew that we could have a discussion, and that politics would certainly be relevant, but I felt that he would manage his internal politics and I would manage my internal politics, and that if we were both armed with a solution that helped both parties, we could (repair the relationship). It was also good that Pat was very direct.

> *"I had a feeling that if I could get to talk to people, that I could dissolve this hatred..."*

He didn't play games. He just kind of laid it out there. And I took that as a sign of confidence that he had the ability to do what he said."

Gastelum also said both he and Milligan knew why the ongoing litigation needed to be resolved. "I think one thing going into the secret meeting that impressed me about Pat is that he is a lawyer-litigator, and a very successful one. I was a former general counsel lawyer. I didn't litigate myself. But I had managed a lot of litigation. So it was very easy for us to come together to talk about litigation. We understood the issues. And we understood, coming from where we came, the value of trying to find a solution. After you've been battling for years and years and years, it's really only the lawyers who are succeeding. It's not the parties that are usually best served. The parties are ultimately served by a compromise that makes sense for both."

Within a matter of months, the thaw was underway, the lawsuits were settled and a new chapter in Valley District's relationship with MWD had begun.

Milligan said settling the lawsuits saved customers of both agencies millions of dollars. Looking back at his board service from 1964 to 1976 and again from 1984 to 2014, Milligan said re-establishing a positive relationship between Valley District and MWD was his biggest accomplishment for the district.

"I had a feeling that if I could get to talk to people, that I could dissolve this hatred and that I could get rid of 12 lawsuits that we had, and that I could cut a deal with Metropolitan to buy excess water that we had, when we had high groundwater here, nuisance water, that they would pay us money for what we were throwing away by pumping it here in the valley. And I felt that I could work out a deal where we could cooperate on all of these pipelines that would need to be built and save us both a huge amount of money. I could make an agreement with them where they would cover our back when we had a water disaster and we could cover their back so that we could start acting like we were really decent people again. And I did it."

Gastelum said the biggest gain was the new spirit of cooperation, which paved the way to better regional water management.

San Bernardino Valley Municipal Water District General Manager Louis Fletcher.

Photo courtesy of San Bernardino Valley Municipal Water District

Valley District President Patrick Milligan (center) signs accord with MWD and MWD General Manager Ron Gastelum and Valley District General Manager Louis Fletcher.

MWD Chairman of the Board Phillip Pace shakes hands with Valley District President Patrick Milligan as MWD General Manager Ron Gastelum and Valley District General Manager Louis Fletcher look on.

"We already had infrastructure in the same general areas and there was an opportunity for us to share infrastructure in ways that provided mutual aid and mutual benefit, and that ended up being a very positive part of our relationship," Gastelum said. As a result of this partnership, a significant amount of additional water supplies — more than 150,000 acre feet (enough to meet the water needs of 300,000 average households for one year) — was made available and provided to meet the critical needs of residences and businesses in California."

Both Valley District and Metropolitan have since helped each other with major water management and delivery challenges.

For example, when MWD faced lawsuits that delayed the construction of a tunnel through the mountains that it needed to deliver State Water Project water to its newly constructed Diamond Valley Reservoir, near Hemet, Valley District offered MWD the use of its pipelines, bypassing the tunnel project.

"For several years, the only water delivered to Diamond Valley Lake was being delivered through our pipelines," Headrick said.

Valley District also faced a situation in 2000 when it had an opportunity to purchase additional State Water Project water, which it needed to store locally. "Metropolitan let us store 4,000 acre feet of that water in Diamond Valley Lake, which they said they would make available to us when we needed it in the future," Headrick said.

He said the spirit of cooperation between Valley District and Metropolitan continues to this day, and enables the agencies to cooperate with each other in ways that would have been unthinkable decades ago. "And the beneficiaries of this cooperative relationship are our customers," he said.

Signing ceremony in which Metropolitan Water District and San Bernardino Valley Municipal Water District agreed to work cooperatively with one another. Pictured from left to right starting from the second man seated at the table is MWD Director John Foley; MWD General Manager Ron Gastelum; MWD Chairman of the Board Phillip Pace; Valley District President Patrick Milligan; MWD Director Bill Wright and Valley District Director George Aguilar.

Standing from left to right in the second row are MWD Director John Mylne (third man standing from left); MWD Director James Blake; Valley District General Manager Louis Fletcher; Valley District Director Ed Killgore; MWD Director Regina Murphy; Valley District Director Mark Bulot; and MWD Director Joseph Parker. Standing from left to right in the third row are MWD Director Edward Little (no tie); MWD Director Timothy Brick; MWD Director Henry Barbosa; MWD Director John Morris (with glasses); Valley District Director Steve Copelan; MWD Director Tom Coughran; MWD Director Glen Peterson (no tie); and MWD Director Langdon Owen.

Levee repair work 2006-2007 | *Photo courtesy of the California Department of Water Resources*

CHAPTER 15

THE DELTA SMELT AND CENTURY OLD LEVEES

HOW AN ENDANGERED FISH AND AN ANTIQUATED LEVY SYSTEM ARE REDUCING THE AMOUNT OF WATER AVAILABLE FOR DELIVERY TO SAN BERNARDINO COUNTY WHILE UNDERMINING THE RELIABILITY OF THE STATE WATER PROJECT FOR MILLIONS OF CALIFORNIANS

Ever since Valley District signed a contract with the California Department of Water Resources in 1960 to receive State Water Project water, the district has depended on the state to provide the water necessary to address the San Bernardino Valley's supplemental water needs.

The need for imported water has increased along with San Bernardino's population. Today, Valley District depends on State Water Project imports not only to recharge the Bunker Hill and Lytle Creek Basins, but for direct surface water deliveries to its retail water agency customers from Yucaipa to Rialto.

More than 700,000 San Bernardino Valley residents and businesses now depend on State Water Project water for roughly 25 percent of their water supply.

So does much of the rest of California. More than 25 million people, or two thirds of California's population, now depend to varying degrees on water that flows through the Delta. So do farmers in the San Joaquin Valley.

Unfortunately, the State Water Project is proving to be an increasingly volatile and unreliable resource as a result of recent court judgments that have prevented water agencies from diverting as much Northern California water as they had in the past.

These court ordered cutbacks in Delta water deliveries significantly compound the automatic reductions in water deliveries that take place whenever California experiences periods of drought.

As a result, Valley District is receiving far less water than its original entitlement from the State Water Project. While Valley District is entitled to receive up to 102,600 acre feet of water each year from the State Water Project, the district typically receives only a fraction of that amount.

Part of the cutbacks reflect the effects of recent droughts. But they also reflect court judgments to protect several endangered species.

In 2008, a federal judge ordered a 30 percent cutback in Delta water deliveries to protect the Delta smelt, one of several species of endangered fish.

Valley District challenged the cutbacks in court through its affiliation with the State Water Contractors Association.

The Sacramento-based association argued that the cutbacks were ordered without taking into account other factors scientists have identified as possible

reasons for the decline in fish populations. These include toxic runoff from pesticides; discharges from wastewater treatment plants; invasive plants and aquatic animals; as well as non-native predator fish, which have altered the natural food chain.

U.S. District Court Judge Oliver Wanger sided with water agencies in December 2010 when he ruled that the federal agency had used "sloppy science" in making its recommendations and had narrowly focused on its own obligations to protect endangered species without considering the impacts of its recommendations on California's water supply—and its residents.

Wanger ordered the Service to go back to the drawing board and reassess many of its recommendations, adding, "the public cannot afford sloppy science and unidirectional prescriptions that ignore California's water needs."

Unfortunately, the Service did the same thing again in late 2009 when it doubled the critical habitat area for the Santa Ana Sucker in Riverside and San Bernardino counties without consulting with or seeking input from state and local agencies. The expansion of critical habitat for the sucker had the effect of threatening local water supplies that Valley District hoped to develop to reduce its dependence on State Water Project deliveries, a topic that will be discussed in subsequent chapters.

But the ever-present threat of environmental judgments is just one risk that is undermining the reliability of Delta water supplies.

The heart of the State Water Project—the giant Sacramento-San Joaquin Delta —has become increasingly vulnerable to earthquakes and salt water intrusions.

Originally an estuary where Northern California's rivers spilled into the San Francisco Bay, the Delta was taken over by farmers in the 1870s who subsequently built 1,100 miles of levees that held back the Delta's waters, enabling them to convert large sections of the Delta into islands of farmland.

Levee 1986 flood

Photo courtesy of the California Department of Water Resources

1986 flood

Photo courtesy of the California Department of Water Resources

Levee Repairs

Photo courtesy of the California Department of Water Resources

Levee Repairs

Photo courtesy of the California Department of Water Resources

1986 flood

Photo courtesy of the California Department of Water Resources

Nearly a century later, the Department of Water Resources and the federal Central Valley Project used the Delta as a transit point through which the waters of Northern California's rivers could be conveyed into aqueducts that led to the Central Valley and to Southern California. Today, the Delta remains the key transit point—and the single biggest area of vulnerability in the entire State Water Project—because its levees are at risk of collapse.

If the levees fail, salt water could come rushing into the Delta and contaminate the water supplies upon which millions of Californians depend.

A statewide ballot initiative was proposed in 1982 to fund a conveyance facility around the Delta, which would enable water agencies to direct water around the Delta, avoiding the levees. Dubbed the Peripheral Canal, it quickly became a political football that pitted Northern California against Southern California, the latter of which failed to overcome opposition from the North.

Recognizing that something needs to be done, a coalition of state and federal agencies have formed the Bay Delta Conservation Plan, which calls for construction of two tunnels to convey fresh water beneath the Delta to pumping stations that would distribute the water to Central and Southern California through the Central Valley Project and the State Water Project aqueducts.

The project, which is expected to be underway by 2017 and completed by 2026, would benefit Inland Empire water agencies by making the State Water Project water less vulnerable to earthquakes and salt water intrusions into the Delta. The project will also improve water quality while keeping drinking water operations outside the range of the Delta smelt.

Levee Repairs

Photo courtesy of the California Department of Water Resources

Seven Oaks Dam | *Photo courtesy of Western Municipal Water District*

CHAPTER 16

VALLEY DISTRICT AND WESTERN MUNICIPAL WATER DISTRICT WIN NEW SANTA ANA RIVER WATER RIGHTS

Valley District and Western Municipal Water District received word from the State Department of Water Resources in October of 2009 that the state had approved their request for diversion of Santa Ana River water.

The permits, subsequently issued in July 2010, authorized the two agencies to capture up to 198,000 acre feet of Santa Ana River storm flows each year that would otherwise have flowed to the Pacific Ocean. Of course, that's assuming that water is available in the river. And rarely does it rain or snow enough to produce that kind of volume.

However, the fact that the two agencies had obtained water rights was significant because it gave them the legal right to capture flood waters so that the water would not be wasted. New water rights also put Valley District in a position to reduce dependency on imported water supplies from the Sacramento-San Joaquin Delta, which were becoming more problematic and less reliable.

> *"It's taken us decades to obtain these new water rights," Milligan said. "But given California's increasingly problematic water situation, I think everyone in the Inland Empire would agree that this has been time well spent."*

A 1969 court settlement involving agencies throughout the Inland Empire also requires Valley District and Western to maintain the integrity of the entire San Bernardino groundwater basin.

"It's taken us decades to obtain these new water rights," said longtime Valley District Director, Patrick Milligan. "But given California's increasingly problematic water situation, I think everyone in the Inland Empire would agree that this has been time well spent."

Those new water rights came with a price, however. In an effort to mitigate potential impacts on threatened or endangered species, the California Department of Fish and Wildlife required Valley District and Western to set up a Restoration/Recovery Trust Fund to pay for native fish species habitat restoration and recovery efforts along the Santa Ana River. As of 2014, the two water agencies had already contributed $400,000 to the habitat restoration fund since it was formed in 2007 and had pledged to continue making annual payments of $50,000 through 2016.

This photo illustrates a prime Santa Ana sucker spawning area on the confluence of the Santa Ana River and the Rialto Channel near the Rapid Infiltration Extraction (RIX) facility, where wastewater receives tertiary treatment before being discharged into the river.

Photo courtesy of Heather Dyer, San Bernardino Valley Municipal Water District

CHAPTER 17

COMPLICATIONS:

THE U.S. FISH AND WILDLIFE SERVICE EXPANDS THE CRITICAL HABITAT AREA FOR THE SANTA ANA SUCKER

Valley District received word that the California State Water Resources Control Board had approved its request for additional rights to Santa Ana River water in mid-October 2009.

One month later, the U.S. Fish and Wildlife Service announced that it intended to establish 1,559 acres of critical habitat for the Santa Ana sucker along the Santa Ana River in a move that would directly interfere with ongoing water capture, flood control and groundwater recharge operations in San Bernardino and Riverside counties as well as Valley District and Western's efforts to expand facilities to take advantage of their new Santa Ana River water rights.

Citing the Endangered Species Act of 1973, the Service had originally established 8,305 acres of critical habitat area for the sucker in 2005, all of which were along the San Gabriel River and Big Tijunga Creek in Los Angeles County.

"Essential habitat for the Santa Ana sucker in Orange, Riverside, and San Bernardino counties has been excluded from the final critical habitat designation, because we have concluded that benefits of excluding this land from critical habitat outweigh the benefits of their inclusion pursuant to section 4 (b) (2) of the Act," the Service wrote in its Final Rule, which was published in the *Federal Register* on Feb. 3, 2005.

But the Tucson, Ariz.-based Center for Biological Diversity subsequently filed suit against the Service in 2007 in an effort to force the federal agency to increase the habitat area for the sucker. The Service subsequently settled with the CBD by agreeing to re-open the critical habitat designation review process. This led to the Service designating 1,559 acres of critical habitat for the sucker in San Bernardino and Riverside counties.

"The Service never stated why its 2005 ruling was insufficient, nor did it provide any new scientific information to justify an expansion of critical habitat for the sucker," said Pat Milligan, who served on Valley District's board of directors from 1964 to 1976 and again from 1984 to 2014.

The designation of critical habitat prevented Valley District and other agencies from immediately expanding their storm water capture capabilities along the Santa Ana River, effectively stalling their ability to take advantage of their new water rights.

Valley District, in fact, had planned to build storm water capture and retention facilities that could enable local agencies to capture an average of 29,000 acre feet of additional runoff each year for groundwater recharge purposes.

Kerwin Russell, natural resources manager for the Riverside Corona Resource Conservation District, highlights some of the exposed sand, rocks and gravel in the creek that runs through the Tequesquite Arroyo, one of several tributaries of the Santa Ana River in Riverside, Calif. San Bernardino Valley Municipal Water District and Western Municipal Water District have set aside funds to pay for habitat restoration efforts for the Santa Ana Sucker and other species.

Photo courtesy of Jeff Crider

Working with San Bernardino County and the San Bernardino County Flood Control District, Valley District identified more than a dozen existing flood control basins where storm water could be captured for recharge purposes with a $3 million investment in rubber dams, gates or simple earth berms.

A 38-acre site near the John W. North Water Treatment Plant was also identified as a worthwhile site where water from the Santa Ana River could be captured for groundwater recharge purposes. Valley District is working together with Riverside Public Utilities and Western Municipal Water District to jointly fund the $25 to $30 million project, which will include construction of an inflatable rubber dam that can be raised as needed to efficiently control water flowing in the river and enhance percolation.

Rather than accept establishment of critical habitat for the Sucker along the Santa Ana River, Valley District joined forces with Western Municipal Water District and 10 other neighboring cities and water and flood control agencies

Santa Ana sucker.

Photo courtesy of Kerwin Russell, Riverside Corona Resource Conservation District

and filed suit against the Service in August of 2011. In their complaint, filed in U.S. District Court in Santa Ana, water agencies argued that the Service violated several tenets of the Endangered Species Act (ESA), which requires the federal agency to consult and work cooperatively with state and local agencies; to base its decisions on the best available science; and to balance the needs of endangered species with the needs of humans who are likely to be affected by critical habitat rulings.

Water agencies alleged that the Service not only failed to consult with or work cooperatively with state and local agencies, but based its decisions on unscientific survey data, unpublished reports that have not been peer reviewed as well as published reports that, ironically, contradict the Service's arguments.

Agencies that are participating in the lawsuit against the Service include Bear Valley Mutual Water Company in Redlands; Big Bear Municipal Water District; city of Redlands; city of Riverside; city of San Bernardino Municipal Water Department; East Valley Water District in Highland; Riverside County Flood Control and Water Conservation District; San Bernardino Valley Municipal Water District; San Bernardino Valley Water Conservation District; Western Municipal Water District in Riverside; West Valley Water District in Rialto; and Yucaipa Valley Water District.

Workers employed by the Riverside Corona Resource Conservation District are removing invasive non-native trees and plants in the Tequesquite Arroyo in Riverside. The non-native trees and shrubs will be replaced with native trees and plants to provide suitable habitat for the Santa Ana sucker and other species.

Photo courtesy of Jeff Crider

Habitat for Santa Ana suckers and other threatened or endangered species near the Santa Ana River in San Bernardino County.
Photo courtesy of Heather Dyer for San Bernardino Valley Municipal Water District

CHAPTER 18

THE U.S. FISH AND WILDLIFE SERVICE WINS ROUND ONE IN COURT, BUT WATER AGENCIES APPEAL THE DECISION

In October 2012, U.S. District Court Judge James V. Selna upheld the U.S. Fish and Wildlife Service's decision to double the critical habitat area for the Santa Ana sucker in San Bernardino and Riverside counties.

Selna's ruling, issued in Santa Ana, Calif., was made possible by the Ninth Circuit Court of Appeals, which ruled in 1995 that the National Environmental Policy Act of 1969 or NEPA does not apply to states within its jurisdiction, which include California, Arizona, Nevada, Oregon, Washington, Idaho, Montana, Hawaii and Guam.

However, every other federal court that has looked at NEPA has ruled that it does apply to the states within their jurisdiction, said Greg Wilkinson, an attorney representing Valley District and other plaintiffs in their case against the Service.

"These contradictory opinions enabled the Fish and Wildlife Service to avoid considering the environmental effects of their habitat decisions and to avoid cooperating with state and local agencies in California," Wilkinson said.

Valley District and its water agency partners appealed Selna's decision to the Ninth Circuit in June 2013. But this time Valley District hoped not only to reverse the Service's habitat decision involving the Santa Ana sucker, but to encourage the court to revisit its interpretation of NEPA, which had effectively given the Service the ability to walk away from habitat conservation agreements it had signed with other agencies.

Indeed, when the Service doubled the critical habitat area for the Santa Ana sucker, it included areas already protected by 14 Inland Empire agencies that had signed the Riverside County Multiple Species Habitat Conservation Plan (MSHCP), the nation's largest habitat conservation plan.

The MSHCP took four years to negotiate and implement at a cost of $30 million. The habitat plan is funded by the collection of development and infrastructure impact fees, which are used to purchase and manage undeveloped land for the protection of the sucker and 145 other species of concern in western Riverside County.

"This dispute, created by the Service, really reflects a lack of coordination and cooperation between federal, state and local agencies, which is precisely what NEPA tries to avoid," Wilkinson said, adding that water agencies were asking the Ninth Circuit for 'en banc' review of the district court ruling by all 11 judges in the Ninth Circuit."

At the time of this writing, Valley District and other water agencies were still waiting for the Ninth Circuit's decision.

Valley District plans to fund an expansion of the San Bernardino Valley Water Conservation District's recharge facilities to capture more storm water released by Seven Oaks Dam.

Photo courtesy of Rick Strobaugh for San Bernardino Valley Municipal Water District

CHAPTER 19

WATER AGENCY RELATIONS IN THE 21ST CENTURY:

MOVING TOWARD GREATER COORDINATION AND COOPERATION

While the 1969 settlements adjudicated surface and groundwater rights from the Bunker Hill Basin westward to Prado Dam, it took several decades — about 35 years, to be precise — before Inland Empire water agencies put their guns down and started working with one another in a truly collaborative fashion.

"When you start an adjudication, everybody is very touchy," said Bob Reiter, a former general manager of Valley District who worked with the agency from 1966 to 2006. "People would say, 'You're pumping my water. You're taking too much.' It creates a tense environment."

> *"People would say, 'You're pumping my water. You're taking too much.' It creates a tense environment."*

The 1969 settlements allowed water retailers to operate independently and to pump the water they needed from local groundwater basins. Valley District took on the responsibility of replenishing those basins as needed with imported water.

But while the natural tendency was for agencies to work independently after the 1969 settlements, several factors drew Inland Empire water agencies into much closer working relationships with one another.

These included the rapid growth of the Inland Empire's population, which almost tripled from 1.6 million to 4.2 million between 1980 and 2010, significantly increasing water demands. At the same time, there were growing uncertainties about the reliability of State Water Project deliveries during periods of drought, as evidenced by repeated years in which the state Department of Water Resources was only able to deliver a fraction of the water it was contracted to deliver.

Realizing they needed to better manage limited water resources throughout the Inland Empire, Valley District and 17 other water agencies agreed in 2005 to develop an integrated regional water management plan.

With Valley District as the lead agency, the agencies obtained a planning grant from the state Department of Water Resources and developed a detailed Integrated Regional Water Management Plan that would help Inland Empire agencies achieve several objectives:

- **Improve the reliability of water supplies during droughts**
- **Develop strategies for the management and conservation of storm water.**
- **Protect surface water and groundwater quality**
- **Reduce the risk of liquefaction**
- **Avoid impacts from the movement of contamination plumes.**

The plan, which was completed in November 2007, was assembled by Valley District and its water agency partners, who called themselves the Technical Advisory Group.

"We were one of the first regions in the state of California that produced a truly regional plan with participation by almost every water supplier in the region," said Douglas Headrick, who has served as Valley District's General Manager since 2010. He said that the plan allows agencies to coordinate the use of surface water and groundwater supplies as well as water conservation activities throughout western San Bernardino and Riverside counties.

The plan includes water resource budgets, estimates of future water demands and supplies and contingency scenarios in the event of drought. The plan also called for the creation of a Basin Technical Advisory Committee (BTAC) involving the same agencies, which would work together on an ongoing basis to jointly implement the plan. This includes an annual management plan for surface water, groundwater and imported water supplies throughout the San Bernardino Valley.

The BTAC has not only helped Inland Empire agencies manage water resources in times of drought, but it has helped them to better coordinate their groundwater recharge operations as well.

"In the past, different agencies were recharging different amounts of water at different times, and that sometimes caused problems," said West Valley Water District Assistant General Manager Thomas Crowley, who also serves as BTAC chairman.

"Now," he said, "everybody works from the same set of facts. The BTAC has also brought about a greater trust between the technical and administrative staffs and boards of directors of the various agencies, and that enables policy makers to make more informed decisions."

EMERGING CONSTITUENTS

But while rising population growth and uncertainties about State Water Project water sparked a regional planning effort in 2005, Inland Empire water agencies faced a challenge of a much different type in 2006. That's when the Santa Ana Regional Water Quality Control Board, which regulates wastewater, issued a tentative order to also regulate the use of State Water Project water as if it was wastewater.

California Aqueduct

Photo courtesy of the California Department of Water Resources

Babcock Laboratories utilized triple stage quadruple mass spectrometry with an on line concentrator for sample preparation for the Emerging Constituents testing program.

Photo courtesy of BABCOCK Laboratories, Inc.

Chemist Tim Moore of Babcock Laboratories performing sample preparation for the Emerging Constituents testing program.

Photo courtesy of BABCOCK Laboratories, Inc.

"The staff at the regional board decided that because the Sacramento River receives treated effluent, and some State Water Project water flows down the Sacramento River, that they could regulate the use of State Water Project water," said Mark Bulot, a Valley District board member who has represented the district since 1998. "But the effluent was considered acceptable as discharge into a drinking water source and it was already regulated in Sacramento."

The proposed regulation not only threatened local agencies' use of State Water Project water, but put Valley District in an untenable position. "We would either have to violate a waste discharge order or the 1969 judgments," Bulot said.

The greatest concern of the Regional Board was that recharging the Santa Ana River Watershed's groundwater would result in an increase in accumulated salts to the point that eventually, the basin water quality objective (a regulatory maximum concentration) would be exceeded.

Valley District decided the best course of action was to set up a task force involving water agencies throughout the Santa Ana River watershed, including agencies in San Bernardino, Riverside, and Orange counties. This Salinity Management Group negotiated with the Regional Board, and developed a process of modeling and monitoring of groundwater quality. The process involves using approved groundwater flow and contaminant transport models every three years to predict the salinity concentration 20 years into the future. This will provide ample time to develop solutions to the rising salinity, should it threaten to exceed the basin objective. This did not completely satisfy the Regional Board. They were also concerned with unregulated contaminants, referred to as constituents of emerging concern. These "emerging constituents" or ECs are items such as pharmaceuticals, caffeine, and personal care products.

A second task force, called the Emerging Constituents Work Group, also involving wastewater agencies, told the Santa Ana Regional Water Quality Control Board that it would investigate the emergence, distribution and presence of emerging constituents in groundwater supplies throughout the Santa Ana Watershed and share its findings with the Regional Board.

"The Regional Board then set aside the tentative order pending the outcome of the research by the task force," Bulot said

In 2009, water and wastewater agencies set up a voluntary program to monitor "emerging constituents" in samples collected from the Santa Ana River, the Colorado River aqueduct, the State Water Project aqueduct and in recycled water produced by local wastewater treatment plants.

Samples have been collected and analyzed each summer since 2010. "The study was originally intended to last only three years and was scheduled to conclude when the State Water Resources Control Board established a more formal EC monitoring program in January of 2013," the EC task force stated in its 2013 Sampling Report.

"Although ECs were detected at many of the sampling sites, the concentrations were extremely low. And, where detected, EC concentrations fell well within the range where other studies have shown that 'no adverse health effects would be expected."

However, the EC Task Force elected to extend the voluntary study one additional year to develop baseline data consistent with the State Water Resources Control Board's amended Recycled Water Policy.

THE ESTABLISHMENT OF GOOD WORKING RELATIONS WITH THE SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT

Valley District's relations with the San Bernardino Valley Water Conservation District entered a particularly difficult period after the former filed papers with the State Water Resources Control Board seeking additional water rights on the Santa Ana River.

The Conservation District claimed rights to all the water in the Santa Ana River not used by the prior rights holders, primarily Bear Valley Mutual Water Company. The Conservation District also claimed that they had rights to all of the new water that would be captured by the construction and operation of the Seven Oaks Dam.

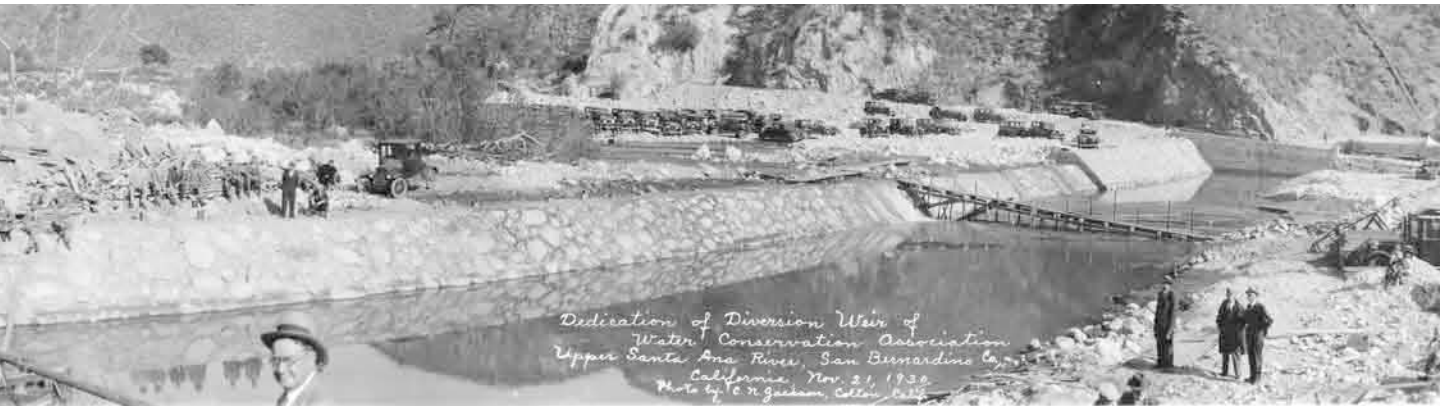
The disagreement on water rights culminated in a hearing before the State Water Resources Control Board in December 1999. The State Board ruled that the water from Seven Oaks Dam was not already appropriated and that Valley District and Western Municipal Water District could proceed with their water rights application. This process ultimately resulted in the largest water rights permits in Southern California being awarded to Valley District and Western — 198,000 acre-feet in any one year.

Problems surfaced again when Valley District participated in an effort by the Local Agency Formation Commission (LAFCO) to consolidate the Conservation District.

LAFCO argued that the Conservation District was no longer needed and that its operations could be merged with Valley District to achieve greater efficiency. But the Conservation District fought back and when the vote was taken by the LAFCO Commission, the Conservation District survived.

Since then, Valley District has worked to develop positive working relations with the Conservation District. The focus on positive relations has been productive, since the Conservation District has groundwater recharge facilities that Valley District needs for recharge efforts. In 2012, this new, productive relationship resulted in the signing of a cooperative agreement between the Conservation District, Valley District and Western to develop and operate joint groundwater recharge facilities.


tion District Intake


Dedication of Diversion Weir of
Water Conservation Association
Upper Santa Ana River, San Bernardino Co.,
California Nov. 21, 1930.

Water conservation garden at California State University, San Bernardino, which was largely funded by Valley District.

Photo courtesy of San Bernardino Valley Municipal Water District

CHAPTER 20

NEW VALLEY DISTRICT INITIATIVES IN THE POST 2010-PERIOD

STEPPED UP PROMOTION OF WATER CONSERVATION

Faced with tightening water supplies, Valley District has launched a series of water conservation initiatives in recent years, both on its own and in partnership with other agencies.

These efforts include providing financial support for the Inland Empire Resource Conservation District, which operates an educational outreach effort to elementary schools to educate children about the need to conserve water.

Valley District has also expanded its rebate programs for weather based irrigation controllers for city parks and schools throughout its service area.

Valley District also sponsored construction of a water conservation demonstration garden at California State University, San Bernardino, which it hopes will inspire Inland Empire residents to replace their thirstiest trees, plants and shrubs with water efficient plants.

The one-acre garden, located along the sidewalk that leads to the Coussoulis Arena, opened June 4, 2011 following a grand opening ceremony that Valley District officials used to highlight the need for Inland Empire residents to adopt sustainable landscaping practices.

"Almost three quarters of the water Inland Empire water agencies deliver is being used to irrigate grass as well as subtropical trees, plants and shrubs that consume far more water than we can afford to provide," Valley District President Milligan said during a news conference.

The garden features more than 200 varieties of Water Saving Garden Friendly trees, plants, shrubs and ground covers, which are organized into six different types of water-saving gardens, including a California natives garden; a Mediterranean garden; a fragrance garden; a shade garden; a desert garden; and a garden featuring several types of ground covers and lawn substitutes.

The garden also showcases different kinds of paving materials, such as bricks and porous cement, which provide hard surfaces to walk on, while allowing precious rainwater to percolate through to recharge our groundwater basins.

Benches and architecturally pleasing shade structures were incorporated into the garden to encourage students and visitors to the campus to savor the garden's beauty, as well as the butterflies, birds and other wildlife that native plants attract.

Valley District provided more than $500,000 in funding for the project and secured another $50,000 donation for the project from the Inland Empire Resource Conservation District. The Water Resources Institute also secured a $100,000 donation from the San Manuel Band of Mission Indians.

> *We needed a new direction," - Douglas Headrick, Valley District's general manager and chief engineer.*

In addition to donating land for the garden, Cal State San Bernardino provided construction and financial management services for the garden as well as ongoing maintenance, security and tours.

A PARTNERSHIP WITH THE HOME DEPOT

Valley District also took the lead in setting up a collaborative effort by Inland Empire water agencies to promote the use of Water Saving Garden Friendly plants in partnership with The Home Depot and other retailers.

The Home Depot was a major partner in the collaborative effort, launched in the spring of 2011, which includes special sales and seminars on planting and irrigation of climate appropriate trees, shrubs and ground covers.

The program has been so successful that The Home Depot is now developing similar programs in partnership with water agencies around the country.

NEW FOR 2014: iEfficient.com

While Valley District has spent thousands promoting conservation education through its funding of rebates, education and the conservation garden at Cal State University, San Bernardino, the district launched its biggest public education campaign in 2014.

The campaign, which includes special events, media outreach, an advertising campaign and the launching of a water education website at iEfficient.com, is intended to permanently change attitudes and behaviors that affect how we use water.

The importance of the campaign was underscored by a March 2014 survey of 400 Inland Empire residents by Newport Beach-based Probolsky Research, which found that 67.5 percent of western San Bernardino and Riverside County residents falsely believe that most of their water use is inside the home. In reality, landscaping typically accounts for two thirds to three quarters of residential water use. Major conservation can be achieved by replacing grass as well as leafy, tropical trees and plants with native or Water Saving Garden Friendly plants, which consume far less water.

Water conservation garden at California State University, San Bernardino.

Photo courtesy of San Bernardino Valley Municipal Water District

Water conservation education campaign.

Photo courtesy of Jeff Crider for San Bernardino Valley Municipal Water District

Water conservation garden at California State University, San Bernardino.

Photo courtesy of San Bernardino Valley Municipal Water District

Water conservation education campaign.

Photo courtesy of Jeff Crider for San Bernardino Valley Municipal Water District

The survey also revealed other disturbing findings.

For example, practically no one had even heard of the Bay Delta Conservation Plan - which restores Delta ecosystems while diverting drinking water supplies through tunnels, restoring the reliability of imported supplies.

There is a willingness to conserve water, and thirst for information about how to do it. But little understanding of why such conservation efforts are needed beyond the obvious shortages people discern during periods of extended drought.

A NEW PARTNERSHIP AND A FRESH START WITH THE U.S. FISH AND WILDLIFE SERVICE

The U.S. Fish and Wildlife Service undermined the trust of water and flood control agencies across Riverside and San Bernardino counties in late 2009 when it violated the terms of the Riverside County Multi-Species Habitat Conservation Plan and expanded the critical habitat area for the Santa Ana sucker.

But despite this violation of trust, and the resulting lawsuit filed against the Service by Valley District and 11 other Inland Empire agencies, Valley District collaborated with its partners and developed a new partnership and a fresh start with the federal agency.

On Sept. 10, 2014, Valley District and its water agency partners announced an agreement with the U.S. Fish and Wildlife Service to develop a Habitat Conservation Plan for the Santa Ana River that mitigates water conservation, flood control and groundwater recharge projects in San Bernardino County.

The U.S. Fish and Wildlife Service also announced that it had approved $675,345 in grant funds for the Habitat Conservation Plan, which will protect the Santa Ana sucker and other threatened or endangered species. "This HCP is a very positive development because it provides a framework for federal, state and local agencies to work together in a cooperative way to proactively address environmental concerns involving water and flood control projects along the Santa Ana River," said Ken Corey, assistant field office supervisor of the U.S. Fish and Wildlife Service.

Corey added that the proposed HCP would not only provide conservation benefits for the Santa Ana sucker, but other native fish, such as the arroyo chub and the speckled dace; birds, such as the southwestern willow flycatcher and the Least Bell's vireo; the San Bernardino kangaroo rat; and various plants, including the slender horned spineflower and the Santa Ana woolly-star, a wild flowering plant with blue lavender flowers.

"We needed a new direction," said Douglas Headrick, Valley District's general manager and chief engineer.

"The reality," he said, "is that water supply projects needed to supply the growing demands of our customers need the approval of the U.S. Fish and Wildlife Service. We need their cooperation and support. Otherwise, we lose the ability to capture and store the water we need."

Headrick said the plan would identify the best ways to avoid, minimize and offset the impacts of current and proposed water conservation, flood control and

groundwater recharge projects along the Santa Ana River and its tributaries for both threatened and endangered species.

Conservation activities could involve everything from purchasing and setting aside land for habitat to funding studies and implementing restoration projects. If approved, the cooperatively developed plan would give water agencies a way to avoid future conflicts with the Service over endangered species issues, while still conducting water, groundwater recharge and flood control operations in the upper Santa Ana River watershed.

The plan would offset impacts of water capture, groundwater recharge and flood control projects, including the Lytle Creek Recharge Project; Mill Creek water diversions; the Clean Water Factory in San Bernardino; and other water recharge and storage projects.

Nine other water agencies joined Valley District in committing to co-fund development of the HCP. The other agencies include the city of San Bernardino Municipal Water Department; city of Riverside Public Utilities; San Bernardino Valley Water Conservation District; the city of Rialto; East Valley Water District; West Valley Water District, Western Municipal Water District, Inland Empire Utility Agency, and the County of San Bernardino Department of Public Works.

As noted in Chapter 15, several water capture and recharge projects are needed to help Valley District and Western Municipal Water District take advantage of their new Santa Ana River water rights. Both water agencies are facing a timetable to get the new facilities in place. If significant progress is not made building the new water capture and recharge facilities by 2020, Valley District and Western could lose a portion of their new water rights, said Bob Tincher, Valley District's manager of water resources.

To move the permitting process along, Valley District, for the first time, has agreed to pay for the salary of a full-time U.S. Fish and Wildlife Service biologist — Dr. Kai Palenscar — who will serve as the key point person for the district and other San Bernardino and Riverside County water agencies as they work to develop a new Habitat Conservation Plan for the Santa Ana River in San Bernardino County.

San Bernardino Valley Municipal Water District General Manager and Chief Engineer Douglas Headrick.

Photo courtesy of San Bernardino Valley Municipal Water District

Sage scrub habitat in San Bernardino County will be preserved as part of a Habitat Conservation Plan that mitigates water conservation, flood control and groundwater recharge projects.

Photo courtesy of Heather Dyer, San Bernardino Valley Municipal Water District

Santa Ana River.

Photo courtesy of Jeff Crider for San Bernardino Valley Municipal Water District

These efforts complement existing efforts by Valley District to support wildlife conservation efforts.

Valley District and Western have jointly set aside $400,000 for habitat restoration efforts along the Santa Ana River that benefit the Santa Ana Sucker and other threatened or endangered species. These funds have been used for habitat restoration efforts as well as efforts to remove non-native fish that feed on endangered species.

In March of 2013, more than 400 non-native fish were removed from the Tequesquite Arroyo, a storm channel that feeds the Santa Ana River just west of Mount Rubidoux in Riverside. The fish were relocated to Lake Elsinore through a cooperative effort between the Riverside Corona Resource Conservation District and the California Department of Fish and Wildlife.

Local water agencies, including Valley District and Western, paid for the non-native fish relocation as part of a larger project to clean up the Tequesquite Arroyo so that it could be used as a refuge and spawning area for Santa Ana suckers and other native fish species, including the Arroyo Chub.

A 2,000-foot section of the Tequesquite Arroyo passes by the site of a former municipal dump and was previously choked with chunks of old concrete, asphalt, fallen limbs and trash, which reduced water movement through the creek. RCRCD removed the debris as part of the habitat restoration effort funded by local water agencies.

RCRCD crews also removed 123 non-native plants to reduce their impacts on surrounding native vegetation. Several non-native trees were controlled with an herbicide, but will be left in place because their trunks and branches can be used by native birds.

Trash control, non-native fish and amphibian removal will continue during the next phase of the Tequesquite Arroyo restoration project along with water quality testing, supplemental planting and fish habitat enhancement.

WATER BANKING IN THE SAN JOAQUIN VALLEY

Valley District expanded its water banking capabilities in February 2012 by storing nearly 18,000 acre-feet of water in the southern San Joaquin Valley.

"This is to insulate us so we don't have to pay exorbitant prices for water on the spot market in dry years," said Valley District General Manager and Chief Engineer Douglas Headrick.

The water, stored through an arrangement with Kern Delta Water District in Bakersfield, cost about $240 more per acre-foot than the $600 Valley District already pays for State Water Project water. But Headrick said the investment will be well worth it in the long run.

"It may sound like a lot of money," Headrick said, "but when we're in a dry year, having something in the bank we can draw from will keep a potentially bad situation from getting worse."

The historic drought that began in 2012 was exactly the type of hydrologic condition that the groundwater storage program was developed for. By calling on delivery of a portion of the banked water in Kern County, additional water supply restrictions were averted. Based on the success of this storage program, Headrick said that additional storage programs, both outside and inside the district boundary, are being developed.

"Retail water agencies in western San Bernardino County have built their distribution systems around wells and local surface water sources. But to keep these wells and treatment plants running when dry periods occur, we need water from the State Water Project. And sometimes that takes storing some of our supply in a wet year for delivery during a dry one," Headrick said.

Edmonston Pumping Plant in Kern County.

Photo courtesy of the California Department of Water Resources

Valley District and San Gorgonio Pass Water Agency fund Phase 2 of the East Branch Extension of the State Water Project, which increases the capacity of the distribution system.

Photo courtesy of Yucaipa Valley Water District.

CHAPTER 21

PERSPECTIVES ON VALLEY DISTRICT'S ACCOMPLISHMENTS, LESSONS LEARNED, AND NEW WATER MANAGEMENT CHALLENGES IN THE 21ST CENTURY

Valley District was formed 60 years ago with the mission of importing water from other areas of California to supplement local surface water and groundwater supplies.

Water agencies from Yucaipa to Rialto now collectively depend on Valley District to provide them with roughly 25 percent of the water they need for their business and residential customers.

But as we've seen in reviewing Valley District's history, the agency has done much more than simply import water from Northern California.

In addition to developing and implementing long-range water acquisition strategies that benefit water agencies, residents and businesses throughout its service area, Valley District has designed and built a state-of-the-art network of pipelines, pump stations, reservoirs and canals that efficiently deliver water throughout the San Bernardino Valley for groundwater recharge as well as direct use by other water agencies.

The district has also taken on other responsibilities, partly on its own initiative, and partly as a way of resolving legal disputes involving other agencies.

It was Valley District that came up with the strategy that led to the historic 1969 settlements — the agreements that required Valley District to assume ongoing responsibility for recharging the Bunker Hill Groundwater Basin.

It was Valley District that led the campaign to convince the U.S. Army Corps of Engineers to abandon its plans for a 233-foot-tall flood control dam in Mentone and to instead build the Seven Oaks Dam and to use it not only for flood control, but for water storage purposes.

It was also Valley District that recognized that it could obtain additional Santa Ana River water rights as a way of supplementing water imports from Northern California — a wise move, particularly given the growing uncertainties with State Water Project water.

Valley District has also taken the lead role in funding independent scientific research by the U.S. Geological Survey to better understand the hydrology of the Bunker Hill Basin. And, as we've seen, the research funded by Valley District has led to the creation of groundwater management models that are now used by water agencies around the world.

> *Water decisions need to be made by people with a huge amount of engineering knowledge and very few political obligations or debts."*

Valley District has also learned a lot of about politics and the extent to which political agendas can interfere with proper water management, particularly when those agendas are based on ignorance of the latest scientific facts.

As longtime Valley District Director President Patrick Milligan said, "Water decisions need to be made by people with a huge amount of engineering knowledge and very few political obligations or debts."

Their decisions also need to be based on scientific facts, not wishful thinking, assumptions or ideology. This is why Valley District has paid for more surface water and groundwater research by the U.S. Geological Survey than any other Inland Empire water agency. The U.S. Geological Survey is considered the "gold standard" of research, according to water agency officials throughout the Inland Empire. Its findings are considered to be unbiased and free of political agendas or influence.

Another valuable lesson, according to Valley District Directors Ed Killgore and Mark Bulot, is appreciating the fact that more can be achieved when water agencies work together in a cooperative spirit than when they work at odds with one another.

While this historical account has not delved into the intricacies of Valley District's political relationships with other Inland Empire water agencies, Valley District's directors acknowledge that it has taken a long time to replace political rivalries, suspicions and agendas between different water agencies across western San Bernardino and Riverside counties with a spirit of cooperation.

"When I first got on the Valley District board almost 20 years ago," Killgore said, "everybody hated everybody. It was horrible."

Since then, however, several of the more politically problematic water agency managers and board members have either retired or passed away, and they've been replaced by a new generation of water agency managers and board members who understand that they can achieve more by working together rather than against each other.

Recognizing the importance of cooperative planning and management, Valley District was part of a team that created the Basin Technical Advisory Committee (BTAC), the group comprised of mid-level water managers who are free of political influence.

"BTAC has been a wonderful experiment," Milligan said.

"We kicked the politicians out of the room and brought in the water managers and the people with engineering and scientific background. We brought them all into the room and now the recommendations that are coming are oriented to helping the people in the valley. You get water managers managing water rather than people in political positions."

It wasn't always that way.

"It used to be the recommendations that would come in would benefit one political area over another," Milligan said. "I remember when there were decisions that were being made that were being made on the location of pipelines and wells and the location of very important infrastructure that were based entirely on the desire of a couple of communities to have a couple of facilities

Valley District and San Gorgonio Pass Water Agency funded the doubling in size of the Crafton Hills Reservoir near Yucaipa in 2014.

Photo courtesy of Yucaipa Valley Water District

built in their area as opposed to where these facilities could be built that would best serve the valley. This new group of young people would be embarrassed to recommend that to each other. We need to be continually vigilant in the area of enterprise that we're in to make sure that we do not allow politics to take over the operation of managing water."

Valley District and other agencies also need to be mindful of the fact that we still don't have all of the scientific answers. More research is needed and new findings may shape our thinking and management of water in the future.

"We have to learn that we are still in an era of increasing scientific knowledge about the proper management of water," Milligan said, adding, "We are spending millions of dollars to develop knowledge about how this basin reacts and how is the best way to use this basin to produce the largest amount of clean water."

Valley District also faces new challenges, namely trying to make the most efficient use of water supplies while accommodating the increasing water demands of environmental protection agencies. These demands are often the result not of science, but of litigation.

Another, equally formidable challenge is that of educating people about water and encouraging more efficient water use practices.

The state of California has mandated that water agencies reduce consumption by 20 percent by 2020, using 2005 as a base year. The state has also mandated increased use of recycled water. In fact, the State Water Resources Control Board has mandated that water agencies increase their collective use of recycled water by 200,000 acre feet by 2020 and by an additional 300,000 acre feet by 2030.

Educating San Bernardino Valley residents about the importance of water conservation and the steps they need to take to make meaningful reductions in water use could be one of the biggest challenges moving forward.

"Our biggest challenge is managing the resources we have locally and saving every drop we can locally," said Valley District Director Steve Copelan.

Educating the public about the need for stepped up water conservation is consequently an area of concern for Valley District board members.

"I don't think we are aggressive enough in our outreach to the community regarding water conservation," said Valley District Director Gil Navarro. "I think that's an area of need. I think we should do more education and outreach to the young people that are going to govern this country in the future. I think we need to learn how to live differently with water."

Valley District is working with other agencies through the Inland Empire to spread information about the need to conserve water and change our water use habits.

Navarro also said the city ordinances need to be updated to better reflect the importance of water conservation.

Bulot, for his part, said he believes Valley District is on a proper course. "The question," he said, "is whether we can keep it going. There will be different levels of cooperation between agencies and new people and personnel changes all the time. There will be opportunities for mistrust. But will the board of the future be up to this challenge? Will the staff be up to it?"

Ultimately, Bulot said, it will be imperative that Valley District keep politics out of the board. "The challenge," he said, "is to keep the board away from politics so that we can keep the spirit of cooperation working with other agencies."

BOARD OF DIRECTORS OF SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

2014

Ed Killgore

Division I - Rialto and Bloomington

Gil Navarro

Division II - City of Colton and portions of Bloomington, Fontana and San Bernardino

C. P. Milligan

Division III - Highland Avenue in northern San Bernardino to the Devil Canyon Power Plant of the State Water Project

Mark Bulot

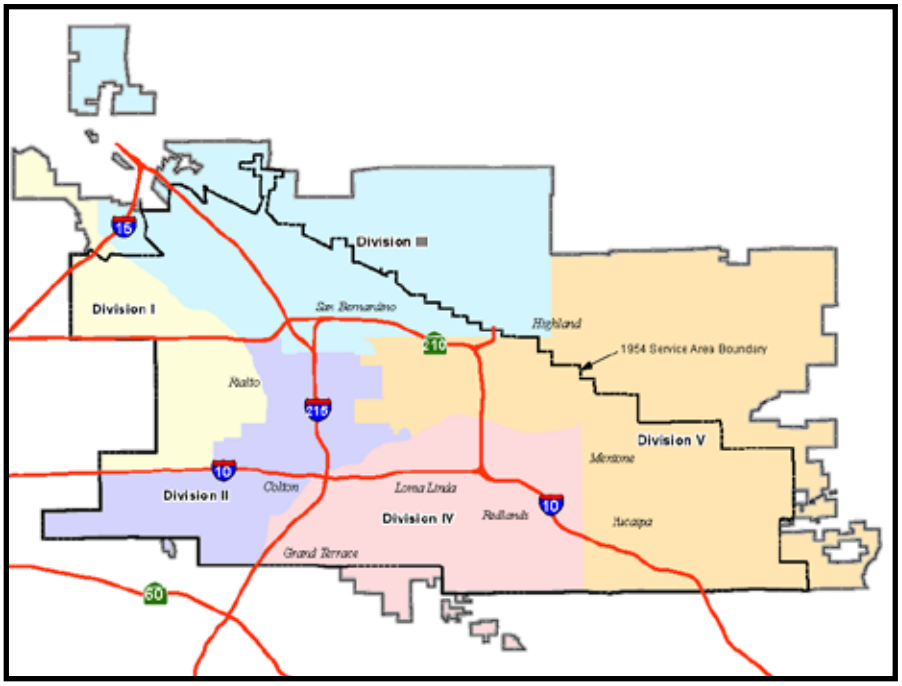
Division IV - South-central portion of the District

Steve Copelan

Division V - Highland and Yucaipa

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

SERVICE AREA



SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT

GENERAL MANAGERS

GENERAL MANAGER	TERM SERVED
James P. Strickland	4/1/54-3/2/55
James F. McDill	11/1/55-2/28/58
Hugo W. Wilde	3/5/58-1/2/66
Jack A. Beaver	1/5/66 - 7/31/80
G. Louis Fletcher	8/1/80-6/30/01
Robert L. Reiter	7/1/2001-12/31/06
Randy Van Gelder	1/1/07-12/31/09
Douglas Headrick	1/1/10- Present










“Anyone who has an interest in water development or supply in the San Bernardino Valley will want to read this book. This history will be a true asset to the Joseph Andrew Rowe Water Resources Archives at Cal State San Bernardino.”

Suzie Earp, Archivist
Water Resources Institute
California State University
San Bernardino