SIXTY YEARSSTRONG

1957-2017

A HISTORY OF THE ZONE 7 WATER AGENCY

Acknowledgements

A special thanks to all of the general managers and past and present Directors who gave their time to tell the story of Zone 7. Thank you to Laura McCreery, at UC Berkeley who pulled all of those stories together brilliantly. Thank you to the Zone 7 staff. Thank you to our customers and the Livermore-Amador Valley community.

December 2017

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Voters Approve Zone 7 By Wide Margin--1,941-328

Livermore and Amador Valleys voted solidly in favor of a comprehensive water program Tuesday when they approved Zone 7 of the Alameda County Flood Control and Water Conservation District by a 1,941 to 328 vote, a 6-1 margin.

The seven-man slate of the Valley Water Committee was elected as the Board of Directors of the zone.

Vote for the candidates was:

Karl Wente	1,479
Leo Callaghan	1,457
Herman Koopman	1,427
Melvin Nielsen	1,405
Victor Lund	1,354
Eldred Chance	1,339
Thornton Taylor	1,328
Robert Becker	1,284
Earl Odell	1,218
Burt Duke	1,121
Seth Tennis Jr.	777

Becker, Earl Odell and Burt Duke ran well in Livermore, taking fourth, fifth and sixth places in the voting here, but collected few votes in Pleasanton.

Becker was only 44 votes behind Thornton Taylor in the final total and had hoped that absentee ballots from U.C.R.L. employees at the Nevada atomic tests might make up the difference.

But the County Clerk's office reported that applications were received for only 21 absentee ballots.

A number of the successful candidates said after the election they do not plan to meet until after the Board of Supervisors canvasses the ballots next week.

Vote was surprisingly light, the 8,300 registered voters in the two townships.

There was only one precinct of the 18 in the election which did not favor the zone, Sunol School where a telephone campaign against the zone was conducted Monday and Tuesday and the vote was 21-34.

Voters at Arroyo Sanatorium could not have been more in favor of the zone as they gave it a 45-0 vote.

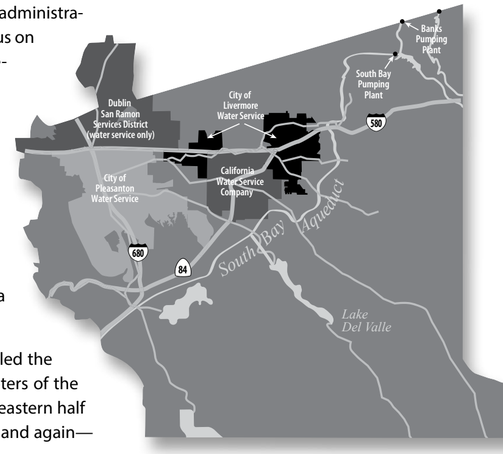
Major argument in favor of the zone was that it will be the agency for this area that can purchase water from the proposed South Bay Aqueduct, to insure an adequate supply of water for the two valleys in the future.

However, this is not the only job it will do. The zone also has

Introduction

Situated at the crossroads of a bustling municipal corridor, an agricultural hub with a $200 million wine industry, and the high-tech industrial world of Silicon Valley, the Zone 7 Water Agency has parlayed a unique geography and sixty years of forward leadership into a successful water program within its borders and a solid role in regional and statewide water policy.

Governed by an expert board of directors and guided by a series of skilled administrators, Zone 7 has emerged as a leading water utility while maintaining a focus on the local needs of the Livermore-Amador Valley. The key to the zone's six decades of success lies in the valley community itself. Zone 7 has throughout its history attracted the time and expertise of extraordinary people: board members, general managers and staff members, and local volunteers.



Now operating on par with large water utilities—and independent from its parent entity, the Alameda County Flood Control and Water Conservation District, in most respects—Zone 7 offers a reliable water supply, sophisticated flood and stream management, sustainable groundwater management, and thoughtful environmental stewardship through a network of modern facilities and an array of programs.

As the governing policy body, Zone 7's locally-elected board of directors led the way from the start. Its first members embraced the mandate from the voters of the Livermore-Amador Valley to provide both water and flood control for the eastern half of Alameda County. Over the decades the board expanded its vision time and again—thinking big, planning ahead, making careful decisions based upon facts.

As James Concannon, Zone 7 director from 1984 to 2008, said: "The board had a thing called common sense."[1]

1. Unless otherwise credited, all quotes are taken from oral history interviews recorded in 2017 as part of the Bay Area Public Works Oral History Project at the University of California, Berkeley. The interviews are housed in the archival collection of The Bancroft Library.

Six Decades of Commitment and Innovation

Under the board's direction, a succession of capable general managers has kept Zone 7 at the forefront of water-agency management practices and has prepared the valley to meet its future needs. Most recently—building upon the first fifty years of leadership and careful financing—the Zone 7 board has in the sixth decade, 2007-2017, pushed the agency to a higher level of service and accountability, ushering in an era of professional administration, transparency, and prudent asset management. The agency has a broad financial portfolio, reserve funds, a capital improvement program, a cost-saving two-year budget process, and a formal investment policy.

"I have worked with every general manager," said hydrogeologist Sands Figuers, a board member from 1988 to 2000 and also 2008 to the present. "Over time the needs of the zone change, and we've managed to find the managers that the board needed at the time."

As the Zone 7 Water Agency honors its beginnings and anticipates its future, a look back reveals sixty years of commitment and innovation in the delivery of water services. Here is that story, told largely by those whose leadership made the agency what it is today.

A Zone Like No Other

In the summer of 1950, Richard W. Karn, a new graduate of UC Berkeley's program in civil engineering, had begun his career with the state Division of Water Resources in Sacramento. "I got a phone call from Herb Crowle, the first engineer-manager of the Alameda County Flood Control and Water Conservation District, who offered me a job," he said.[2]

Karn became a principal staff engineer for Alameda County, working to establish and improve flood control in zones 1 through 4, including San Leandro, Castro Valley, and Hayward. "It fit into my own interests perfectly," he said.

Richard Karn

2. Quotes from Richard W. Karn are excerpted from his 2016 oral history, which also is part of the Bay Area Public Works Oral History Project archived at The Bancroft Library, University of California, Berkeley.

"A huge storm and flood occurred Nov 17, 1950," he recalled. "The flood sent us to Alvarado, where Alameda Creek was flooding. We stayed there all night, packing sandbags and bolstering the levees."

Major floods, which the staff had to physically fight, continued over Karn's first few years. "The district was county-wide, but to improve any portion you had to form a zone," he said. In 1957 the county took steps to form a new Zone 5 for its vast southern and eastern portions: Fremont, Newark, and Union City (Washington Township) and also the Livermore-Amador Valley (Murray Township).

"Crowle came out to the valley to sell it to the people in the area," Karn said. "But ranchers and farmers objected and hired an attorney-landowner who looked like a farmer but was actually a senior partner in Brobeck, a top law firm in San Francisco."

Sensing that he had lost credibility in the area, Crowle asked Karn to take over all flood control efforts for the Livermore-Amador Valley, a rural, agricultural region of 425 square miles with more than half the land area of Alameda County but less than 4 percent of its population, where future growth was stymied by a need for adequate drainage and water supply.

Although much of the valley was unincorporated, the attorney-landowner, Lowell Miller, helped local farmers persuade the two cities, Livermore and Pleasanton, to hold an election and seek a new zone of their own. Their request came with a promise, Karn said: "If you vote this down, we'll give you something better."

The farmers, led by vintner Ernest Wente, and the cities did vote against joining Zone 5. In an unprecedented move, they went to the state legislature and proposed amending the District Act to specify that the Livermore-Amador Valley would be served by a flood-control zone with a locally-elected board of directors to run it and approve its budget before submission to county supervisors.

Valley Flooding, 1955

Recent Awards, Honors, and Recognitions

In the last ten years alone, Zone 7's accomplishments have won recognition from local, state, and federal entities as it continues its quest to become fully independent from Alameda County while retaining responsibility for both flood control and water supply for the valley (two intertwined functions that could not easily be separated):

- **The California Climate Action Registry** named Zone 7 a "Climate Action Leader" in recognition of its proactive efforts to address global climate change (2007)
- **The Partnership for Safe Water** acknowledged the Del Valle Water Treatment Plant for the 15th consecutive year, hailing Zone 7 as one of few water utilities in the United States providing drinking water that surpasses federal standards (2014)
- **State groundwater legislation** cited Zone 7 as an example of one of the best water agencies in the state for sustainable groundwater management (2014)
- Both the **Government Finance Officers Association (GFOA)** and the **California Society of Municipal Finance Officers (CSMFO)** have recognized Zone 7 for excellence in financial reporting
- **The Special District Leadership Foundation** awarded Zone 7 "District Transparency Certificates of Excellence" (2015 and 2017)

The enabling state legislation, secured in 1955, included a mandate to provide a water supply as well as flood control and granted taxing power—up to 15 cents per $100 of assessed property value—to fund the new zone. In 1957 voters readily approved the plan and elected the new zone's leadership, a seven-member at-large board of directors with strong ties to the valley's agricultural base.

"That seven-member board was really a top-flight group of men from here. The top vote-getter was Karl Wente, who was the son of Ernest Wente…so he was elected as the first chairman of the board," Karn said. "From Livermore the others were Leo Callaghan, who was a mortician, and Eldred Chance, who was a real estate man… and Thornton Taylor, who was a rancher in north Livermore up in the Vasco region."

"Then the three from Pleasanton were Mel Neilsen, who was a farmer—had orchards near downtown Pleasanton—and Victor Lund, who was a rancher and had land south of Pleasanton, and Herman Koopman, who was also a rancher and had land south of Pleasanton. They were all stalwarts in the community. They really were."

The fledgling Zone 7 was the only Alameda County flood control zone also responsible for water supply. With the groundwater basin as the sole source of water for residents and the cities, Livermore was getting its well water from a private company, California Water Service Company, while Pleasanton had its own water system. The newly-developing Dublin area formed what is now the Dublin San Ramon Services District to handle both water and sewage treatment for that area.[3]

Zone 7's first bond election in 1960 passed easily. More than 80 percent of voters within the service area approved $5.67 million in general obligation bonds to address water supply, poor drainage, and flood hazards, with bond financing to be split between water supply and flood control.

3. The Dublin San Ramon Services District, formed in 1953 as the Parks Community Service District by local farmers seeking new sources of water, in 1961 became the Valley Community Services District, adding services related to the new housing developments known as the Volk-McLain planned communities. The district adopted its present name in 1977.

"We got the water project going here, and it was all done under local control and with local input, particularly from our Zone 7 board," Karn said. "I was really fortunate to be able to have such a great board to work with."

"Karl Wente, who was about my age, was really a good man, and we became close friends, even though he went to Stanford instead of Cal," he added. "We used to go and testify at hearings around the State of California in support of the State Water Project. He would introduce himself always, when he testified, as a farmer. Well, he had a master's degree in bioscience and was a really sharp guy, so when he was testifying it always became pretty apparent that he was not just a farmer."

Early Water Supplies and Facilities

As Karn saw it, the decision to form Zone 7 worked out well. "Herb Crowle always wanted to get into the water business, and we knew that the only place you could do it would be out here in the Livermore-Amador Valley."

All the other cities in Alameda County had sources of water. "Down in Fremont there was another district called the Alameda County Water District," Karn explained. "This was formed under County Water District general law. The Alameda County Water District was not a part of Alameda County government." After the State Water Project bond issue of 1960, Zone 7 began working closely with the Alameda County Water District, which also drew its water from wells, to support construction of the new South Bay Aqueduct.

Meanwhile, Zone 7 was negotiating with the state to contract for an aqueduct water supply. "We actually put our contract together with the state before the Metropolitan Water District did in Southern California, but the state would not sign the contract because they wanted to sign the first contract with the Metropolitan Water District because they were so big," Karn said.

"They were contracting for a lot more water than we were," he added. "The state, of course, didn't want to announce the big deal with a little district like we were."

Throughout this period Karn spent a lot of time testifying in hearings held by the assembly and senate water committees and also working closely with the state's Division of Water Resources. The State of California in time signed its contract with Zone 7, granting a yearly entitlement of 40,000 acre-feet of water from the South Bay Aqueduct.

As the first "straw" off the Delta, Zone 7 first began to recharge the local groundwater basin and then, with the construction of the Patterson Pass Water Treatment Plant, began to deliver fully-treated aqueduct water to retail customers: the Veterans Administration Hospital in Livermore and then the City of Livermore. As the use of aqueduct water allowed the groundwater basin to replenish, Zone 7 began supplying groundwater to the Dublin area's Valley Community Services District (now Dublin San Ramon Services District).

Zone 7 continued to draw some 80 percent of its water from the South Bay Aqueduct, and the annual entitlement increased to 46,000 in 1963. The board approved a thirty-year contract with the California Water Service Company in Livermore, requiring it to purchase most of its water from Zone 7 rather than depleting the groundwater basin. (This groundwater management tool would become a regular feature of contracts with other water retailers.)

Karn was by now leading the Water Resources and Planning Branch in the engineering division of county flood control, which Crowle had set up when Zone 7 went into the water business. "Zone 7 was going great," he said.

Current Programs and Facilities

The following programs and facilities are in place as Zone 7 marks its 60th anniversary:

Water Supply

- treated drinking water for 220,000 people in Pleasanton, Livermore, and Dublin plus, via special agreement, some 20,000 residents of the Dougherty Valley portion of San Ramon (Contra Costa County) through the Dublin San Ramon Services District
- untreated water for irrigation of 3,500 agricultural acres, mainly vineyards
- a Sustainable Groundwater Management Ordinance (consistent with state law in response to Zone 7's official recognition by the state as the Livermore-Amador Valley's sole groundwater management agency)
- initiating designs for new ozone water treatment projects that will improve water quality at both of the agency's surface water treatment plants (Del Valle and Patterson Pass)
- the Mocho Groundwater Demineralization Plant, which protects the groundwater basin and softens groundwater supplies
- water rights acquired from other jurisdictions and financed by developers, which have boosted annual water entitlements from the State Water Project
- groundwater storage and banking in water storage districts outside Alameda County to help assure adequate water supplies in dry years
- a demonstration plant that has tested new ultra-filtration membrane methods at the Patterson Pass Water Treatment Plant

Flood and Stream Management and Environmental Stewardship

- regional flood protection for 425 square miles of eastern Alameda County
- the reclaimed-quarry project "Chain of Lakes," which will capture flood water to enhance a reliable, high-quality water supply and aid regional flood protection
- a multi-benefit Stream Management Master Plan to enhance wildlife habitat and recreation in tandem with flood protection by using funding partnerships to achieve more public value
- thirty-seven miles of flood protection channels that represent a third of all channels and creeks in the Livermore-Amador Valley
- a "Living Arroyos" program to enhance urban streams and streamside habitats in ways that also protect drinking water supplies and prevent flooding (in partnership with Livermore, Pleasanton, and the Livermore Area Recreation and Park District)
- 5,000 newly purchased acres in the Lake Del Valle Watershed that will aid flood protection and enhance water quality
- a Grazing Management and Watershed Protection Plan for the new Lake Del Valle property
- timely and effective responses to the changes brought by weather cycles and by climate change (such as blue-green algae blooms and the cyanotoxins occasionally associated with those events)
- an alternative power and renewable energy-use portfolio that includes solar power installations and a project to pool power-and-water resources with partner agencies
- a partnership between regulatory agencies and local jurisdictions—developed and implemented under Zone 7's leadership—on the Eastern Alameda County Conservation Strategy, which fosters a holistic approach to preserving biological resources
- a collaboration with local, state, and federal agencies on fishery enhancement measures to help protect a threatened steelhead trout population in Alameda Creek while preserving water reliability
- financial reliability for flood protection, with property taxes used to operate and maintain the existing system and development fees used to expand it as needed

James Vivrette, who had replaced Crowle as engineer-manager of the district, left the county to become the director of public works for the City of San Leandro. "All of a sudden the engineer-manager position was open, and I got the promotion," Karn said. "I started on March 1, 1962, as engineer-manager."

Mindful of a local need for untreated water for agriculture, the Zone 7 board in 1965 approved contracts to provide irrigation water from the South Bay Aqueduct to the nearby Livermore vineyards of Wente Brothers Winery and Concannon Vineyards.


Phil Wente

"Certainly Zone 7 was not formed to provide agricultural water…and I'm fully aware of that," said Philip Wente (son of Karl Wente), a Zone 7 board member for sixteen years. "The fact that there was an opportunity to use some of the surplus capacity in the canal and the elasticity of the water supply to irrigate some agriculture was a bonus."

By the time he joined the board in 1978, Wente added, "There had been a use pattern established that allowed agriculture to use some of the facilities and to contract for water with the agency like the municipal and industrial users did, in the same manner. We signed contracts. We were required to pay for the facilities that allowed us to take water out of the canal so that it wasn't a burden to any of the ratepayers or anybody else other than the direct users. Agriculture covered its own expenses in that regard."

Leadership Changes and More Facilities for Water Conveyance and Treatment

As Zone 7's first decade drew to a close in 1966, Engineer-Manager Richard Karn departed the county flood control agency to enter a private civil engineering practice. Recalling the management aspects of his four years in that job, he said:

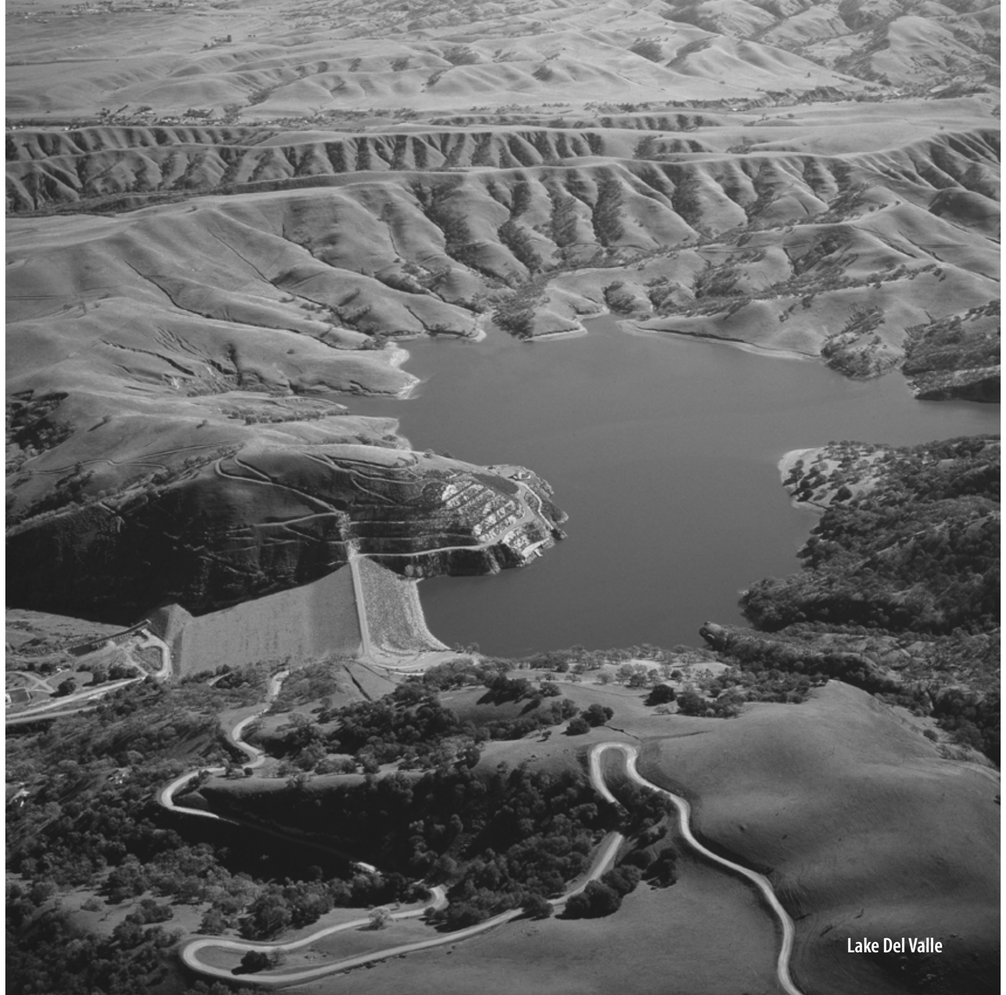
"When I became engineer-manager of the district in 1962, I had to get someone else to handle Zone 7…Gail Stanton took over and handled it for a while. When we put the water project together, I hired a man from the East Bay Municipal Utility District named Stan Saylor to come over because we didn't know anything about treating water or conveying finished water, and Stan had a lot of experience in that."

"Then Gail left and became the general manager of Oro Loma Sanitary District, and Stan took over. Then Stan left for private business[4] and Mun Mar was the guy who took over," Karn said. "Mun was really a good engineer, a good man."

Mar, a civil engineer who had been on the flood control district's permanent staff since 1958, proved a solid choice to lead the Water Resources and Planning Branch, which continued to administer Zone 7. In working with Paul Lanferman, the new engineer-manager who replaced Karn, Mar demonstrated a knack for administration and finance.

"When I got over there I started changing…how we present information to the board and what the minutes of the board meeting should include."

4. Before entering private practice, Stan Saylor served as Assistant Chief Engineer and later as General Manager of the Alameda County Water District.



Lake Del Valle

Mar said. "I just had a desire to get all the little, loose details buttoned up so that we're on firm ground all the time," he added. "It's more inclusive to bring the board into more of the details but not overwhelm them at board meeting times."

As Zone 7's facilities and programs took shape in the early years, one state project played a key role in water management, Karn recalled. "The state, with the Army Corps of Engineers, decided to build a dam on Arroyo del Valle, and that became both a water-regulating reservoir to serve off of the South Bay Aqueduct but also a flood-control facility," he said. "There was a reserve kept for flood control during the year which, as the winter went by and spring came, was available to the state because they didn't need it for flood control anymore. But it became a really significant part of the flood-control program here in Zone 7."

Formed by creation of the dam just south of Livermore between 1966 and 1968, Lake Del Valle today captures local runoff as a water supply for both Zone 7 and the Alameda County Water District, also aiding flood control by reducing the flooding along Arroyo Valle, Alameda Creek, and Arroyo de la Laguna.

Designated a "state recreation area," Lake Del Valle is also a public site for swimming, boating, and fishing, operated by the East Bay Regional Park District for the State of California.

In 1970, with a proposed expansion of its water system at issue in the communities of Livermore, Pleasanton, and Dublin—all of which had

60th Anniversary Celebration

In October 2017, Zone 7's board and staff members joined Grant Davis, the Director of the Department of Water Resources, and other agency and community representatives to celebrate the 50th anniversary of the creation of Lake Del Valle and the 60th anniversary of Zone 7. Davis applauded Zone 7's leadership throughout the history of the State Water Project, and he praised the State Water Contractors, including Zone 7, as collaborators in achieving statewide water reliability and advancing critical infrastructure projects such as the California WaterFix. He also described some of the challenges of the recent Oroville Spillway emergency and the need to elevate the importance of dam evaluations for nearly 1500 dams across the state and commended DWR's Delta Field Division Staff not only for their efforts for operating and maintaining critical portions of the SWP, like Del Valle.

Dick Quigley, Grant Davis, John Greci

distinct constituents and priorities—Zone 7 put forth to voters a second general-obligation bond measure. Although the bond did not muster the two-thirds majority required for passage, the agency and local advocates regrouped and tried again, and in 1972 voters passed an $8.2 million measure of a different sort.

"We got a revenue bond measure approved," Mar said. "They gave us authority to issue bonds to get the money to finance construction of the Del Valle Water Treatment Plant. So we hired a consultant to do the design work, and we did all the pipeline work from the plant all the way down to the valley and then the Cross Valley Pipeline. Once you have the money, it was preparing plans and specifications for bids for all of these projects. They came all at once, almost."

"That was an exciting time in terms of engineering," he added. "We had a lot of challenges in terms of plant location—When and how are the pipelines going to be installed? What's the timing?—for a lot of things so we could sell the bonds preceding the need for the money…It changed from a meet-and-confer negotiation and settlement to a time of, 'Okay, let's get these facilities in the ground.'"

Selection of the Del Valle site had a story, too, Mar said. Zone 7 needed a second water treatment plant to complement the one at Patterson Pass, and as the board considered a new site in the valley, Mar time and again reviewed the plans to convey water to the plant through a new pipe.

"We had to make adjustments as to where we would connect into the South Bay Aqueduct," he said. "They had made allowance for it years in advance, but all of our studies used that connection as the basis."

"One day, I sat there and looked at the plan and said, why do we want to do that? Why don't we set the plant [at Del Valle], make a new connection to the pipeline?" he said. "We're going to have to shut down the aqueduct anyway to connect up, so why don't we just shut it down and make a new connection so we don't have to build this big pipe to bring the water to the treatment plant?"

Mar's idea took hold, and the board agreed to construct the water treatment plant at Del Valle. By the mid-1970s, Zone 7 had completed the Del Valle Water Treatment Plant and the Del Valle pipeline, both essential to providing enough treated water to the growing community in the valley.

The board began to consider water rates for the coming years, establishing a new formula that allowed an annual adjustment of rates—a formula that was considered to cover the recurring costs of replacing equipment and machinery with short life spans.

Meanwhile, Zone 7 led Pleasanton, Livermore, and the Valley Community Services District in a process to develop a valley-wide wastewater management plan. The result was that the other three entities, as dischargers of treated wastewater, formed a joint powers agency, the Livermore-Amador Valley Water Management Agency, to export treated sewage from the valley.

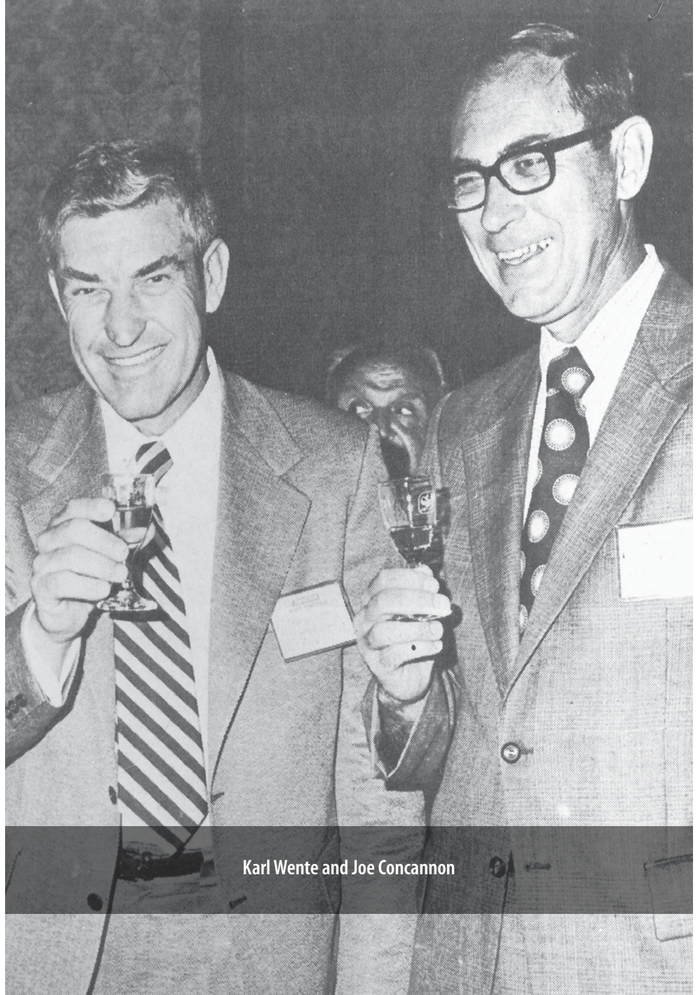
Zone 7's Financial and Administrative Framework

- A broad financial portfolio that supplements property tax revenue with water sales, grants, bonds, and a range of impact fees.
- Reserve funds, an asset management program, a capital improvement program, and other measures that promote sound financial management.
- A formal set of strategic planning priorities (adopted in 2012 and updated in 2013, 2015 and 2017) for water, flood control, administration, and public outreach.
- Early submission since 2010 of the Urban Water Management Plan required every five years by the California Department of Water Resources.
- An agency-specific Comprehensive Annual Financial Report prepared in accordance with State of California statutes.
- A recent shift to a cost-saving two-year budget (projected at $169 million for fiscal year 2017-2018).
- A formal investment policy with (1) investment authority delegated to the treasurer; (2) an updated reserve policy; and (3) new debt and purchasing policies.

Partial Autonomy from Alameda County

In an era characterized by strong views about growth issues for the valley—with the "growthers" facing off against the "no-growthers"—the 1976 election for Zone 7's board of directors attracted six candidates with previous experience as elected officials, including four former mayors, three of whom were elected. The election signaled an era of expanded depth and breadth of experience on the board, and subsequent elections continued to draw a mix of candidates, many with engineering or science backgrounds or with experience as elected officials—or both.

"You had people who had various interests, and they wanted those interests represented on the board," said vintner Philip Wente, who was elected in 1978, soon after the shift in board membership. "You had environmentalists, you had former city council people, you had agriculturalists, you had businessmen, and occasionally you had developers. There were a lot of different points of view represented. My recollection was we typically had very balanced boards."



Karl Wente and Joe Concannon

"Margaret Tracy[5], who is deceased now, was a no-growther," said Wente's fellow vintner James Concannon, a board member from 1984-2008. "But I respected her."

Jim Dixon and Jim Concannon in 2008

"Margaret Tracy was a mover and shaker," Wente said. "She represented the environmental groups in a pretty broad spectrum and the conservative side of limited development and resource management and environmental protection."

Zone 7's perpetual quest for more autonomy from Alameda County arose again as the composition of the board changed. "As time progressed, some [Zone 7] board members said, 'Why are there two boards? Isn't that redundant?'" Mar said.

Mar took a creative approach, first studying the history of the issue and then consulting with the county counsel. "I said, what we need is an MOU between the Zone 7 board and the board of supervisors," Mar recalled. "We convened a joint meeting of the two boards in Hayward, and they spent time jawboning about it."

That process bore fruit and in 1978, when the county granted Zone 7 more local control and autonomy, the board of directors could for the first time hire its own general manager. With several applicants and a mix of views and priorities among its own members, the board did not reach a decision easily. But in due time Mar won both the job and formal approval to move the staff from Oakland to a local site in the valley, a leased office space in Livermore.

"Mun really organized the district and ran it as a separate entity, almost, from the flood control district," Richard Karn recalled. "He was a good engineer. He was well organized. He could handle himself in public forums, and he knew how to satisfy the Zone 7 board of directors and keep them happy. That was very important."

"He ended up building the zone," he added. "I may have created it, but he's the man who really built it into what it is today."

5. A valley resident since 1957 and the first woman to serve on Zone 7's board, Margaret J. Tracy held her seat for sixteen years, 1978-1984.

ZONE 7 TIMELINE

1957
Voters elect a seven-member board of directors with strong ties to the valley's agricultural base, and vintner Karl L. Wente serves as the first board chair, while Richard W. Karn heads up the administrative efforts, serving as Zone 7's first engineer-manager.

1959
Zone 7 adopts a master plan for flood control, with special attention to the frequent flooding of northern Pleasanton and parts of Livermore, Dublin, and Sunol.

1961
Zone 7 enters into a contract with the State of California for a yearly entitlement of 40,000 acre-feet of water from the newly constructed South Bay Aqueduct.

1962
Zone 7's new Patterson Pass Water Treatment Plant east of Livermore begins operations with a treatment capacity of 6 million gallons a day (later expanded).

1965
The Zone 7 board approves the first contracts to provide untreated water for agricultural irrigation to the vineyards of Wente Brothers Winery and Concannon Vineyards.

1966
Engineer-Manager Richard Karn leaves Zone 7 to enter a private consulting firm and is replaced by Paul Lanferman, Zone 7's head of construction and maintenance.

1968
The first unit of Vasco Pipeline is constructed to bring water to the north Livermore area.

1969
With a proposed expansion of Zone 7's water system complicated by the unique issues and views of the valley's three communities (Livermore, Pleasanton, and Dublin), Zone 7 puts forth a general obligation bond measure, which falls short of the two-thirds majority vote required for passage.

1972
Zone 7 leads an effort joined by Pleasanton, Livermore, and the Valley Community Services District to develop a valley-wide wastewater management plan. As dischargers of treated wastewater, the other three entities form a joint powers agency, Livermore-Amador Valley Water Management Agency, to export treated sewage from the valley.

1974
The Zone 7 board addresses water rates for the next five years, establishing a formula that allows an annual adjustment of rates (now to include a component to cover the recurring costs of replacing equipment and machinery with short life spans).

1975
The Del Valle water treatment plant and the Del Valle pipeline are completed.

1985
Zone 7 adopts its first Urban Water Management Plan, as required by the California Urban Water Management Planning Act (as set forth in the California Water Code).

1991
Zone 7 signs a memorandum of understanding to implement an urban water conservation program.

1992
Groundwater storage allows the Livermore-Amador Valley to survive prolonged drought conditions from 1987 to 1992, the worst six-year drought since the late 1920s, without mandated water rationing.

Zone 7 establishes a Rate Stabilization Reserve to mitigate water-rate fluctuations during times of drought or emergency supply outages.

1997
As the demand for untreated water for irrigation increases in the valley, Zone 7 establishes a connection fee to cover the costs of supplying untreated water to new agricultural clients.

1999
Zone 7 joins the Alameda Creek Fisheries Restoration Workgroup in its efforts to restore steelhead trout to portions of the Alameda Creek watershed.

2000
A new agreement with the Dublin San Ramon Services District allows Zone 7 to service the Dougherty Valley area of San Ramon (located in Contra Costa County), with fees to be adjusted every five years.

2003
State legislation grants Zone 7 greater local autonomy and independence from Alameda County government on issues and projects specific to the Zone 7 area.

2004
The State of California increases Zone 7's yearly entitlement from the South Bay Aqueduct to 80,619 acre-feet of water, twice the amount of the first entitlement in 1961.

2005
Zone 7 moves its headquarters from Pleasanton to North Canyons Parkway in Livermore.

2006
Zone 7 escalates its level of participation in the statewide water-planning process, securing a seat on the steering committee for the new Bay Delta Conservation Plan.

2007
Construction begins on the Mocho Groundwater Demineralization Plant.

The valley community joins with current and former board members and general managers to celebrate Zone 7's 50th anniversary. The agency publishes "Quenching the Thirst, Quieting the Flood Waters: 50 Years of Zone 7 in the Livermore-Amador Valley."

In recognition of its proactive steps in helping to address global climate change, Zone 7 is granted Climate Action Leader status by the California Climate Action Registry, a nonprofit public-private partnership that serves as a voluntary greenhouse gas registry.

2009
Zone 7 approves an increase in fees paid by new developments in order to mitigate the increased runoff from new buildings and pavement. The fees will cover a proportionate share of costs for flood-protection measures in the Stream Management Master Plan.

The new Mocho Groundwater Demineralization Plant begins operating, slowing the buildup of salts and minerals in the groundwater basin and thereby protecting the basin's long-term use, promoting recycled water for irrigation, and softening delivered water.

The Zone 7 board votes to raise wholesale rates for treated water in 2010, also outlining how cost-saving measures already have resulted in a smaller-than-expected rate increase.

2010
Zone 7 achieves early submission of its Urban Water Management Plan, which is required every five years by the Department of Water Resources. (Zone 7 is not directly required to reduce per capita water use as mandated in SB 7, but it supplies water-use projections and supports the efforts of its four retailers to comply with the new law.)

With official acceptance of its Urban Water Management Plan by the Department of Water Resources, Zone 7 becomes eligible to apply for state grants, winning partial funding towards construction of a demineralization plant.

2011
Zone 7 completes a 348-kilowatt solar power installation at its Del Valle Water Treatment Plant. The solar panels are expected to reduce greenhouse gas emissions while producing one-third of the energy for water treatment and other plant operations, reducing Zone 7's costs by some $800,000 over twenty years.

2012
Over three years (since 2009-10) Zone 7 cuts its annual operating budget by more than $4 million through (1) a soft hiring freeze, (2) employee benefit and cost-of-living wage concessions, (3) maximizing in-house resources and turning less often to outside contracts, and (4) participating in a consortium of Bay Area water agencies that jointly buy large quantities of common water treatment chemicals at reduced rates.

The Zone 7 board of Directors votes to hold 2013 wholesale rates for treated water to 2012 levels and to limit a rate increase in 2014 to the current inflation rate.

2013
With several partner agencies, Zone 7 inaugurates the Living Arroyos Program, joining with the local community to improve the urban streams and streamside habitats of the Livermore-Amador Valley.

Zone 7 purchases the Lake Del Valle property known as Patterson Ranch for the purpose of watershed protection and preservation.

2013
Zone 7 increases its portfolio of alternative power and renewable energy use through a Power and Water Resources Pooling Authority project at the Patterson Pass Water Treatment Plant.

2014
Zone 7 and other water agencies conceive and develop the Bay Area Regional Reliability (BARR) partnership, a regional approach to water for some 6 million residents and thousands of businesses and industries in the Bay Area. BARR works to improve the reliability of the water supply; enhance emergency preparedness; address climate change and resiliency; maximize investment in infrastructure; and promote the sharing of water during droughts.

State legislation cites Zone 7 as an example of one of the best water agencies in the state for sustainable groundwater management.

Zone 7 adds new stream gauges to its stream gauging network and begins real-time flow reporting via its Storm Central website.

2015
The Special District Leadership Foundation awards Zone 7 a "District Transparency Certificate of Excellence"

2017
The Zone 7 board approves a Sustainable Groundwater Management Ordinance that is consistent with state law, prepared in response to Zone 7's official recognition by the state as the Livermore-Amador Valley's sole groundwater management agency.

The Zone 7 board approves multiple measures to improve the agency's financial administration and elevates the position of Assistant General Manager—Finance so that the incumbent serves also, by appointment of the board, as the agency's treasurer.

Zone 7 celebrates its 60th anniversary with a year of programs and events. A celebratory 18-month calendar (July 2017 through December 2018) features artwork by fourth-grade students at John Green Elementary School in Dublin, Walnut Grove Elementary School in Pleasanton, and Sunset Elementary School in Livermore.

Flood Protection, Water Supply, and the Chain of Lakes

A period of drought in the late 1970s revealed that Zone 7's groundwater resources could assure an ample water supply, even when nearby regions faced severe rationing. Yet to shore up a reliable supply of high quality water and enhance regional flood protection, Zone 7 had for many years talked of a proposed "Chain of Lakes" that would capture storm runoff in exhausted quarry sites and replenish the underlying groundwater basin.

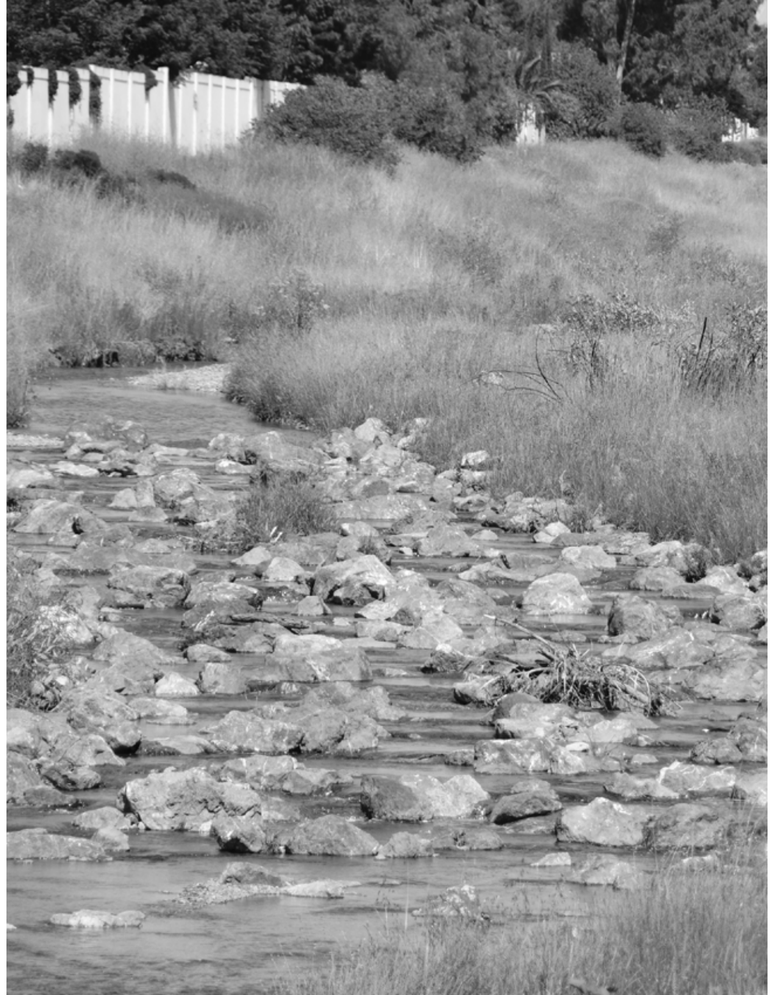
"I was deeply involved with the quarry operators in the Livermore Valley," Mun Mar recalled. "There were three major producers of sand and gravel. One was Kaiser Sand & Gravel. Then there was Lone Star Cement, and then there was the Jamieson Company."

"The quarry operators would always go back for renewal of their permit," he added. "Then we realized that of course they're mining the very groundwater resources we had for water."

"One of the things for reclamation was that they wanted to line all the pits, take all the garbage from the Bay Area, put it in there," Mar added. "We actually took it all the way up to the State Water Resources Control Board…and I decided, 'I'm going to make a disruption here.' I said, 'Why would you put garbage in the groundwater basin?' I kept it simple."

The State Board turned the quarries down, so Kaiser hired Richard Karn, now in private practice, to come back into the picture he had been part of from the beginning. He and other private practitioners collaborated with Zone 7 to further the Chain of Lakes idea.

"Actually, it took about ten years of negotiating," Mar said. "We finally got all the pieces together and wrote up three separate agreements, worked with county counsel on the agreements as to the properties involved and who would be doing what. The essence of it is that they would complete the Chain of Lakes concept that was approved by the



county planning commission. Upon completion by any of the operators, their lands would be conveyed to Zone 7."

"The zone would then, over the long term, get pieces of this Chain of Lakes that could become part of its water-supply system," Mar added. "Waters could be imported and put in the Chain of Lakes because of these big holes in the ground. The storage capability was equivalent to the storage capability of Lake Del Valle, and so it gave us a lot of opportunity to enhance our water-supply system and its reliability for the valley. I think that was most of my work through that period, dotting i's and crossing t's and drafting contracts."

"I always took the view that, 'Hey, you're removing our groundwater basin. You're doing irreparable harm. I know you can't go backwards. What I think would be fair is that you leave us reasonably whole,'" Mar said. "That was my mantra for about ten years, leaving us reasonably whole."

Zone 7 made some concessions along the way, such as keeping the groundwater basin low so that the quarries could operate more economically, but that approach had to square with other facets of groundwater management. "We can't do that forever," Mar said.

Finally, though, the zone had prevailed on a long-term plan for quarry reclamation in the valley, laid out in the "Specific Plan for Livermore-Amador Valley Quarry Reclamation" adopted by county supervisors in 1981. More than thirty-five years later, only one of the ten lakes in the chain is now in Zone 7's possession. Time extensions for quarrying have delayed the other expected transfers to Zone 7.

"We were going to get these lakes in 2030," said Richard Quigley, a board member since 2004. Within the last couple years that's been postponed to 2058."

The Chain of Lakes was never going to happen quickly, but the concept retained strong support all around. "The essence of it is that at the end of it we would wind up with the land, facilities capable of transferring water from one property to another, and that we would have a series of lakes that we could operate and manage," Mar said. "That was the big picture."

"It's the most exciting thing since I've been on the board," said John Greci, who has served as a director since 1994 and has been elected six times. "I'm just elated. We'll be able to divert water from the arroyos into the gravel pits and store it. That will permeate in, recharge the basin, and we'll have storage also in the open quarries."

"The underground storage is the best because it avoids evaporation [from open-water sites such as lakes]. We did a study. Four feet of water evaporates off of Shadow Cliffs a year," Greci added. "Recharging through Chain of Lakes is dual purpose, storage and recharge. We are so lucky to be able to do that."

A Resurgence of Agriculture

The Livermore-Amador Valley's local viticulture industry, in existence since the nineteenth century, had fallen off by the late 1960s, and the valley also had missed out on the California wine boom that played out farther north in the 1970s. With rapid growth ever more at issue, the valley's vast agricultural lands were constantly under the threat of development, and the number of wine-growing operations dwindled to a handful.

"Starting in the early eighties, we sat down with the cities of Livermore and Pleasanton and the County of Alameda supervisor for this area," said Philip Wente, "and talked about what it would take to put together a more long-range county general plan amendment that would allow for agricultural development as well as agricultural commercial development, the types of things that were going on in Napa and Sonoma that attract tourism."

These discussions took shape, and the formal South Livermore Valley Steering Committee, begun in 1987, included property owners, environmental groups, political organizations, and other stakeholders. The committee began a comprehensive planning process for the region, and by 1993 the completed South Livermore Valley Area Plan outlined economic incentives and regulations for development that would encourage investment in viticulture and limit the development of agricultural lands.

Established in 1994, the non-profit South Livermore Valley Agricultural Land Trust (now the Tri-Valley Conservancy) facilitated the preservation and protection of agricultural and open space lands. As part of the agricultural land trust movement pioneered by the nearby Marin Agricultural Land Trust, it was one of many land trusts formed to save farmland around California and throughout the United States.

"It was very successful and is the reason that we now are about fifty-five wineries here in Livermore," Wente said. "We rebounded off our four-to-six low point and turned it around."

Wente's fellow vintner and former Zone 7 board member James Concannon agrees. "We didn't want to move [our winery], but it was going to happen because of subdivision-itis," he said. "By putting the South Livermore Valley specific plan in…it's amazing what has happened…There are [many] more wineries in the valley now."

As agriculture began to rebound and expand in the valley, the demand for untreated water for irrigation increased as well. Existing agricultural users of untreated water were "grandfathered" in, but Zone 7 established a connection fee to cover the costs of supplying water for irrigation to new clients. The proximity of the South Bay Aqueduct—flowing southwest from Bethany Reservoir through the Livermore-Amador Valley almost to San Jose—allowed the agency to provide more water with relative ease, if and when it was available.

"I think agriculture is necessary," said geotechnical and soils engineer William R. Stevens, a board member since 1998. "The grape growers now are so efficient in their water use. It's a consortium of people…they trade [with each other]…they're pretty much self-sufficient."

More Water Challenges and an Era of Leadership Changes

In 1985 Zone 7 expanded the use of its right-of-way for flood control by adopting an Arroyo Management Plan, which would allow the recreational potential of projects to be developed in cooperation with local agencies having park and recreation responsibilities. Also in 1985 came the first Urban Water Management Plan, which the California Urban Water Management Planning Act of 1983 now required of each water agency every five years.

With California plagued from 1987 to 1992 by the worst six-year drought since the late 1920s, the Livermore-Amador Valley again survived without mandated water rationing owing to Zone 7's program of groundwater storage, retrieval, and replenishment. But the agency did embrace the concept of voluntary rationing, signing a memorandum of understanding to implement an urban water conservation program. The board also established a rate stabilization reserve to ease water-rate fluctuations during times of drought or emergency supply outages.

When Mun Mar retired in 1990 as the general manager of Zone 7, capping an exemplary career of more than forty years with the agency, the board went outside for his successor, James Dixon, a civil engineer and former longtime chief of Sacramento County's Water Resources Division.

By 1994, General Manager Dixon had overseen completion of the Vineyard Pipeline, a seven-mile and $7.2 million project begun during Mar's tenure to deliver high-quality treated surface water to the valley's western customers, both to increase the reliability of the water supply and to improve its taste. That year Dixon addressed Zone 7's recent accomplishments and current priorities in an annual report to the board and the public, the first of its kind. "Good management means planning for the future," he wrote.

"We began the year with Zone 7 Board or Directors' approval of a comprehensive planning report that identifies our water needs to the year 2020 and outlines alternative strategies to meet those needs," he added. "We closed the year by approving, conceptually, changes in our state water contracts that could meet those needs."

With the help of Assistant General Manager Vince Wong, who had an illustrious Zone 7 career of his own, Dixon oversaw the agency's negotiations for new water supply contracts with the retail water suppliers[6]; bringing water connection charges and drainage area fees up to date; and beginning the process of negotiating with the Dublin San Ramon Services District and developers so that Zone 7 eventually could deliver State Water Project water to the Dougherty Valley, located outside its service area.

When Dixon retired in the spring of 1997 after six and a half years as general manager, the board chose Dale Myers, who had been with Zone 7 since 1980, most recently as assistant general manager of emergency and support services, to lead the agency.

Regional and Statewide Water Issues

In addition to new leadership, Zone 7's fifth decade (1997 to 2007) brought a new emphasis on long-term planning and a robust engagement with regional and statewide water issues.

The agency continued negotiations with developers of the planned Dougherty Valley community in neighboring Contra Costa County to finance the transfer of 7,000 acre-feet per year of State Water Project contractual water rights from the Berrenda Mesa Water District in Kern County. The controversial project ended up in litigation, but several years of effort finally brought a settlement that all the affected local governments, the Dougherty Valley developers, and Zone 7's board could support.

"I, for one, opposed it from the beginning," wrote John P. Marchand, a water quality chemist and board member from 1990 to 2005, in a letter to the editor of a local newspaper. "It has long been the board's policy that new development should pay its own way."

6. The four retailers are the City of Pleasanton, the City of Livermore, the Dublin San Ramon Services District, and the California Water Service Company–Livermore District, which serves a portion of Livermore. The retailers together serve about 240,000 residents and businesses in the Livermore-Amador Valley.

Sacramento-San Joaquin River Delta

Regional and Statewide Player in Water Policy

In addition to its programs and facilities for the Livermore-Amador Valley, Zone 7 has carved out a sizable policy niche on the regional and statewide water scene. The agency:

- has emerged as a key player in "California WaterFix," the planning process for updating water infrastructure and conveyance for the Sacramento-San Joaquin River Delta ("the Delta"), serving as one of the State Water Project's longtime representatives on the statewide executive committee working to improve water reliability for all Californians
- is a founding member of the Bay Area Regional Reliability (BARR) partnership, a joint effort by key water agencies to conceive and implement a regional approach to water supply, flood emergencies, climate change, and drought
- is a member of the Bay Area Water Agencies Coalition (BAWAC), the group coordinating integrated regional water-management planning (representing the water-supply function)
- is a member of the Bay Area Flood Protection Agencies Association (BAFPAA), the group coordinating integrated regional flood-management planning (representing the flood protection function)
- works with other agencies to explore new technologies such as desalination (for example, joining other Bay Area water agencies to consider a regional water-supply project centering on desalination and water transfers to serve millions of people)
- is a noted participant in professional trade organizations, such as the Association of California Water Agencies (ACWA) and the California Urban Water Agencies (CUWA)

"All of the infrastructure costs will be borne by the developers and not current residents," he wrote. "Long ago, I was secure with the fact that Zone 7 staff had ensured that Zone 7 would be 'whole.'"

John Marchand

By 2000, a formal agreement with the Dublin San Ramon Services District allowed Zone 7 to supply treated water to the Dougherty Valley portion of San Ramon (in Contra Costa County), with fees to be adjusted every five years.

"Dale Myers at that time was able to hammer out a nice contract," said board member William R. Stevens. "They had to get their own water…so we supported it."

The Dougherty Valley process was the first of several developer-funded acquisitions that by 2004 had increased Zone 7's total yearly entitlement from the State of California to 80,619 acre-feet of South Bay Aqueduct water, twice the amount of the first entitlement in 1961. Zone 7 also looked outside its boundaries for water storage and added offsite groundwater capacity in order to strengthen the overall reliability of the water supply.

"The state, on a long-term basis, could no longer meet the contractual demands," said Marchand. "The state had sold 4.2 million acre feet in contracts, but at that time…they couldn't meet the full contractual demand."

"Today they can only meet less than 1.7 million acre-feet," he added, "so we've become less and less secure in the state supply, which is, again, why we bought the additional entitlements."

The long road to independence from Alameda County government hit a milestone in 2003, when state legislation (AB 1125) amended the Alameda County Flood Control and Water Conservation District Act, granting Zone 7 greater local autonomy and independence on issues and projects specific to the Zone 7 area. Although full independence has remained under discussion, the county today continues to administer human resources and other limited aspects on behalf of Zone 7.

Under General Manager Dale Myers and his chosen deputy, Assistant General Manager Jill Duerig, Zone 7 ramped up its participation in the statewide water-planning process, securing a seat on the steering committee for the new Bay Delta Conservation Plan and also representing the State Water Project on the executive committee formed to create a Delta Habitat Conservation and Conveyance Program.

With degrees in both science and civil engineering, Duerig also had substantial water agency experience. After years of groundwater cleanup and supervision for the Alameda County Water District, Duerig had helped direct the startup of that agency's new water treatment plant in the early nineties. She then took a law degree from Santa Clara University and joined an environmental law firm for a time, continuing to work on groundwater cleanup, before returning to the water field in 2003 as General Manager and Chief Engineer of the Scotts Valley Water District in the Santa Cruz Mountains.

Joining the Zone 7 staff as engineering manager in 2005, Duerig quickly took on the priority projects of General Manager Myers, including such signature achievements as developing a Water Quality Plan and a Salt Management Plan. "After I had been here less than six months, he promoted me to being his assistant general manager so that we were working very closely together," she said.

When Myers retired in February 2007, the board quickly promoted Duerig to General Manager. In an unusual move, Myers—now a private citizen—soon ran for and was elected to the Zone 7 board of directors. Although he served only eight months before stepping down, his earlier administrative leadership of the agency and strong negotiating skills had helped to set the stage for future successes.

"His brilliance was he was a wheeler-dealer and he found water," said board member Sands Figuers, who served 1988-2000 and now serves again since 2008. "We now have a lot of off-site storage…tens of thousands of acre-feet of water we can pull on when we need to."

"That's why he did it," he added. "We needed water banks, and he created the bank accounts."

Water Treatment and Water Quality

In addition to developing and upgrading major facilities for water treatment, Zone 7 became known for a special interest and expertise in matters of water quality. With scientists and civil engineers on both its board and its staff, the agency gravitated towards an expansive view of the threats to water quality and the options for removing those threats.

After gasoline refiners began using MTBE[7] as an additive in California gasoline in order to meet air quality rules, for example, storage tanks and pipelines started leaking the compound into water supplies.

"Zone 7 was the first agency in California to pass a resolution on MTBE," said former Director John Marchand, whose own water quality career with the Alameda County Water District allowed him a sophisticated understanding of the issue.

"A few weeks later I was at a conference, and one of my colleagues in the American Water Works Association came up and said, 'You haven't gotten caught up in all this MTBE nonsense, have you?' I said, 'Actually, our agency is the first one to pass a resolution.' That was in, probably, June."

"In October of that same year, [the same colleague] was moderating a panel on MTBE contamination," he added. "So Zone 7 was really leading the curve on all of that. It showed our commitment to water quality and water reliability."

In 1999, Zone 7 was recognized as one of the top ten water utilities in the nation with the director's award from the Partnership for Safe Drinking Water, a collaboration between the EPA and the American Water Works Association.

7. methyl tertiary butyl ether

Mocho Groundwater Demineralization Plant

"I actually went back to Chicago and received the award on behalf of the Zone 7 Water Agency and also the Alameda County Water District, for whom I worked," said Marchand. "It was literally water quality from A to Z as I collected the Partnership for Safe Drinking Water awards for the two agencies that I worked for, one as a board member, one as a staff member."

"Out of 161,000 water utilities in the nation, Zone 7 and ACWD were recognized as two of the top ten," he added, "so I was very proud of that."

Starting in 1999, Zone 7 cooperated with its four retailers (wholesale customers for treated water) and a group of local experts (the Groundwater Management Advisory Committee) to develop a plan to control and reduce salt loading of the groundwater basin, both to improve long-term water quality and to facilitate the use of recycled water. The Salt Management Plan (SMP) was finalized and adopted in May 2004 and approved by the San Francisco Bay Regional Water Quality Control Board one month later.

"When you talk about minerals…in the chemical sense, you often use the term 'salts.' So when you're talking about desalination it means not just like seawater—taking the salt out—it means generally mineral removal," said General Manager Duerig. "We actually constructed a demineralization plant for our groundwater…it uses the technology reverse osmosis to take out the minerals."

"So we have improved the salt balance, or the mineral balance, for the entire basin and it allows us to recycle more water without overly concentrating the salts. People are happier because they're getting softer water. The Regional Water Quality Control Board is happier because we're not overly building up minerals and salts from our recycling processes."

The Salt Management Plan became a cornerstone of the Groundwater Management Plan adopted in 2005. Also in consultation with the retailers, the Zone 7 board in 2003 adopted a Water Quality Management Plan, setting more stringent targets than state and federal water-quality standards.

"Because of my background in biology/chemistry, I'm a water quality person through and through," Duerig said. "The reason I sit on the ACWA board is because I chair the water quality committee. I co-chair the water quality committee for CUWA, too. Water quality is my first love."[8]

"Jill has done a fantastic job working with the retailers, continuing that legacy of a good working relationship with our retailers," said John Greci, a board member since 1994. "They're such a vital part of what we do."

As had been true for years, California's water agencies must every five years submit a revised Urban Water Management Plan to the state Department of Water Resources.

"Zone 7 had done one in 2000 and submitted it to the state…It took the state almost three years to review, and they sent us a letter back and said it's deficient," said Duerig, who was then Assistant General Manager, Engineering. "I decided that we were going to make a point of getting the 2005 urban water management plan approved by the state, not just because it was the right thing to do but also because a lot of opportunities for state funding were based on having an approved urban water management plan."

Zone 7 submitted the 2005 plan before the deadline, and the results came fast. "One of the first [state grants] we got was on a demineralization plant," Duerig said. "We got about three-quarters of a million dollars towards construction. It was probably $20-30 million, but nevertheless it was probably the first [major] grant Zone 7 had received."

8. Association of California Water Agencies (ACWA) and California Urban Water Agencies (CUWA)

Exploring Water Treatment Options

Ultra-Filtration

As part of ongoing efforts to maintain and upgrade its facilities, Zone 7 in 2003 completed a new demonstration plant, an ultra-filtration membrane facility at the Patterson Pass Water Treatment Plant that added a treatment capacity of 8 million gallons a day.

The project used an alternative construction-delivery method, Design-Build (an integrated and cost-effective approach in which the designer and the general contractor work together from start to finish), to demonstrate differences from the traditional Design-Bid-Build approach (in which the designer and the general contractor are separate entities working in distinct phases over a longer period of time).

The demonstration project allowed the Agency to develop plans for permanent expansions and to identify advantages and disadvantages of alternative delivery methods.

Desalination

The West Coast's first municipal sea water desalination plant had opened on Catalina Island in 1989, but barriers of access and cost had prevented many areas from adopting similar methods. In 2009, Zone 7 brought online its first brackish water desalination plant, the Mocho Groundwater Demineralization Plant. This plant elevates the quality of delivered water and improves groundwater salt management, thereby allowing more water recycling in the valley.

In 2010, Zone 7 also joined four other Bay Area water agencies that had collaborated since 2003 on a possible regional water supply project that would combine desalination and water transfers to serve the needs of over 5.6 million residents and businesses in the region.

Ozone

Like utilities and agencies around the Bay Area, Zone 7 has had to face consequences—over and above occasional floods—of evolving weather patterns and climate change, including a proliferation of blue-green algae in its water storage facilities.

Zone 7 began working to prevent the serious water-supply problems that occurred elsewhere in the country under similar conditions. After ramping up its monitoring, the agency joined its State Water Project partners, the Alameda County Water District and Santa Clara Valley Water District, in a rigorous scientific study of how to treat the cyanotoxins that can be produced by algae.

"Those studies showed chlorine, which we do use, is okay," said General Manager Duerig. "But really the only thing that treats cyanotoxins is ozone, so we said, ah, perhaps we should put those ozone projects on the front burner."

Zone 7 accelerated ozone projects for both of its surface water treatment plants, eventually winning over board members to the realities of need and cost.

"We're one of the last agencies to go ozone," said Richard Quigley, a Zone 7 director since 2004. "Some of us board members have been fighting it because of dollars for years, and the overwhelming support of the neighborhood has taught us that we've got to get with the program."

"Treating with ozonation and granular-activated charcoal…would also remove some of the contaminants of emerging concern, the endocrine disruptors and things like that," said biochemist Sarah Palmer, a board member since 2006. "We need to get the ozonation in because then also we wouldn't have the…taste and odor issues we have now."

Flood and Drought Cycles and the 21st Century Economy

The year 2007 started with a howl, as winter storms lashed California and the west. As the state began to recover, a judge of the Alameda County Superior Court in March ordered the Department of Water Resources to shut down the state's water export pumps in the South Delta in order to protect endangered salmon and Delta smelt in the vicinity of the pumps.

For nine days, water agencies across the state were forced to rely on supplies normally reserved for droughts. Although Zone 7 cleared the hurdle without having to institute emergency measures of its own, it would have faced dramatic challenges if the shutdown had lasted just a few days longer.

In late August 2007, a federal court ruling significantly reduced water deliveries so that state and federal agencies could formulate a plan to protect Delta smelt and other endangered species, possibly via a "dual-conveyance" system to move water from the northern Sierra through the Delta itself and also through a new pipeline or canal around the Delta, thereby offering flexibility to accommodate the habitat needs of fish along with the water-supply needs of Californians. During this period Zone 7 saw the reliability of its State Water Project supply drop from 76 percent of its annual allocation to 60 percent. The reduced allocation would only be available in an average weather year, not during a drought.

Meanwhile, Zone 7 began to implement its new Stream Management Master Plan, adopted in 2006 during the tenure of General Manager Dale Myers to guide the agency's efforts to restore streams by enhancing wildlife habitat while providing suitable recreational benefits, recharge optimization and

educational opportunities. The new plan also set forth enhancements to regional flood protection, to be carried out in the future by capturing flood water in the reclaimed-quarry project, the Chain of Lakes.

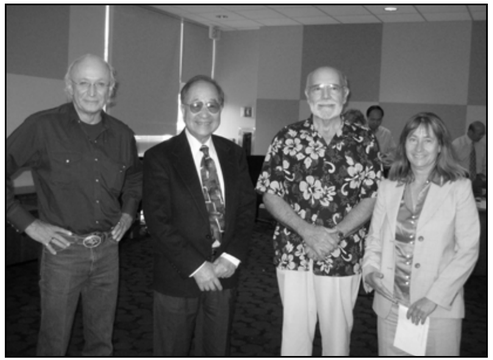
The lingering effects of the 2008 economic recession, which greatly slowed local development—combined with reduced revenue owing to water conservation during the 2014 drought—sent Zone 7 into financial crisis. Over three years (fiscal years 2009-10 through 2012-13), the agency slashed its annual operating budget by more than $4 million through:

1) a soft hiring freeze,
2) employee benefit and cost-of-living wage concessions,
3) maximizing in-house resources and turning less often to outside contracts,
4) participating in a consortium of Bay Area water agencies that jointly buy large quantities of common water treatment chemicals at reduced rates, and
5) delaying major capital projects, including construction of the new Altamont Water Treatment Plant, for which designs had been completed and property acquired (this project alone would have cost $150-200 million).

Some remnants of the recession have persisted since then, prompting the board to further delay some projects and other plans.

"Zone 7's financial picture hasn't changed, but the overall size has increased," said board member Sands Figuers. "The zone is where it needs to be right now, but we're just as bound by economics as everyone else."

Even with capital projects proceeding more slowly owing to the financial realities of the last decade, Zone 7 has been able to bring new facilities and programs online. In 2011, the agency added a 348-kilowatt solar power installation at its Del Valle Water Treatment Plant. The solar panels reduce greenhouse gas emissions while producing about one-third of the energy required for water treatment and other plant operations, savings that could reduce Zone 7's costs by some $800,000 over twenty years.



Four General Managers: Dale Myers, Mun Mar, Jim Dixon, Jill Duerig

In 2013, Zone 7 joined the cities of Livermore and Pleasanton and the Livermore Area Recreation and Park District to inaugurate the Living Arroyos program. The four jurisdictions now work together to enhance urban streams and nearby habitats in ways that also protect drinking water supplies and prevent flooding. And in 2014, Zone 7 added new stream gauges to its stream gauging network, which for the first time allowed public access to real-time flow reporting on the Storm Central website.

Meanwhile, Northern California had entered a period of punishing drought. For five years, from 2012 through 2016, sunny winters took a toll, causing Governor Jerry Brown to order a 25 percent statewide cut in urban water use. In early 2014, the Zone 7 board of directors proclaimed a state of local drought emergency, which stayed in place until mid-2016. Even then, the agency imposed a voluntary 10 percent conservation target in support of ongoing statewide water conservation efforts.

9. Director Ramirez Holmes's comment came in writing rather than in an interview.

"The recent drought was considered the worst in 150 years of recorded history in many parts of the state, including the Livermore-Amador Valley," said Angela Ramirez Holmes, a board member since 2012. "It's a reminder that water is not an infinite supply, and it brought a sharper focus on sustainability and on diversification and local control of Zone 7's water supply."[9]

Zone 7 assumed another leadership role in 2014 as a founding member of the Bay Area Regional Reliability (BARR) partnership, a joint effort by the Bay Area's largest water agencies to address water supply, flood emergencies, and climate change, and to establish a regional drought contingency plan. The regional approach was put to the test early in 2017, as a series of winter storms brought a swift end to the drought but caused facility damage to many flood channels and also damaged residential areas farther south in San Jose.

In recent years Zone 7 also has joined other local jurisdictions and both state and federal resource agencies to address habitat conservation. The "Eastern Alameda County Conservation Strategy" aims to provide a collaborative and consistent approach to preserving the area's biological resources. The idea is to help coordinate and streamline mitigation requirements associated with various development and infrastructure projects (including Zone 7s water-supply and flood-protection projects), and to direct those mitigations to areas of strategic biological value.

As the complexities of the twenty-first century unfold, Zone 7 joins with other water agencies, other levels of government, and key players from all sectors to confront the issue of long-range water management, storage, and conveyance, all with an eye to the limits of California's overall water supply.

"My concerns as a scientist are to make sure that the Delta itself is healthy because I think that is crucially important to the entire Bay Area," said biochemist Sarah Palmer, a board member since 2006.

"The educator in me would like to see ongoing education for the public—not just of the public but for the public—in terms of helping people and ourselves understand what some of the issues are," she added. "Education for all."

Groundwater Management

Groundwater remains a critical component of Zone 7's program of integrated regional water management. During wet years, the agency banks excess supplies in both the local groundwater basin and in off-site storage banks operated by the Semitropic Water Storage District and the Cawelo Water District (both located in the Central Valley) in order to assure reserves for use in dry years.

This "conjunctive use" of the agency's State Water Project supply also protects against seasonal fluctuations in demand, and it preserves the supply in large storage reservoirs that are not subject to the same evaporation losses as open bodies of water such as Lake Del Valle are. As an added bonus, recharging the local basin with imported water improves the quality of groundwater by bringing more balance to the concentrations of minerals.

In 2014, the State of California's Sustainable Groundwater Management Act (known as SGMA or "Sigma"), recognized Zone 7's sustainable groundwater management program by naming Zone 7 the exclusive agency to continue this role in its service area. At the end of 2016, Zone 7 officially accepted the new role and filed an Alternative Sustainable Groundwater Management Plan. Early in 2017, Zone 7's board of directors adopted a Sustainable Groundwater Management Ordinance to clarify the related responsibilities.

The culmination of this new arrangement, coming at the start of the agency's 60th anniversary year, highlights the fact that, since its inception in 1957, Zone 7 is the only zone of the Alameda County Flood Control and Water Conservation District that provides services other than flood control. The State of California has now confirmed that the agency excels at sustainably managing the groundwater of the Livermore-Amador Valley in keeping with its larger responsibility to provide a safe and reliable water supply.

Sixty Years Strong

As the Zone 7 Water Agency looks back on sixty years, it has expertly fulfilled its 1957 mandate to provide a high-quality water supply and flood-control services to residents and businesses of the Livermore-Amador Valley. The enormous growth of the valley's population—and the infrastructure required to furnish adequate water, transportation, and housing—has required constant changes of direction and policy and an ever-more sophisticated approach to internal leadership, fiscal management, external partnerships, and watershed stewardship.

"Water is life and something we must protect now and for our future generations," said James McGrail, a board member since 2014. "With that spirit, Zone 7 works diligently to accomplish these goals."

Zone 7 enjoys the support and respect of its partner entities beyond the valley, both in and out of government, who work to make California's water supply and infrastructure work well for citizens throughout the state. Through the extremes of weather cycles, from withering drought to raging flood, the Zone 7 board has guided the improvements to its programs, facilities, and advocacy, all in service of the public good.

"You want to be responsive to your constituency, but you shouldn't be tied to just being a political animal," said Sarah Palmer of her role on the board. "You're not just dealing with politics. You're dealing with public safety and health. You're dealing with the environment. You're dealing with something which has got to be sustainable for the next hundred years and more."

"I'm proud of what we've got," said Board President John Greci, who has served as a director since 1994.

"We've got to take care of the people," he added. "That's why they put us there."

Directors: Jim McGrail, Sandy Figuers, Dick Quigley, Angela Ramirez Holmes, Sarah Palmer, John Greci, Bill Stevens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LIVERMORE-AMADOR VALLEY
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WATER SUPPLY • FLOOD PROTECTION
CELEBRATING 60 YEARS