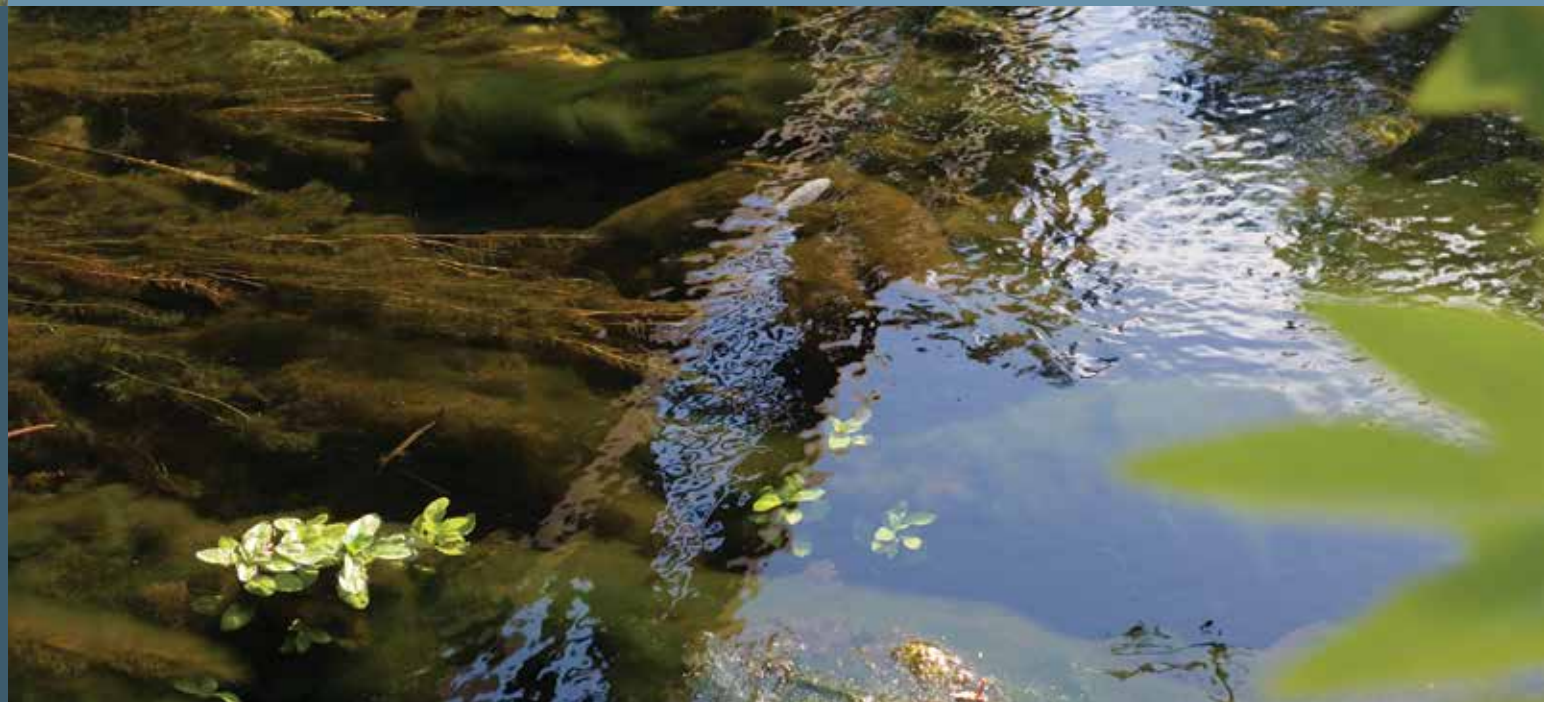
Zone 7 Water Agency

2016 Annual Report

We're All About Water!

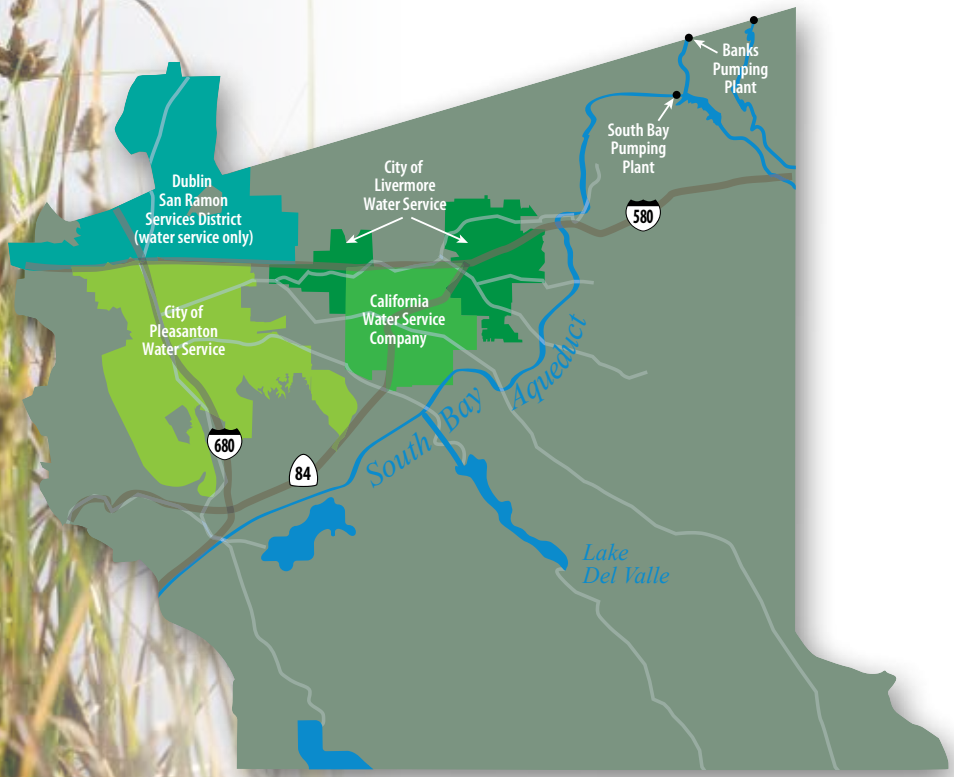


Our Mission

Zone 7 Water Agency is committed to providing a reliable supply of high-quality water and an effective flood-control system to the Livermore-Amador Valley. In fulfilling our present and future commitments to the community, we will develop and manage our water resources in a fiscally responsible, innovative, proactive and environmentally sensitive way.

Vision Statement

To be recognized as the platinum standard water and flood control district in which to live, work and do business by enhancing the quality of life, economic vitality and environmental health of the communities we serve.



Our Values

1. Open and Transparent
The Board's meetings and communications shall be open and public, except when the Brown Act authorizes otherwise.

2. Customer Service
Our commitment to the community requires prompt, respectful and courteous relations with our customers, both internal and external, as well as pursuing community partnerships and collaboration with other area public agencies when beneficial to the public.

3. Integrity
We practice the highest ethical standards and maintain open, honest communications at all levels of the organization at all times.

4. Fiscally Responsible
We will operate in a productive, cost effective, transparent and efficient manner to ensure sound financial stability.

5. Environmentally Sensitive
In carrying out our mission, we are dedicated to preserving and enhancing the environment while complying with regulations.

6. Innovative/Proactive
We encourage innovation, creativity and ingenuity, seeking constant improvement and keeping up with the latest economical technologies and management practices.

7. Safety
We are committed to public and employee safety to maintain a healthy work environment. We work safely and provide safe products and services.

8. Employee Development
We foster a respect for diversity, equality, a spirit of performance-based accountability and productivity along with personal and professional growth for all team members so as to achieve excellence through the collective energy that comes from a work environment where each employee can flourish and succeed to their highest potential.

Board of Directors

A Message from the President

Dick Quigley
President, FY 2016-17

As 2016 approached, there were concerns that El Niño weather events could cause flooding and other damage. However, precipitation in the 2015-16 wet season was less than feared and close to average. Nevertheless, after four years of drought, 2016 did bring enough local rain and snow to the Sierra Nevada Mountains to officially lift the Zone 7 service area out of the local drought emergency. With the recent drought still a vivid memory, Zone 7 made the most of the opportunities 2016 presented to focus on long-term infrastructure and water reliability efforts.

Zone 7 decided to accelerate the addition of ozonation facilities and to study the possibility of expanding water storage options to help bolster long-term water supplies and ensure that the agency continues to meet the region's demands for high-quality water that meets all existing and anticipated state and national drinking water quality standards. Zone 7 also reinforced its role as the primary manager and steward of local groundwater resources by accepting the role of Groundwater Sustainability Agency (GSA) under the 2014 Sustainable Groundwater Management Act (SGMA).

Ozonation facility additions for the Del Valle Water Treatment Plant (DVWTP) and Patterson Pass Water Treatment Plant (PPWTP) were originally planned for 2023 but due to the recent drought and subsequent poor water quality, and challenges keeping water treatment production high enough to meet demands, the Board of Directors opted to install the first ozonation facilities at DVWTP by 2019. However, moving ahead sooner than planned requires Zone 7 to obtain debt financing. The decision to assume debt in order to finance large infrastructure projects is not one that any public agency comes to without serious consideration. The Board concluded that the clear benefits to the public health of adding ozonation facilities vastly outweighs the costs. The ozonation facilities at the DVWTP and PPWTP will significantly improve Zone 7's ability to provide high quality water despite differences in source water quality while maintaining a rate of production that meets local needs. And, to better manage Agency finances, the Board appointed its first Treasurer.

Zone 7 also made significant strides in addressing long-term water supply reliability by pursuing multiple solutions to solve water challenges. Conservation, leak reduction, increased water use efficiency, groundwater management, offsite water banking and fixing aging infrastructure in the Delta will continue to be important parts of Zone 7's diversified portfolio. In 2016, Zone 7 added consideration of advanced water recycling, Lake Del Valle reservoir expansion, Los Vaqueros Reservoir Expansion and Sites Reservoir as potential solutions to reliably meet long-term water supply needs.

As part of a collaboration with other Bay Area water agencies, referred to as the Bay Area Regional Reliability (BARR) program, opportunities for interties and use of Los Vaqueros could provide connectivity to the regional delivery systems, reducing the risk of water supply shortages. It could even facilitate a regional desalination project.

Lastly, Zone 7 took important steps to become the GSA under California's historic groundwater legislation, SGMA. Long before SGMA was enacted, area leaders recognized that managing the groundwater basin to ensure water supply reliability was critical to the economic viability of the Valley. When Zone 7 was founded in 1957, replenishing the groundwater basin was one of the Agency's main objectives. Because sustainable groundwater management has long been a pillar of the Agency's mission and because it has met that mission with great success as demonstrated through 42 years of monitoring data and the Agency's ability to manage the yield of the basin through multiple droughts, Zone 7 is one of only 15 agencies identified in the state legislation as the exclusive local agency eligible to become the GSA for managing groundwater within its service area. This special designation allowed Zone 7 to assume the role of GSA much more quickly and at much less cost than other agencies around the state.

John Greci
Vice President, FY 2016-17

Sandy Figuers

Jim McGrail

Sarah Palmer

Angela Ramirez Holmes

Bill Stevens

Key Accomplishments

Water Supply, Reliability, and Quality

A mindful management of limited supplies: With improved water supply conditions during the latter part of the year, Zone 7 was able to meet all its retailers' demands and even lifted conservation requirements. Zone 7 continued to urge the community to be mindful of water use and continue to conserve water wherever possible. The community continued to curb water use but after nearly five years of drought, water use was up slightly from 2015. Water use for the region was still down approximately 30 percent relative to 2013 levels, far exceeding the state's average urban water conservation of 19.5 percent.

Bolstering future reliability: Zone 7 made significant investments toward supporting the planning and development of Sites Reservoir, a proposed new off-stream reservoir located 75 miles northwest of Sacramento, California, at a participation level of 20,000 acre-feet. Investments were also made in studies to expand the storage capacities of Lake Del Valle and Los Vaqueros reservoirs.

Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan completion: Completed in 2016, the results of the Water Supply Evaluation (WSE update) confirmed that expanded use of recycled water (advanced treatment/potable reuse) and desalination can both help to reliably provide adequate water supply in the future, in addition to infrastructure improvements from California WaterFix and expanded storage options such as Sites Reservoir.

Water quality: All water supplied during 2016 met the regulatory standards set by the state and federal governments and, in almost all cases, the quality was significantly better than required. To ensure continued high-quality, safe drinking water, Zone 7 has begun designing ozonation facilities for both the Del Valle and Patterson Pass water treatment plants.

Capital projects: Zone 7 initiated several significant projects to maintain critical water supply and water quality infrastructure, including 1) rehabilitation project for the Mocho 1 groundwater well, 2) filter valve replacements at the Del Valle Water Treatment Plant, 3) clearwell roof replacement at the Del Valle Water Treatment Plant, 4) replacement of the disinfection equipment at the Hopyard Well No. 6, and 5) addition of a new 5 million gallon storage reservoir and a new 12 million gallon per day filtration system at the Patterson Pass Water Treatment Plant.

Delta sustainability: Efforts to improve water reliability for 25 million Californians, including those living in Zone 7's service area, reached a milestone with release of the BDCP/California WaterFix Final Environmental Impact Report/Environmental Impact Statement at the end of 2016. Certification and permits are expected to be granted in 2017. The California WaterFix is identified as being the least costly per acre-foot of water developed of all the measures evaluated in the WSE Update.

Sustainable Groundwater Management: As part of its long-standing, proactive groundwater basin stewardship, Zone 7 formally announced its intention to become a local GSA and submitted an alternative groundwater management plan that substantially complies with the Sustainable Groundwater Management Act (SGMA). SGMA is historic legislation that requires local agencies to adopt groundwater management plans, and monitor and manage groundwater resources in a sustainable way.

Flood Protection/Stream Management Master Plan

Flood protection work: Repairs to creek banks, debris removal, vegetation management and facility inspections were part of an extensive effort throughout the summer months to prepare for 2016-17 rainy season. As they do each year, Agency staff worked to ensure the flood-control channels were in good working condition to convey stormwater.

Stream Management Master Plan Update (SMMP): The SMMP addresses the challenges of balancing flood protection with water supply, water quality, habitat and environment, and recreation and trails objectives for the Livermore-Amador Valley. Zone 7 continued to implement key aspects of the SMMP and to work on system-wide hydraulic and hydrology models that identify and help prioritize potential problem areas that may require a regional solution to address the impact.

Arroyo Mocho Floodplain and Riparian Forest Restoration Project (Mederios Parkway): Implementation of the Medeiros Parkway Project began in 2016. The project is aimed at improving regional flood protection and addressing regional sediment management issues by reconnecting the stream with more of its adjacent floodplain.

Multi-Benefit Projects/Environmental/Community Partnerships

Living Arroyos Program: The Living Arroyos partnership with the City of Livermore, the City of Pleasanton, and Livermore Area Recreation and Park District continued to grow. Volunteers and Living Arroyos staff harvested and planted over 500 willow stakes and performed other maintenance activities along the Arroyo Mocho at the Stanley Reach Project.

Creek cleanups: Zone 7 collaborated extensively with other agencies to help keep local creeks clean by teaming up on debris removal and by helping to promote community creek cleanups while also serving as a site captain during the events.

Financial Accountability & Cost Efficiency

Water rates: Zone 7's board voted to extend a temporary drought surcharge for another year to help the Agency recover from deep financial losses from the drought. 2016 was the first year of the three-year treated water rate increase. The three-year horizon for the wholesale rate increase provides greater predictability/stability for Zone 7 and its customers, improves the ability of Zone 7 to plan for and finance deferred and badly needed equipment replacements, infrastructure maintenance and capital projects.

Annual audit findings: The annual independent audit of Zone 7's accounting practices found that Zone 7 Water Agency has continued to accurately and fairly represent the financial health of the agency, and its practices align with nationally accepted accounting principles and comply with applicable laws and government regulations.

Transparency: In late 2015, the Board of Directors approved a one-year trial for video recording/televising monthly board meetings on community television and posting archived video links to the Agency's website. Videotaping and subsequent replay on TV30 began in 2016.

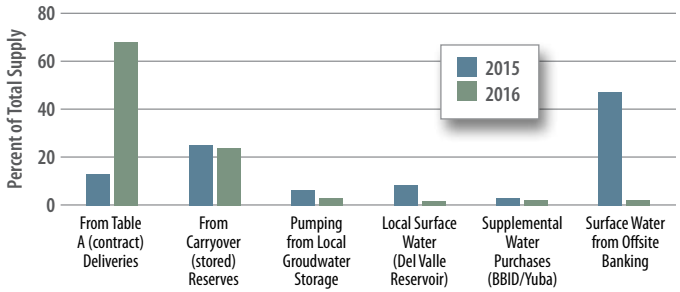
Managing Resources

In a Replenishing Year

Although the Statewide drought continued through the first part of 2016, Northern California largely recovered its surface water supplies by the year's end. By April 2016, water supply conditions had vastly improved, leading Governor Jerry Brown to reassess conservation mandates. Given Zone 7's supply and storage conditions at that time, there was no need to continue mandatory conservation within the service area. In June 2016, the Zone 7 Board lifted the local drought emergency and set a voluntary 10 percent conservation target to support ongoing statewide water conservation efforts. Despite the improved conditions, Zone 7 staff continued working with the water retailers to promote wise use of water throughout 2016.

Actual 2016 water demand on Zone 7 was 34,000 acre-feet. Conservation was about 31 percent Valley-wide compared to 2013 demands, far exceeding the state average. Zone 7 strives to maximize the amount of water placed into storage both locally and outside its service area. In addition to minimizing groundwater pumping, Zone 7 maximized recharge in 2016 by recharging the main groundwater basin and by sending surplus water to Kern County groundwater banks. Zone 7 can recover water from these offsite groundwater banks in dry years, just as it did in 2014 and 2015 to augment supplies.

2015 and 2016 Water Supply Sources



Replenishing Surface Water Resources

Surface water imports from the State Water Project were up significantly in 2016 compared to 2015. This was made possible because of the higher State Water Project allocation (60 percent in 2016, compared to 20 percent in 2015 and only 5 percent in 2014).

2016 Supply & Demand for Zone 7 Water Supplies

(in acre-feet, where one acre-foot equals 326,000 gallons)

Supply	2015	2016
State Water Project deliveries (into valley)		
From Table A (contract) deliveries	4,400	30,000
From carryover (stored) reserves	8,800	10,400
Pumping from local groundwater storage	2,000	1,800
Local surface water (Del Valle Reservoir)	2,900	100
Supplemental water purchases BBID/Yuba	400	800
Surface water from offsite banking	16,500	300
Total Supply	**35,000**	**43,400**

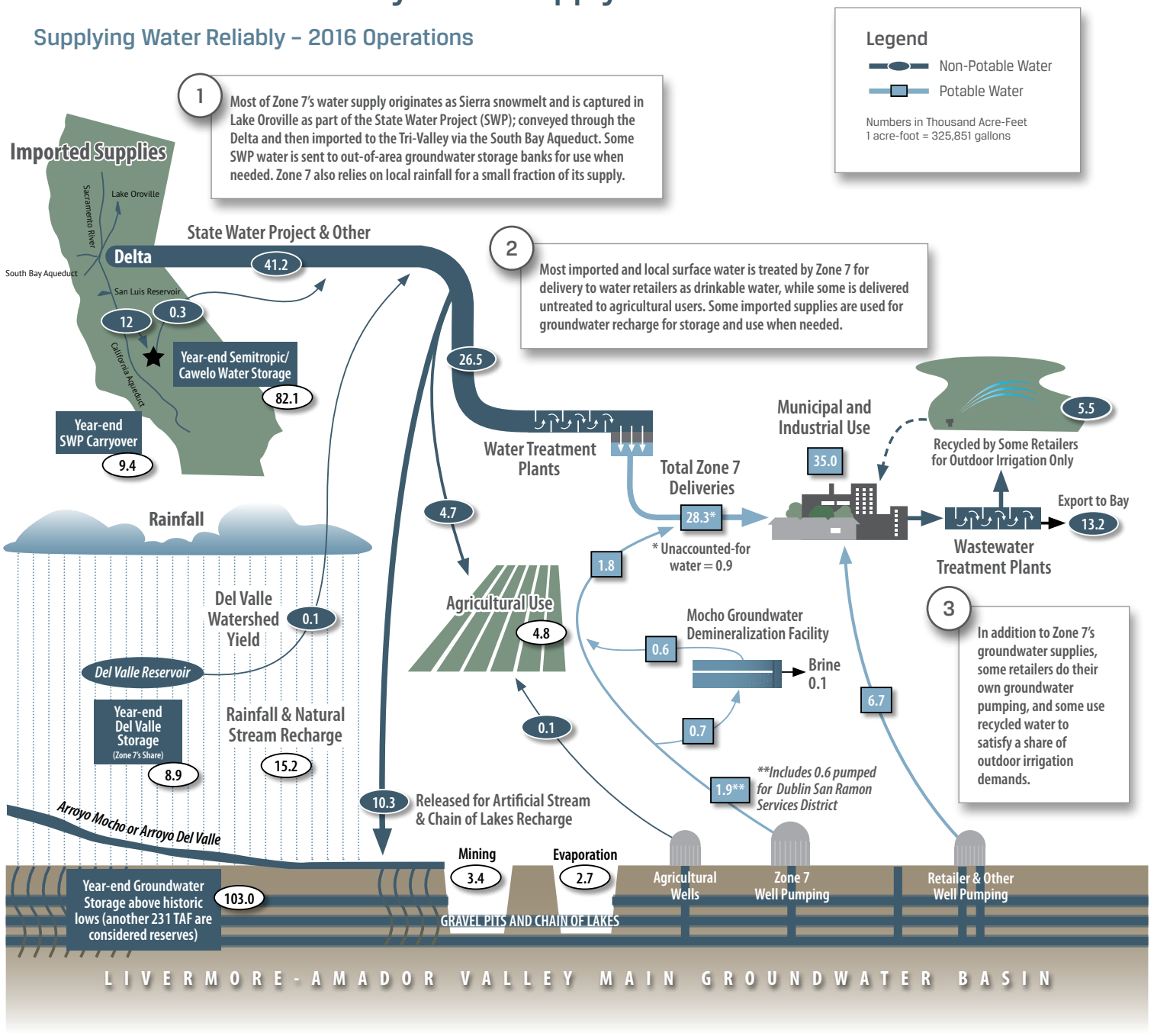
Demand	2015	2016
Municipal (drinking) water	25,500	28,400
Untreated irrigation water	5,600	4,700
Released for local groundwater recharge	3,900	10,300
Total Demand*	**35,000**	**43,400**

Available Year-End Storage	2015	2016
State Water Project water sent to offsite banking	0	12,000
Local groundwater basin (above historic lows)**	85,000	103,000
Offsite banking programs	74,400	82,100
Del Valle Reservoir storage	100	8,900
State Water Project carryover	13,400	9,400
Total Year-End Storage	**172,900**	**215,400**

* Demand totals include a small amount of unaccounted-for water typical for water systems of this size.
** An additional 128,000 acre-feet (AF) of water was in storage at the end of 2016, for a total of 231,000 AF.

Livermore-Amador Valley Water Supply & Use

Supplying Water Reliably – 2016 Operations



Thinking Ahead

Long-Term Supply Reliability

In 2016, Zone 7 released its updated Water Supply Evaluation, which concludes that new alternative supplies, including desalination and potable reuse, could improve reliability especially during droughts, but that neither one can solve Zone 7's long-term challenges without the California WaterFix, which addresses the Delta's outdated water conveyance infrastructure. Zone 7 also continues to evaluate other alternative supply and storage options.

California Water Action Plan and WaterFix

California WaterFix is one piece of the comprehensive California Water Action Plan, which was updated in 2016 and is considered the roadmap to put California on a path to sustainable water management. A critical element of the Plan, with potentially significant benefits for Zone 7 water reliability, is the implementation of California WaterFix. California WaterFix would modernize the 50-year-old State Water Project delivery system with two 30-mile long tunnels linking new water diversion facilities upstream of the Delta on the Sacramento River to existing pump facilities in the south Delta. The WaterFix Final Environmental Impact Report/ Environmental Impact Statement (EIR/EIS) was released in December 2016 and a Notice of Determination/Record of Decision is anticipated in 2017.

CALIFORNIA WATER FIX
RELIABLE. CLEAN. WATER.

Del Valle Reservoir

Reservoir Expansion Studies

With the aim of diversifying water storage options, Zone 7 elected to be a co-participant in three reservoir expansion studies. As part of a collaboration with the other two South Bay contractors (Alameda County Water District and Santa Clara Valley Water District), Zone 7 is investing in the evaluation of the feasibility of increasing storage capacity in Lake Del Valle through optimized reservoir operation and/or physical modifications to the facilities. Zone 7 is also investing resources in the planning, environmental assessments, engineering, and technical studies to

determine the costs and benefits of expanding Los Vaqueros Reservoir and the costs and benefits of constructing a pipeline to connect the reservoir to the South Bay Aqueduct system that brings water to the Valley. The results of the study will support Los Vaqueros Reservoir Expansion Project's application for grant funding under Proposition 1, the 2014 water bond. Zone 7's cost share for both reservoir expansion studies is provided through Zone 7's Fund 310, Water Supply and Reliability Fund, which funds future water storage and Delta-related projects.

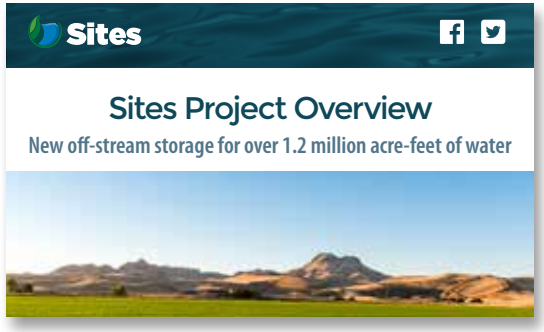
Sites Reservoir

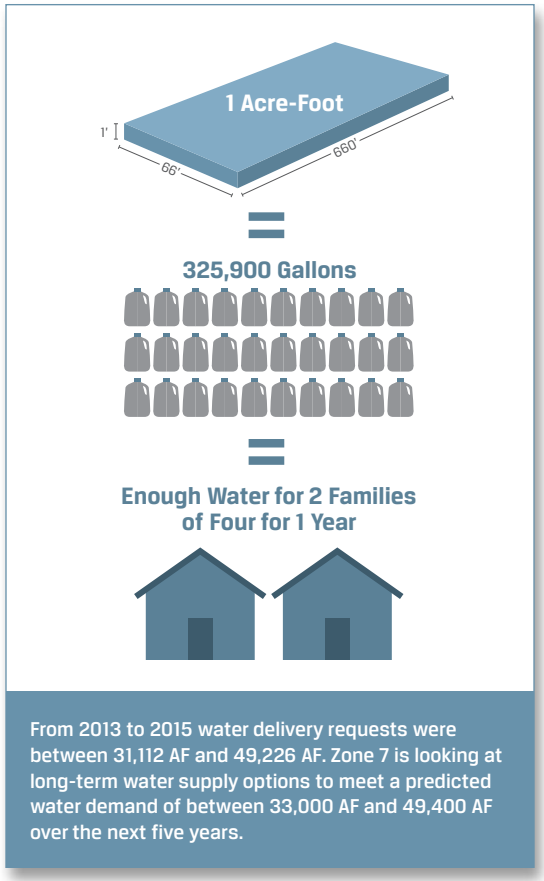
Zone 7, along with about 30 other water suppliers, agreed to participate in Phase 1 of the Sites Reservoir Project, which could potentially provide both water supply and water storage benefits. Sites Reservoir would be a new, offstream reservoir with 1.3-1.8 million acre-feet of new storage capacity with a large portion earmarked for environmental water. In July 2016, Zone 7 submitted a "Proposal to Participate" requesting a participation level of 20,000 acre-feet. Zone 7's cost share of the project would make up about 5 percent of the total Phase 1 cost of about $17 million.

The environmental review began in 2016, with the scoping process completed in early 2017. The Draft EIR/EIS is expected to be released in mid-2017, in time for a Proposition 1 grant funding application

Evaluation of Advanced Water Recycling Feasibility

As a next step toward enhancing long-term water supply reliability for the Livermore-Amador Valley, Zone 7 partnered with the water retailers to evaluate the feasibility of potable reuse, which uses advanced treatment technologies to transform wastewater into a purified raw water supply. The purpose of the study is to evaluate the feasibility of various potable reuse options for the Valley and to identify the most promising options based on technical, financial, and regulatory considerations. If advanced recycling is found to be technically and economically feasible, the study will provide recommendations for next steps for the agencies.





From 2013 to 2015 water delivery requests were between 31,112 AF and 49,226 AF. Zone 7 is looking at long-term water supply options to meet a predicted water demand of between 33,000 AF and 49,400 AF over the next five years.

Investing in Infrastructure

In 2016, Zone 7 continued to invest in numerous important capital investment projects to ensure high-quality, reliable water delivery.

Mocho Well 1 Improvements/Rehabilitation Project

Zone 7 completed the design and contractor procurement to remove and replace the well pump, perform casing condition assessment, and make other necessary repairs to the well. The contractor is scheduled to perform the work from February to May 2017 in order for the well to be back in operation during the high-demand 2017 summer months.

DVWTP Filter Valve Replacement Project

Zone 7 procured a contractor and completed the replacement of valves and actuators on four of the eight filters at the Del Valle Water Treatment Plant. Since the valves were beyond the end of their useful life, the filter valves needed to be replaced to ensure production reliability and water quality at the treatment plant. Work is expected to be completed in February 2017.

Del Valle Water Treatment Plant 3 Million Gallon Clearwell Roof Replacement

In 2016, Zone 7 completed the design, awarded a construction contract, and commenced construction for this project. Work entails replacing the clearwell's sheet metal roof, joists, and purlins, as well as replacement of the clearwell's inlet and outlet valves, and making spot repairs to the interior hypalon liner. The new roof will improve treated water system reliability and lessen the threat of structural damage or more costly expense to repair the clearwell. This project is expected to be completed in May 2017.

In 2016, Zone 7 continued to make progress on numerous important capital investment projects to ensure high-quality, reliable water delivery.

Hopyard Well No. 6 and Stoneridge Well Sodium Hypochlorite System Replacement Project

Both the Hopyard Well No. 6 and the Stoneridge Well's disinfection system equipment needed replacement due to the fact that the equipment had reached the end of its useful life. Improvements also needed to be made in order to meet current Fire Code requirements. Zone 7 initiated the work in 2016 and it will be phased over two winters (one well per winter) to reduce the risk to water supply.

Patterson Pass Water Treatment Plant Upgrades and Ozonation

In April 2016, the Zone 7 Board awarded contracts for design of the Patterson Pass Water Treatment Plant (PPWTP) Upgrades Project, which consists of planning, design, and construction of a new 12 million gallon per day (MGD) conventional media filtration system, 5 million gallon (MG) operational capacity treated water storage reservoir, and associated ancillary facilities at the PPWTP. In December 2016, the Board also awarded contracts for the addition of ozonation and rehabilitation of existing filters at the PPWTP. The construction work will be phased, with completion of all phases anticipated by 2021.

Del Valle Water Treatment Plant Ozonation Project

In May 2016, the Zone 7 Board awarded contracts for the design of the Del Valle Water Treatment Plant Ozonation Project. The addition of ozonation will improve the quality of the local drinking water. Ozone is significantly more effective than other treatment technologies such as powdered activated carbon, chlorine, and chloramines at treating algal byproducts and other constituents of emerging concern, including endocrine disruptors, pharmaceuticals, and personal care products. The construction of Ozonation facilities is anticipated to be completed in 2019.

SCADA Program Update

Zone 7 uses a Supervisory Control and Data Acquisition (SCADA) System to monitor and operate its treatment and distribution facilities. Major equipment such as servers and switches were replaced in 2016 as part of the scheduled five-year replacement/improvements to the SCADA system to ensure that it remains reliable. In addition to major equipment replacement, other improvements included cyber-security audit, network monitoring software, and programming upgrades to other SCADA software.

Conservation

A Way of Life for our Communities

Conservation continues to be a high priority for Zone 7 residents and businesses. The drought persisted into 2016, and though water resources have returned to healthy levels, Zone 7 continues to offer rebate programs aimed to keep future conservation levels high.

Zone 7 received 61 applications for lawn conversion rebates—resulting in 76,368 square feet of turf being removed, of which 45,465 square feet received rebates. Outreach, customer engagement, and increased public awareness stand to reduce outdoor water use by more than 1.9 million gallons (5.8 acre-feet) annually. Participation in the lawn conversion rebate program decreased 38 percent, possibly due to easing drought conditions. Also, one of the retailers is now running their own rebate program separate from Zone 7.

Despite the focus on outdoor water conservation, indoor rebate programs such as the high efficiency washer rebates continue. In 2016, Zone 7 experienced declines in the number of clothes washer rebates (856 rebates were processed, a 31 percent decrease from 2015) and in the number of high-efficiency toilet rebates (481 rebates were issued, a 40 percent decline). Rebate applications for these indoor appliances are declining for various reasons. Most Efficient clothes washers available for purchase and high-efficiency toilets are reaching market saturation. Grant funding from the California Department of Water Resources covered 45 percent of rebate program costs.

Co-sponsored by Zone 7, the 2016 Bringing Back the Natives Garden Tour featured local gardens in Livermore and Pleasanton. This free, self-guided tour showcased gardens with attractive plants native to the region that can be used in water-wise landscaping and also provide benefits to bees, butterflies, birds, and other wildlife.

Also in 2016, Zone 7 conservation activities included:

- Promoting Fix a Leak Week in March to bring awareness to water leaks inside and outside the home and the amount of water wasted in homes each year.
- Participating in the annual May Water Awareness Month campaign to make conservation a way of life. Zone 7 also co-sponsored and promoted the free, self-guided Bringing Back the Natives Garden Tour, showcasing native and water-wise gardens throughout the East Bay.
- Hosting a Qualified Water-Efficient Landscape (QWEL) Environmental Protection Agency WaterSense certification training for 26 participating landscape professionals.
- Co-sponsoring a "Mow-No-More" hands-on workshop teaching residents how to sheet mulch over their lawn for water efficiency and other environmental benefits.
- Co-sponsoring the PG&E water and energy showcase held in San Francisco.
- Participating in several conservation outreach events, including a water-wise workshop as part of Dublin Pride Week and teaming up with the Valley's water retailers for other community outreach events.
- Expanding public education to address the need to water trees in a drought to help ensure their survival, with tips on how to water trees efficiently.
- Reaching nearly 14,000 K-12 students through 531 classroom presentations and five school assemblies covering water resource management topics such as conservation.

Water Quality

Zone 7 is dedicated to delivering high-quality water to its customers. Despite continuing drought conditions in 2016, which caused challenges with Delta water quality and increased Zone 7's water treatment costs, the water that Zone 7 delivered to its customers again met the drinking water standards set by the state and federal governments. In almost all cases, the water delivered by Zone 7 was significantly better than required.

Both the Del Valle and Patterson Pass surface water treatment plants maintained their Partnership for Safe Water status for the 2016 reporting period. The Partnership is a program developed by the American Water Works Association (AWWA), the U.S. Environmental Protection Agency, and associated Partner organizations.

First Step to Add Ozone Treatment and Improve Drinking Water

In 2016, Zone 7 took the first steps toward the planning and design work needed for the addition of ozone treatment at its two surface water treatment plants, the Del Valle Water Treatment Plant (DVWTP) and Patterson Pass Water Treatment Plant (PPWTP). The project will take at least three years to complete for the DVWTP and five years to complete for the PPWTP. Once online, ozonation will significantly improve the quality of the local drinking water. Ozone is much more effective than other treatment technologies such as powdered activated carbon, chlorine and chloramines at treating algal byproducts and other constituents of emerging concern, including endocrine disruptors, pharmaceuticals, and personal care products.

Algae Bloom in the Delta

An algae bloom in the Delta had a significant impact on Zone 7's treatment processes, plugging the filters. It also resulted in numerous taste and odor complaints from customers in the Tri-Valley. Complaints seem to indicate a "plastic" smell (unlike the more common algae odor of earthy/musty) but water samples indicated that the water was safe to drink. In response to the complaints, Zone 7 added powdered activated carbon, an interim measure to reduce taste and odor until ozonation is available.

Nitrate Study Report

The preliminary Nitrate Study for three South Livermore areas of concern identified in the Nutrient Management Plan (NMP) was completed in 2016. The NMP identified several "hot spots" (areas where detected nitrate concentrations are above the Groundwater Basin Objective (10mg/L). A list of all pertinent wells within, and adjacent to, the areas of concern was compiled and several of them were sampled and tested for the study. The study concluded that although overall basin groundwater quality is not expected to degrade, there is still a need to manage and monitor future nutrient loading in these areas-of-concern. The NMP outlines the steps to be taken to minimize nitrogen loading from existing and new sources.

Flood Control & Stream Management

Rainy Season Preparations

In preparation for the rainy season, Zone 7 conducted extensive work throughout the spring and summer of 2016 to ensure the flood-control channels were in good working condition to convey stormwaters. Flood protection repair work included three emergency bank repairs totaling 320 feet, 3,500 feet of access road repair, retaining wall construction to support a slope above a multi-use trail, slope stabilization to repair 120 feet of cracked bank, reinstallation of two drain inlet structures and culverts, 280 feet of new V-ditch drainage, and 1,000 feet of erosion fabric installation. Regular maintenance activities included vegetation removal, channel mowing, repair of fencing and gates, hydro-seeding, and removal of downed trees, trash, and debris from channels, access roads, and drainage inlets. In total, Zone 7 invested over $1.5 million in routine maintenance and repair activities of the regional flood-protection system in 2016.

Throughout the rainy season, Zone 7 sent out e-newsletters with educational information and resources regarding how to prepare for the rainy season. The e-newsletters included information on where to obtain free sandbags, tips for winterizing homes, links to statewide flood preparedness resources and links to Zone 7's Storm Central website for real-time flow monitoring.

Stream Management Master Plan Update (SMMP)

In 2016, Zone 7 began the process of updating the SMMP. The SMMP update addresses the challenges of balancing flood protection with water supply, water quality, habitat and environment, and recreation and trails objectives for the Livermore-Amador Valley. As such, the SMMP is a multi-benefit program developed to fulfill stream management goals and objectives of Zone 7, while providing opportunities for other local and regional agencies and stakeholders to identify compatible General and/or Master Plan features of

In preparation for the rainy season, Zone 7 conducted extensive work throughout the spring and summer of 2016 to ensure the flood-control channels were in good working condition to convey stormwaters.

their respective groups to be considered in future SMMP projects. The Update will develop a prioitized project list to reduce flooding risk and facilitate project identification for an expanded ten-year Capital Improvement Program for flood facilities. In addition, an effort to update the SMMP projects to better reflect challenges identified by the modeling efforts is underway.

Additional Stream Gauges

The Agency completed the installation of two additional stream gauges as part of Zone 7's stream gauging network. The new gauges are located on Altamont Creek in Livermore and South San Ramon Creek in Dublin. These new gauges will provide real-time flow-related information during storm events, with daily base flows and temperature readings for ongoing studies. Coupled with the incorporation of new rain gauges that measure precipitation, data from the stream gauges are also used by Zone 7 staff to prepare for local storm events as part of an early-warning system. Staff is able to respond accordingly, depending on the current rainfall intensity and stream gage height and flow readings.

Local Hazard Mitigation Plan (LHMP)

The process of completing a five-year update to Zone 7's Local Hazard Mitigation Plan (LHMP) began in spring of 2016. Development of the Plan is underway and will go through the final stages of acceptance by the Zone 7 Board, as well as state and federal agencies upon completion. The federal Disaster Mitigation Act of 2000 requires cities, counties, and special districts to have a LHMP to minimize damage and quicken recovery from disasters such as earthquakes and floods, and to be eligible for federal hazard mitigation funds. The update included a public survey to get public input on the highest priority issues and areas of greatest concern and a review of impacts from natural and manmade disasters to see where infrastructure and services can be strengthened or improved to reduce potential effects and thereby reduce costs after disasters.

Sustainable Groundwater Management

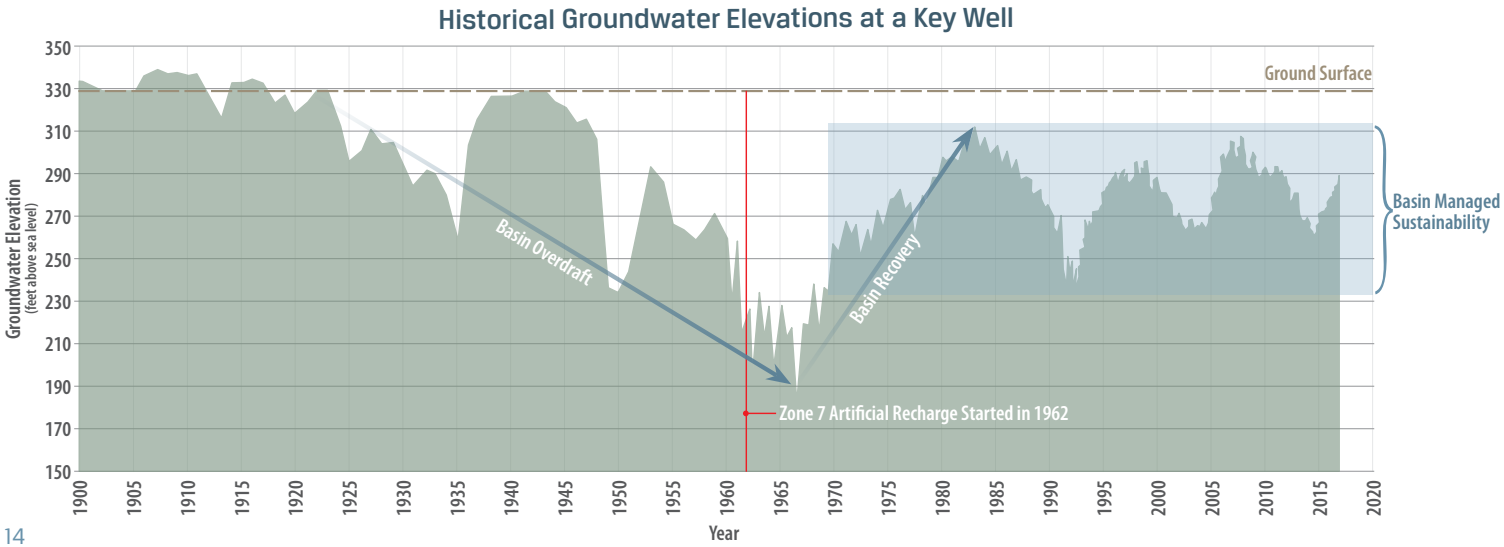
Zone 7 has long been known for its proactive groundwater basin stewardship. Continuing in that tradition, on December 21, 2016, the Zone 7 Water Agency Board of Directors adopted a resolution officially accepting the role of Groundwater Sustainability Agency (GSA) for the Livermore Valley Groundwater Basin under the Sustainable Groundwater Management Act (SGMA). Zone 7 was one of several agencies recognized in the legislation as being a trusted groundwater basin manager and identified as the exclusive local agency eligible to perform the GSA role within their respective groundwater basins.

Through coordination with other local agencies in the region and neighboring groundwater basins, Zone 7 will continue groundwater management for the entire portion of the Livermore Valley groundwater basin that is within the Agency's service area as well as a small portion that lies within Contra Costa County.

When Zone 7 was founded in 1957, groundwater management, specifically replenishing the groundwater basin, was one of the Agency's main objectives.

Since SGMA's main goal is for the state's precious groundwater resources to be sustainably managed, its regulations call for Groundwater Sustainability Plans (GSP) to be developed for all high- and medium-priority groundwater basins by 2022. The required plans are similar to the Groundwater Management Plan adopted by Zone 7 in 2005. Therefore, in 2016, Zone 7 prepared and submitted an alternative Groundwater Sustainability Plan in compliance with SGMA and based on Zone 7's existing programs, practices, and documentation. As required, the main goals of the Plan are to avoid six "undesirable results": chronic lowering of groundwater levels; reduction in groundwater storage; seawater intrusion; degraded water quality; land subsidence; and depletion of interconnected surface water that cause adverse impacts on beneficial uses.

Under SGMA, the GSP is required to be updated every five years with the first update due in 2022. Zone 7 will be working with the various public agencies that overlay the Livermore Valley Groundwater Basin to facilitate continued effective and sustainable groundwater basin management under SGMA. Annual groundwater management reports will continue to be prepared and posted on the Zone 7 website, and copies will be submitted to the Department of Water Resources and the Regional Water Quality Control Board as they have been since 2005.



Watershed Stewardship

Living Arroyos

Initiated in 2013, Living Arroyos is a multi-agency partnership in the Livermore-Amador Valley among Zone 7, the City of Livermore, City of Pleasanton (joined in January 2016), and the Livermore Area Recreation and Park District (LARPD). Living Arroyos strives to be a means to increase opportunities for local residents to engage in hands-on watershed stewardship, and to establish relationships with streams near their homes. The Program includes activities such as planting, weeding, watering, monitoring, debris removal, pruning, invasive plant management, intern training, and volunteer participation. In 2016, the Board agreed to continue acting as the Fiscal Agent for the program, and approved a budget of $400,000 over the two-year budget cycle to cover Zone 7's share of the program costs and site-specific project costs.

During the 2015-16 Program Year, interns worked approximately three days a week, for a total of 137 workdays (compared to 103 workdays in 2014-15 and 109 in 2013-14). With help from over 200 hard-working volunteers, the Living Arroyos field staff accomplished a great deal of stream improvement during the third Program Year.

Accomplishments included restoration and maintenance of native trees and shrub plantings, weed removal and sod maintenance, and completion of a field study to assess the status of willow biotechnical bank stabilization structures at 31 sites.

Arroyo Mocho at Stanley Reach: The Stanley Reach project was conceived in 2012 as an alternative flood control and reforestation project, and was the first project of the Living Arroyos program. In 2016, activities to support the project including applying mulch, removing wire cages, removing nonnative invasive plant species, watering, monitoring survival rates and removing trash and other debris from the channel.

The Arroyo Mocho Floodplain and Riparian Forest Restoration Project: 2016 marked the kickoff of the Stream Management Master Plan (SMMP) project at Medeiros Parkway in Livermore. The goal is to improve regional flood protection and help address sediment management issues by reconnecting the stream with more of its adjacent floodplain. A natural floodplain along Arroyo Mocho will provide stormwater detention and natural habitat compatible with recreational use. It may also increase groundwater recharge capacity and improve groundwater supply and sustainability.

Arroyo Seco Oaks Replacement Project: The Arroyo Seco project was taken on to replace four mature oak trees that were damaged by construction of additional lanes on I-580. Monitoring and maintenance activities conducted at the site included fixing cages, reapplying mulch to the oaks, picking up trash, and monitoring survival and emergence.

Outreach & Education

Schools Program

Zone 7's popular Valley-wide water education program continued in 2016, reaching nearly 14,000 students from kindergarten to twelfth grade. Classroom activities and evening events at schools focused on Science, Technology, Engineering, and Math, and covered topics ranging from water conservation and water quality to flood protection and stormwater-pollution prevention. Zone 7 distributed 1,300 leak detective activity brochures to second through fourth graders, and worked with most of the third graders in Livermore through Ag Adventure Day to help them understand the connection agriculture has with water.

Spring and Fall Home and Garden Shows

Once again, Zone 7 occupied a booth at the Home and Garden Shows at the Alameda Fairgrounds to provide informative handouts, and engage visitors in discussions on various water-related topics such as conservation, flood preparedness, and drought-tolerant gardening.

Alameda County Fair

During the fair's environmentally focused weekend, residents of all three cities were given an opportunity to see and hear about some of the many things that Zone 7 does by manning two different booth locations.

Livermore Valley Joint Unified School District Science Odyssey

Over 700 students displayed research or engineering projects. Zone 7 exhibited a floodplain model that simulates the effects of light/heavy rainfall on permeable versus nonpermeable surfaces, and relationships with downstream channel flows and floodplains.

Water Awareness Month and Tap Water Day

As part of Water Awareness month, Zone 7 co-sponsored the 2016 Bringing Back the Natives, a free, self-guided tour of 40 private gardens in Alameda and Contra Costa counties giving residents ideas on how to use California native plants to make their gardens water efficient, drought tolerant, and more beautiful.

Student Water Projects

At the Alameda County Science & Engineering Fair, Zone 7 staff helped judge middle- and high-school student water projects that were submitted by students within Zone 7's service area. Three winners presented their projects at the May 2016 Board meeting as part of Water Awareness Month.

- Anay Bhakat (Grade 7), study entitled, "Using a Tool to Maximize the Yield of Your Plants by Controlling the Water Received."
- Courtney Schnapp (Grade 7), study entitled, "Potable or Not? Measuring & Comparing Different Ways of Water Purification."
- Preethi Veeragandham (Grade 11), study entitled, "Rooted in Environmentalism: Exploring the Effect of Recycled Water on Plant Growth."

Public Workshop

In October, Zone 7 held a workshop to educate consumers about water rates and answer questions about rate increases.

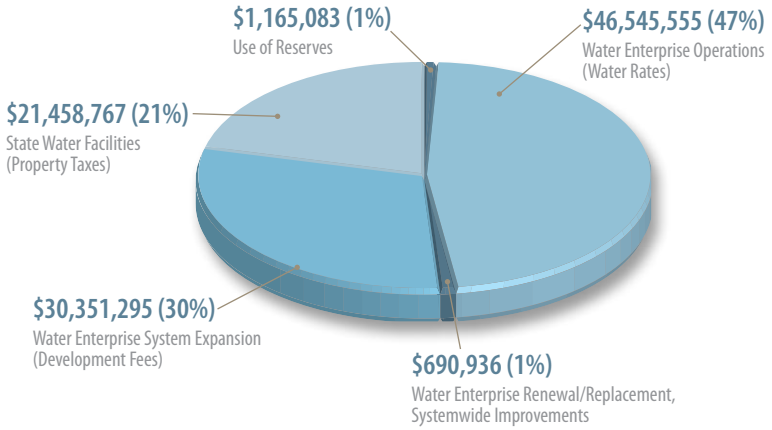
E-newsletter Distribution

The Agency continued to increase its e-newsletter subscriptions, and published on topics ranging from water conservation, flood preparedness, to water rates. To subscribe, see the home page of Zone 7's website at *www.zone7water.com*.

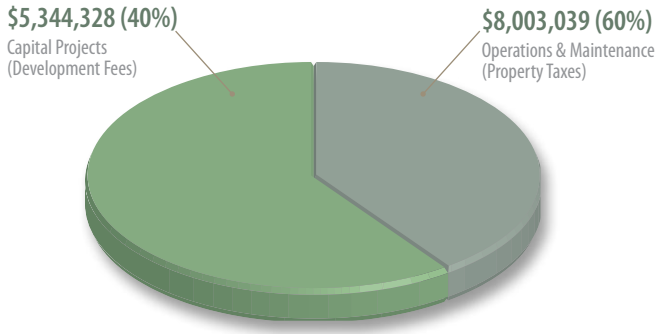
Financial Information

Fiscal Year 2016-2017 Revenue & Expenses

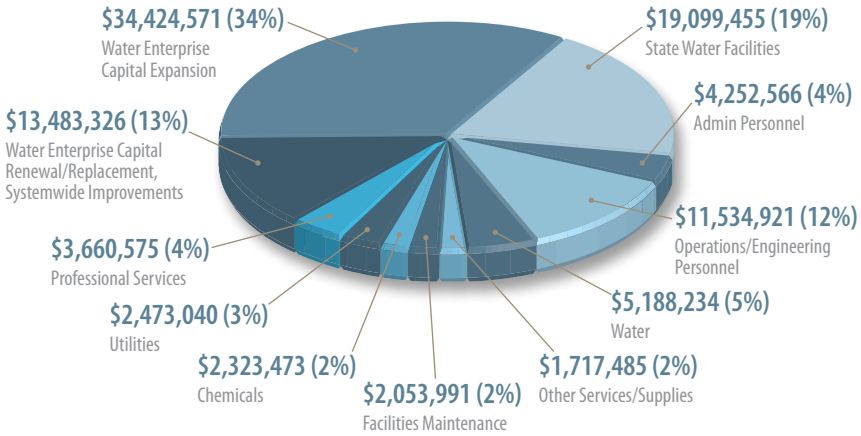
Water Supply, Reliability, and Quality
Revenue: $100,211,636



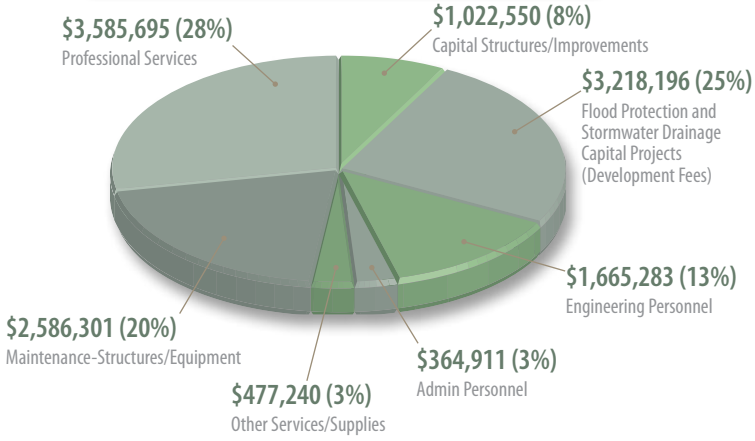
Flood Protection
Revenue: $13,347,367



Water Supply, Reliability, and Quality
Operating and Capital Expenses: $100,211,636



Flood Protection
Operating and Capital Expenses: $12,920,176



Zone 7 Water Agency supplies treated drinking water to retailers serving approximately 240,000 people and businesses in Pleasanton, Livermore, Dublin and, through special agreement with the Dublin San Ramon Services District, the Dougherty Valley area of San Ramon. Zone 7 also supplies untreated irrigation water (mostly to vineyards) and provides flood protection services to eastern Alameda County.

Executive Staff

Jill Duerig *General Manager*

Kurt Arends *Assistant General Manager, Engineering*

Osborn Solitei *Treasurer/Assistant General Manager, Finance*

Zone 7 Water Agency | 100 North Canyons Parkway, Livermore, CA 94551 | (925) 454-5000 | www.zone7water.com