



**Zone 7 Water Agency**

# 2013 Annual Report

Investing in water supply reliability,  
planning for shortages



# 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

The critical need for Zone 7's continued, proactive work to shore up its water supply reliability was all the more evident in 2013 as many parts of California – including here in the Livermore-Amador Valley – experienced the driest calendar year on record on the heels of two previous consecutive dry years. This would lead in January 2014 to declarations of both state and local drought emergencies. But while many challenges lay ahead for Zone 7 and water agencies throughout the state, in part due to climate change and to the Delta's aging infrastructure and ecosystem decline, Zone 7 had in 2013 already been building on its many years of previous work to improve its water supply reliability through increased local self-reliance and conservation planning. This was the case even as the Agency, which will always rely on Delta conveyance for the majority of its water supply, continued to support Bay Delta Conservation Plan efforts toward a Delta conveyance fix aimed at improving both water supply reliability and the Delta ecosystem. When the BDCP is completed, more water can be moved without impacting the Delta ecosystem.

Zone 7 made big strides in 2013 on short- and long-term planning for the Chain of Lakes, a series of sand-and-gravel mining pits to be turned over to Zone 7 for water management purposes as quarrying operations cease over time. This important local asset – located in the heart of the Livermore Amador Valley – will support the Agency's mission of providing both a reliable, high-quality water supply and an effective regional flood protection system. Chain of Lakes planning work done in 2013 set the stage for subsequent drought emergency projects involving a new Chain of Lakes well and a new pipeline to one of the lakes suitable for groundwater recharge. Other investments in 2013 designed to bolster our local water supply reliability included participation in Bay Area Regional Desalination Project studies, a project to

recapture groundwater pumped by the quarry operators, and construction of capital projects identified in Zone 7's Asset Management Plan to replace local aging infrastructure.

In the area of flood protection, Zone 7 continued important work on stream sediment studies and studies to assist in its Stream Management Master Plan update. It completed work on the first phase of the Arroyo Mocho Stanley Reach Riparian Restoration and Channel Enhancement Pilot Project and joined forces with the City of Livermore and the Urban Creeks Council for the "Living Arroyos Program," a public-private partnership to restore the urban streams and streamside habitats of the Valley while continuing to protect drinking water supplies and prevent flooding.

The Agency did aggressive outreach in 2013 to educate the public not only about the need to conserve, but also about the value, convenience and environmental benefits of publicly delivered tap water over far-more expensive bottled water in plastic containers. In recognition of its pyramid of 144 one-gallon jugs depicting the average daily water use by each person in a single family home in Zone 7's service area, the Agency was a finalist for the Association of California Water Agencies 2013 "Best in Blue" award, recognizing outstanding achievements by public water agencies in communications. In the area of finance, Zone 7 also received the Distinguished Budget Presentation Award, for the budget year beginning July 1, 2013, from the Government Finance Officers Association of the United States and Canada.



*Bill Stevens  
President, FY 2013-14*



*John Greci  
Vice President, FY 2013-14*



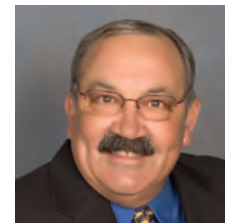
*Sandy Figuers*



*AJ Machaevich*



*Sarah Palmer*



*Dick Quigley*



*Angela Ramirez Holmes*

# Key Accomplishments

## WATER SUPPLY, RELIABILITY & QUALITY

- ▶ **Bay Delta Conservation Plan** – Zone 7 continued to participate in and support BDCP efforts, which are aimed at achieving the co-equal goals of restoring both the Delta ecosystem and water supply reliability for 25 million Californians south of the Delta, including those living in Zone 7's service area. A public draft of the BDCP and associated environmental documents were released by state and federal agencies in December 2013 for formal public review and comment.
- ▶ **Chain of Lakes projects** – The agency completed a project to capture water discharged from local quarry operations that was previously flowing out of the Valley to the Bay. This project set the stage for further drought emergency work in early 2014.
- ▶ **Regional desalination project** – A partnership of five Bay Area water agencies, including Zone 7, completed several site-specific technical studies.
- ▶ **Key capital projects** – Construction started on several projects identified in Zone 7's Asset Management Plan as needed to maintain system reliability, including the first phase of the Superpulsator Rehabilitation Project at the Del Valle Water Treatment Plant.
- ▶ **Nutrient Management Plan** – Zone 7 launched the process of updating its Salt Management Plan (SMP) and augmenting it with a new Nutrient Management Plan section – a blueprint for managing nutrient-loading to the Livermore Valley Groundwater Basin to achieve sustainable groundwater quality and to allow for increased use of recycled water.
- ▶ **Water conservation & conservation outreach** – In addition to continuing to offer rebates for water-saving devices at homes and businesses, Zone 7 conducted extensive water conservation outreach and workshops.

## FLOOD PROTECTION/STREAM MANAGEMENT MASTER PLAN

- ▶ **Stanley Reach pilot project** – Construction of the Arroyo Mocho's Stanley Reach Riparian Restoration and Channel Enhancement Pilot Project was completed.

- ▶ **SMMP update** – Zone 7 completed preliminary system-wide hydrology and hydraulic models and performed most of the creek studies needed to complete an environmental baseline for the SMMP update effort.
- ▶ **Sediment study** – Continued studies furthered Zone 7's understanding of the movement of sediment in local streams to help the agency with its flood-control maintenance programs.
- ▶ **Castlewood emergency concrete removal** – Zone 7 collaborated with the Castlewood Country Club to remove large slabs of a concrete structure crossing that had collapsed and were obstructing the flow in Arroyo de la Laguna.

## MULTI-BENEFIT PROJECTS & COMMUNITY PARTNERSHIPS

- ▶ **Chain of Lakes, preliminary lake use evaluation** – Zone 7 made big strides during 2013 on short- and long-term planning for future water supply, flood protection and other beneficial water management uses of the Chain of Lakes, a series of sand and gravel quarry sites being turned over to the Agency as mining operations cease over time.
- ▶ **Living Arroyos program** – Zone 7 entered into a public-private partnership with the City of Livermore and the Urban Creeks Council to restore urban streams and streamside habitats while continuing to protect drinking water supplies and prevent flooding. The program is envisioned as a way to engage the community in the stewardship of local streams.
- ▶ **Arroyo Valle watershed land purchase** – Zone 7's Board of Directors authorized the purchase of 5,000 acres of land adjacent to Lake Del Valle southeast of Livermore. The aim is to help with floodplain preservation and management, protect both the reliability and quality of local water supplies, and provide an opportunity for mitigation of other watershed-wide flood protection and water supply projects.
- ▶ **Creek cleanups** – The Agency collaborated extensively with other agencies to keep local creeks clean both by teaming up on debris removal and by promoting community creek cleanups.

## FINANCIAL ACCOUNTABILITY & COST EFFICIENCY

- ▶ **Efficiency measures** – Staff continued to implement cost-saving measures, such as participation in the treatment chemical purchase consortium, the soft hiring freeze and reduced discretionary spending.
- ▶ **Energy efficiency** – In efforts to both save money and be environmental stewards, the agency took steps to increase its alternative power and renewable energy use portfolio through a Power and Water Resources Pooling Authority (PWRPA) project at the Patterson Pass Water Treatment Plant. The next planned PWRPA project is at the Mocho Groundwater Demineralization Plant and two nearby wells.
- ▶ **Implementation of new financial software system** – Zone 7 replaced its old financial software to meet organizational needs and enhance monthly reporting to the Board and public for transparency.
- ▶ **Budget book presentation award** – The Government Finance Officers Association of the United States and Canada (GFOA) awarded Zone 7 the Distinguished Budget Presentation Award for the new budget book format used for the budget year beginning July 1, 2013. This award reflects Zone 7's commitment to transparency and meeting the highest principles of governmental budgeting, according to GFOA. It is the first such award for Zone 7.
- ▶ **Tri-Valley Utilities Coordination/Integration Study** – Zone 7 participated with other water, recycled water, sewer and stormwater utilities in the Tri-Valley to explore potential opportunities to pool services/equipment for increased efficiency.
- ▶ **Pursuit of independence** – Zone 7 continued to pursue independence from Alameda County as a means to streamline operations and reduce administrative costs.



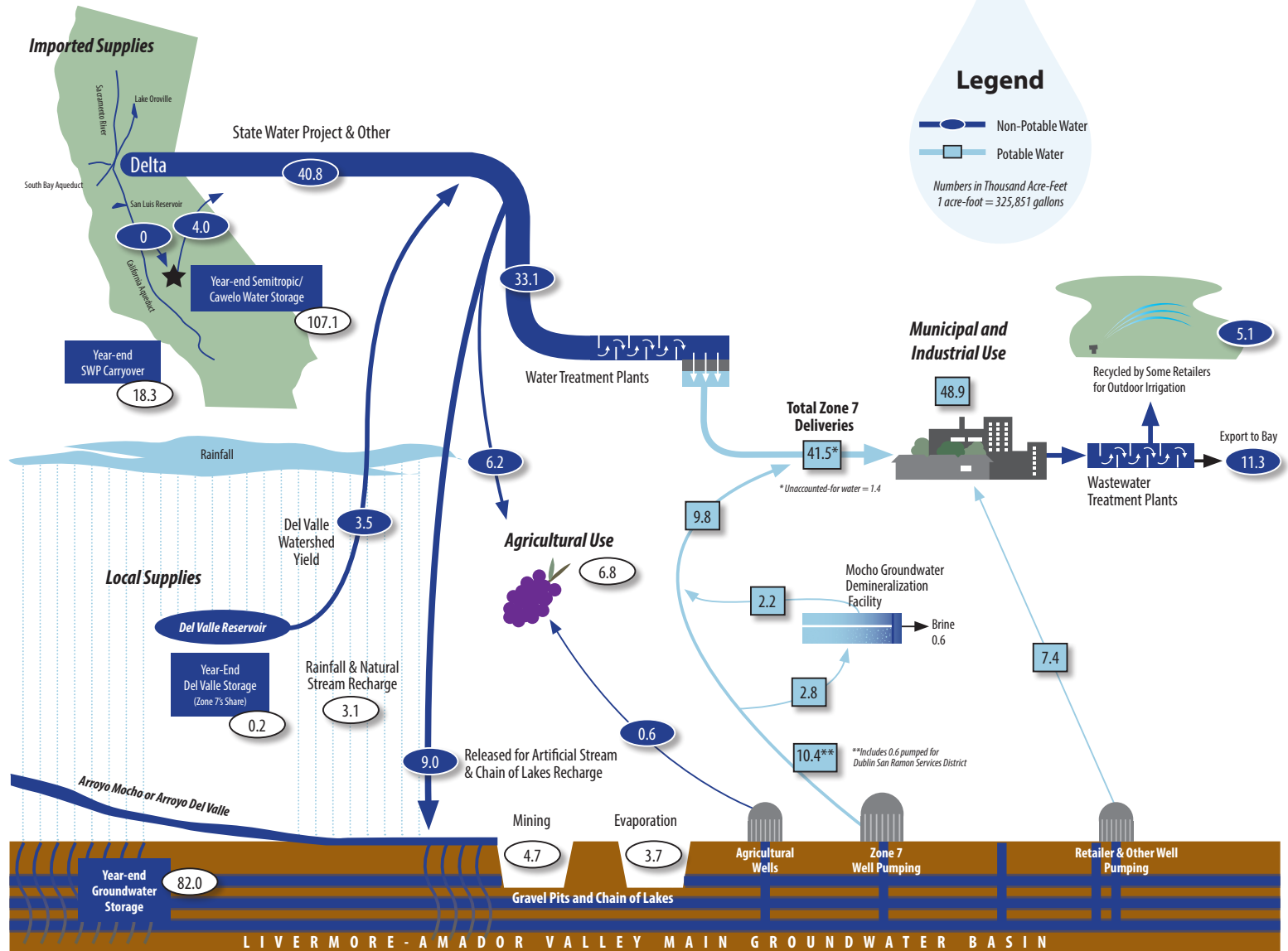
*As chair of the Bay Area Flood Protection Agencies Association (BAFPAA) in 2013, Zone 7 hosted BAFPAA's first annual Conference, involving nearly 100 participants. BAFPAA, which formed in 2006, is comprised of flood protection agencies from San Francisco Bay counties.*

# Livermore-Amador Valley Water Supply & Use

Supplying Water Reliably – 2013 Operations

## How Our Water System Works

The vast majority of Zone 7's water supply is imported to the Valley. It starts as Sierra snowmelt. The water is collected behind Oroville Dam, and then is conveyed to the Valley from the State Water Project via the Delta and South Bay Aqueduct. Most is treated locally for delivery to water retailers as potable water, while some is delivered untreated to agricultural water users. Some is also recharged via local arroyos into the local groundwater basin for storage and use when needed, and some is sent to out-of-area groundwater storage banks. Zone 7 also relies on local rainfall for a small fraction of its supply. In addition, some retailers do their own groundwater pumping and some use recycled water to satisfy a share of outdoor irrigation demands.



# Water System Reliability/Challenges

## RELIABILITY ACCOMPLISHMENTS

Zone 7 received only 35 percent of its State Water Project (SWP) contract amount in 2013. In addition to light Sierra snowpack and little rainfall during this extremely dry hydrologic year, Delta pumping restrictions to protect Delta smelt and salmon were another reason for the low water delivery. As a result, Zone 7 withdrew some water from storage – including offsite banking, Del Valle Reservoir storage and SWP carryover supplies – to meet demand. Meanwhile, the record-breaking dry year locally meant there was less natural recharge of the local groundwater basin than usual.

## 2013 Supply & Demand for Zone 7 Water Supplies (in acre-feet, where one acre-foot equals 326,000 gallons)

Supply	2012	2013
State Water Project deliveries (into Valley)	32,500	35,000
Pumping from local groundwater storage	11,100	9,800
Local surface water (Del Valle Reservoir)	7,400	3,500
Supplemental water purchases BBID/Yuba	2,400	5,800
Surface water from offsite banking	0	4,000
<b>Total Supply</b>	<b>53,400</b>	<b>58,100</b>

Demand	2012	2013
Municipal (drinking) water	38,400	41,500
Untreated irrigation water	5,500	6,200
Unaccounted-for water *	1,300	1,400
Released for local groundwater recharge	8,200	9,000
<b>Total Demand</b>	<b>53,400</b>	<b>58,100</b>

State Water Project water sent to offsite banking	20,300	0
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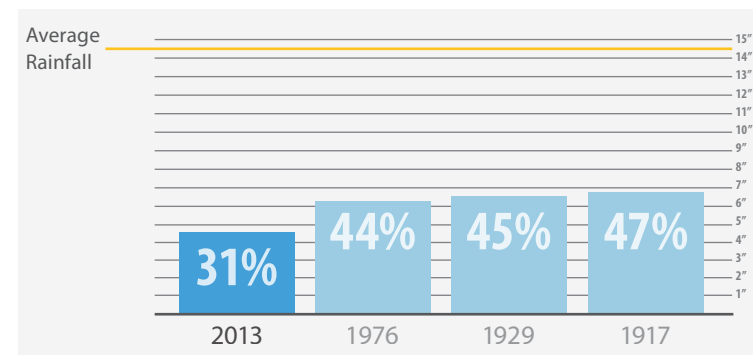
### Available Year-End Storage

Local groundwater basin	92,000	82,000
Offsite banking programs	111,100	107,100
Del Valle Reservoir storage	3,800	200
State Water Project carryover	25,200	18,300
<b>Total Year-End Storage</b>	<b>232,100</b>	<b>207,600</b>

\*Refers to meter discrepancies or other undefined system losses typical for water systems of this size.

Signs at the end of 2013 that California was entering the third straight dry winter – the seventh in the last ten years – pointed to the need not only to conserve water in 2014, but also to use water wisely as a year-round way of life and to continue the path forward for the Bay Delta Conservation Plan (see next page).

Many parts of the state ended Calendar Year 2013 with the lowest rainfall amounts of record. In the Livermore Valley, total precipitation for the year was only 31 percent of the 14.5-inch average, with 4.5 inches of rainfall received. Previous dry record-holders include 1976 with 6.4 inches (44 percent of average), 1929 with 6.6 inches (45 percent of average), and 1917 with 6.8 inches (47 percent of average).



The persistently dry conditions led to declarations of state and local drought emergencies in early 2014, and for Zone 7’s Board of Directors to approve a drought emergency response plan that, in addition to asking everyone in the Livermore-Amador Valley to reduce water use 25 percent, included immediate agency actions and emergency projects aimed at minimizing water supply shortages in 2014. The agency continues to monitor the situation closely and to adjust operations as necessary to optimize use of available resources.

# Bay Delta Conservation Plan

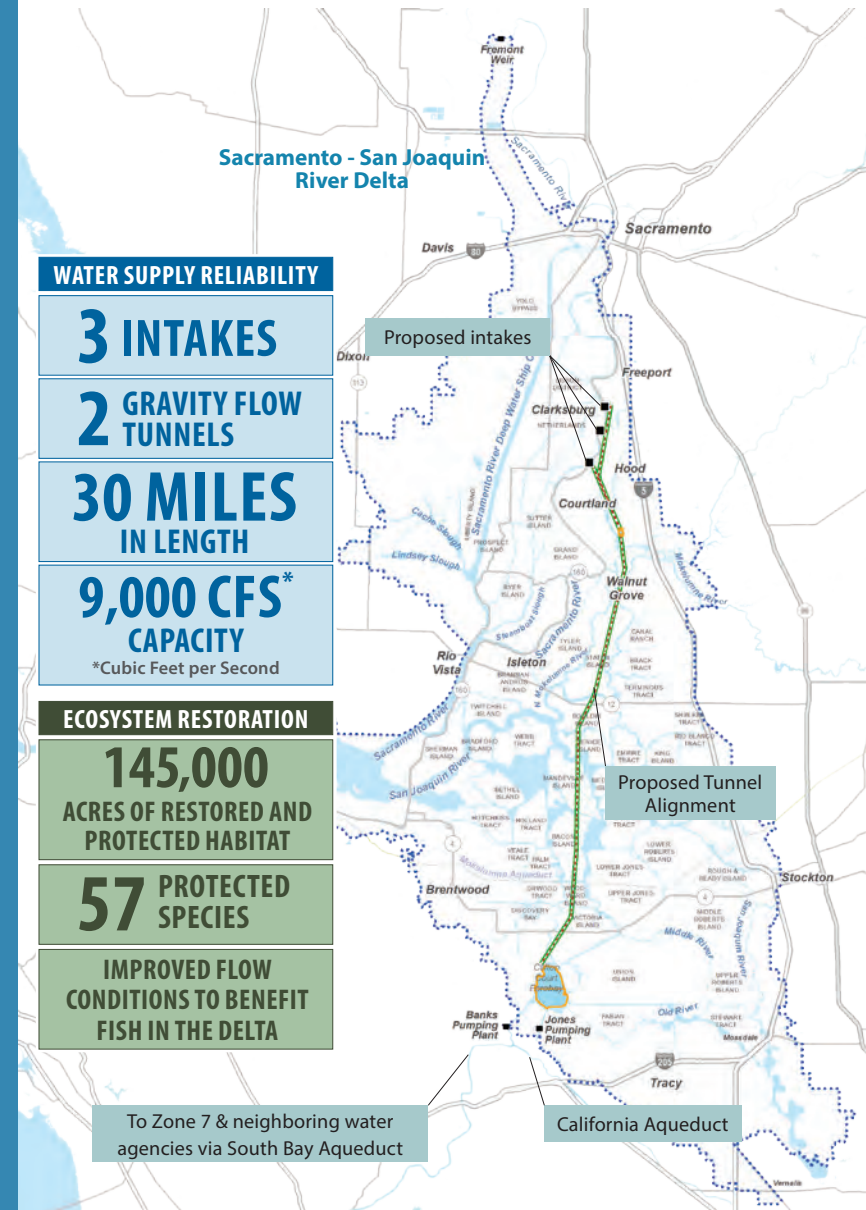
Following seven years of extensive scientific review, public meetings, collaboration and compromise by many competing interests, the public draft of the Bay Delta Conservation Plan (BDCP) and associated environmental impact documents were released in December 2013 for formal public review and comment. The BDCP is a state/federal plan aimed at achieving the co-equal goals of restoring both the Delta ecosystem and water supply reliability for 25 million Californians, including those living in Zone 7's service area. More than 80 percent of the water delivered by Zone 7 is Sierra snowmelt captured by the State Water Project and conveyed through the Delta, making a Delta solution imperative for the Tri-Valley's economic vitality and continued quality of life.

## THE PROBLEM

Water for the state and federal water projects is conveyed through the Delta's 1,100-mile network of fragile levees that protect islands that have sunk by as much as 25 feet over the decades. The health of the Delta estuary faces mounting pressures related to invasive species, as well as threats of seawater intrusion from flooding, earthquakes and rising sea levels due to global climate change. In addition to other stressors on the Delta, including contaminants from agricultural drainages, wastewater treatment plant discharges, recreational activities and upstream diversions, the existing system of water conveyance has created unnatural north-south flows in the Delta, confusing native species. Operations of the state and federal projects are limited by regulatory requirements, including those issued by state and federal fishery agencies to protect threatened and endangered fish species. Projected long-term average deliveries to Zone 7 from the State Water Project have been reduced from 76 percent of contract amounts annually to about 60 percent.

## PROPOSED DELTA CONVEYANCE

In addition to extensive habitat improvements, the BDCP calls for construction of two new water supply tunnels, from the northern Delta to existing aqueduct facilities in the south Delta, to restore reliability and reduce seismic and other risks. Through ongoing evaluation and compromise, the facility's proposed size has been reduced from 15,000 cubic feet per second (cfs) to 9,000 cfs. The improved conveyance would be large enough to capture sufficient wet-weather supplies to maintain the state's groundwater basins and surface water reservoirs, while still requiring urban communities to stay on the path of conserving and recycling water. If a new conveyance system is built, the benefiting water agencies (including Zone 7) would pay for construction and related environmental mitigation.





# Investing in Water System Reliability

## ASSET MANAGEMENT

Construction started in 2013 on several key capital projects identified in Zone 7's Asset Management Plan as needed to maintain system reliability, including:

- ▶ **The first phase of the Superpulsator Rehabilitation Project at the Del Valle Water Treatment Plant.** The existing equipment was 25 years old and nearing the end of its useful life. The superpulsators are an integral component of the treatment process at the plant. The overall project includes improving clarifier drainage, adding safety protections and clarifier basins, removing and replacing all of the superpulsator equipment located in each of the four clarifier basins, and recoating the concrete in each of the basins.
- ▶ **Filter media replacement and replenishment project.** It included complete rehabilitation of Filter No. 2 at the Del Valle Water Treatment Plant and replenishing the media for all filters at both the Del Valle and Patterson Pass treatment plants for improved filter reliability.

## CHAIN OF LAKES

The agency completed a project in 2013 to capture water discharged from local mining operations that was previously flowing out of the Valley. This project set the stage for further drought emergency work in early 2014 involving the Chain of Lakes.

## BAY AREA REGIONAL DESALINATION PROJECT STUDIES

While working to protect its State Water Project (SWP) supplies and improve the reliability of SWP deliveries through the Delta, Zone 7 has concurrently been investigating more local drought-resistant water supply sources to diversify the agency's water supply portfolio and reduce reliance on the SWP. Through the Bay Area Regional Desalination Project, Zone 7 has partnered with four of the Bay Area's largest water agencies (Contra Costa Water District, East Bay Municipal Utility District, San Francisco Public Utilities Commission and Santa Clara Valley Water District) to evaluate the feasibility of a joint facility that would desalinate brackish Bay water, providing regional benefits while minimizing environmental impacts.

In 2013, the partners completed site-specific technical studies based on a location in eastern Contra Costa County. The studies evaluated the ability and costs to move water throughout the Bay Area using existing and planned facilities, the potential impacts of the facility on Delta water quality and sensitive fish species, the potential energy use and associated greenhouse gas emissions of the facility, and the potential use of Los Vaqueros Reservoir. With these studies completed, the agencies have determined that the project is technically feasible. The next steps are to revisit the project's role within the context of each partner's changing water supply and demand picture through 2030 and to continue to seek other ways to bolster regional reliability.



*Phase 1 of the Superpulsator Rehabilitation Project at the Del Valle Water Treatment Plant was completed in 2013.*

# Water Conservation

Zone 7's conservation program works to assist customers in improving water-use efficiency as a year-round way of life. A state law enacted in 2009 requires a 20 percent reduction in per-capita urban water use by 2020. Zone 7 has been collaborating with its water retailers to help them plan accordingly, to develop and implement various conservation rebate programs, and to support their recycled water projects.



Recycled water keeps a local resource local and reduces water imports and wastewater pumping. Every gallon of recycled water used for irrigation saves a gallon of precious drinking water.

## REBATE INCENTIVES FOR 2013

- ▶ Continue to save an estimated 121.1 acre-feet of water annually (a total 395 million gallons of water over the 10-year life of the improvements).
- ▶ Cost \$305,554, of which Zone 7 was reimbursed \$214,750 by a Proposition 84 Round 1 Integrated Water Management Grant awarded by the state Department of Water Resources.
- ▶ Resulted in water-saving rebates being issued for:
  - 625 high-efficiency toilets (HETs), and direct installation of 291 HETs.
  - 2,123 high-efficiency clothes washers.
  - lawn conversions to water-efficient landscaping at eight homes.
  - weather-based irrigation controllers at 28 homes and businesses.
  - commercial "large-landscape" surveys at eight high-water-use properties.



## ALSO IN 2013, ZONE 7'S OTHER CONSERVATION EFFORTS INCLUDED:

- ▶ Recognition during a dedication ceremony for its support of Dublin San Ramon Services District's Central Dublin Recycled Retrofit Project and, in particular, for providing irrigation retrofits that will save local schools money on their water bills while reducing demand for potable water in the Valley.

- ▶ Partnership with East Bay Municipal Utility District, Contra Costa Water District and Santa Clara Valley Water District, in conjunction with California Landscape Contractors Association, in hosting the 1st annual Bay Area Landscape Water Conference, held in Dublin. The conference goal was to educate and engage business owners, Homeowners Association board members and property managers on the importance of water-use efficiency and avoiding water waste.
- ▶ Sponsoring a Qualified Water-Efficient Landscaper (QWEL) training for 42 participants, and co-sponsoring, with Alameda County Water District, a Bay Friendly Training series for 47 professional landscapers.
- ▶ As part of a Bay Area-wide Proposition 84 Round 2 Integrated Regional Water Management program grant from the State Department of Water Resources, being awarded \$187,000 to further Zone 7 conservation programs.
- ▶ Sponsoring a "How to Remove Your Lawn" workshop ("Mow no Mo'!") in Livermore, facilitated by Bringing Back the Natives.
- ▶ Co-sponsoring and helping to promote two separate water-wise garden tours in the East Bay - the Bringing Back the Natives Garden Tour and the Bay Friendly Garden Tour.
- ▶ Providing Livermore schools with faucet aerators, rebates and other assistance identifying additional conservation measures that, in collaboration with the school district and other entities, helped the district reduce water consumption in the last half of 2013 by 18.2 percent (42.3 acre-feet), at a savings of \$75,000.
- ▶ Converting a building at the Dublin Corporate Center to waterless urinals using a microbial cube system, saving an estimated 406,640 gallons (1.25 acre-feet) of water annually.
- ▶ Unveiling its pyramid of 144 one-gallon jugs, depicting the average daily water use by each person in a single family home in Zone 7's service area. The pyramid conveys important educational messages not only about the need to use water wisely, but also about the value, convenience and environmental benefits of tap water vs. many-times-more-expensive bottled water in plastic containers.

# Groundwater Resources Management

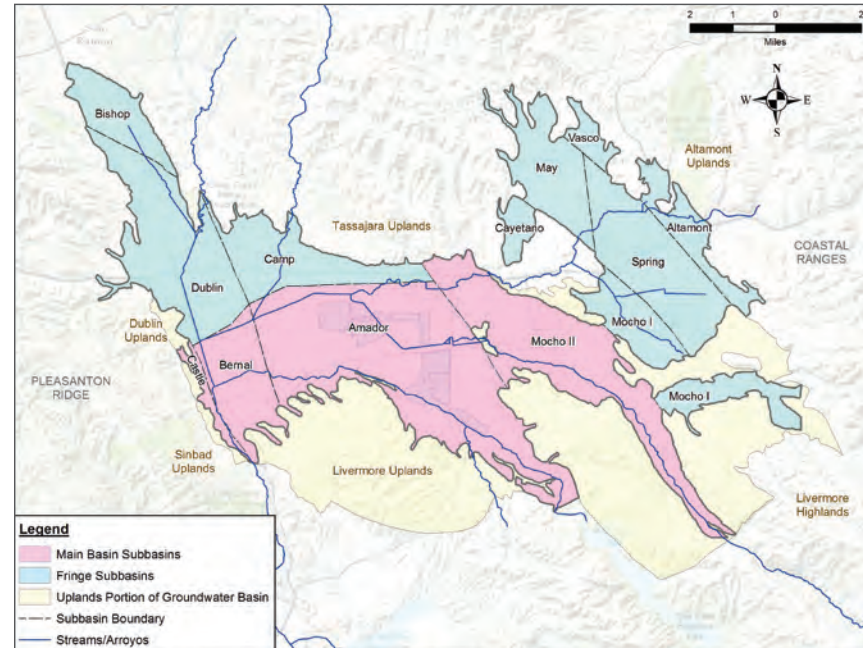
In 2013, Zone 7 was awarded a \$200,000 Local Groundwater Assistance Grant by the California Department of Water Resources to upgrade its Groundwater Model. The recalibrated model will serve as a useful tool for agency water management planning including well siting and operations, groundwater replenishment operations and groundwater quality projections.

## NUTRIENT MANAGEMENT PLAN GETS UNDERWAY

In 2013, Zone 7 launched the process of updating its Salt Management Plan (SMP), and augmenting it with a new Nutrient Management Plan section – a blueprint for managing nutrient loading to the Livermore-Amador Valley Groundwater Basin. Nutrients such as nitrogen and phosphorus are essential to plant and animal nutrition; however, elevated concentrations degrade water quality and some forms of these nutrients (such as nitrates) are regulated to protect the public health. The plan's goals remain the same as the original SMP's: to achieve sustainable groundwater quality as well as quantity, to allow for increased use of recycled water, and to qualify for state Department of Water Resources local groundwater management grants. With the addition of the Nutrient Management section, the expanded plan will be called the Salt and Nutrient Management Plan (SNMP).

The Livermore Valley Main Groundwater Basin (Main Basin) provides at least 20 percent of the drinking water supply for Zone 7's service area. Even more importantly, the groundwater basin serves as a large, underground water storage basin for Zone 7 to store excess water in wet years that can be used in dry years when imported surface water is less available.

In 2009, the State Water Resources Control Board adopted a Recycled Water Policy requiring that Salt Nutrient Management Plans be completed for all groundwater basins in California by May 2014. While this requirement does not apply to groundwater basins like Zone 7 that already have an approved SMP, Zone 7 as a proactive groundwater basin manager for the Livermore-Amador Valley Groundwater Basin plans to complete the nutrient management addition in 2014.



### The key goals and objectives of this effort include:

- ▶ assessing salt- and nutrient-loading impacts for planned and potential recycled water use increases over the Main Basin;
- ▶ confirming that the salt-management strategies recommended in the 2004 Salt Management Plan are still the best options for mitigating current and future salt-loading;
- ▶ defining additional mitigation measures for historical and potential nutrient-loading impacts, if any; and
- ▶ addressing new monitoring requirements of the recently adopted Recycled Water Policy.

# Water Quality

In 2013, all drinking water that Zone 7 delivered to its retailers serving Pleasanton, Livermore, Dublin and the Dougherty Valley area of San Ramon again met regulatory standards and, in almost all cases, the water quality was significantly better than required.

As part of its commitment to water quality, the agency in 2013 submitted a report to the American Water Works Association's Partnership for Safe Water Program showing that the Del Valle Water Treatment Plant surpassed water quality goals for turbidity set forth by the Partnership for Safe Water Program. In 2009, Zone 7 received a national Directors Award for DVWTP for maintaining the Partnership for Safe Water for 10 consecutive years. Annually renewing the Partnership for Safe Water requires Zone 7 to provide the plant performance results in a narrative report, including data analysis. Zone 7 is eligible in 2014 for a 15-year partnership award.



Inclusion of the Partnership principles in Zone 7's continuous improvement plan has assisted the agency in improving overall plant performance and delivered water quality. Identification of performance-limiting factors has allowed Zone 7 to address and correct these factors through optimization of treatment processes and capital improvement projects.

## TREATMENT CHALLENGE

During the summer of 2013, filtration challenges were encountered at both plants. While high water quality was maintained, these challenges resulted in reduced treatment capacity and increased groundwater pumping. In the Fall of 2013, the Zone 7 Board approved a contract for water treatment support and investigation of interim and long-term solutions to the challenges.

## MOCHO GROUNDWATER DEMINERALIZATION PLANT

The Mocho Groundwater Demineralization Plant (MGDP) uses reverse osmosis technology to remove salts from the groundwater basin, thus reducing or halting the build-up of salts in the basin while improving delivered drinking water quality.

In 2013, the plant demineralized 2,785 acre-feet (more than 0.9 billion gallons) of groundwater, and approximately 2,798 tons of salt was exported out of the Valley as brine.



*Mocho Groundwater Demineralization Plant*

# Chain of Lakes

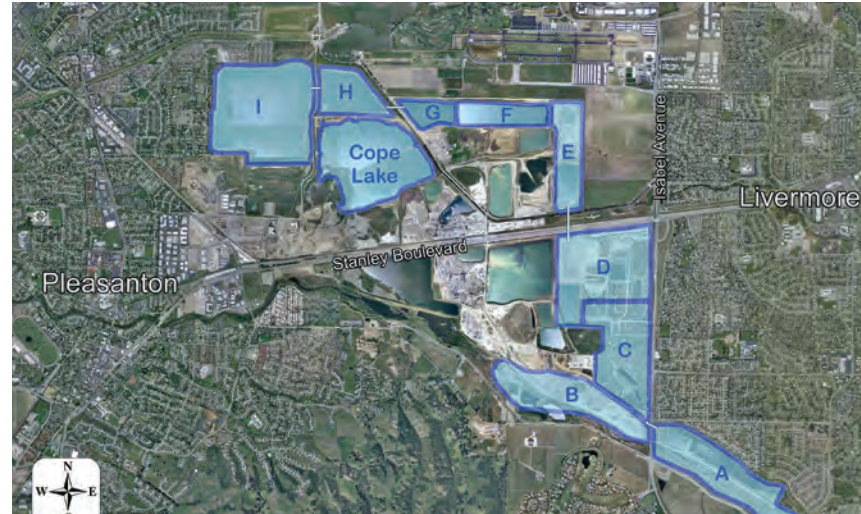
*A vital asset for water supply & flood protection*

Zone 7 made big strides in 2013 in planning future beneficial water management uses of the Chain of Lakes (COLs), a series of sand and gravel quarry sites located in the heart of the Livermore-Amador Valley. Water management includes but is not limited to groundwater recharge, surface water storage and conveyance, and flood protection. The lakes will be turned over to Zone 7 as quarrying operations cease over the next 20 to 50 years. Much of the area is still undergoing active mining but the chain will ultimately consist of 10 lakes, named Lakes A through I, as well as Cope Lake, connected through a series of conduits.

Planning for the future Chain of Lakes has been in process for decades. In late 2013, Zone 7 completed a detailed preliminary lake use evaluation for each of the lakes to be dedicated to Zone 7, for presentation to the Agency's Board of Directors in early 2014. The potential uses were divided into Primary Uses and Secondary Uses:

- ▶ Primary Uses that directly support Zone 7's mission of providing a reliable, high-quality water supply and effective regional flood protection.
- ▶ Secondary Uses that over the years have been requested by external entities (i.e. water retailers, members of the public, recreation agencies) and are potentially compatible with Zone 7's Primary Uses of the lakes, but do not directly support Zone 7's mission.

Surface water storage and conveyance were an assumed primary use for each of the lakes, and other uses were evaluated with that in mind. With the exception of active recreation, strong candidates emerged for most uses. However, some lakes scored high for multiple and potentially conflicting uses and actual compatibility will need to be further evaluated.



In the near term, Zone 7's detailed planning efforts are focused primarily on Lake I and Cope Lake (which are already owned by Zone 7), and Lake H (which is expected to be transferred to Zone 7 within the next three years). Recommended Zone 7 uses for these lakes include surface water storage and conveyance, groundwater recharge (Lake I), and stormwater detention (Cope Lake and Lake H). Habitat conservation and education/passive recreation (i.e. bird watching and trails) could also be accommodated depending on interest and participation from outside agencies. These efforts will continue to be coordinated with the development of the East Pleasanton Specific Plan.

Given the long period of transition, uses of the other lakes will be reconsidered over time to reflect any changes in regulations, water management needs, and other factors.



# Flood Protection & SMMP

Zone 7 provides for the regional management of flood and storm waters to protect life, property and habitat from damage and destruction within a 430-square-mile area of eastern Alameda County. Key components include program administration, capital improvements and collaboration with other watershed stakeholders. Maintenance activities for the 37 miles of Zone 7-owned channel facilities include emergency repairs, routine maintenance and repairs, clearing debris from channels and access roads, vegetation management, inspections to ensure the system is in good working condition to receive

and convey storm waters, and rehabilitation of existing facilities. Capital projects were outlined in the Stream Management Master Plan (SMMP), an integrated program that brings together flood protection, erosion and sedimentation management, water supply and water quality improvements, habitat and environmental enhancements, and recreational and educational opportunities. A key component of this integrated program is watershed stewardship. In 2013, Zone 7 purchased about 5,000 acres in the Arroyo Valle watershed to assure it is managed with stewardship in mind.

## ARROYO DE LA LAGUNA EMERGENCY CONCRETE REMOVAL



*Before*



*After*



*Bioassessment collection and sample preparation were part environmental baseline studies conducted in 2013 to support Zone 7's update of its Stream Management Master Plan. The standardized protocol can be applied again in future years to help evaluate how Zone 7's projects and activities are influencing the health of the watershed over time and help future projects achieve California Environmental Quality Act compliance and environmental permitting.*

### ZONE 7 IN 2013:

- ▶ Completed 33 bank repairs, four biotech brush walls, 2,019 linear feet of access roadway and drainage renovation at a total construction cost of \$850,000. The planning, permitting, design and construction management were performed by Zone 7 staff.
- ▶ Collaborated with the Castlewood Country Club for an emergency repair to remove large slabs of a concrete structure crossing that had collapsed and were obstructing the flow in Arroyo de la Laguna within the Country Club area, so as to avoid a potential threat to public health and safety.
- ▶ Coordinated with the U.S. Army Corps of Engineers for the bi-annual inspection on Zone 7 facilities to maintain the Agency's eligibility for federal funding in the event of a storm disaster.
- ▶ Continued work on sediment studies that will help Zone 7 develop a more cost-effective maintenance plan to reduce flooding risks from sediment buildup that can decrease the stormwater carrying capacity of some streams, and will assist in the SMMP updating process.
- ▶ Continued a collaborative effort involving the U.S. Department of Agriculture's Natural Resources Conservation Service on two bank stabilization projects at Line G-1-1 and Pleasanton Canal (Line B-5). A two-year post-planting monitoring effort was begun.
- ▶ Initiated design of the Arroyo las Positas Improvement at Vasco Road Project, and collaborated with the City of Dublin on the Chabot Canal Regional Stormwater Detention Project.

### STREAM MANAGEMENT MASTER PLAN UPDATE

In support of Zone 7's SMMP update effort, the agency in 2013 completed preliminary systemwide hydrology and hydraulic models. These initial models will form the basis for evaluating future projects along the arroyos and streams.

In addition, Zone 7 initiated environmental baseline studies to support the SMMP update. In-house personnel who received specialized training collected physical riparian habitat data, water quality data and insect and other samples from 27 stream sites across Zone 7's service area. Study results will be used to develop a "snapshot" of ecosystem conditions, which will aid in developing project-specific watershed management goals in the SMMP.

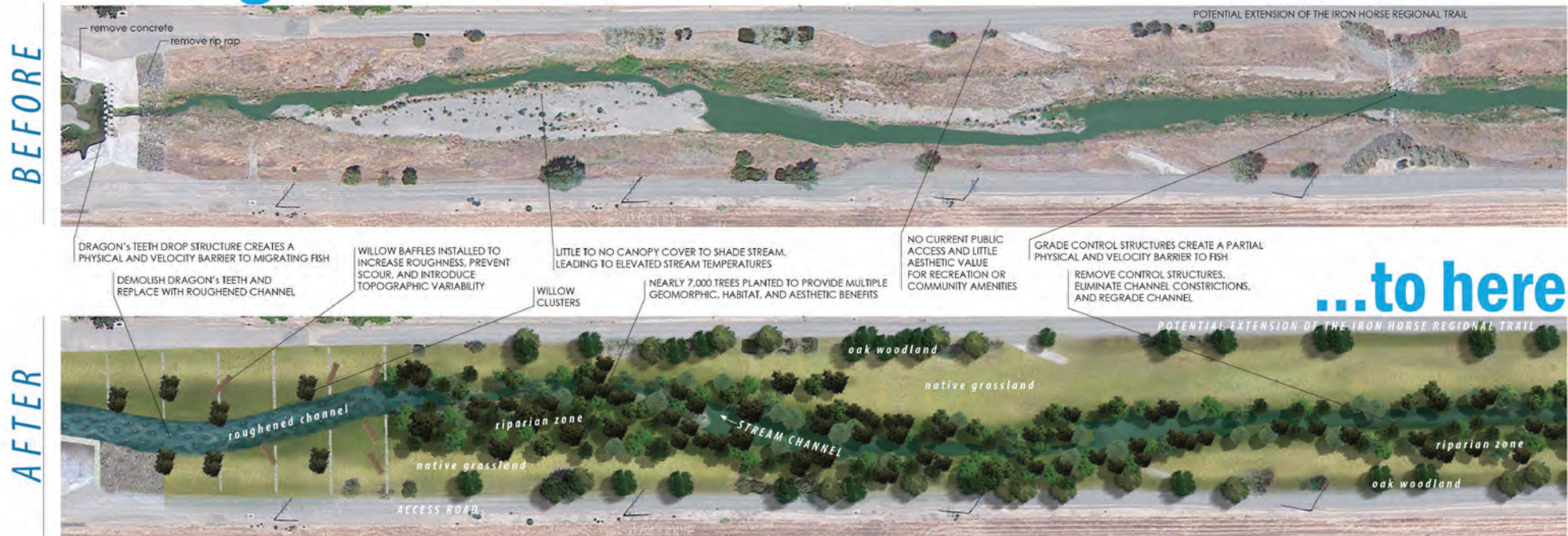
#### *Watershed Stewardship*

*Zone 7 purchased Arroyo Valle watershed land for stewardship purposes.*



# Stanley Reach Project

## Getting from here...



Zone 7 implemented a unique pilot project in 2013 to enhance a section of the Arroyo Mocho flood control channel in Livermore. The agency's Arroyo Mocho Stanley Reach Riparian Restoration and Channel Enhancement Pilot Project is located adjacent to Stanley Boulevard between Murrieta Boulevard and Isabel Avenue in the City of Livermore. The project will demonstrate the feasibility of transforming an earthen trapezoidal channel into a vegetated stream reach exhibiting natural characteristics, while also maintaining its core functionality for flood protection, local sediment management, and groundwater recharge. The project design

facilitates stream channel enhancements, 12 acres of increased riparian vegetation, and removal of barriers to fish passage. In addition, the Arroyo Mocho was identified by the U.S. Environmental Protection Agency in its 303(d) listing as being impaired for temperature. This project may help Zone 7 provided data concerning the 303(d) listing in advance of any Total Maximum Daily Load (TMDL) being adopted.

This is a pilot project to evaluate the feasibility, limits and effectiveness of one approach to restore stream and riparian habitat.



# Watershed Stewardship

## LIVING ARROYOS PROGRAM

In July 2013, Zone 7's board approved an agreement with the City of Livermore and the Urban Creeks Council for the "Living Arroyos Program," a public-private partnership to acquaint the public and local volunteers with the flood protection practices and streamside habitats of the Livermore-Amador Valley, while engaging in plantings, weed abatement, and other activities that help to protect drinking water supplies and prevent flooding. The program is envisioned as a public volunteer and apprenticeship program that engages the community in the stewardship of local streams within the Upper Alameda Creek Watershed. Key goals of the program are to:

- ▶ Increase opportunities for local residents of all ages to engage in hands-on stewardship of natural resources, and to have contact with nature close to home.
- ▶ Increase public awareness of important watershed issues (see program website, [www.livingarroyos.org](http://www.livingarroyos.org)).
- ▶ Improve habitat and water quality of local streams while maintaining and enhancing both public safety and regional flood protection.
- ▶ Strengthen public/private partnerships within the community.



## CREEK CLEANUPS

Zone 7 collaborated extensively with other agencies to keep local creeks clean. For example, it partnered with the City of Pleasanton on an effort to remove tires, shopping carts and other debris along a 2-mile stretch of the Arroyo Mocho between Interstate 680 and Santa Rita Road. Zone 7 also was a partner in the Tri-Valley Creeks to Bay Cleanup, a community volunteer effort held in September as part of international Coastal Cleanup Day, and helped the City of Dublin promote two community creek cleanups.

## LIVERMORE-TO-PLEASANTON TRAIL ALONG ARROYO LAS POSITAS

Zone 7 officials joined in a community celebration that marked the opening of a key Livermore-to-Pleasanton trail project along a Zone 7 flood control channel. The 1.5-mile multi-use trail is located in western Livermore along Arroyo las Positas, east of El Charro Road. Zone 7 provided the City of Livermore with a recreational use license agreement and a bridge easement for the trail crossing, was instrumental in supporting Livermore's efforts to obtain a \$762,000 state Proposition 50 River Parkways Grant for trail development, and worked with the city on trail alignment issues. The project was another example of how Zone 7, through its Stream Management Master Plan, takes an integrated approach to maximize public benefits of its flood control facilities - not only for flood protection but also habitat enhancements, water quality improvements and, when compatible, recreation. Later in 2013, the trail was connected to Pleasanton's Arroyo Mocho Trail as part of the Tri-Valley trail system that links local and regional trail networks.



## CHRISTMAS BIRD COUNT

Zone 7 again provided access to its Chain of Lakes property as part of the fifth annual Eastern Alameda County Christmas Bird Count, hosted by the Ohlone Audubon Society and the Alameda Creek Alliance. This marked the 114<sup>th</sup> year of the annual nationwide volunteer-based survey effort coordinated by the Audubon Society to promote bird conservation and assess long-term trends in winter bird populations.

# Community Outreach & Education

**Water science in the schools program:** Zone 7's schools program made a total of 372 classroom presentations reaching around 10,000 students within Zone 7's service area during the 2012-13 school year, and launched plans for expanding high school level presentations.

## COMMUNITY EVENTS

Conveying important messages about water conservation, stormwater pollution prevention and the value of publicly delivered tap water, Zone 7 participated in a variety of events throughout the year, including Earth Day celebrations, home and garden shows, the Sunol Wildflower Festival, Clean Water Program events, water-wise gardening workshops and tours, the Livermore Children's Fair and the Alameda County Science & Engineering Fair. New and exciting in 2013 were:

- ▶ **Water, Wind & Weather Weekend:** Zone 7 staffed a booth during this special three-day event during the Alameda County Fair, featuring "Alameda County's largest classroom" summer learning and activities for kids and families. Using a watershed diorama, Zone 7 demonstrated how household pollutants can travel down storm drains and into local creeks to pollute our waterways, and provided information about pollution prevention.
- ▶ **Plastic Bag Ordinance education at local schools:** Zone 7's schools program provided children with information and reusable bags to bring home as part of community education about Alameda County's new plastic bag ordinance, which went into effect on January 1, 2013. Plastic bags are one of the most common litter items found in our waterways, and plastic pollution is a growing threat to creeks, the ocean and marine life.
- ▶ **Water jug pyramid:** Throughout 2013, Zone 7 displayed its pyramid of 144 one-gallon jugs, depicting the average daily water use by each person in a single family home here in Zone 7's service area. This was part of ongoing water conservation outreach and education.



## SCIENCE & ENGINEERING FAIR AWARDEES HONORED

As part of Water Awareness Month, eight students received special recognition during Zone 7's May board meeting for water-related projects that had been displayed during the annual Alameda County Science and Engineering Fair. All eight students (one middle school team and two high school teams) who received special awards from Zone 7's judges for their water-related projects attend schools within Zone 7's service area.



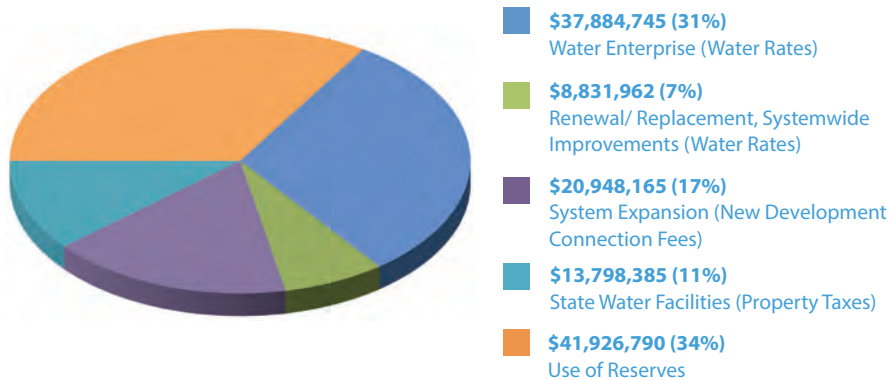
*The e-newsletter provides a dual function of distributing press releases to the media and directly informing and educating the public. The frequency of mailings was increased in 2013, and 20 e-newsletters were sent. In order to make it even easier for the public to subscribe to Zone 7's e-newsletter, which serves as an environmentally friendly and cost-effective form of communication, staff developed a QR Code symbol to be imprinted on future publications for scanning by smart phones.*

# Financial Information

Budget FY 2013-14

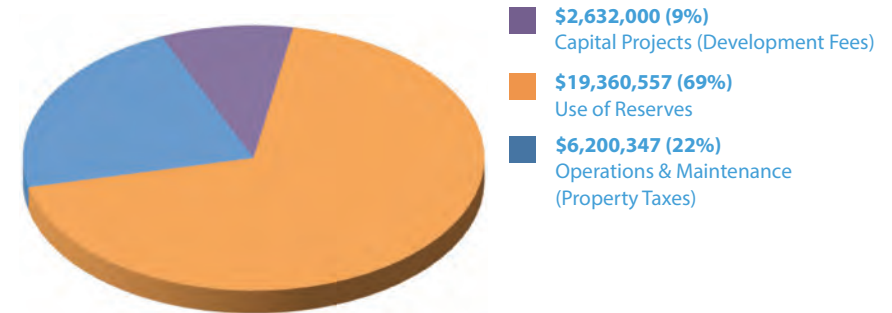
## Water Supply, Reliability & Quality Revenue

Total: \$123,390,047



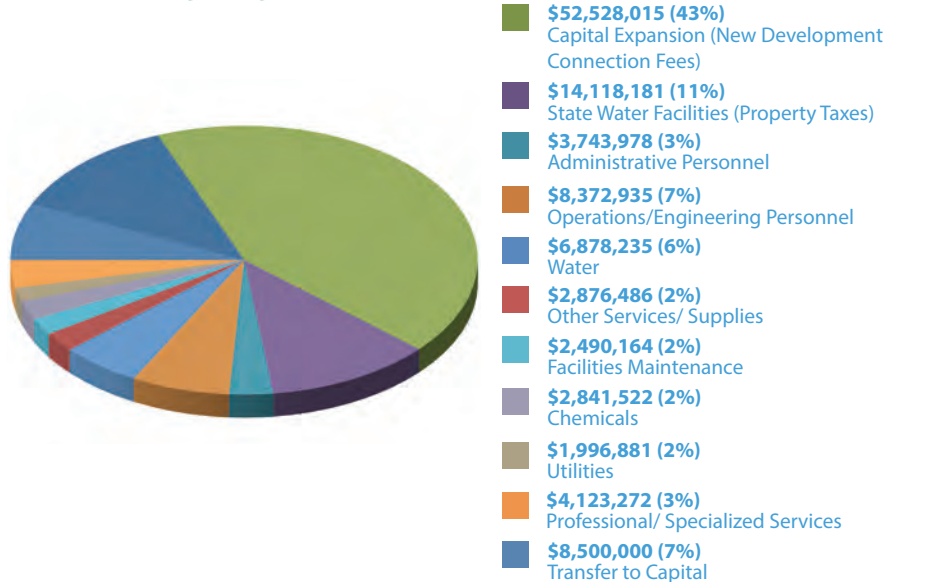
## Flood Protection Revenue

Total: \$28,192,904



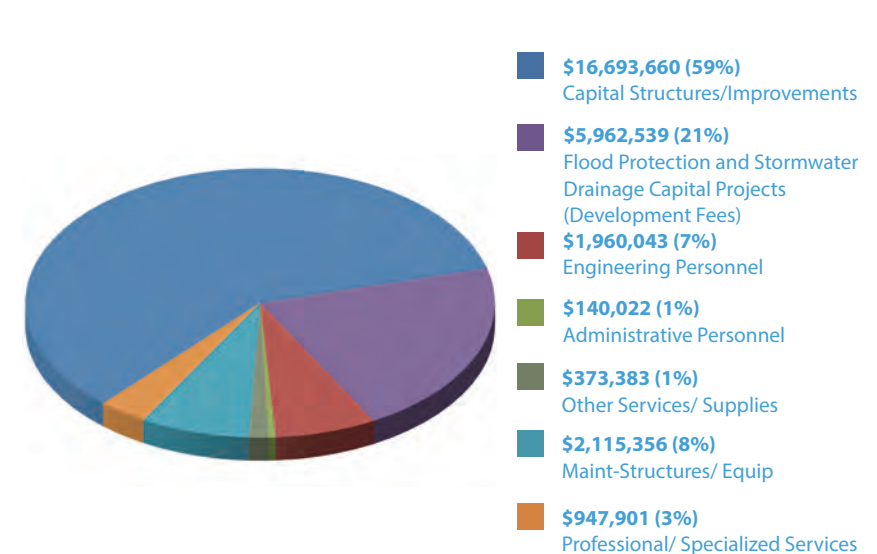
## Water Supply, Reliability & Quality Operating & Capital Expenses

Total: \$123,390,047



## Flood Protection Operating & Capital Expenses

Total: \$28,192,904





## Zone 7 Water Agency

100 North Canyons Parkway

Livermore, CA 94551

(925) 454-5000

[www.zone7water.com](http://www.zone7water.com)

Zone 7 Water Agency supplies treated drinking water to retailers serving more than 200,000 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. We also supply untreated irrigation water (mostly to vineyards) and provide flood protection services to eastern Alameda County.

### EXECUTIVE STAFF

**Jill Duerig**

*General Manager*

**Kurt Arends**

*Assistant General Manager, Engineering*

**Tom Hughes**

*Assistant General Manager, Administrative Services*