



AZUSA | SIERRA MADRE | MONTEREY PARK | ALHAMBRA

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BUILDING A

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RESILIENT & SUSTAINABLE

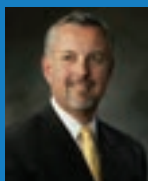
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WATER SUPPLY

2016-2017  
ANNUAL REPORT



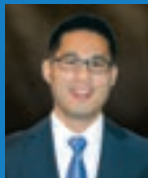
## BOARD OF DIRECTORS



Mark R. Paulson  
Division I - Alhambra



Dr. Steven Placido  
Division II -  
Alhambra and  
Monterey Park



Thomas Wong  
Division III -  
Monterey Park,  
President



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Division IV,  
Sierra Madre



Raul Romero  
Division V - Azusa

## Mission Statement

The San Gabriel Valley  
Municipal Water  
District provides reliable  
supplemental water for the  
communities of Alhambra,  
Azusa, Monterey Park and  
Sierra Madre in a cost-  
effective and environmentally  
responsible manner.



Darin J. Kasamoto  
General Manager



Ed Hills  
Assistant General  
Manager



Dear Friends:

I am pleased to share our 2016-2017 Annual Report. It's been an exciting year for our precious water resources in California and the San Gabriel Valley. The year ran the gamut from persistently dry, drought conditions last summer and fall, to heavy rain and snow in the winter and spring, resulting in improved water supply conditions across the state as reflected in California's reservoirs and snow pack.

We've learned many lessons from our latest drought, particularly that if we work together, we can overcome any challenge. In the worst drought in our state's history, we achieved record conservation and ensured that no one in the San Gabriel Valley went dry.

However, we still face persistent challenges and we should anticipate that drought cycles will continue. While the statewide drought emergency has been lifted, our local water supply remains in a precarious position, as local groundwater, which provides nearly 85% of the water we use, remains near historic low levels. In addition, the heavy rains in northern California also had unwanted impacts including flooding and damage to reservoirs such as Lake Oroville, highlighting the need for investments in our aging water infrastructure across the state.

Two major operational accomplishments this fiscal year included delivering 23,923 acre-feet of water to the Main Basin to supplement local groundwater supplies and refurbishment of the Azusa Flow Control Structure. In the longer-term, we are working to diversify the sources of our regional water supply and to more effectively utilize our groundwater basin to store water. We continue to study opportunities in the fields of recycled water, storm water capture and hydroelectric green power generation.

Financially, we've continued to improve the District's balance sheet and improve our financial reserves while maintaining the lowest wholesale replenishment water rate in the region. And, we are firmly established as a leader due to our water conservation, rebate and education programs. We're excited about our new community grant program, Opportunities for Water Leadership (O.W.L.), which offers grants of between \$200-\$2,000 to local youth, school and community organizations which want to work with us to develop creative water conservation projects. Call us (626-969-7911) or check our website for details about our conservation programs ([www.sgvmwd.org](http://www.sgvmwd.org)).

We remain steadfast in our efforts to build a resilient water supply for current and future generations as cost-effectively as possible, and we are working to ensure that our region is ready for inevitable future droughts. Our progress depends on the continued support and participation of our member city governments and stakeholders. We thank you for your partnership and look forward to building a resilient and sustainable water supply.

Sincerely,

Thomas Wong  
President, Board of Directors  
San Gabriel Valley Municipal Water District



# GROUNDWATER: KEY TO BUILDING A RESILIENT AND SUSTAINABLE WATER SUPPLY

The key to building a resilient and sustainable water supply in the San Gabriel Valley is our primary water resource - local groundwater. As drought cycles and climate change affect the predictability of precipitation, runoff and imported water supplies, we must prioritize conservation and long-term investments in groundwater supply and infrastructure. In reality, groundwater is abundant: if California were flat, the volume of its groundwater would be enough to flood the entire state 8 feet deep.

## Why is Groundwater So Important for the San Gabriel Valley?

Our Basin's hydrology and geology are different from neighboring watersheds, thus, we utilize groundwater to a larger degree.

- Roughly 40 percent of California's water supply comes from groundwater.
- In Southern California, about two-thirds of the people obtain about 50 percent of their water from groundwater sources.
- The water bucket graphic shows that in the San Gabriel Valley, approximately 85 percent of the water used is local groundwater, 10 percent is treated imported water and 5 percent is from other local supplies (recycled water and local surface water diversions).



San Gabriel Canyon Spreading Basin



Source: Main San Gabriel Basin Watermaster

## How is Local Groundwater Managed?

Water gets into the ground mostly through snowmelt and rain seeping gradually into the soil, broken rocks underneath the ground and overland flow in creeks, streams, rivers and ponds. How much recharge or absorption occurs depends upon the rate and duration of rainfall, soil moisture conditions, the water table depth and the soil type. Groundwater is extracted with wells and pumps.

The District is directly involved in sustaining local groundwater supplies; we partner with the Main San Gabriel Basin Watermaster, which administers water rights and manages the withdrawal, replenishment and quality of groundwater resources within the Basin (see map below). As a State Water Contractor, we purchase water from the State Water Project and transport it via our Devil Canyon-Azusa Pipeline to spreading basins managed by the LA County Department of Public Works. This imported water, along with runoff, slowly "percolates" down to replenish groundwater levels.

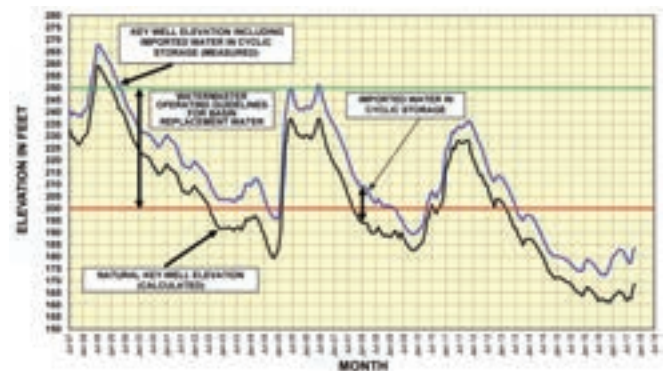
## What is the Status of Groundwater Supplies in the San Gabriel Valley?

### Isn't the Drought Over?

Despite the end of the State's drought emergency, and despite improvement in reservoir and snow pack levels statewide, it will take several years of average or above-average precipitation to recharge groundwater supplies in California to pre-drought levels. **It takes a long time to get into a drought and a long time to get out of a drought.**



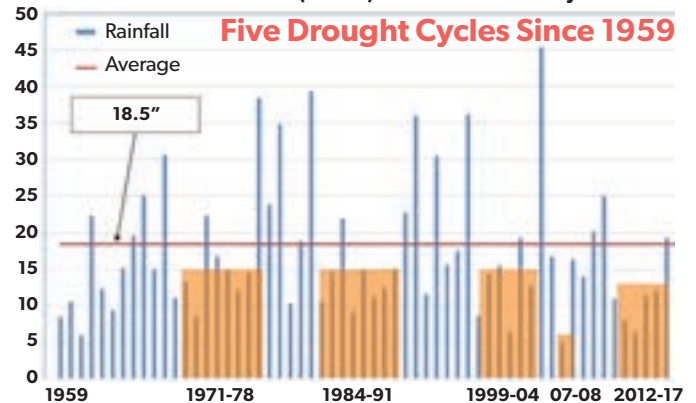
In fact, groundwater levels according to the bellwether Baldwin Park Key Well, reached an historic low in 2016 and remain near historic low levels.



## Several factors contribute to the slow recovery of our groundwater supplies:

- 1. The Length and Severity of the Recent Drought.** In the San Gabriel Valley, average precipitation over the past 100 years is approximately 18.5 inches. The graph shows droughts will recur and that "dry years" outnumber "wet years."

### Rainfall (inches) in San Gabriel Valley



- 2. Fluctuating Imported Water Deliveries.** Imported water deliveries used to replenish groundwater were reduced by the State to **5% of allocation in 2014; 20% of allocation in 2015; 60% of allocation in 2016; and 85% of allocation in 2017.**

We've also experienced interruptions to scheduled imported water deliveries due to factors beyond our control such as capacity restrictions on some parts of the State Water Project.

- 3. Extreme Heat and Reduced Stormwater Runoff.** This year, runoff in the San Gabriel Watershed to the Canyon reservoirs is only 70-75% of average. Prolonged drought and dry conditions have led to water being absorbed prior to running into Cogswell, San Gabriel or Morris reservoirs or spreading into the Basin. Per a UCLA study, the number of "extreme heat days" (95 degrees or hotter) is increasing throughout the San Gabriel Valley. From 1981-2000, there were 32 "extreme heat days," with 74 projected by 2050 and 117 by 2100.
- 4. Contamination.** The Main San Gabriel Basin is one of the most contaminated groundwater basins in the nation due to ground disposal of synthetic organic compounds/solvents dating back to World War II. Careful monitoring and remediation efforts involving the U.S. EPA, the San Gabriel Basin Water Quality Authority and local water treatment facilities ensure our water supply remains safe.
- 5. Aging Infrastructure.** Nationally, we lose 1.7 trillion gallons of drinking water every year to faulty, aging, or leaky pipes. When you add in leakage from sewer and stormwater pipes, that number rises to 6 trillion gallons.

*The importance of groundwater in the state's overall water supply outlook will undoubtedly increase in the coming years. Groundwater sustainability will only be achieved if everyone recognizes and accepts that groundwater is a precious resource that requires careful management.*

# 2016-17 HIGHLIGHTS

## WATER SUPPLY RELIABILITY & OPERATIONS HIGHLIGHTS

The District is one of 29 State Water Contractors. Our primary mission and operational responsibility is to deliver imported water from the State Water Project through our pipeline to replenish groundwater in the San Gabriel Valley to be stored for future use. The District provides “water insurance” and a variety of water solutions to our member cities.

Major operational accomplishments in the 2016-2017 fiscal year included:

- **Supplemental Water** – planned water deliveries from the State to the District increased to 24,480 acre-feet (AF) in calendar year 2017 from the drought-lowest level of 1,200 AF in 2014. In addition, because of the record snow accumulation in the Sierra Nevada Mountains, the District was able to take advantage of 3,057 AF of “surplus” water that was made available earlier in 2017. This year’s delivery totals compare favorably to 17,280 AF of supplemental water in CY 2016; 5,760 AF in 2015; 10,080 AF in 2013; 18,720 AF in 2012; 23,040 in 2011; and 14,400 AF in 2010 (one AF supplies water for a family for one year).
- **Successful Refurbishment of the Azusa Flow Control Structure (FCS)** – the Azusa FCS is a key facility for the District to deliver imported water to the Main San Gabriel Basin, overall, and for replenishment of at-risk wells in Azusa. The refurbishment included the installation of a new flow control valve as well as an isolation valve, flow meter, and diffuser. The refurbished facility incorporates new engineering that has dramatically reduced the amount of cavitation at the site which should facilitate many years of reliable service.
- **Recycled Water Feasibility Study** – the District commissioned a Feasibility Study related to recycled water and found feasibility for delivering recycled water to the City of Monterey Park and, potentially, the City of Alhambra by working with Central Basin Municipal Water District. The Study needs to be reviewed by the State Water Board and adopted by the SGVMWD Board.
- **Hydroelectric Facility Study** – further progress was made this year toward completing final design of two, new hydroelectric units at the Emerald Pressure Reducing Station and the Azusa Flow Control Structure. A portion of the design cost will be funded with a grant from the U.S. Bureau of Reclamation.
- **Updated Integrated Resource Plan (IRP)** – The Board adopted the Integrated Resource Plan prepared by Stetson Engineers. The updated 2017 IRP is prepared for the District to consider changes in water demand projections and water supply.
- **Connection to Covina Irrigation Company** – in FY 2016-2017, the District delivered 2,615 AF, another example of the District helping to address local supply issues and optimize water supplies in the Basin.



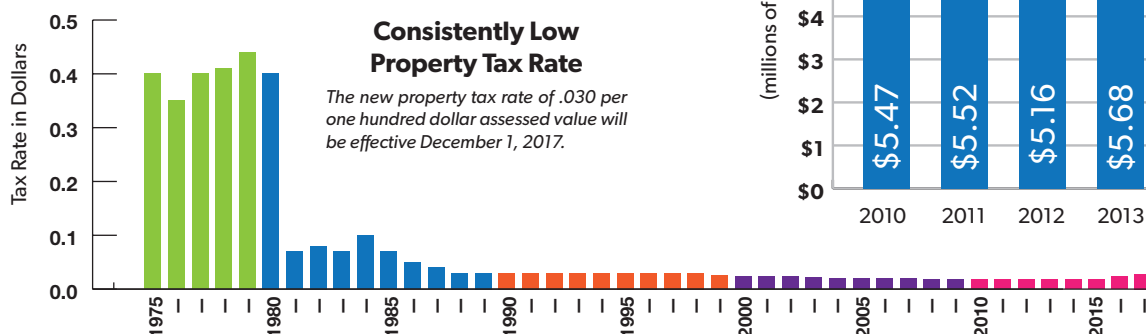
## FINANCIAL HIGHLIGHTS

The District has a strong track record of prudent financial management. We are committed to the responsible and efficient use of taxpayer dollars.

### Optimizing Sustainability and Financial Responsibility

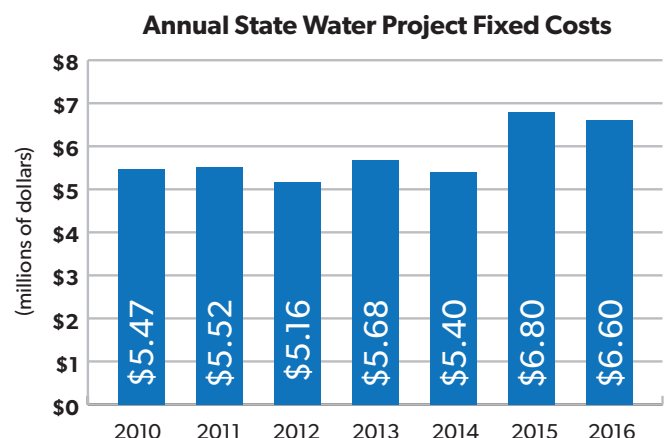
Over the past 5-6 years, as the drought worsened, the District’s budget projections showed a structural deficit, primarily due to rapidly escalating State Water Project costs imposed by the state. These costs are fixed costs, payable to the state regardless of how much water the District receives. As shown on the graph, these costs increased from an average of \$5.4 million per year from 2010-2014, to \$6.8 million in 2015 (26% increase), and \$6.6 million in 2016.

As a result, the District has reduced discretionary expenses, drawn on financial reserves, and implemented revenue adjustments to address the structural budget deficit and to provide funds for additional supplemental water to replenish our depleted groundwater basin. The District adjusted its water rate for member cities in 2015 from \$130 per acre-foot (AF) (which it had been since 1989) to \$145/AF, and began a three-year rate adjustment that will move our rate to \$200/AF by 2018-2019. The Board also voted in June 2017 to approve a resolution increasing the property tax rate from .023 to .030 cents per one hundred dollar assessed value throughout its service area, effective later in 2017. These adjustments were necessary to ensure continued operations and availability of water, and will help the District make preparations for future droughts.



### Lowest Wholesale Water Rates

Even with recent adjustments, the District’s rates remain extremely fair and the lowest in the region: other water importing agencies in the San Gabriel Valley have rates ranging from \$795/AF to nearly \$898/AF. As we witnessed in 2014 with passage of the \$7.5 billion Water Bond, and the public’s positive conservation response to our recent historic drought, stakeholders are supportive of prudent investments in water infrastructure to ensure a resilient and sustainable water supply.





## WATER CONSERVATION AND PUBLIC EDUCATION HIGHLIGHTS



The District has continued its leadership in developing educational water conservation programs in the San Gabriel Valley. Water conservation is the least expensive and most efficient of our water supply solutions. Every gallon we save is water we don't need to pay for, import, recycle, treat or pump, saving energy and money in the process. The District continues to fine tune its water conservation and public education programs to be as relevant as our water supply situation warrants.

### Educational Website – [www.sgvmwd.org](http://www.sgvmwd.org)

The District's website is regularly updated with new information and features such as a "Water Supply and Water Conservation" video, and a detailed analysis of the more than 20 water conservation pilot projects funded by District grants over the years. Please check our website for water saving tips, rebates, downloadable information for teachers and schools, water-related news and legislation, and more.

### 2016 Water Forum

The District pioneered the first San Gabriel Valley Water Forum in 2012. The 2016 Forum was attended by nearly 300 residents, city officials, educators and students, business owners and employers, community leaders, environmentalists and the press. The theme was "Coming Together" and panelists discussed a variety of ways to work together locally and statewide. Please visit the Forum's website ([www.sgvmwaterforum.com](http://www.sgvmwaterforum.com)) for further information.

Pictured below, from left to right, are featured keynote speakers, Timothy Quinn, executive director, Association of California Water Agencies (ACWA), Jeff Kightlinger, general manager, Metropolitan Water District of Southern California, Jim Peifer, City of Sacramento, and Brent Walthall, Asst. GM, Kern County Water Agency.



### Federal, State and Local Government Outreach

Water has "risen" to the highest level of consideration at all levels of government, and we actively partner with our elected officials to develop a reliable water supply. We met with Congresswoman Grace Napolitano and her staff at District headquarters, conducted a local briefing for staff of other San Gabriel Valley federal and state elected officials, and visited Sacramento to meet with Legislators. Pictured are board members Thomas Wong, Tom Love and Steve Placido with (clockwise): Assemblywoman Blanca Rubio, Senator Anthony Portantino, Assemblyman Chris Holden and Assemblyman Ed Chou.



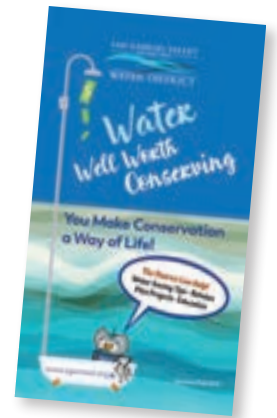
### Speakers' Bureau Meets Community, Ethnic and Media Groups

The District provides a Speakers' Bureau and Town Hall program providing important water supply, water quality and water conservation information. Board members and management regularly speak at educational workshops attended by residents, community leaders, legislators, business groups, and media. Pictured below are panelists at a Town Hall meeting at Alhambra's City Hall (left), SGVMWD Board President Thomas Wong being interviewed at our Asian-American media briefing in Monterey Park (center), and stakeholders from Alhambra and Monterey Park on a "water tour" which ended at San Gabriel Canyon Spreading Grounds (right).



### "Advanced" Water Saving Tips Brochure and Rebate Program

As water conservation becomes a way of life, many people want to practice state-of-the-art water conservation techniques. Thus, the District developed an informational brochure with "advanced" water saving tips including grey water recycling, recycled wastewater, rainwater capture, rebates and more. Our successful rebate program includes cash rebates for rain barrels, water-efficient washing machines, smart irrigation controllers, waterless urinals and high-efficiency toilets. For FY 2016-2017, the District funded 1,450 rebates, providing participants with nearly \$215,000 of cash incentives to save water. Visit our website for more information about the rebate program.



### Youth, School and Community Outreach Program

When we visit schools for our Home Water Survey program, we tell students that "H<sub>2</sub>Owl" is to water conservation as Smokey the Bear is to forest fire prevention. And we have the students tap their hands and feet on the auditorium floor to call attention to the groundwater "below." They love it! The District's board has always prioritized working with students as our top outreach priority. As our ambassador and water conservation guru, H<sub>2</sub>Owl is a fixture at community and school events, concerts, Earth Day events, libraries and parks throughout our service area.



Pictured left to right is our booth at the Alhambra Chinese New Year event, dedication of a water conservation landscaping project at Mountain View Elementary School in Azusa, dedication of a water conservation landscaping project at Brightwood Elementary School in Monterey Park and an Earth Day event in Sierra Madre.



# OPERATIONAL OVERVIEW

## Delivering Supplemental Water to the San Gabriel Valley

The San Gabriel Valley Municipal Water District was approved in 1959 by voters in Alhambra, Azusa, Monterey Park and Sierra Madre to help those cities meet their long-term water needs. The District's Devil Canyon-Azusa Pipeline delivers water from northern California via the State Water Project to the Main San Gabriel Basin to replenish the groundwater underlying our communities. This thoughtfully planned and engineered system is maintained and operated by Water District personnel 365 days a year. The District entered into a contract with the State of California Department of Water Resources in 1962 for the delivery of water each year from the State Water Project. Today the District is one of 29 State Water Contractors who obtain water from the vast State Water Project and who pay for retirement of the bond used to construct it, as well as its operation and maintenance. Starting in 1975 and continuing today, the District has been importing water from Northern California to replenish groundwater supplies in the San Gabriel Basin.

### Spreading Grounds

*Spreading grounds are operated and maintained by the Los Angeles County Department of Public Works. Water from our pipeline is delivered into spreading grounds where it percolates to recharge underground aquifers.*



### Operation Center

*The Operation Center is located at District headquarters. The state-of-the-art computerized Supervisory Control and Data Acquisition system (SCADA) controls and monitors the pipeline and pressure reducing stations.*



### Green Power/Hydroelectric Generator

*A turbine generator, powered by water flowing in the pipeline, creates electricity. Built in 1985, this generator has the potential to produce enough electricity for over 500 homes annually. The revenue helps to offset some of our operating costs.*





### State Water Project (California Aqueduct)

Water for the Main San Gabriel Basin originates from the State Water Project, also known as the California Aqueduct. Pumps and gravity help move the water from northern California to our Basin.



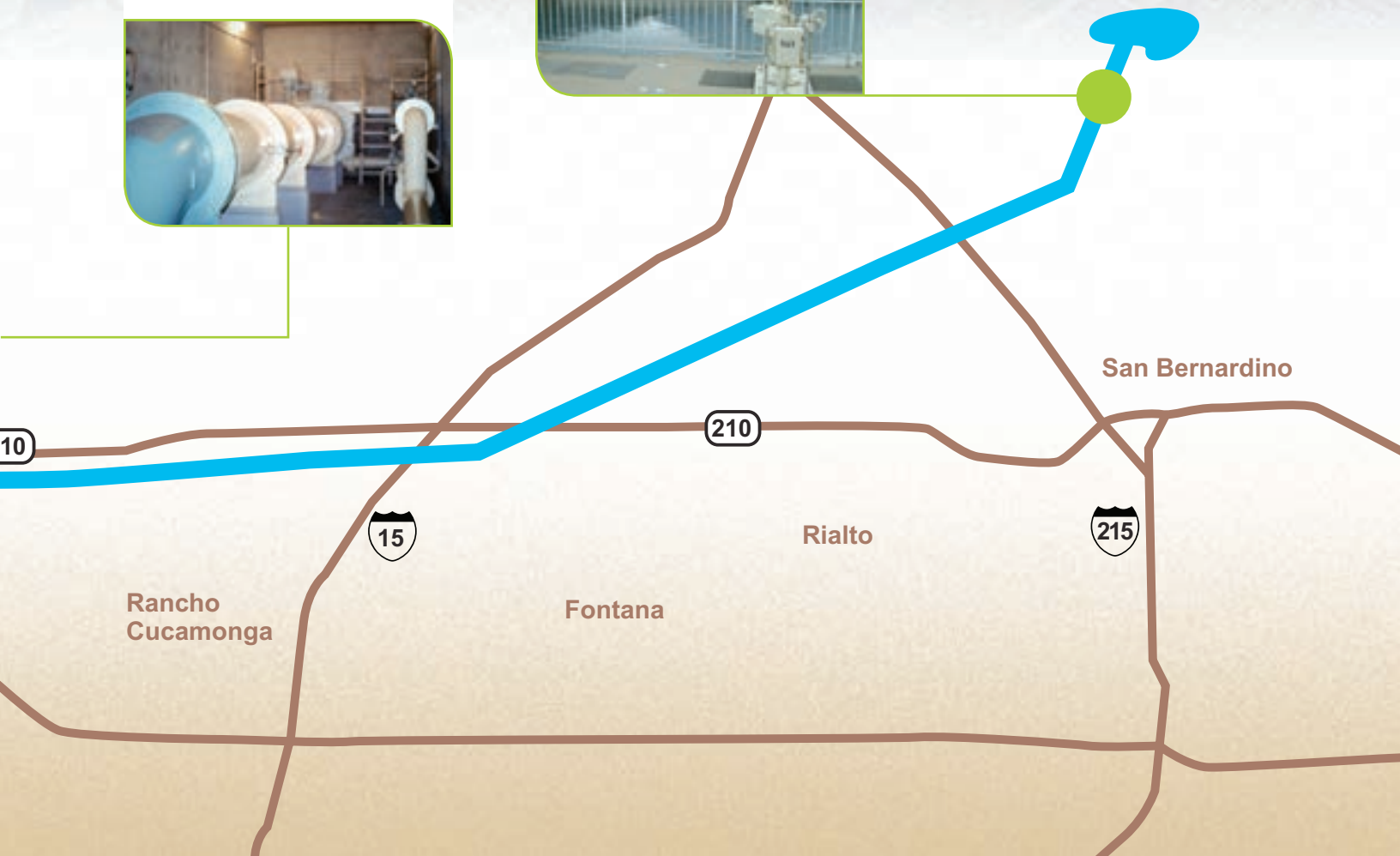
### Devil Canyon/Power Plant

Water coming from the State Water Project (California Aqueduct) powers turbines in the Devil Canyon Power Plant near Lake Silverwood and then enters the pipeline through the slidegate.



### Flow Control Facilities

As water flows from the State Water Project to the spreading grounds, the water flow and pressure are controlled at pressure-reducing stations located in Glendora, La Verne and Fontana.



# WATER CONSERVATION AND WATER QUALITY PILOT AND DEMONSTRATION PROJECTS

## O.W.L. COMMUNITY GRANT PROGRAM

Beginning in summer 2017, the District began a new water conservation pilot program - the O.W.L. (Opportunities for Water Leadership) Community Grant Program. The San Gabriel Valley Municipal Water District invites you and your school or community organization to submit a proposal about how you can create a smart, fun "water-wise" project for your community. Schools and community groups are eligible in our member cities of Alhambra, Azusa, Monterey Park and Sierra Madre. We'll help with funding if you identify partners, organize activities, manage the project's completion and share its results locally. Grants range from \$200-\$2,000. Funding is limited and available until June 30, 2018.

Details about the program, including an online application form, are available on the District's website: [www.sgvmd.org/education/owl\\_program](http://www.sgvmd.org/education/owl_program).



Opportunities for Water Leadership

## WATER CONSERVATION PILOT PROJECT SUMMARY

The Water District has funded about \$12 million of water conservation and water quality pilot programs in our four member cities since 2009. Our goal has been to both save water short-term and provide information to help people, schools, businesses and other organizations adopt long-term water saving technology, materials and procedures. Our strategy has been to implement the pilot projects at highly visible, high water-consumption locations.

An overview of our pilot programs is outlined below. More detailed fact sheets about each of these pilot projects may be found on the District's website ([www.sgvmd.org/conservation/introduction](http://www.sgvmd.org/conservation/introduction)).

Pilot Projects	Water Saving Feature:	Irrigation	Landscape	Technology
<b>Alhambra</b>				
Gateway Plaza (2009-2010)		◆	◆	
The Alhambra Urban Community (2011-2012)		◆	◆	◆
West San Gabriel Valley YMCA (2013-2014)		◆	◆	◆
Fire Station (2014-2015)		◆	◆	
City Hall (2016-2017)		◆	◆	
<b>Azusa</b>				
Azusa Chamber of Commerce (2009-2010)		◆	◆	
Memorial Park, North Recreation Center (2009-2010)		◆	◆	
Department of Light and Water (2009-2010)		◆	◆	
San Gabriel Canyon Gateway Center (2009-2010)		◆	◆	
Azusa Pacific University (2010-2011)		◆	◆	◆
Paramount Elementary School (2014-2016)		◆	◆	
Mountain View Elementary School (2014-2016)		◆	◆	
Median Water and Tree Saving Project (2016)		◆	◆	
<b>Monterey Park</b>				
California Native Median Project (2011-2012)		◆	◆	
City Hall Planters and Smart Controller (2009-2010)		◆	◆	◆
Automated Meter Reader (AMR) (2009-2010)		◆	◆	◆
Brightwood Elementary School (2014-2015)		◆	◆	
Macy Intermediate School (2014-2015)		◆	◆	
Demonstration Gardens (2015-2016)		◆	◆	◆
<b>Sierra Madre</b>				
Miramonte Reservoir/Mt. Wilson Trailhead (2009-2010)		◆	◆	
Sturtevant Street Flood Control Right of Way (2009-2010)		◆	◆	
Sierra Vista Park (2009-2010)		◆	◆	◆
Sierra Madre School (2011-2012)		◆	◆	
City Hall (2015-2016)		◆	◆	◆



Alhambra City Hall



Paramount Elementary School, Azusa



Demonstration Garden, Monterey Park



Sierra Madre City Hall