



**CITY OF MOUNTAIN VIEW
2020 URBAN WATER
MANAGEMENT PLAN**

EXECUTIVE SUMMARY

Draft

May 4, 2021

CHAPTER 1: INTRODUCTION

The Urban Water Management Plan (UWMP) provides an analysis of the City of Mountain View's available water supply, during normal and dry-year scenarios, compared to current and projected water demand. The UWMP is a link between land use planning and water supply planning, developed to evaluate if sufficient water is available to meet the needs of Mountain View's existing and future water customers. This UWMP update also includes an update to the Water Shortage Contingency Plan. In preparing this UWMP update, staff worked collaboratively with the City's wholesale water suppliers to exchange necessary information. Notice of the preparation and adoption process was posted in local newspapers and emailed to neighborhood and business liaisons, local water agencies, and the County of Santa Clara. Pursuant to State law, water agencies must update their UWMP every five years.

CHAPTER 2: SERVICE AREA

Mountain View's municipal water system serves the majority of businesses and residents within the City limits. A small number of customers are served by the California Water Service Company. The City's service population is currently 79,772, with an employment base of 98,270. Future water demand projections were developed based on a snapshot of approved development and the General Plan growth estimates, including that affiliated with the approved North Bayshore, El Camino Real, East Whisman, and San Antonio Precise Plans, projected linearly to 2045 to meet the UWMP time horizon. Collective growth is estimated to reach 116,900 residents and 126,100 jobs within the municipal water service area by 2045. These land use policies are expected to increase the population by 47% and jobs by 28% from the current levels.

CHAPTER 3: WATER SYSTEM OVERVIEW

The City's municipal water system services three pressure zones and consists of three wholesale water turnouts, four reservoirs, three pump stations, four active groundwater supply wells, and buried pipelines of varying composition, ages, and sizes. Mountain View currently serves approximately 17,540 potable water service connections and 60 active recycled water service connections. Single-family and multi-family homes account for 83% of all connections, with the remaining connections serving commercial, institutional, and industrial accounts and landscape customers.

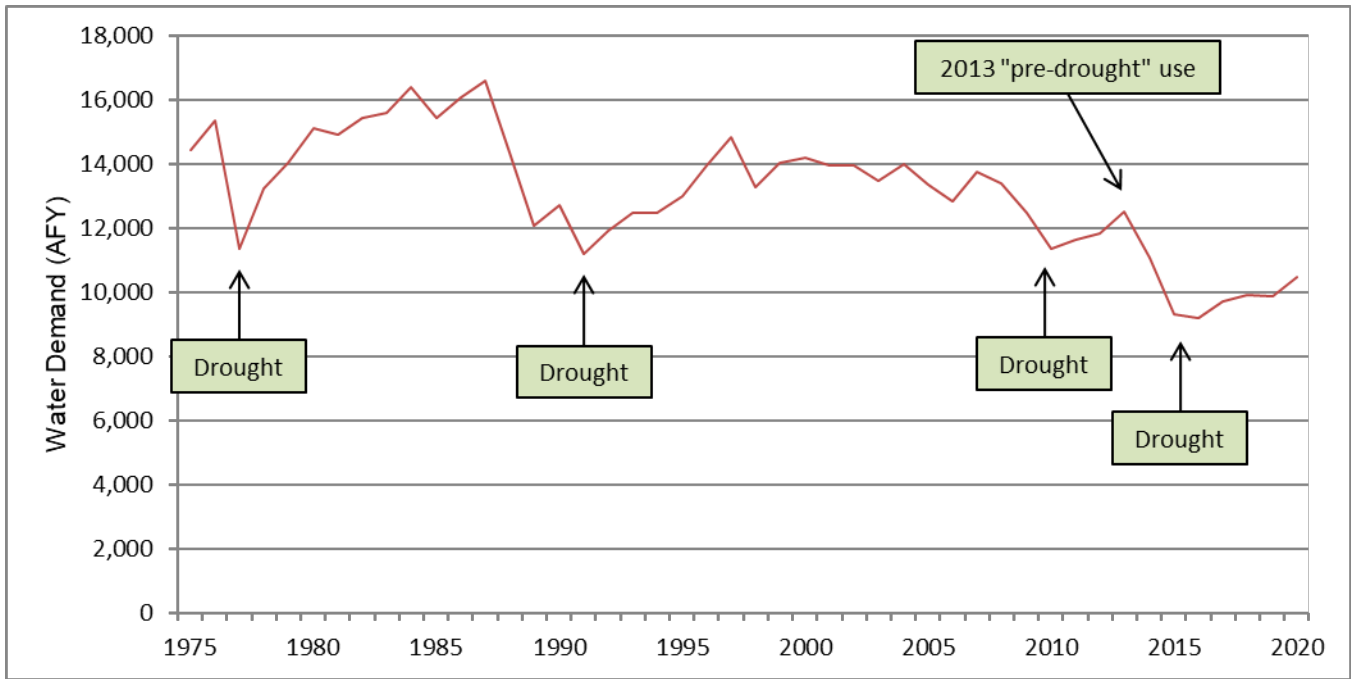
CHAPTER 4: WATER DEMAND

Two notable events have occurred since the last UWMP update in 2015 to influence Mountain View's water demand: (1) California experienced the most severe drought on record resulting in a significant decline in water use followed by a slow and continued rebound; and (2) Mountain View, and the rest of the world, endured challenges from the novel coronavirus (COVID-19) global pandemic, shifting the City's water demand patterns away from businesses and toward homes, as workplaces closed to on-site workers and residents Sheltered-in-Place.

Historical Water Demand

Mountain View’s historical water demand is shown in Figure ES-1. This figure shows a general downward trend in water use since the mid-1980s, punctuated by rapid drops in water use coinciding with periods of drought, as customers responded to conservation requests. Since the conclusion of the most recent drought in 2017, the City has seen a steady rebound in usage. Despite this increase, the City’s current water demand is 16% below the predrought baseline of 2013.

Figure ES-1: Historical Water Demand



Compliance with 2020 Urban Water Use Target

The Water Conservation Act of 2009 (also referred to as SB X7-7, for California Senate Bill Extraordinary Session 7-7) requires each urban water retail supplier to develop and meet a water-use target by the year 2020. Mountain View’s 2020 urban water use target is 146 gallons per capita per day. The City’s current water use is 112 GPCD, which is nearly 22% below the 2020 urban water use target and, therefore, compliant with the requirements of SB X7-7.

Projected Water Demand

Mountain View’s water demand projections were developed based on regional modeling efforts completed over the past several years. Mountain View’s water-use model was most recently revised to account for new plumbing code requirements, updated population and employment projections, and the impacts of climate change. Continued rebound from the recent drought and 2008-10 economic recession are also included.

The City’s water-use model includes three scenarios to evaluate and forecast Mountain View’s water demand through the year 2045. The “base-case” scenario represents a high-end estimate of possible future demand. Two additional scenarios were developed to capture water savings expected from plumbing code efficiencies and increased water conservation measures. Mountain View’s model results are shown in Table ES-1 in five-year increments through the year 2045. For the purpose of this UWMP, the scenario, incorporating plumbing code savings (Scenario B), is selected for the City’s official demand projections.

Table ES-1: Water Model Results

Water Model Scenario	Projected Water Demand (AFY)				
	2025	2030	2035	2040	2045
Scenario A (Base-Case)	12,679	13,485	14,288	15,091	15,894
Scenario B (Plumbing Codes)	12,058	12,548	13,064	13,607	14,163
Scenario C (Plumbing Codes and Conservation)	11,825	12,164	12,530	12,929	13,361

CHAPTER 5: WATER SUPPLY SOURCES

The City of Mountain View receives the majority of drinking water from the City and County of San Francisco’s Regional Water System (Regional System), operated by the San Francisco Public Utilities Commission (SFPUC). Mountain View is a member of the Bay Area Water Supply and Conservation Agency (BAWSCA), which represents the 26 water agencies that purchase water wholesale from SFPUC. Mountain View also purchases water wholesale from the Santa Clara Valley Water District (now known as Valley Water) and pumps local groundwater from City-owned wells. Mountain View has a recycled water distribution system to meet nonpotable demand in the North Bayshore Area. In 2020, the City’s water supply production was 84% SFPUC, 10% Valley Water, 2% groundwater, and 4% recycled water. Below is a summary of the City’s water supplies:

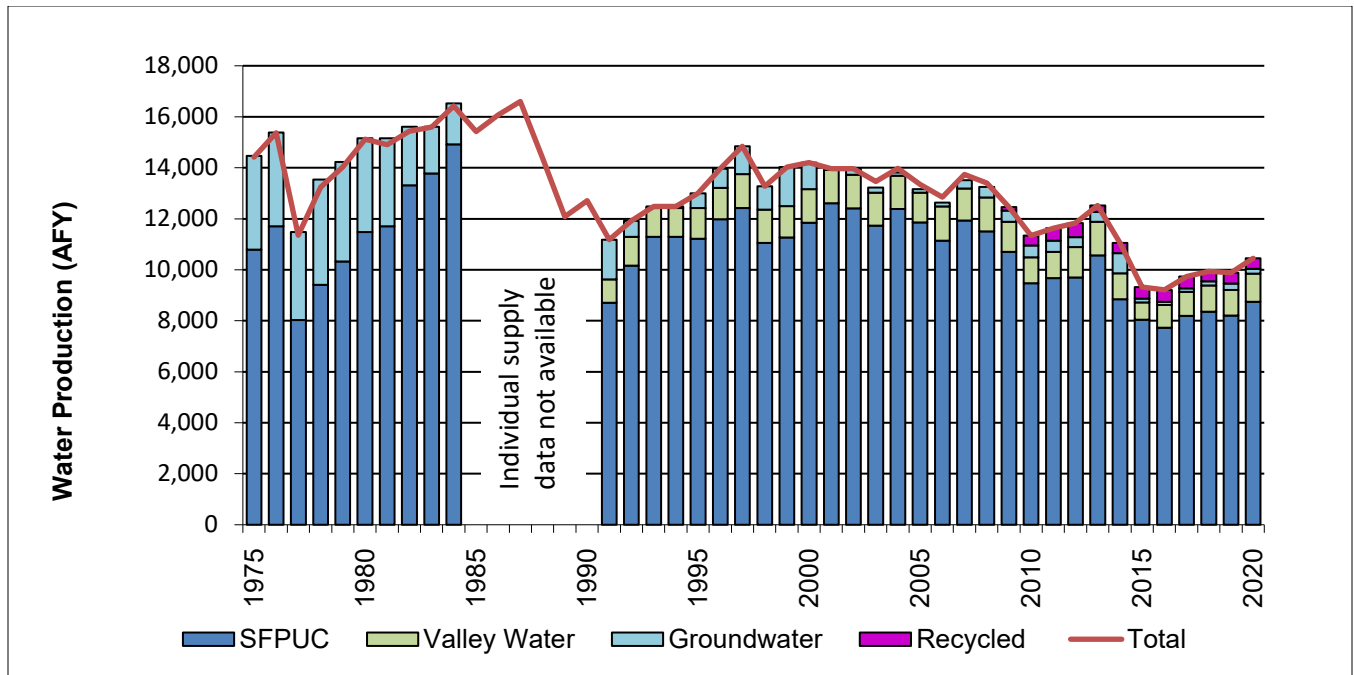
- **San Francisco:** The Regional System draws an average of 85% of their supply from the Tuolumne River, collected in Hetch Hetchy Reservoir in Yosemite National Park. This water feeds into an aqueduct system delivering water 167 miles by gravity to Bay Area reservoirs and customers. The remaining 15% of SFPUC’s supply is drawn from local surface waters in Alameda County and Peninsula watersheds through the San Antonio, Calaveras, Crystal Springs, Pilarcitos, and San Andreas reservoirs.
- **Valley Water:** Valley Water is an independent special district that provides wholesale water supply, groundwater management, flood protection, and stream stewardship on behalf of Santa Clara County’s nearly 2 million residents. Valley Water’s service area includes all of Santa Clara County. Sources of supply for Valley Water include local surface water, imported water from the State Water Project and Central Valley Project,

groundwater, and recycled and purified water. Valley Water supplies are used to recharge local groundwater basins, released to local creeks to meet environmental needs, and delivered directly to retail water suppliers through Valley Water’s treatment plants and distribution system. Potable reuse through groundwater augmentation is a planned future water supply for Valley Water.

- **Local Groundwater:** Mountain View owns and operates water supply wells that extract local groundwater for use as drinking water. City wells pump groundwater from the Santa Clara Basin, which is managed by Valley Water. Approximately one-half of all groundwater used in Santa Clara County is recharged by Valley Water from local and imported surface water.
- **Recycled Water:** Mountain View uses recycled water from the Palo Alto Regional Water Quality Control Plant for irrigation and toilet flushing in the North Bayshore Area. The City has utilized recycled water since 1980. There are currently 58 active customer connections to the City’s recycled water system, including Shoreline Golf Links and Shoreline at Mountain View Regional Park, Shoreline Amphitheatre, Charleston Park, and various business and roadway landscaping.

Mountain View's historical water supply production is shown in Figure ES-2. A general downward trend is evident over the past 45 years, due mostly to changes in customer base, increased plumbing efficiencies, changes in landscape aesthetics and periodic drought.

Figure ES-2: Historical Water Supply Production



Projected Water Supply Production

Mountain View maintains a robust water supply portfolio to ensure that sufficient water is available for existing and future needs. Production of each water supply changes based on several factors, including demand, water quality, and drought. In order to meet projected demand, Mountain View expects to utilize the City’s supplies in the approximate volumes presented in Table ES-2. Actual use of each supply will depend on demand, supply conditions, and operational needs. For conservative planning purposes, demand growth is assumed to be met using SFPUC water; however, the City maintains flexibility to allow for the use of all water supplies, as needed. The City continues to work with the Regional Water Quality Control Plant to improve recycled water quality and is updating the Recycled Water Feasibility Study to evaluate system expansion options. Future investments in recycled water will allow for increased use of this resource.

Table ES-2: Projected Water Supply Production

Supply Source	Projected Water Supply Production (AFY)				
	2025	2030	2035	2040	2045
SFPUC	10,154	10,644	11,160	11,703	12,259
Valley Water	1,176	1,176	1,176	1,176	1,176
Groundwater	280	280	280	280	280
Potable	11,610	12,100	12,616	13,159	13,715
Recycled	448	448	448	448	448
Total Supply	12,058	12,548	13,064	13,607	14,163

CHAPTER 6: WATER SUPPLY RELIABILITY

As part of the UWMP update, the City and the City’s wholesale water suppliers have evaluated their ability to meet projected demand during normal and dry years. Several new considerations have arisen since the City’s last UWMP update in 2015, most prominently the State Water Board’s adoption of the *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary*.

Reliability of the SFPUC Regional System

SFPUC projects significant supply shortfalls due to implementation of the Bay Delta Plan and is developing strategies to address these possible shortfalls.

- **Water System Improvement Plan:** To enhance the ability of the Regional System and meet its goals for water quality, seismic reliability, delivery reliability, and water supply, SFPUC approved a \$4.8 billion Water System Improvement Plan (WSIP) in 2008. The WSIP included over 30 capital projects related to rehabilitation, construction, replacement, and

upgrades to pipelines, reservoirs, dams, treatment facilities, tunnels, and power facilities. The WSIP authorized the SFPUC to undertake a number of water supply projects to meet dry-year demands with no greater than 20% rationing.

- **Bay Delta Plan:** The State Water Board has amended the Board's Bay Delta Plan to establish water quality objectives to maintain the health of the Bay Delta ecosystem. A main goal of the Bay Delta Plan is to increase salmon populations in the Bay Delta and three San Joaquin River tributaries. One of the affected tributaries is the Tuolumne River, which is SFPUC's primary water source. If the Bay Delta Plan is implemented as adopted, the SFPUC will be able to meet system demand in normal years, but the SFPUC would experience supply shortages during dry years ranging from 30% to 49%. The State Water Board, SFPUC, and others are currently negotiating a voluntary alternative to the Bay Delta Plan. At this time, the final resolution of this process is uncertain.
- **Alternative Water Supply Planning:** The SFPUC is increasing and accelerating the SFPUC's efforts to acquire additional water supplies and explore other projects that would improve water resilience. Development of additional water supplies would reduce SFPUC's supply shortfalls that are projected to result from implementation of the Bay Delta Plan. Capital projects under consideration include surface water storage expansion, recycled water expansion, water transfers, desalination, and potable reuse. These projects are in the early feasibility or conceptual planning stages, and SFPUC expects to complete the Alternative Supply Program evaluation by July 2023.

Reliability of Valley Water Managed Supplies

Based on Valley Water's existing and planned sources of supply, Valley Water expects to be able to meet Countywide demands through 2045 under normal and drought conditions.

- **Imported Water Constraints:** Valley Water's imported supplies are subject to a number of constraints, including hydrologic variability, regulatory requirements to protect fish and water quality in the Bay Delta, and conveyance limitations. Imported Bay Delta supplies are at risk from levee failures due to seismic threats and flooding, sea-level rise and climate change, declining populations of protected fish species, and water quality variations. Valley Water's Bay Delta supplies are not impacted by the Bay Delta Plan described above, which addresses tributaries of the San Joaquin River at this time. The State Water Board is also considering amendments that will focus on the Sacramento River and the river's tributaries. These amendments, referred to as Phase II of the Bay Delta Plan, have not been completed and are, therefore, not contemplated in this UWMP update.
- **Local Surface Water Constraints:** Valley Water's local surface water is vulnerable to hydrologic variability and operational needs. Reservoirs are sized for annual operation and have multiple management considerations. For example, in wet years, Valley Water's ability to capture local surface water is limited by Valley Water's need to provide flood

protection. During dry years, Valley Water's groundwater recharge program is limited by required environmental flows. Dam safety requirements have reduced reservoir storage capacities, which Valley Water is working to address.

- **Groundwater Constraints:** Groundwater supply is largely constrained by hydrologic variability and the operational storage capacity within the subbasins. Inflows to the groundwater subbasins are controlled by Valley Water's managed aquifer recharge program and natural recharge.

Water Service Reliability Assessment

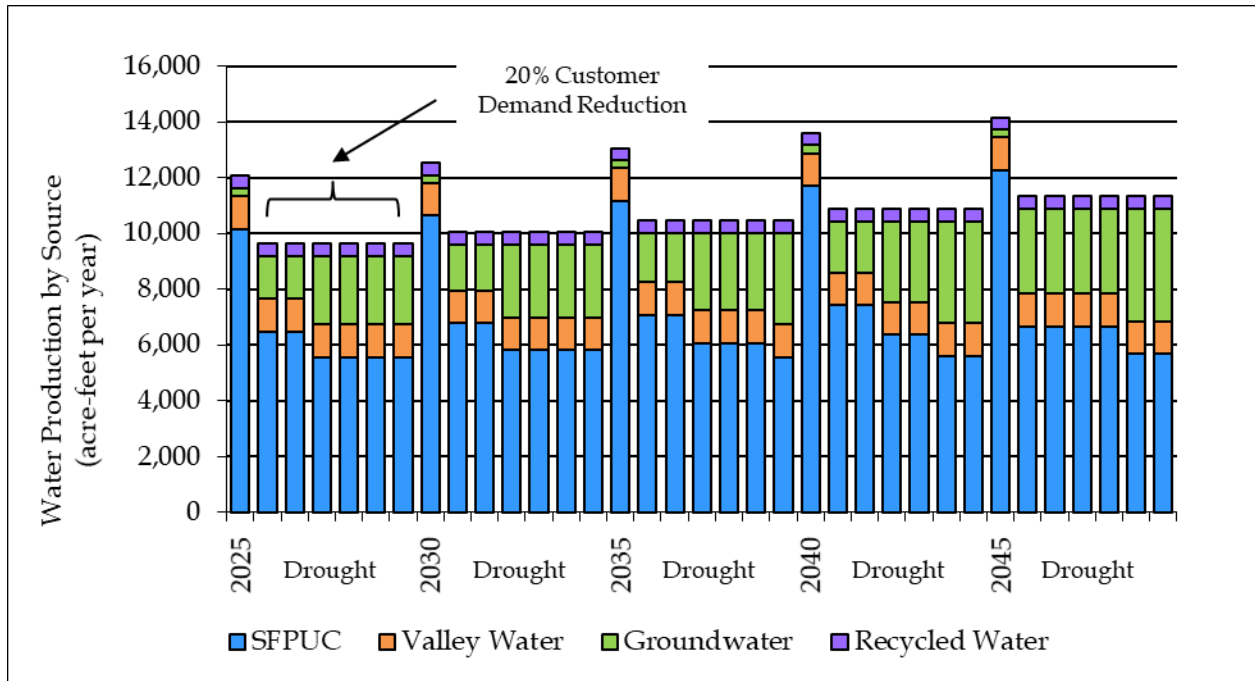
Mountain View plans to meet projected water demand during normal and dry-year scenarios using a combination of existing supplies and demand-reduction measures. Valley Water, local groundwater, and recycled water supplies are projected to be fully available during all year types (normal and dry) through 2045. Based on the information provided by the SFPUC under their Bay Delta Plan scenario, Mountain View will have full SFPUC supply availability during normal years but will experience SFPUC supply shortfalls between 36% and 54% during dry years.

Water Supply and Demand Assessment

Mountain View uses the information on reliability provided by the City's wholesale suppliers to evaluate the cumulative supply impacts to the City during normal and dry years. Based on the information provided by Valley Water and SFPUC, Mountain View expects to meet current and future water needs during normal years but will experience 20% potable water supply shortfalls during dry years (Figure ES-3). These shortfalls would be made up through implementation of demand-reduction strategies, consistent with the City's Water Shortage Contingency Plan.

Central to the City's supply and demand analysis is Mountain View's plan to increase groundwater production to mitigate impacts of SFPUC's possible dry-year supply shortfalls. At this time, however, implementation of the Bay Delta Plan remains uncertain. The City hopes the State Water Board is able to negotiate a voluntary agreement for the Tuolumne River that achieves the Bay Delta Plan water quality goals while providing a reliable water supply for human use. In the meantime, Mountain View is collaborating closely with Valley Water to include the results of this UWMP in Valley Water's upcoming Groundwater Management Plan update.

Figure ES-3: Water Shortage Supply Production



CHAPTER 7: WATER CONSERVATION

Mountain View implements several water conservation measures, in partnership with Valley Water and BAWSCA. Key measures are summarized below:

- Regulations:** The City has adopted a water waste prevention ordinance, Water Conservation in Landscaping Regulations, and the Mountain View Green Building Code.
- Metering and Rates:** Mountain View has metered customer water use since at least 1938. Current metering efforts include conversion to advanced metering (also known as “smart” metering) and requiring that irrigation be metered separate from other uses. Water bills are charged based on the volume of water used.
- Water Loss Control:** The City tracks system water loss on an annual basis as part of the City’s water loss control and prevention program.
- Customer Programs:** Several programs are available to help customers use water more efficiently. Examples include: home water reports, Water-Wise House Calls, irrigation budget reports, landscape audits, plumbing fixture replacement (toilets, clothes washers, commercial equipment, and submeters), and landscape upgrades.

- **Education and Outreach:** Outreach is promoted through school assemblies, landscape education classes, website and social media postings, utility bill design and messaging, bill inserts, brochure racks, a dedicated phone hotline, and booths for public events.

CHAPTER 8: WATER SHORTAGE CONTINGENCY PLAN

Mountain View's Water Shortage Contingency Plan serves as a flexible framework of planned response measures to mitigate water supply shortages. The Plan describes demand-reduction strategies to meet various stages of shortages, including up to 10%, 11% to 25%, 26% to 40%, and greater than 40%. Each stage includes a set of demand reduction actions that become progressively more stringent as the shortage condition escalates. All of the stages are designed to provide adequate water to protect public health and safety and satisfy the City's fire protection needs. The City's Water System Emergency Response Plan and a Risk and Resilience Assessment evaluate impacts from natural disasters and man-made threats on Mountain View's water supply. The SFPUC and Valley Water similarly have prepared studies to evaluate and plan for emergency supply interruptions.

SUMMARY

Mountain View updates the City's UWMP every five years to evaluate the City's ability to meet the City's water needs over the next 25 years. This UWMP considers water demand associated with current customers as well as new customers, arising from implementation of the General Plan and Precise Plans. This growth, combined with continued rebound from recent drought and economic recession, is expected to increase water use by 35% between 2020 and 2045. Mountain View will meet these water needs through continued implementation of water conservation measures and use of the City's four water suppliers: SFPUC, Valley Water, groundwater, and recycled water.

Although recent actions by the State Water Board may reduce SFPUC's dry-year supply availability by up to 50%, the final impacts are uncertain at this time and negotiations are ongoing. In the meantime, new projects are being studied to ensure SFPUC can meet SFPUC's contractual obligations and service level goals, and Mountain View's groundwater wells remain available for use, mitigating impacts from a possible temporary reduction in SFPUC supply. Mountain View continues to collaborate with SFPUC, Valley Water, BAWSCA, and others to sustainably manage our water supplies and meet the City's water needs now and in the future.