August 22, 2022

MEETING NOTICE

WATER CONSERVATION AND DEMAND MANAGEMENT COMMITTEE

Members of the Water Conservation and Demand Management Committee:
Director Nai Hsueh, Committee Vice Chair
Director Barbara F. Keegan
Director Linda J. LeZotte, Committee Chair

Staff Support of the Water Conservation and Demand Management Committee:
Rick L. Callender, Esq., Chief Executive Officer
Melanie Richardson, Assistant Chief Executive Officer
Aaron Baker, Chief Operating Officer, Water Utility
Rachael Gibson, Chief of External Affairs
J. Carlos Orellana, District Counsel
Gregory Williams, Deputy Operating Officer, Raw Water Division
Vincent Gin, Deputy Operating Officer, Water Supply Division
Sam Bogale, Deputy Operating Officer, Treated Water Operations & Maintenance Division
Marta Lugo, Assistant Officer, Office of Government Relations
Bart Broome, Assistant Officer, Office of Government Relations
Antonio Alfaro, Government Relations Advocate, Office of Government Relations
Kirsten Struve, Assistant Officer, Water Supply Division
Vanessa De La Piedra, Groundwater Management Manager, Groundwater Monitoring and Analysis Unit
Metra Richert, Unit Manager of the Water Supply Planning and Conservation Unit
Samantha Greene, Senior Water Resources Specialist, Water Supply Planning & Conservation Unit
Jing Wu, Senior Water Resources Specialist, Water Supply Planning & Conservation Unit
Justin Burks, Senior Water Conservation Specialist, Water Supply Planning & Conservation Unit

The regular meeting of the Water Conservation and Demand Management Committee is scheduled to be held on **Monday, August 29, 2022, at 3:00 p.m., in the Headquarters Building Boardroom, 5700 Almaden Expressway, San Jose, CA 95118.**

The meeting agenda and corresponding materials are located on our website: https://www.valleywater.org/how-we-operate/committees/board-advisory-committees

Water Conservation and Demand Management Committee Meeting

Public and non-presenting staff Join Zoom Meeting
https://valleywater.zoom.us/s/92597340524

Meeting ID: 925 9734 0524
One tap mobile
+16699009128,,92597340524# US (San Jose)

Dial by your location
+1 669 900 9128 US (San Jose)
Meeting ID: 925 9734 0524

Santa Clara Valley Water District
Water Conservation and Demand Management Committee Meeting

HQ Building Boardroom
5700 Almaden Expressway
San Jose CA 95118

REGULAR MEETING AGENDA

Monday, August 29, 2022
3:00 PM

District Mission: Provide Silicon Valley safe, clean water for a healthy life, environment and economy.

BOARD REPRESENTATIVES:
Director Nai Hsueh, Committee Vice Chair
Director Barbara F. Keegan
Director Linda J. LeZotte, Committee Chair

All public records relating to an item on this agenda, which are not exempt from disclosure pursuant to the California Public Records Act, that are distributed to a majority of the legislative body will be available for public inspection at the Office of the Clerk of the Board at the Santa Clara Valley Water District Headquarters Building, 5700 Almaden Expressway, San Jose, CA 95118, at the same time that the public records are distributed or made available to the legislative body. Santa Clara Valley Water District will make reasonable efforts to accommodate persons with disabilities wishing to attend Board of Directors' meeting. Please advise the Clerk of the Board Office of any special needs by calling (408) 265-2600.

Mr. Vincent Gin
Ms. Kirsten Struve
(Staff Liaisons)

Ms. Glenna Brambill, (COB Liaison)
Management Analyst II
gbrambill@valleywater.org
1-408-630-2408

Note: The finalized Board Agenda, exception items and supplemental items will be posted prior to the meeting in accordance with the Brown Act.

Santa Clara Valley Water District
Water Conservation and Demand Management Committee

REGULAR MEETING
AGENDA

Monday, August 29, 2022	3:00 PM	HQ Building Boardroom

IMPORTANT NOTICES AND PARTICIPATION INSTRUCTIONS

Santa Clara Valley Water District (Valley Water) Board of Directors/Board Committee meetings are held as a "hybrid" meetings, conducted in-person as well as by telecommunication, and is compliant with the provisions of the Ralph M. Brown Act.

To maximize public safety while still maintaining transparency and public access, members of the public have an option to participate by teleconference/video conference or attend in-person. To observe and participate in the meeting by teleconference/video conference, please see the meeting link located at the top of the agenda.

If attending in-person, you are required to comply with Ordinance 22-03 - AN ORDINANCE OF THE SANTA CLARA VALLEY WATER DISTRICT SPECIFYING RULES OF DECORUM FOR PARTICIPATION IN BOARD AND COMMITTEE MEETINGS located at https://s3.us-west-2.amazonaws.com/valleywater.org.if-us-west-2/f2-live/s3fs-public/Ord.pdf .

In accordance with the requirements of Gov. Code Section 54954.3(a), members of the public wishing to address the Board/Committee at a video conferenced meeting, during public comment or on any item listed on the agenda, should use the "Raise Hand" tool located in the Zoom meeting link listed on the agenda, at the time the item is called. Speakers will be acknowledged by the Board Chair in the order requests are received and granted speaking access to address the Board.

Valley Water, in complying with the Americans with Disabilities Act (ADA), requests individuals who require special accommodations to access and/or participate in Valley Water Board of Directors/Board Committee meetings to please contact the Clerk of the Board's office at (408) 630-2711, at least 3 business days before the scheduled meeting to ensure that Valley Water may assist you.

This agenda has been prepared as required by the applicable laws of the State of California, including but not limited to, Government Code Sections 54950 et. seq. and has not been prepared with a view to informing an investment decision in any of Valley Water's bonds, notes or other obligations. Any projections, plans or other forward-looking statements included in the information in this agenda are subject to a variety of uncertainties that could cause any actual plans or results to differ materially from any such statement. The information herein is not intended to be used by investors or potential investors in considering the purchase or sale of Valley Water's bonds, notes or other obligations and investors and potential investors should rely only on information filed by

Valley Water on the Municipal Securities Rulemaking Board's Electronic Municipal Market Access System for municipal securities disclosures and Valley Water's Investor Relations website, maintained on the World Wide Web at https://emma.msrb.org/ and https://www.valleywater.org/how-we-operate/financebudget/investor-relations, respectively.

Under the Brown Act, members of the public are not required to provide identifying information in order to attend public meetings. Through the link below, the Zoom webinar program requests entry of a name and email address, and Valley Water is unable to modify this requirement. Members of the public not wishing to provide such identifying information are encouraged to enter "Anonymous" or some other reference under name and to enter a fictional email address (e.g., attendee@valleywater.org) in lieu of their actual address. Inputting such values will not impact your ability to access the meeting through Zoom.

Join Zoom Meeting:
https://valleywater.zoom.us/j/92597340524
Meeting ID: 925 9734 0524

Join by Phone:
1 (669) 900-9128, 925 9734 0524#

1. CALL TO ORDER:

1.1. Roll Call.

2. TIME OPEN FOR PUBLIC COMMENT ON ANY ITEM NOT ON THE AGENDA. *Notice to the Public: Members of the public who wish to address the Committee on any item not listed on the agenda should access the "Raise Hand" tool located in Zoom meeting link listed on the agenda. Speakers will be acknowledged by the Committee Chair in order requests are received and granted speaking access to address the Committee. Speakers comments should be limited to two minutes or as set by the Chair. The law does not permit Committee action on, or extended discussion of, any item not on the agenda except under special circumstances. If Committee action is requested, the matter may be placed on a future agenda. All comments that require a response will be referred to staff for a reply in writing. The Committee may take action on any item of business appearing on the posted agenda.*

3. APPROVAL OF MINUTES:

3.1. Approval of Minutes. 22-0965

Recommendation: Approve the July 25, 2022, Meeting Minutes
Manager: Candice Kwok-Smith, 408-630-3193
Attachments: Attachment 1: 07252022_WCaDMC DRAFT Mins
Est. Staff Time: 5 Minutes

4. REGULAR AGENDA:

4.1. Monthly update on progress towards achieving Valley Water's water use reduction target and water conservation efforts related to the drought emergency. 22-0966

Recommendation:

A. Receive an update on progress towards meeting the Board's call for water use reduction in response to the water shortage emergency condition and water conservation efforts relevant to the overall drought emergency response, and provide feedback to staff.

B. Review the draft of the First Amended and Restated Ordinance 22-02 (AN ORDINANCE OF SANTA CLARA VALLEY WATER DISTRICT ADOPTING DROUGHT OUTDOOR WATER CONSERVATION AND ENFORCEMENT MEASURES) to provide water retailers additional opportunities to undertake enforcement measures that address water waste and to restrict irrigation of commercial, industrial, and institutional (CII) non-functional turf. Staff requests that the Committee recommend that the Board consider adopting the First Amended and Restated Ordinance 22-02.

Manager: Kirsten Struve, 408-630-3138

Attachments: Attachment 1: PowerPoint Presentation
Attachment 2: July Drought Response Report
Attachment 3: Draft Ordinance

Est. Staff Time: 20 Minutes

4.2. Drought Response Plan - Draft Vulnerability Assessment. 22-0967

Recommendation: Receive and Discuss Drought Response Plan Update - Draft Vulnerability Assessment.

Manager: Kirsten Struve, 408-630-3138

Attachments: Attachment 1: PowerPoint Presentation
Attachment 2: Vulnerability Assessment DRAFT

Est. Staff Time: 20 Minutes

4.3. Standing Items Report. 22-0968

Recommendation:

A. This agenda item allows the Committee to receive verbal or written updates and discuss the below subjects. These items are generally informational; however, the Committee may request additional information from staff:

B. This is informational only and no action is required. *Staff may provide a verbal update at the 8/29/2022, meeting if there is reportable/updated information.*

1. Sustainable Groundwater Management Act (SGMA)
2. Flood MAR
3. Agricultural Water Use Baseline Study

Manager: Candice Kwok-Smith, 408-630-3193

Est. Staff Time: 10 Minutes

4.4. Review Water Conservation and Demand Management Committee Work Plan, the Outcomes of Board Action of Committee Requests; and the Committee's Next Meeting Agenda. 22-0969

Recommendation: Review the Committee work plan to guide the committee's discussions regarding policy alternatives and implications for Board deliberation.

Manager: Candice Kwok-Smith, 408-630-3193

Attachments: Attachment 1: 2022 WCaDMC Work Plan

Est. Staff Time: 5 Minutes

5. CLERK REVIEW AND CLARIFICATION OF COMMITTEE REQUESTS.

This is an opportunity for the Clerk to review and obtain clarification on any formally moved, seconded, and approved requests and recommendations made by the Committee during the meeting.

6. ADJOURN:

6.1. Adjourn to Regular Meeting at 11:00 a.m., on Monday, September 26, 2022.

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Santa Clara Valley Water District

File No.: 22-0965

Agenda Date: 8/29/2022
Item No.: 3.1.

COMMITTEE AGENDA MEMORANDUM

Water Conservation and Demand Management Committee

SUBJECT:
Approval of Minutes.

RECOMMENDATION:
Approve the July 25, 2022, Meeting Minutes

SUMMARY:
A summary of Committee discussions, and details of all actions taken by the Committee, during all open and public Committee meetings, is transcribed and submitted for review and approval.

Upon Committee approval, minutes transcripts are finalized and entered into the District's historical records archives and serve as historical records of the Committee's meeting.

ATTACHMENTS:
Attachment 1: 07252022 WCaDMC Draft Minutes

UNCLASSIFIED MANAGER:
Candice Kwok-Smith, 408-630-3193

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WATER CONSERVATION AND DEMAND MANAGEMENT COMMITTEE MEETING

DRAFT MINUTES

MONDAY, JULY 25, 2022

A regular meeting of the Water Conservation and Demand Management Committee was held on July 25, 2022, at Santa Clara Valley Water District, Headquarters Building Boardroom, 5700 Almaden Expressway, in San Jose, California.

1. CALL TO ORDER

Committee Chair Director Linda J. LeZotte called the meeting to order at 11:13 a.m.

1.1. ROLL CALL

Committee Board Members in attendance were: Committee Vice Chair, Director Nai Hsueh (District 5), Director Barbara F. Keegan (District 2), and Committee Chair, Director Linda J. LeZotte (District 4) establishing a quorum.

Staff members in attendance were: Joseph Aranda, Aaron Baker, Lisa Bankosh, Roseryn Bhudsabourg, Glenna Brambill, Justin Burks, Usha Chatwani, George Cook, Phil Dolan, Anthony Fulcher, Paola Giles, Samantha Greene, Linh Hoang, Cindy Kao, Candice Kwok-Smith, Isabella Millet, Colin Resch, Metra Richert, Mary Samar, Ashley Shannon, Kirsten Struve, Gregory Williams, and Jing Wu.

Guest Agencies in attendance were: Katja Irvin (Sierra Club Loma Prieta Chapter), Julia Schmitt (Brown and Caldwell), and Kurt Elvert (San Jose Water Company-SJWC).

Public in attendance was: Dr. Arthur M. Keller.

2. TIME OPEN FOR PUBLIC COMMENT ON ANY ITEM NOT ON AGENDA

There was no one present who wished to speak.

3. APPROVAL OF MINUTES

3.1 APPROVAL OF MINUTES

It was moved by Director Nai Hsueh, seconded by Director Barbara F. Keegan, and carried unanimously, to approve the minutes of the June 27, 2022, Water Conservation and Demand Management Committee meeting as presented.

4. ACTION ITEMS

4.1. MONTHLY UPDATE ON PROGRESS TOWARDS ACHIEVING VALLEY WATER'S WATER USE REDUCTION TARGET AND WATER CONSERVATION EFFORTS RELATED TO THE DROUGHT EMERGENCY

Kirsten Struve reviewed the materials as outlined in the agenda items.

The Water Conservation and Demand Management Committee discussed the following: Villages' letter, outreach messaging, complaints, restrictions, e-shopping cart items, and concerns with the requirements.

Ashley Shannon and Linh Hoang were available to answer questions.

Public Comment:
Dr. Arthur Keller noted that maneuvering through the water waste complaint process was difficult and restaurants giving a glass of water and a pitcher of water is wasteful and should be stopped.

The Water Conservation and Demand Management Committee took no action.
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4.2. DRAFT ORDINANCE ESTABLISHING ZONES OF CONTROLLED DRINKING WATER WELL CONSTRUCTION FOR THE PURIFIED WATER PROJECT

George Cook reviewed the materials as outlined in the agenda items.

The Water Conservation and Demand Management Committee discussed the following: ordinance's impacts, appeal process vs hearing process, state law compliance needs to be clear, so the Board understands the intent of the ordinance, and water supply purposes-well constructions need to be determined.

Anthony Fulcher was available to answer questions.

The Water Conservation and Demand Management Committee took no action

4.3. EVALUATING WATER CONSERVATION PROGRAM OPPORTUNITIES

Ashley Shannon reviewed the materials as outlined in the agenda items.

The Water Conservation and Demand Management Committee discussed the following: hot water recirculation pump analysis shows not cost effective, large landscape program, those dwellings/homes that are impacted, and share information on collaborations.

Public Comment:
Dr. Arthur Keller suggested that new developments should be required to install recirculation pumps because it takes too long for the water to heat up.

The Water Conservation and Demand Management Committee took no action.

4.4. STANDING ITEMS REPORT

Committee Chair Director Linda J. LeZotte reviewed the materials as outlined in the agenda items.

There were no verbal updates for:

1. Sustainable Groundwater Management Act (SGMA)
2. Flood MAR
3. Agricultural Water Use Baseline Study

The Water Conservation and Demand Management Committee took no action.

4.5 REVIEW WATER CONSERVATION AND DEMAND MANAGEMENT COMMITTEE WORK PLAN, THE OUTCOMES OF BOARD ACTION OF COMMITTEE REQUESTS; AND THE COMMITTEE'S NEXT MEETING AGENDA

Kirsten Struve reviewed the materials as outlined in the agenda items.

The August Agenda Items:

- Drought and Enforcement Ordinance
- Drought Plan Vulnerability Assessment
- Drought vs. long term planning
- Ag Baseline study (Fall)

The Committee's next scheduled meeting is at 3:00 p.m. August 29, 2022.

5. CLERK REVIEW AND CLARIFICATION OF COMMITTEE'S REQUESTS

Glenna Brambill stated there were no action items for Board consideration.

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6. ADJOURNMENT

Committee Chair Director Linda J. LeZotte adjourned at 12:08 p.m., to the next scheduled meeting.

Glenna Brambill
Board Committee Liaison
Office of the Clerk of the Board

Approved:

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File No.: 22-0966

Agenda Date: 8/29/2022
Item No.: 4.1.

COMMITTEE AGENDA MEMORANDUM

Water Conservation and Demand Management Committee

SUBJECT:
Monthly update on progress towards achieving Valley Water's water use reduction target and water conservation efforts related to the drought emergency.

RECOMMENDATION:

A. Receive an update on progress towards meeting the Board's call for water use reduction in response to the water shortage emergency condition and water conservation efforts relevant to the overall drought emergency response, and provide feedback to staff.

B. Review the draft of the First Amended and Restated Ordinance 22-02 (AN ORDINANCE OF SANTA CLARA VALLEY WATER DISTRICT ADOPTING DROUGHT OUTDOOR WATER CONSERVATION AND ENFORCEMENT MEASURES) to provide water retailers additional opportunities to undertake enforcement measures that address water waste and to restrict irrigation of commercial, industrial, and institutional (CII) non-functional turf. Staff requests that the Committee recommend that the Board consider adopting the First Amended and Restated Ordinance 22-02.

SUMMARY:
On June 9, 2021, the Board adopted Santa Clara Valley Water District (Valley Water) Resolution 21-68 which declared a water shortage emergency condition pursuant to California Water Code §350, called for water use reduction of 15% compared to 2019, and urged the County of Santa Clara to proclaim a local emergency. The County ratified its proclamation of a drought emergency on June 22, 2021. Valley Water Resolution 22-20 amended Valley Water Resolution 21-68 on April 12, 2022, to call for no more than 2 days of irrigation in a week for ornamental lawns and prohibit excessive runoff, midday irrigation, and irrigation after rainfall. On May 24, 2022, the Board approved Ordinance 22-02 to enforce these restrictions. Ordinance 22-02 went into effect on June 1, 2022.

In 2022, Santa Clara County and California entered the third year of drought, and experienced the driest January, February and March on record. Valley Water's Federal and State imported water allocations were drastically reduced to historic lows. On March 28, 2022, Governor Gavin Newsom issued Executive Order N-7-22 to call on local water suppliers to move to at least Stage 2 of their water shortage contingency plans. The U.S. Drought Monitor Report from August 4, 2022, indicates that the Santa Clara County is in severe drought. The northern Sierra Nevada snowpack, a primary source of imported water, is 16% of normal as of June 13, 2022. Staff will provide updates regarding latest drought conditions.

Groundwater levels in July have continued its typical pattern of summer decline. Greater than average declines in groundwater levels are expected this year because of the drought. Achieving the Board's water use reduction target is essential to minimize the risk of resumed subsidence in North Santa Clara County and wells going dry, particularly in South Santa Clara County. That risk increases as the drought persists.

Consequently, conservation is an important strategy to help reach the Board's 15% call for water use reduction and mitigate negative impacts.

Water Conservation Outreach

Valley Water's "Say Yes" water conservation campaign continued in July. Success stories on the Landscape Rebate Program were highlighted in social media. In addition, Valley Water's 30-second "Say Yes to Saving Water" video was distributed to local movie theaters. Blogs were developed to discuss work at Anderson Dam and tree care.

In July, a social media campaign was developed asking residents to test their knowledge of drought and conservation, and to gauge how well residents understand Valley Water's drought-related messaging. The Speakers Bureau Program held four presentations in July.

Water Conservation Programs

With the close of Valley Water's fiscal year at the end of June, Valley Water reached an impressive milestone - over 1 million square feet of lawn was converted to low-water use landscape and a total of 1,432 rebates were issued for landscape conversion, irrigation equipment and rainwater rebates. Valley Water partnered with local non-profit Our City Forest for the July Do-It-Yourself Lawn Busters workshop, which taught attendees how to convert an area of turfgrass lawn into a low-water use landscape.

Valley Water developed a handout to highlight the Santa Clara County's conservation efforts and successes, including achieving the Governor's call for conservation in June 2022. The handout was provided to the Governor's office. The handout is shown in Appendix A of the attached July 2022 Drought Response Report.

Countywide Water Use Reduction

Countywide water savings is trending in the right direction with savings in June greater than in May. Countywide water savings was 9% in June 2022 compared to June 2019. Santa Clara County's cumulative water savings from June 2021 - June 2022 is 3%, compared to 2019. Countywide water savings was 15% in June 2022 compared to June 2020, which means Santa Clara County achieved the Governor's call for conservation. The county exceeded California's water savings of 8% in June 2022, compared to June 2020. California's cumulative water savings from July 2021 - June 2022 is 3%, compared to 2020. Santa Clara County's cumulative water savings during this time is 9%, compared to 2020.

Water Waste Enforcement

Valley Water's Water Waste Program is continuing its educational mission while enforcing the mandatory outdoor water use restrictions. Valley Water is addressing these complaints and coordinating with water retailers and municipalities on these efforts. Over 700 water waste complaints were received since enforcement of Ordinance 22-02 was launched in June. Runoff continues to be the most common complaint. Enforcement has been successful as there were fewer reports of water waste in July compared to June, which suggests that people are addressing their water waste or are less likely to waste water. One repeated complaint was received, which suggests that most people are addressing the water waste for which they were reported.

First Amended and Restated Ordinance 22-02

Effective June 10, 2022, commercial, industrial, and institutional (CII) non-functional turf must not be irrigated in California under regulations adopted by the State Water Resources Control Board. In the proposed First Amended and Restated Ordinance (An Ordinance of Santa Clara Valley Water District Adopting Drought Outdoor Water Conservation and Enforcement Measures), the restriction against watering CII non-functional turf has been added to the list of enforceable water use restrictions by Valley Water. In addition, the First Amended and Restated Ordinance includes refined procedures to coordinate with retailers in Valley Water's enforcement process, in order to avoid duplication of enforcement steps by Valley Water or retailers. Upon review by the Water Conservation and Demand Management Committee, the First Amended and Restated Ordinance will be presented for Board consideration on September 13, 2022

ATTACHMENTS:
Attachment 1: PowerPoint
Attachment 2: July 2022 Drought Response Report
Attachment 3: Draft of the Proposed First Amended and Restated Ordinance 22-02

UNCLASSIFIED MANAGER:
Kirsten Struve, 408-630-3138

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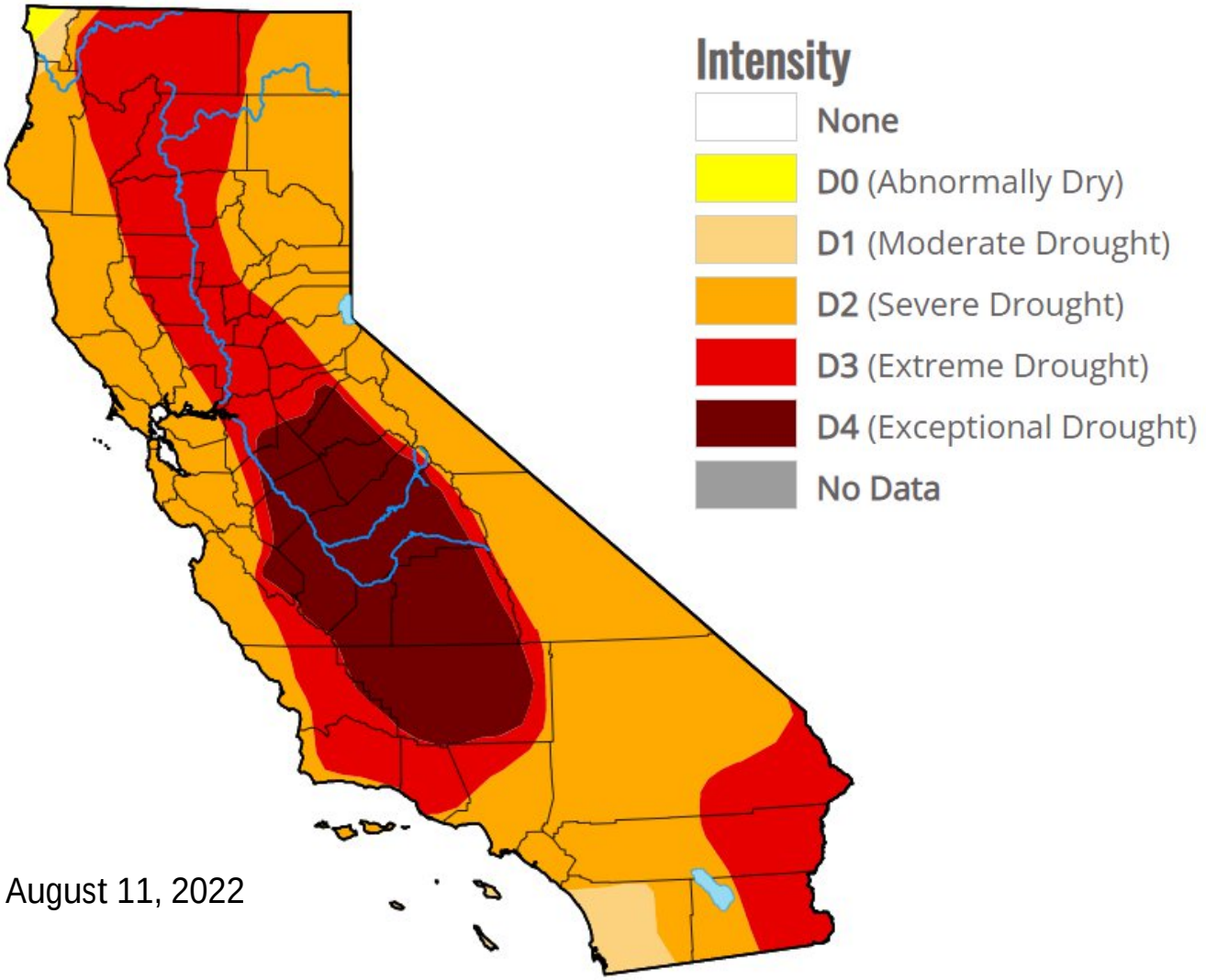
Monthly Drought Emergency Response and Water Supply Update

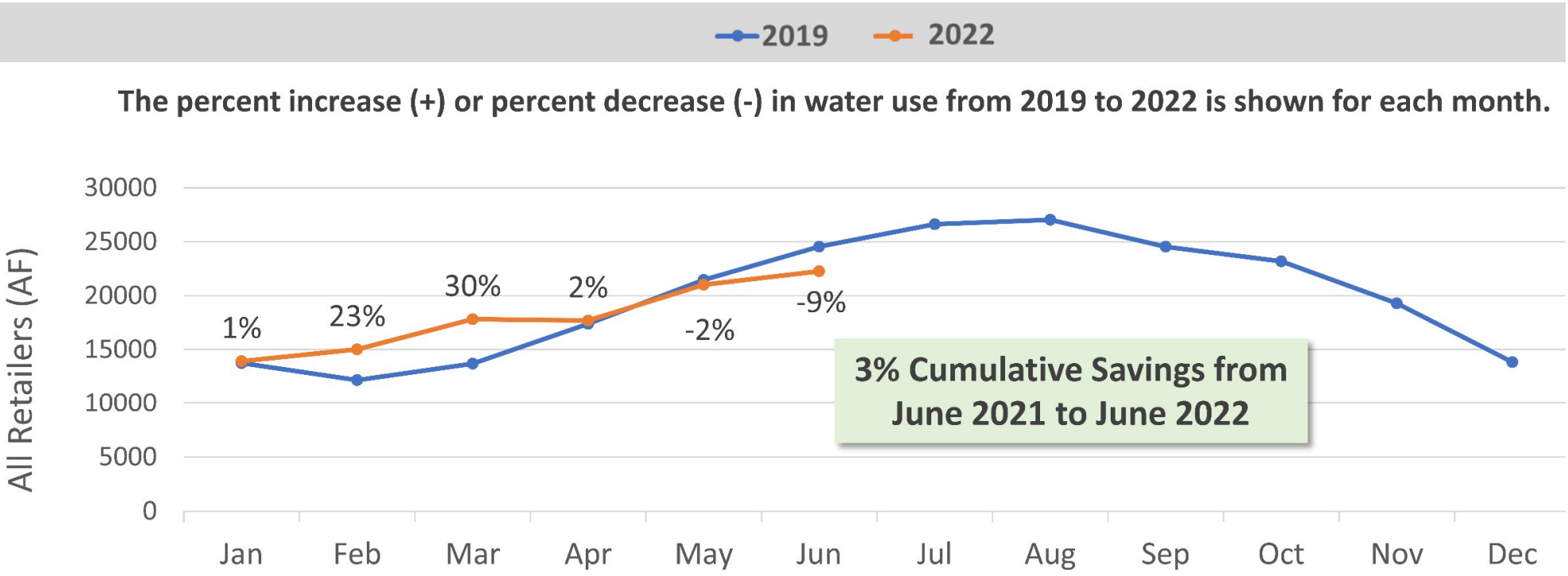
Water Conservation and Demand Management Committee
August 29, 2022

Severe Drought



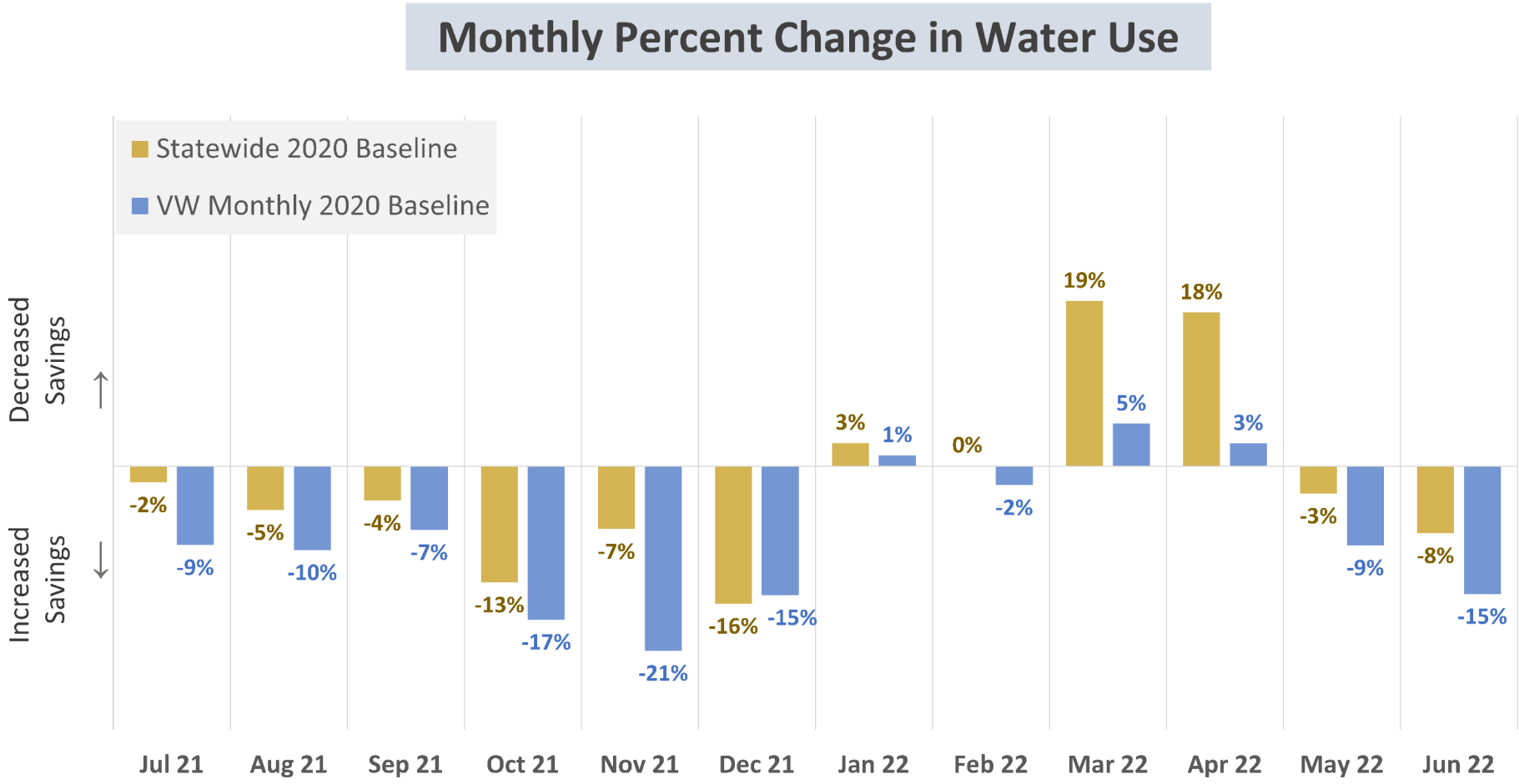
Data source: U.S. Drought Monitor, August 11, 2022

Countywide Water Savings



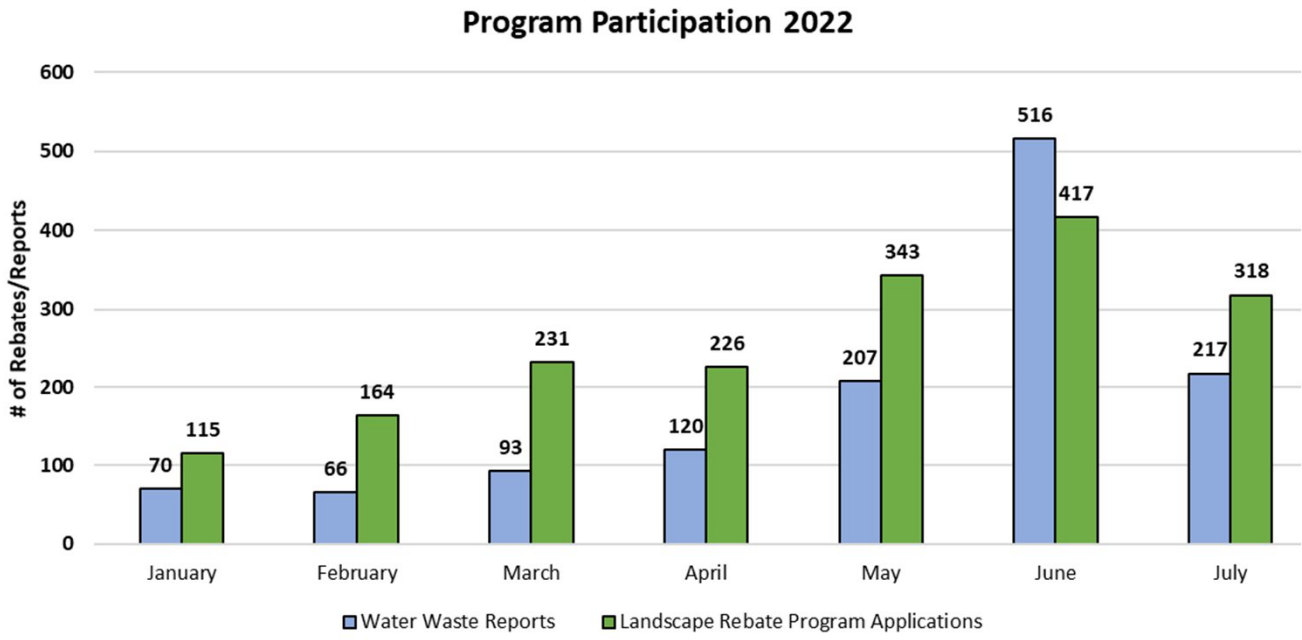
The Governor's call for 15% savings compared to 2020 was achieved in June 2022.

County compared to State Savings



Water Conservation

- Participation remains high
- E-cart
  - Over 7,000 orders
- Water waste enforcement



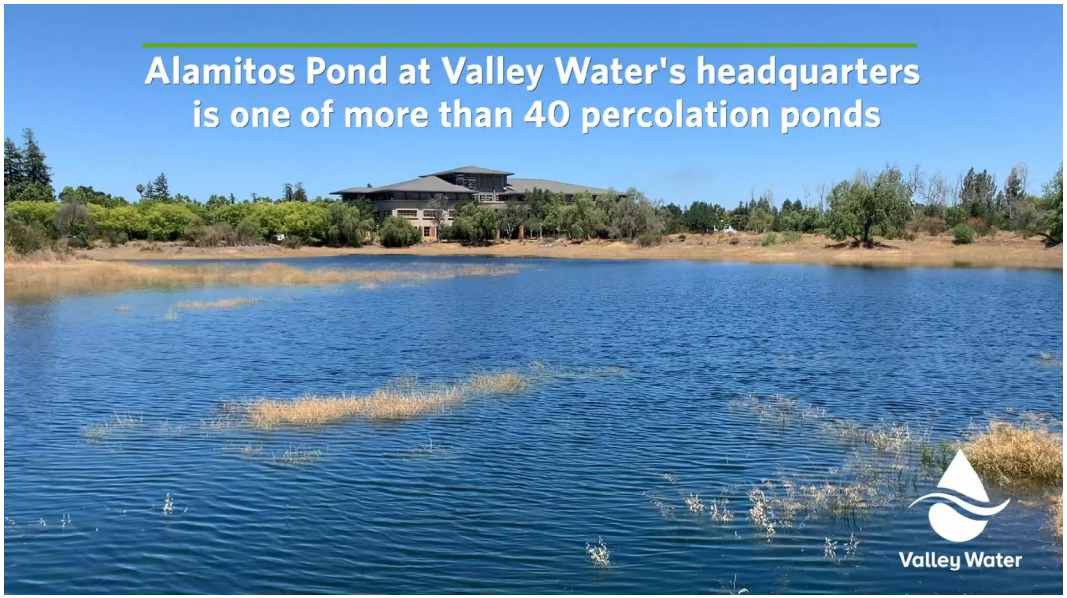
Water Use Reduction Enforcement Updates

- Enforcement began June 1
- Over 700 reports received since June
- Majority of reported violations for runoff

Enforceable Water Waste Violations	June 2022	July 2022
More than 2 days of watering per week	70	39
Watering from 9AM-6PM	84	30
Watering within 48 hours of rainfall	10	4
Runoff	199	95

Drought and Conservation Outreach

- Conservation, Percolation Pond and Say Yes videos
- Social Media Conservation Quiz
- Speakers Bureau presentations



Handout on Successes

One Million Sq. Ft. of Turf Converted

Water Use Dropped 25% in the Last 5 Years

22 Water Conservation Programs Underway

On Track for Long-Term Water Savings

Robust Outreach Campaign

Drought Resources Increased

Total Water Use Down Amid Historic Population Growth

Amendments made to Ordinance 22-02:

- The State's ban on CII non-functional turf irrigation was included
- Valley Water's enforcement steps were retained
- Clarified retailer coordination:
  - Retailers may address water waste case at first, second, or third complaint
  - Clearly explained conditions under which Valley Water would resume a case that a retailer is working on
  - Explained that Valley Water will perform all steps in its enforcement procedures prior to fining

Recommendation

Review the draft of the First Amended and Restated Ordinance 22-02 (An Ordinance of Santa Clara Valley Water District Adopting Drought Outdoor Water Conservation And Enforcement Measures) and recommend that the Board consider adopting the ordinance.

QUESTIONS

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Drought Emergency Response Report

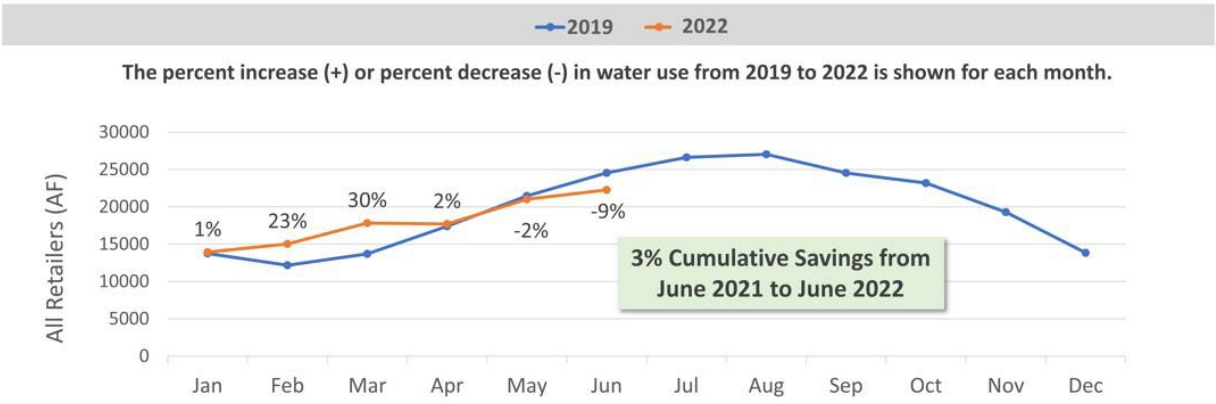
JULY 2022

Drought Resolution Implementation

On June 9, 2021, the Board adopted Valley Water Resolution 21-68 which declared a water shortage emergency condition pursuant to California Water Code §350, called for water use reduction of 15% compared to 2019, and urged the County of Santa Clara (County) to proclaim a local emergency. The County adopted a Resolution ratifying the proclamation of a local emergency due to the drought on June 22, 2021. California's Governor included Santa Clara County as part of a drought emergency proclamation on July 8, 2021, and this proclamation included all California counties on October 19, 2021. Valley Water activated its Emergency Operations Center (EOC) on June 16, 2021 to assist with resolution implementation and other drought-related efforts. Valley Water Resolution 22-20 amended Valley Water Resolution 21-68 on April 12, 2022 to call for no more than 2 days of irrigation in a week for ornamental lawns and prohibit excessive runoff, midday irrigation, and irrigation after rainfall. On May 24, 2022, the Board approved Ordinance 22-02 to enforce these restrictions. The ordinance went into effect on June 1, 2022.

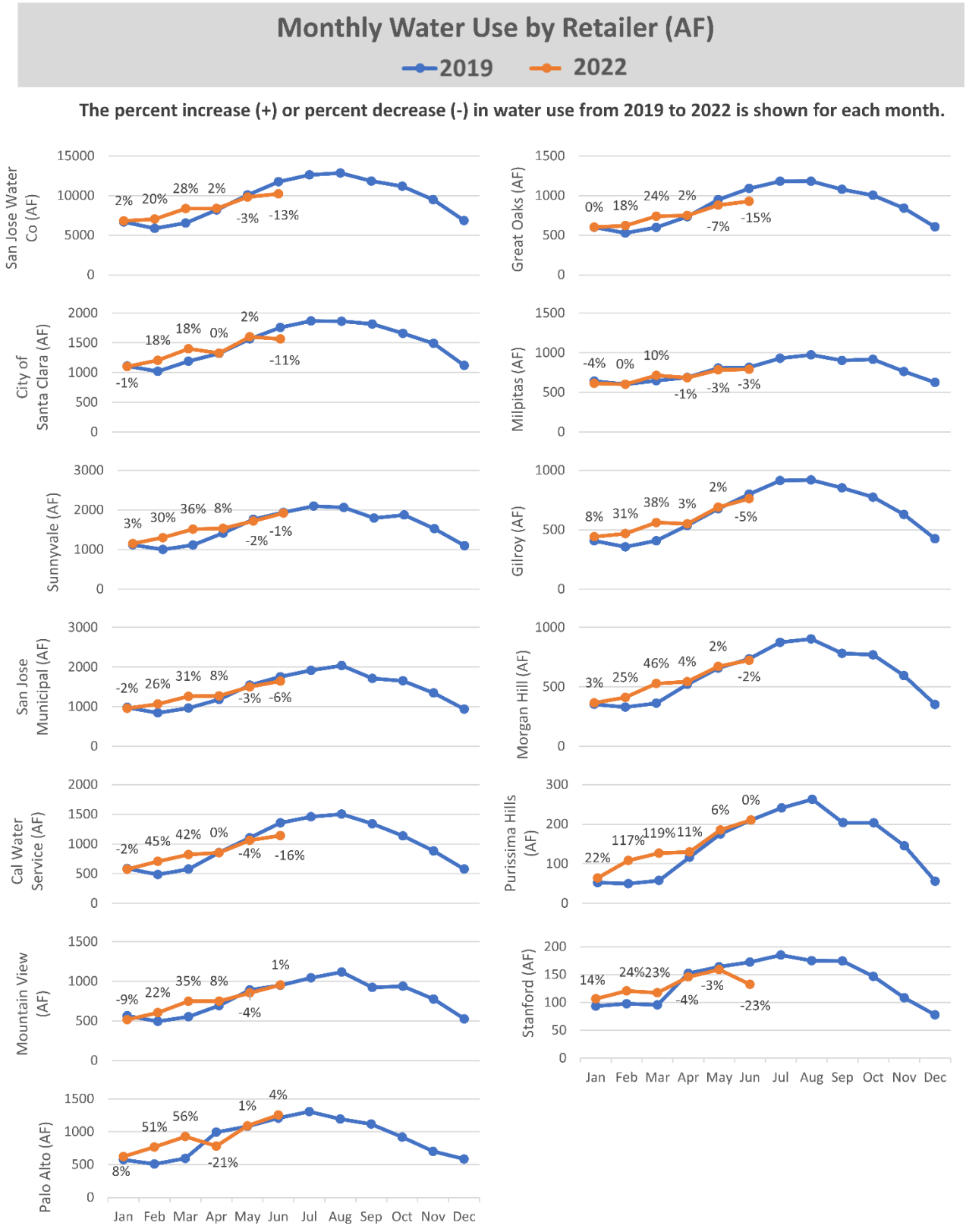
Retailer Water Use Reduction

The graph below depicts total water use from the 13 retailers in Santa Clara County to help track progress towards achieving Valley Water's 15% call for water use reduction made in June 2021.

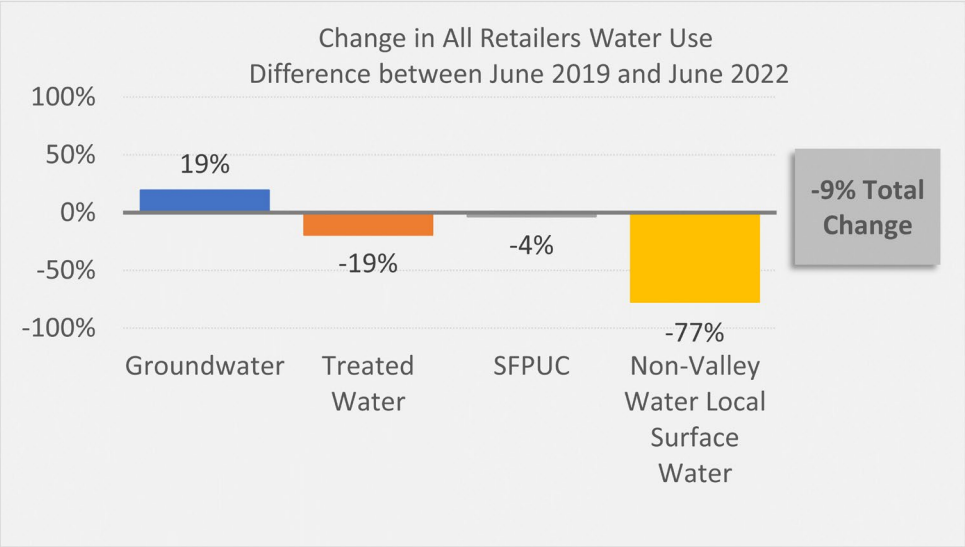


- Countywide water savings is trending in the right direction with savings in June greater than in May.
- Countywide water savings was 9% in June 2022 compared to June 2019.
- Santa Clara County's cumulative water savings from June 2021 – June 2022 is 3%, compared to 2019.
- Countywide water savings was 15% in June 2022 compared to June 2020, which means the county achieved the Governor's call for conservation. The county exceeded California's water savings of 7.6% in June 2022, compared to June 2020.
- California's cumulative water savings from July 2021 – June 2022 is 3%, compared to 2020. Santa Clara County's cumulative water savings during this time is 9%, compared to 2020.
- On June 1, 2022, Valley Water began enforcing outdoor water waste restrictions against runoff, midday watering, and watering after rainfall, and a limit of two days a week of watering for non-functional turf.
- Valley Water continues its conservation and drought-messaging with the "Say Yes to Saving Water" campaign. The multilingual, multi-platform campaign encourages residents, businesses, farms, and others to follow watering restrictions and take actions, both large and small, that can increase water savings.

These graphs depict water use by each of Valley Water's 13 retailers to help track progress towards achieving the 15% call for water use reduction made in June 2021. Note that City of Palo Alto Utilities (Palo Alto) and Purissima Hills Water District (Purissima) normally do not use Valley Water sources of water. A large proportion of water used by the City of Mountain View Public Works (Mountain View) and Stanford Utilities (Stanford) is not from Valley Water sources.



The graph below depicts changes between the retailers' different types of water use. As expected, the proportion of groundwater use tends to increase during drought.



The table below shows Valley Water retailers' water usage volumes by type.

	Total Water Use in Acre-Feet (June 2019)					Total Water Use in Acre-Feet (June 2022)				
Water Retailer	Groundwater	Treated Water	SFPUC	Non-Valley Water Local Surface Water	SUM	Groundwater	Treated Water	SFPUC	Non-Valley Water Local Surface Water	SUM
San Jose Water Company	2,700	7,400	-	1,660	11,760	4,360	5,500	-	380	10,230
Santa Clara, City	1,000	460	300	-	1,760	1,000	300	260	-	1,570
Sunnyvale	10	910	1,020	-	1,940	10	810	1,100	-	1,920
San Jose Municipal Water	90	1,220	440	-	1,760	90	1,050	500	-	1,650
California Water Service	340	1,020	-	-	1,360	220	920	-	-	1,140
Palo Alto	-	-	1,210	-	1,210	-	-	1,250	-	1,250
Mountain View	20	110	820	-	950	10	100	850	-	950
Great Oaks	1,090	-	-	-	1,090	930	-	-	-	930
Milpitas	-	50	770	-	820	-	340	460	-	790
Gilroy	800	-	-	-	800	760	-	-	-	760
Morgan Hill	740	-	-	-	740	720	-	-	-	720
Purissima Hills Water	-	-	210	-	210	-	-	210	-	210
Stanford	-	-	170	-	170	-	-	130	-	130
Total	**6,780**	**11,170**	**4,940**	**1,660**	**24,550**	**8,100**	**9,010**	**4,770**	**380**	**22,260**

<u>Collaboration with the County, Retailers, and Cities</u>

- As of July 31, 2022, 14 cities in Santa Clara County have implemented a maximum two-day irrigation schedule, including five cities that have taken additional formal action to their elected boards in response to the ongoing drought emergency and Valley Water's Amended Resolution 22-20.
- In July, Valley Water continued to conduct outreach to the municipalities for their consideration and adoption of the Model Water Efficient New Development Ordinance (MWENDO), as part of ongoing efforts to support cities' and the County's interests in expanding water efficiency measures. Currently, the County and several cities are considering aligning the adoption of new MWENDO measures as part of their jurisdictions' Title 24 triennial building code update. The 2022 version of California's Title 24 is effective January 1, 2023.

Water Conservation Programs

Valley Water is actively promoting ways people can save water through rebates, free water-saving devices, and behaviors. The Shopping Cart (eCart) Program offers free water-saving devices to homes and businesses.The Landscape Rebate Program (LRP) provides rebates for converting high-water use landscapes to low-water-use landscape, as well as retrofitting existing irrigation equipment with approved high-efficiency irrigation equipment. With the close of the fiscal year at the end of June, over 1.3 million square feet of lawn have been converted to low water using landscape and a total of 1432 rebates were issued for landscape conversion, irrigation equipment and rainwater rebates. Valley Water partnered with local non-profit Our City Forest for the July Do-It-Yourself Lawn Busters workshop, which taught attendees how to convert an area of turfgrass lawn into a low-water use landscape.

Estimated conservation program applications received are shown below.

Program	May	June	July
Landscape Rebate Program Applications[1]	343	417	318
Water-saving Device Orders	868	1,477	694

[1]Starting July 1, 2021, the landscape rebate was increased from $1 to $2 per square foot and the maximum rebate was increased from $2,000 to $3,000 for single-family homes.

Water Waste Enforcement

Valley Water began enforcing outdoor water waste restrictions against runoff, midday watering, and watering after rainfall, and a limit of two days a week of watering for non-functional turf on June 1, 2022. The Water Waste Program is enforcing these restrictions while continuing its educational mission.

Program	May	June	July
Water Waste Reports	207	516	217

Complaints of violations against water waste restrictions are submitted by members of the public. 217 total water waste complaints were received in July 2022. 135 of the complaints received are enforceable, as they relate to the restrictions listed in Ordinance 22-02 and occurred in service areas supplied by Valley Water sources; the remaining are not enforceable. Each complaint may include multiple reports of violations against water waste restrictions. Below is a breakdown of the numbers of water waste reported violations related to the restrictions listed in Ordinance 22-02. Not all violations are verified by staff to be occurring, such as those related to watering after rainfall.

Enforceable Water Waste Violations	**June 2022**	**July 2022**
More than 2 days of watering per week	70	39
Watering from 9AM-6PM	84	30
Watering within 48 hours of rainfall	10	4
Runoff	199	95

Drought and Water Conservation Outreach

- In a continued effort to highlight the Landscape Rebate Program, a second success story was published on Valley Water's social media channels. These stories offer a first-person, local perspective of the many benefits of transforming lawns into water-efficient, native plant yards. Staff created two videos highlighting how Valley Water is using its allocation of water from the Central Valley Project to fill percolation ponds and replenish groundwater supplies across the county. In addition, Valley Water's 30-second "Say Yes to Saving Water" video was distributed to movie theaters for a four-week run in San Jose, Sunnyvale, Santa Clara, Mountain View and Milpitas.
- Staff published a blog to Valley Water News to highlight the recent work at Anderson Dam of reinforcing the hillside in preparation for the tunneling work. The blog included a quote from Chair Pro Tem Varela and Deputy Operating Officer Chris Hakes. Staff also posted a timelapse video of this recent work to our social media platforms. Blogs on tree care during drought and refilling percolation ponds in Santa Clara County were also posted.
- In July, staff kicked off a social media campaign asking residents to test their knowledge of drought and conservation by taking Valley Water's new quiz. Upon completion of the quiz, participants are entered into a raffle to win a bucket full of water-saving tools from our Shopping Cart. Staff will use the quiz results to gauge how well residents understand and absorb Valley Water's drought-related messaging.
- The Speakers Bureau Program held four presentations in July. On July 11, Director Santos and CEO Callender conducted a virtual drought presentation to the Rotary Club of Milpitas. On July 13, staff gave a virtual drought presentation to the Doerr Neighborhood Association during their regular association meeting. On July 14, outreach staff supported the water conservation team with a landscape rebate program presentation to the Modern Management Inc. homeowners' association group in Morgan Hill. On July 25, Director Keegan and staff delivered a drought presentation to the Cory Neighborhood Association in San Jose.
- Statistics for public outreach efforts are shown below.

Outreach Type	**July 2022**
Social Media[1]	
Impressions[2]	2,947,787
Engagements[3]	50,028
Link Clicks	10,478
Video Views	320,518
Website Page Views	
Water conservation webpages	26,319
BeHeard.ValleyWater.org/drought-information	599
Media	
Media Mentions[4]	3,524
Speakers Bureau	
Presentations[5]	4

[1]Includes Facebook, Twitter, Instagram, and LinkedIn

[2]Impressions are the number of times a post is displayed in a newsfeed.

[3]Engagements are the number of times a user interacts with a post, such a retweet, click, and more.

[4]Includes TV, radio, social media, online and print

[5] Office of Communications and Government Relations

Drought and Water Conservation Education

- In July, the Education Outreach team (EO) supported 31 educators and reached 509 students through 25 in-person and virtual presentations. EO presented water conservation and drought awareness messaging to students and their families at two library story time programs and also supported 20 summer camp groups with the Boys and Girls Club of Silicon Valley, the YMCA and City of San Jose Parks, Recreation and Neighborhood

Services Program. All library program and camp attendees recited the Valley Water Water Conservation Pledge, signed the pledge poster, and received drought messaging water conservation stickers and drought-tolerant native plant seeds. EO also supported the South Bay Water Week Teacher Externship Week and presented water conservation activities to the Santa Clara County high school teachers attending the educator training and provided resources and information for teachers to use with their students in the future.

- The table below shows Educational Outreach efforts in 2022, all of which included drought and water conservation messaging.

Program	**May 2022**	**Jun 2022**	**Jul 2022**
Educators/Teachers	74	16	31
Classes/Groups	62	20	22
Students	1,788	497	509

- Members of the Valley Water Youth Commission presented an overview of the Youth Commission and the Drought Awareness Social Media Campaign to high school teachers attending the South Bay Water Week Teacher Externship Week. The Commissioners also highlighted the Drought Awareness Campaign toolkit that is housed on the Youth Commission website and encouraged the teachers to engage their students in raising drought awareness in their communities.

Committee Updates

- Drought-related updates are being provided regularly at Committee meetings to receive feedback and guidance. These updates were provided to the Agricultural Water Advisory Committee and the Water Conservation and Demand Management Committee in July 2022.

Water Supply Operations and Outlook

- There was no rainfall in July in the Santa Clara County. The current rainfall year extends from July 1, 2022, through June 30, 2023.
- Total reservoir storage as percentage of unrestricted reservoir capacity is 20% for July 31, 2022, which is 38% of the (20-year) average total storage for the current month.

Imported Water

- While storms in October and December 2021 provided a wet start to the water year, January through March 2022 were the driest combined first three months on record in California. Additionally, Northern California received above average precipitation in April, but major reservoir levels generally remain below average. As of July 28, 2022, the northern Sierra Nevada snowpack, a primary source of imported water, is at 16% of normal for this date.
- As of July 28, 2022, total state reservoir storage is below the historical average. Shasta Reservoir is at 54% of average for this date, Oroville Reservoir is at 62% of average for this date, and Folsom Reservoir is at 96% of average for this date. Total storage in each of these three major reservoirs has decreased in July.
- As of July 28, 2022, storage in San Luis Reservoir is approximately 662 thousand acre-feet (TAF). San Luis Reservoir storage was reduced by approximately 129 TAF in July.
- Valley Water entered 2022 with over 65 TAF of imported supplies stored in San Luis Reservoir. This includes emergency transfer supplies purchased in 2021, previously undelivered State Water Project (SWP) supplies, and water recovered from the Semitropic Groundwater Bank. This amount is higher than normal and is intended to

provide water supply reliability in the event dry conditions continue in 2022, while also mitigating for the loss of storage in Anderson Reservoir.

- The California Department of Water Resources (DWR) has announced a 2022 SWP allocation of 5 percent, which equates to an allocation of 5 TAF for Valley Water. DWR has approved Valley Water's request for additional water to meet our critical human health and safety needs.
- The U.S. Bureau of Reclamation (Reclamation) Central Valley Project (CVP) water supply allocations for south-of-Delta CVP contractors, including Valley Water, are currently set to a municipal and industrial allocation of public health and safety water only and an agricultural allocation of zero percent. Reclamation has approved Valley Water's request for public health and safety water.
- Valley Water will continue to withdraw previously stored supplies from the Semitropic Groundwater Bank in 2022 if SWP and CVP allocations remain low. Staff continues to work with DWR and other Semitropic Banking partners and anticipates that at least 31.5 TAF would be available for delivery to Valley Water. As of June 30th, Valley Water has withdrawn approximately 16.9 TAF in 2022 from Semitropic Groundwater Bank.
- Valley Water previously executed several long-term water transfer agreements that could provide emergency transfer supplies in 2022, but transfer supply this year is severely limited due to the critically dry conditions across the state. To date in 2022, Valley Water has secured agreements for 18.3 TAF of emergency transfer supplies, after conveyance losses this is estimated to provide approximately 13 TAF of additional supply. Staff is also pursuing other water transfer opportunities for additional supplemental supplies.

Treated Water

- The taste and odor compound, geosmin, continued to be slightly elevated in water from the South Bay Aqueduct and the San Luis Reservoir. Valley Water was able to proactively optimize the water treatment process and mitigate potential impacts.
- Cyanotoxins levels had slight detection in the San Luis Reservoir source water but were non-detect in treated water.
- No reportable water quality issues for the treated water delivered and no complaint was received from retailers for the month of July.

Groundwater Recharge

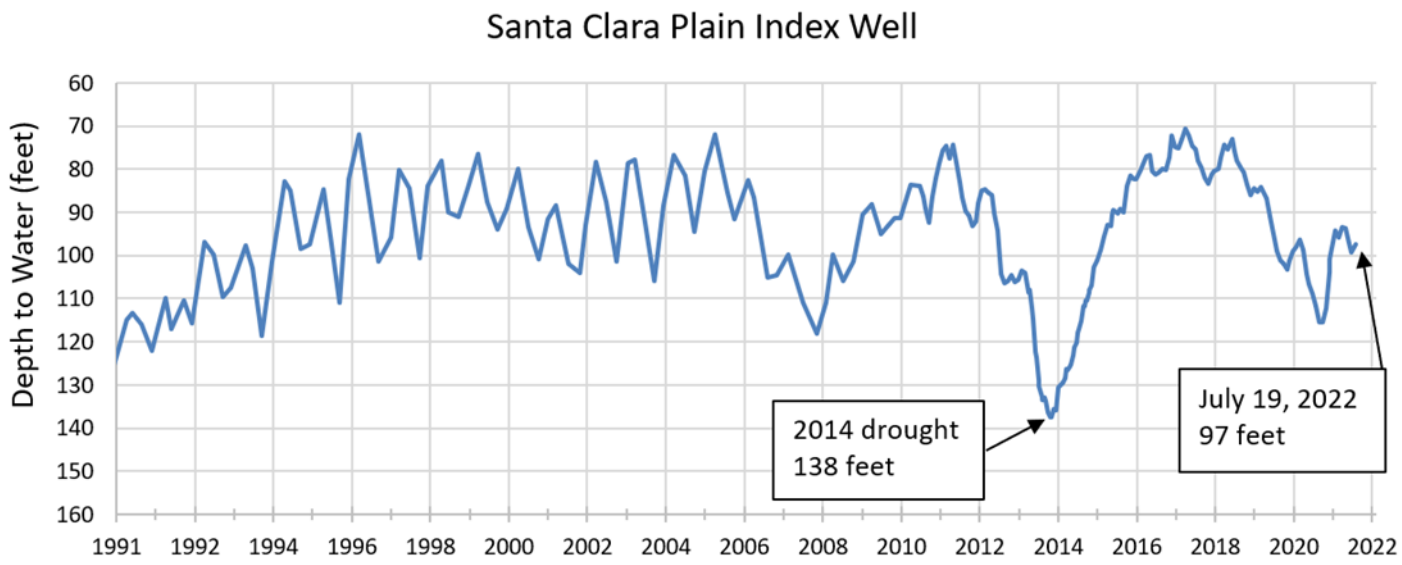
- In June and July 2022, Valley Water expanded its recharge program in North County and increased the recharge in Coyote Creek after the approval of the Public Health and Safety water allocation by the US Bureau of Reclamation. Recharging the groundwater basins is one of the best ways to put the new water allocation to beneficial use.
- In early spring, Valley Water had only 26 percolation ponds filled with water. By early August, the number of filled ponds will exceed 65 ponds out of a total 102 ponds countywide.
- Managed recharge in 2022 is projected to end at 95% of normal (or the 20-year average).

Groundwater Conditions:

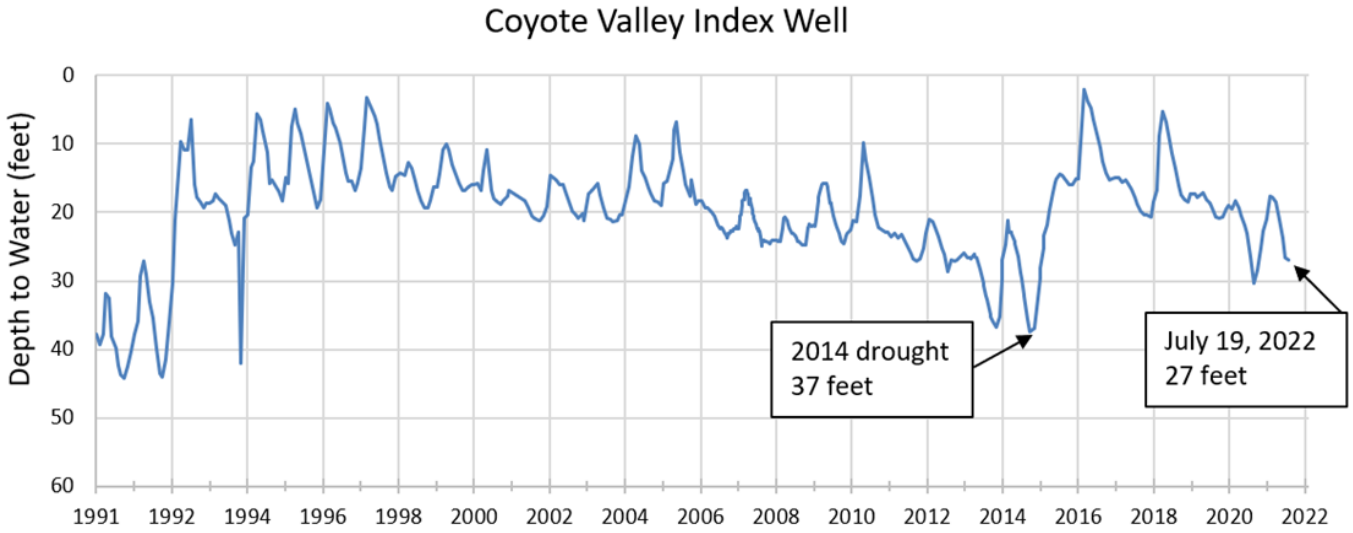
Groundwater levels in July have continued the typical pattern of summer decline, but greater than average declines are expected this year because of the drought. Water use reduction is essential to minimize the risk of resumed subsidence in North County and wells going dry, particularly in South County. The risk of dry wells and subsidence increases as the drought persists. No new dry wells have been reported in July.

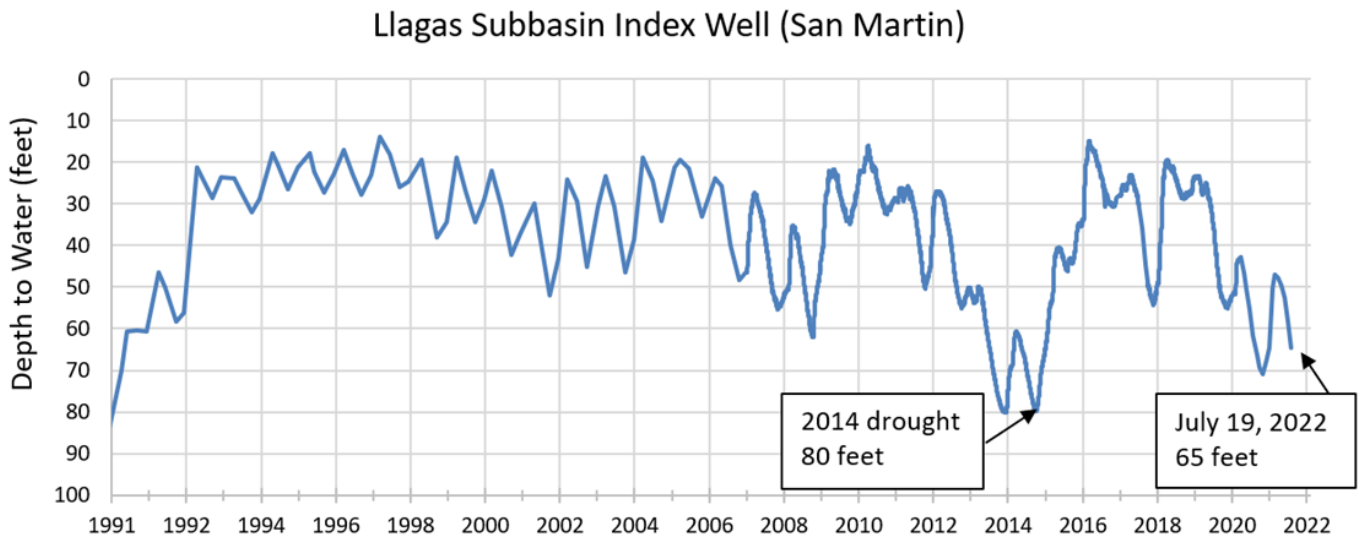
- North County Groundwater
    - The current water level at the regional index well has increased by about 2 feet since last month and is about 41 feet above the minimum water level in 2014. The water level at this well is about 14 feet higher compared to this time last year.
    - Groundwater levels are more than 52 to 100 feet above thresholds established to minimize the risk of permanent subsidence.

- Since the onset of the current drought, a total of two dry wells have been reported in North County, all in the foothills where yield is generally less reliable.



- South County Groundwater
  - The current water level in the Coyote Valley and Llagas Subbasin regional index wells have each decreased by about 0 and 7 feet since last month and are about 10 and 15 feet, respectively, above the minimum water level in 2014. Additionally, the water levels in these wells are each about 1 and 3 feet, respectively, lower compared to this time last year.
  - Since the onset of the current drought, a total of four dry domestic wells have been reported in South County, all in locations close to the foothills where yield is generally less reliable. Valley Water works to provide affected well owners with appropriate assistance, including information on available resources or billing support as needed.





State Coordination

- Governor Calls Water Agency Leaders to Sacramento – On July 29, 2022, Governor Newsom and senior administration officials met with water agency leaders in his Sacramento office. The meeting was a follow-up to a similar meeting held on May 23, 2022, to discuss the state's failure to meet the Governor's call to conserve water. In the meeting the Governor and other administration officials urged water retailers to report water conservation numbers early, asked that conservation efforts continue, urged that conservation savings be permanent to the degree possible, and asked that conservation successes be shared with the media.

- Valley Water developed a handout to highlight Santa Clara County's conservation efforts and successes, including achieving the Governor's call for conservation in June 2022. The handout is shown in Appendix A of this drought report.

Staffing and Resources

- For water conservation programs, four of six vacant intern positions were filled, with start dates in August. Recruitment is underway to fill the remaining positions.
- Additionally, two candidates were selected to fill these vacancies and will start in August 2020.
- Staff have requested resumes for the new vacant Temporary Water Conservation Specialist position and intend to hold interviews for this vacancy sometime in late August.
- Drought emergency expenses are expenditures supplemental to the regular budget that would not have been adopted had there been no drought. The FY 2022-23 Adopted Budget of $37 million for drought emergency is comprised of $17 million for emergency water purchases, $7 million for water banking expenses to help bring approximately 32,000 acre-feet of water banked at Semitropic Water Storage District into the county, and $13 million for conservation programs and drought related public relations.
- Due to the timing of monthly financial system closes, drought expenditures are reported one month behind the monthly Drought Emergency Report.
- FY 2021-22 preliminary year-end expenses between July 2021 through the month of June 2022 totaled approximately $48.07 million spent or encumbered primarily for emergency water purchases tied to contracts executed either in FY 2020-21 or late FY 2021-22, relatively small draws of water from Semitropic Water Storage District in August, December, February, March, May, and June, operating supplies and services including communications contracts, and labor expenses for staff time implementing Valley Water's drought response program. Of the $48.07 expense, approximately $11 million was encumbered in June for one existing and three new emergency water purchases contracts for which water will be received in FY2022-23.

Expanded Opportunities

Purified Water Project

The Purified Water Project will replenish groundwater supplies with purified water and expand usage of recycled and purified water, a drought-resilient, locally-controlled water source.

- Valley Water continued to develop the procurement and CEQA documents for the Purified Water Project.
- Valley Water continued outreach to cities and landowners along the pipeline route.

Drought Response Plan

Valley Water is developing a Drought Response Plan (DRP) to improve water supply reliability in Santa Clara County during times of future shortage through a WaterSMART grant from the Bureau of Reclamation. Valley Water's DRP will evaluate new approaches for determining when to request water use reductions from the public and develop a response framework to employ during future droughts.

- Work continues refining the draft Vulnerability Assessment that evaluates the risks and impacts of drought in the county, focusing on key factors that increase Valley Water's vulnerability to drought, such as climate change, existing and potential regulations, infrastructure conditions, and future water quality conditions. The consultant has also started working on the next phase of the DRP looking at drought triggers and water shortage actions in coordination with retailers.

Appendix A: Valley Water's water conservation handout

SANTA CLARA COUNTY IS IN A SEVERE DROUGHT.

LET'S SAY YES TO SAVING WATER

WaterSavings.org

Valley Water

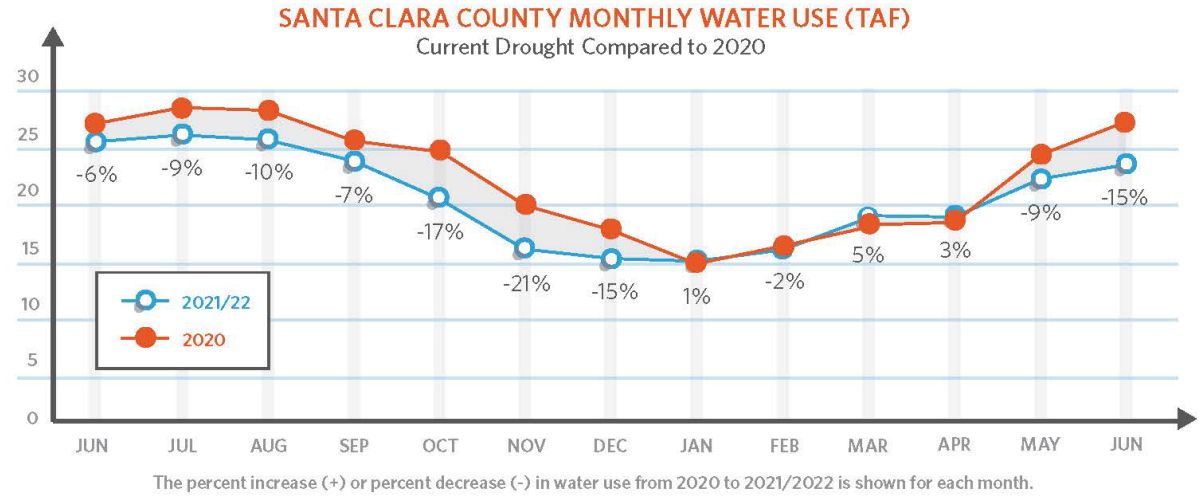
Valley Water Drought Impacts

The Santa Clara Valley Water District, Valley Water, is the regional wholesale water supplier and groundwater sustainability agency, serving 2 million people and thousands of job-creating businesses in Silicon Valley. The current drought has hit harder in our region due to the federally ordered draining and seismic retrofit of Anderson Dam, our largest drinking water reservoir. The county usually imports 50% of its water supply, but with local resources constrained, dependence on imported water is even greater.

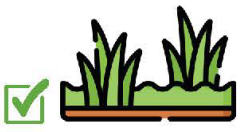
With drought and reduced imported water supplies come the risk of groundwater overdraft and the return of historic land subsidence in the San José region, one of our state's major metropolitan areas. Valley Water has taken bold actions to lead the way in water conservation and the people of Santa Clara County are saying YES to saving water.

Valley Water Actions = Success

State Conservation Target Met - Governor's call for 15% conservation compared to 2020 was met in June 2022. Santa Clara County also met this target in Fall 2021.



The percent increase (+) or percent decrease (-) in water use from 2020 to 2021/2022 is shown for each month.



One Million Sq. Ft. of Turf Converted
In the Fiscal Year 2021-22, Valley Water converted over one million square feet of turf through our landscape rebate program.

Water Use Dropped 25% in the Last 5 Years
Water use was 148 gallons per person per day in 2017 and 111 gallons per person per day in 2022.

22 Water Conservation Programs Underway
Valley Water offers 16 programs for outdoor conservation and 6 programs for indoor conservation, for residents, businesses, and farms.

On Track for Long-Term Water Savings
Valley Water is on track to save 99,000 acre-feet per year by 2030 compared to 1992 and 109,000 acre-feet by 2040.

Robust Outreach Campaign
In 2021 and 2022, Valley Water outreach campaigns reach millions with conservation messages through TV and radio, movie theaters and billboards, buses and transit shelters, social media platforms and targeted influencers, text messages, and more. Our Speakers Bureau Program offers community organizations the opportunity to hear directly from Valley Water leaders about our water supply challenges and the need for conservation.

Drought Resources Increased
Valley Water doubled its water conservation staff and has spent nearly $50 million on drought response in FY 2021-22, including emergency water transfers, bolstered water conservation programs, and aggressive outreach programs.

Total Water Use Down Amid Historic Population Growth
The population in Santa Clara County has increased by 25% over the past 30 years, while water demand has decreased by about 8% in that time (1990—2020).

Valley Water Drought Response Timeline

Conservation Programs Bolstered — MAY 2021

As drought becomes more severe, Valley Water doubles landscape rebate program incentive, ramps up outreach, launches new Online Shopping Cart for free water-saving devices delivered to residents and businesses.

Emergency Declared with Mandatory Conservation — JUNE 2021

Amid historically low imported water allocations, the Valley Water Board declares a Water Shortage Emergency Condition and calls for 15% mandatory water conservation compared to 2019, a more stringent baseline than 2020. A limit of 3 days per week watering is urged.

Conservation Target Met — OCT. 2021

Santa Clara County meets Valley Water's call to reduce water use by 15% compared to 2019, using 16% less water in October 2021 and 20% less water in November 2021 compared to 2019.

Driest On Record — JAN–MAR. 2022

Rainfall during this period in San José measured just 0.36 inches, the driest start to a calendar year on record. The dry spring skyrockets water use in comparison to 2019 and 2020.

Watering Limited Further — APR. 2022

With imported water allocations set at 5% or human health and safety levels, the Valley Water Board calls for restricting the watering of lawns and ornamental landscapes to no more than 2 days per week.

First Ever Enforcement Ordinance — MAY 2022

Valley Water Board adopts Water Waste Enforcement Ordinance to enforce and issue fines for water waste by individual water users, an unprecedented step for Valley Water and for any wholesale water agency.

State Target Met and "Say YES to Saving Water" Launched — JUNE 2022

Santa Clara County reaches Governor's call to reduce water use by 15% compared to 2020. Valley Water adds a new large landscape conversion program and increases rebate amounts to a maximum of $100,000 per project. The innovative "Say YES to Saving Water" campaign is launched with a large budget.

Commercial Turf Watering Ban to Be Enforced — SEPT. 2022

Valley Water Board will consider incorporation of the state's Commercial Industrial & Institutional turf watering ban into our enforcement ordinance.

BOARD OF DIRECTORS
SANTA CLARA VALLEY WATER DISTRICT

ORDINANCE NO. 22-

A FIRST AMENDED AND RESTATED ORDINANCE OF SANTA CLARA VALLEY WATER DISTRICT ADOPTING DROUGHT OUTDOOR WATER CONSERVATION AND ENFORCEMENT MEASURES

The Board of Directors of Santa Clara Valley Water District does ORDAIN as follows:

SECTION 1: PURPOSE

1.1 Due to water shortage conditions existing in the service area of the Santa Clara Valley Water District (Valley Water), as well as historically low imported water allocations of Valley Water's State Water Project (SWP) and Central Valley Project (CVP) supplies, the purpose of this ordinance is to establish mandatory outdoor water conservation measures with corresponding enforcement measures as part of a mandatory outdoor water conversation program. To ensure Valley Water continues providing a safe, reliable water supply when its supplies are limited due to current or future shortage conditions, the measures in this water conservation program are intended to preserve and extend Valley Water's available water supply in Santa Clara County and to reduce the hardship on the general public to the greatest extent possible. They are also aimed at ensuring the efficient use of Valley Water's water supply outdoors to maintain sufficient supplies to meet public health, safety and welfare needs during uncertain water supply conditions.

1.2 Valley Water adopts this ordinance consistent with Article X, Section 2 of the California Constitution pursuant to its authority under Water Code Section 350 et seq, Water Code Section 375 et seq, and the Santa Clara Valley Water District Act, (Stats. 1951, ch. 1405, p. 3336 et seq., West's Ann. Wat.—Appen. (1999 ed. & 2012 supp.) ch. 60, p. 354 et seq.).

SECTION 2: DEFINITIONS

2.1 "Turf" means a ground cover surface of non-native, ornamental grass, or a ground cover surface of mowed grass. Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue are cool-season grasses. Bermudagrass, Kikuyugrass, Seashore Paspalum, St. Augustinegrass, Zoysiagrass, and Buffalo grass are warm-season grasses.

2.2 "Non-Functional Turf" means Turf that is solely ornamental and does not serve a community or neighborhood function, including, use for recreational purposes, or civic or community events.

2.3 "Incidental Runoff" means unintended amounts (volume) of runoff, such as unintended, minimal overspray from sprinklers that escapes the area of intended use. Water leaving an intended use area is not considered incidental if it is part of the facility or system design, if it is due to excessive application, if it is due to intentional overflow or application, or if it is due to negligence.

2.4 "Property Owner" means the owner of the land where a possible violation of one or more of the water waste prohibitions described in Subsection 3.1 of this ordinance is occurring.

2.5 "Water Retailer" means municipalities or investor-owned water retailers that supply potable water made available by Valley Water to Property Owners.

SECTION 3: OUTDOOR DROUGHT WATER WASTE PROHIBITIONS

3.1 Violations of the prohibitions set forth below are subject to the enforcement measures described in Section 4. All Property Owners in Santa Clara County who receive potable water supplied or managed by Valley Water either directly or indirectly by a Water Retailer shall not do any of the following:

(a) irrigate Non-Functional Turf more than 2 days a calendar week.

(b) irrigate any outdoor landscape between the hours of 9:00 AM and 6:00 PM.

(c) apply potable water to any outdoor landscape in a manner that causes more than Incidental Runoff. More than Incidental Runoff includes water that flows onto an adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures.

(d) apply potable water to any outdoor landscape during and within 48 hours after measurable daily rainfall of at least one fourth of one inch (0.25 inches) of rain. In determining whether measurable daily rainfall of at least fourth of one inch (0.25 inches) of rain occurred on a property, enforcement will be based on records of the closest weather station to the property available from the National Weather Service (weather.gov) or the Valley Water ALERT website (valleywateralert.org/scvwd/pgi.php).

(e) apply potable water to Non-Functional Turf at commercial, industrial and institutional sites, including homeowner's associations.

3.2 The use of potable water is not prohibited to the extent necessary to ensure the health of trees and other perennial non-Turf plantings or to the extent necessary to address immediate health and safety, sanitation, or fire protection needs as determined by the fire marshal. Unless otherwise permitted by the fire marshal, the watering permitted under this Subsection 3.2 must be completed in a manner that prevents runoff.

SECTION 4: ENFORCEMENT

4.1 For violations set forth in Subsection 3.1, the following enforcement procedures 4.1 (a) – (e) shall apply. Valley Water will emphasize an educational approach to addressing reported violations of water waste prohibitions to encourage water conservation and to prevent water waste.

Reports of water waste will be made through public complaints to Valley Water. For Property Owners who receive potable water supplied or managed by Valley Water either directly or indirectly by a Water Retailer, steps 4.1 (a) – (e) will be followed. If the property is supplied by a Water Retailer, Valley Water will notify the Water Retailer of each complaint. Valley Water will offer Water Retailers the opportunity to initiate their own enforcement process established for their respective service area at either steps 4.1 (a), (b), or (c). While the Water Retailer pursues its enforcement process, Valley Water will not conduct any of the steps in its enforcement process.

If the Water Retailer does not initiate its own enforcement process, or if the Water Retailer who previously initiated its enforcement process requests that Valley Water resume its enforcement process, then Valley Water will perform the remaining steps between 4.1 (a) – (e) that Valley Water has not yet completed.

(a) Notice of Report of Violation

If a report of a violation of outdoor water waste prohibitions in Subsection 3.1 is submitted to Valley Water, a Notice of Report of Violation will be issued to the Property Owner. A Notice of Report of Violation will contain information on how to

correct violations and a warning that failure to correct a violation within fourteen (14) calendar days from the issuance date of that written notification may result in future enforcement action. No administrative fine is issued by Valley Water at this time.

(b) Notice of Second Report of Violation

If a second report of a violation of outdoor water waste prohibitions in Subsection 3.1 is submitted to Valley Water for the same property following fourteen (14) calendar days and within twelve (12) calendar months of the issuance of a Notice of Report of Violation, Valley Water or its contractors shall conduct a site visit of the property to document the violation, if possible, and provide a door hanger. The door hanger will state that failure to comply with water waste prohibitions may result in future enforcement action. Furthermore, Valley Water will send the Property Owner a Notice of Second Report of Violation.

(c) Notice of Third Report of Violation

If a third report of a violation of outdoor water waste prohibitions in Subsection 3.1 is submitted to Valley Water for the same property following fourteen (14) calendar days from the issuance of a Notice of Second Report of Violation and within twelve (12) calendar months of the issuance of a Notice of Report of Violation, Valley Water will send a Notice of Third Report of Violation to the Property Owner. This will state that the Property Owner may receive administrative fines for uncorrected violations.

(d) Notice of Violation

Valley Water or its contractors will conduct a site visit of the property following fourteen (14) calendar days following the issuance of a Notice of Third Report of Violation to document the violation. If the violation is continuing, then Valley Water will send a Notice of Violation to the Property Owner which will state that the Property Owner is now subject to administrative fines for uncorrected violations.

The Property Owner is subject to an administrative fine of up to one-hundred dollars ($100) for each violation found. Notwithstanding the foregoing, Valley Water may impose an administrative fine of up to ten thousand dollars ($10,000) in extraordinary circumstances where it finds that: the Property Owner had actual notice of the water waste prohibition found to be violated; the Property Owner's conduct was intentional; and the amount of water involved was substantial.

(e) Repeat Violations

Valley Water will conduct a site visit thirty-one (31) days following the issuance of a Notice of Violation, or when a subsequent report of violation of outdoor water waste prohibitions in Subsection 3.1 is submitted to Valley Water following thirty-one (31) calendar days from the issuance of a Notice of Violation and within twelve (12) calendar months of the issuance of a Notice of Report of Violation, to determine if the confirmed violation is continuing. If the violation is continuing, the Property Owner shall be subject to an additional administrative fine of up to ten thousand dollars ($10,000). For each successive violation, the Property Owner shall be subject to an additional administrative fine of five hundred dollars ($500) for each additional day that the violation continues.

SECTION 5: HEARING

5.1 A Property Owner subject to an administrative fine will be provided notice and may request a hearing to present evidence that the violation did not occur by following the procedure set forth below:

(a) Within thirty (30) calendar days of receiving a Notice of Violation, the Property Owner mails a written request for a hearing to the Clerk of the Board, 5750 Almaden Expressway, Valley Water, San José, CA 95118-3686. For purposes of this Section 5, the request for hearing shall be deemed received by Valley Water on the day it arrives at Valley Water. The Clerk of the Board shall notify the Property Owner, in writing, of the place, date and time of the hearing, which shall take place no earlier than thirty (30) calendar days after a Notice of Violation was issued.

(b) The Chief Executive Officer or designee shall conduct a hearing considering all applicable facts and issue a written decision. The Chief Executive Officer's or designee's decision shall be final.

(c) Any administrative fine not timely contested in a hearing per this Section 5 shall be deemed final.

SECTION 6: EFFECTIVE DATE

NOW, THEREFORE BE IT ORDAINED by the Board of Directors of the Santa Clara Valley Water District that this ordinance shall be in effect starting on September 13, 2022.

PASSED AND ADOPTED by the Board of Directors of the Santa Clara Valley Water District by the following vote on September 13, 2022:

AYES: Directors

NOES: Directors

ABSENT: Directors

ABSTAIN: Directors

SANTA CLARA VALLEY WATER DISTRICT

By: _____
JOHN L. VARELA
Chair Pro Tem, Board of Directors

ATTEST: MICHELE L. KING, CMC

_____
Clerk, Board of Directors

File No.: 22-0967

Agenda Date: 8/29/2022
Item No.: 4.2.

COMMITTEE AGENDA MEMORANDUM

Water Conservation and Demand Management Committee

SUBJECT:
Drought Response Plan - Draft Vulnerability Assessment.

RECOMMENDATION:
Receive and Discuss Drought Response Plan Update - Draft Vulnerability Assessment.

SUMMARY:
Santa Clara Valley Water District (Valley Water) is developing a Drought Response Plan (DRP) by integrating lessons learned from Valley Water's and other water agencies' past drought responses. Developing a robust approach for requesting water use reductions and improving Valley Water's ability to take actions during the early phases of a drought will improve Valley Water's drought response. The DRP has four main components: a benchmark study, a vulnerability assessment, water shortage contingency plan update, and a drought response framework. In March 2022, staff introduced the DRP to the Water Conservation and Demand Management Committee and presented the benchmark study. This memorandum summarizes the draft vulnerability assessment.

To develop the DRP, Valley Water has an internal stakeholder group composed of experts from across Valley Water and has a Task Force composed of Valley Water's retailers, Santa Clara County agricultural and environmental stakeholders, and other interested parties. Valley water collaborates with the internal stakeholder group and the Task Force through a series of workshops to discuss goals, approaches, and findings and to solicit feedback on draft elements of the DRP. Valley Water met with the Task Force to discuss and solicit feedback on the draft vulnerability assessment on June 30, 2022.

The draft vulnerability assessment evaluates the risks and impacts of drought to Valley Water's existing water supply and infrastructure. The report documents key factors that increase Valley Water's supply vulnerability during drought, which included climate change, existing and potential regulations, infrastructure conditions and constraints, and future water quality conditions (Attachment 2). Interrelationships between the factors may compound their effects on future water supply reliability.

Key findings from the draft vulnerability assessment include:

- Climate change is expected to reduce the availability of imported and local surface water

supplies and increase the frequency and severity of drought. At the same time, the frequency of extreme precipitation events is expected to increase, and a greater proportion of annual precipitation may fall within a smaller number of large events. The shift in precipitation patterns may make surface storage capture and delivery more challenging.

- Upcoming and existing regulations, such as the Bay-Delta Water Quality Control Plan (Bay-Delta Plan) and Endangered Species Act/ California Endangered Species Act (ESA/CESA) permits are vulnerabilities to the future availability of imported water supplies. Locally, Fisheries and Aquatic Habitat Collaborative Effort (FAHCE) Settlement Agreement implementation, future Lake and Streambed Alternation Agreements, and other permits necessary for Utility operations could also reduce system flexibility. Regulatory-based vulnerabilities do not explicitly contribute to increased risk of hydrologic drought, rather they may exacerbate water shortage conditions during drought events.
- Infrastructure limitations and constraints can also exacerbate drought impacts. Key constraints include current storage restrictions on five out of ten local Valley Water reservoirs, limitations on physical delivery of stored surface water in out-of-county groundwater banks, and the potential for concurrent conveyance outages during drought events. Parallel to this, current infrastructure and reservoir operational rules may not maximize the capture and storage of surface water produced by the short, intense storm events that are predicted to occur with climate change.
- Water quality vulnerabilities can reduce system flexibility and potentially limit available water supply sources, which can worsen water shortages during drought. Surface water quality vulnerabilities, such as toxic cyanobacterial blooms and higher Total Dissolved Solids (TDS), are often direct impacts from drought stemming from lower streamflow, greater evaporation, and higher water temperature. Drought conditions can also affect groundwater quality through increased likelihood of saltwater intrusion. In addition, emerging groundwater contaminants, such as Per- and Polyfluoroalkyl Substances (PFAS), may result in additional treatment constraints that constrain system flexibility.

As a part of the draft vulnerability assessment, mitigation actions are identified to decrease drought vulnerabilities. Mitigation actions are intended to be long-term projects and programs that reduce the potential for water shortages in the future. The Water Supply Master Plan (WSMP) identifies projects that increase water supply reliability. The WSMP is reviewed on an annual basis through the Monitoring and Assessment Program (MAP) to incorporate the latest available data, modeling, and project information. The draft vulnerability assessment identifies ways WSMP projects could enhance water supply reliability and mitigate drought risks based on discussions with Valley Water staff concerning specific system vulnerabilities during drought. This evaluation resulted in a conceptual prioritization of mitigation actions summarized below:

- Meeting Valley Water’s conservation targets should continue to be prioritized as they are a critical component in reducing water demand and mitigating drought risk.
- To help mitigate droughts while Anderson Reservoir is under construction, near-term investment in additional imported water transfer agreements should continue to be

prioritized. Transfer agreements may not be a reliable tool in the future given climate change and potential future regulatory impacts in the San Francisco Bay Delta watershed and may not be as cost-effective as other options; thus water transfer agreements are not recommended as a long-term solution.

- Potable reuse (including indirect and direct potable reuse projects) will be highly important in maintaining future water supply reliability. Potable reuse projects are locally controlled and are less impacted by climate change, drought, and environmental streamflow regulations that affect existing surface water supplies. They also provide an important diversification to the water supplies available to Valley water. These projects should be prioritized given their drought resiliency and ability to supplement existing water supply sources.
- Evaluation and/or implementation of projects and programs that enhance beneficial use of local water supplies, such as Lexington Pipeline and forecast informed reservoir operations, should continue to be explored.
- Diversification of storage, such as an additional out-of-county groundwater bank or new surface water storage (e.g., Los Vaqueros Expansion, Pacheco Reservoir) could help increase operational flexibility and drought reliability by increasing Valley Water's ability to store wet year water for withdrawal during dry years.
- Implementation of imported water supply projects and programs that allow for greater operational flexibility, including improving the ability to capture the expected shorter, high flow events, (e.g., Delta Conveyance Project and Sites Reservoir) should continue to be explored.

Next Steps

The draft vulnerability assessment was reviewed by internal stakeholders and the Task Force. Staff is incorporating comments into the draft vulnerability assessment to finalize the report. Work has started on the next segment of the DRP, which examines how Valley Water monitors for drought and requests short-term response actions from the public when necessary.

Valley Water will provide regular updates on the progress of the DRP development to the Water Conservation and Demand Management Committee, the Environmental and Water Resources Committee, and other interested advisory committees. The draft and final DRP will be presented to the Board of Directors for comments and approval, respectively.

- Fall 2022: Draft Drought Monitoring and Water Shortage Response
- Winter 2022: Draft Drought Response Framework
- End of 2022: Draft DRP
- Early 2023: Bureau of Reclamation reviews and comments on the DRP
- Summer 2023: Final DRP brought to the Board for approval

ATTACHMENTS:

Attachment 1: PowerPoint Presentation
Attachment 2: Draft Vulnerability Assessment

UNCLASSIFIED MANAGER:
Kirsten Struve, 408-630-3138

Valley Water Drought Response Plan – Vulnerability Assessment

Presented by: Michael Martin, Water Supply Planning and Conservation Unit

August 29, 2022

Valley Water

Overview of DRP Goals

Allow Valley Water to be more proactive regarding droughts

1. Update Water Shortage Contingency Plan
   - Refine drought response triggers
   - Determine early indicators of drought
2. Establish toolbox of actions to prepare for and take during a drought
3. Increase coordination and alignment among Valley Water, retailers, and municipalities

Valley Water WSCP:			
Stage	Title	Projected End-of-Year GW Storage (AF)	Short-term reduction in water use
1	Normal	> 300,000	None
2	Alert	< 300,000	0-10%
3	Severe	< 250,000	10-20%
4	Critical	< 200,000	20-40%
5	Emergency	< 150,000	Over 40%

Review of DRP Components

Benchmark Study
- Background Information
- Lessons Learned

Vulnerability Assessment
- Risks to water sources & infrastructure
- Drought risk mitigation actions

Water Shortage Response
- Monitoring for drought
- Triggers for drought
- Response actions during drought

Drought Response Framework

- Refine drought response triggers
- Determine early indicators of drought
- Establish a toolbox of actions during drought
- Ensure consistency with master planning efforts
- Communications Plan
- Budget and staff support needs for drought

Components of the Vulnerability Assessment

Water Shortage Risk Factors

Mitigation Actions

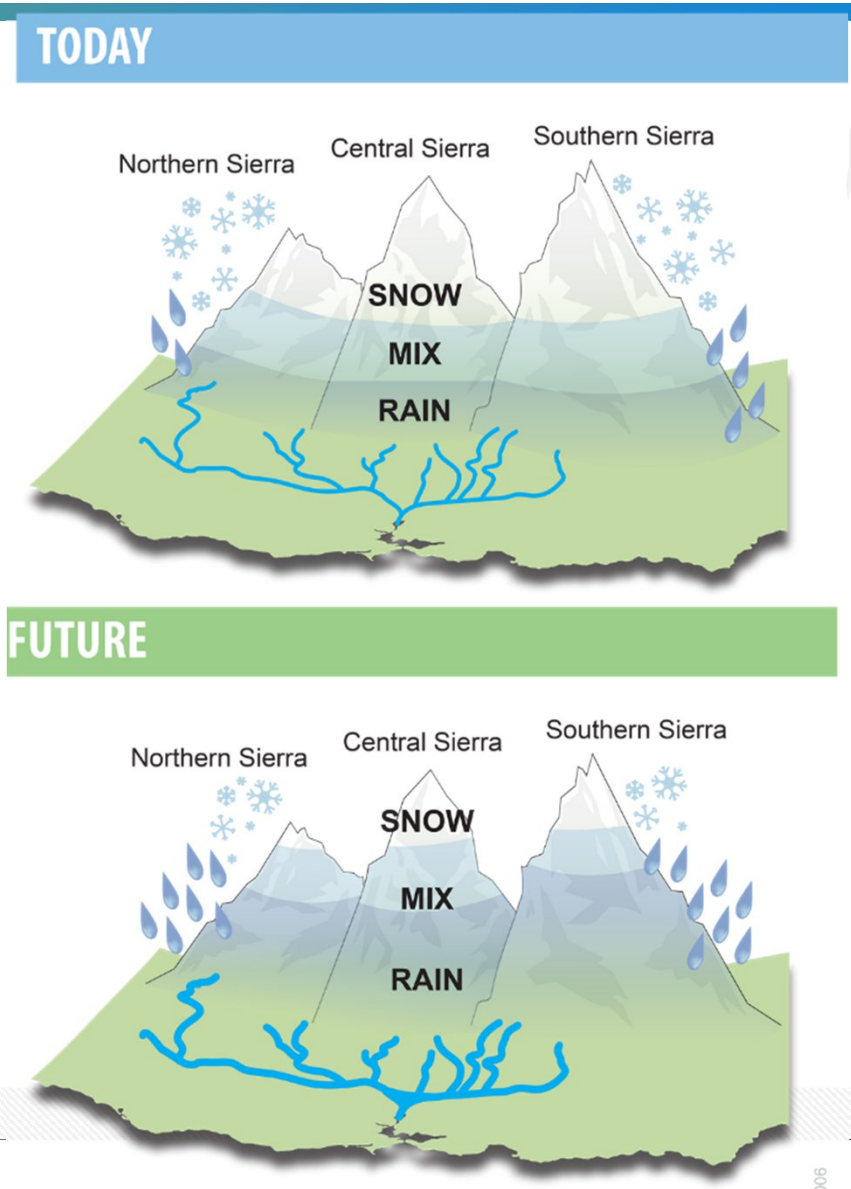
Community Impacts

Water Shortage Risk Factors

- Interrelated
- Potentially compounding
- May reduce water supply availability
- May limit operational flexibility

Climate Change

- Higher temperature
  - Increased irrigation demand
  - Increased evaporation
  - Water quality concerns
- More rain and less snow
  - Change in timing and volume of runoff
- Greater frequency of extreme events
  - Atmospheric rivers
  - Fire



Regulatory Risks

- Future imported and local permit conditions
- Bay Delta watershed water rights curtailments
- Bay Delta Water Quality Control Plan
- Sustainable Groundwater Management Act (out-of-county groundwater banks)
- Fish and Aquatic Habitat Collaborative Effort (FAHCE)
- Emerging Contaminants

Infrastructure Constraints

- Reliance on exchanges to recover banked groundwater supplies
- Local reservoir seismic restrictions
- Concurrent system outages
- Retail agency system constraints

Anderson Reservoir, December 2020

Water Quality

- Sea level rise
  - Increased Delta salinity in Delta
  - Saltwater intrusion to groundwater
- Increased water temperature
- Increased algal blooms
- Emerging contaminants (PFAS, Cr6, etc.)
- Fire:
  - Reservoir sedimentation
  - Contaminant mobilization

Evaluated Mitigation Projects/Programs

- Water Supply Master Plan projects/programs

- Water Conservation Strategic Plan

- Supply system optimization

- New agreements

Example Projects From 2021 MAP

- Potable Reuse (DPR & IPR)
- Lexington Pipeline
- Los Vaqueros Reservoir Expansion
- Pacheco Reservoir
- Refinery Recycled Water Exchange
- Sites Reservoir
- Delta Conveyance Project
- Groundwater Bank Diversification

Forecast Informed Reservoir Operations (FIRO)

Transfer Agreements

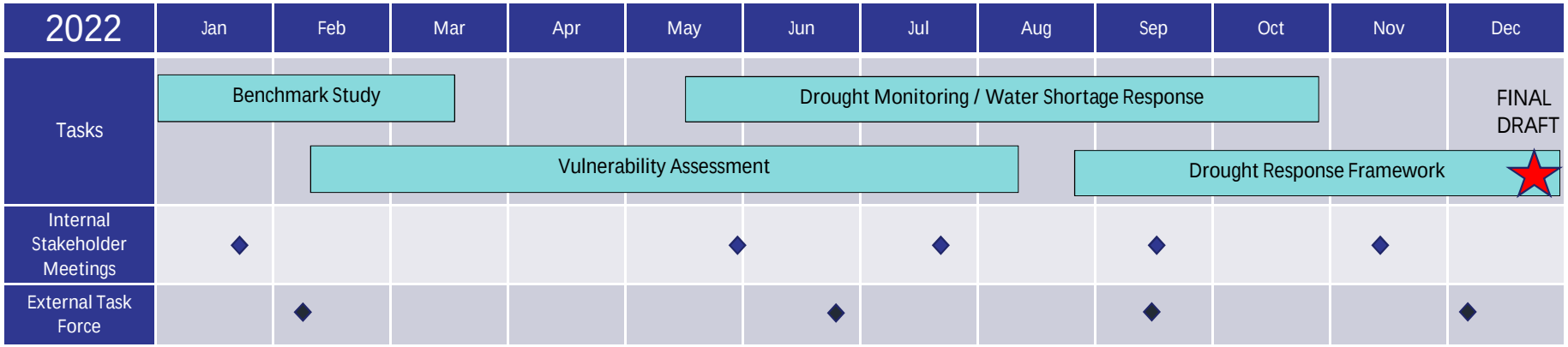
Vulnerabilities Summary

- Climate change → reduced surface supplies.
- Bay-Delta and local regulations → reduced surface supplies
- Storage restrictions, retailer limitations → increased infrastructure constraints
- SGMA + Reduced exchange capacity → decreased access to banked supplies
- Water quality impacts → increased system constraints.

Mitigation Action Summary

- Meet water conservation goals
- Implement reuse projects
- Enhance use of local supplies
- Near-term investment in additional transfer agreements (not long-term solution)
- Diversify storage projects:
  - increase operational flexibility
  - greater capture of high flow events

Schedule / Next Steps



2023

March - Respond to Reclamation comments and finalize plan

June – Bring Final Drought Contingency Plan for approval

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June 22, 2022

To: Mike Martin, Valley Water

From: Luke Wang, Hazen and Sawyer
Audrey Gozali, Hazen and Sawyer
David Mitchell, M.Cubed

cc: Samantha Greene, Valley Water

QC: Greg Gates, Hazen and Sawyer

Drought Response Plan Vulnerability Assessment

DRAFT Technical Memorandum

Executive Summary

Santa Clara Valley Water District (Valley Water) is in the process of developing a Drought Response Plan (DRP) to improve water supply reliability during future droughts. The DRP will help Valley Water prepare and respond to droughts by evaluating vulnerability to droughts and identifying measures to provide long term supply reliability, identifying early indicators of drought and refining drought response triggers and actions, to enhance coordinated response actions in Santa Clara County. This technical memorandum focuses on an overall vulnerability assessment of Valley Water's water supply system.

Consistent with Bureau of Reclamation (Reclamation) guidance[1], Valley Water has conducted a vulnerability assessment that evaluates the risks and impacts of drought in the county. The vulnerability assessment focused on documenting key factors that increase Valley Water's supply vulnerability during drought, which included climate change, existing and potential regulations, infrastructure conditions and constraints, and future water quality conditions. Key findings from this assessment include:

- Climate change is expected to reduce the availability of imported and local supplies and increase the frequency and severity of drought. At the same time, the frequency of extreme precipitation events is expected to increase, and a greater proportion of annual precipitation may fall within a smaller number of large events.
- Upcoming and existing regulations, such as the Bay-Delta Water Quality Control Plan (Bay-Delta Plan) and Endangered Species Act/California Endangered Species Act (ESA/CESA) permits are vulnerabilities to the future availability of imported supplies. Locally, the Fish and Aquatic Habitat Collaborative Effort (FAHCE) Settlement Agreement implementation could also reduce system flexibility. Regulatory-based vulnerabilities do not explicitly contribute to

[1] See https://www.usbr.gov/drought/docs/2019/FY19DroughtResponseProgramFramework.pdf

increased risk of hydrologic drought, rather they may exacerbate water shortage conditions during drought events.

- Infrastructure limitations and constraints can also exacerbate drought impacts. Key constraints include current storage restrictions on five out of ten local reservoirs (with Anderson Reservoir being under construction through 2032), limitations on physical delivery of stored surface water in out-of-county groundwater banks, and the potential for concurrent conveyance outages during drought events. Parallel to this, current infrastructure and reservoir operational rules are not designed to efficiently capture and store the short, intense storm events that are predicted to occur with climate change, which could reduce the total amount of water stored for dry-year use.
- Water quality vulnerabilities can reduce system flexibility and potentially limit available supply sources which can worsen water shortages during drought. Surface water quality vulnerabilities, such as toxic cyanobacterial blooms and higher Total Dissolved Solids (TDS), are often direct impacts from drought stemming from lower streamflow, greater evaporation, and higher water temperature. Drought conditions can also affect groundwater quality through increased likelihood of saltwater intrusion. In addition, emerging contaminants, such as Per- and Polyfluoroalkyl Substances (PFAS), affecting groundwater supplies may result in additional treatment constraints that further constrain system flexibility.

If left unmitigated, future drought events can result in impacts to human health and safety, the economy, and the natural environment in Santa Clara County. These impacts include:

- Reduced quantity and quality of water for residential activities including human consumption, cooking, and cleaning.
- Reduced availability and quantity of water for critical for business operations and processes, potentially resulting in increased cost for goods and services produced in the county.
- Higher agricultural demand for water, lower crop yields, and pasture loss potentially resulting in increased cost of agricultural goods produced in the county.
- Risks to the natural environment including losses in tree and other plant growth, increased wildfire risk, impairment to aquatic habitat/fisheries, and impairment of groundwater dependent ecosystems. Impacts to the natural environment also pose a direct risk to outdoor recreation activities, such as boating and fishing.

As a part of the vulnerability assessment, Reclamation recommends the implementation of mitigation actions to decrease drought vulnerabilities. Mitigation actions are intended to be long-term projects and programs that reduce the potential for water shortages in the future. Through its Water Supply Master Plan (WSMP), Valley Water has devoted significant effort identifying projects that mitigate drought risk and increase water supply reliability in the county (Valley Water, 2019). Since its adoption, the WSMP has been monitored and adjusted on an annual basis through the Monitoring and Assessment Program (MAP) which incorporates the latest available data, modeling, and project information. The vulnerability assessment reviewed the projects identified in the WSMP and MAP, held discussions with Valley Water staff concerning specific system vulnerabilities during drought, and identified ways in which the WSMP

projects could enhance supply reliability and mitigate drought risks. This evaluation resulted in a conceptual prioritization of mitigation actions summarized below:

- Meeting Valley Water's conservation targets should continue to be prioritized as they are a critical component in reducing water demand and mitigating drought risk.
- Near-term investment in additional imported water transfer agreements should continue to be prioritized as they are important in securing supplemental supplies during drought while Anderson Reservoir is under construction and Valley Water works to secure existing supplies, increase water conservation and water reuse, and optimize existing supplies and infrastructure per the WSMP. Transfer agreements may not be as a reliable tool in the future given climate change and potential future regulatory impacts in the Delta watershed.
- Potable reuse (including indirect and direct potable reuse projects) will be highly important in maintaining future water supply reliability. Potable reuse projects are locally controlled and are less impacted by climate change, drought, and on the environmental streamflow regulations that affect existing surface water supplies. These projects should be prioritized given their ability to supplement existing supply sources.
- Evaluation and/or implementation of projects and programs that enhance beneficial use of local supplies, such as Lexington Pipeline and forecast informed reservoir operations, should continue to be prioritized and explored.
- Diversification of storage, including investment in alternative storage projects, such as an additional out-of-county groundwater bank or new surface water storage (e.g., Los Vaqueros Expansion, Pacheco Reservoir) could help increase operational flexibility and drought reliability by increasing Valley Water's ability to store wet year water for withdrawal during dry years.
- Implementation of imported water supply projects and programs that allow for greater operational flexibility, including improving the ability to capture the expected shorter, high flow events, (e.g. Delta Conveyance Project and Sites Reservoir) should continue to be prioritized and explored.

In addition to these findings, Valley Water should continue to consider more explicit modeling and/or sensitivity testing of certain vulnerabilities to better quantify potential risks and mitigation action performance. These vulnerabilities include potential reductions in San Francisco Public Utilities Commission (SFPUC) deliveries to the county resulting from the Bay-Delta Plan, local/out-of-county water quality impacts, and short-term outages concurrent with drought.

Table of Contents

List of Abbreviations

Acronym	Definition
AF	Acre-feet
AMS	American Meteorological Society
Bay-Delta	Sacramento-San Joaquin Delta
Bay-Delta Plan	Bay-Delta Water Quality Control Plan
BiOps	Biological Opinions
CCAP	Climate Change Action Plan
CCWD	Contra Costa Water District
CDFW	California Department of Fish and Wildlife
Central San	Central Contra Costa Sanitary District
CEQA	California Water Quality Act
CESA	California Endangered Species Act
CII	Commercial, Industrial, Institutional
Cr6	Hexavalent chromium
CVP	Central Valley Pipeline
DC	District of Columbia
DDW	Department of Drinking Water
DPR	Direct Potable Reuse
DRP	Drought Response Plan
DSOD	Division of Safety of Dams
DWR	Department of Water Resources
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAHCE	Fisheries and Aquatic Habitat Collaborative Effort
FERC	Federal Energy Regulatory Commission
FIRO	Forecast-Informed Reservoir Operations
GCM	Global Climate Model
gpcd	Gallons per capita per day
GSP	Groundwater Sustainability Plan
GWMP	Groundwater Management Plan
HAB	Harmful Algal Bloom
IPR	Indirect Potable Reuse
IRP	Infrastructure Reliability Plan
ITP	Incidental Take Permit
KCWA	Kern County Water Agency
LOS	Level of Service
LSAA	Lake and Streambed Alteration Agreements
LVE	Los Vaqueros Expansion
M&I	Municipal and Industrial
MAF	Million Acre-Feet
MAP	Monitoring and Assessment Program
MCL	Maximum Contaminant Limit
mg/L	Milligrams per liter
MGD	Million Gallons per Day
MOU	Memorandum of Understanding
NMFS	National Marine Fisheries Service
P3	Public-Private Partnerships
PFAS	Per- and Polyfluoroalkyl Substances
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
ppb	Parts per Billion
PS	Pump Station
RCP	Representative Concentration Pathway

Reclamation	US Bureau of Reclamation
RRWE	Refinery Recycled Water Exchange
SBA	South Bay Aqueduct
SFPUC	San Francisco Public Utilities Commission
SFRWS	San Francisco Regional Water System
SGMA	Sustainable Groundwater Management Act
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAF	Thousand Acre-Feet
TAFY	Thousand Acre-Feet per Year
TDS	Total dissolved solids
UC	University of California
USACE	US Army Corp of Engineers
USFWS	United States Fish and Wildlife Services
VA	Voluntary Agreement
Valley Water	Santa Clara Valley Water District
WEAP	Water Evaluation and Planning System
WSIP	Water Storage Investment Program
WSMP	Water Supply Master Plan
WTP	Water Treatment Plant

1. Introduction

Valley Water manages a diverse water supply portfolio and has made significant investments to enhance water supply reliability and conservation in Santa Clara County. As a part of Valley Water's most recent WSMP, an updated Level of Service (LOS) goal was adopted to meet 100% of demand is non-drought years and at least 80% of demand during drought years (Valley Water, 2019). However, several factors including climate change, regulatory conditions, infrastructure condition and constraints, and future water quality challenges have the potential to increase the frequency and/or severity of water supply shortages, thereby reducing water supply reliability in the county. This memorandum seeks to identify vulnerabilities and to list, evaluate, and prioritize potential mitigation actions to address them. This memorandum provides the following:

- An overview of Valley Water's supply system,
- A discussion of factors expected to increase water shortage vulnerability,
- A review of modeled water shortages under future drought conditions and their impacts on different water-dependent sectors (e.g. human health and safety, the economy, and the natural environment),
- Identification and evaluation of potential mitigation actions, and
- A conceptual prioritization of mitigation actions.

2. Overview of Valley Water System

Valley Water provides wholesale water supply, groundwater management, flood protection, and stream stewardship services to Santa Clara County. Valley Water manages an integrated water supply system that consists of groundwater basins, creeks, surface water reservoirs, groundwater recharge ponds and facilities, canals, raw water pipelines, recycled water pipelines, water treatment/purification facilities, treated water pipelines, pump stations, retail agency turnouts, and interconnections with other out-of-county suppliers. This section provides a brief overview of Valley Water's system, including service area description, supply sources, and projected demands.

2.1 Valley Water Service Area

Within Valley Water's service area, there are 13 retailer agencies that provide water service directly to the residents and businesses of Santa Clara County (see Figure 2-1 on the following page). Valley Water's 13 retail agencies include:

- California Water Service
- City of Gilroy
- City of Milpitas
- City of Morgan Hill
- City of Mountain View
- City of Palo Alto[2]
- City of Santa Clara
- City of Sunnyvale
- Great Oaks Water Company
- Purissima Hills Water District[3]
- San José Municipal Water
- San Jose Water Company
- Stanford University

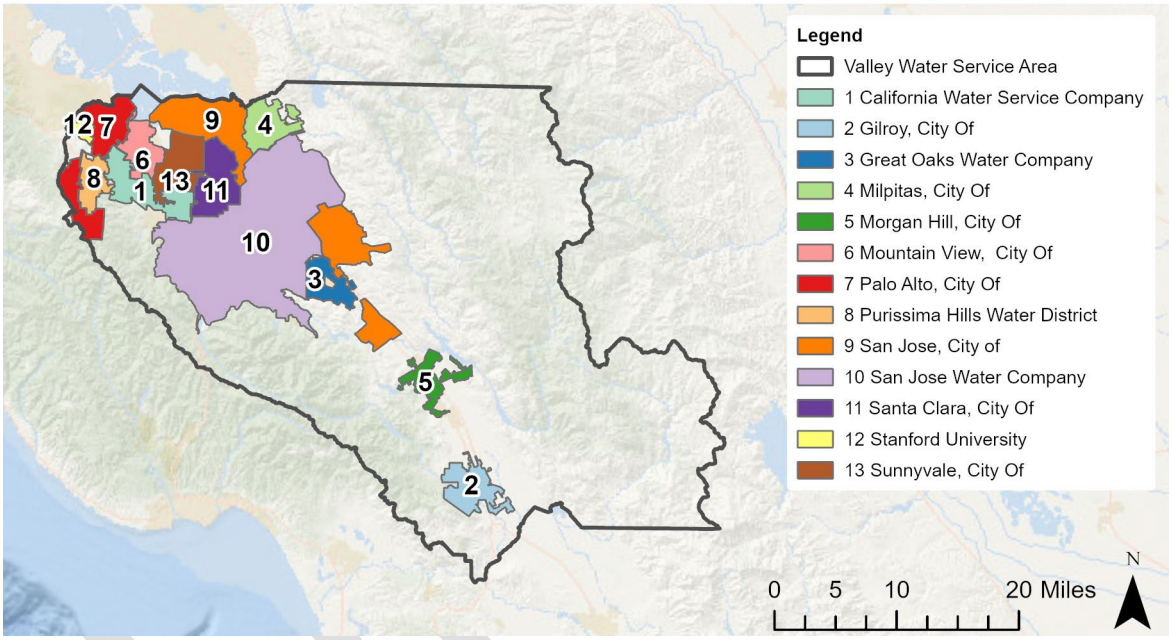

Figure 2-1: Valley Water Service Area and Retail Agency Boundaries

Valley Water provides some limited raw surface water deliveries outside of retailer service areas. Some residents in the foothills and mountains may have non-well sources, such as springs, or surface water rights. Valley Water manages two primary groundwater subbasins underlying the valley floor, but its groundwater basin management does not extend to the foothills or mountains. Valley Water also does not maintain the pumping facilities for retail agencies and other groundwater producers.

[2] The City of Palo Alto does not purchase water from Valley Water but receives water conservation and groundwater management services.

[3] Purissima Hills Water District does not purchase water from Valley Water, however being in Santa Clara County it receives water conservation services.

2.2 Water Demands

Valley Water recently completed an updated demand study, which provided forecasts of water demand for each provider type (i.e., retail agency or non-retail groundwater producer) across several water use sectors out to 2045 (Valley Water, 2021e). Table 2-1 summarizes projected demands from 2025-2045 for the entire county.

Table 2-1: Summary of County-Wide Baseline Water Demand Forecast in Thousand Acre-Feet per Year (TAFY) (Valley Water, 2021e)

Provider Type	Sector	2025	2030	2035	2040	2045
Retail agency	Single family	115	114	114	115	114
	Multifamily	44	47	53	57	62
	Commercial, Industrial, Institutional (CII)	117	118	123	128	132
	Other	8	8	8	8	8
	Nonrevenue	16	17	17	18	18
	Raw water	2	2	2	2	2
Retail Agency Total		302	305	317	327	336
Non-retail groundwater producer	Municipal/Industrial (M&I)	14	14	14	14	14
	Agricultural	25	25	25	25	25
Non-Retail Groundwater Producer Total		38	38	38	38	38
Total (no Conservation) [a]		**340**	**344**	**355**	**366**	**374**
Additional Conservation [b]		12	25	30	36	36
Total (with Conservation)		**328**	**319**	**325**	**330**	**338**

Notes:
[a] Refers to total forecasted demand from baseline scenario, excluding conservation.
[b] Consistent with total county-wide projections of future conservation (i.e., post-2020). Prior achieved conservation is implicitly included within the demand forecast.

2.3 Supply Sources and Delivery

Valley Water has access to several supply sources including imported water, groundwater, local surface water, and recycled and purified water. Valley Water's supply sources are highly integrated to provide flexibility in the raw water system for its overall conjunctive use strategy. This integration is illustrated in overall mix of supply and use detailed in Figure 2-2 on the following page.

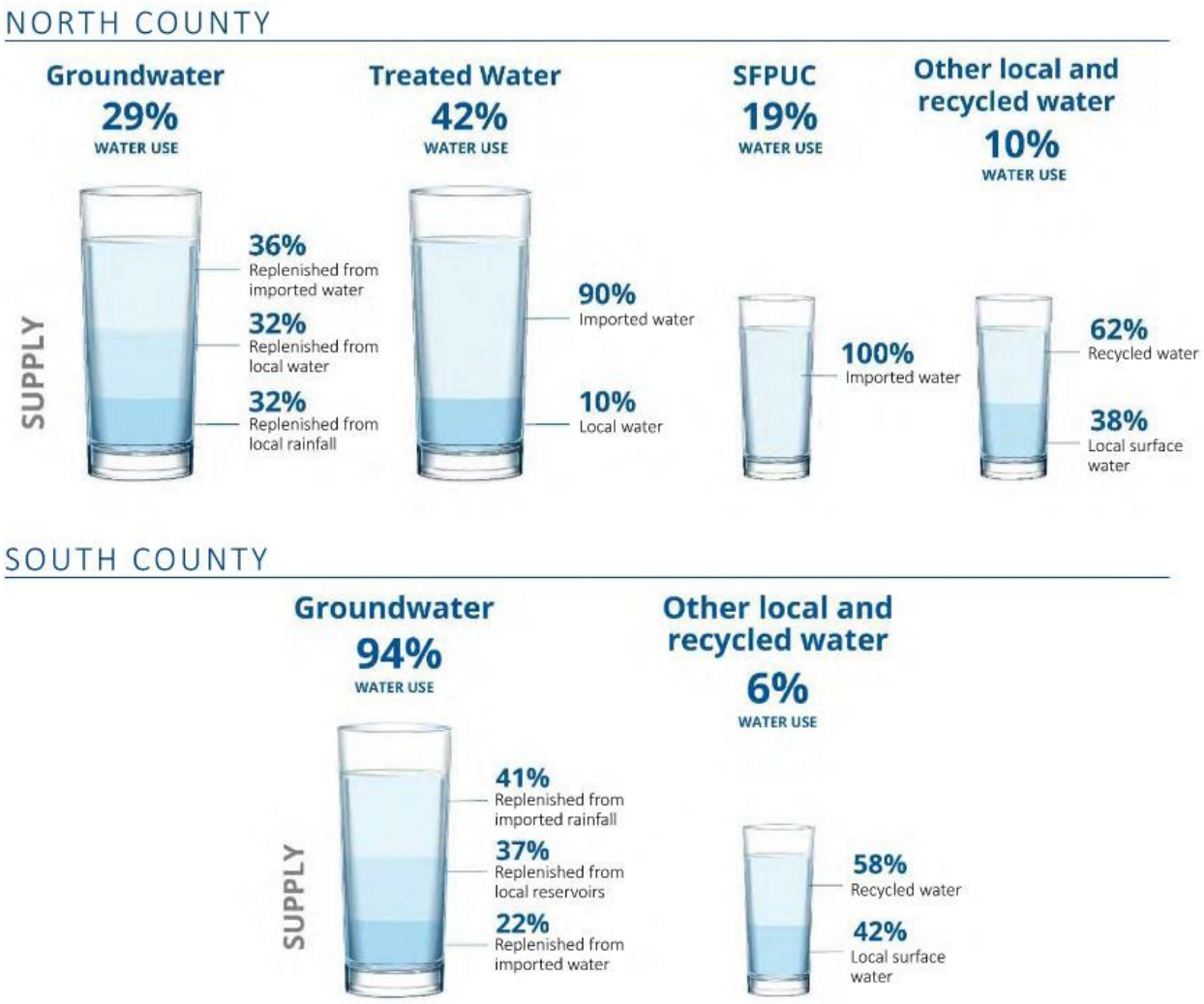

Figure 2-2: Distribution of Water Supply and Use in the North County and South County between 2010-2019 (Valley Water, 2021d)[4]

2.3.1 Imported Water

Sources of imported water delivered to Santa Clara County include the State Water Project (SWP), the Central Valley Project (CVP), the San Francisco Regional Water System (SFRWS). Table 2-2 provides a summary of these three imported supply sources. During dry periods, transfers of non-project (e.g. non-SWP/CVP) water may also serve as a source of imported supplies.

[4] South County retail agencies make up approximately 7% of total retail demand between 2025 and 2045 (21-24 TAFY). Remaining retail demand is concentrated in the North County (Valley Water, 2021e).

Table 2-2: Summary of Imported Supply Sources

Supply Project	Source Water	Supervising Agency	Valley Water Contract Volume	Primary Delivery Pathway
SWP	Sacramento-San Joaquin Delta (Bay-Delta)	California Department of Water Resources (DWR)	100 TAFY [(a)]	South Bay Aqueduct (SBA)
CVP	Bay-Delta	US Bureau of Reclamation (Reclamation)	152.5 TAFY [(a)]	California Aqueduct and San Felipe Division conveyance facilities
SFRWS	Tuolumne River	SFPUC	N/A [(b)]	San Joaquin and Bay Division Pipelines

Notes:
[(a)] SWP and CVP deliveries are typically substantially less than the maximum contract volumes due to insufficient availability of water.
[(b)] Valley Water does not directly purchase water from SFPUC. Eight Valley Water retailer agencies, including the City of Milpitas, City of Mountain View, City of Palo Alto, City of Santa Clara, City of Sunnyvale, Purissima Hills Water District, San José Municipal Water, and Stanford University, buy water directly from SFPUC. Two retail agencies, including City of Palo Alto and Purissima Hills Water District have historically purchased all or nearly all their supply from SFPUC.

As identified in Figure 2-2, imported water is well-integrated with Valley Water's other supply sources. SWP and CVP supplies are used to both replenish local groundwater as well as meet the demands of retail agencies in the North County[5] with connections to Valley Water's treated water system.[6] In the North County, imported water typically meets 90% of treated water demand and replenishes 36% of groundwater demands through managed recharge. In the South County, imported water typically replenishes 22% of groundwater demand. When available, excess contract supplies from the SWP and CVP may be stored in out-of-county facilities (i.e., San Luis Reservoir in Merced County and the Semitropic Groundwater Storage Bank in Kern County) and/or locally in Anderson and Calero reservoirs (see Sections 2.3.2 and 2.3.3).

2.3.2 Groundwater

Valley Water's service area overlies two primary subbasins, the Santa Clara Subbasin of the Santa Clara Valley Basin (DWR 2-9.02) and the Llagas Subbasin of the Gilroy-Hollister Valley Basin (DWR 3-3.01).[7] A map identifying the location of the Santa Clara and Llagas subbasins is provided in Figure 2-3.

As identified in Figure 2-2, groundwater meets a significant portion of demand in the county: 29% of demand in the North County and 94% of demand in the South County on average. Valley Water does not directly pump and deliver groundwater to retail agencies and customers; rather, Valley Water manages the subbasins for the benefit of groundwater users. Key management strategies include conjunctive use and managed recharge from Valley Water's imported and local surface supplies[8], protection of groundwater quality, and monitoring/modeling of the subbasins.

[5] The North County boundary includes all retail agencies except the Cities of Gilroy and Morgan Hill.

[6] Retail agencies with treated water connections include City of Sunnyvale, City of Santa Clara, City of Mountain View, California Water Service, San Jose Water Company, San José Municipal, and City of Milpitas.

[7] Limited parts of Valley Water's service area overlie the San Mateo Plain Subbasin of the Santa Clara Valley Basin (DWR 2-009.03) and the North San Benito Subbasin of the Gilroy-Hollister Valley Basin (DWR 3-003.05).

[8] Valley Water's groundwater subbasins are a key means for storing excess supplies from its imported and local surface water sources.

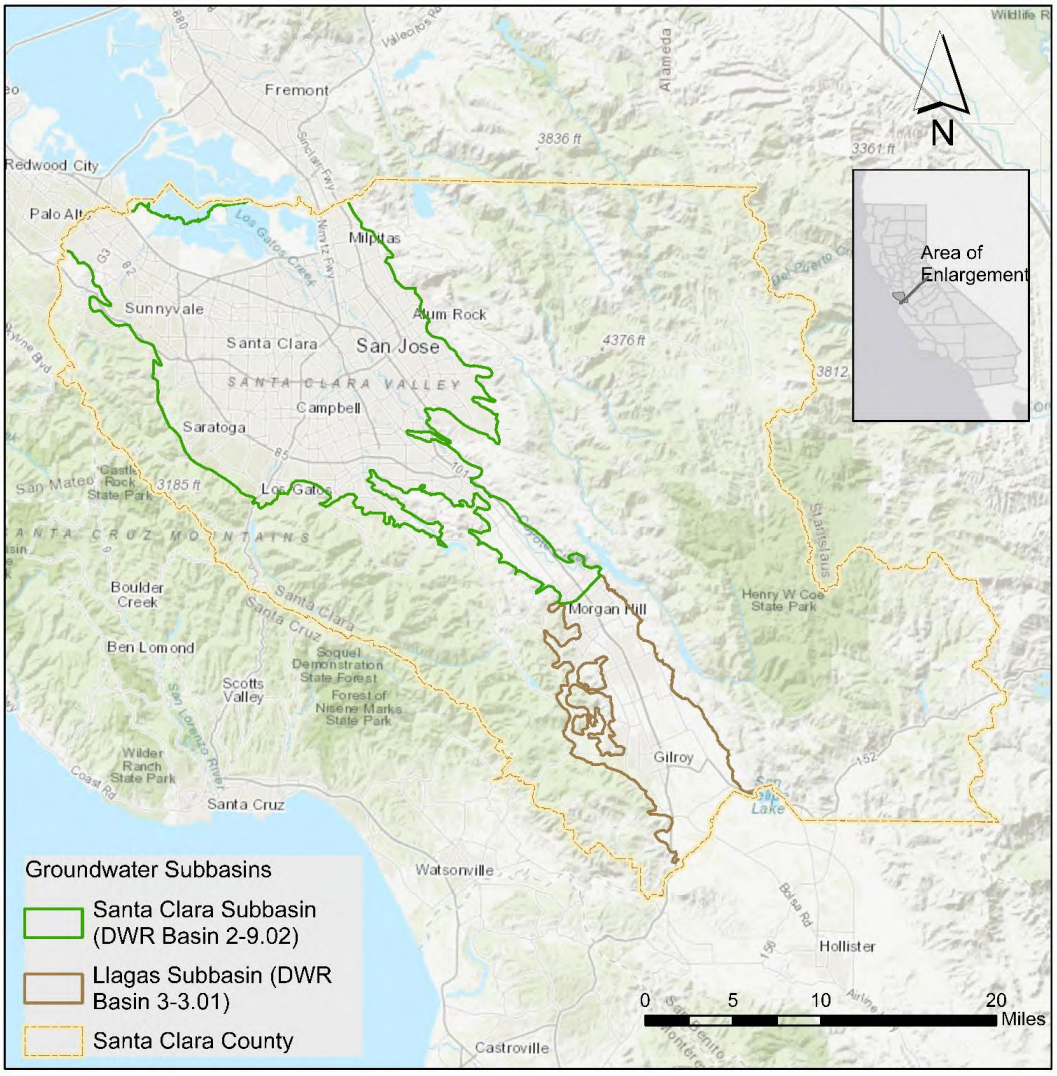

Figure 2-3: Location of Santa Clara and Llagas Subbasins (Valley Water, 2021d)

2.3.3 Local Surface Water

Valley Water has 24 appropriative water rights licenses and one filed water right permit with the State Water Resources Control Board (SWRCB) totaling 227.78 TAFY (Valley Water, 2021). Valley Water operates 10 surface water reservoirs (summarized in Table 2-3) within four watersheds.

Of Valley Water's 10 local reservoirs, four can supply water to surface water treatment plants. Water from local reservoirs makes up a relatively small proportion (10%) of treated water deliveries. Local reservoirs are generally considered an emergency supply source to treatment plants. Two of the 10 local reservoirs, Anderson and Calero reservoirs, store both local surface water and imported water. Local surface water makes up close to a third of all groundwater recharge. Valley Water's reservoirs also provide recreational and environmental flow benefits to the local watersheds and downstream communities.

Table 2-3: Summary of Local Surface Water Reservoirs

Watershed	Reservoir	Unrestricted Capacity (AF)	Connection to Water Treatment Plants
Stevens Creek	Stevens Creek	3,056	
Guadalupe	Almaden	1,555 [(a)]	✓
	Calero	9,738 [(a)]	✓
	Guadalupe	3,320 [(a)]	
	Lexington	18,534	
	Vasona	463	
Coyote Creek	Coyote	22,541 [(a)]	✓
	Anderson	89,278 [(a)]	✓
Pajaro River	Chesbro	7,967	
	Uvas	9,688	

Notes:
[(a)] Storage capacity in Almaden, Calero, Coyote, and Guadalupe reservoirs is limited due to DWR Division of Safety of Dams restrictions. Anderson Reservoir is currently drained to deadpool, by an order of the Federal Energy Regulatory Commission, to accommodate a seismic retrofit.

Outside of local surface water directly managed by Valley Water, both San Jose Water Company and Stanford University have their own local surface water supplies, which provide close to 11 TAFY on average (Valley Water, 2021a).

2.3.4 Recycled and Purified Water

Recycled water currently accounts for approximately to 5%, or 19 TAFY, of total supply in the county and is currently entirely supplied for non-potable uses. Recycled water is currently produced from four wastewater plants: Palo Alto Regional Water Quality Control Plant, City of Sunnyvale Water Pollution Control Plant, San José-Santa Clara Regional Wastewater Facility, and South County Regional Wastewater Authority. Over the years, Valley Water has increased its role in expansion of recycled water in the county by collaborating with the wastewater agencies and investing more in the recycled water systems. These include building Silicon Valley Advanced Water Purification Center in San Jose, acting as the wholesaler for the Wolf Road distribution system in Sunnyvale, and acting as the wholesaler in South County by owning the whole recycled distribution system in Gilroy. To enhance recycled water quality, Valley Water produces purified water provided from Valley Water's Silicon Valley Advanced Water Purification Center, which is blended with recycled water from the San José-Santa Clara Regional Wastewater Facility. Valley Water plans significant expansion of purified water in the county as a part of its Countywide Water Reuse Master Plan (Valley Water, 2021f) via Public-Private Partnerships (P3).

2.3.5 Raw Water and Treated Water Distribution

System demands are met through Valley Water's raw and treated water distribution systems. As identified in Table 2-2, imported water from the SWP typically enters Valley Water's system through the SBA[9] and is treated at Penitencia Water Treatment Plant and/or Rinconada Water Treatment Plant via the Central Pipeline. SWP supplies that are brought into the county and not sent to treatment facilities are diverted to creeks and ponds for managed groundwater recharge.

[9] SWP supplies may also be delivered via the California Aqueduct and San Luis Reservoir.

CVP supplies enter Valley Water's system mainly via the California Aqueduct to the San Luis Reservoir and through Reclamation's San Felipe Division conveyance facilities. Raw CVP water is directed through the Cross Valley, Calero, and Almaden Valley Pipelines to Santa Teresa and/or Rinconada water treatment plants and then delivered to retail agencies. Along the way, raw CVP water can also be diverted to creeks and managed recharge ponds or stored locally in Anderson Reservoir (once the retrofit is complete) and Calero Reservoir. Local supplies from Coyote, Anderson, Almaden, and Calero Reservoirs can also feed the Santa Teresa and/or Rinconada water treatment plant through these conveyance pathways.

Figure 2-4 presents a diagram outlining the key raw and treated water system components and distribution pathways and key connections to retail agencies and out-of-County interties.[10]

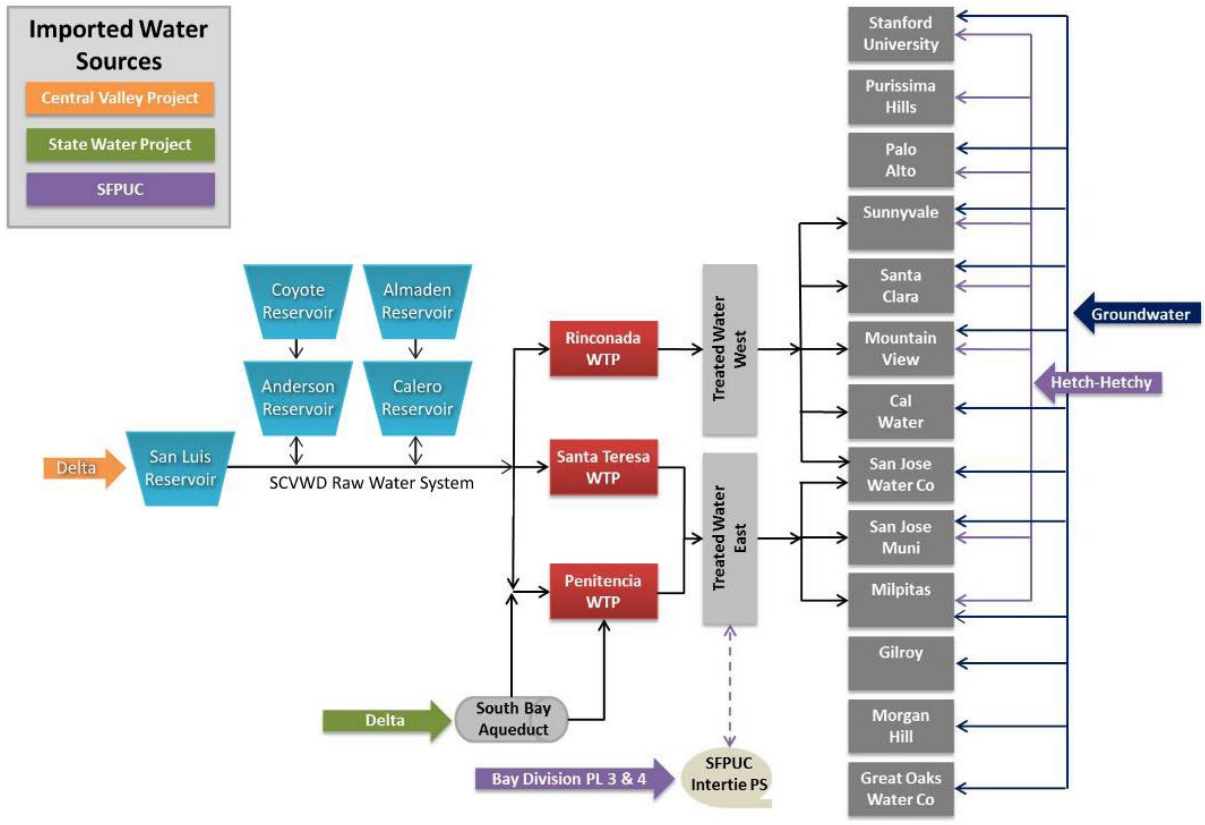

Figure 2-4: Simplified Schematic of Valley Water's Raw Distribution System Identifying Key Connections Between the Raw and Treated Water Systems and Retail Agency Potable Supply Sources (Valley Water, 2016)

[10] In addition to delivering treated water directly to the retail agencies summarized in Table 2-2, SFPUC and Valley Water share an intertie allowing for transfers of treated water in emergency situations.

3. Factors that Increase Vulnerability to Water Shortages

Several factors are expected to increase Valley Water's vulnerability to water shortages in the future. These factors include climate change, existing and potential environmental and water quality regulations, infrastructure conditions and constraints, and future water quality. Interrelationships between the factors may compound their effects on future water supply reliability. For example, climate change is expected to reduce the availability of nearly all of Valley Water's supply sources since they rely on surface water availability, and this reduction in supply availability will likely be further exacerbated by existing and potential future regulations on imported water. During prolonged drought, the detrimental effects on future water supply reliability are likely to be magnified. For example, existing drought management strategies, such as transfers and exchanges of imported supplies, may be even more difficult to secure and execute during a prolonged drought. These impacts create vulnerabilities in water supply reliability, including reduced water supply availability and reduced operational flexibility.

3.1 Climate Change

3.1.1 Overview

The 2021 Climate Change Action Plan (CCAP) built on Valley Water's existing climate change response efforts and presented goals and strategies to continue and expand these efforts (Valley Water, 2021g). Climate change projections for temperature, precipitation, local reservoir inflows, drought and snowpack, wildfire, and sea level rise and their impacts to Valley Water were described in the CCAP. The climate change impacts utilized historical temperature and precipitation data in Santa Clara County from 1950 to 2019 to assess two emission scenarios, an intermediate scenario and a business-as-usual scenario. The major takeaways from these projection analyses included:

- Temperature is projected to increase by 1.8 to 2.0°F by 2050 under the intermediate and business-as-usual scenarios, respectively.
- Snowpack is projected to continue declining, with the Sierra Nevada snowpack declining by 30 to 60% by 2040-2065 under Representative Concentration Pathway (RCP) 8.5, thereby changing the timing and volume of annual runoff of imported water supplies.
- Greater frequency of extreme precipitation events is predicted to occur (e.g. atmospheric rivers), which would then be expected to make up a larger percentage of annual precipitation totals within shorter windows.
- Sea level rise in the San Francisco Bay is expected to accelerate; mean projections under RCP 8.5 expect a rise between 1.6 – 3.4 feet by 2050.

The combination of these factors is expected to decrease the availability of both local surface and imported water supplies as well as increase the frequency and severity of drought in the county.

3.1.2 Impacts to Valley Water

The effects of climate change are expected to limit source water availability and reduce operational flexibility of Valley Water's system. Imported water and local surface water supplies are the most obviously affected, as projected increases in temperature and subsequent less snowpack and runoff reduces flow into the Bay-Delta and local reservoirs. Imported supply availability may also be further limited by sea level rise as saltwater intrusion into the Delta reduces the amount of water available for export.[11]

Projected temperature increases are expected to increase evapotranspiration and subsequently increase outdoor water use, which will put additional constraints on supplies to meet peak-season water demand. Increased temperatures are also expected to increase reservoir evaporation both in State/Federal storage projects and local reservoirs. Figure 3-1 shows potential increases in local reservoir evaporation due to climate change as modeled by 16 Global Climate Models (GCMs) (Valley Water, 2021c). On average, peak month evaporation is expected to increase over 100 AF by the mid-century and nearly 400 AF by end-of-century.

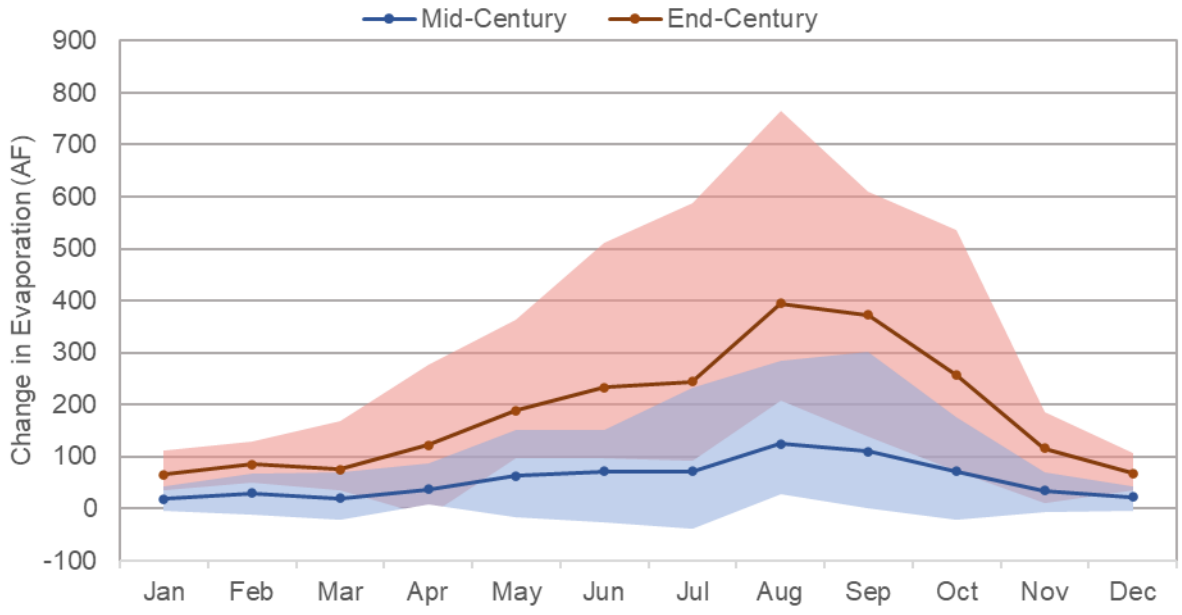

Figure 3-1: Projected Increase in Local Reservoir Evaporation due to Climate Change (Valley Water, 2021c)[12]

Declining availability of local and imported surface water supplies will increase pressure on managed groundwater recharge through two pathways. First, less imported and local surface water will be available for groundwater recharge, which will decrease groundwater storage. Second, if less surface water is

[11] Saltwater intrusion can be managed by reducing exports, increasing reservoir releases, or a combination of both.

[12] Blue line and shaded area reflect mid-century conditions while red line and shaded area reflect end of century conditions. Shaded areas reflect the range of the 16 models while the solid lines reflect the multi-model average.

available to supply the water treatment plants, groundwater pumping will increase, which will further reduce groundwater storage in the Santa Clara. While managed groundwater recharge programs will experience future deficits due to limited imported supply, the ensemble mean precipitation of downscaled global climate models indicate that precipitation may increase by 2045. Increased precipitation could increase wet year natural groundwater recharge, which could partially mitigate the loss of dry year surface supplies (Valley Water, 2021d). Sea level rise may pose additional risks to Valley Water's groundwater supplies based on saltwater intrusion. Seal level rise and saltwater intrusion are further discussed in Section 3.4.2.

Increased frequency of extreme precipitation and high-flow events (such as those caused by atmospheric rivers) can present additional challenges to Valley Water. High-flow events can be more difficult to capture and store in surface water reservoirs and increase the risk of downstream flooding, depending on the timing of the rainfall event. For example, if a significant percentage of annual rainfall occurs when reservoir rule curves are low (e.g. in early December), reservoir operations can limit the amount of water stored after the event.

3.2 Existing and Potential Environmental and Water Quality Regulations

3.2.1 Overview

Existing and potential environmental and water quality regulations coupled with drought conditions will add additional constraints to the availability of imported and local water supplies. A summary of existing and potential regulations is provided in Table 3-1 on the following pages.

Table 3-1: Summary of Existing and Potential Regulations (Continued on Following Page)

Potential or Existing Regulation	Impacted Supplies	Description / Key Features

Bay-Delta Plan	Imported (CVP, SWP, SFPUC)	• Establishes water quality and flow objectives in the Bay-Delta.
		• SWRCB in the process of updating the plan through two separate plan amendments:
		  • *Phase I (Resolution No. 2018-0059):* Established flow standards for the Lower San Joaquin River and its tributaries including the Stanislaus, Tuolumne, and Merced Rivers and revised salinity standards on the San Joaquin River and southern Delta.
		  • *Phase 2 (Currently in development):* Will establish flow standards for the Sacramento River and its tributaries, Delta eastside tributaries, Delta outflows, and interior Delta flows.
		  • *Phase 3 (not yet started):* Will implement the objectives adopted in Phases 1 and 2 through regulations or adjudicative water rights proceedings, or water quality certifications.
		• New instream flow requirements for the Tuolumne River could result in SFPUC water supply shortfalls of up to 50% in multiple dry years (SFPUC, 2021).
		• New flow requirements for the Sacramento River and Delta eastside tributaries are estimated to reduce Sacramento/Delta surface water supply by 17% (approximately 2 million acre-feet (MAF) (SWRCB, 2018).
		• The State is encouraging stakeholders to negotiate Voluntary Agreements (VAs) that could “reduce the volume of water that needs to be dedicated for instream purposes”. It is expected that a VA would result in significantly less impact from the Bay-Delta Plan on urban and agricultural water supplies, however, the adoption of VAs is uncertain.

National Marine Fisheries Service (NMFS) and US Fish and Wildlife Service (USFWS) Biological Opinions (BiOps)	Imported (CVP, SWP)	• Establishes requirements for operation of the CVP and SWP to protect ESA listed species, which affects the amount of water available for export to CVP and SWP service areas, including Santa Clara County. • USFWS and NMFS are in the process of re-initiating consultation on long-term operations of the CVP and SWP.

Table 3-1 (Continued): Summary of Existing and Potential Regulations

Potential or Existing Regulation	Impacted Supplies	Description / Key Features
CA Department of Fish and Wildlife (CDFW) 2020 SWP Incidental Take Permit (ITP)	Imported (SWP)	• Establishes requirements for operation of the SWP to protect CESA listed species, which affects the amount of water available for export to SWP service areas, including Santa Clara County. • The State may amend or issue a new ITP depending on the outcomes of the ongoing federal consultation.
Sustainable Groundwater Management Act (SGMA)	Imported (Semitropic)	• SGMA requires local Groundwater Sustainability Agencies in high- and medium- priority basins to develop and implement Groundwater Sustainability Plans (GSP) or to develop Alternatives to GSPs. • Semitropic Water Storage District's GSP was recently deemed inadequate by DWR (Gosselin, 2022). • Additional constraints could limit the ability to bank and recover supplies.
Water Right Curtailments	Imported (Exchanges/ Transfers, SFPUC)	• Curtailments limit access to full water rights during times of shortage and are issued by the SWRCB in order of seniority. Under severe drought conditions, curtailments can even affect senior water rights holders. • Curtailments can limit availability of transfers/exchanges during drought and/or affect the SFPUC's access to its water right.
FAHCE	Local Surface Water	• 1996 water rights complaint indicated Valley Water's reservoir operation impacted steelhead trout and Chinook salmon. • FAHCE developed a Settlement Agreement (initialed by the parties in 2003) to improve fish and aquatic habitat in Coyote, Stevens Creek, and Guadalupe River watersheds. The Draft Environmental Impact Report was released in 2021 and the Final EIR is being completed. • Starting in October 2020, a FAHCE Pilot Program is under way on Stevens Creek and Guadalupe Creek. • FAHCE implementation includes modifications to reservoir rule curves and releases (including winter and springtime pulse releases if storage thresholds are met).
Uvas and Chesbro Lake and Streambed Alteration Agreements (LSAA)	Local Surface Water	• LSAA governs reservoir operations and releases for Uvas and Chesboro. • Sets conditions for inter-basin transfers via the Uvas/ Llagas transfer pipeline. • Requires monitoring of temperature and turbidity.
Emerging Contaminant Maximum Contaminant Levels (MCLs)	Local Groundwater, Imported (Semitropic)	• The SWRCB Division of Drinking Water (DDW) has recently drafted an MCL for hexavalent chromium (Cr6). • The SWRCB DDW and US EPA are developing drinking water standards for at least two of the most known per- and polyfluoroalkyl substances (PFAS), perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). • These MCLs may require additional groundwater treatment affecting total recovery from local and imported groundwater supplies.

3.2.2 Impacts to Valley Water

Imported Supplies

Table 3-1 identifies Valley Water's impacted supply sources resulting from existing and potential regulations. Figure 3-2 summarizes preliminary CalSim II modeling[13] prepared for the State Water Contractors, which estimates annual SWP exports under several current and potential future scenarios (State Water Contractors, 2020). These scenarios and their assumptions are further described in Table 3-2. Under the preliminary modeling scenario that approximated potential Bay-Delta Plan conditions and climate change, overall SWP exports from the Delta watershed decrease by 0.6 MAF on an annual average basis. Although CVP exports were not explicitly identified in the model output presented to the State Water Contractors, it is not unreasonable to assume that CVP exports will experience similar projected impacts to that of SWP exports. Reductions of this magnitude would decrease Valley Water's overall availability of SWP/CVP supplies under all conditions and likely increase both the frequency and magnitude of supply shortages from current conditions.

Table 3-2: CalSim II Modeling Scenarios Estimating SWP Delta Watershed Exports (State Water Contractors, 2020)

Scenario Name	Scenario Description	Key Assumptions
Scenario 1B	2020 ITP	Current climate and 2020 SWP ITP and 2019 NMFS BiOp
Scenario 2	Current Trends	Climate change [(a)] and 2020 SWP ITP and 2019 NMFS BiOp
Scenario 3B	Increased Delta Outflow Requirements	Climate change and Delta outflow requirements approximating Bay-Delta Plan conditions without VAs
Notes: [(a)] Climate change conditions assume 2035 median projections plus 45 cm of sea level rise.		

[13] CalSim II is a water supply system model maintained by DWR and Reclamation that models the SWP and CVP systems from 1922 to 2003.

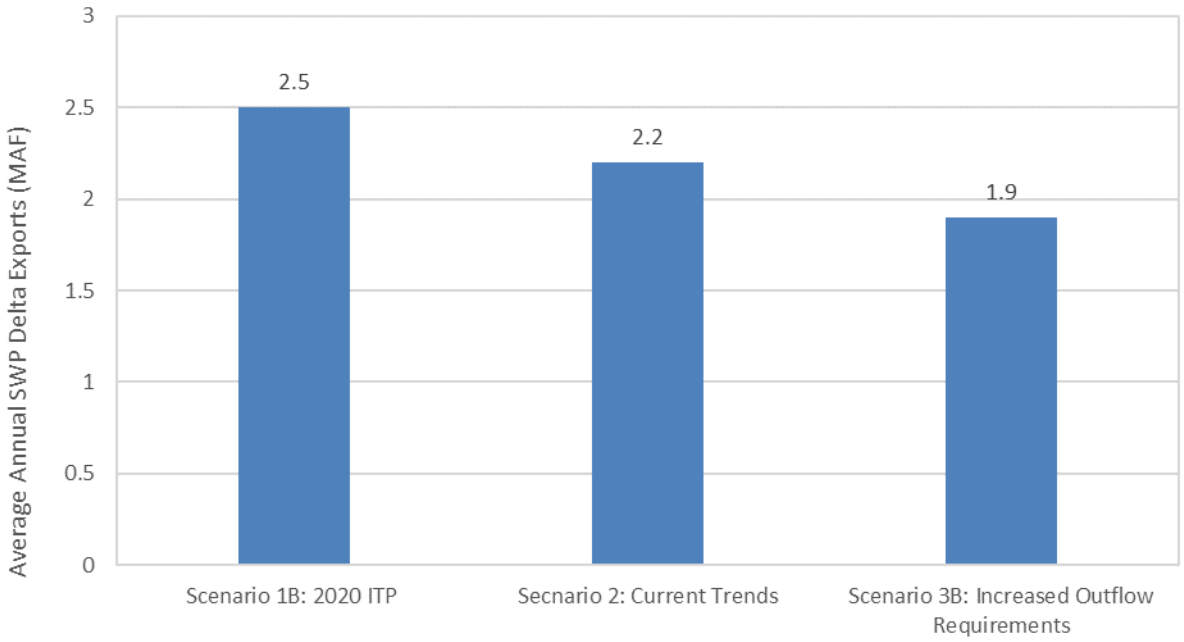

Figure 3-2: Comparison of Existing and Future Scenarios of Average Annual Estimated SWP Delta Watershed Exports (State Water Contractors, 2020)

SFPUC's supplies may also be severely impacted by implementation of the 2018 Bay-Delta Plan updates, which is of particular concern to the North County retailers who purchase water from SFPUC. SFPUC modeled projections of the reduction in supply availability due to the Bay-Delta Plan as a part of their Water Supply Reliability Assessment in their 2020 Urban Water Management Plan (SFPUC, 2021). Figure 3-3 summarizes projected wholesale water supply shortages under the 2018 Bay-Delta Plan (without a VA) under demands projected for 2025, 2035, and 2045. By 2045, it is projected that shortages could exceed 50%, or nearly 101 TAFY (90 million gallons per day (MGD)), in the fourth and fifth year of drought conditions. Efforts to develop a VA for the Tuolumne River are ongoing but have recently stalled, and the 2018 updates to the Bay-Delta plan are currently being litigated. If the Bay-Delta Plan is implemented according to the assumptions in the SFPUC's Water Supply Reliability Assessment, affected Santa Clara County retailers may increase usage of other supply sources, including local groundwater and Valley Water's treated water (Valley Water, 2021).

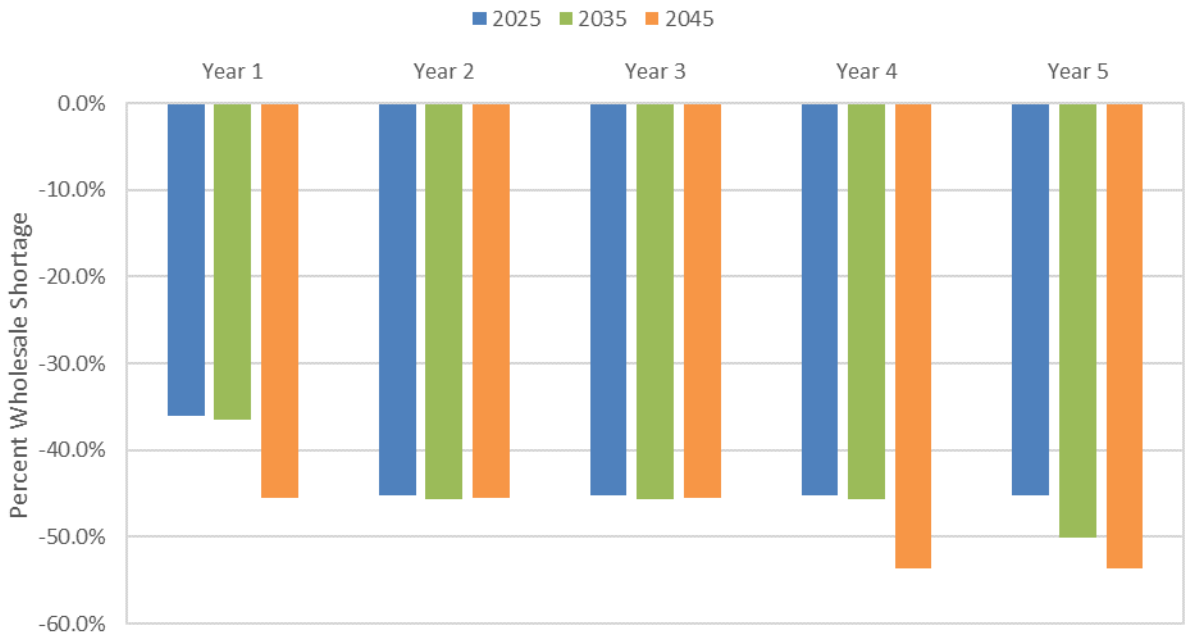

Figure 3-3: Projected SFPUC Wholesale Water Supply Shortages During a 5-Year Drought Under Bay-Delta Plan Conditions (SFPUC, 2021)

Water right curtailments and out-of-county groundwater sustainability concerns also have the potential to affect Valley Water's imported water reliability. Water right curtailments are a secondary risk to Valley Water as curtailments have the effect of further constraining the ability to execute exchanges and transfers of watershed supplies during drought.[14] Curtailments may also impact SFPUC's water rights, which could increase supply shortages for Valley Water's SFPUC-dependent retail agencies.

Semitropic Water Storage District is one of Valley Water's largest sources of supplemental supply during critical dry years. SGMA-related restrictions on Semitropic Water Storage District could limit Valley Water's access to its water stored in the Semitropic Water Storage Bank during drought years. In addition, DWR rejected the GSP for Semitropic Water Storage District, causing uncertainty in the basin's management and thus Valley Water's ability to retrieve stored water during droughts. Potential reductions in banked storage recovery would reduce both drought year supply and flexibility within Valley Water's operations.[15]

Local Supplies

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[15] Potential reductions in banked storage from SGMA may also affect other out-of-county banks being explored by Valley Water.

Table 3-1 identifies two existing and potential regulations affecting Valley Water's local supply sources: the FAHCE Settlement Agreement and emerging contaminant MCLs. The modifications to local reservoir rule curves and release rules codified in the FAHCE are likely to add additional constraints to Valley Water's groundwater recharge operations and raw water supply. Proposed pulse releases may result in flow conditions that exceed the capacity of diversions to existing groundwater recharge facilities. In addition, there is uncertainty in release rules for Coyote Creek.[16] Updated releases to Coyote Creek could result in additional operational constraints on Valley Water's local surface water system, particularly with the current shutdown of Anderson Reservoir.

MCLs of emerging contaminants are regulations that could affect local groundwater supply. The recently drafted Cr6 MCL and impending PFOA and PFOS MCLs, among other emerging contaminant regulations by the DDW and/or EPA, are regulations that may require investment in costly groundwater treatment for well owners depending on the existing water quality of the groundwater basin. Further detail about how MCLs of emerging contaminants could affect Valley Water are discussed in Section 3.4.

3.3 Infrastructure Condition and Constraints

3.3.1 Overview

As described in Section 2.3, Valley Water maintains a complex water supply system that integrates several different supply sources through its raw and treated water infrastructure. A diverse supply portfolio and redundancies in key raw and treated water facilities provide Valley Water with significant system flexibility to maintain service during droughts and other major system outages (Valley Water, 2016). Despite this flexibility, several existing infrastructure constraints present distinct challenges during droughts which include:

- Reliance on SWP exchange capacity to recover banked supplies in the Semitropic Groundwater Bank.
- Loss of local reservoir storage capacity due to the DWR, Division of Safety of Dams (DSOD) and the Federal Energy Regulatory Commission (FERC) restrictions.
- Concurrent system outages during drought, such as a failure of the South Bay Aqueduct[17] or a seismic event that breaches levees in the Delta.
- Retail agency distribution system limitations on supply substitution or blending.

3.3.2 Impacts to Valley Water

The infrastructure constraints identified above have the effect of limiting operational flexibility during drought. Specific impacts are summarized below.

[16] The FAHCE does not currently have a Final Environmental Impact Report for Coyote Creek.

[17] Rehabilitation of the South Bay Aqueduct will be required given its age and condition. The rehabilitation will likely take decades to complete and cost hundreds of millions of dollars.

Constraints on Semitropic Groundwater Bank Recovery

Valley Water recovers a majority of banked supplies from the Semitropic Groundwater Bank through an exchange with SWP supplies. This framework presents challenges when there is insufficient water being conveyed in the SWP system (Valley Water, 2017). During the 2012-2016 drought, Valley Water explored mechanisms for retrieving water stored in the Semitropic Groundwater Bank via the California Aqueduct Reverse Flow Project (Bureau of Reclamation, 2014). The proposed project would have installed temporary pumping facilities to reverse the flow direction of the California Aqueduct so that stored imported supplies could be delivered to contractors "upstream" of Semitropic Water Storage District but "downstream" of Valley Water. In exchange, Reclamation would have delivered an equal amount of water (less conveyance losses) to San Luis Reservoir for use by Valley Water. A separate project to pump and reverse flow previously banked supplies for direct delivery to San Luis Reservoir was also evaluated. Neither project was executed, and discussions with Valley Water staff indicated that the California Aqueduct Reverse Flow Project would be a strategy of "last resort" in future droughts. Valley Water has been able to take stored water from Semitropic Groundwater Bank consistent with its contract when needed to date; nevertheless, the projects illustrate the challenges of physical delivery, exchange, and timing constraints from the Semitropic Groundwater Bank if needed in the future. Recovery of banked water is constrained by timing of take, where take is generally lower in summer months when in-basin demands are higher.

Current Limits to Local Storage Capacity

DSOD and FERC have capacity restrictions in place on several of Valley Water's reservoirs, as summarized in Table 3-3.

Table 3-3: Current Reservoir Capacity Restrictions

Reservoir	Capacity (AF)	Restricted Available Capacity (AF)	Restricted Capacity (%)
Almaden	1,555	1,443	93%
Anderson	89,278	3,050 [(a)]	3% (deadpool)
Calero	9,738	4,414	45%
Coyote	22,541	11,843	53%
Guadalupe	3,320	2,134	64%

Notes:
[(a)] Deadpool capacity was updated in Valley Water's 51st Protection and Augmentation of Water Supplies (PAWS) report (Valley Water, 2022).

The DSOD and FERC restrictions have currently reduced over 103 TAF of total storage capacity from Valley Water's local reservoir system. The current loss of Anderson Reservoir (expected to be at least 10 years while seismic retrofits are completed) is the most challenging from a drought management perspective given Anderson Reservoir's overall capacity and ability to carry over storage from one year to another and supply the treated water system. While Anderson Reservoir is out of service, Valley Water staff consider Calero Reservoir to be "backup" storage to address short-term low supply conditions affecting the distribution system; however, Calero Reservoir has a small, restricted storage capacity (4,414 AF) and can only deliver about 40 cubic feet per second or 26 MGD by gravity to the raw water

distribution system, which is not sufficient to meet the demand of a single water treatment plant during an outage.

Concurrent System Outages

A system outage occurring concurrent with a drought event has the potential to severely limit the ability to deliver water. Valley Water's Infrastructure Reliability Plan (IRP) identified several outage scenarios reflecting relevant local hazards, including:

- Three earthquake scenarios, affecting the San Andreas and Calaveras faults,
- An extreme storm event,
- Outages to the Delta lasting 6-months and 24-months in duration, and
- An out-of-County power outage.

In each scenario, the IRP performed modeling and repair sequencing to determine minimum time to return service and to recommend infrastructure projects to enhance system redundancy and resiliency. The "worst case" scenario was determined to be a magnitude 7.9 earthquake on the San Andreas fault, which would disrupt treated water delivery to service[18] up to 30 days (Figure 3-4 shows an example repair sequence for this scenario). Treated water deliveries are expected to be returned to service within 14 days for both the extreme storm and out-of-County power outage scenarios. The Delta outage scenarios concluded that Valley Water could maintain service for the outage duration with 20% reductions in demand under above average local hydrologic conditions and groundwater storage, completion of key Water Supply Master Plan projects (e.g. indirect potable reuse)[19], and utilization of the SFPUC intertie. Returning and maintaining service during each of these scenarios, in particular the Delta outage, would be considerably more difficult with concurrent drought conditions and under summertime demands.

[18] Assumed to be wintertime minimum monthly demand.

[19] See Section 4 for additional description of Water Supply Master Plan projects.

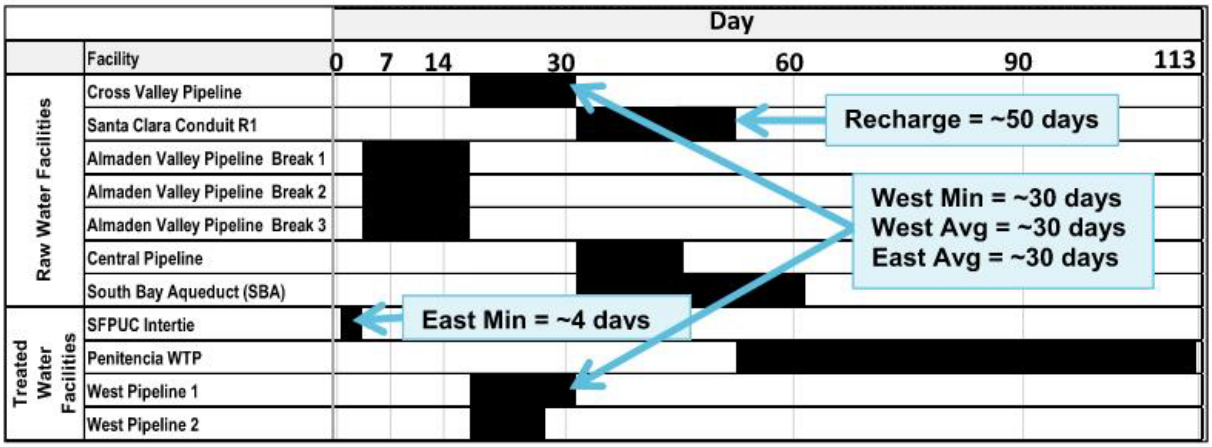

Figure 3-4: Example Repair Sequence for a San Andreas Earthquake Outage Scenario (Valley Water, 2016)

Retail Agency Distribution System Constraints

In general, retail agencies are flexible to switch supply sources (e.g. offsetting groundwater use with additional treated water purchases), but certain retailers have physical limits, operational limits, or water quality constraints that pose challenges for changing supplies. Several retail agencies' distribution systems have pressure zones that are heavily reliant on one supply source and do not currently have the system flexibility to easily switch sources (e.g. from treated water to groundwater) during an outage or a drought event that asymmetrically affects supply sources. Outside of pressure zone constraints, several retail agencies do not have connections to all supply sources provided in the county. For example, portions of Milpitas' service area do not have access to the groundwater basin. Similarly, other retail agencies, like Palo Alto and Purissima Hills Water District, do not have connections to Valley Water's treated water distribution system, and South County retailer agencies are entirely dependent on groundwater pumping.

3.4 Future Water Quality Conditions

3.4.1 Overview

Climate change and water shortages are expected to create additional challenges to maintaining water quality in the Delta. As noted in Section 3.1, sea level rise due to climate change will result in the need for additional outflow to maintain existing water quality objectives. Projected lower water levels in local reservoirs and warmer ambient temperatures will result in increased risk of harmful algal bloom (HAB) formation, including cyanobacterial blooms. Cyanobacteria may produce taste-and-odor compounds that impart undesirable taste and/or odor to surface water. In addition, some species of cyanobacteria can produce cyanotoxins which can cause illness and death in humans and animals.

Climate change driven rising water temperatures also pose risks to fish and aquatic habitats, and temperature management measures are included in FAHCE and the NMFS BiOp for long-term operations

of the CVP and SWP. Water temperature is an important parameter to monitor for under the Uvas and Chesboro LSAAs. In these agreements, water temperature is identified as a parameter to meet using in-stream flow requirements and volume. In addition, many of the creeks that Valley Water manages flow directly into the San Francisco Bay. Maintaining safe streamflow temperatures helps preserve wildlife in creeks and the aquatic habitats within Valley Water's watersheds.

Emerging contaminants like PFOA, PFOS, and Cr6 will also likely require additional treatment and operational measures to meet future state regulations. The SWRCB DDW recently published a draft MCL for Cr6 of 10 parts per billion (ppb) (DDW, 2022), and DDW and the EPA continue to work on establishing MCLs for individual PFAS compounds.

3.4.2 Impacts to Valley Water

With sea level rise and loss of Sierra snowpack, available imported supplies from the Delta watershed and transfers will likely be reduced. In response to saltwater intrusion into the Delta, additional water supplies will be required to manage Delta salinity and thus not be available for SWP/CVP allocations. The loss of snowpack will impact the ability of SWP/CVP to capture and store winter precipitation which will also impact SWP/CVP allocations.

Locally, HABs could become a concern especially when San Luis Reservoir is at its low point. Responding to HAB events in San Luis Reservoir or within Valley Water's in-county reservoirs could require additional watershed/lake management or result in the need for additional treatment plant optimization. Seeking additional treatment for local surface water sources will require costly investment by retail agencies and Valley Water. Treatment not only involves design, planning, and construction, but also higher operational costs to achieve treatment goals, and monitoring and maintenance costs. The COVID-19 pandemic demonstrated that supply chain problems can result in unreliable and expensive chemical deliveries when supply chain issues arise. Appropriate planning will be required to ensure treatment will be functional in the long-term to meet treatment goals and state regulations.

In addition to water quality impacts to imported and local surface water supplies, local groundwater supply may be further constrained due to emerging contaminant regulations and sea level rise/saltwater intrusion. During drought conditions, additional treatment constraints and/or water quality concerns could reduce operational flexibility if affected groundwater wells have been removed from service. Based on the recent 2021 Groundwater Management Plan (GWMP) (Valley Water, 2021d), most wells monitored by Valley Water, including annual monitoring network wells and public water system data reported to DDW were below the 10 ppb Cr6 draft MCL. However, for the principal aquifer zone, which is represented by wells primarily drawing water from depths greater than 150 feet, the maximum reading was 10 ppb in 2019. The presence of naturally occurring Cr6 sources may require affected well owners in limited geographic areas to pursue treatment depending on the adopted MCL.

The 2021 GWMP also noted that PFAS was detected in both the Santa Clara and Llagas Subbasins, but there were not many wells that found PFAS detections above current state health-advisory levels. However, ten water supply wells were taken offline by a water retailer out of an abundance of caution. Valley Water continues to collaborate with regulatory agencies and local water retailers to further assess the extent of PFAS impact in the basin, identify possible contributing sources, and take action if needed.

When MCLs are established for PFAS, Valley Water will need to further engage with retail agencies to better understand any potential changes to groundwater use.

As sea level rise increases (see Section 3.1) saltwater intrusion is expected to increase in the shallow aquifer zone primarily through an expected increase in tidal incursion into rivers and creeks. The 2021 GWMP identified that currently 49 wells (1.7% of current groundwater pumping) are at the highest risk to this vulnerability.

4. Future Baseline Water Shortages and Sectoral Impacts

If left unmitigated, future drought events will result in impacts to human health and safety, the economy, and the natural environment in Santa Clara County. This section explores impacts to these sectors informed by modeling of future water shortages developed under Valley Water's WSMP and most recent MAP report.

4.1 Modeled Future Water Shortages

The 2021 MAP conducted updated water supply system modeling using Valley Water's Water Evaluation and Planning (WEAP) system model that considered future assumptions reflecting several of the key vulnerabilities identified in Section 2.3.3 including climate change, future regulatory risks, and infrastructure constraints. Key modeling included:

- 2045 projected demands assume the achievement of Valley Water's long-term conservation goal (110 TAFY estimated from 1992 onward).
- 94 years of monthly historical hydrology adjusted with five climate change scenarios to bracket local impacts to hydrology (e.g. reservoir inflows, evaporation, precipitation, natural groundwater recharge, and impacts to water demand).
- Updated imported water (i.e., SWP/CVP) availability[20] based on recent DWR CalSim II model results presented in the 2019 Delivery Capability Report (DWR, 2020) adjusted downward to account for climate change and regulatory impacts (e.g. the Bay-Delta Plan).
- Dry year transfers/exchanges, outside of those associated with groundwater banks, were not considered since they are not included in the WSMP's Board-approved suite of projects as well as the risks associated with their long-term reliability.
- FAHCE reservoir operations.
- The model baseline contains representation of current infrastructure conditions and constraints (e.g. reduced SBA capacity), but assumes investment in key ongoing Capital Improvement Plan (CIP) projects, including completed dam seismic retrofits, upgrades to Vasona Pump Station, and the Rinconada Water Treatment Plant Reliability Improvement Project.
- No new projects identified in the WSMP or MAP were included in the baseline.

[20] Impacts to SFPUC supplies associated with the Bay-Delta Plan were not considered.

Based on these assumptions, the model baseline presents a reasonable estimation of future water supply conditions in Santa Clara County. Figure 4-1 shows a time series plot identifying modeled water supply shortages (presented as percent reduction in demand) resulting from drought events in the model period of record. The model identified six distinct drought events resulting in water supply shortages ranging from 10% to 40%. The event occurring between hydrologic years 1989-1995 was the most severe and included two consecutive years of 40% water shortages.

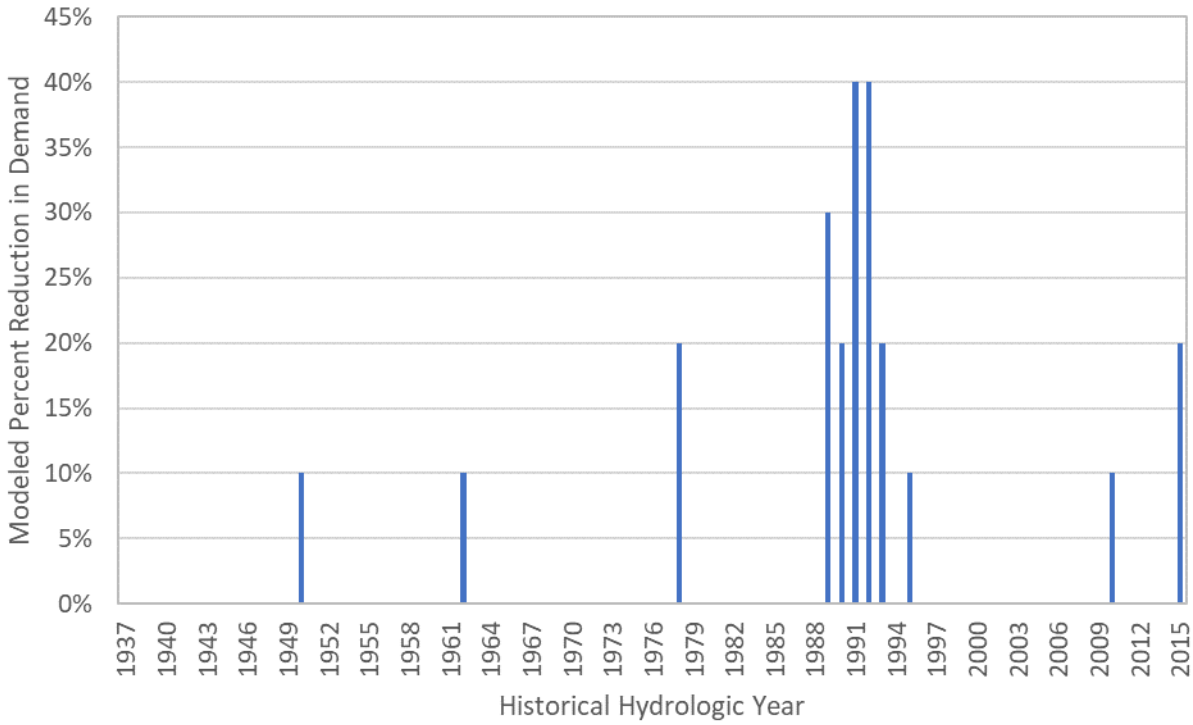

Figure 4-1: Modeled Water Supply Shortages Under Baseline Future Conditions

4.2 Impacts to Human Health and Safety

The largest potential for impacts to human health and safety from drought-driven water shortages are expected to occur within the county's residential customer base. Residential customers' health and safety may be affected primarily through lower available water quantities[21] for indoor activities including human consumption, cooking, and cleaning.

Prior studies (Valley Water, 2021a) have estimated county-wide average indoor use at 62% of total demand (38% reflects estimated outdoor use).[22] This indicates that most drought events modeled in Figure 4-1 can be managed to minimize human health and safety impacts by prioritizing reductions in

[21] Residential customers' health and safety are also at risk from decreased source water quality as identified in Section 3.4. Water treatment standards and facilities are expected to mitigate water quality concerns to residential customers however operational costs may increase under future conditions.

[22] Indoor/outdoor use was estimated based on total water use across all retail agency customer classes.

outdoor use. However, the most extreme years with 40% shortages will likely require reductions in indoor use. Greater efficiency in indoor use can mitigate impacts to human health and safety, however this may be challenging as several Valley Water retail agencies have average per capita residential water use close to 55 gallons per capita per day (gpcd).

4.3 Impacts to the Economy

Drought related impacts to the economy are examined by considering impacts of water shortages to the county's CII and agricultural customer base. The primary quantity related risk to CII customers concerns reduced availability of water for processes critical for business operations such as industrial cooling and food processing. CII customers are also affected by water quality degradation during drought events, in particular, industrial and tech companies whose processes are highly sensitive to changes in TDS. Reducing CII outdoor use (e.g. eliminating watering of non-functional turf) can mitigate impacts to core business processes, however the most extreme years (40% shortages) modeled in the MAP may be difficult to address with outdoor reductions alone. Disruptions in the quality and volume of water needed for critical business processes could result in increased cost for goods and services produced in the county.

Drought also poses significant risk to the county's agricultural sector. Higher temperatures and lower precipitation during drought events result higher agricultural demand for water. Without sufficient water availability, the agricultural sector could experience lower crop yields and pasture loss which may threaten the economic viability of existing farms and/or result in increased cost of agricultural goods produced in the county. Although the agricultural sector is not subjected to the same water use restrictions as M&I users in the county, the Valley Water Board strongly encourages agricultural water users to consider water shortage conditions in planting and irrigation practices. Agricultural users are also at risk of declining groundwater levels and/or dry wells if drought conditions are unchecked.

4.4 Natural Environment and Recreation

Drought events pose significant risks to the natural environment and associated outdoor recreation activities. Higher temperatures and lower precipitation experienced during drought can result in losses in tree and other plant growth, increase wildfire risk, and impair aquatic habitat/fisheries through reduced streamflow and higher water temperatures. Additionally, lower groundwater elevations can result in impairment of groundwater dependent ecosystems including wetlands, rivers, streams, and estuaries, seeps and springs, and terrestrial vegetation.

These impacts to the natural environment pose direct risks to outdoor recreation activities. Increased wildfires constrain the publics ability to recreate outdoors due to smoke inhalation concerns and immediate risk of fire hazards.[23] Meanwhile, lower levels in local reservoirs can result in restrictions on boating, and degradation and loss of aquatic ecosystems directly impact the publics access to aquatic recreation activities, such as fishing.

[23] Wildfires and associated smoke inhalation also pose significant risks to human health and safety and economic impacts dur to business disruption.

5. Mitigation Actions

Reclamation provides a specific definition of mitigation actions in its guidance for drought contingency planning, which states that:

[Mitigation actions] build long-term resiliency and mitigate risks posed by drought. Mitigation measures are actions, programs, and strategies implemented before drought to address potential risks and impacts. These actions are outside of regular water management activities and are intended to decrease sector vulnerabilities and reduce the need for response actions.

Mitigation actions are distinct from "response actions" in that mitigation actions are implemented before drought occurs rather than during a drought. For that purpose, this section focuses on preemptive projects and programs envisioned to increase water supply resiliency, decrease drought risk, and address the vulnerability factors identified in Section 2.3.3. Mitigation actions reviewed in this section were primarily selected from projects and programs identified within Valley Water's WSMP and associated MAP reports. Two additional mitigation actions were identified based on discussions with Valley Water staff.

This section is structured to:

- Review the planning objectives informing the mitigation actions,
- Provide an overview of the identified mitigation actions, and
- Evaluate the potential performance of the identified mitigation actions.

5.1 WSMP Planning Objectives Inform the Mitigation Actions

The WSMP identified several planning objectives that guide Valley Water's strategy for meeting future demands and ensuring reliable delivery of safe, and clean water to its customers. Valley Water uses these objectives to guide the development and evaluation of alternatives, projects, and programs. A full summary of the WSMP planning objectives is provided in Appendix A. Several of the WSMP planning objectives directly address the vulnerability factors identified in Section 2.3.3 and are summarized in Table 5-1 below. Consideration and adherence to these planning objectives will collectively help select project alternatives to address identified drought vulnerabilities.

Table 5-1: Summary of WSMP Planning Objectives and Vulnerabilities Addressed

Planning Objective	Objective Summary	Vulnerabilities Addressed
Provide a reliable water supply for municipalities, industries, agriculture, and the environment	Defines the importance of meeting service area demands, level of service (LOS) goals, maintaining groundwater storage, securing existing water supplies, reducing reliance on the Delta watershed, and maximizing water conservation and efficiency.	• Climate change • Regulatory conditions
Ensure drinking water quality	Focuses on protecting surface water and groundwater quality and meeting drinking water quality regulations.	• Water quality conditions
Maximize flexibility in the water supply system	Recognizes the importance of system flexibility, including prioritizing local control over operations and supplies, minimizing complexity, allowing for phased implementation of new projects, and explicitly accounting for climate change.	• Climate change • Infrastructure condition and constraints
Protect the Natural Environment	Identifies the importance of avoiding impacts to natural resources, protecting, and restoring aquatic ecosystems, and reducing greenhouse gas emissions.	• Climate change • Regulatory conditions • Water quality conditions
Ensure community benefits	Addresses Valley Water's mission to fulfill customer service goals, improve quality of life in the county, and provide flood protection benefits.	• Climate change • Infrastructure condition and constraints • Water quality conditions • Rate impacts

5.2 Overview of Potential Mitigation Actions

Several mitigation actions were identified within the WSMP and from discussions with Valley Water staff. Mitigation actions fall into two main categories:

1. Investment in WSMP Projects and Programs
2. Implementation of Management Actions

Specific mitigation actions are described in the following sections.

5.2.1 Investment in WSMP Projects and Programs

The WSMP identified dozens of future infrastructure projects[24] for Valley Water to consider implementing to advance the key planning objectives identified in Table 5-1. The most recent MAP provided updates to eight projects (summarized in

[24] A detailed summary of WSMP projects is provided in Appendix B.

Table 5-2) considered in the WSMP based on the most recent data and project information available. Valley Water will continue evaluation and participation in the broader list of projects defined in the WSMP to allow for future adjustments to account for project risk, climate change, future demands, and regulatory uncertainties. For the purposes of this vulnerability study, only the nine projects updated in the MAP were considered.

Table 5-2: Summary of WSMP Projects Updated in the 2021 MAP

Project	Description
Direct Potable Reuse (DPR)	Uses effluent from a wastewater partner for a direct potable reuse project to feed a new Advanced Water Purification Facility adjacent to the existing Silicon Valley Advanced Water Purification Center. Purified water would be blended with treated water at the Penitencia Water Treatment Plant.
Indirect Potable Reuse (IPR)	Uses effluent from regional wastewater facilities to feed a new Advanced Water Purification Facility. Purified water will be used for managed recharge at the existing ponds in the Los Gatos Recharge System.
Lexington Pipeline	Constructs a new pipeline between Lexington Reservoir and the raw water system to provide greater flexibility in using local water supplies. The pipeline would allow surface water from Lexington Reservoir to be put to beneficial use elsewhere in the county (increasing utilization of existing water rights) and potentially capture some wet-weather flows during high-flow events such as atmospheric rivers.
Los Vaqueros Reservoir Expansion (LVE)	Expands Contra Costa Water District's (CCWD) Los Vaqueros Reservoir from 160 TAF to 275 TAF. A new conveyance facility, the Transfer Bethany Pipeline, would be constructed as a part of the project, which would provide a direct connection of CCWD's system to the California Aqueduct above Bethany Reservoir, which serves the SBA.
Pacheco Reservoir	Enlarges Pacheco Reservoir from about 5,500 AF to 140,000 AF and connects the reservoir to Valley Water's raw water system through the Pacheco Conduit. Supply sources to the expanded reservoir are local creek inflows and imported supplies from San Luis Reservoir.
Refinery Recycled Water Exchange (RRWE)	An out-of-County recycled water project between Valley Water, Central Contra Costa Sanitary District (Central San), and CCWD. Allows Central San to provide recycled water to two oil refineries in Contra Costa County in lieu of CCWD's CVP water. CCWD's excess CVP water would then be supplied to Valley Water.
Sites Reservoir	Construction of a 1,500 TAF off-stream water supply reservoir north of the Delta that would collect flood flows from the Sacramento River. Potential to provide dry year yield and storage benefits. The project would be operated in coordination with the SWP and CVP.
Delta Conveyance Project (DCP)	Constructs alternative conveyance capable of diverting up to 6,000 cfs from the Sacramento River north of the Delta and delivering it to the SWP pumps at the southern end of the Delta. The project purpose is to restore and protect the reliability of SWP water deliveries and, potentially, CVP water deliveries south of the Delta, consistent with the State's Water Resilience Portfolio. Objectives include addressing sea level rise, minimizing public health and safety impacts from a major earthquake that causes Delta levee failure, protecting the ability of the SWP to deliver water when hydrologic conditions and regulations allow, and providing operational flexibility to improve aquatic habitat in the Delta.
Groundwater Bank Diversification	Investment in an additional out-of-county groundwater bank to diversify storage options, maximize "put" capabilities during wet years, and maximize "take" capabilities during dry years.

5.2.2 Implementation of Management Actions

In this vulnerability assessment, management actions are defined as non-infrastructure programs that have the potential to address Valley Water's identified vulnerability factors as well as overall drought risk. Several actions were identified within both the WSMP and from discussions with Valley Water staff, including:

- Continued implementation of the Water Conservation Strategic Plan,
- Evaluation of Forecast-Informed Reservoir Operations (FIRO), and
- Investment in new agreements.

Continued Implementation of the Water Conservation Strategic Plan

Continued implementation of county-wide conservation efforts is critical to maintaining and improving Valley Water's water supply reliability. Long-term conservation is a key element in the WSMP and directly addresses the planning objective to provide a reliable water supply for municipalities, industries, agriculture, and the environment. Valley Water has set specific targets to conserve 110 TAFY by 2040 relative to a 1992 water use efficiency baseline. Valley Water has made considerable progress towards these targets and estimates to have saved nearly 77 TAF as of 2021 through a combination of passive savings[25] and active programs[26].

In continued support of these conservation targets, Valley Water completed a Water Conservation Strategic Plan (Strategic Plan) in 2021 that provided a blueprint for meeting Valley Water's established conservation policy objectives and targets (Valley Water, 2021a). The Strategic Plan concluded that Valley Water will be able to meet its conservation targets provided that:

- Program implementation rates are increased, shifted towards the highest saving programs (e.g. programs targeting municipal outdoor water use) and focused on areas with historically low participation,
- Conservation staffing levels are increased to support expanded program implementation, and
- Valley Water continues to leverage new technology to enhance conservation, more effectively target new potential customers (including small site landscape customers) supported by data and trends, increase awareness of long-term conservation programs, and consider expanding program offerings to include savings related to reducing distribution system water loss.

A summary of the projected water savings required to meet the conservation targets is provided in Figure 5-1. Valley Water's savings of 77 AF in 2021 are 13 AF away from meeting the 2025 projected water savings needed to reach conservation targets.

[25] Passive savings include water conservation efforts that occurred due to changes in plumbing/building codes/markets which resulted in retail agency customers installing water efficient fixtures.

[26] Valley Water has implemented over 43 programs since the 1990s covering water saving devices and strategies in the single-family residential, multi-family residential, irrigation, agricultural, and commercial, industrial, and institutional (CII) water use sectors.

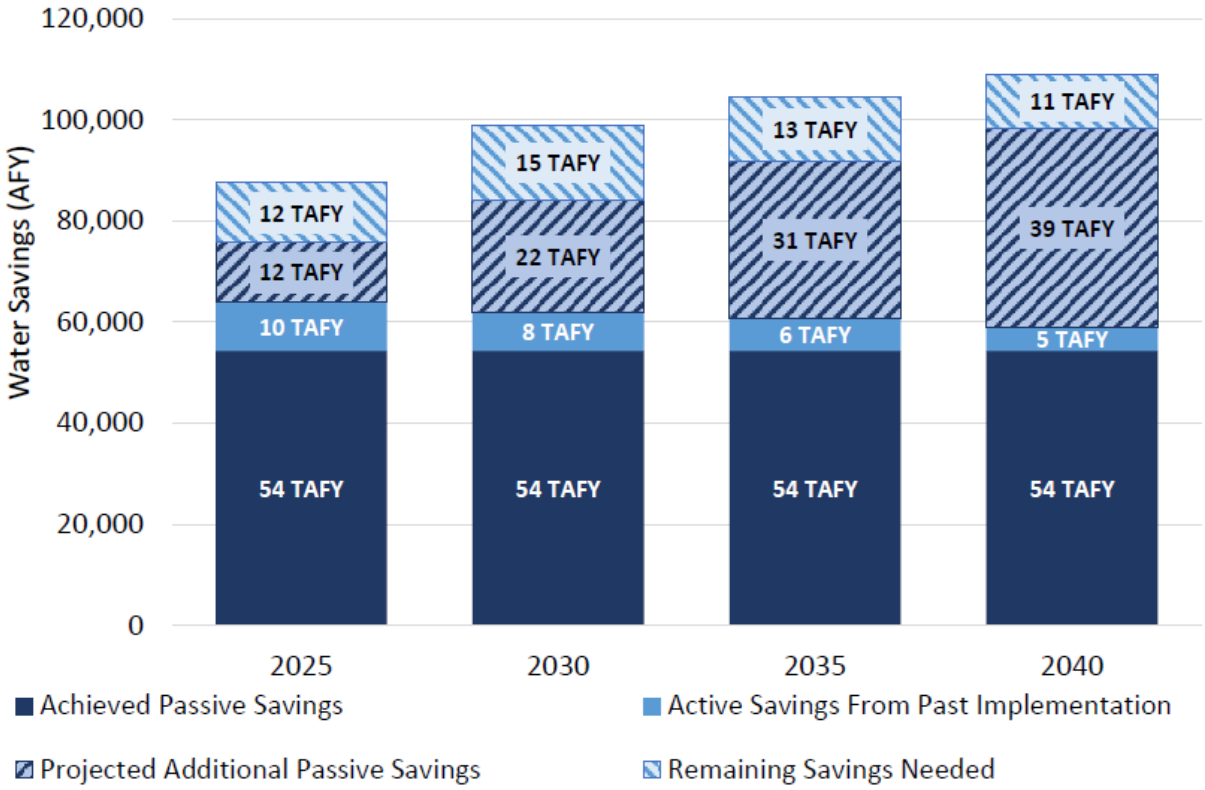

Figure 5-1: Projected Water Savings Needed to Reach Conservation Targets (Valley Water, 2021a)

Forecast-Informed Reservoir Operations (FIRO)

The American Meteorological Society (AMS) defines FIRO as "a reservoir-operations strategy that better informs decisions to retain or release water by integrating additional flexibility in operation policies and rules with enhanced monitoring and improved weather and hydrological forecasts" (AMS, 2022). FIRO has been applied (or is being considered) at several reservoirs and water supply agencies across the country, including Sonoma Water (Jasperse, et al., 2020), Yuba Water Agency, DWR (Somona Water, 2022), and the New York City Department of Environmental Protection (National Academies of Sciences, Engineering, and Medicine, 2018).

FIRO offers several potential benefits to reservoir managers including:

- Allowing deviations from established reservoir operations rule curves (e.g. allowing for increased storage) based on forecasted hydrology,
- Enacting flood preparation activities (e.g. pre-emptive diversions/releases to create additional freeboard, warnings to downstream stakeholders) ahead of forecasted high flow events,
- Implementation of early drought response ahead of seasonal projections of reservoir inflow, and/or
- Adjustments to reservoir release schedules for ecological benefit.

Discussions with Valley Water staff indicated that, even though Valley Water's reservoirs are not currently operated per FIRO, the practice is to allow for deviations from the operating rule curves if it is determined safe to do so based on the weather forecast. From time to time, reservoir storage is allowed to rise above operating rule curves based on a seven-day forecast window that incorporates current conditions (storage, inflow, and watershed saturation), a range of weather forecasts, and reservoir outlet capacity. Operations staff permit these deviations from the operating rule curves provided there is a clear pathway for returning storage back to the operating rule storage thresholds through full outlet releases. Deviations from the operating rule curves at the five reservoirs that have seismic restrictions (Table 3-3) is only acceptable if the weather forecast shows that storage will not exceed the seismic restrictions at these reservoirs.

As infrastructure investments enhancing the Valley Water's local reservoirs are implemented (e.g. seismic retrofits, Lexington Pipeline), there is the opportunity to evaluate the use of FIRO at Valley Water reservoirs. FIRO may be an attractive mitigation action for Valley Water given that FIRO contributes to overall operational flexibility and has the potential to lessen the impacts of increased hydrologic variability stemming from climate change. FIRO also provides opportunities to mitigate water quality and regulatory impacts. As an example, the New York City Department of Environmental Protection actively uses FIRO to assist in source water quality management and compliance with downstream ecological flow requirements (National Academies of Sciences, Engineering, and Medicine, 2018). Planning-level modeling would need to be conducted to test and calibrate specific operating rules that incorporate hydrologic forecasts as well as to better understand the benefits and risks to water supply reliability and potential impacts to downstream flows.

Investment in New Agreements

Water shortage vulnerability can also be mitigated through investment in agreements that secure additional supplies or allow for additional storage of imported (i.e., Delta watershed) supplies. Since the 2012-2016 drought, Valley Water has established long-term transfer agreements as well as single-year transfer agreements with options for future years. These options provide Valley Water with the "right of first refusal" of excess supplies for first year of future droughts that put Valley Water in a better position to secure available water. In parallel to developing longer-term agreements, Valley Water works closely with DWR and Reclamation staff to secure allocations to meet critical public health and safety needs in years of shortage.

5.2.3 Linkage Between Mitigation Actions and Key Vulnerabilities

The mitigation actions described in the prior sections can reduce the impact of the risk factors described in Section 3. Table 5-3 on the following pages summarizes how each mitigation action addresses the identified risk factors.

Table 5-3: Summary of Risk Factors Addressed by Mitigation Actions (Continued on Following Page)

Mitigation Category	Project/Program	Climate Change	Regulatory Risks	Infrastructure Constraints	Water Quality
Infrastructure Project	Direct Potable Reuse (DPR)	• Reuse supplies are less vulnerable to changes in temperature and precipitation	• New local supply supplements existing supplies vulnerable to regulatory impacts	• Increases system flexibility by adding an additional supply source	• Addition of highly purified water directly to distribution system or ahead of water treatment plant
Infrastructure Project	Indirect Potable Reuse (IPR)	• Reuse supplies are less vulnerable to changes in temperature and precipitation	• New local supply supplements existing supplies vulnerable to regulatory impacts	• Increases system flexibility by adding an additional supply source	• Addition of highly purified water to groundwater basin
Infrastructure Project	Lexington Pipeline	• Would allow for increased beneficial use of high flow events	• Would expand use of local supply to supplement existing supplies vulnerable to regulatory impacts	• Increases system flexibility by expanding the raw water system and adding an additional reservoir as a treatment plant source	• Addition of supply source increases options for optimization of source water quality
Infrastructure Project	Los Vaqueros Reservoir Expansion (LVE)	• Allows for better capture of high flows events under imported water contracts • Additional dry year storage	• Additional means for storing imported water during periods of excess availability	• Increases diversity in storage • Provides a new conveyance pathway to access imported water	• Addition of dry year storage increases options for optimization of source water quality
Infrastructure Project	Pacheco Reservoir	• Allows for better capture of high flows events under imported water contracts • Additional dry year storage	• Additional means for storing imported water during periods of excess availability	• Increases diversity in storage	• Addition of dry year storage increases options for optimization of source water quality
Infrastructure Projects and Programs	Refinery Recycled Water Exchange (RRWE)	• Recycled water supply less vulnerable to changes in temperature and precipitation	• Increases access to imported water via a recycled water exchange		

Table 5-3 (Continued): Summary of Risk Factors Addressed by Mitigation Actions

Mitigation Category	Project/Program	Climate Change	Regulatory Risks	Infrastructure Constraints	Water Quality
Infrastructure Projects and Programs	Sites Reservoir	• Allows capture of high flow events to offset imported water shortages • Additional dry year storage	• Additional imported supply source to supplement existing imported water supplies	• Increases diversity in storage • Increases system flexibility by adding an additional supply source	• Could assist in mitigating water quality related Delta outages
Infrastructure Projects and Programs	Delta Conveyance Project	• Mitigates sea level rise impacts with new intakes and tunnel	• Expected to improve reliability of Delta exports under future regulatory conditions	• Increases system flexibility by providing new conveyance for imported Water • Decreases risk of seismic and Delta Levee concerns	• Flexibility in diversions help manage salinity and mitigate water quality related Delta outages
Infrastructure Projects and Programs	Groundwater Bank Diversification	• Additional dry year storage • Groundwater banks avoid evaporative losses of surface water reservoirs	• Additional means for storing imported water during periods of excess availability	• Increases diversity in storage • Additional flexibility in recovering supply from out of county banks	• Addition of dry year storage increases options for optimization of source water quality
Management Actions	Water Conservation Strategic Plan	• Increased conservation helps offset increases in demand from higher temperatures and lower precipitation	• Increased conservation helps reduce strain on supplies vulnerable to regulatory impacts • Will assist in complying with SB 606 and AB 1668		
Management Actions	FIRO	• Could allow for increased beneficial use of high flow events	• Could expand use of local reservoirs to supplement existing supplies vulnerable to regulatory impacts	• Could allow for increased operational flexibility in delivering raw water and/or making reservoir releases	• Could be developed to consider and improve in-stream flow conditions
Management Actions	Transfer Agreements	• Could help offset some near-term impacts of climate change	• Could help offset lower allocations of imports resulting from regulatory conditions but may be more difficult to execute		

5.3 Mitigation Action Performance Evaluation

This section provides a performance evaluation of the mitigation actions identified in Section 5.2 based on planning objectives identified in the WSMP and modeled performance from the 2021 MAP (Valley Water, 2021c). The 2021 MAP conducted updated water supply system modeling using Valley Water's WEAP system model that considered future assumptions reflecting several of the key vulnerabilities identified in Section 2.3.3 including climate change, future regulatory risks, and infrastructure constraints. Key modeling assumptions and performance of the baseline scenario were discussed and presented in Section 4.1.

Seven of the infrastructure projects identified in Table 5-2Table 5-2 (excluding DCP and an additional out-of-county groundwater bank)[27] were modeled independently[28] and in combination as future project portfolios.[29] A key performance metric from the WEAP modeling for the 2021 MAP is frequency of overall supply shortage. Figure 5-2Figure 5-3 summarizes the frequency and severity[30] of the shortages for each modeled project and portfolio. Projects and portfolios that met Valley Water's current dry year LOS goal of meeting at least 80% of annual water demand are highlighted in teal.

[27] DCP was not modeled in the 2021 MAP since it is in early stages and there is insufficient information on proposed operations to model and quantitatively evaluate water supply benefits to Valley Water. Additional out-of-county groundwater banking for diversifying put and take capabilities was evaluated on a conceptual basis.

[28] Certain projects, including DPR and IPR, were modeled considering multiple potential capacities.

[29] Eight distinct project portfolios were evaluated combining new supply sources with different storage/conveyance options. Portfolio were developed in a collaborative process among Valley Water staff and with Board input.

[30] Severity of shortage was organized consistent with current Water Shortage Contingency Plan (WSCP) Stages 2-5.

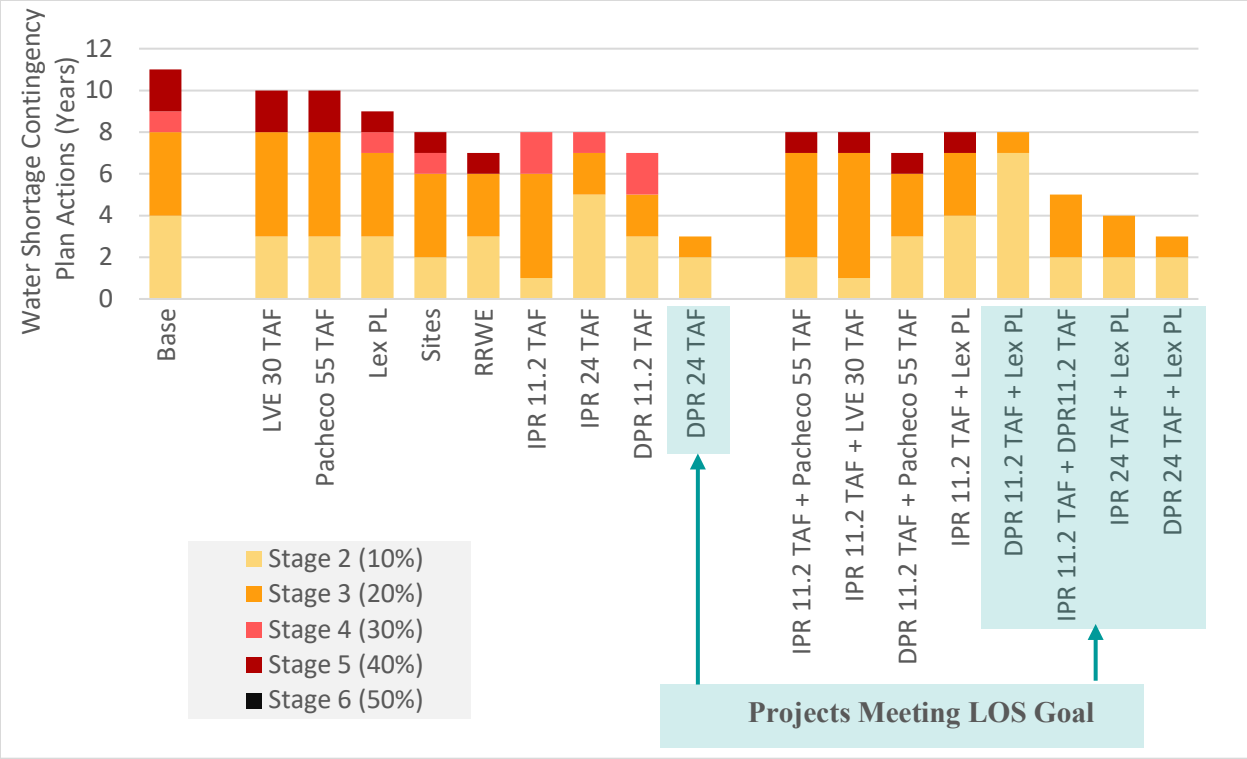

Figure 5-2: Modeled Frequency and Severity of Expected Shortages Assuming 2045 Demand Under the Median Climate Change Scenario (Valley Water, 2021c)

Key conclusions from the 2021 MAP analyses are as follow:

- Shortages under baseline conditions, which include meeting conservation targets, reach 40%.
- Shortages under all conditions would be higher if conservation targets are not met.
- No single project modeled, aside from DPR at 24 TAF, meets the dry year LOS goal.
- Implementation of potable reuse is critical to meeting the dry year LOS goal.
- The combination of Lexington Pipeline with any of the direct potable reuse alternatives modeled is sufficient to meet the dry year LOS goal.
- Diversification of out-of-county storage could improve operational flexibility and Valley Water's ability to transport supplies to local storage during a drought.

Project risks, including cost, ability to implement (e.g., maturity of planning/design, regulatory/permitting requirements), operability concerns (e.g., project interdependencies, lack of local control), supply reliability issues (e.g., future timing and availability of source water), and susceptibility to climate change impacts differ between each of the projects identified in Section 5.2. The MAP conduced a detailed risk assessment (see Appendix C) so that project risks are identified and can be mitigated. Cost and other project risks are important to consider as projects are selected and implemented.

In addition to the modeling and analysis presented in the 2021 MAP for the mitigation measures defined in Section 5.2, three additional analyses could be added in future MAP analyses to align with other vulnerability factors and mitigation measures identified in this report, including:

- Modeling to evaluate FIRO practices, such as testing of efficacy at Anderson reservoir, integration with other projects (e.g. Lexington Pipeline), and consideration of various forecast windows.
- More explicit consideration of anticipated reductions to SFPUC deliveries resulting from the Bay-Delta Plan.
- Inclusion of Delta Conveyance Project in water supply modeling when data becomes available from DWR.

6. Mitigation Action Prioritization

Prior sections of this memorandum provided a review of the key factors expected to exacerbate Valley Water's vulnerability to drought, identified potential mitigation actions to address these vulnerabilities, and evaluated their potential performance based on the modeling analyses supporting the WSMP and MAP. This section provides a conceptual prioritization of the mitigation actions identified in Section 5 consistent with the findings of the WSMP and MAP[31]:

- Meeting Valley Water's conservation targets is important in managing water demands and is a key component of meeting LOS goals. For that purpose, implementing the Water Conservation Strategic Plan should continue to be prioritized. A thorough messaging campaign will be essential to the success of implementing the Water Conservation Strategic Plan.
- Investing in transfer agreements and advocating for enhanced protection of minimum imported (i.e., SWP and CVP) delivery should continue to be prioritized to relieve dry-year stressors until Valley Water can implement WSMP infrastructure projects and complete seismic retrofits. However, vulnerabilities to imported water sources are expected to increase in the future, so these investments may be most beneficial in the short-term.
- Potable reuse projects are important new supply sources that are less impacted by climate change, drought, and the environmental flow regulations. IPR projects also have the potential to improve groundwater basin water quality through the introduction of purified water to the receiving basin. Per the 2021 MAP modeling, reuse projects are critical new supply sources to supplement the declining availability of existing local sources and imported water supplies and increasing system demand. Reuse projects should continue to be prioritized through the WSMP, MAP, and Purified Water P3.

[31] Formal ranking, analysis of risks, and prioritization of projects and programs (including the mitigation actions identified in this memorandum) are primary functions of Valley Water's WSMP and MAP processes. Valley Water's existing WSMP and MAP allows for phased implementation of these projects and continued evaluation of project risks to ensure that the right-sized project(s) are funded and implemented at the appropriate time.

- Implementation of projects and programs that enhance beneficial use of local supplies, such as Lexington Pipeline and FIRO should continue to be explored. These local projects have the potential to both mitigate climate change vulnerabilities and increase system flexibility. The efficacy of FIRO is currently unknown and should be studied at Lexington Reservoir, Anderson Reservoir, and other local reservoirs.
- Diversification of storage projects by investing in one or more of LVE, Pacheco Reservoir, Sites, Sisk Dam Raise, and additional out-of-County groundwater banks increase operational flexibility to be able to put larger volumes of wet year supplies into storage and retrieve larger volumes of water during dry years to improve overall reliability.
- Given the importance of imported water as water supply source during dry years, continued participation and evaluation of projects that address long-term reliability of imported supplies, such as DCP, should be continued.

Lastly, future vulnerabilities that are not modeled in the 2021 MAP (i.e., expected reductions in SFPUC deliveries, local/out-of-County water quality impacts, and short-term outages concurrent with drought) should continue to be tracked and more explicitly analyzed for potential impacts to future water supply shortages and development/selection of mitigation action portfolios.

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Appendix A: WSMP Planning Objectives

See Appendix A of the Water Supply Master Plan 2040

https://www.valleywater.org/sites/default/files/Water Supply Master Plan 2040_11.01.2019_v2.pdf

Appendix B: WSMP and MAP Project Descriptions

Direct Potable Reuse: Uses effluent from the SJ/SC Regional Wastewater Facility to feed a new Advanced Water Purification Facility adjacent to the existing Silicon Valley Advanced Water Purification Center (water from Sunnyvale and Palo Alto is considered in other portfolios). The purified water is then blended with treated water at the Penitencia Water Treatment Plan. Assumes up to 24,000 AFY of advanced treated recycled water would be available by FY28.

Indirect Potable Reuse to Los Gatos Ponds: Uses effluent from the SJ/SC Regional Wastewater Facility to feed a new Advanced Water Purification Facility adjacent to the existing Silicon Valley Advanced Water Purification Center (water from Sunnyvale and Palo Alto is considered in other portfolios). The purified water is then recharged in the existing Los Gatos ponds. Assumes up to 24,000 AFY of advanced treated recycled water would be available for groundwater recharge by FY28. This is portfolio 1a in the CWRMP.

Lexington Pipeline: Constructs a pipeline between Lexington Reservoir (or Vasona Reservoir) and the raw water system to provide greater flexibility in using local water supplies. The pipeline would allow surface water from Lexington Reservoir to be put to beneficial use elsewhere in the county, increasing utilization of existing water rights. In addition, the pipeline will enable Valley Water to capture some wet-weather flows that would otherwise flow to the Bay. Water quality issues would require pre-treatment/management.

Los Vaqueros Reservoir: Expansion of Los Vaqueros Reservoir from 160TAF to 275TAF. Transfer Bethany Pipeline would connect Contra Costa Water District's (CCWD's) system to Bethany Reservoir, which serves the South Bay Aqueduct and the California Aqueduct. Valley Water can participate in conveyance only or have 30 TAF of dedicated storage in the reservoir. The project will be operated by a Joint Powers Authority.

Pacheco Reservoir: Enlarges Pacheco Reservoir from about 5,500 AF to 140,000 AF and connect the reservoir to the Pacheco Conduit. The primary water sources to fill the expanded reservoir would be natural creek inflows and CVP supplies.

Refinery Recycled Water Exchange: A regional recycled water project between Valley Water, Central Contra Costa Sanitary District (Central San), and Contra Costa Water District (CCWD). The project will allow Central San to provide recycled water to two oil refineries in Contra Costa County in lieu of CCWD's CVP water. CCWD will then provide its freed-up CVP supply to Valley Water. The project may make available up to 11,000 AFY of water on average.

Sites Reservoir: Construction of a 1,500 TAF off-stream water supply reservoir north of the Delta that would collect flood flows from the Sacramento River. Potential to provide dry year yield and storage benefits. The project would be operated in coordination with the SWP and CVP.

Delta Conveyance Project: Constructs alternative conveyance capable of diverting up to 6,000 cfs from the Sacramento River north of the Delta and delivering it to the SWP pumps at the southern end of the Delta. The project purpose is restore and protect the reliability of SWP water deliveries and, potentially, CVP water deliveries south of the Delta, consistent with the State's Water Resilience Portfolio. Objectives include addressing sea level rise, minimizing public health and safety impacts from a major earthquake that causes Delta levee failure, protecting the ability of the SWP to deliver water when hydrologic conditions and regulations allow, and providing operational flexibility to improve aquatic habitat in the Delta. This project is in the early planning phase, so costs and yields have not been determined.

Appendix C: 2021 MAP Risk Assessment

https://scvwd.legistar.com/View.ashx?M=F&ID=9893656&GUID=BE892B4F-9EC0-46D8-A91C-E49F9149BC65

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Santa Clara Valley Water District

File No.: 22-0968

Agenda Date: 8/29/2022
Item No.: 4.3.

COMMITTEE AGENDA MEMORANDUM

Water Conservation and Demand Management Committee

SUBJECT:
Standing Items Report.

RECOMMENDATION:

A. This agenda item allows the Committee to receive verbal or written updates and discuss the below subjects. These items are generally informational; however, the Committee may request additional information from staff:

B. This is informational only and no action is required.
Staff may provide a verbal update at the 8/29/2022, meeting if there is reportable/updated information.

1. Sustainable Groundwater Management Act (SGMA)
2. Flood MAR
3. Agricultural Water Use Baseline Study

SUMMARY:
Standing Items will allow regular reports from staff on subjects that may be of interest to the committee members.

ATTACHMENTS:
None.

UNCLASSIFIED MANAGER:
Candice Kwok-Smith, 408-630-3193

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File No.: 22-0969

Agenda Date: 8/29/2022
Item No.: 4.4.

COMMITTEE AGENDA MEMORANDUM

Water Conservation and Demand Management Committee

SUBJECT:
Review Water Conservation and Demand Management Committee Work Plan, the Outcomes of Board Action of Committee Requests; and the Committee's Next Meeting Agenda.

RECOMMENDATION:
Review the Committee work plan to guide the committee's discussions regarding policy alternatives and implications for Board deliberation.

SUMMARY:
The attached Work Plan outlines the approved topics for discussion to be able to prepare policy alternatives and implications for Board deliberation. The work plan is agendized at each meeting as accomplishments are updated and to review additional work plan assignments by the Board.

BACKGROUND:
Governance Process Policy-8:

The District Act provides for the creation of advisory boards, committees, or commissions by resolution to serve at the pleasure of the Board.

Accordingly, the Board has established Advisory Committees, which bring respective expertise and community interest, to advise the Board, when requested, in a capacity as defined: prepare Board policy alternatives and provide comment on activities in the implementation of the District's mission for Board consideration. In keeping with the Board's broader focus, Advisory Committees will not direct the implementation of District programs and projects, other than to receive information and provide comment.

Further, in accordance with Governance Process Policy-3, when requested by the Board, the Advisory Committees may help the Board produce the link between the District and the public through information sharing to the communities they represent.

ATTACHMENTS:
Attachment 1: WCaDMC Work Plan

UNCLASSIFIED MANAGER:
Candice Kwok-Smith, 408-630-3193

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Water Conservation and Demand Management Committee Work Plan 2022

Item No.	Work Plan Item	Meeting Date	Discussion/Action Item	Accomplishment Date and Outcome
Water Supply Master Plan Strategy 1: Secure Existing Supplies Goal: 99,000 AF conservation by 2030				
1	Monitor progress in achieving water conservation goal: • Amount of water conserved • Water conservation program success metrics (participation, lawn conversion, etc.) • Water conservation outreach success metrics • Collaboration with retailers • Communicating about water waste • Engage and support private-sector stakeholders, local, state, and federal agencies that promote water conservation. • Drought Updates – progress toward 15% reduction compared to 2019, specific actions	Annually (April) Monthly	Discussion/Action Items	**Accomplished January 24, 2022:** The Committee received the monthly update on progress towards Valley Water Resolution 21-68's water use reduction target and drought-related water conservation efforts and took no action. **Accomplished February 23, 2022:** The Committee received the monthly update on progress towards Valley Water Resolution 21-68's water use reduction target and drought-related water conservation efforts and took no action. **Accomplished March 21, 2022:** The Committee received the monthly update on progress towards Valley Water Resolution 21-68's water use reduction target and drought-related water conservation efforts and took the following action: The Committee approved by roll call and unanimous vote staff's recommendation for Board consideration to adopt a new resolution restricting watering to two

Item No.	Work Plan Item	Meeting Date	Discussion/Action Item	Accomplishment Date and Outcome
				days maximum limit that includes ornamental landscaping and lawns. *The Board approved this recommendation at the April 12, 2022, meeting.* **Accomplished April 25, 2022:** The Committee received the following presentations: •The monthly update on progress towards Valley Water Resolution 21-68's water use reduction target and drought-related water conservation efforts •The Water Conservation Program Savings update for Fiscal Year 2021 (FY21), •The One-Year Check-In for the Online Shopping Cart (eCart) Program for Free Water-Saving Devices, •The Youth Commission Drought Awareness and Conservation Toolkit, the Committee took no action. **Accomplished May 19, 2022:** The Committee received the following presentations: •Monthly update on progress towards achieving Valley Water Resolution 21-68's water use reduction target and enforcement for Valley Water Resolution 22-20 and took the following action:

Item No.	Work Plan Item	Meeting Date	Discussion/Action Item	Accomplishment Date and Outcome
				The Committee unanimously approved recommending that the Board consider adopting the Ordinance ADOPTING DROUGHT OUTDOOR WATER CONSERVATION AND ENFORCEMENT MEASURES." *The Board approved this recommendation at the May 24, 2022, meeting.* •Water Conservation Program **Accomplished June 27, 2022:** The Committee received the following presentations: •Monthly update on progress towards achieving Valley Water's water use reduction target and water conservation efforts related to the drought emergency. •Water Fixture Replacement Program One Year Update, •Commercial, Industrial, Institutional, and Multi-Family Residential (CII/MF) Water Conservation Programs, The Committee took no action. **Accomplished July 25, 2022:** The Committee received the following presentations: •Monthly update on progress towards achieving Valley Water's water use reduction target and water

Water Conservation and Demand Management Committee Work Plan 2022

Item No.	Work Plan Item	Meeting Date	Discussion/Action Item	Accomplishment Date and Outcome
				conservation efforts related to the drought emergency, and •Evaluating Water Conservation Program Opportunities. The Committee took no action on the above items.
2	Recommend policies towards water conservation goal: • Water Conservation Strategic Plan • Making Water Conservation a Way of Life • Review the current 15% call for water use reduction compared to 2019 water use • New programs • SCW funding	TBD	Discussion/Action Items	
Water Supply Master Plan Strategy 2: Increase Water Conservation and Stormwater Capture Goal: Increase water conservation to 109,000 AF/year and increase stormwater capture to 1,000 AF/year by 2040.				
3	Monitor progress in achieving the long-term water conservation and stormwater capture goal: • Investments in no-regrets package/stormwater resource plan implementation • Ag Water Use Baseline study • Collaboration with UC Water on Flood Managed Aquifer Recharge (Flood MAR)	January 2022 March 2022 January 2022 March 2022	Discussion/Action Items	**Accomplished January 24, 2022:** The Committee received presentations on the Agricultural Water Use Baseline Study and on the Flood MAR and took no action. **Accomplished March 21, 2022:** The Committee received presentations on the Agricultural Water Use Baseline

Water Conservation and Demand Management Committee Work Plan 2022

Item No.	Work Plan Item	Meeting Date	Discussion/Action Item	Accomplishment Date and Outcome
				Study and on the Flood MAR and took no action. **Accomplished April 25, 2022:** The Committee received no reports on the Agricultural Water Use Baseline Study or the Flood MAR. **Accomplished May 19, 2022:** The Committee received no reports on the Agricultural Water Use Baseline Study or the Flood MAR. **Accomplished June 27, 2022:** The Committee received no reports on the Agricultural Water Use Baseline Study or the Flood MAR. **Accomplished July 25, 2022:** The Committee received no reports on the Agricultural Water Use Baseline Study or the Flood MAR.
4	Recommend policies towards achieving long-term water conservation goal • Collaboration on ordinances	2022	Discussion/Action Items	
Water Supply Master Plan Strategy 3: Optimize the Use of existing supplies and infrastructure				

Water Conservation and Demand Management Committee Work Plan 2022

Item No.	Work Plan Item	Meeting Date	Discussion/Action Item	Accomplishment Date and Outcome
5	South County Recharge	TBD	Discussion/Action Items	
6	Sustainable Groundwater Management Plan (SGMA) • Updates on our 2021 Groundwater Management Plan • New Groundwater Sustainability Plan (GSP) for North San Benito Subbasin	Monthly	Discussion/Action Items	**Accomplished January 24, 2022:** The Committee received a verbal update on the Groundwater Sustainability Plans and took no action. **Accomplished March 21, 2022:** The Committee received a verbal update on the Groundwater Sustainability Plans and took no action. **Accomplished April 25, 2022:** The Committee received presentations on: •The Proposed Zones of Controlled Drinking Water Well Construction for the Purified Water Project, and •A verbal update on the Groundwater Sustainability Plans, and the Committee took no action. **Accomplished May 19, 2022:** The Committee received no report. **Accomplished June 27, 2022:** The Committee received no report.

Water Conservation and Demand Management Committee Work Plan 2022

Item No.	Work Plan Item	Meeting Date	Discussion/Action Item	Accomplishment Date and Outcome
				Accomplished July 25, 2022: The Committee received no report on the Groundwater Sustainability Plans, but received a presentation on: •Draft Ordinance establishing zones of controlled drinking water well construction for the Purified Water Project, and the Committee took no action.
Future Demand Projections				
7	Monitor progress and recommend policies • Urban Water Management Plan • CCAP water supply portion • Water Shortage Contingency Plan update (Drought Response Plan update)	February 2022 March 2022	Discussion/Action Items	**Accomplished February 23, 2022:** The Committee received a presentation on the Drought Response Plan and took no action. **Accomplished March 21, 2022:** The Committee received a presentation on the Drought Response Plan – Benchmark Study and took no action.
Work Plan Updates				
8	Review Water Conservation and Demand Management Committee Work Plan, the Outcomes of Board Action of Committee Requests; and the Committee's Next Meeting Agenda.	Monthly	Discussion/Action Items	**Accomplished January 24, 2022:** The Committee reviewed and discussed the Water Conservation and

Item No.	Work Plan Item	Meeting Date	Discussion/Action Item	Accomplishment Date and Outcome
				Demand Management Committee Work Plan and took no action. **Accomplished February 23, 2022:** The Committee reviewed and discussed the Water Conservation and Demand Management Committee Work Plan and took no action. **Accomplished March 21, 2022:** The Committee reviewed and discussed the Water Conservation and Demand Management Committee Work Plan and took no action. **Accomplished April 25, 2022:** The Committee reviewed and discussed the Water Conservation and Demand Management Committee Work Plan and took no action. **Accomplished May 19, 2022:** The Committee reviewed and discussed the Water Conservation and Demand Management Committee Work Plan and took no action. **Accomplished June 27, 2022:** The Committee reviewed and discussed the Water Conservation and Demand Management Committee Work Plan and took the following action:

Water Conservation and Demand Management Committee Work Plan 2022

Item No.	Work Plan Item	Meeting Date	Discussion/Action Item	Accomplishment Date and Outcome
				The Committee unanimously approved requesting that the Board consider approving a Board Workshop on the Water Supply Master Plan (WSMP) MAP process to engage all that would benefit (Board, Committee and Community) when staff is ready **Accomplished July 25, 2022:** The Committee reviewed and discussed the Water Conservation and Demand Management Committee Work Plan and took no action.
Additional Items:				
9	Outreach messaging for water-wise concerns.			
10	Find opportunities to ensure new development have improved water wise features • Proactively engage to ensure new development have improved water wise features and review major developments within the county • Work on contacting the building trades about water conservation practices. • Work on contacting Planning Commissions on adopting the model ordinances	March 2022		**Accomplished March 21, 2022:** The Committee received a presentation on improving water wise features for new developments and took no action.

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