APPENDIX F: SUPPLY RELIABILITY MEMO

TECHNICAL MEMORANDUM

TO: **Sarah Fleury, SCV Water**

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RE: **Final SCV Water Supply Reliability Assessment**

1. Introduction

Reliable water supply planning requires an understanding of how individual sources perform under varying hydrologic conditions and how those sources function together as an integrated system. Santa Clarita Valley Water Agency (SCV Water) manages a diverse portfolio of imported and local water supplies that are operated in coordination to meet customer demands under both average and stressed conditions.

SCV Water's supply portfolio is structured such that imported supplies serve as the primary source under normal conditions, while groundwater, storage, and transfers provide increasing levels of support under dry conditions, and recycled water provides a consistent baseline across all year-types. This integrated approach reflects how supplies are managed in practice to respond to variability in hydrologic conditions, operational constraints, and system demands.

This Water Supply Reliability Technical Memorandum (TM) provides the supply side assumptions and availability estimates used in the Water Supply Reliability Assessment (WSRA). Accordingly, the purpose of this memorandum is to define the availability, constraints, and operational assumptions of each supply source, including imported water, groundwater, recycled water, storage, and transfers. The analysis is informed by a combination of historical hydrologic records, State Water Project delivery projections, groundwater sustainability planning, contractual supply agreements, and SCV Water operational assumptions. These sources provide the basis for characterizing supply availability and constraints under the defined planning scenarios.

The analysis presented in this memorandum focuses on how each supply source performs under defined planning scenarios and how the overall supply portfolio responds to changing conditions. This includes characterization of supply availability under normal, single dry, and multiple dry year conditions, as well as identification of key operational and system constraints that influence supply reliability.

This memorandum does not compare supplies to projected demands or determine supply sufficiency. The comparison of available supplies to projected demands, and the resulting evaluation of supply reliability, is presented in the 2025 Urban Water Management Plan (UWMP). The assumptions described in this TM form the basis for evaluating supply reliability relative to demand in the UWMP.

This TM is coordinated with, but distinct from:

- The Climate Change Technical Memorandum, which establishes climate-related context and assumptions; and
- The Drought Risk Assessment, which evaluates system performance under extended drought conditions and associated shortage risks.

Together, these documents provide a comprehensive and coordinated framework for evaluating SCV Water's water supply reliability under a range of future conditions.

2. Water Supply Reliability Requirements in the 2025 UWMP

a. Purpose of Water Supply Reliability Requirements

The UWMP Act requires urban water suppliers to evaluate the reliability of their water supplies in relation to projected demands under a range of hydrologic conditions, including normal, single-dry, and multiple dry year scenarios. These requirements are intended to ensure that UWMPs assess whether available water supplies are sufficient to meet anticipated demands over the planning horizon, and to identify potential vulnerabilities in the water supply portfolio. Reliability assessments support long-term water resource planning by evaluating how individual sources and the overall system perform under varying conditions, accounting for operational constraints, supply variability, and planned supply and infrastructure investments.

This TM provides the detailed data, assumptions, and analytical methods used to quantify supply availability and evaluate reliability across planning scenarios. The TM supports, but does not replace, the summary conclusions presented in the UWMP. **Table 1** lists the applicable California Water Code (CWC) requirements addressed by this memorandum.

b. Applicable Water Code Sections

Table 1: Applicable Water Code Sections

UWMP Requirement
CWC Section 10635(a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.
CWC Section 10631(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier as described in subdivision (a) [in five-year increments to 20 years or as far as data is available],1 providing supporting and related information, including all of the following: (1) A detailed

UWMP Requirement
discussion of anticipated supply availability under a normal water year, single dry year, and droughts lasting at least five years, as well as more frequent and severe periods of drought, as described in the drought risk assessment. For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change. (2) When multiple sources of water supply are identified, a description of the management of each supply in correlation with the other identified supplies. (3) For any planned sources of water supply, a description of the measures that are being undertaken to acquire and develop those water supplies.
CWC Section 10631 (b)(1) A detailed discussion of anticipated supply availability under a normal water year, single dry year, and droughts lasting at least five years, as well as more frequent and severe periods of drought, as described in the drought risk assessment. For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change.
CWC Section 10635 (b)(2) A determination of the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.
CWC Section 10635 (b)(4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.
CWC Section 10634 The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.
CWC Section 10620(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

c. Interpretation of Supply Reliability Requirements

In practice, UWMP reliability requirements are addressed through evaluation of how available water supplies compare to projected demands under defined hydrologic conditions and operational constraints. This includes consideration of:

- The availability and reliability of each individual water supply source, including imported water, groundwater, recycled water, and other local supplies.
- The integrated performance of the overall water supply portfolio, including how sources are managed in combination to meet demands.

- The influence of hydrologic variability on supply availability under normal, single-dry, and multiple dry year conditions.
- Operational, infrastructure, and institutional constraints that may limit the ability to fully utilize available supplies.
- The role of planned supply projects, programs, and management actions in maintaining or improving long-term reliability.

Supply reliability considerations are therefore embedded across multiple UWMP components, including water supply characterization, water supply reliability analysis, drought risk assessment, and water shortage contingency planning. This memorandum focuses specifically on the technical evaluation of supply availability and system performance under defined planning scenarios.

d. SCV Water Approach to Compliance

SCV Water's approach to meeting UWMP reliability requirements is based on applying consistent, scenario based assumptions across all supply sources and evaluating system performance as an integrated portfolio. This approach reflects how water supplies are managed in practice and ensures that reliability is assessed under representative operating conditions. Key elements of this approach include:

- **Scenario Based Reliability Evaluation**
  SCV Water evaluates water supply reliability under normal water year, single dry year, and multiple dry year (five-year drought) conditions, consistent with UWMP requirements. These scenarios are used to assess how supply availability varies under different hydrologic conditions and to evaluate system performance over the planning horizon.

- **Integrated Portfolio Analysis**
  Reliability is assessed based on the performance of SCV Water's overall supply portfolio rather than individual sources in isolation. This approach reflects how imported water, groundwater, recycled water, storage, and conservation actions are managed together to meet system demands under varying conditions.

- **Consistency with Other Technical Memoranda**
  This Water Supply Reliability TM provides the quantitative analysis of supply availability and demand comparison across scenarios. It is coordinated with, but distinct from:

  - The Climate Change Technical Memorandum, which establishes climate-related context and assumptions; and
  - The Drought Risk Assessment, which evaluates system performance under extended drought conditions and associated shortage risks.

- **Separation of Reliability Assessment from Shortage Response**
  The reliability assessment evaluates whether supplies are sufficient to meet projected demands under defined planning scenarios. It does not prescribe specific shortage response actions or demand reduction measures, which are addressed separately in the Water Shortage Contingency Plan.

e. Consideration of Interested Parties' Input

SCV Water convened Workshop 4: Water Supply Portfolio on February 18, 2026 (Workshop 4), as part of the ongoing development of the 2025 UWMP. This session followed three previous workshops: one focused on Board-visioning to guide the UWMP process, another introducing the UWMP process to the broader community, and another meeting introducing SCV Water's various water supplies. Building on those conversations, Workshop 4 shifted from broad engagement to a deep dive into one of the UWMP's core technical topics: water supply reliability, drought risk assessment, and an overview of the Water Shortage Contingency Plan (WSCP).

The workshop's purpose was to:

- Provide an overview of SCV Water's water supply portfolio and planning assumptions
- Present results of the Drought Risk Assessment (DRA)
- Reinforce how the UWMP and WSCP function together
- Gather stakeholder feedback on the draft portfolio through a Strength, Weaknesses, Opportunities and Threats (SWOT) exercise
- Poll stakeholders on appropriate planning tools for different risk scenarios
- Serve as a key validation milestone prior to preparation of the Draft UWMP

Interested parties' input from Workshop 4 provided a qualitative assessment of water supply reliability risks and opportunities, including identification of key strengths such as groundwater stability and supply diversification, and key risks such as imported water dependence, climate variability, and regulatory uncertainty.

These themes are reflected in the technical analysis presented in this TM. Specifically, imported water variability is addressed through allocation assumptions and climate uncertainty as a backbone throughout all scenarios. Workshop feedback further emphasized the perceived importance of groundwater as a stabilizing supply source. The TM expands on assumptions related to groundwater production, basin management constraints, and alignment with the Groundwater Sustainability Plan, ensuring transparency regarding how local supplies contribute to modeled reliability outcomes.

3. State Water Project (SWP)

a. Overview

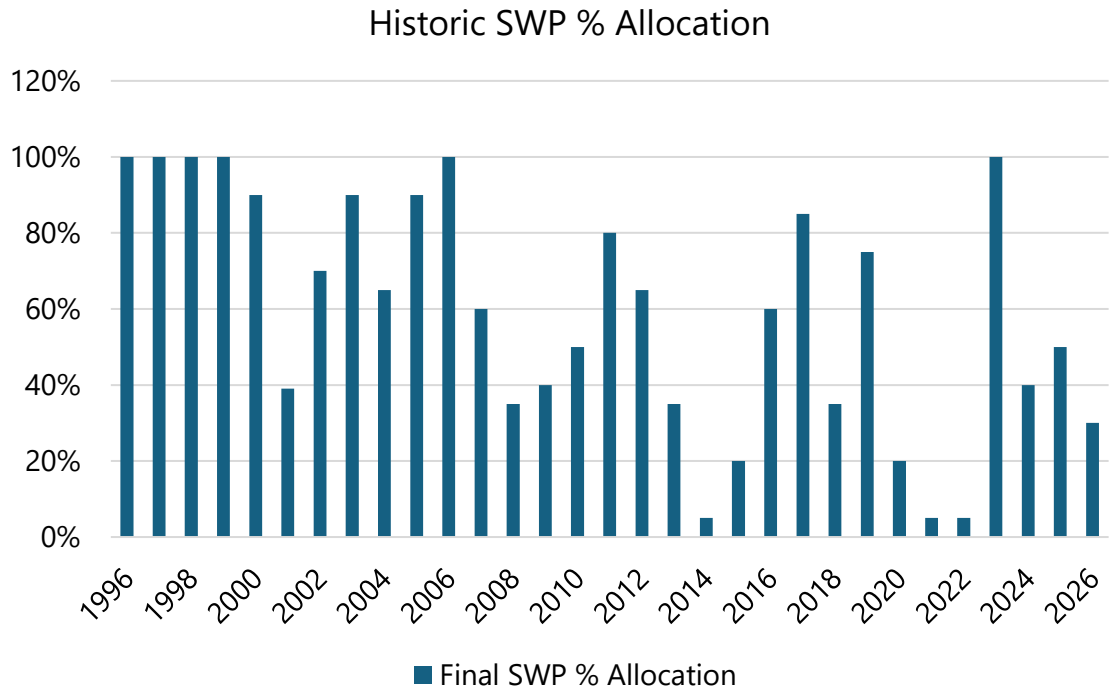
The State Water Project (SWP) is a major component of California's statewide water supply system, designed to capture, store, and convey water from Northern California to regions of demand throughout the state. The system includes a network of reservoirs, pumping facilities, and aqueducts that transport water from the Sacramento–San Joaquin Delta to urban and agricultural users, including Southern California. The SWP plays a critical role in meeting statewide water demands by redistributing water from areas of relative abundance to areas with limited local supply.

SWP deliveries are governed by long-term contracts with participating agencies, with each contractor assigned a maximum annual allocation, referred to as "Table A" water. This Table A amount represents the basis for available water among contractors in a given year. Actual deliveries vary annually depending on hydrologic conditions, system operations, and regulatory constraints, and are allocated proportionally

among contractors based on available supply. In addition to Table A water, the SWP provides other types of supplies under specific conditions, including Article 21 water, which is available on an interruptible basis when excess water and system capacity exist, and carryover water, which allows contractors to store unused allocations for future use.

The total maximum Table A contract amount for all SWP contractors is approximately 4.17 million acre-feet per year (MAFY), representing the full contractual delivery capacity of the system. However, actual deliveries are typically lower and vary substantially from year to year. Historical deliveries between 2015 and 2024 ranged from approximately 277 thousand acre-feet (TAF) in dry years to over 3,100 TAF in wet years, with an average of approximately 1,659 TAF per year, illustrating the high degree of variability inherent in SWP supplies. SCV Water has a maximum SWP Table A contract amount of 95,200 acre-feet per year (AFY), which represents its proportional share of SWP supplies available for allocation among contractors. **Figure 1** shows the historic SWP allocations by water year from 1996-2026.

Figure 1: Historic SWP % Allocation by Water Year, 1996-2026

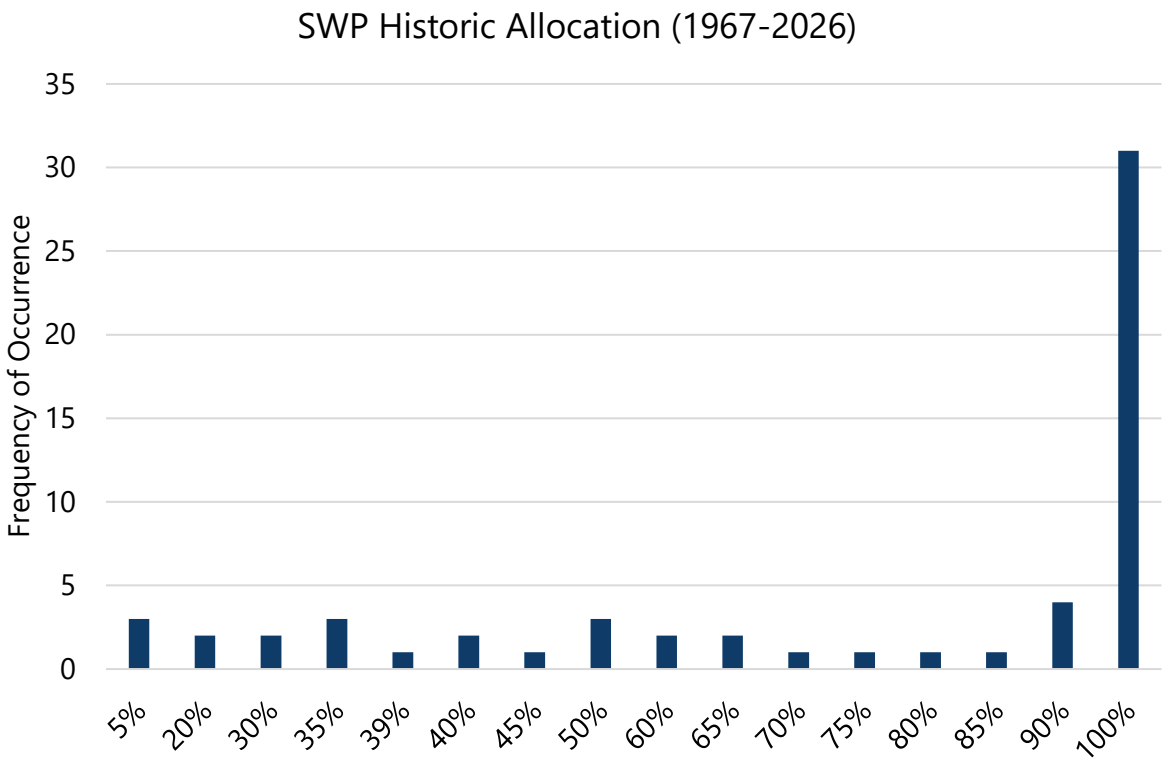


Source: SWP Allocations 1996 - 2026 including Settlement Agreement %s

The reliability of SWP deliveries is influenced by a combination of hydrologic conditions, regulatory requirements, operational constraints, and infrastructure limitations. Hydrologic variability, including differences in precipitation, snowpack, and runoff timing, is a primary driver of supply availability. In addition, SWP operations are subject to a complex regulatory framework in the Sacramento–San Joaquin Delta, including water quality objectives (WQOs), endangered species protections, and coordinated operational requirements with the Central Valley Project (CVP). These requirements can limit pumping,

require reservoir releases, and constrain the timing and volume of exports, thereby affecting overall delivery capability. **Figure 2** illustrates the historical distribution of SWP annual allocation percentages from 1967 through 2026. Rather than presenting allocations as a time series, this figure shows how frequently different allocation levels have occurred over the historical record, providing a clear representation of the variability inherent in SWP supplies. A 5% SWP allocation happened just three times in 60 years: 2014, 2021, and 2022.

Figure 2: Distribution of SWP Annual Allocation Percentages (1967–2026)



Source: SWP Table A allocations 1967 - 1995; M&I Allocation

Source: SWP Allocations 1996 - 2026 including Settlement Agreement %s

To support long-term planning and provide a consistent basis for evaluating SWP supply reliability, the California Department of Water Resources (DWR) prepares the SWP Delivery Capability Report (DCR). The DCR provides a statewide assessment of the expected long-term performance of the SWP under existing and projected conditions, using system modeling that incorporates hydrologic variability, regulatory constraints, infrastructure capacity, and operational requirements. The 2025 Draft DCR represents the most current available information on SWP delivery reliability and incorporates updated modeling, operational assumptions, and regulatory conditions relative to the 2023 DCR. As such, the 2025 Draft DCR is used as the primary reference for evaluating SWP supply availability in this analysis.

The DCR reflects DWR's responsibility to operate the SWP in a manner that balances multiple objectives, including providing a reliable water supply, protecting ecosystem health in the Delta, complying with state and federal regulatory requirements, and maintaining critical water infrastructure. As a result, the delivery capability estimates presented in the DCR represent not only physical water availability, but also the effects of environmental regulations, legal agreements, and system operations that govern SWP performance.

The DCR also incorporates updated modeling approaches and assumptions to reflect current conditions, including adjustments to historical hydrology to better represent recent climate conditions, as well as evaluation of risk-informed future scenarios. These scenarios are used to assess how SWP delivery capability may change over time due to factors such as climate variability, regulatory changes, and evolving system conditions.

Within the UWMP framework, the DCR serves as the foundational source of information for characterizing imported water supply reliability. The DCR provides a consistent, statewide basis for estimating SWP allocation levels, delivery variability, and long-term supply availability under a range of conditions. These estimates are not intended to represent a single outcome, but rather to inform local planning by providing a range of plausible delivery conditions that can be integrated with local supplies, operational strategies, and demand projections.

Accordingly, the 2025 UWMP uses the DCR to inform assumptions regarding SWP supplies under normal, single-dry, and multiple dry year conditions. SCV Water relied on Draft 2025 DCR tables provided to each SWP contractor for their specific agency which looks at DWR modeled existing and future conditions. These assumptions are incorporated into the broader water supply reliability analysis, which evaluates the performance of SCV Water's integrated supply portfolio and its ability to meet projected demands over the planning horizon.

b. Legal and Institutional Consideration

i. Coordinated Operations Agreement (COA)

The Coordinated Operation Agreement (COA) was originally signed in 1986 and defines how the state and federal water projects share the available water supply and the obligations including senior water right demands, water quality, and environmental flow requirements imposed by regulatory agencies. The agreement calls for periodic review to determine whether updates are needed in light of changed conditions. After completing a joint review process, DWR and United States Bureau of Reclamation (USBR) agreed to an addendum to the COA in December 2018, to reflect water quality regulations, biological opinions and hydrology updated since the agreement was signed.

The COA Addendum included changes to the percentages for sharing responsibilities for in basin uses, sharing available export capacity, and the periodic review process. The 1986 Agreement required CVP to meet 75% of the in basin uses and the SWP to meet 25%. The COA Addendum now distinguishes responsibility based on water year type and CVP responsibilities range from 80% in wet years to 60% in critical years. SWP responsibility ranges from 20% in wet years to 40% in critical years. Additionally, the COA Addendum changed sharing export capacity. Previously, export capacity was shared 50% to CVP and 50% to SWP. The COA addendum changed this formula to be 65% CVP and 35% SWP during balanced conditions in the Delta and 60% CVP and 40 % SWP

during excess conditions. Overall, based on modeling, these change results in an approximately 115,000 AFY on average reduction in long-term SWP supplies. Finally, the 2018 COA Addendum updated the periodic review process to require review of the COA Agreement and Addendum every 5 years.

c. Environmental and Ecosystem Health Context

i. Biological Opinions and Incidental Take Permit for SWP

In September 2021, USBR and DWR reinitiated consultation with National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) on the Coordinated Long-term Operations of the CVP and SWP due to anticipated modifications to the proposed action that may cause effects to ESA-listed species and/or designated critical habitat not analyzed in the 2019 biological opinions. In late 2024, the USFWS and NMFS issued new Biological Opinions for the Long-Term Operation of the CVP and SWP. Additionally, in late 2024, the California Department of Fish and Wildlife (CDFW) issued to DWR a new Incidental Take Permit for the Long-Term Operation of the SWP pursuant to the California Endangered Species Act (CESA) with regards to state-protected white sturgeon1 and state- and federally-protected delta smelt, longfin smelt, winter-run Chinook and spring-run Chinook. The operational restrictions in the federal 2024 Biological Opinions and the state Incidental Take Permit were consistent in 2024. In December 2025, USBR issued a revised Record of Decision (ROD) that adopted modified operational requirements for the CVP, called "Action 5". Some of the operational restrictions in the Action 5 differ from those in the 2024 state Incidental Take Permit for the SWP.

In 2025, DWR received two state Incidental Take Permit amendments to its 2024 state permit, but there continues to be some misalignment between state and federal operation plans. DWR and USBR are committed to minimizing potential misalignments and relying on existing mechanisms for accounting under the state and federal Coordinated Operations Agreement (COA) to minimize any redirected water supply impacts.

Currently, there is no litigation challenging the 2024 biological opinions or the modification to the ROD that adopted Action 5 for CVP operations. Certain federal water contractors filed litigation challenging the state Incidental Take Permit. The previous legal challenges to the 2019 Biological Opinions have been dismissed.

d. Water Quality and Treatment

i. Water Quality Control Plan/Health Rivers and Landscapes/Voluntary Agreements

The State Water Resources Control Board (SWRCB) is responsible for adopting and updating the Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta Plan), which establishes water quality control objectives and flow requirements needed to provide reasonable protection of beneficial uses in the watershed. The SWRCB has been engaged for many years in updating the Bay Delta Plan.

The Bay-Delta Plan is being updated through phases. Phase 1 is updated the Bay-Delta Plan objectives for the San Joaquin River and its major tributaries and the southern Delta salinity objectives. Phase 2 is updating the objectives for the Sacramento River and Delta and their major tributaries. (Plan amendments). On

December 12, 2018, through SWRCB Resolution No. 2018-0059, the SWRCB adopted the Phase 1 Plan amendments and Final Substitute Environmental Document (SED), establishing the Lower San Joaquin River flow objectives and revised southern Delta salinity objectives. On February 25, 2019, the Office of Administrative Law approved the Plan amendments. This plan requires an adaptive range of 30-50 percent of the unimpaired flow to be maintained from February through June in the Stanislaus, Tuolumne, and Merced Rivers, with a starting point of 40 percent of the unimpaired flow. During this same time period, the flows at Vernalis on the San Joaquin River, as provided by the unimpaired flow objective, are required to be no lower than a base flow of 1,000 cubic feet per second (cfs), with an adaptive range between 800 and 1,200 cfs, inclusive. The plan also updated the south Delta salinity standards for protecting agricultural beneficial uses. While this part of the plan was updated, there is ongoing litigation challenging the updated plan and has not yet been implemented.

The SWRCB is also considering Phase 2 Plan amendments focused on the Sacramento River and its tributaries, Delta eastside tributaries (including the Calaveras, Cosumnes, and Mokelumne rivers), Delta outflows, and interior Delta flows. SWRCB staff are recommending an adaptive range of 45-65 percent unimpaired flow objective with a starting point of 55 percent. Once the SWRCB adopts Phase 2 Plan amendments, the Board will assign implementation responsibility in both Phase 1 and 2. At this time, the potential impacts to the SWP are unknown but this implementation approach would have a large impact on water users, including SWP public water agencies (PWA)s, in the Phase 2 planning area.

The State and several water users proposed an alternative to the staff recommendation for the Phase 2 Bay-Delta Plan update in 2018, known as the Program for Implementing Healthy Rivers and Landscapes (HRL) (previously called Voluntary Agreements). The HRL offers an alternative to the SWRCB staff's flow only approach. The HRL, if agreed to by the SWRCB, would be concurrently implemented with the unimpaired flow approach (for non-HRL participants) and would become the Program of Implementation for the Plan amendments. The SWRCB staff included the HRL as an alternative in their draft Program of Implementation. The HRL will be implemented through enforcement agreements. The HRL includes flow commitments, and funding for flow commitments, habitat actions, and a robust science program. The HRL provides an opportunity to combine flow and habitat actions to protect fish and wildlife beneficial uses of water, while providing certainty for water users. It also offers a chance to avoid years of hearings and litigation and to instead begin implementation of the updated Bay-Delta Water Quality Control Plan upon adoption by the SWRCB.

If the HRL is adopted by the SWRCB, one of the key operational requirements for spring outflow in the 2024 SWP Incidental Take Permit will be replaced and aligned with the flow commitments in the HRL. The draft 2025 DCR assumed that this would occur and hence shows minor improvements in the SWP allocations compared to the 2023 DCR.

e. Climate Change and Future Conditions

i. SWP Water Supply Estimates

DWR prepares the biennial SWP DCR to assist SWP contractors and local planners in assessing the availability of supplies from the SWP. DWR issued its most recent update, the draft 2025 DCR, in December 2025. In this update, DWR provided SWP supply estimates for SWP contractors to use in their planning

efforts, including for use in their 2025 UWMPs. The draft 2025 DCR includes DWR's estimates of SWP water supply availability under both existing (2025) and future conditions (2043).

DWR's estimates of SWP deliveries are based on the CalSim 3 computer model that simulates monthly operations of the SWP and CVP systems. Key inputs to the model include the facilities included in the system, hydrologic inflows to the system, regulatory and operational constraints on system operations, and contractor demands for both CVP and SWP water. In conducting its model studies, DWR must make assumptions regarding each of these key inputs.

In the draft 2025 DCR for its model study under existing conditions, DWR assumed: existing facilities, hydrologic inflows to the model based on 100 years of adjusted historical inflows (1921 through 2021) recent changes to climate, current regulatory and operational constraints including 2018 COA Amendment, 2024 biological opinions and 2024 SWP Incidental Take Permit, and SWP contractor demands at maximum Table A Amounts. The long-term average allocation reported in the draft 2025 DCR for the existing conditions study provides appropriate estimate of the SWP water supply availability under current conditions.

To evaluate SWP supply availability under future conditions, the draft 2025 DCR included three model studies representing hydrologic and sea level rise conditions in 2043. The future condition studies used all of the same model assumptions as the study under existing conditions, but reflected changes expected to occur from climate change, specifically, projected temperature and precipitation changes centered around 2043 (2028 to 2057) and sea level rise. The three risk-informed climate scenarios (50%, 75%, and 95% level of concern) for the year 2043 included in the draft 2025 DCR provide explicit representation of climate change uncertainties and improved transparency and information for local planners. The level of concern is defined based on projected climate-informed system performance levels of April-to-July unimpaired runoff (Eight River Index) in the Delta watershed. The 50% level of concern scenario represents a middle-of-the-road or central tendency future at 2043 for the SWP. The 75% level of concern scenario represents a worse than average future for the SWP and 95% level of concern represents much worse. In other words, a 95% level of concern scenario depicts a future condition in which 95% of model-informed climate outcomes result in better SWP system reliability. For the long-term planning purposes of a UWMP, the long-term average allocations reported for the 50% level of concern 2043 study from the draft 2025 DCR is the most appropriate estimate of average future SWP water supply availability. The 75% and 95% level of concern studies can be used to further understand the sensitivity of the water supply portfolio to the projected changes in the future SWP supplies. See SCV Water's Climate Change Technical Memorandum to learn more about the 50% level of concern pathway.

ii. SWP Adaptation Strategy

In August 2025, DWR released the SWP Adaptation Strategy (Report) to reduce risk to the SWP water supply and other broad benefits from climate change vulnerabilities through 2085 timeframe. The Report identifies a set of actions with the most promise to protect the benefits of the SWP. It concludes that maintenance of the SWP aging infrastructure and a modernized tunnel system to transport water under the Delta are the most valuable adaptations.

The Report considered structural, operational and maintenance, and nature-based solution strategies. Of the 17 strategies considered, five have been identified as the most promising. Each individual strategy

addresses different climate stressors such as increasing drought frequency, more extreme precipitation, earlier runoff, and sea level rise. A combination of responses is needed to address these climate stressors. The five strategies included in the adaptation portfolios include enhanced asset management, California Aqueduct subsidence remediation, Delta Conveyance Project (DCP), Forecast-Informed Reservoir Operations at Oroville Dam, and South-of-Delta storage augmentation. The five strategies were organized into four adaptation portfolios for evaluation in the Report.

The Report concluded that continued maintenance, repair and additional restoration of the aging SWP infrastructure are first-priority measures regardless of future changes in climate. In terms of future SWP investments, the Report finds that the DCP is the single most effective strategy on its own, and it amplifies the benefits of other strategies. Forecast-Informed Reservoir Operations at Oroville is a safe and effective low-cost strategy that provides relatively small improvements in the SWP water supply. South-of-Delta storage augmentation is a promising strategy, especially in combination with the DCP, that can help improve the SWP drought resilience. The Report shows that implementation of a portfolio of strategies will result in greater adaptation than the sum of its parts.

f. Seismic and Other Risks

i. SWP Seismic Resiliency

DWR's SWP seismic resiliency efforts are managed within the SWP Dam Safety Program. The Dam Safety Program was established in 2018. Sixteen Dam Safety Program initiatives were established with input from external industry experts and recommendations from the 2017 Oroville Spillway incident reports. The initiatives aimed to set internal roles, responsibilities, and expectations for implementing standardized procedures for inspections, including inspection frequency, documentation, and reporting. A key component of the SWP Dam Safety Program is the use of Potential Failure Mode Analysis, including seismic risks, to prioritize projects based on risk, which aligns with dam safety industry best practices and Federal Energy Regulatory Commission guidelines. In 2023 DWR completed its first Dam Safety Program audit, which is to be performed every five years. The audit determined that DWR's program is on par with their peers and they are a leader in some areas.

DWR is conducting Seismic Walkdowns of all SWP plants. A Seismic Walkdown consists of visual assessment of vulnerable components and review of design drawings and documents. The first Seismic Walkdown was performed at Hyatt Powerplant in Oroville, as recommended by the Dam Safety Director's Safety Review Board. Of the 30 items identified for further analysis, only two will require an anchorage retrofit/redesign at Hyatt Powerplant. Seismic Walkdowns have also been completed at Devil Canyon Power Plant and Pearblossom Pumping Plant.

The most prominent seismic project DWR is implementing is the joint USBR/DWR Sisk Dam Safety of Dam Project corrective action which will result in major seismic stability improvements. Construction of the Sisk Dam modifications began in 2022 and is expected to be completed in 2032. Other prominent SWP Dam Safety Projects being implemented are Oroville Dam Coreblock and Grout Gallery Piezometers, Parish Camp Saddle Dam Raise, Del Valle Dam Conservation Outlet Works Seismic Stability Investigation, and Castaic Dam Low-level Gate Dogging and New Outlet Works Planning Study.

DWR has also developed several plans and instructions related to post-earthquake response that contain instructions for initial observation, validation inspections, and technical assessments. DWR operates and relies on 112 seismic stations across the SWP for its seismic warning system. Additionally, DWR partnered with California Office of Emergency Services (CalOES) and the operators of the California Integrated Seismic Network (USGS, Berkeley Seismological Laboratory, Caltech) to update its seismic warning system. Since 2021 DWR has replaced 51 seismic stations and obsolete communication modems and plans to replace the remaining stations by 2029. The SWP also has 13 seismic switches to prevent loss of water and reduce impacts downstream of the switch if triggered by ground acceleration greater than 0.1g, the commonly used pseudostatic acceleration factor for seismic design of SWP plants. Overall, DWR is engaged in extensive seismic resiliency efforts to protect the SWP.

ii. Emergency Freshwater Pathway Description (Sacramento-San Joaquin Delta)

It has been estimated by the DWR that in the event of a major earthquake in or near the Delta, water supplies could be interrupted for up to three years, posing a significant and unacceptable risk to the California business economy. A post-event strategy would provide necessary water supply protections to avert this catastrophe. Such a plan has been coordinated through DWR, Corps of Engineers (Corps), USBR, California Office of Emergency Services (Cal OES), the Metropolitan Water District of Southern California (Metropolitan), and the State Water Contractors.

iii. DWR Delta Flood Emergency Management Plan

The Delta Flood Emergency Management Plan (DWR, 2018) provides strategies for response to Delta levee failures, up to and including earthquake-induced multiple island failures during dry conditions when the volume of flooded islands and salt water intrusion are large, resulting in curtailment of export operations. Under these severe conditions, the plan includes a strategy to establish an emergency freshwater pathway from the central Delta along Middle River and Victoria Canal to the export pumps in the south Delta. The plan includes the prepositioning of emergency construction materials at existing and new stockpile and warehouse sites in the Delta, and development of tactical modeling tools (DWR Emergency Response Tool) to predict levee repair logistics, timelines of levee repair and suitable water quality to restore exports. The Delta Flood Emergency Management Plan has been extensively coordinated with state, federal and local emergency response agencies. DWR, in conjunction with local agencies, the Corps and Cal OES, conduct tabletop and field exercises to test and revise the plan under real time conditions.

DWR and the Corps provide vital Delta region response to flood and earthquake emergencies, complementary to Cal OES operations. These agencies perform under a unified command structure and response and recovery framework. The Northern California Catastrophic Flood Response Plan (Cal OES, 2018) incorporates the DWR Delta Flood Emergency Management Plan. The Delta Emergency Operations Integration Plan (DWR and USACE, 2019) integrates personnel and resources during emergency operations.

iv. Pathway Implementation Timeline

The Delta Flood Emergency Management Plan has found that using pre-positioned stockpiles of rock, sheet pile and other materials, multiple earthquake-generated levee breaches and levee slumping along the freshwater pathway can be repaired in less than six months. A supplemental report (Levee Repair, Channel

Barrier and Transfer Facility Concept Analyses to Support Emergency Preparedness Planning, M&N, August 2007) evaluated among other options, the placement of sheet pile to close levee breaches, as a redundant method if availability of rock is limited by possible competing uses. The stockpiling of sheet pile is vital should more extreme emergencies warrant parallel and multiple repair techniques for deep levee breaches. Stockpiles of sheet pile and rock to repair deep breaches and an array of levee slumping restoration materials are stored at DWR and Corps stockpile sites and warehouses in the Delta.

v. Emergency Stockpile Sites and Materials

DWR has acquired lands at Rio Vista and Stockton as major emergency stockpile sites, which are located and designed for rapid response to levee emergencies. The sites provide large loading facilities, open storage areas and new and existing warehousing for emergency flood fight materials, which augment existing warehousing facilities throughout the Delta. The Corps maintains large warehousing facilities in the Delta to store materials for levee freeboard restoration, which can be augmented upon request of other stockpiles in the United States. Pre-positioned rock and sheet pile are used for closure of deep levee breaches. Warehoused materials for rapid restoration of slumped levees include muscle (k-rail) walls, super sacks, caged rock containers, sand bags, stakes and plastic tarp. Stockpiles will be augmented as materials are used.

vi. Emergency Response Drills

Earthquake-initiated multiple island failures will mobilize DWR and Corps resources to perform Delta region flood fight activities within an overall Cal OES framework. In these events, DWR and the Corps integrate personnel and resources to execute flood fight plans through the Delta Emergency Operations Integration Plan (DWR and USACE, 2019). DWR, the Corps and local agencies perform emergency exercises focusing on communication readiness and the testing of mobile apps for information collection and dissemination. The exercises train personnel and test the readiness of emergency preparedness and response capabilities under unified command, and provide information to help to revise and improve plans.

vii. Levee Improvements and Prioritization

The DWR Delta Levees Subventions and Special Projects Programs have funded, and Delta Reclamation Districts have implemented levee improvements along the emergency freshwater pathway and other water supply corridors in the central and south Delta. These efforts are complementary to the Delta Flood Emergency Management Plan, which along with pre-positioned emergency flood fight materials, assists in timely pathway restoration after an seismic event. These programs have been successful in implementing a coordinated strategy of emergency preparedness to the benefit of SWP and CVP export systems.

Urban agencies, including Metropolitan, Contra Costa Water District, East Bay Municipal Utility District, and others have participated in levee improvement projects along or near the Old and Middle River corridors. Overall, as indicated above, there are robust plans and measures are in place to respond to earthquake and flood induced levee failures.

viii. SWP Subsidence Impacts

The SWP facilities including the California Aqueduct (Aqueduct) were designed to account for residual natural subsidence in the San Joaquin Valley. However, as noted in the SWP DCR 2023 Addendum – Impacts of Subsidence (DCR Subsidence Addendum) released by DWR in May 2025, the overdesign capacity of the Aqueduct to account for subsidence has been exhausted because of historical and ongoing natural and human-induced subsidence. DWR has implemented operating criteria to minimize impacts on the delivery capability because of the reductions in conveyance capacity resulting from subsidence. The DCR Subsidence Addendum modeling indicates that even with these adaptations, 2023 levels of subsidence reduce the long-term average delivery capability of the SWP by 3%. Without arresting and preventing ongoing subsidence and implementing infrastructure improvements, the report estimates that the long-term average delivery capability of the SWP could be reduced by 18% to 87% by 2043, assuming current subsidence trends continue into the future. The estimates of delivery capability presented in the DCR Subsidence Addendum contain a high degree of uncertainty associated with the subsidence trends given the actions related to the Sustainable Groundwater Management Act (SGMA) in the vicinity of the Aqueduct, and DWR is implementing additional studies to improve understanding of this uncertainty.

More importantly, DWR is currently working to implement infrastructure improvement projects to avoid the near-term reductions in the delivery capability forecasted for 2043. The projects include Check 17 Gate Removal, Pools 17-18 Liner Raise, Pools 20-21 Liner Raise, Pool 24 Liner Raise, and Pool 31 Liner Raise. These projects collectively will raise 42 miles of concrete liner at critically subsided locations along the Aqueduct to prevent water supply reductions forecasted for 2043. These near-term projects have been prioritized to begin construction between 2026 and 2028 to maximize the risk reduction. With these improvement projects implemented DWR expects the risk to the delivery capability forecasted in the DCR Subsidence Addendum will be significantly reduced. Concurrently, DWR is also in the planning phases of implementing long-term improvements to restore the original design conveyance capacity and original operating criteria of the Aqueduct through 2085. Accordingly, DWR has recommended using the 2025 Draft DCR to support long-term planning efforts and not the DCR Subsidence Addendum.

g. Planned Actions to Maintain or Enhance Reliability

i. Delta Conveyance Project

Consistent with Executive Order N-10-19, in early 2019, the state announced a new single tunnel project, which proposed a set of new diversion intakes along the Sacramento River in the north Delta for SWP. In 2019, DWR initiated planning and environmental review for a single tunnel DCP to protect the reliability of SWP supplies from the effects of climate change and seismic events, among other risks. On December 21, 2023, DWR certified the Environmental Impact Report and approved the DCP selecting "Bethany Reservoir Alignment" for further engineering, design and permitting. DWR received the Incidental Take Permit for the DCP from the CDFW in February 2025. DWR is in the process of obtaining change in point of diversion permit from the SWRCB to add the two proposed DCP diversion intakes to the SWP water rights. In October 2025, DWR certified that DCP is consistent with the Delta Plan. DWR is continuing with the design refinements, environmental planning and permitting through 2026-27 including resolving appeals on its Delta Plan certification. DCP will potentially be operational in 2045 following extensive planning, permitting and construction.

DWR estimates of SWP supply reliability in its draft 2025 DCR are based on existing facilities, and do not include the proposed DCP. Since the UWMP uses DWR's draft 2025 DCR to estimate SWP

supplies at 2045, any changes in SWP supply reliability that would result from the proposed DCP are not included in the UWMP. Most recent estimates from DWR indicate that DCP is expected to increase SWP Delta exports by about 467,000 AFY on a long-term average under current climate conditions.

ii. B. F. Sisk Dam Raise and San Luis Reservoir Expansion

USBR and San Luis & Delta Mendota Water Authority (SLDMWA) are proposing to raise Sisk Dam and increase storage capacity in San Luis Reservoir. The proposed 10-foot dam raise is in addition to the ongoing 12-foot raise of Sisk Dam to improve dam safety and would expand San Luis Reservoir storage by 130 TAF. The final EIR and the Record of Decision were issued in October 2023 and estimated that the SWP exports could potentially reduce by about 23 TAF per year on average under the preferred alternative. This project is currently undergoing design, environmental planning and permitting. DWR estimates of SWP supply reliability in its draft 2025 DCR are based on existing facilities, and do not include this project.

iii. Sites Reservoir

Sites Reservoir is a proposed new 1,500,000 AF off-stream storage reservoir in northern California near Maxwell. Sacramento River flows will be diverted during excess flow periods and stored in the off-stream reservoir and released for use in the drier periods. Sites Reservoir is expected to provide water supply, environmental, flood and recreational benefits. The proponents of Sites Reservoir include 30 entities including several individual SWP PWAs. Sites Reservoir is expected to provide approximately 205 TAF of additional deliveries on average to participating agencies under existing conditions. Sites Reservoir is currently undergoing environmental planning and permitting. Sites Reservoir project filed a water rights petition and is expected to receive a water right permit in 2026 from the SWRCB. DWR estimates of SWP supply reliability in its draft 2025 DCR are based on existing facilities, and do not include the proposed Sites Reservoir.

h. Reliability Assessment and Results

The characterization of SWP supply availability is based on the DWR Draft DCR, which relies on a 100-year hydrologic record (1922–2021) to simulate the full range of historic runoff, operational, and regulatory conditions. Within this modeling framework, SCV Water applies allocation assumptions to its Table A entitlement to estimate available imported supplies under each required year-type. **Table 2** shows the allocation projections under these different supply assessments.

Normal Year: Under Normal Year conditions, SWP availability reflects the median hydrologic and operational behavior represented in the long-term simulation. These are years that are neither extremely wet nor extremely dry and that reflect average Delta export capability under existing regulatory constraints. Based on the Draft DCR projections, SCV Water assumes an average SWP allocation of approximately 50 percent in 2025, declining to approximately 43 percent by 2045 and continuing at that level through 2050. When applied to SCV Water's Table A entitlement, this results in approximately 46,000 AF of imported supply in 2030 and approximately 41,000 AF in 2050. These volumes represent expected long-term median operating conditions rather than peak wet-year deliveries.

Single Dry Year: DWR's 2023 DCR indicates that the modeled single dry year SWP water supply allocation is 4% and the draft 2025 DCR indicates 6% under the existing conditions. Historically the lowest SWP

allocations were at 5% in 2014, 2021 and 2022. Due to extraordinarily dry conditions in 2021 and 2022, the initial 2022 SWP allocation was a historically low 0% of Table A Amounts, was later increased to 5% in March 2022, the lowest ever final total SWP water supply allocation. Historic dry conditions led to the low SWP water supply allocations in 2021 and 2022. Such conditions, although possible, likely have a low probability of occurrence. The draft 2025 DCR, which takes into account into the recent changes in the climate, indicates 11% probability of annual SWP Table A deliveries between 0 – 500 TAF, which translates to allocations of 12% or less.

Each year by October 1, SWP contractors submit their requests for SWP supplies for the following calendar year. By December 1, DWR estimates the available water supply for the following year and sets an initial supply allocation based on: the total of all contractors' requests, current reservoir storage, forecasted hydrology through the next year, and target reservoir storage for the end of the next year. The most uncertain of these factors is the forecasted hydrology. In setting water supply allocations, DWR uses a conservative 90% hydrologic forecast, where nine out of ten years will be wetter and one out of ten years drier than assumed. DWR re-evaluates its estimate of available supplies throughout the runoff season of winter and early spring, using updated reservoir storage and hydrologic forecasts, and revises SWP supply allocations as warranted. Since most of California's annual precipitation falls in the winter and early spring, by the end of spring the supply available for the year is much more certain, and in most years DWR issues its final SWP allocation by this time. While most of the water supply is certain by this time, runoff in the late fall remains somewhat variable as the next year's runoff season begins. A drier than forecasted fall can result in not meeting end-of-year reservoir storage targets, which means less water available in storage for the following year.

California is known to experience highest inter-annual variability in hydrology across the entire United States. While droughts occur, with science-based adjustments to regulatory requirements and better water management to take advantage of the wetter periods that occur even in drought years, SWP water supply reliability is expected to improve. Thus, the assumption for SWP contractors such as SCV Water is that a 5% allocation represents the "worst-case" scenario. While 5% reflects the lowest observed allocation, SCV Water recognizes that future conditions may result in lower or more sustained constraints; this assumption is therefore used as a planning benchmark rather than a hard lower bound. The 5% allocation reflects the value agreed upon by the State Water Project (SWP) for use by all contractors when planning for a single dry year.

Multiple Dry Year: The Multiple Dry Year condition is defined using the worst historic five-consecutive-year drought sequence in the 100-year hydrologic record, specifically 1929 through 1933. Under the 2025 Draft DCR characterization of this period, SWP allocations during those five years were 6 percent (1929), 34 percent (1930), 3 percent (1931), 11 percent (1932), and 19 percent (1933). This sequence demonstrates both the severity and interannual variability that can occur during prolonged drought. The average allocation across the sequence is approximately 15 percent. For forward-looking planning purposes, SCV Water represents this multi-year drought condition as an average of the five-consecutive-year period, approximately 15 percent in 2025, declining to approximately 13 percent by 2040 and continuing through 2050 to reflect projected reductions in future delivery capability under climate-adjusted DCR modeling. Applied to SCV Water's Table A entitlement, this results in approximately 14,300 AF of imported supply in 2025 and approximately 12,400 AF by 2050 during sustained drought conditions.

It is important to clarify that the selection of the 1929–1933 drought sequence is not based on its recurrence interval, but rather on the planning assumption that the most severe drought on record could occur again, providing a conservative basis for stress testing supply reliability. While this approach is consistent with prior UWMPs, it acknowledges that climate change may increase drought frequency or intensity in the future; however, the methodology is designed to ensure the system can withstand conditions as severe as the historical worst case.

This distinction between Single Dry Year (a one-year shock) and Five-Year Drought (a compounded sequence reflecting cumulative system stress) is applied consistently and is essential to understanding how SWP reliability behaves differently under isolated versus sustained hydrologic stress.

Table 2: SWP Supply Allocation Assumptions

WSRA Year-Type	Hydrologic Basis	Historic Year(s)	Allocation Assumption	2030 Volume (AF)	2050 Volume (AF)
Normal Year	Median conditions from 100-year hydrologic simulation (1922–2021)	Not tied to a single year (middle range of record)	50% (2025) declining to 43% by 2045–2050	~47,600 AF	~41,000 AF
Single Dry Year	Standalone critically constrained imported supply year (planning shock year)	Not sequence-based	5% (constant 2025–2050)	~4,760 AF	~4,760 AF
Multiple Dry Year	Worst five-year sequence in 100-year record	1929–1933	Sequence allocations: 1929 – 6% 1930 – 34% 1931 – 3% 1932 – 11% 1933 – 19% Planning avg ≈ 15% (2025) declining to 13% by 2040–2050	~14,300 AF	~12,400 AF

4. Water Transfers and Exchanges

a. Overview

SCV Water uses water transfers and exchanges as operational tools to improve dry-year reliability, enhance flexibility, and optimize the management of available water supplies. These tools include a combination of long-term contractual agreements and short-term, discretionary transfer and exchange programs that allow SCV Water to shift water across time and location in response to changing conditions.

Key transfer and exchange programs evaluated in the UWMP include:

- Long-term firm water purchase agreements, including the Buena Vista–Rosedale Rio Bravo (BVRRB) agreement and future Nickel Water - NLF supplies; and
- Short-term and program-based transfers, including participation in the Yuba Water Accord and other exchange or spot transfer opportunities.

These programs serve different roles within the water supply portfolio. Long-term agreements provide reliable, baseline supplies available across all hydrologic conditions, while short-term transfers and exchanges are used selectively to manage surplus conditions, supplement supplies during dry years, and improve operational efficiency. Transfers and exchanges are not relied upon as primary supplies in all conditions but are used to enhance overall system reliability when available and feasible.

b. Key Constraints

Water transfers and exchanges used by SCV Water are implemented through a combination of long-term contractual agreements and short-term programmatic arrangements, each governed by specific legal, operational, and institutional requirements.

Buena Vista–Rosedale Rio Bravo (BVRRB)
The BVRRB agreement is a long-term transfer agreement for 11,000 AFY that provides a defined annual quantity of water based on established Kern River water rights. Deliveries are implemented through exchange mechanisms involving SWP Table A supplies or direct delivery to the California Aqueduct via the Cross Valley Canal. Since the supply is contractually secured and not subject to annual hydrologic variability, it is treated as a firm supply. Institutional considerations primarily relate to coordination with the participating Kern County agencies and the use of existing SWP and regional conveyance infrastructure. SCV Water has entered into agreements that reserves 3,378 AF of the BVRRB water for potential annexations into its service area. 389 AF is reserved for the second phase of the Tesoro Del Valle development. This development is scheduled to be completed by early 2027. 489 AF has been reserved for the Tapia Ranch development with development estimated to be completed in the late 2020s. 2,500 AF is reserved for the planned Legacy Village Project pursuant to the Pre-Annexation Agreement described above. These developments are assumed to occur after 2030 but before 2035. During the periods before demands for these developments occur, or if these developments occur but do not use all the amounts reserved for them in any year or years, the remaining supply would be available to the entire SCV Water service area.

Nickel Water - Newhall Land & Farm (NLF)
NLF is a contract-based supply of 1,607 AFY acquired from Kern County sources and currently held and managed under agreement until conveyance to SCV Water is triggered by development conditions associated with the Newhall Ranch Specific Plan. The transfer of this supply is governed by the Newhall Land Settlement Agreement, which defines the timing, conditions, and allocation of the water. Until full transfer occurs, availability is subject to coordination between parties and storage arrangements within regional groundwater banking programs. It is assumed for planning purposes that the Newhall Ranch Specific Plan will be developed and that the rights to the Nickel Water supply will be transferred to SCV Water in 2035 (i.e., the assumed completion of the Newhall Ranch Specific Plan), thereafter becoming

available as an annual supply to SCV Water. Once transferred, this supply is expected to function as a firm component of the SCV Water portfolio.

Yuba Water Accord

The Yuba Water Accord is a multi-agency program that allows participating SWP contractors to purchase water from Yuba County Water Agency through DWR. SCV Water's participation is governed by program rules, availability conditions, and coordination with DWR and other participating agencies. Deliveries are subject to Delta conveyance conditions and associated losses, which vary depending on hydrologic and operational conditions. Per the agreement, an estimated average of up to 1,000 AFY of non-SWP supply (after losses) is available to SCV Water in dry years, through 2050. In 2021 and 2022, with a SWP allocation of 5% of Table A Amount, approximately 2,500 AF of Yuba water supply was available to SCV Water north of the Delta, of which SCV Water received 2,000 AF. SCV Water plans to utilize this supply only in dry years.

Across all transfer and exchange programs, the primary constraints relate to conveyance, regulatory requirements, and operational feasibility:

- **Conveyance Constraints:** Delivery of all transfer supplies relies on regional and statewide infrastructure, including the SWP and Delta conveyance system. While firm supplies are not hydrologically constrained at the source, they remain dependent on the ability to move water through these systems.
- **Regulatory and Environmental Constraints:** Operations in the Sacramento–San Joaquin Delta are governed by WQOs, endangered species protections, and flow requirements. These constraints can affect the timing, quantity, and feasibility of water conveyance, particularly for discretionary transfers that depend on available system capacity and hydrologic conditions.
- **Water Quality Considerations:** Transfer supplies may originate from different regions and be conveyed through different pathways. Delta-conveyed supplies, such as those associated with the Yuba Water Accord, are subject to variability in salinity, turbidity, and other water quality parameters. All supplies are ultimately managed within SCV Water's existing treatment, blending, and operational framework.
- **Climate Dependence:** Firm supplies (BVRRB and Nickel Water) are not directly tied to hydrologic variability, while discretionary supplies are dependent on hydrologic conditions and system operations. As a result, climate-driven changes to imported water availability may affect the reliability of discretionary transfers.
- **Seismic Risk:** Transfers and exchanges that rely on conveyance outside of the SCV Water service area are subject to system-wide seismic risks. While the underlying water supply remains available, disruptions to conveyance infrastructure may affect the timing or ability to deliver these supplies.

Exchanges provide operational flexibility by allowing SCV Water to adjust the timing or location of deliveries rather than requiring direct movement of the same water at a given time. However, they remain dependent on the same regulatory, operational, and conveyance conditions that govern imported water supplies.

For planning purposes, transfers and exchanges are treated as supplemental reliability tools. Long-term firm supplies are included as consistent components of the supply portfolio, while discretionary transfers are assumed to be available only when hydrologic, regulatory, and operational conditions allow. This approach

reflects SCV Water's continued use of transfers and exchanges as flexible tools to support overall water supply reliability rather than as primary or guaranteed sources of supply.

c. Reliability Assessment and Results

Spot market transfers and exchanges are market and condition dependent. Availability can be affected by hydrologic conditions, conveyance constraints, timing, and program eligibility conditions established by counterparties or administering agencies. For UWMP planning purposes, SCV Water does not assume that discretionary spot market transfers will be available in all dry conditions; rather, they are treated as supplemental tools that may be pursued, if feasible.

SCV Water also holds long-term, firm water purchase transfer agreements that are not discretionary and are not dependent on annual hydrologic variability. Agreements such as the BVRRB contract require SCV Water to purchase a fixed volume of water. This supply is available and critically important during dry years but must also be taken in wet years when it may be surplus to immediate needs. Unlike option based or annual agreements such as those under the Yuba Accord, which provide flexibility to elect whether to purchase water in a given year, the BVRRB agreement and similar contracts (including Nickel) do not provide annual purchase discretion. These long-term firm supplies shown in **Table 3** function as baseline portfolio components rather than contingent or supplemental resources and are treated accordingly in planning and reliability assessments.

Table 3: Water Transfers and Exchanges Supply Assumptions

WSRA Year-Type	Hydrologic Basis	Historic Year(s)	Allocation Assumption	2030 Volume (AF)	2050 Volume (AF)
Normal Year	Average hydrologic conditions	Not tied to a specific year (planning average)	Firm supplies available from BVRRB; Nickel not yet available; no discretionary transfers assumed	**11,000**	**12,607**
Single Dry Year	Representative dry year with reduced SWP allocations	Recent dry years (e.g., 2014, 2021)	Firm supplies available from BVRRB; Nickel not yet available in 2030 but available by 2050; Yuba Accord purchases assumed available; no spot transfers assumed	**12,000**	**13,607**
Multiple Dry Year	Extended drought conditions (five-year sequence)	Multi-year drought periods (e.g., 1987–1992)	Firm supplies available from BVRRB; Nickel not yet available in 2030 but available by 2050; Yuba Accord purchases assumed available; no spot transfers assumed	**12,000**	**13,607**

5. Supply by Storage

a. Overview

SCV Water's approach to supply reliability incorporates storage as a key component of its water supply strategy, allowing SCV Water to capture, store, and recover water across varying hydrologic conditions. Storage programs are used to manage imported water supplies over time by storing water during periods of surplus and making it available during dry periods when other supplies are constrained.

Key storage programs evaluated in this UWMP include:

- Flexible Storage Accounts, which provide short-term storage of SWP supplies in Castaic Lake to help manage year-to-year variability;
- Rosedale–Rio Bravo Banking Program, which provides large-scale groundwater storage and recovery capacity in Kern County to support dry-year supply reliability;
- Semitropic Banking Program, which allows SCV Water to store excess SWP supplies in groundwater basins and recover water during periods of limited imported supply; and
- Semitropic – NLF Banking Program, which provides additional groundwater storage and recovery capacity associated with Nickel Water and the Newhall Ranch Specific Plan.

These programs serve complementary roles within the water supply portfolio. Flexible storage provides short-term operational flexibility, while groundwater banking programs provide longer-term storage and recovery capacity that is primarily used to support single dry and multiple dry year reliability. For planning purposes, storage supplies are not relied upon in normal year conditions and are instead reserved to supplement supplies during periods of reduced imported water availability.

b. Key Constraints

SCV Water's storage programs are implemented through a combination of contractual storage rights, groundwater banking agreements, and operational arrangements with partner agencies. These agreements define storage capacity, recovery limits, program duration, and operational requirements, and are coordinated with regional and SWP partners.

Flexible Storage Accounts

SCV Water's Flexible Storage Accounts are established through its SWP contract with the DWR and provide up to 4,684 AF of dedicated storage capacity in Castaic Lake. In addition, SCV Water has an agreement to access 1,376 AF of additional Flexible Storage capacity from Ventura SWP entities through 2030, for a combined total of 6,060 AF of available storage. These agreements define the conditions for withdrawal and require replenishment within five years. Institutional considerations include coordination with DWR and participating SWP entities and compliance with operational requirements governing use of the storage accounts.

Rosedale–Rio Bravo Banking Program

SCV Water participates in the Rosedale–Rio Bravo Water Storage District groundwater banking program under a long-term agreement that provides up to 100,000 AF of storage capacity. SCV Water may store and recover up to 20,000 AFY, with 10,000 AFY of firm recovery capacity currently available, increasing to 15,000

AFY by 2035 based on planned or assumed improvements. Institutional considerations include adherence to contractual storage and recovery limits, coordination with RRBWSD and partner agencies, and integration with regional conveyance systems for recovery and delivery.

Semitropic Banking Program

SCV Water participates in the Semitropic Water Storage District banking program through the Stored Water Recovery Unit (SWRU), under which SCV Water may store up to 5,000 AFY, to a maximum of 15,000 AF of storage capacity, and recover up to 5,000 AFY. These agreements define recharge, storage, and recovery operations and are coordinated with other program participants. Institutional considerations include compliance with contractual limits, coordination of recharge and recovery operations, and adherence to program terms, including duration and renewal provisions.

Semitropic – NLF Banking Program

The Semitropic – NLF Banking Program is governed by agreements between NLF and Semitropic Water Storage District, which provide 4,950 AFY of annual storage and withdrawal capacity and a total storage capacity of 55,000 AF. These agreements include provisions for the future transfer of NLF's interests to SCV Water in connection with the Newhall Ranch Specific Plan. Institutional considerations include coordination between SCV Water, NLF, and Semitropic, as well as compliance with the Newhall Land Settlement Agreement and associated program requirements.

The primary constraints affecting banking and storage programs relate to recharge opportunity, recovery capacity, groundwater management requirements, conveyance, and system operations.

- **Recharge and Availability Constraints:** Storage programs depend on the availability of surplus water, particularly imported supplies in wet years, to recharge or refill storage accounts. Changes in hydrologic conditions, including reduced snowpack, altered runoff timing, and increased precipitation variability, may reduce opportunities to capture and store excess water for future use. For planning purposes, storage capacity itself is assumed to remain stable, but the ability to use that capacity depends on recharge availability and operating conditions.

- **Groundwater Management and Environmental Constraints:** Groundwater banking operations must be conducted in a manner that maintains long-term basin health, including avoiding overdraft, minimizing land subsidence, and supporting stable groundwater levels. Recharge and recovery activities are subject to operational and regulatory requirements intended to protect groundwater resources and maintain consistency with sustainable groundwater management practices. Environmental considerations therefore reflect both local basin conditions and broader system constraints affecting imported supply operations.

- **Water Quality Considerations:** Stored water may originate from and be stored in locations both within and outside of the SCV Water service area, including groundwater banking programs in Kern County. As a result, stored water is subject to the water quality conditions of the receiving groundwater basins and the source water characteristics associated with recharge supplies. Upon recovery, stored water is integrated into SCV Water's portfolio and managed through existing treatment, blending, and operational practices. Storage programs are not assumed to require

unique treatment processes beyond those already incorporated into SCV Water's system operations.

- **Conveyance and Recovery Constraints:** The availability of stored water is not directly affected by seismic events or imported water export restrictions; however, recovery and delivery depend on the continued operation of pumping, conveyance, and aqueduct systems used to extract and transport water. Because some storage is located outside the SCV Water service area, including in Kern County, disruptions to regional or statewide infrastructure may affect the timing or ability to recover and deliver stored supplies. Flexible Storage Accounts are similarly dependent on SWP infrastructure for delivery.

- **Operational Role in the Portfolio:** SCV Water manages storage programs using a cyclical approach that emphasizes recharge during periods of available supply and recovery during periods of reduced imported water availability. Flexible storage is maintained when possible during normal and wet years and drawn upon during dry conditions. Groundwater banking programs, including Semitropic and Rosedale–Rio Bravo, are used to store excess imported supplies when available and to provide recovery capacity during dry-year conditions. These programs are integrated with imported water operations, transfers, and broader portfolio management to optimize the use of available supplies over time.

Accordingly, banking and storage programs function as long-term reliability tools that improve system resilience by preserving water for use during dry periods. Their effectiveness depends less on the physical presence of storage capacity than on the ability to recharge, recover, and convey stored water under changing hydrologic and operational conditions.

c. Reliability Assessment and Results

Storage programs provide a critical component of SCV Water's overall water supply reliability by enabling the capture, storage, and recovery of water across hydrologic cycles. Unlike primary supply sources, storage programs do not increase total long-term water availability, but instead improve reliability by shifting water across time and making stored supplies available during periods of reduced imported water availability.

Table 4 summarizes the available storage and recovery capacity associated with SCV Water's storage programs over the planning horizon. These values reflect the maximum available recovery capacity from Flexible Storage Accounts and groundwater banking programs, including Rosedale–Rio Bravo, Semitropic, and Semitropic – NLF. As shown, total available storage recovery capacity increases from 21,060 AF in 2030 to 29,630 AF beginning in 2035, reflecting the availability of NLF-related storage supplies.

For reliability assessment purposes, storage supplies are not assumed to be used in normal year conditions and are instead reserved to support dry-year reliability. **Table 5** presents the assumptions used to incorporate storage programs into the Water Supply Reliability Assessment (WSRA). Under single dry year and multiple dry year conditions, storage supplies are assumed to be available up to their maximum annual recovery capacities and are used to supplement reduced imported supplies.

The reliability of storage programs is therefore dependent on both the volume of water available in storage and the capacity to recover that water in a given year. While recovery capacities provide a consistent upper

bound on available supply, actual recoverable volumes may vary depending on recharge history, operational conditions, and system constraints. These considerations are incorporated into the overall reliability analysis through coordination with imported supply availability and hydrologic assumptions.

Overall, storage programs significantly enhance SCV Water's ability to maintain reliable service during single dry and multiple dry year conditions by providing a managed reserve of water that can be used to offset variability in imported supplies. By reserving storage supplies for dry-year use and managing recharge and recovery over time, SCV Water improves system resilience without relying on storage as a primary supply source in normal conditions.

Table 4: Available Water Supplies in Storage

	2030	2035	2040	2045	2050
Flexible Storage Accounts	6,060	4,680	4,680	4,680	4,680
Rosedale Rio-Bravo Bank	10,000	15,000	15,000	15,000	15,000
Semitropic Bank	5,000	5,000	5,000	5,000	5,000
Semitropic – NLF	0	4,950	4,950	4,950	4,950
Total	**21,060**	**29,630**	**29,630**	**29,630**	**29,630**

Table 5: Water Storage Supply Assumptions

WSRA Year-Type	Hydrologic Basis	Historic Year(s)	Allocation Assumption	2030 Volume (AF)	2050 Volume (AF)
Normal Year	Average hydrologic conditions	Not tied to a specific year (planning average)	Storage programs are not relied upon in normal conditions; supplies are reserved for dry-year use	0	0
Single Dry Year	Representative dry year with reduced SWP allocations	Recent dry years	Recovery limited by program capacities; storage used to supplement reduced imported supplies	21,060	29,630
Multiple Dry Year	Extended drought conditions (five-year sequence)	Multi-year drought periods	Recovery limited by program capacities; storage used to support sustained dry-year demands	21,060	29,630

6. Groundwater

a. Overview

SCV Water overlies the Santa Clara River Valley East Subbasin (DWR Basin No. 4-4.07 or Basin), which is the sole source of groundwater supply for SCV Water. The Basin is located in the central-western portion of the County of Los Angeles, bounded on the north by the Piru Mountains, on the east and southeast by the San Gabriel Mountains, and on the south by the Santa Susana Mountains. The surface area of the Basin is approximately 66,200 acres (approximately 103 square miles). The City of Santa Clarita is an urban area near the eastern boundary of the Basin. Major highways that intersect the Basin include Interstate 5 (I-5) and California State Routes 14 and 126. The area overlying the basin is drained by the Santa Clara River, Bouquet Creek, San Francisquito Creek, and Castaic Creek. Groundwater is found in alluvium, terrace deposits, and Saugus Formation. Groundwater in the subbasin is generally unconfined in the alluvium, but may be confined, semi-confined, or unconfined in the Saugus Formation. Developable quantities of groundwater are present in the alluvium (Alluvial Aquifer) and in portions of the Saugus Formation

b. Legal and Institutional Consideration

In September 2014, California Governor Jerry Brown signed into law a package of three bills that, together, constitute SGMA, codified in Section 10720 et seq. of the CWC. This framework for sustainable groundwater management requires governments and water agencies in medium and high-priority basins to halt the overdraft of groundwater resources and balance groundwater pumping and rechange rates to achieve sustainability. This legislation created a statutory framework for planning and implementing groundwater management that can be sustained without causing undesirable results. Under SGMA, medium- and high-priority basins should reach sustainability within 20 years of implementing their Groundwater Sustainability Plans (GSPs), which is 2042 for the Basin. The Basin is designated a high priority basin by DWR.

SGMA has set deadlines for reaching sustainability (in this basin, SCV Water's focus is on maintaining sustainability) and empowered local agencies to form Groundwater Sustainability Agencies (GSAs) to manage groundwater basins and develop GSPs. In his signing statement, Governor Brown emphasized that "groundwater management in California is best accomplished locally." To that end, SCV Water; the City of Santa Clarita (City); the County of Los Angeles (LA County); and the Los Angeles County Waterworks District No. 36, Val Verde (LACWWD 36) are in a Joint Exercise of Powers Agreement (JPA) as the Santa Clarita Valley Groundwater Sustainability Agency (SCV-GSA). The Basin has not been adjudicated. In the larger Santa Clara River Valley Groundwater Basin, the westernmost Santa Paula Subbasin has been adjudicated. No other GSAs have jurisdiction in the Basin. SCV-GSA prepared a Groundwater Sustainability Plan (GSP https://scvgsa.org/wp-content/uploads/2022/02/Santa-Clara-River-Valley-East-Groundwater-Subbasin-GSP.pdf) to comply with SGMA and to maintain long term groundwater sustainability over the required 20-year planning horizon. The GSP was approved by DWR in January 2024.

c. Environmental and Ecosystem Health Context

i. Groundwater Dependent Ecosystems (GDEs)

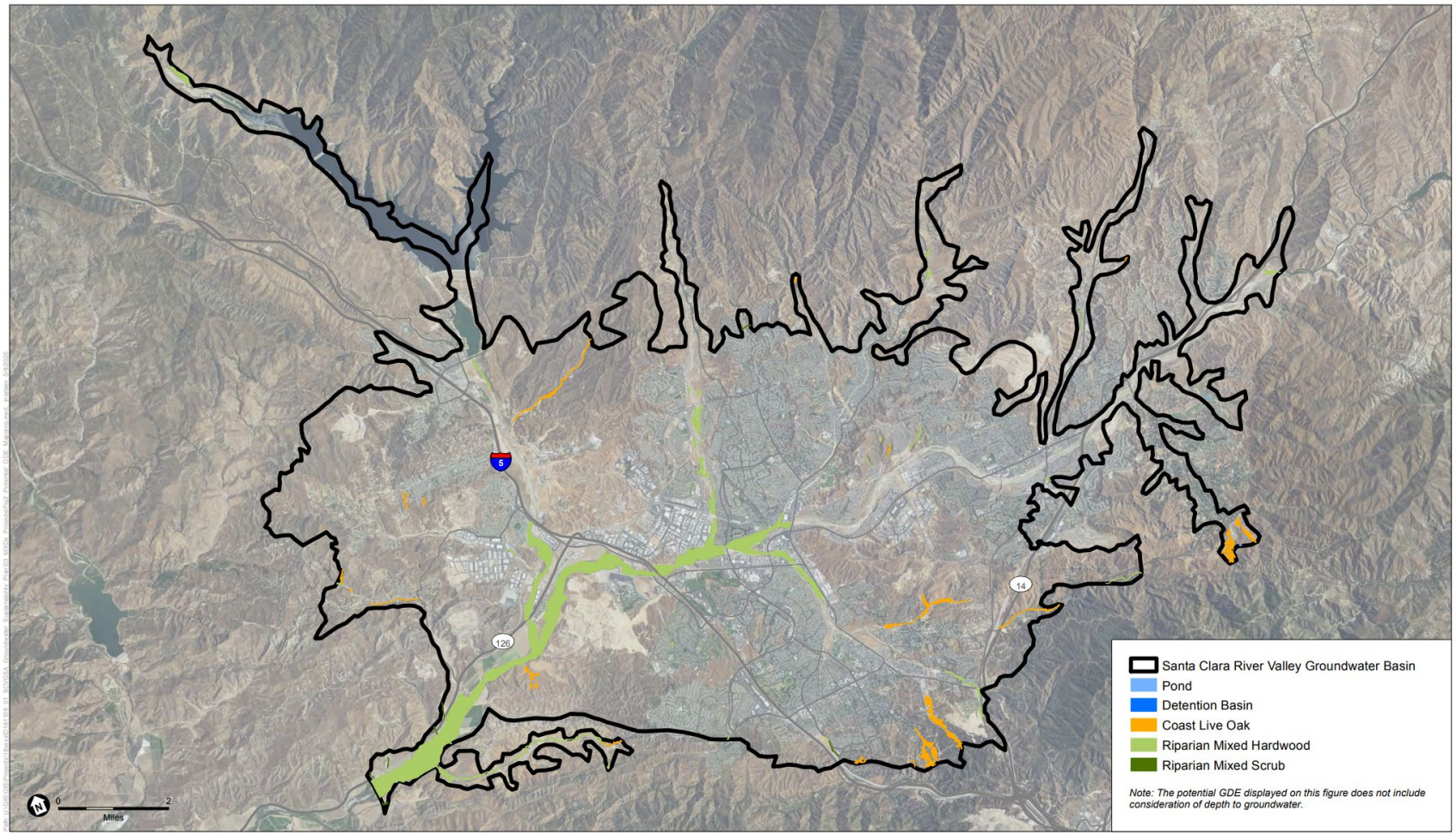
SGMA requires GSAs to identify and consider GDEs within their GSPs. GDEs are defined under SGMA as "ecological communities of species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface" (23 California Code of Regulations § 351(m)). GDE types

include seeps and springs; wetlands and lakes; terrestrial vegetation connected to shallow groundwater; and rivers, streams and estuaries.

In general, riparian habitat in the Upper Santa Clara River Basin support several special status avian species including the least Bell's vireo and southwestern willow flycatcher. These species are found in the willow and riparian mixed hardwood forests along the length of the river. Riparian habitat requires a reliable water source. Willow forests occur in areas where groundwater is available year-round. Willow root zones occur most prominently within 1 to 5 feet below the surface but may reach depths of up to 8 feet. Root depths of mature cottonwood trees may reach over 16 feet. The GSP follows guidelines that suggest that habitats where underlying groundwater depths are 30 feet or more can be assumed to be disconnected from groundwater. Before looking at groundwater levels and depth to groundwater of the habitats, the GSP identified 1,890 acres of potential GDEs, where the primary vegetation types include Fremont cottonwood forest and coast live oak woodland along the Santa Clara River and its tributaries. This can be seen in **Figure 3.**

Figure 4 presents a revised map of GDEs within the Basin considering this 30-foot depth to groundwater criterion. Since groundwater fluctuates over the year and between years, the 30-foot criterion data is taken conservatively from modeled groundwater depths throughout the Basin in the late dry season (September) during a wet year (2011). As illustrated in **Figure 4**, some of the vegetated areas in the eastern portion of the basin and in the upper canyons have been removed from the GDE category. However, the majority of potential GDEs identified are confirmed, particularly the areas within the Santa Clara River corridor extending from the confluence with San Francisquito Creek to the western Basin boundary.

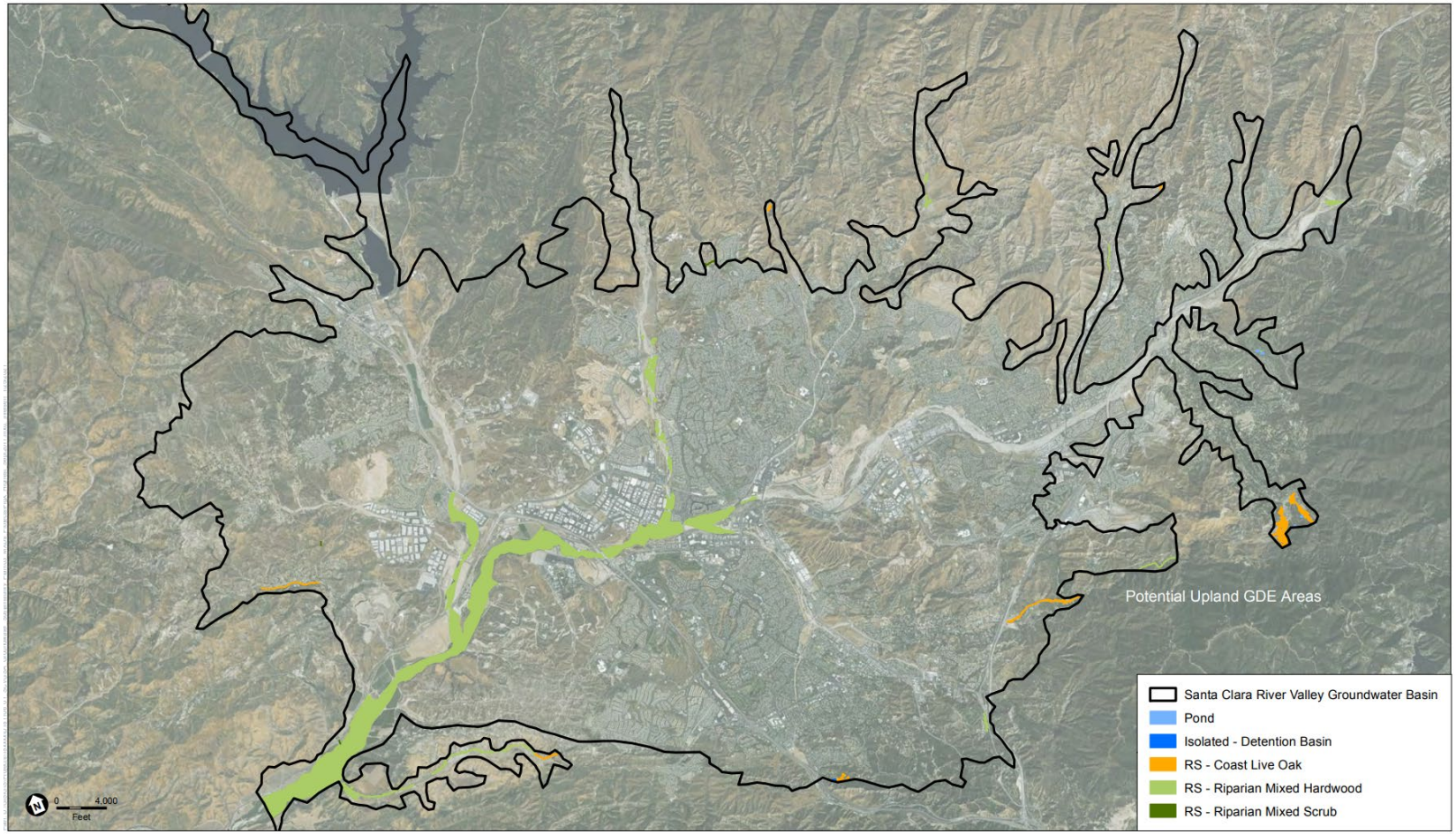
Figure 3: Potential GDE Mapping of the Basin (GSP, Figure 5-59)



SOURCE: ESA, 2020; NWI, 2019; NCCAG, 2019.

SCVGSA Groundwater Sustainability Plan

Figure 4: Potential GDE Mapping of the Basin With Depth to Groundwater (GSP, Figure 5-60)



SOURCE: ESA, 2020; NWI, 2019; NCCAG, 2019.

GDE Considerations Assessment

The existing vegetation within the GDE area has survived a pattern of annually lowering levels with even greater declines in drought years. The GSP generally addresses ecosystem health by incorporating GDE monitoring into basin management strategies. Recognizing their sensitivity, the GSP identifies climate change as a significant stressor that can impact groundwater availability and GDE viability. The GSP is not designed to manage all factors that may affect GDEs but is designed to evaluate if groundwater extraction may lead to undesirable results to GDEs. If so, then the GSP includes management actions to avoid impacts from groundwater extraction to GDEs.

ii. Monitoring

Monitoring groundwater levels and quality have been conducted by various agencies in the Basin; a detailed discussion of these monitoring programs is discussed in Section 7 of the GSP. Historically, groundwater levels at the production wells in the Saugus Formation and Alluvial Aquifer have been conducted on a generally monthly basis from 1989 to present. Groundwater level records have been analyzed and shown in hydrographs of representative wells that are provided in annual reports. SCV Water monitors water quality for its customers and reports on water quality in detail in the annual Water Quality Report that is provided to all Santa Clarita Valley residents who receive water from SCV Water and more broadly in the annual Santa Clarita Valley Water Report. The latter report also provides information on the actions taken to address sources of contamination that are regulated by the California Department of Toxic Substances Control and the SWRCB. Historical annual streamflow in the Santa Clara River watershed has been monitored by the U.S. Geological Survey (USGS) and the Los Angeles County Department of Public Works (LACDPW). Currently active and former gages for the Basin include an upstream gage in the Santa Clara River above Lang Railroad Station at the Capra Road Railroad Crossing (LACDPW station F93B-R), the Old Road Bridge gage just west of I-5 (LACDPW station F93C-R), and two downstream gages (the former County Line gage [USGS station 11108500], which was located 0.75 miles west of the western boundary of the Basin, and the current Piru gage [USGS station 11109000], which is located 3.5 miles west of the western boundary of the Basin). Stream gaging also occurs in Mint Canyon (LACDPW station F328B-R) and Bouquet Canyon (LACDPW station F377B-R). The California Surface Water Ambient Monitoring Program (SWAMP) monitors, assesses, and reports on the conditions of surface waters throughout the state of California. Data from SWAMP are used to improve the state's water quality assessment and add or remove water bodies from the impaired water bodies list as required under Sections 305(b) and 303(d) of the Clean Water Act. The Central Coast Regional Water Quality Control Board is the regional agency that implements SWAMP in the Basin.

d. Water Quality and Treatment

SCV Water has been working since 1997 to address groundwater contamination in the Santa Clarita Valley. The Groundwater Basin Restoration Program was developed to restore impacted groundwater supplies to beneficial use for the Valley. In 1997, the initial contaminant of concern was perchlorate, but since has been expanded to include additional contaminants, including volatile organic compounds (VOCs) in 2010, and per- and polyfluoroalkyl substances (PFAS) in 2019.

i. Salt and Nutrient Management Plan (SNMP)

In 2014, a SNMP was prepared for the Basin in accordance with the SWRCB's Recycled Water Policy. This SNMP is intended to provide the framework for water management practices to ensure protection of

beneficial uses and allow for the sustainability of groundwater resources consistent with the Water Quality Control Plan: Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties. Responsibility for the protection of surface water and groundwater quality in California rests with the SWRCB and nine Regional Water Quality Control Boards (RWQCBs). The SWRCB establishes statewide water quality control policy and regulation and coordinates with and reviews RWQCB efforts to provide reasonable protection and enhancement of the quality of both surface waters and groundwaters in the region. Region specific water quality regulations are outlined in water quality control plans that recognize regional beneficial uses, water quality characteristics, and water quality problems.

The Los Angeles RWQCB (LARWQCB) has jurisdiction over the coastal drainages between Rincon Point (on the coast of western Ventura County) and eastern LA County, which includes Santa Clarita Valley. The SNMP for the Basin determined current water quality conditions to ensure that all water management practices (including the use of recycled water) are consistent with site-specific WQOs set by the LARWQCB for the Basin. WQOs have been set by the LARWQCB for the Alluvial Aquifer but not for the Saugus Formation. The SNMP identifies WQOs for TDS, chloride, and nitrate. As part of the SNMP, a monitoring plan has been developed for the Basin that identifies key monitoring locations within each subunit for both surface water and groundwater.

The Santa Clara River, the predominant surface waterbody in the Basin, also influences groundwater quality in the losing reaches of the river (where river water infiltrates to groundwater). The Santa Clara River has been identified as an impaired water body and listed in the Clean Water Act Section 303(d) list published by the U.S. Environmental Protection Agency (U.S. EPA). The Upper Santa Clara River has been listed for the following contaminants: coliform bacteria, boron, and sulfates.

The Basin consists of six groundwater management zones: five shallow alluvial groundwater basins and the Saugus Formation. Water use associated with land uses and the form of the water that enters the groundwater system (i.e., irrigation runoff, septic seeps, precipitation percolation, underflow from upgradient zones, and other forms) determine the salt and nutrient load carried into each management Basin Plan. Water quality Information from the SNMP have been incorporated into SCV Water's GSP and used during the preparation of sustainability goals when setting minimum thresholds and measurable objectives, and also were considered during development of the projects and management actions.

ii. PFAS

In response to evolving federal and state regulatory standards, SCV Water initiated a Groundwater Treatment Implementation Plan (GTIP) in 2021 to evaluate treatment technologies and prioritize restoration of impacted wells to conform to the latest updated U.S. EPA regulations. The 2021 plan evaluated compliance options, identified wells requiring treatment, and prioritized treatment implementation. Furthermore, the plan reviewed viable technologies and treatment locations and then presented opinions of probable construction cost (OPCC) for implementation and funding opportunities.

In response to the U.S. EPA announcement for a PFAS maximum contaminant level (MCL) below four (4) parts per trillion (ppt) in drinking water, SCV Water prepared an update to the GTIP (August 2023). The August 2023 update identified and reprioritized the list of impacted wells requiring treatment to meet the proposed MCLs. Revised OPCCs reflected the cost of implementing further treatment. In addition to perchlorate and PFAS, SCV Water recognized VOCs as a drinking water contaminant impacting the

groundwater wells. The VOC compounds were detected in four wells, leading to the need for VOC treatment planning and cost analysis.

SCV Water updated the GTIP again in June 2025 to evaluate wells requiring additional VOC treatment, revised the treatment priority list, identified well start-up status, and provided OPCCs for VOC and PFAS treatment. The June 2025 update aimed to document wells under construction for VOC treatment, update capital and O&M costs for existing PFAS and perchlorate treatment facilities, provide cost estimates for new VOC treatment facilities, and revise the treatment priority list based on current water quality data, system demand, and staff recommendations.

Per the GTIP, Saugus Well 1 (S1) and 2 (S2) currently treat perchlorate and PFAS using ion exchange (IX). These wells are under construction for VOC treatment and will undergo modifications to the existing treatment system. Under the Process Memo 97-005, the Division of Drinking Water (DDW) permit for wells S1 and S2 requires an operational goal for VOC removal that involves blending for non-detect trichloroethylene (TCE) and tetrachloroethylene (PCE) in the distribution system. Monitoring for TCE and PCE occurs at the source water, lead and lag points, and six (6) distribution sites. Per the GTIP, Saugus Well 1 (S1) and 2 (S2) currently treat perchlorate using ion exchange (IX). In March of 2026 the addition of granular activated carbon (GAC) the treatment process was permitted by the Division of Drinking Water (DDW) for the removal of VOCs.

Following perchlorate detection in August 2010, Well 201 was shut down. Operation resumed in 2017 via IX with discharge to the Santa Clara River under National Pollution Discharge Elimination System requirements, while Valencia Water Company (VWC) worked to obtain a potable drinking water permit. During operations restart, TCE was detected between 0.5 and 1.3 micrograms per liter (µg L-1). While the DDW did not request VOC treatment in 2017, they also did not provide a permit to operate the IX system at Well 201. The DDW later indicated that VOC treatment would be necessary to receive a final permit. Droughts in 2021 led to the suspension of discharge to waste operations for Well 201, and the agreement for VOC treatment was established to meet the Process Memo 97-005 requirements. Construction is underway to upgrade the wellhead treatment to add VOC removal to the existing perchlorate treatment system using ion exchange (IX). The construction was completed at the end of 2025 and should be online May 2026. Beginning in May 2012, Well 205 had low levels of TCE, ranging from below the Detection Limit for Purposes of Reporting (DLR) to 0.92 µg L-1. In 2017, perchlorate concentrations reached the MCL of 6 µg L-1, prompting the well to be removed from service. The construction for perchlorate treatment was completed in 2017. The well is currently under construction for VOC treatment using granular activated carbon (GAC). The treatment system (including IX and GAC) is on schedule to be completed in June 2026.

e. Climate Change and Future Conditions

The Alluvial Aquifer is the uppermost principal aquifer in the Basin. Primary sources of recharge include precipitation, recharge from the Santa Clara River, recharge from the Saugus Formation, and mountain front recharge. Sources of manmade recharge include infiltration of irrigation water, infiltration of stormwater runoff from urban areas, infiltration of surface flow and underflow from Castaic Dam, infiltration releases by the LADPW from its reservoir facilities in the San Francisquito and Bouquet Canyon area, and infiltration associated with discharges from the water reclamation plants (WRPs). Discharge from the Alluvial Aquifer occurs through pumping of irrigation and municipal supply wells, discharge to the Santa Clara River in the

western portion of the Basin, subsurface discharge to the neighboring Piru Basin to the west, and evapotranspiration (ET) by riparian vegetation. Discharge also occurs in the form of seepage to the underlying Saugus Formation. The Saugus Formation Aquifer underlies the Alluvial Aquifer and is present throughout the entire Basin, unlike the Alluvial Aquifer. The Saugus Formation can be further subdivided into two units. The upper portion, which is up to 5,000 feet thick and consists of coarse-grained sand and gravel beds, contains the majority of the accessible groundwater. The lower portion, known as the Sunshine Ranch Member, is up to 3,500 feet thick and is composed of fine-grained sediments with low permeability. The Sunshine Ranch Member does not provide groundwater in sufficient quantity or adequate quality for municipal use. Generally, the upper 1,000 to 2,000 feet of the upper portion of the Saugus Formation is utilized for municipal groundwater production. The underlying 3,000 feet is not utilized for municipal supply. The primary sources of recharge to the Saugus Formation include percolation from the Alluvial Aquifer (particularly on the east end of the Basin), direct recharge from precipitation, and inflow from outside the Basin. Discharge from the Saugus Formation is primarily from groundwater extraction and flow to the Alluvial Aquifer in the western portion of the Basin. Climate change affects the ability of recharge potential in the Basin.

The Basin Operating Plan in the GSP quantifies the estimated effects of future build-out conditions and climate change in the Basin. In the water budget analyses for projected future conditions in the GSP, the performance of the Basin is simulated by subjecting the Basin Operating Plan to future full build-out conditions for land and water uses while also (1) simulating a repeat of the 95-year historical hydrologic record (1925 through 2019) and then (2) further adjusting this hydrologic record to account for potential changes in climate at two future time frames (the years 2030 and 2070). The definition of normal versus dry years is governed by (1) local hydrologic (precipitation) conditions and Saugus Formation groundwater production volumes in the case of pumping from the Alluvial Aquifer and (2) the allocation amounts of imported water supplies in the case of pumping from the Saugus Formation. The GSP incorporates climate change by creating a process in which variability in the historical climatic record is preserved while the magnitudes of events are increased or decreased based on projected changes in precipitation, evaporation, recharge potential, and air temperature, as obtained from global climate model outputs that have been downscaled to localized areas such as the Basin. See SCV Water's Climate Change Technical Memorandum to learn more about climate change impacts in the Basin. **Table 6** provides a summary of the Operating Plan for the Basin with climate change included.

Table 6: Groundwater Operating Plan for Basin

Aquifer	Normal Years (AF)	Dry Year 1 (AF)	Dry Year 2 (AF)	Dry Year 3 (AF)
Alluvium	30,000–40,000	30,000–35,000	30,000–35,000	30,000–35,000
Saugus	7,500–15,000	15,000–25,000	21,000–25,000	21,000–35,000
Total	**37,500–55,000**	**45,000–60,000**	**51,000–60,000**	**51,000–70,000**

f. Seismic and Other Risks

i. Seismic

The GSP's hydrogeological conceptual model incorporated results from a seismic refraction study for the Basin. The GSP's technical analysis also concluded that changes in land surface elevations are likely the result of seismic activity in the region. Appendix I of the 2025 UWMP includes more detailed analysis of seismic risks for SCV Water, including well locations.

ii. Subsidence

Land subsidence in California is commonly a result of fluid withdrawal (oil or groundwater). The principal causes of land subsidence are aquifer system compaction (caused by reduction in hydraulic head affecting the physical structure and orientation of clay minerals and drainage of organic soils. Subsidence can occur in two forms, elastic and inelastic (or permanent). Generally, subsidence occurs on a seasonal basis. When groundwater pumping occurs and groundwater levels decline, the land surface can subside. When groundwater levels recover following wetter conditions and reduced groundwater pumping, the land surface can recover, similar to compressing and releasing a spring. The amount that the ground surface subsides and subsequently "springs back" is considered elastic subsidence. This cycle occurs every year and is common everywhere there are seasonal variations in groundwater levels. Conversely, the amount of decline in the ground surface elevation that remains regardless of groundwater level recovery is considered to be inelastic subsidence. Under SGMA, only inelastic subsidence is to be evaluated in this GSP. For inelastic subsidence to occur in an area, that area generally requires two primary conditions. One is to have wells screened in aquifers that contain substantial amounts of clay within the depth interval that the well is constructed. The second condition is that there needs to be a multi-year period during which groundwater levels in the aquifer are at elevations below historical low levels in that area of the Basin. If both conditions do not occur, then inelastic subsidence related to groundwater pumping is unlikely to occur in appreciable quantities to impact critical infrastructure. Short term declines in groundwater levels over one or two years likely will not result in significant amounts of inelastic subsidence and impacts to infrastructure. This is based on data collected areas in the San Joaquin Valley that have experienced significant amounts of subsidence and where there have been significant investments in subsidence monitoring networks. Described in more detail in the GSP, the Saugus Formation has not been pumped significantly to cause extended periods of groundwater level declines and there has been no evidence that groundwater pumping-induced subsidence has occurred. The GSP reports that there has not been evidence of chronic groundwater level declines in areas with Saugus Formation geology with silts and clays within the screened intervals of municipal supply wells that would contribute to subsidence. The GSP also reviewed subsidence impacts on projected Saugus Formation pumping. The comparison of the projected and historical data at each well shows simulated future groundwater levels, including during normal and drought periods. The future water levels are representative of "full build-out land use conditions" that include the sustained operation of wells V201 and V205 (in part for perchlorate removal), along with additional source capacity for extraction of groundwater from the Saugus Formation in the V206 and V207 area of the Basin that would allow SCV Water to extract approximately 35,000 AF per year during multiple dry years.

g. Planned Actions to Maintain or Enhance Reliability

The amount of groundwater pumping in the Basin has not exceeded (and is not expected to exceed) the estimated sustainable yield of about 52,200 AFY on a long-term (multi-decadal) basis, and groundwater levels have been and are expected to remain stable on a long-term basis. Accordingly, the GSA has been implementing management actions since the GSP adoption to ensure that data gaps are addressed and that the improved monitoring program continues to demonstrate that the Basin is being managed sustainably. A large portion of the proposed activities include enhancing monitoring to check for impacts to GDEs, water quality, subsidence, and checking data trends against minimum threshold and data triggers.

Additionally, the GTIP, last updated June 2025, highlighted a near-term well treatment implementation schedule to get wells back online with treatment. **Table 7** described the wells, their current status, estimated start-up, AFY of supply available, and if that well treatment project is included in the 2025 UWMP for future projections.

Table 7: GTIP Well Treatment Implementation Schedule

Wells	Status	Start-up (Month/year)	Design/ Permitted Capacity (gpm)	Design/ Permitted Supply (AFY)	Included in UWMP Projections (Yes/No)
N wells	Online	12/20	6,250	10,081	Yes (2025)
Q2	Online	5/23	1,200	1,936	Yes (2025)
Valley Center	Online	10/22	1,200	1,936	Yes (2025)
Santa Clara/Honby	Online	6/24	2,000	3,226	Yes (2025)
Well 201 VOC	Construction	6/25	2,000	3,226	Yes (2026)
T7, U4, U6 PFAS, S1/S2 VOC	Construction	2/26	3,450	5,565	Yes (2026)
Well 205	Construction	12/25	2,700	4,355	Yes (2026)
S6, S7, S8	Final Design	5/27	3,000	4,839	Yes (2027)
N11, N12, N13	Final Design	8/28	5,400	8,710	Yes (2025 limited production)
E14, E15, E16, E17	CEQA	6/29	4,800	7,742	Yes (2029)
Well W9 and Well W10	Environmental	6/30	W9 (800) and W10 (1,500)	W9 (1,290) and W10 (2,420)	Yes (2030)
Lost Canyon 2A, Sand Canyon	Environmental	1/29	2,000	3,226	Yes (2029)
Wells 206 and 207	Planning	6/28	2,500	4,033	Yes (2025 limited production)

h. Reliability Assessment and Results

Groundwater supply assumptions for SCV Water are based on the groundwater sustainability planning framework for the Basin. The 2022 GSP evaluates basin response using a 95-year historical hydrologic record (1925–2019) and classifies each year as wet, normal, or dry based on long-term precipitation patterns and basin response. Under normal hydrologic conditions, recharge from streamflow infiltration, direct rainfall, and subsurface inflow provides higher replenishment to the Alluvial Aquifer. Under dry conditions, reduced precipitation lowers streamflow infiltration and deep percolation, reducing natural recharge and increasing operational reliance on the deeper Saugus Formation.

For UWMP reliability reporting, SCV Water's groundwater year-type assumptions are carried into the WSRA framework and are implemented consistent with SGMA requirements and the GSP's sustainable management criteria. Groundwater production from the Alluvial Aquifer and the Saugus Formation is planned and managed to remain within sustainable management criteria consistent with the 2022 GSP. Planned groundwater extraction consistent with the UWMP were simulated in the basin flow model as part of SCV Water's planning approach.

Table 8 shows the differences and assumptions across the various year-types. The difference between year-types is driven by two factors: (1) reduced natural recharge in dry conditions and the operational shift toward deeper groundwater production, and (2) scheduled additions of Saugus well capacity after mitigation of water quality constraints. Specifically, Single Dry Year assumptions reflect the dry-year parameter set used in the base water budget (base-WB) reliability framework (using dry-year assumptions referencing 1929 and 1949), with Saugus Wells 3 and 4 are online in 2027, Well 5 incorporated as scheduled beginning in 2035, and Well 6 in 2045. In the multi-dry condition, Saugus Well 6 is included as an additional drought-resilience supply element, consistent with its role in the multi-year drought portfolio.

Normal Year: The Normal Year condition reflects median basin recharge and operating conditions within the 1925–2019 hydrologic record. Under these conditions, recharge from streamflow infiltration, direct precipitation, and subsurface inflow supports baseline sustainable production from the Alluvial Aquifer, with a smaller contribution from the deeper Saugus Formation. In 2030, groundwater production under Normal conditions is projected at approximately 29,650 AF from the Alluvial Aquifer and 10,290 AF from the Saugus Formation, for a total of 39,940 AF. By 2050, projected production increases modestly to 30,789 AF (Alluvial) and 11,090 AF (Saugus), for a total of 41,879 AF, consistent with updated Basin Yield Analysis assumptions. Under Normal conditions, groundwater production reflects approximately a 75 percent Alluvial / 25 percent Saugus distribution. This distribution reflects recharge-supported shallow basin operations and represents SCV Water's baseline sustainable pumping posture.

Single Dry Year: The Single Dry Year condition reflects a one-year hydrologic shock characterized by reduced precipitation and limited recharge but without the cumulative impacts associated with prolonged drought. For planning purposes, SCV Water applies the dry-year parameter set used in the base water budget (base-WB) reliability framework, consistent with the historic dry-year assumptions identified (referenced to 1929 and 1949). Under this condition, reduced streamflow infiltration lowers recharge to the Alluvial Aquifer. To offset reductions in imported supply, SCV Water increases reliance on deeper groundwater production while remaining within SGMA sustainable management criteria limits. In 2030, groundwater production under Single Dry conditions is projected at 26,090 AF from the Alluvial Aquifer and 22,773 AF from the deeper Saugus Formation, totaling 48,863 AF, representing approximate a 21 percent increase over Normal Year

production. Wells 3 and 4 are planned to be online in 2027, Well 5 incorporated as scheduled beginning in 2035, and Well 6 in 2045. Following mitigation of water quality constraints, increases Saugus production to 24,500 AF through 2050, while Alluvial production remains at 26,090 AF. Under Single Dry conditions, the groundwater production distribution shifts to approximately a near-balanced split between Alluvial and Saugus formations, reflecting operational reliance on deeper storage during short-term dry conditions.

Multiple Dry Year: The Multiple Dry Year condition reflects sustained multi-year hydrologic stress consistent with consecutive dry classifications under the GSP framework. Unlike the Single Dry Year, this condition accounts for compounded recharge limitations and requires careful management to prevent undesirable results under SGMA. Under this condition, groundwater production increases further relative to Normal operations but remains conservatively below basin operating plan maximums. In 2030, projected production is 27,600 AF from the Alluvial Aquifer and 26,147 AF from the Saugus Formation, totaling 53,747 AF, representing approximately a 35 percent increase over Normal Year production. By 2050, incorporation of Saugus Well 6 into the supply portfolio increases Saugus Formation production to 30,083 AF, while Alluvial production remains at 27,600 AF, for a total of 57,683 AF. Under sustained drought conditions, the distribution shifts slightly toward the Saugus Formation, reflecting SCV Water's strategy of preserving shallow aquifer storage while utilizing deeper formation capacity during prolonged drought. Across all year-types, groundwater production assumptions remain consistent with groundwater limits evaluated in the 2022 GSP.

The GSP future water budget groundwater flow model simulations included future development and build out of the Santa Clarita Valley, along with climate change factors. The GSP identified the basin can be operated sustainably, and basin monitoring to ensure avoidance of undesirable results would be conducted.

Table 8: Groundwater WRSA Details

WSRA Year-Type	Hydrologic Basis	Historic Year(s)	Production Assumption	2030 Volume (AF)	2050 Volume (AF)
Normal Year	GSP 95-year record (1925–2019); median recharge conditions	Not tied to a single year	Baseline sustainable production	**Alluvial:** 29,650 (74%) **Saugus:** 10,290 (26%) **Total:** 39,940	**Alluvial:** 30,789 (74%) **Saugus:** 11,090 (26%) **Total:** 41,879
Single Dry Year	GSP dry-year operating condition; reduced recharge	Base-WB dry-year parameter set (1929 and 1949 reference)	~21% increase over Normal Year; Shift from Alluvial to Saugus	**Alluvial:** 26,090 (53%) **Saugus:** 22,773 (47%) **Total:** 48,863	**Alluvial:** 26,090 (51%) **Saugus:** 24,500 (49%) **Total:** 50,590
Five-Year Drought	Sustained multi-year drought under GSP framework	Consecutive drought operating condition	~35% increase over Normal Year. Increase in use from Saugus formation.	**Alluvial:** 27,600 (51%) **Saugus:** 26,147 (49%) **Total:** 53,747	**Alluvial:** 27,600 (48%) **Saugus:** 30,083 (52%) **Total:** 57,683

7. Recycled Water

Recycled water supplies are derived from treated wastewater flows at the Valencia Wate Reclamation Plant (WRP) and Vista Canyon Water Factory. Unlike imported surface water supplies, recycled water availability is primarily dependent on wastewater flows and treatment capacity rather than annual precipitation or Delta export conditions. Because recycled water availability does not fluctuate with hydrologic conditions, it reduces overall portfolio variability and provides a reliable baseline supply during both normal and drought conditions.

Projected recycled water volumes are presented in **Table 9** and reflect existing customers, planned system expansion, and the timing of additional non-potable reuse programs. Recycled water provides a hydrologically resilient component of SCV Water's supply portfolio. While imported supplies decrease significantly under Single Dry and Multi-Dry conditions, recycled water remains stable across year-types. This stability enhances overall system reliability and reduces dependence on imported supplies during drought.

Table 9 provides forecasted recycled water direct beneficial uses for SCV Water. SCV Water's New Drop Program is a strategic method of developing additional recycled water supplies, without increasing the diversion of recycled water flows discharged to the Santa Clara River. These additional recycled water supplies would be derived from wastewater flows generated from new residential and commercial development. The New Drop Program accounts for the increase in wastewater flows associated with new development and separates these projected wastewater flows from existing flows discharged to the Santa Clara River. The use of recycled water under the New Drop Program is intended to allow expansion of recycled water deliveries while maintaining historical discharge conditions in the Santa Clara River. The concept ensures that the Santa Clara River continues receiving the historical baseline of treated effluent while still allowing SCV Water to expand recycled water delivery to new customers.

Key features include:

- Identifying wastewater flows attributable solely to new development.
- Tracking these flows separately from existing discharges that support instream ecological needs.
- Using this increment of supply for non-potable recycled water projects, including Phase 2 expansions and new development areas.

The New Drop Program supports the phased implementation of the Recycled Water Master Plan, including Phase 2 projects and recycled water service to the NLF developments. It also serves new irrigation demands (e.g., schools, parks, developments) without compromising Santa Clara River instream flows.

The Phase 1 recycled water program has been operational since 2003 and includes: a 4,000 gallons per minute (gpm) pump station at the Valencia WRP; a 1.5 MG reservoir in the Westridge area; and approximately 15,600 linear feet of transmission pipeline. Phase 1 current deliveries are about 450 AFY, primarily for landscape irrigation. Representative customers and places of use include The Oaks Club (formerly TPC) golf course, commercial centers, and roadway medians along The Old Road.

Phase 2 (components 2B, 2C, and 2D) extends non-potable recycled water service to schools, parks, colleges, golf courses, and new developments using supplies from the Valencia WRP and the Vista Canyon WRP. SCV Water is in various stages of planning and constructing its Phase 2 projects. Phase 2 projects are expected

to add an additional 1,880 AF of recycled water use by 2030. Availability and use of recycled water are influenced by instream flow requirements, treatment capacity and operations at the WRPs, and the economics and feasibility of customer retrofits. The near-term growth strategy centers on serving new development areas with recycled water via the New Drop Program while existing discharges continue to sustain environmental needs in the Santa Clara River.

Table 9: Existing and Projected Recycled Water Demands

Phase/Project	Approximate Demand (AFY)	Timeframe for Coming Online	Source of Recycled Water
Phase 1	450	Existing*	Valencia WRP
Phase 2B: Vista Canyon Development and nearby irrigation customers	300	Existing*	Vista Canyon WRP
Phase 2C: Educational Campuses	760	2026-2027	Valencia WRP
Phase 2C: Country Club and Golf Course	600	2026-2027	Valencia WRP
Phase 2D: Educational Campuses	220	2026-2027	Valencia WRP
Five Point	2,559	2026-2043	Newhall Ranch/Valencia WRP
Total	**4,889**		

Note: *Existing Recycled Water demands are currently met with recycled water and potable water makeup water.

Projected recycled water use demand includes converting additional existing customers to recycled water, after the completion of Phase 2B, 2C and 2D. Additional demands are anticipated for Newhall Ranch Westside communities and Vista Canyon as those developments get completed. **Table 10** shows the projected recycled water use demands versus projected recycled water use supplies. These projections indicate that SCV Water will need to utilize potable water makeup to meet recycled water demands until 2045 when recycled water supplies are anticipated to be greater than demands as more supplies are generated from the "New Drop Program".

Table 10: Projected Recycled Water Use

Recycled Water Use Type	2030	2035	2040	2045	2050
Landscape	200	200	200	200	200
Golf Courses	250	250	250	250	250
Subtotal: Existing Recycled Water Supply	*450*	*450*	*450*	*450*	*450*
Landscape	1,165	1,943	2,717	3,536	4,374
Golf Courses	350	350	350	350	350
Subtotal: New Recycled Water Supply	*1,515*	*2,293*	*3,067*	*3,886*	*4,724*
Total Projected Recycled Water Supply	**1,965**	**2,743**	**3,517**	**4,336**	**5,174**
Potential Recycled Water Demand	**3,290**	**3,632**	**4,010**	**4,428**	**4,889**

i. Potable Reuse

SCV Water is currently evaluating potable reuse options to strengthen long term supply reliability and improve seasonal supply demand balancing through a Water Reuse Optimization Study. The draft study initially evaluated 14 potable reuse options, which were screened down to five shortlisted alternatives. Only the Valencia WRP was considered as a potential recycled water source facility. Early screening identified constraints in using the Vista Canyon Water Factory, Saugus WRP and the future Newhall Ranch WRP, which is not expected to be operational in the near term. Preliminary technical findings from initial drafts indicate that an average of 5 MGD of recycled water may be available for potable reuse year-round, while still meeting all existing and planned non-potable reuse commitments. Draft findings for the five shortlisted alternatives are being further refined for ongoing treatment, conveyance options, groundwater modeling, and reverse osmosis concentrate management analysis. The final recommendations of the Water Reuse Optimization study are expected upon completion of the study in the summer of 2026.

ii. Actions to Encourage and Optimize Future Recycled Water Use

SCV Water implements pricing incentives, reduced rates, for recycled water compared to potable as a way to encourage use and offset conversion costs. Additional actions include implementation of a Purple (PREP) Planning Readiness and Effectuation Program Pilot that helps facilitate conversion of Phase 2B, 2C, and 2D customer irrigation systems to recycled water. Under this program customers can choose either direct installation of required retrofit materials or receive financial incentives for the cost of upgrades.

Additional measures under consideration include broader retrofit incentives for recycled water use where available. Projected results scale with Phase 2 buildout, on the order of 1880 AFY additional non-potable reuse deliveries, plus developer driven supplies).

Optimization elements include:

- Completing Phase 2 non-potable projects that use "New Drop" supplies without reducing historical discharges
- Implementing potable reuse via the ongoing Water Reuse Optimization Study that shortlists groundwater recharge (spreading and injection) and DPR (raw/treated water augmentation)

options. The study aims to identify a preferred alternative that strengthens SCV Water's long term supply reliability while also remaining fully compatible with the Sanitation District's chloride and temperature compliance plans.

- Leveraging excess winter recycled water via seasonal storage and advanced treatment to increase year round beneficial use

Table 11 summarizes methods to encourage future use in accordance with CWC Section 10633(f).

Table 11: Methods to Encourage Future Recycled Water Use

Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (AF)
Purple PREP	RW Customer Conversion Incentives and Direct Installation	2029	450
New Development	Permitting and Construction of RW Infrastructure in SCV	Ongoing	6499
RW Optimization Study	Assess RW Optimal Use in the SCV Including Groundwater Recharge, and Distribution Expansion	2027	TBD
		Total (AF)	**6,949**

8. Supply Reliability Scenarios

As part of the 2025 UWMP, SCV Water needs to complete a reliability assessment that evaluates individual supply components and incorporates them into a reliability model which includes SWP operational rules, groundwater operations and banking and exchange limitations. These operational rules and restrictions were described above. The base portfolio model for normal year supplies represents the current water portfolio and pulls all the source information together.

SCV Water's WSRA evaluates supply availability under three year-types: Normal Year, Single Dry Year, and Five-Consecutive-Year Drought, using long-term hydrologic simulation, historical drought records, groundwater sustainability planning, and contractual supply agreements.

Year-type definitions:

1. Normal Year: Median hydrologic/operational condition
2. Single Dry: A severe standalone one-year shock
3. Five-Consecutive-Year Drought: Compounded multi-year sequence reflecting sustained system stress

The following tables present SCV Water's projected supply portfolio under Normal Year, Single Dry Year, and Multiple Dry Year conditions. Differences between year-types reflect changes in imported water availability and the corresponding operational shift toward groundwater, storage, and supplemental supplies to maintain overall system reliability. The 2025 UWMP will compare the supply reliability information against projected demands.

a. Normal Year

Under Normal Year conditions, SCV Water's supply portfolio is primarily supported by a combination of imported water and groundwater, with recycled water providing a stable supplemental component. Imported supplies, particularly SWP deliveries and firm transfer supplies such as BVRRB, represent a significant portion of total supply, while groundwater production remains within a baseline sustainable operating range consistent with the Basin Operating Plan.

Recycled water contributes a consistent and gradually increasing supply over the planning horizon, reflecting planned system expansion and implementation of the New Drop Program. Storage and banking supplies are not assumed to be utilized under Normal Year conditions and are instead reserved for use during dry periods.

Overall, the Normal Year condition reflects SCV Water's baseline operating strategy, where imported supplies meet a substantial portion of demand and local resources are managed to maintain long-term sustainability and operational flexibility. **Table 12** presents projected total water supply under Normal Year conditions for the 2030–2050 planning horizon.

Table 12: Normal Year Supplies

Supplies (AFY)	2030	2035	2040	2045	2050
Groundwater[a]					
Alluvial Aquifer	29,650	30,783	30,783	30,783	30,783
Saugus Formation	10,290	10,690	10,690	11,090	11,090
Total Groundwater	**39,940**	**41,473**	**41,473**	**41,873**	**41,873**
Recycled Water					
Recycled Water Existing[b]	450	450	450	450	450
Recycled Water New Drop or Future	1,515	2,293	3,067	3,886	4,724
Total Recycled	**1,965**	**2,743**	**3,517**	**4,336**	**5,174**
Imported Water					
State Water Project[c]	45,696	43,792	41,888	40,936	40,936
Flexible Storage Accounts[d]	0	0	0	0	0

Supplies (AFY)	2030	2035	2040	2045	2050
Buena Vista-Rosedale	11,000	11,000	11,000	11,000	11,000
Nickel Water - Newhall Land[(e)]	-	1,607	1,607	1,607	1,607
Yuba Accord Water[(f)]	-	-	-	-	-
Total Imported	**56,696**	**56,399**	**54,495**	**53,543**	**53,543**
Banking and Exchange Programs[(g)]					
Rosedale Rio-Bravo Bank[(g)]	-	-	-	-	-
Semitropic Bank[(g)]	-	-	-	-	-
Semitropic – Newhall Land Bank[(g)]	-	-	-	-	-
Exchange Balances	-	-	-	-	-
Total Bank/Exchange	**0**	**0**	**0**	**0**	**0**
Total Supplies	**98,601**	**100,615**	**99,485**	**99,752**	**100,590**
Total Demands [(h)]	**64,025**	**69,077**	**70,206**	**71,913**	**73,775**

Notes:

(a) Groundwater supplies represent the quantity of groundwater available to be pumped according to the GTIP schedule and associated GSP basin operating plan.

(b) Existing Recycled Water is based on current average annual use.

(c) SWP supplies are based on average deliveries from DWR's 2025 Draft DCR (48% - 43% at buildout due to climate change).

(d) Supplies not needed in average years.

(e) Existing Newhall Land supply committed under approved Newhall Ranch Specific Plan. Water is available from 2025 -2034 to meet supply shortfalls associated with the Newhall Ranch Specific Plan. Assumed to be transferred to SCV Water once Newhall Ranch development is completed around 2035.

(f) Supply available for purchase every year, however, shown is amount available in dry periods, after delivery losses. This supply would typically be used only during dry years and is available through 2050.

(g) Supplies not needed in average years.

(h) For completeness, LAWWD36 sales are included in demands.

b. Single Dry Year

Under Single Dry Year conditions, imported water supplies, particularly SWP deliveries, are significantly reduced. However, total supply availability remains comparable to Normal Year conditions due to SCV Water's integrated portfolio management strategy.

Reductions in imported supplies are offset through increased groundwater production, use of stored supplies from banking and flexible storage programs, and supplemental transfers such as the Yuba Water Accord. Groundwater production shifts toward greater reliance on the Saugus Formation, while remaining within sustainable management criteria. Storage and banking programs are actively utilized under this condition to supplement reduced imported supplies. Recycled water supplies remain stable and continue to provide a consistent component of the portfolio, unaffected by hydrologic variability.

This scenario demonstrates SCV Water's ability to absorb short-term hydrologic shocks by shifting reliance from imported supplies to local and stored resources, maintaining overall system reliability in a single dry year. **Table 13** illustrates projected total supply under Single Dry Year conditions for the 2030–2050 planning horizon.

Table 13: Single Dry Year Supplies

Supplies (AFY)	2030	2035	2040	2045	2050
Groundwater[a]					
Alluvial Aquifer	26,090	26,090	26,090	26,090	26,090
Saugus Formation	22,773	24,500	24,500	24,500	24,500
Total Groundwater	**48,863**	**50,590**	**50,590**	**50,590**	**50,590**
Recycled Water					
Recycled Water Existing[b]	450	450	450	450	450
Recycled Water New Drop or Future	1,515	2,293	3,067	3,886	4,724
Total Recycled	**1,965**	**2,743**	**3,517**	**4,336**	**5,174**
Imported Water					
State Water Project[c]	4,760	4,760	4,760	4,760	4,760

Supplies (AFY)	2030	2035	2040	2045	2050
Flexible Storage Accounts[(d)]	6,060	4,680	4,680	4,680	4,680
Buena Vista-Rosedale	11,000	11,000	11,000	11,000	11,000
Nickel Water - Newhall Land[(e)]	0	1,607	1,607	1,607	1,607
Yuba Accord Water[(f)]	1,000	1,000	1,000	1,000	1,000
Total Imported	**22,820**	**23,047**	**23,047**	**23,047**	**23,047**
Banking and Exchange Programs[(g)]					
Rosedale Rio-Bravo Bank[(g)]	10,000	15,000	15,000	15,000	15,000
Semitropic Bank[(g)]	5,000	5,000	5,000	5,000	5,000
Semitropic – Newhall Land Bank[(g)]	0	4,950	4,950	4,950	4,950
Exchange Balances	-	-	-	-	-
Total Bank/Exchange	**15,000**	**24,950**	**24,950**	**24,950**	**24,950**
Total Supplies	**88,648**	**101,330**	**102,104**	**102,923**	**103,761**
Total Demand[(h)]	**69,147**	**74,603**	**75,822**	**77,666**	**79,677**

Notes:

(a) Groundwater supplies represent the quantity of groundwater available to be pumped according to the GTIP schedule and associated GSP basin operating plan.

(b) Existing Recycled Water is based on current average annual use.

(c) SWP supplies are based on DWR's 2025 Draft DCR SWP agreed upon single dry year allocation of 5%.

(d) Supplies utilized in single dry years.

(e) Existing Newhall Land supply committed under approved Newhall Ranch Specific Plan. Water is available from 2025 -2034 to meet supply shortfalls associated with the Newhall Ranch Specific Plan. Assumed to be transferred to SCV Water once Newhall Ranch development is completed around 2035.

(f) Supply available for purchase every year, however, shown is amount available in dry periods, after delivery losses. This supply would typically be used only during dry years and is available through 2050.

(g) Supplies shown are annual amounts that can be withdrawn using existing firm withdrawal capacity and would typically be used only during dry years.

(h) For completeness, LAWWD36 sales are included in demands. The increased percentage applied to the passive demands for single dry year of 8% comes from adjusted weather percentages.

c. Multiple Dry Year

Under Multiple Dry Year conditions, SCV Water's supply portfolio reflects sustained hydrologic stress and a continued reduction in imported water availability. In contrast to the Single Dry Year condition, this scenario represents cumulative impacts over an extended drought period.

To maintain reliability, SCV Water increases reliance on groundwater and stored supplies, with groundwater production reaching its highest planned levels while remaining within SGMA sustainability criteria. Additional groundwater capacity, including the incorporation of future Saugus wells, supports this increased production. Storage and banking programs continue to provide critical supply through available recovery capacity, supplementing reduced imported supplies over the duration of the drought. Recycled water supplies remain stable and continue to provide a consistent baseline contribution across all years, reducing overall system variability.

Despite prolonged reductions in imported water, the combination of groundwater, storage, and recycled water allows SCV Water to maintain sufficient total supply. This condition illustrates the system's ability to sustain operations during extended drought by shifting reliance toward local and previously stored resources. **Table 14** illustrates projected total supply under Multiple Dry year conditions for the 2030–2050 planning horizon.

Table 14: Multiple Dry Year Supplies

Supplies (AFY)	2030	2035	2040	2045	2050
Groundwater[a]					
Alluvial Aquifer	27,600	27,600	27,600	27,600	27,600
Saugus Formation	26,147	27,874	27,874	30,083	30,083
Total Groundwater	**53,747**	**55,474**	**55,474**	**57,683**	**57,683**
Recycled Water Existing[b]	450	450	450	450	450
Recycled Water New Drop or Future	1,515	2,293	3,067	3,886	4,724
Total Recycled	**1,965**	**2,743**	**3,517**	**4,336**	**5,174**
Imported Water					

Supplies (AFY)	2030	2035	2040	2045	2050
State Water Project[c]	14,280	14,280	12,376	12,376	12,376
Flexible Storage Accounts[d]	6,060	4,680	4,680	4,680	4,680
Buena Vista-Rosedale	11,000	11,000	11,000	11,000	11,000
Nickel Water - Newhall Land[e]	0	1,607	1,607	1,607	1,607
Yuba Accord Water[f]	1,000	1,000	1,000	1,000	1,000
Total Imported	**32,340**	**32,567**	**30,663**	**30,663**	**30,663**
Banking and Exchange Programs[g]					
Rosedale Rio-Bravo Bank[g]	10,000	15,000	15,000	15,000	15,000
Semitropic Bank[g]	5,000	5,000	5,000	5,000	5,000
Semitropic – Newhall Land Bank[g]	-	4,950	4,950	4,950	4,950
Exchange Balances	-	-	-	-	-
Total Bank/Exchange	**15,000**	**24,950**	**24,950**	**24,950**	**24,950**
Total Supplies	**103,052**	**115,734**	**114,604**	**117,632**	**118,470**
Total Demand[h]	**67,354**	**72,669**	**73,857**	**75,652**	**77,611**

Notes:

(a) Groundwater supplies represent the quantity of groundwater available to be pumped according to the GTIP schedule and associated GSP basin operating plan.

(b) Existing Recycled Water is based on current average annual use.

(c) SWP supplies are based on average deliveries from DWR's 2025 Draft DCR (15% - 13%).

(d) Supplies utilized in dry years.

(e) Existing Newhall Land supply committed under approved Newhall Ranch Specific Plan. Water is available from 2025 -2034 to meet supply shortfalls associated with the Newhall Ranch Specific Plan. Assumed to be transferred to SCV Water once Newhall Ranch development is completed around 2035.

(f) Supply available for purchase every year, however, shown is amount available in dry periods, after delivery losses. This supply would typically be used only during dry years and is available through 2050.

(g) Supplies shown are annual amounts that can be withdrawn using existing firm withdrawal capacity and would typically be used only during dry years.

(h) For completeness, LAWWD36 sales are included in demands. The increased percentage applied to the passive demands for single dry year of 5.2% comes from adjusted weather percentages.

d. Overall Supply Reliability Findings

Overall, SCV Water's supply portfolio demonstrates a high degree of reliability across Normal, Single Dry, and Multiple Dry Year conditions. While imported water supplies, particularly SWP deliveries, decline significantly under dry conditions, the system maintains total supply availability through increased groundwater production, use of stored supplies, and supplemental transfers.

The portfolio is structured such that variability in imported supplies is offset by operational flexibility in local and stored resources. Recycled water provides a stable baseline supply across all year-types, further reducing system variability. Under extended drought conditions, increased reliance on groundwater and storage remains within sustainable management limits, consistent with the 2022 GSP.

As a result, SCV Water is able to meet projected demands under all evaluated scenarios without reliance on shortage response actions, demonstrating a resilient and adaptable supply portfolio under a range of hydrologic conditions.