2021 Santa Clarita Valley Water Report

Santa Clarita Valley Water Agency and
Los Angeles County Water Works District No. 36

JANUARY 2023

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Acronym	Meaning	Acronym	Meaning
AB	Assembly Bill	PTF	Perchlorate Treatment Facility
af	acre-feet	RAA	Running Annual Average
afy	acre-feet per year	RL	Response Level
Alluvium	shallow Alluvial aquifer	RRB	Rosedale-Rio Bravo Water Storage District
AVEK	Antelope Valley East Kern Water Agency	RWMP	Recycled Water Master Plan
Basin	Santa Clara River Valley Groundwater Basin	SATP	Saugus Aquifer Treatment Plant
BV-RRB	Buena Vista/Rosedale-Rio Bravo	Saugus	deeper Saugus Formation aquifer
Buena Vista	Buena Vista Water Storage District	SCV-GSA	Santa Clarita Valley Groundwater Sustainability Agency
CCR	Consumer Confidence Report	SCVSD	Santa Clarita Valley Sanitation District of LosAngeles County
CEQA	California Environmental Quality Act	SCV Water	Santa Clarita Valley Water Agency
CLWA	Castaic Lake Water Agency	SNMP	Salt and Nutrient Management Plan
DLR	Detection Limit for Purposes of Reporting	Semitropic	Semitropic Water Storage District
DDW	Division of Drinking Water	SGMA	Sustainable Groundwater Management Act
DTSC	California Department of Toxic Substances Control	SOC	Synthetic Organic Chemicals
DWR	California Department of Water Resources	SPTF	Saugus Perchlorate Treatment Facility

Acronym	Meaning	Acronym	Meaning
GPCD	gallons per capita per day	SWAT	Sustainable Water Action Task Force
GSA	Groundwater Sustainability Agency	SWP	State Water Project
GSI	GSI Water Solutions, Inc.	SWRCB	State Water Resources Control Board
GSP	Groundwater Sustainability Plan	SWRU	Semitropic Stored Water Recovery Unit
GWMP	Groundwater Management Plan	TCE	Trichloroethylene
IRWMP	Integrated Regional Water Management Plan	TDS	Total Dissolved Solids
JPA	Joint Power Authority	µg/L	micrograms per liter
LACWD 36	Los Angeles County Waterworks District No. 36	USEPA	United States Environmental Protection Agency
LSCE	Luhdorff and Scalmanini Consulting Engineers	SB	Senate Bill
MCL	Maximum Contaminant Level	UWCD	United Water Conservation District
MOU	Memorandum of Understanding	UWMP	Urban Water Management Plan
NL	Notification Levels	Valley	Santa Clarita Valley
NPDES	National Pollutant Discharge Elimination System	VOC	Volatile Organic Compound
PCE	Tetrachloroethylene	WSCP	Water Shortage Contingency Plan
PFAS	Per- and Polyfluoroalkyl Substances	WUESP	Water Use Efficiency Strategic Plan
PFOA	Perfluorooctanoic Acid	WRP	Water Reclamation Plant
PFOS	Perfluorooctane Sulfonate		

Executive Summary

This calendar-year Annual Water Report is the twenty-fourth since reports began in 1998. It provides current information about the water requirements and water supplies of the Santa Clarita Valley (Valley). This report has been prepared by the Santa Clarita Valley Water Agency (SCV Water) with assistance from Luhdorff & Scalmanini Consulting Engineers (LSCE).

This report provides information about local groundwater resources, State Water Project (SWP) and other imported water supplies, recycled water, and water conservation. It also includes discussion about the Valley's Groundwater Operating Plan (2009), the Urban Water Management Plan (2020 UWMP), the Santa Clarita Valley Groundwater Sustainability Agency's (SCV-GSA) January 2022 Groundwater Sustainability Plan (GSP), and the SCV-GSA's water year Annual Report (GSP Annual Report) prepared in March 2022.

This Annual Water Report reviews the sufficiency and reliability of supplies in the context of existing water demand, with focus on actual conditions in calendar year 2021, and it provides a short-term outlook of water supply and demand for 2022.

2021 was characterized by extreme dry and warm periods statewide which shifted to extreme precipitation in December, ending the calendar year at below average precipitation. With critically dry conditions experienced January through November, the state moved towards increased administrative regulatory actions including Drought Emergency Declarations and the Governor's call for 15% voluntary conservation statewide. SCV Water responded by enacting Stage 1 of the Water Shortage Contingency Plan (WSCP) and Ordinance in November 2021. Overall, there was a slight increase in total water demand from the prior year

Table ES-1. Santa Clarita Valley Summary of 2021 Water Supplies and Uses (af)

Municipal	
Imported Water	41,636
Groundwater	25,933
Recycled Water	480
Subtotal	**68,049**
Agriculture and Miscellaneous	
Groundwater	13,710
Subtotal	**13,710**
TOTAL	**81,759**

as the community slowly transitioned into the call for conservation. SCV Water achieved its 22% by 2021 interim conservation target, set to continue movement towards anticipated future efficiency requirements, and gained momentum moving into dry conditions in 2022. Water uses and supplies in 2021 are summarized in **Table ES-1**.

Since SCV Water's last Annual Water Report, the SCV-GSA adopted its first GSP required by the 2014 Sustainable Groundwater Management Act (SGMA). This plan represents years of work with stakeholders and technical professionals to evaluate Santa Clara River Valley Groundwater Basin (Basin) conditions historically, currently, and to project future conditions. The SCV-GSA also submitted its first water-year based GSP Annual Report in March 2022 for water year 2021 (October 2020-September 2021). The GSP Annual Report shows that the Basin continues to experience year-to-year variations in storage that primarily reflect the effects of variable rainfall. Fluctuations in pumping may explain some of the variations in storage as well, given the generally decreased pumping from the Alluvial Aquifer and slightly greater Saugus Formation pumping that has occurred since the early 2010s. Current changes in storage and the groundwater elevation hydrographs together show similar conditions as those observed historically. They show declining groundwater elevations and storage in certain parts of the Basin during low-rainfall periods (dry cycles in the Basin's local hydrology), but stable or even rising groundwater elevations and storage in other parts of the Basin under these same dry conditions because of careful management of groundwater pumping. As has occurred in the past, groundwater levels and storage are likely to increase during the next cycle of normal or above-normal rainfall. Together, these observations indicate that the Basin was being operated in a sustainable manner through water year 2021.

The aquifer underlying the valley is comprised of a relatively shallow Alluvial aquifer (Alluvium) and the much deeper Saugus Formation (Saugus). Of the 39,650 acre-feet (af) of total groundwater pumping in the Valley in 2021, approximately 26,600 af were pumped from the Alluvium and 13,050 af were pumped from the Saugus Formation. Table ES-2 shows actual 2021 groundwater production in comparison to the Groundwater Operating Plan for the GSP. 2021 pumping from the Alluvium and Saugus Formation were below the operating plan range outlined in **Table ES-2** for the second year of dry conditions.

Table ES-2. 2021 SCV Groundwater Production vs. Operating Plan

Aquifer	Groundwater Production (AF)	Groundwater Operating Plan			
	2021 Production	Normal Year	Dry Year 1	Dry Year 2	Dry Year 3
Alluvium	26,600	30,000 to 40,000	30,000 to 35,000	30,000 to 35,000	30,000 to 35,000
Saugus Formation	13,050	7,500 to 15,000	15,000 to 25,000	21,000 to 25,000	21,000 to 35,000
Total	**39,650**	**37,500 to 55,000**	**45,000 to 60,000**	**51,000 to 60,000**	**51,000 to 70,000**

In 2021, groundwater water levels generally rose in areas with reduced pumping, but decreased in areas with active production, reflective of historically dry conditions. Certain areas with declines earlier in the year also showed groundwater elevation increases later in the year. 2021 had the second highest production totals from the Saugus Formation, which reflects the operating plan under dry conditions.

SCV Water delivers water that is in compliance with all state and federal health standards. Further work continued to address ongoing groundwater quality issues for Perchlorate, volatile organic compounds (VOCs), and per- and polyfluoroalkyl substances (PFAS), which have severely impacted local groundwater production. In 2021 SCV Water completed a feasibility evaluation for water quality compliance and treatment needs to strategically bring crucial impacted groundwater supplies back to potable water quality standards suitable for delivery to its customers (Kennedy/Jenks, 2021). The first PFAS treatment facility came online in December 2020, with additional groundwater treatment projects continuing through 2030.

SCV Water's final allocation of SWP water for 2021 was 5% of its Table A Amount, or 4,760 af. 2021 marked the second time the state has ever issued its lowest allocation of (5%). The total imported water supply in 2021 was 57,653 af which included SWP Table A supply, and supplies purchased from Buena Vista Water Storage District (Buena Vista) with Rosedale-Rio Bravo Water Storage District (RRB) combined supply (BV-RRB), Yuba Accord and State Water Contractor Dry Year programs. In addition, SCV Water utilized water available through dry year reserves which include SWP carryover and flexible storage water, as well as recovery from SCV Water's Semitropic Water Storage District (Semitropic) and RRB water banking programs.

In 2022, total Valley-wide water demand is projected to be approximately 84,800 af before voluntary conservation. Increasing calls for statewide voluntary and mandated conservation resulted in SCV Water enacting Stage 1 of its WSCP and Water Conservation and Water Supply Shortage Ordinance in November 2021. Further, in March of 2022, the Governor issued an emergency order that mandated adoption of Stage 2 of the conservation plans and the Agency moved to Stage 2 in April of 2022. These actions are expected to continue to reduce demands on water supplies in 2022.

The final 2022 SWP allocation was 5 percent, marking the third year the California Department of Water Resources (DWR) ever issued the lowest allocation, and the first consecutive 5 percent allocation since first issued in 2014. Utilizing available imported and local supplies, dry year reserves, flexible storage in Castaic Lake, and options to participate in DWR dry-year water purchase programs, SCV Water anticipates having more than adequate supplies to meet all water demands in 2022 (approximately 90,655 af).

Chapter 1
Introduction

1.1 Purpose, and Potential Change to Future Reports

Annual Water Reports were instituted in 1998 at the request of the Los Angeles County Board of Supervisors. Since then, these Annual Water Reports and/or report details have been incorporated by reference and/or made parts of the Newhall Ranch Specific Plan, and Memorandums of Understanding (MOU) between the upper basin water purveyors and the United Water Conservation District (UWCD). The first MOU between the upper basin water purveyors and UWCD was in 2001 and it was later updated in 2018. The MOUs describe coordination, data management, and preparation of Annual Water Reports by SCV Water. This report's purpose includes summarizing Calendar Year 2021 water related information regarding water supplies, trends, water quality, and basin conditions to provide information to stakeholders, water planners and local agencies, it also includes a new discussion of the SCV-GSA's GSP.

Much has changed in terms of information accessibility about planning and basin conditions since the first Annual Water Report's production in 1998. This Annual Water Report is now just one of several reports and planning documents prepared by SCV Water and/or in partnerships with others since 1998. One result of providing more information about basin management in different formats over the years is report-overlap. To streamline this 2021 Annual Water Report, SCV Water has provided references to other important planning documents (some of which are state-mandated) below:

1. 2003 Groundwater Management Plan (GWMP) – https://www.yourscvwater.com/sites/default/files/SCVWA/CLWA-Groundwater-Management-Plan-December-2003.pdf
2. 2020 Urban Water Management Plan (UWMP) – Urban Water Management Plan | Santa Clarita Valley Water (yourscvwater.com)
3. Santa Clarita Valley Groundwater Sustainability Agency's (SCV-GSA) - https://scvgsa.org/gsp/
4. 2021 GSP Annual Report - https://scvgsa.org/wp-content/uploads/2022/03/SCVGSA_2021-Annual-Report_Final_March2022.pdf
5. 2021 Water Quality Report for SCV Water (CCR) - https://www.yourscvwater.com/en/water-quality
6. Salt and Nutrient Management Plan Santa Clara River Valley East Subbasin (SNMP) - Salt and Nutrient Management Plan Santa Clara River Valley East Subbasin – California Water Library (cawaterlibrary.net)
7. 2014 Integrated Regional Water Management Plan (IRWMP) - https://www.yourscvwater.com/sites/default/files/SCVWA/Integrated-Regional-Water-Management-Plan_February-2014.pdf

For example, the 2003 Groundwater Management Plan (GWMP) (updated in 2008), the 2020 UWMP, and the SCV-GSP all describe approaches to provide water supply into the future, including approaches to pump groundwater during different periods. In addition, the SCV-GSA also provided its first water-year based Annual Report (GSP Annual Report) in March 2022.

SCV Water's Annual Water Quality or Consumer Confidence Reports (CCR) contain a summary of the prior year's water quality, and the Salt and Nutrient Management Plan (SNMP) also contains summaries of water quality and simulations of future water quality trends.

The 2014 Integrated Regional Water Management Plan (IRWMP), and its updates, contain descriptions of the watershed including climate change considerations and coordination with stakeholders. Further, climate change considerations and coordination with stakeholders are also described and/or included in the 2020 UWMP and the GSP.

The 2002 Recycled Water Master Plan (RWMP) was updated in 2016 (Kennedy/Jenks Consultants, 2016), and SCV Water has since developed and implemented an innovative approach to quantify and utilize recycled water called "New Drop." Use of recycled water is described in all the reports above.

In October and November 2021, the SCV-GSA held meetings to present its Draft GSP. The GSP was adopted by the SCV-GSA Board in January 2022.

The SCV-GSA is a Joint Powers Authority (JPA) formed to prepare the state-required GSP. Members of the JPA include the City of Santa Clarita, Los Angeles County Waterworks District No. 36 (LACWD 36), LA County Regional Planning, and SCV Water. The 2021 Draft GSP represents the most up to date and comprehensive information on the basin, representing years of work with stakeholders and technical professionals to evaluate basin conditions historically, currently, and to project future conditions, measured against sustainable management criteria.

Given all these reports with overlapping information and the desire to be efficient with communication, it may be that the GSP Annual Report (attached) can serve the purpose of the SCV Annual Water Report in the future. The GSA and SCV Water's strong coordination with UWCD in the downstream basin has also expanded as each area is also covered by GSAs and their respective GSPs. Prior to making substantial changes to the Annual Water Report process, SCV Water would coordinate with interested stakeholders.

1.2 Water Supply Strategy

As described in the 2020 UWMP, SCV Water continues to rely upon a diverse portfolio of programs and projects to provide reliable water supplies for current and future customers. These include conjunctively operating imported and groundwater sources, recovering groundwater pumping capacity lost to contamination in the Alluvial Aquifer and Saugus Formation, building additional Saugus Formation pumping capacity for use when imported supplies are reduced, increasing the use of recycled water, supplementing existing banking programs that provide dry-year supplies, and increasing the efficiency of current water use (water conservation). This overall strategy is designed to meet increasing water demands while assuring a reasonable degree of supply reliability.

Consistent with this strategy, in 2021, SCV Water fulfilled the following major accomplishments to enhance, preserve, and strengthen the quality and reliability of existing and future water supplies:

- Continued participation in long-term water banking programs with the RRBWSD and the Semitropic Stored Water Recovery Unit (SWRU)
- Continued participation in two-for-one exchange programs with Antelope Valley East Kern Water Agency (AVEK) and UWCD
- Continued preparation of GSP for the Upper Santa Clara River GSA under the SGMA
- Continued to implement the Groundwater Treatment Implementation Plan to manage groundwater quality challenges related to PFAS and perchlorate in accordance with the GSP and 2020 UWMP
- Increase efforts towards more grant funding, with multiple applications awarded grant funding
- Continued participation in the Delta Conveyance Project and the Delta Conveyance Design and Construction Authority,
- Negotiated a five-year extension of the agreement to purchase recycled water from the SCV Sanitation District
- Completed Recycled Water pipeline project Phase 2B (Vista Canyon area)
- Continued with design and construction of multiple infrastructure projects including the Magic Mountain Reservoir and pipeline and extensions of recycled water distribution pipelines
- Completed construction for Treatment System at Well Q2, started constructing Treatment System at Valley Center Well, completed design for Santa Clara/Honby Wells Treatment System, completed construction of 201 perchlorate treatment system (2017) and started design on Well 201 VOC treatment, started planning and California Environmental Quality Act (CEQA) for Well 205 Treatment System, started planning for treatment at E, S, U and T Wells.
- Purchase, installation, training, and certification of in-house lab equipment for PFAS testing
- Completed retail water rate cost study and rate case to unify retail water rates
- Completed update to 2020 UWMP for SCV Water

- Developed the WSCP
- 2021 EPA Watersense Excellence Award Recipient (second year in a row)
- Launched Sustainable Water Action Task Force (SWAT) external SCV Water, City and County representatives
- Release of the Draft GSP and significant stakeholder outreach and discussion

Additionally, SCV Water seeks to refine its water supply strategy through its work on a resiliency initiative. It will build on the UWMP and SCV-GSP but more fully integrate watershed functions while assessing risks posed by climate change and other variables. Initial steps include updating the Agency's water supply reliability model using GoldSim software and initiating a California Environmental Flow Framework on the Santa Clara River.

1.3 Basin Operating Plan

The groundwater basin operating plan is the cumulation of extensive analysis over the past three decades that has resulted in a substantial understanding of the groundwater basin, including groundwater extraction and natural groundwater recharge effects on basin water levels. The most recent Basin Operating Plan was updated in 2008 (LSCE and GSI Water Solutions, Inc. (GSI), 2009) and was further refined in 2021 during the development of the SCV-GSP. The Basin Operating Plan pumping values are summarized in **Table 1-1**. The development of the GSP included an update of the basin numerical model that utilized the Basin Operating Plan and 2020 UWMP ranges for dry-, normal-, and wet-year groundwater pumping from the Alluvial Aquifer and Saugus Formation to develop a projected water budget, considering climate change, to 2042 and 2072 under full buildout conditions for SCV (estimated in 2050) as described in the 2020 UWMP. Though this SCV Annual Water Report is a 2021 calendar year report, and the GSP was adopted and submitted to DWR in January 2022, we are including certain information from the adopted GSP because it is consistent with the Draft GSP reviewed by stakeholders in late 2021. For information on the SGMA efforts in the Subbasin, please refer to the homepage for SCV-GSA at https://scvgsa.org.

Table 1-1. Groundwater Operating Plan for the Santa Clarita Valley

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

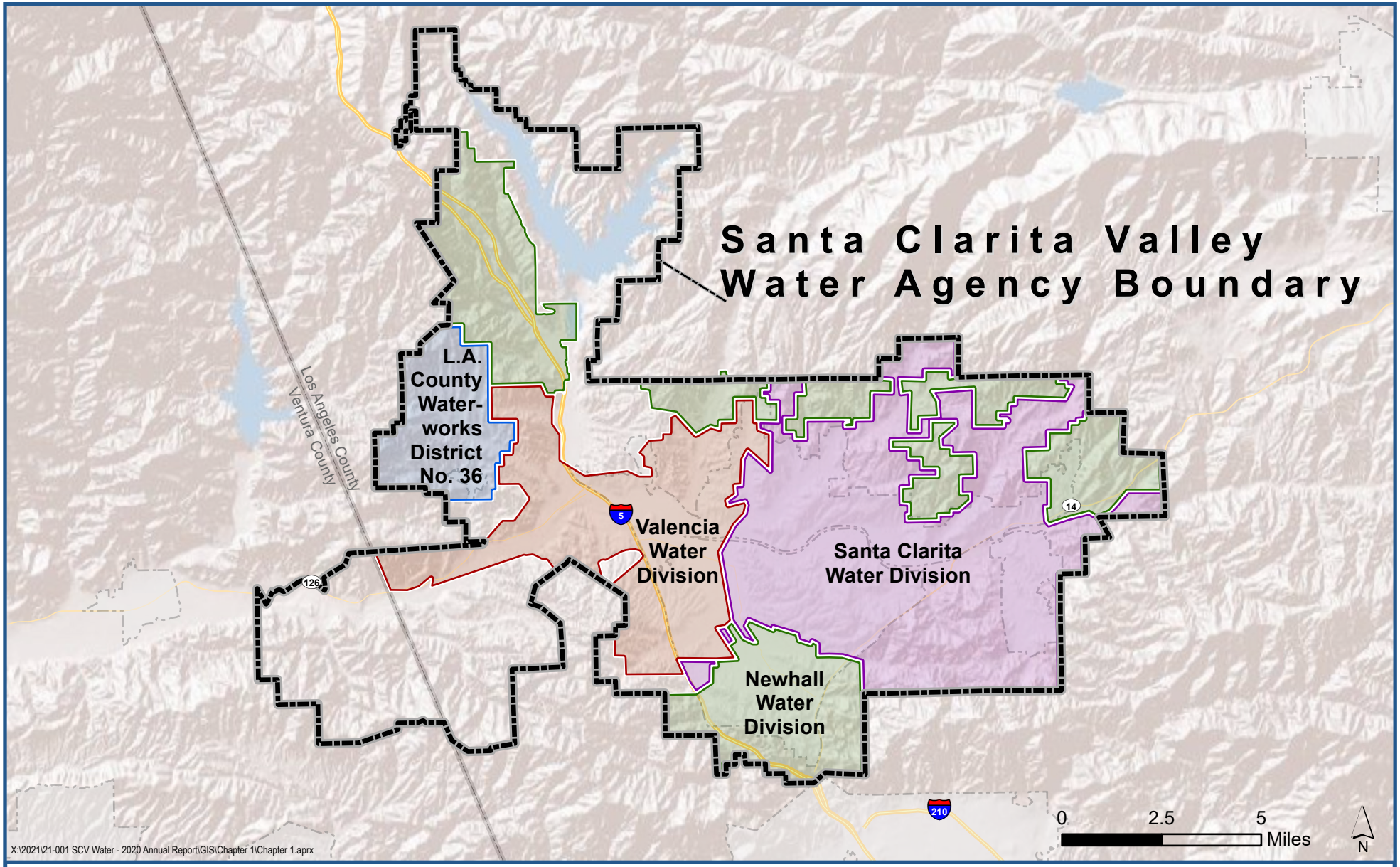
1.4 Service Area Information

Domestic water service is provided to approximately 74,350 service connections by SCV Water and Los Angeles County Waterworks District No. 36.

Figure 1-1 shows the SCV Agency Boundary. It includes a portion of the City of Santa Clarita and unincorporated portions of Los Angeles County. Communities include Val Verde, Stevenson Ranch, Mission Village, Tesoro, Valencia, Newhall, Saugus, Canyon Country, and Castaic.

The 2020 UWMP describes in great detail the types of water supplies utilized in the SCV Water Agency boundary. At a high-level, customers in SCV Water's service area receive a blend of groundwater and imported water. The exact ratio of groundwater to imported water varies due to supply availability and distribution system operational constraints, but generally speaking the ratio of imported to local groundwater is 50:50.

Not all water users in SCV Water's service area are municipal water users. Locally non-municipal wells include agricultural and domestic supply wells. Estimates of the non-municipal groundwater demands have been made over the years using available historical information about groundwater extractions in conjunction with the numerical groundwater flow model for the basin. Such estimates are included and considered in the 2020 UWMP, and the SCV-GSP. SCV Water also procures recycled water from the Santa Clarita Valley Sanitation District (SCVSD) for distribution.



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Consulting Engineers

SCVWA and Water Divisions

Santa Clarita Valley Water Report
Santa Clarita Valley, Los Angeles County, California

Figure 1-1

Chapter 2
Groundwater Supply

2.1 Key Aquifers

The Alluvial Aquifer and Saugus Formation provide groundwater to municipal water users, agricultural uses, and domestic well owners (principally in the canyon areas outside of the municipal water delivery system). Geologic descriptions and hydrogeologic details related to both aquifers are included in several technical reports, most recently the 2020 UWMP (SCVWA, 2021) and 2022 SCV-GSP. The 2022 SCV-GSP contains a detailed hydrogeologic conceptual model and updated geologic cross sections describing the aquifers.

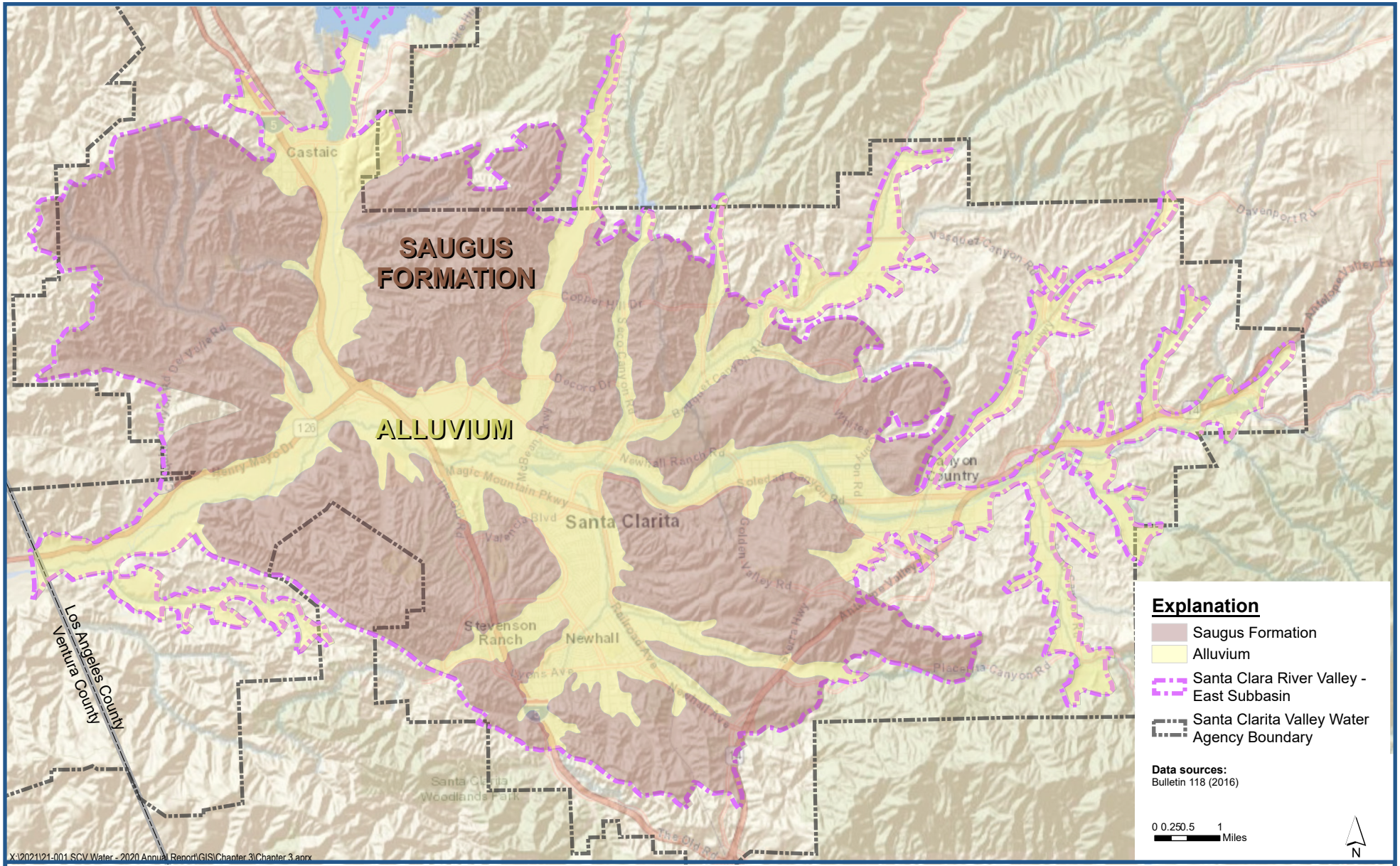
The Saugus Formation and Alluvium Aquifer extents are shown in **Figure 2-1**.

2.2 Alluvial Aquifer Groundwater Supply

Total pumping from the Alluvial Aquifer (by municipal, agricultural, and private pumpers) is in accordance with the 2020 UWMP, which defines the groundwater operating ranges of 30,000 to 40,000 acre-feet per year (afy) in wet and normal years, with possible reduction to 30,000 to 35,000 afy during multiple dry years. Such operations will maximize use of the Alluvial Aquifer because of the aquifer's ability to store and produce good quality water on a sustainable basis and its capability of rapid recovery in wet periods. Alluvial wells are generally located along the main stem of the Santa Clara River (as shown in **Figure 2-2**) which use similar basin reaches described in the SCV-GSP. Since 2019, the discovery of PFAS chemicals in the groundwater supply has created temporary reductions in alluvial pumping as well head treatment systems are designed, installed, and brought into full operation. Full extraction capacity recovery from the impacts of PFAS is anticipated by 2030.

2.3 Saugus Formation Groundwater Supply

Total pumping from the Saugus Formation is in accordance with the 2020 UWMP which defines the groundwater operating ranges of 7,500 to 15,000 afy in average/normal years, with planned dry year pumping of 15,000 to 35,000 afy for one to three consecutive dry years, when shortages to SWP water supplies could occur. Saugus Formation wells are primarily located in the southern and western portions of the basin (**Figure 2-3**). The Basin Operating Plan envisioned that high pumping during dry periods would be followed by periods of lower pumping in order to allow recovery of water levels and storage in the Saugus Formation. Maintaining the substantial volume of water in the Saugus Formation remains an important strategy to help maintain water supplies in the Valley during drought periods. A longstanding water quality issue with the Saugus Aquifer, that has reduced extraction capacity, is the presence of perchlorate. SCV Water also operates treatment systems to remove perchlorate from groundwater.



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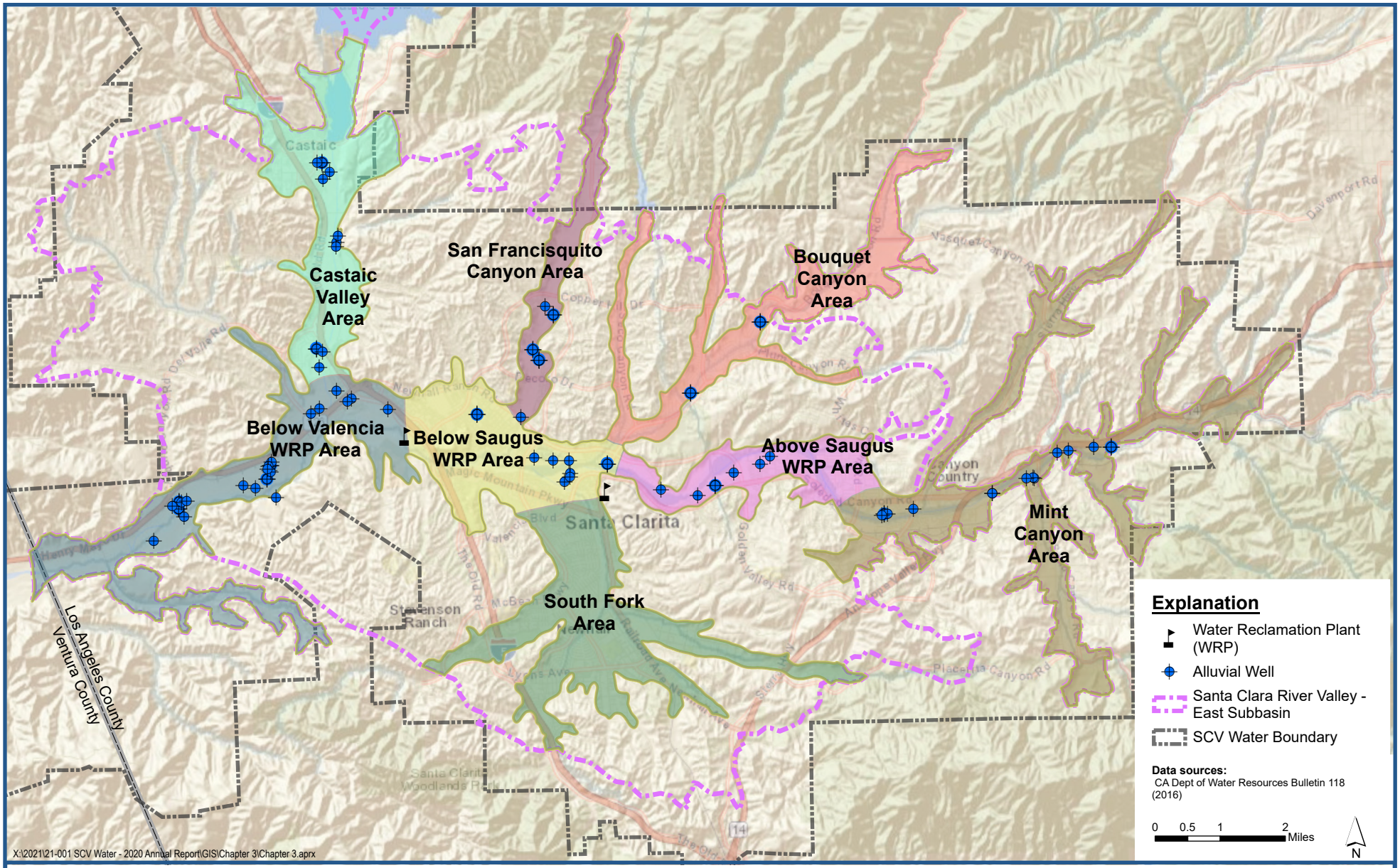
Alluvium and Saugus Formation

Santa Clarita Valley Water Report
Santa Clarita Valley, Los Angeles County, California

Figure 2-1



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Alluvial Well Locations By Area

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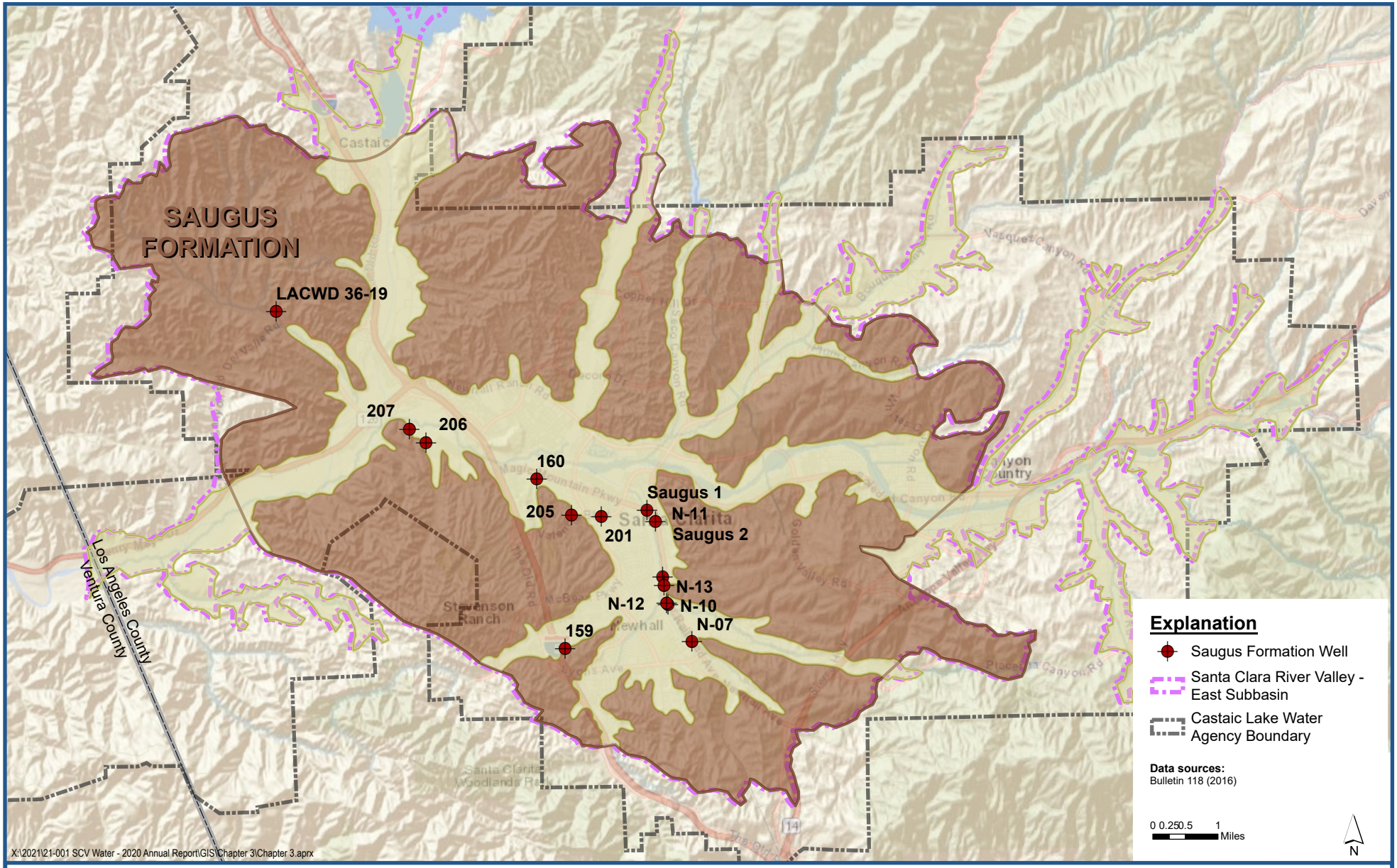
Santa Clarita Valley, Los Angeles County, California

Figure 2-2



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Saugus Formation Well Locations

Santa Clarita Valley Water Report
Santa Clarita Valley, Los Angeles County, California

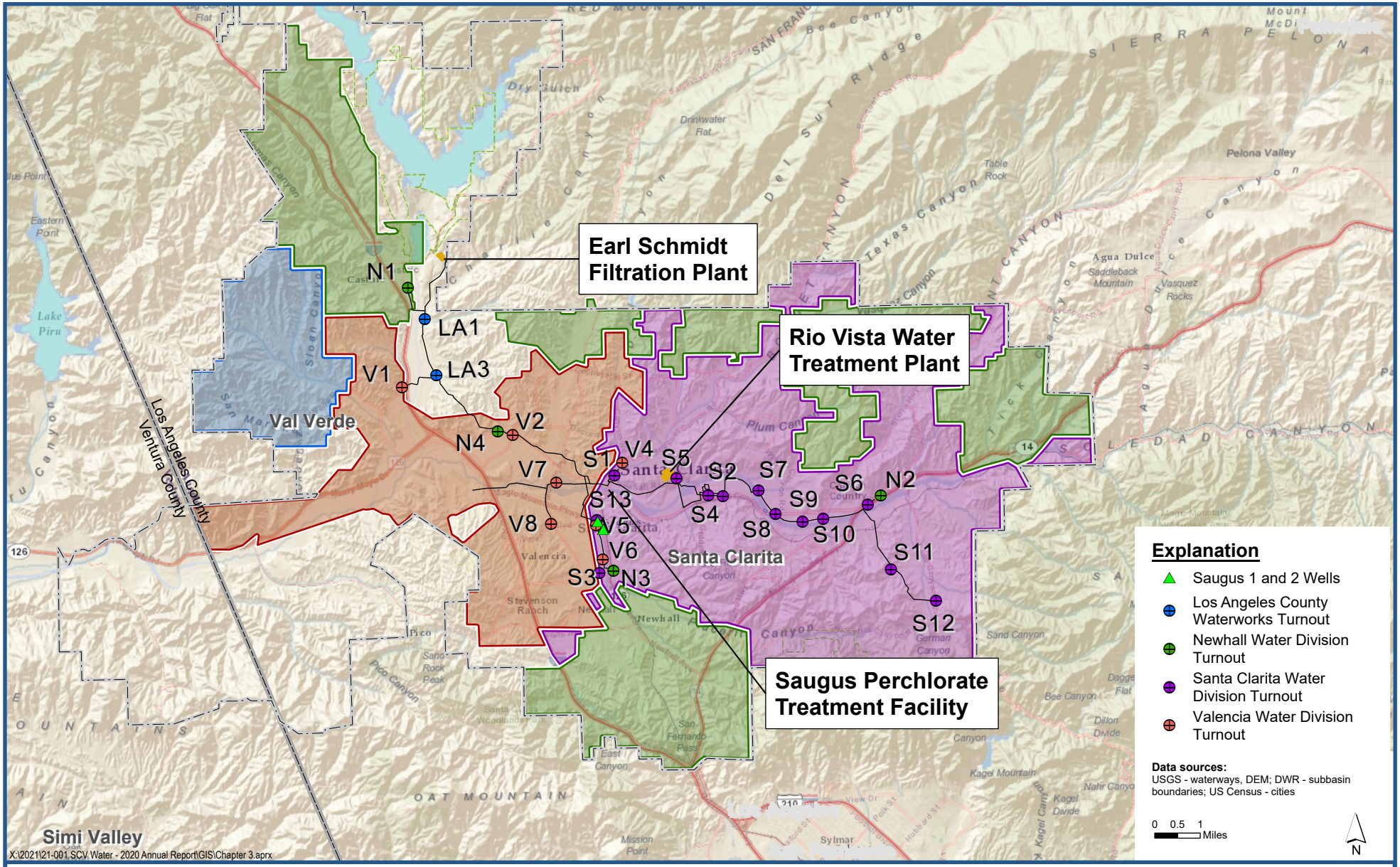
Figure 2-3

Chapter 3
Imported Water Supplies

Prior to 1980, local groundwater extracted from the Alluvial Aquifer and the Saugus Formation was the sole source of water supply in the Valley. Since 1980, local groundwater supplies have been supplemented with imported SWP water supplies and augmented by acquisition of additional supplemental water imported from BV-RRB and Yuba Accord water. Additionally, these water supplies have also been slightly built up by deliveries from the recycled water program since 2003. This section briefly describes SWP and other imported water supplies, as well as the recycled water program. More detailed information can be found in the 2020 UWMP.

SCV Water obtains the majority of its imported water supplies from the SWP, which is owned and operated by DWR. SCV Water is one of 29 contractors holding long-term SWP contracts with DWR. SWP water originates as rainfall and snowmelt in the Sacramento and Feather River watersheds where the SWP's largest reservoir, Lake Oroville, is located. The water released from Lake Oroville flows down the Feather River, joins flows in the Sacramento River and enters the Sacramento-San Joaquin Delta. Water is diverted from the Delta into the Clifton Court Forebay, where it is then pumped into the 444-mile-long California Aqueduct. A portion of SWP water delivered to southern California may temporarily be stored in San Luis Reservoir, which is jointly operated by DWR and the U.S. Bureau of Reclamation. Prior to delivery to SCV Water, SWP supplies are stored in Castaic Lake, a terminal reservoir located at the end of the West Branch of the California Aqueduct.

SCV Water's service area covers approximately 195 square miles (124,800 acres), including the City of Santa Clarita and surrounding unincorporated communities. Water from the SWP and other sources located outside the Valley is treated, filtered, and disinfected at SCV Water's Earl Schmidt Filtration Plant and Rio Vista Water Treatment Plant, which have a combined treatment capacity of 122 million gallons per day. This water is delivered from the treatment plants to the SCV Water Service Area (made up of Newhall Water Division, Santa Clarita Water Division and Valencia Water Division) and a wholesale customer (LACWD 36) through a distribution network of pipelines and turnouts. At present, SCV Water delivers water through 26 potable turnouts as schematically illustrated in **Figure 3-1**.



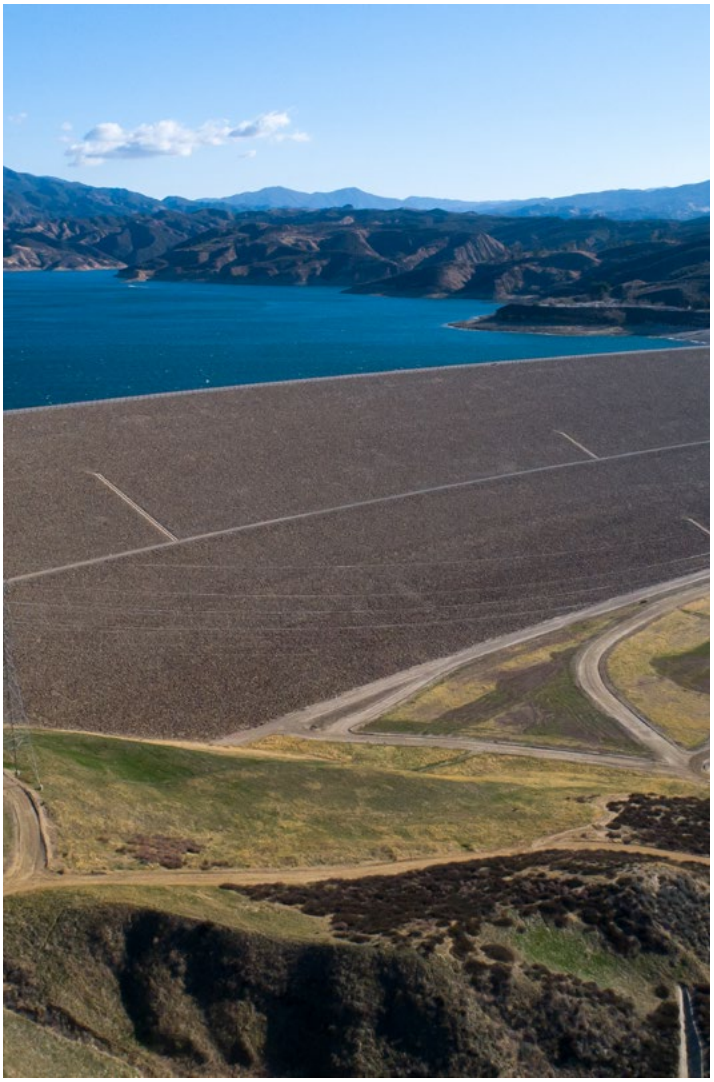
Luhdorff & Scalmanini
Consulting Engineers

Treated Water Distribution System
Santa Clarita Valley Water Agency

Santa Clarita Valley Water Report
Santa Clarita Valley, Los Angeles County, California

Figure 3-1

3.1 State Water Project Table A and Other Imported Water Supplies



Each SWP contractor has a specified water supply amount shown in Table A of its contract that cumulatively totals approximately 4.1 million af. SCV Water's contractual Table A Amount is 95,200 afy of water from the SWP. The term of the SCV Water contract is through 2038. DWR released the final Environmental Impact Report for the proposed extension in November 2018, and in January 2019, the Agency executed an amendment to extend the contract term through 2085, however, the amendment will not become effective until certain precedent conditions are met.

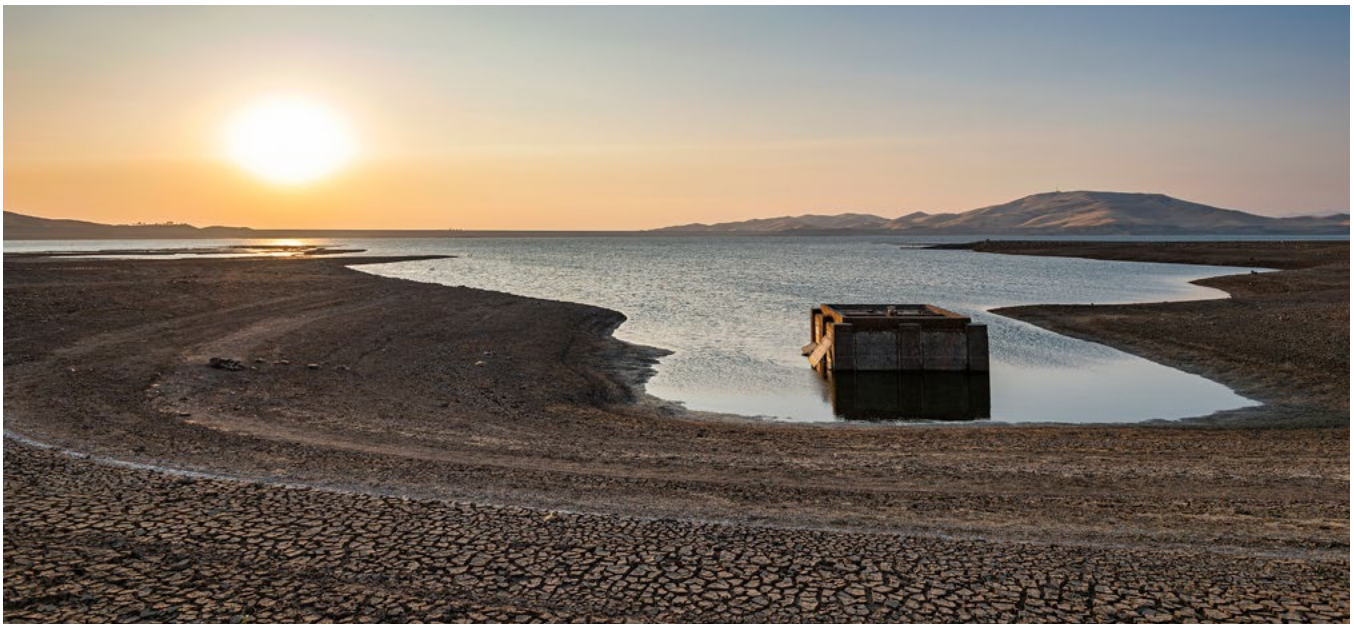
In addition to Table A supplies, the SWP Contract provides for additional types of water that may periodically be available, from "Article 21" water. Article 21 water is made available on an unscheduled and interruptible basis and is typically available only in above normal and wet years, generally only for a limited time in the late winter or early spring.

In early 2007, SCV Water finalized a Water Acquisition Agreement with BV-RRB in Kern County. Under this Program, Buena Vista's high flow Kern River entitlements (and other acquired waters that may become available) are captured and recharged within RRB's service area on an ongoing basis. SCV Water receives 11,000 af of these supplies annually through either exchange of Buena Vista's and RRB's SWP supplies or through direct delivery of water to the California Aqueduct via the Cross Valley Canal.

Other supplies that have been utilized in previous years include water from the Turn-Back Water Pool Program, "Article 21" water, the Yuba Accord Agreement, and "flexible storage" in Castaic Lake (up to 6,060 afy). In 2008, SCV Water entered into the Yuba Accord Agreement, which allows for the purchase of water from the Yuba County Water Agency through the Department of Water Resources to 21 State Water Project contractors (including SCV Water) and the San Luis and Delta-Mendota Water Authority. This non-SWP supply is available to SCV Water in certain years depending on hydrology and historically, SCV Water has utilized this resource in dry to critical years. Under certain hydrologic conditions, additional water may be available to SCV Water from this program.

3.2 Imported Water Supply Reliability - SWP Delivery Capability

In December of 2021 DWR released its Draft SWP Delivery Capability Report, and in September 2022, the final report was issued. The updated SWP Delivery Capability Report is based on DWR's new CALSIM 3 model that extends the hydrologic period through 2015 thus incorporating the historic dry years of 2014 and 2015. The report incorporates the Incidental Take Permit (ITP) and the updated Central Valley Project /SWP Coordinated Operating Agreement. The updated analysis demonstrates reduced reliability of average annual deliveries from 58% to 56%, current single dry-year deliveries from 6% to 4%, and future dry-year from 5% to 2%. Accordingly, the reduction in SWP supply reliability reinforces the need to diligently pursue efforts to conserve potable water and increase the use of recycled water to maximize utilization of potable water supplies.

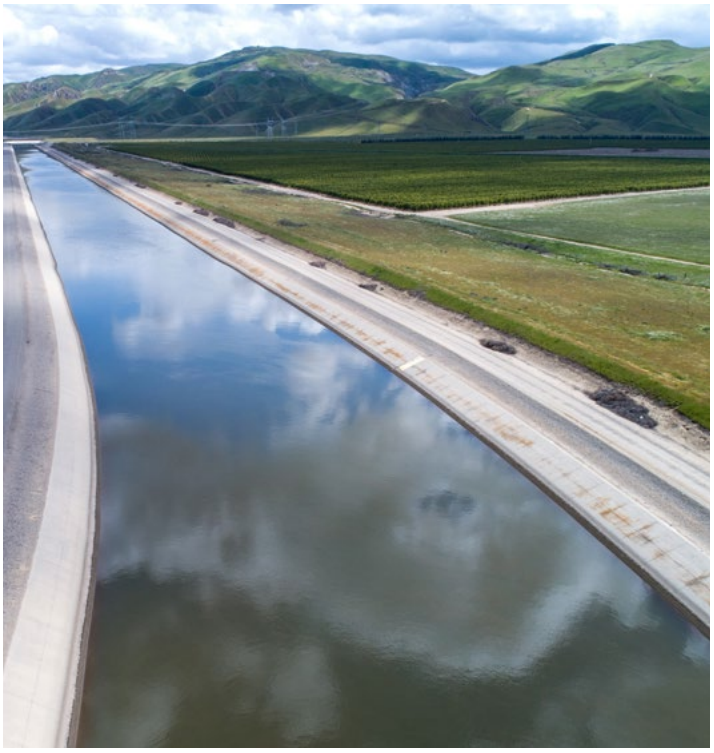


3.3 Water Banking and Exchange Supplies

SCV Water maintains water supply in various banking programs in the Kern Basin, and thereby has diverse supply options when needed. In 2005, then Castaic Lake Water Agency (CLWA) completed an agreement to participate in a long-term water banking program with RRBWSD in Kern County. This long-term program allows storage of up to 100,000 af at any one time, and with subsequent withdrawals and banking over the last 15 years, the balance at the end of 2021 was 78,810 af. SCV Water's current withdrawal pumping capacity is 10,000 afy, though up to 20,000 afy is permitted if other RRBWSD pumping capacity is available for use, which was the case in 2021.

Other components of SCV Water's water supply reliability program include its participation in the Semitropic SWRU. The term of the Semitropic SWRU Banking Program extends through 2035 with the option for two 10-year renewals. SCV Water may withdraw up to 5,000 afy from this banking program. At the end of 2021, the recoverable balance in the Semitropic SWRU Banking Program was 35,278 af.

Separately, SCV Water also has additional supply in Two-for-One Exchange Programs with AVEK (3,500 af) and UWCD (500 af). In 2020, 1,406 af of water from the AVEK program was utilized, leaving 2,344 af for future use. These exchange returns to SCV Water are only available when SWP allocation is 30% or higher.



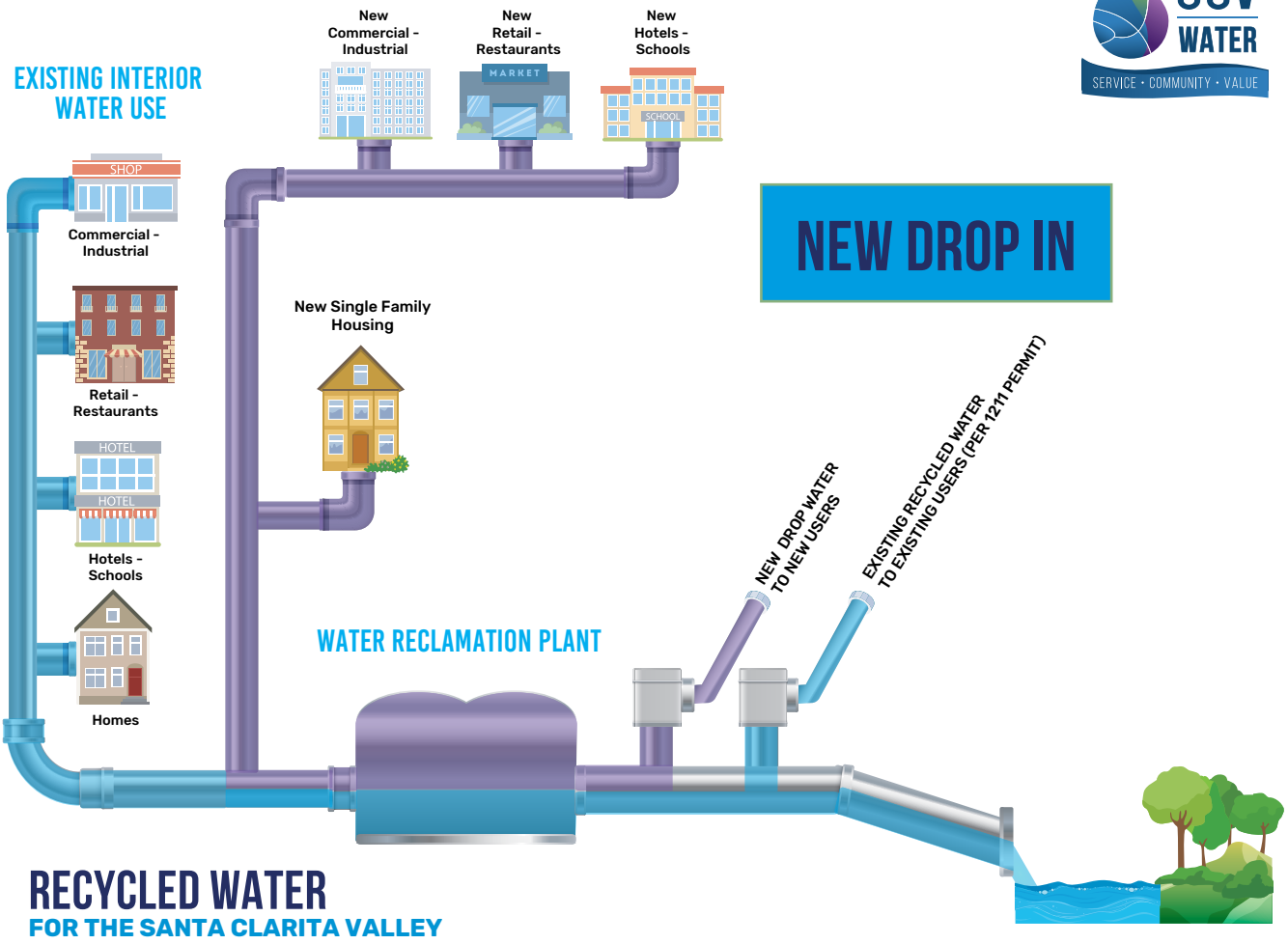
Overall, at the beginning of 2022, SCV Water had an available dry-year supplemental water supply of approximately 117,000 af through banking and exchange programs located outside the groundwater basin. These components of recoverable supplemental water supply are separately reflected in Table 5-6 because they are intended as a future dry-year supply.

3.4 Recycled Water

Recycled water is an important and reliable source of additional water; the use and planned expansion of existing facilities enhances water supply reliability in that it provides an additional source of local supply and allows for more efficient utilization of groundwater and imported water supplies. Deliveries of recycled water in the Valley began in 2003 for irrigation water supply at a golf course and in roadway median strips. In addition, a permit was renewed to allow for supply of recycled water for grading operations. Recycled water use from existing accounts has remained low, yet relatively constant over the last 18 years (approximately 400 afy), and in 2021 recycled water deliveries were approximately 480 af.

Recycled water is currently produced at two water reclamation plants (WRPs) operated by SCVSD: the Valencia WRP and the Saugus WRP, with respective average annual production of 15,500 afy and 6,100 afy, respectively. Most of the treated effluent from these two plants is discharged to the Santa Clara River.

SCV Water is working with SCVSD and other SCV stakeholders on the best path forward to expand the Valley's recycled water resources. As a means of developing additional recycled water supplies without increasing the diversion of recycled water flows discharged to the Santa Clara River, SCV Water has developed the New Drop Program to account for and utilize "new" recycled water flows. These additional recycled water supplies are 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. As new development occurs, potential additional recycled water supplies would be quantified through calculations and measurements. For more information regarding the New Drop Program, refer to the 2020 UWMP.



The Vista Canyon Water Factory came online in 2020 and will be producing recycled water pending completion of Phase 2B construction and approval of customer conversions which are both expected to be completed by the end of 2022. It is anticipated to eventually produce up to 440 afy of recycled water for new and existing users. Additionally, Phase 2D (served by the Valencia WRP) is nearing completion and is in the final stages of approval to include additional irrigation sites. The proposed Newhall Ranch WRP is anticipated to produce 4,200 afy at buildout, meeting more than half of the anticipated non-potable demands for the Newhall Ranch development.

An update to the 2002 RWMP was conducted in 2016 (Kennedy/Jenks Consultants, 2016). The updated RWMP included near-term, mid-term, and long-term objectives for increasing the use of recycled water where it was economically feasible. The previous and current master plans considered various factors affecting recycled water sources, supplies, users and demands so that CLWA (now SCV Water) could develop a cost-effective recycled water system within its service area. The 2016 update remained a draft pending completion of a CEQA document.

Chapter 4
Water Quality

Water delivered by SCV Water consistently meets drinking water standards set by the United States Environmental Protection Agency (USEPA) and the State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW). An annual CCR, which provides water quality data and information, is provided annually to all Valley residents who receive water from SCV Water and LACWD 36. The CCR includes detailed information summarizing the results of water quality testing of groundwater and treated SWP water supplied to the residents of the Valley. The report can be accessed at the following link: https://yourscvwater.com/index.php/water-quality/#waterqualityreports.

4.1 Perchlorate

Perchlorate is a regulated chemical in drinking water. In October 2007, the State of California established a maximum contaminant level (MCL) for perchlorate of 6 micrograms per liter (µg/L). Perchlorate has been a water quality concern in the Valley since 1997 when it was originally detected in four wells operated by the water retailers in the eastern part of the Saugus Formation near the former Whittaker-Bermite facility. In late 2002, perchlorate was detected in a fifth municipal well, in this case an Alluvial well (Stadium Well), also located near the former Whittaker-Bermite site. Two of the wells (Well 157 and Stadium Well) were sealed and replaced with new wells, and two wells (Saugus 1 and 2 Wells) were returned to service with treatment in January 2011. The fifth well (Well NC-11) has remained out of service with a portion of its capacity replaced by a combination of imported water and treated water from the Saugus Perchlorate Treatment Facility (SPTF) (described further below). In early 2005, perchlorate was detected in a second Alluvial well (Well Q2) near the former Whittaker-Bermite site (LSCE, April 2005). Following the installation of wellhead treatment for the removal of perchlorate in the same year, the well was returned to service. In 2007, after two years of subsequent operation with no detections of perchlorate, the wellhead treatment at Well Q2 was removed and remained in active water supply service until May 2019 when perchlorate was again detected at the MCL (6 µg/L). The well was taken out of service, and a treatment system for Well Q2 was constructed in 2020. Well Q2 is anticipated to be back online by the end of 2022, pending a DDW operating permit.

In August 2010, perchlorate was detected further down gradient in an eighth well, Well 201, that is located in the Saugus Formation. While the initial detection was below the MCL, the well was immediately taken out of service. Since then, SCV Water has been pursuing restoration alternatives at Well 201. Perchlorate treatment was constructed in 2017 and Well 201 was pumped to waste in order to help contain the perchlorate plume while permitting through DDW was pending. In 2021, Well 201 was shut down due to current drought conditions and SCV Water continues to work to finalize a permit with DDW for the treatment system. It is anticipated that the well will return to service by the end of 2024 and will also include treatment for VOCs. Following the detection of perchlorate in Well 201 in 2010, pumping was reduced from Well 205 and the well was taken out of service in April 2012 when perchlorate was detected at the MCL. Treatment plans for Well 205 are in design and will be similar to those employed at Well 201. In July 2021, Well N-13 had a perchlorate detection of 4.1 ug/L. Since then, quarterly monitoring has yielded concentration results above the current Detection Limit for Purposes of Reporting (DLR) of 2 ug/L but below the MCL of 6 ug/L. As described in the 2020 UWMP, the replacement and reactivation of the impacted wells, augmented by planned and funded replacement wells, adds to the overall ability to meet the groundwater component of total water supply in the Valley.

4.2 Perchlorate Treatment

As part of the operation of SCV Water's Perchlorate Treatment Facilities, numerous monitoring tests are performed on a continuous basis in order to ensure the safety of the treated water leaving the facilities. Groundwater samples are collected in accordance with their respective DDW operating permits. The samples are analyzed at different frequencies for numerous constituents, including perchlorate, general mineral, inorganic, VOC's, and synthetic organic compounds.

In 2021, 2,554 af of groundwater were pumped from Wells Saugus 1 and Saugus 2. After treatment for perchlorate removal, the groundwater is blended with treated imported water and delivered to the SCV Water distribution system. To date, more than 33,950 af of groundwater have been extracted and treated from Saugus 1 Well and Saugus 2 Well in this manner, of which 32,150 af have been used for water supply[1].

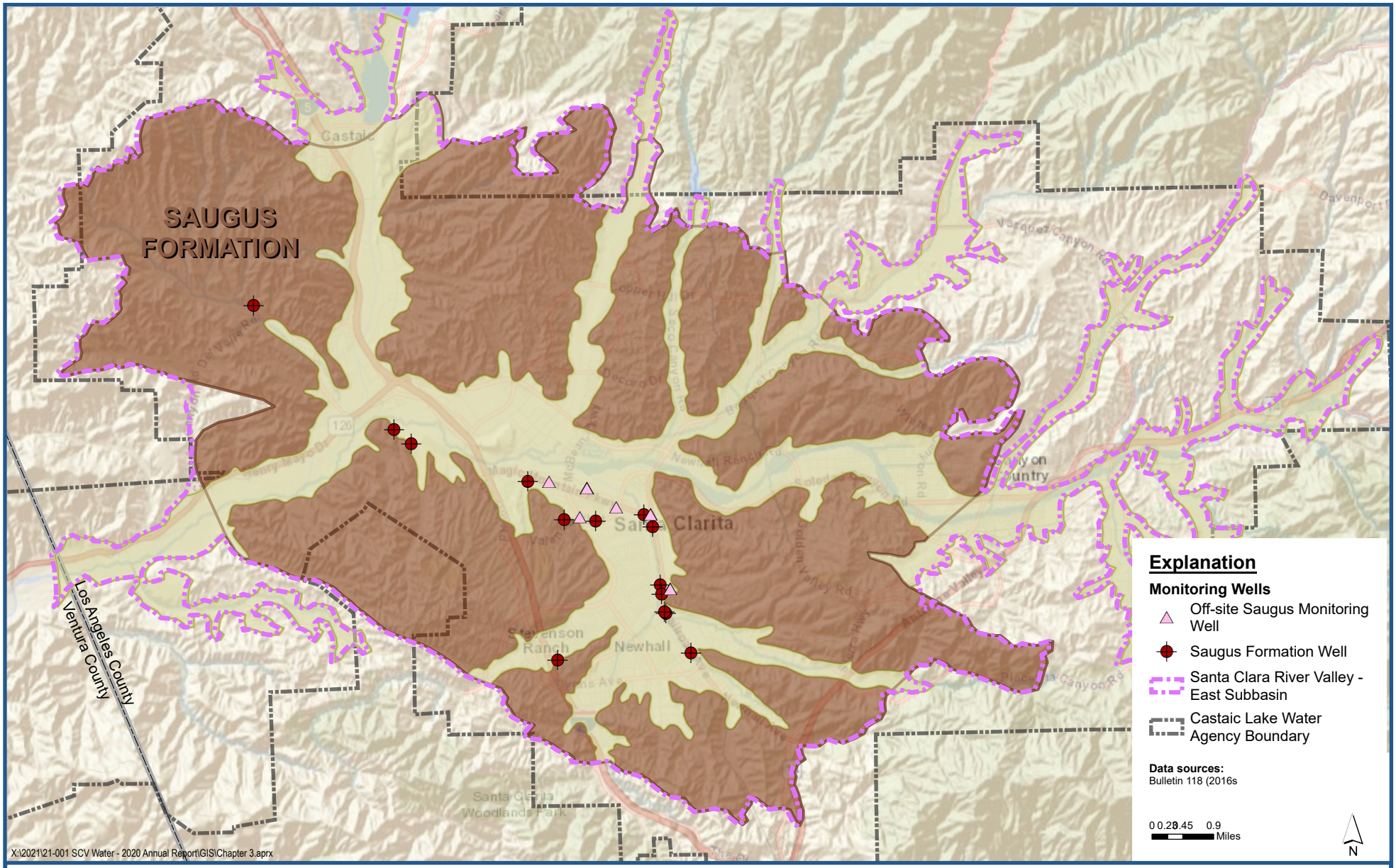
In 2017, a Perchlorate Treatment Facility (PTF) was constructed at Well 201. In November 2017, Well 201 PTF was operated to remove perchlorate from the well and provide containment. The water being pumped through Well 201 PTF was being discharged in accordance with a National Pollutant Discharge Elimination System (NPDES) permit until 2021, when it was shut down due to current drought conditions. Well 201 is currently offline, pending a DDW operating permit and completion of construction of VOC treatment. Since treatment began at Well 201, nearly 4,700 af have been pumped, treated, and discharged to the stormwater system along with approximately 5,600 af imported water, which was used as blend water to comply with NPDES permit conditions. The annual totals are shown in Appendix A Table 1.

1 During initial operation at the SPTF in late 2010 and early 2011, Wells Saugus 1 and 2 water was treated and discharged to the stormwater system. The annual totals are reported in Appendix Table 1 as Local Production from the Saugus Formation by SCV Water. Since early 2011, the amounts of delivered Saugus 1 and 2 Well water were estimated consistent with the proportions in the December 2006 MOU that established amounts to be delivered to SCWD and NWD, and those amounts are reported under Local Production from the Saugus Formation by the respective division.

The Saugus Aquifer Treatment Plant (SATP) on the former Whittaker-Bermite Facility was completed by Whittaker Corporation in June 2017 near the northern boundary of the facility. Operation of the SATP commenced in August 2017. The system includes 10 extraction well clusters along the western border of the facility where groundwater is pumped from the Saugus Formation and treated to remove perchlorate and other contaminants whereupon the water is discharged to the Santa Clara River (DTSC, 2019) in accordance with a NPDES permit. The current permitted discharge rate from the SATP to the River is up to 1,000,000 gallons per day or 1,100 afy. The pump-and-treat system currently treats about 300 gallons of groundwater per minute, and as of the end of 2021, approximately 1,700 af have been extracted and treated (GSI, 2022). The annual totals are shown in Appendix A Table 2.

4.3 Perchlorate Monitoring

The cleanup plan for the Whittaker-Bermite site and the impacted groundwater has been coordinated among SCV Water, Whittaker Corporation, the California Department of Toxic Substances Control (DTSC), and the U.S. Army Corps of Engineers. These entities have also coordinated to extend targeted monitoring of the Alluvial Aquifer and Saugus Formation off-site of the former Whittaker-Bermite Facility, including two locations west of Wells Saugus 1, 2 and Well 201 (as shown in **Figure 4-1**). Off-site monitoring wells were installed near Wells Saugus 1 and 2 between 2006 and 2009; two more were installed in 2012, and another two in 2015. Monitoring and sampling of these wells occurs on a regular basis, and the data are being evaluated to assess groundwater conditions west of the Whittaker-Bermite site and to monitor the effectiveness of perchlorate containment. Additionally, SCV Water's basin groundwater model (which was developed for use in analyzing the basin yield and sustainability of the Current Operating Plan) was also updated and used to assess off-site perchlorate containment. Onsite soil remediation was completed in 2019.



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Saugus Formation Monitoring Well Locations

Santa Clarita Valley Water Report
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Figure 4-1

4.4 Per- and Polyfluoroalkyl Substances (PFAS)

Per- and polyfluoroalkyl substances (PFAS) are a group of manmade chemicals found in a wide range of products used by consumers and industry. These chemicals are known to be resistant to grease, oil, water, and heat. There are nearly 5,000 types of PFAS that have been used in the production of stain- and water-resistant fabrics and carpeting, cleaning products, paints, firefighting foams, cookware, food packaging and processing. The use of these chemicals has been reduced in industrial processes since the early 2000s.

In 2018, DDW initially established interim Notification Levels (NL) for Perfluorooctane sulfonate (PFOS) and Perfluorooctanoic acid (PFOA) of 13 nanograms per liter (ng/L) and 14 ng/L, and these were lowered to 6.5 ng/L and 5.1 ng/L respectively in August 2019 (SWRCB – PFAS Substances -https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/pfas.html). The Response Level (RL) for PFAS (PFOS + PFOA), initially set at 70 ng/L, was lowered in February 2020 to 10 ng/L (PFOA) and 40 ng/L (PFOS). These RLs are based on running annual averages of quarterly monitoring (RAA). SCV Water began the required PFAS testing in May 2019, whereupon eight wells were found to exceed the interim NL. One well was found to exceed the RL and was immediately taken out of service. Subsequent sampling in 2019 identified more wells that exceeded the NL but no more with RL exceedances until the revised RAA RLs were issued. SCV Water took appropriate measures and removed all wells which exceeded an RAA RL from service.

To address these concerns, in 2019 SCV Water formed a PFAS Strike Team consisting of key SCV Water staff and expert consultants to determine next steps for treatment and other strategies (Kennedy/ Jenks, April 2021). Construction of a water treatment facility at the N Wells site (N, N7, N8) near the William S. Hart Baseball/Softball League ballfields began in February 2020 and was completed in October of that year. The project provides water treatment at a rate of up to 6,250 gpm. Two additional treatment facilities are planned in the near term; one for the Valley Center Well that is slated to become operational the last quarter of 2022 and another for the Santa Clara and Honby Wells that is projected to become operational in early 2024. The PFAS Strike Team continues bi-weekly meetings to coordinate all future recovery projects and water quality status updates.

4.5 Volatile Organic Compounds

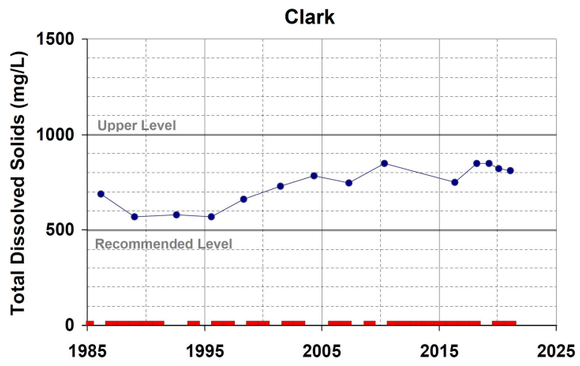
Organic chemical contaminants, including synthetic and volatile organic chemicals (SOC and VOCs), are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems. Organic compounds also include pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses. Local supply wells are tested at least annually for VOCs (Wells Saugus 1 and 2 are tested weekly) and periodically for SOCs, and Castaic Lake water is checked annually for VOCs and SOCs. Trichloroethylene (TCE) and Tetrachloroethylene (PCE) have been detected in trace amounts in some Saugus wells, however, there have not been any VOC or SOC detections above the MCLs and therefore, the Valley's water supply complies with state and federal drinking water standards.

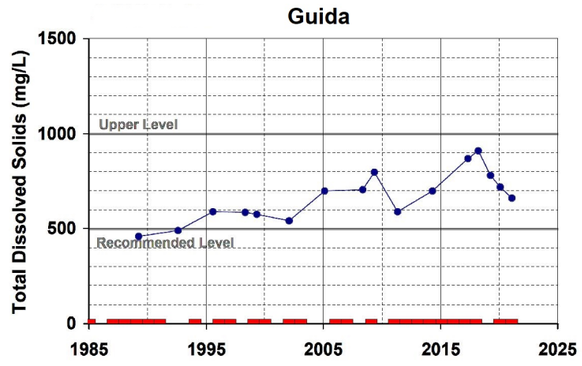
Because SCV Water's Water Supply Permit for Wells Saugus 1 and 2 has an operational goal of non-detect (less than the DLR) for VOCs, SCV Water performed a VOC source identification study (CH2MHill, 2015). This study concluded that the likely source was the Whittaker-Bermite site or the Saugus Industrial Center. VOC treatment will be installed at the Saugus 1 and 2 Wells SPTF. During start up and discharge of Well 201 Perchlorate Treatment Facility, positive results of TCE were detected above the DLR. Therefore, SCV Water is working with DDW to permit the treatment of both perchlorate and VOCs at Well 201.

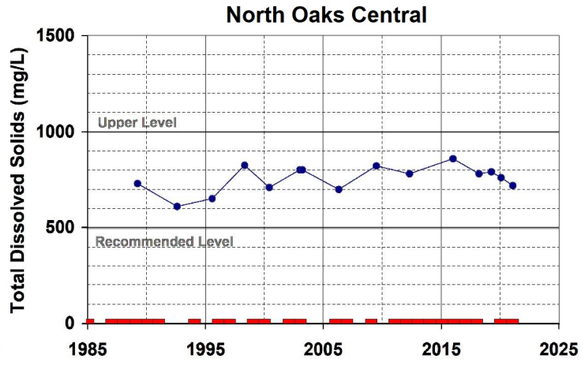
4.6 Groundwater Quality – Alluvium

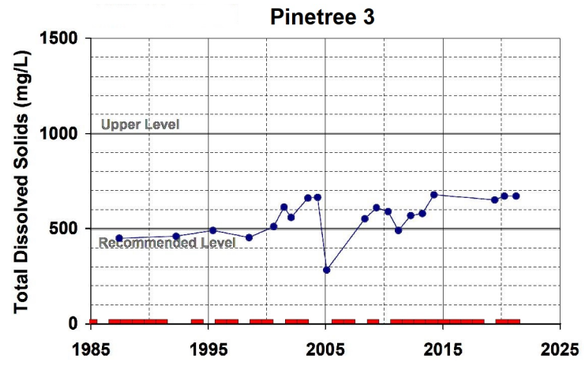
Historical groundwater quality in several wells has been listed and discussed in previous Annual Water Reports and in the 2015 and 2020 UWMP's. This Annual Water Report updates the historical groundwater quality plots in **Figures 4-2 (Eastern Alluvial Wells) and 4-3 (Western Alluvial Wells)**. These figures show total dissolved solids (TDS) concentrations (a measure of the amount of dissolved minerals and salts in water) in milligrams per liter (mg/L). These figures include representative water quality in each area of the Valley. The figures also present Secondary MCLs (aesthetic-based standards "Recommended and Upper Levels") for reference.

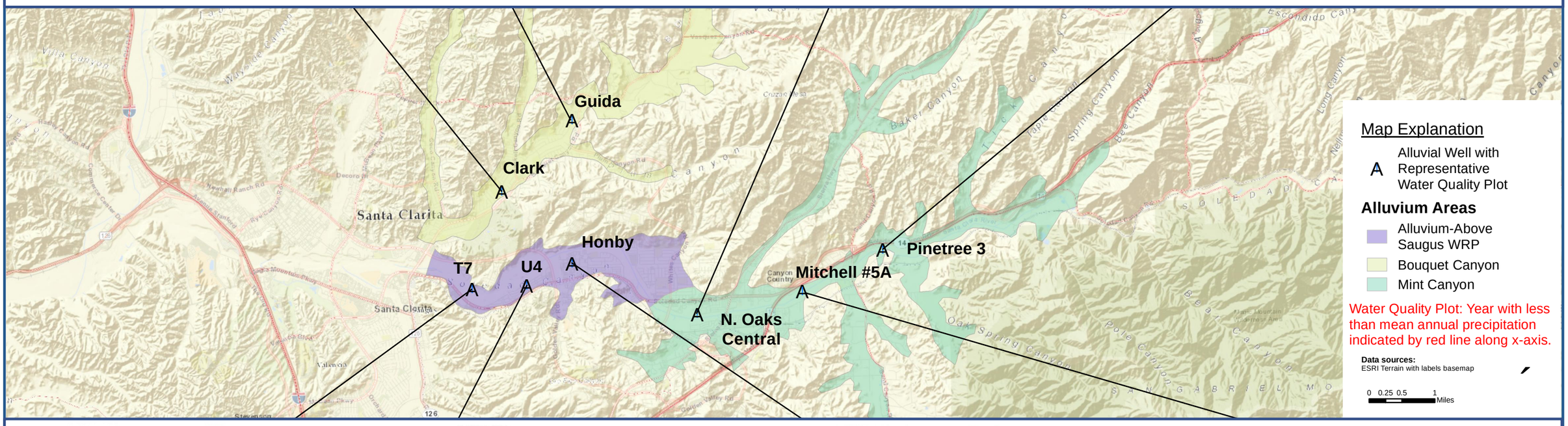
Water quality in the Alluvium exhibits natural variability. A deep-dive into water quality trends has been presented in the SNMP, and more recent updates to that document were added in 2022. TDS concentrations in 2021 are within historical ranges. There have been periodic fluctuations in some parts of the basin, where groundwater quality has varied with precipitation and streamflow. These fluctuations often occur during dry periods when decreased recharge results in increased salinity, and during wet periods when increased recharge results in decreased salinity. In 2021, of the 33 sampled alluvial wells throughout the Valley, none were found to be in exceedance of the Secondary MCL upper level for TDS. Testing by SCV Water (in accordance with DDW requirements) demonstrates that groundwater meets acceptable drinking water standards. However, there are historical instances of minor variances in TDS above the recommended secondary MCL.

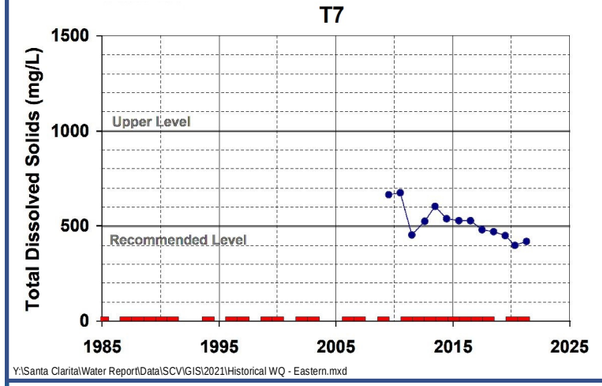


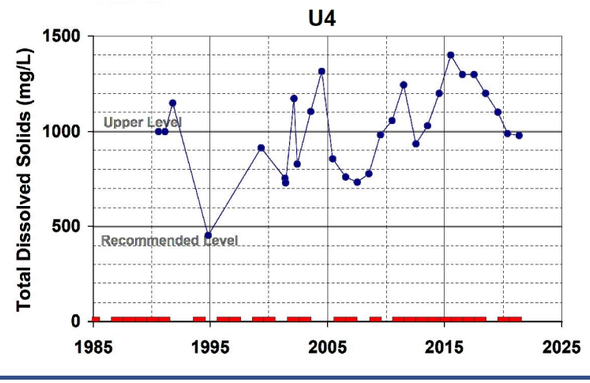


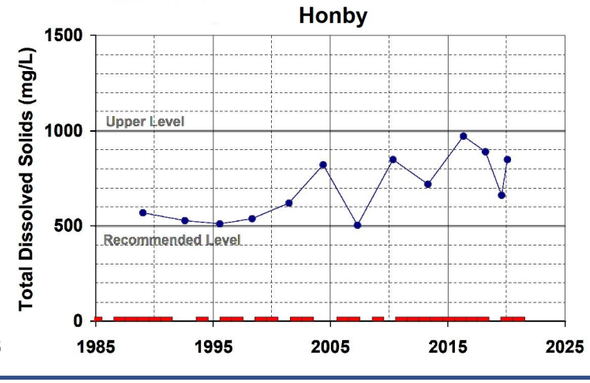


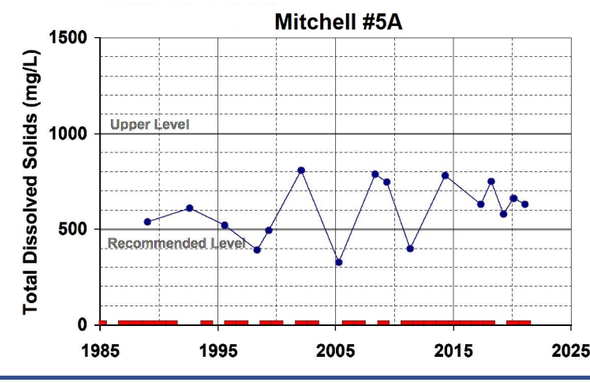












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Groundwater Quality in Eastern Santa Clarita Valley Alluvial Wells

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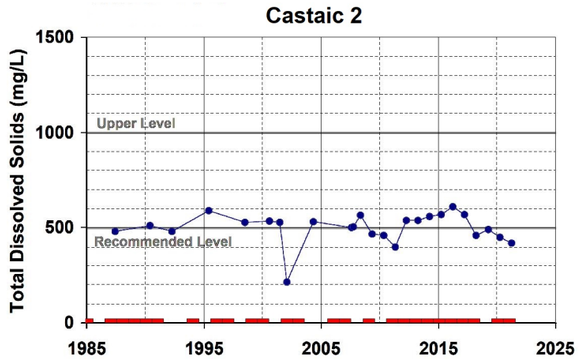
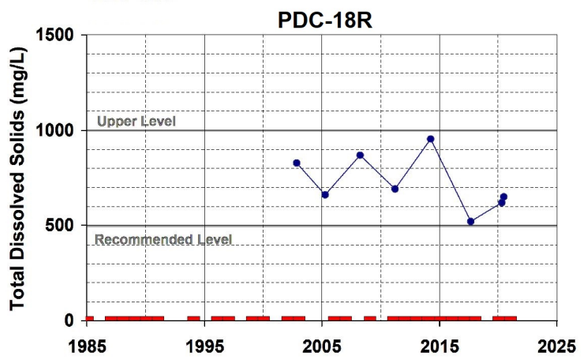
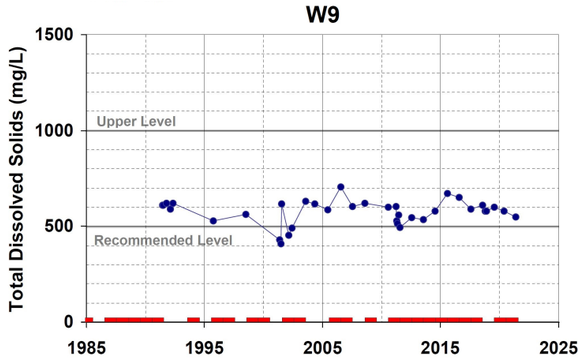
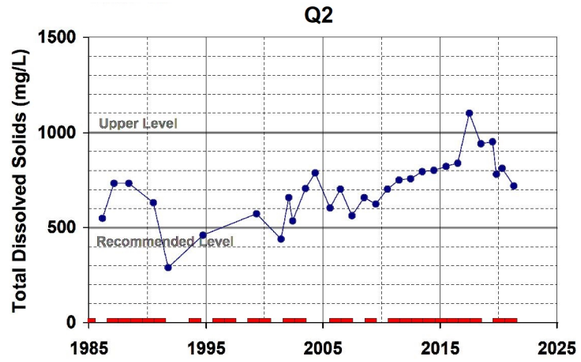
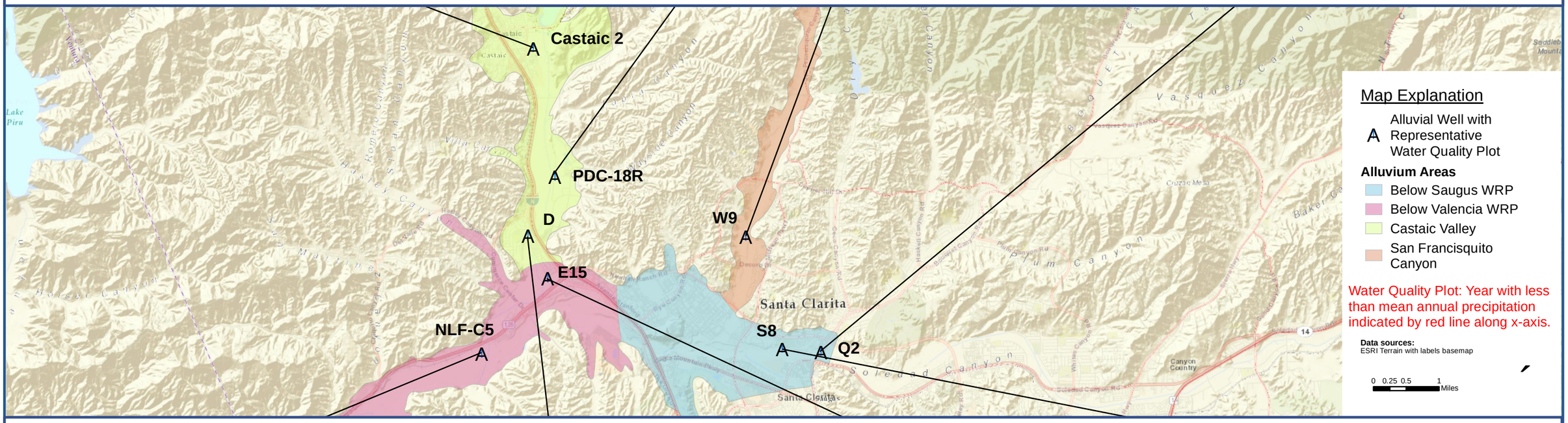
Figure 4-2

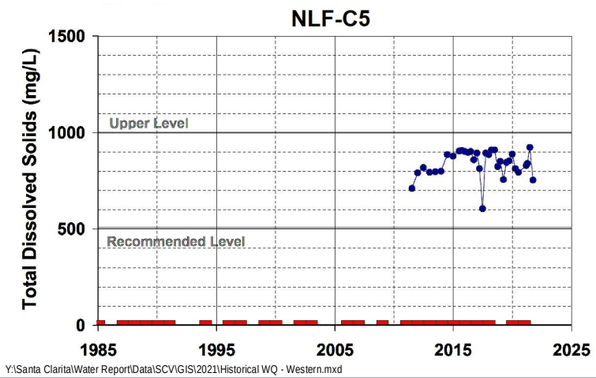


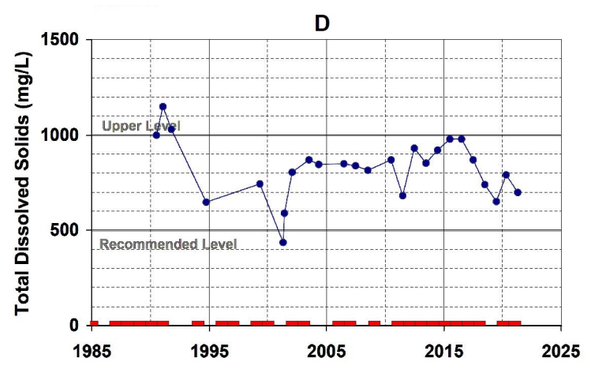


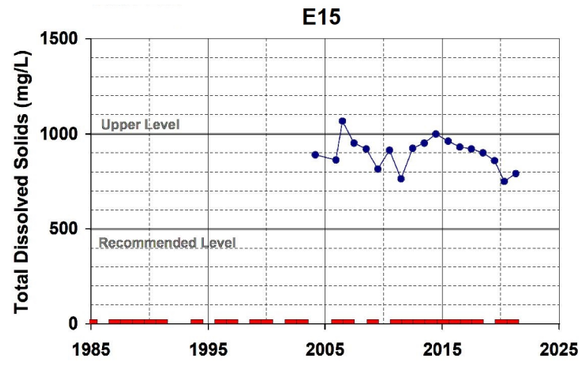


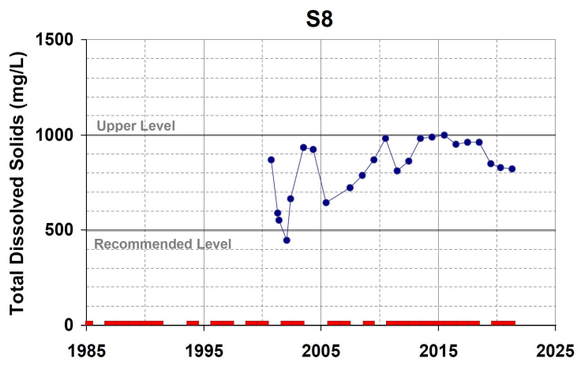












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Groundwater Quality in Western Santa Clarita Valley Alluvial Wells

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Figure 4-3

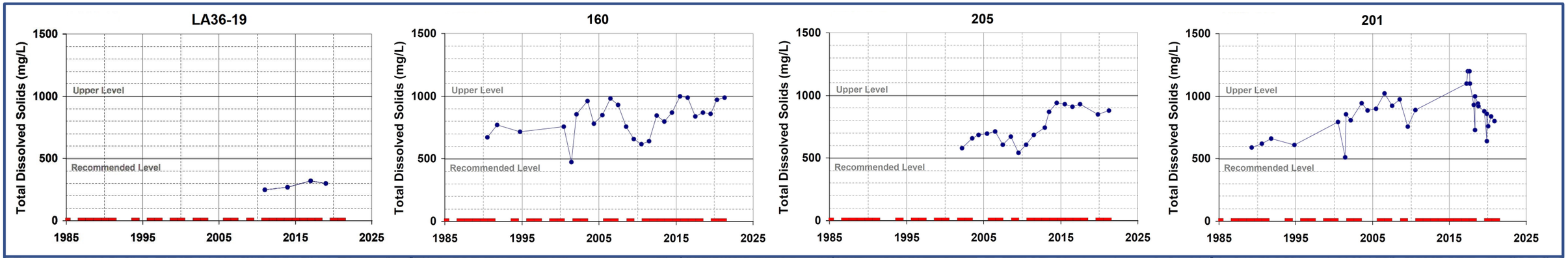
4.7 Groundwater Quality – Saugus Formation

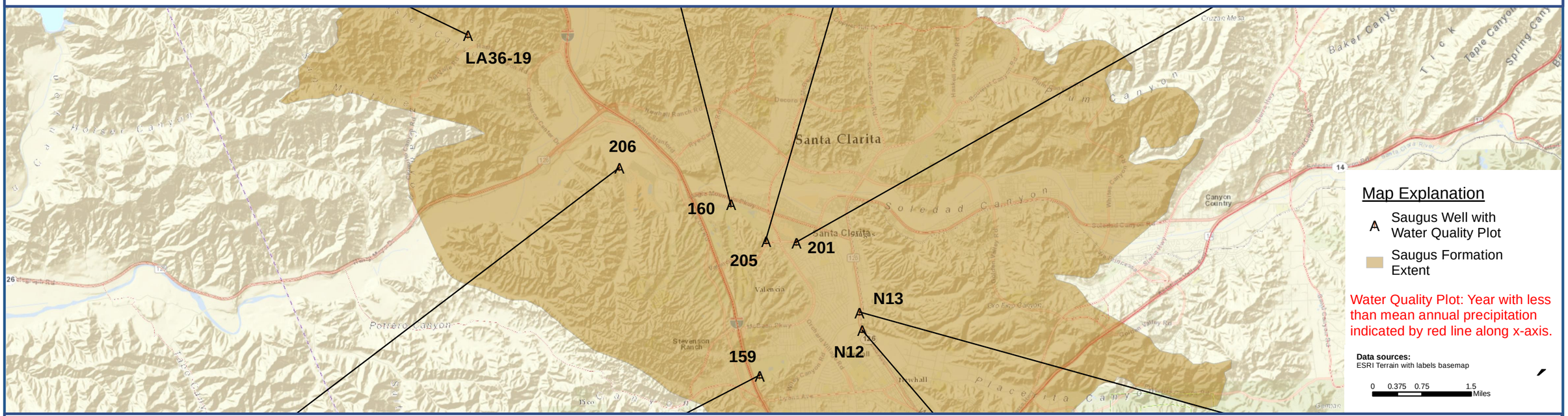
As discussed above for the Alluvium, groundwater quality is also a key factor in assessing the Saugus Formation as a source for municipal and agricultural water supply. Integration of individual records from several wells has been used to examine general water quality trends. Based on those records, water quality in the Saugus Formation has not historically exhibited the recharge-related fluctuations seen in the Alluvium. Based on available data over the last 50 years, groundwater quality in the Saugus Formation has exhibited stable to slightly increasing trends in TDS concentrations as illustrated in **Figure 4-4**. TDS concentrations in the Saugus Formation remain within the range of historic concentrations and below the Secondary MCL upper level. Groundwater quality within the Saugus Formation will continue to be monitored to ensure long-term viability of the Saugus Formation as a component of overall water supply.

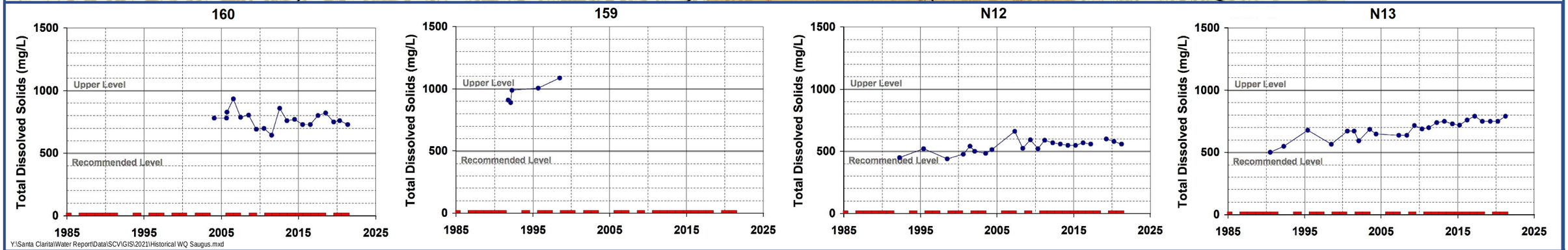
4.8 Imported Water Quality

SCV Water operates two surface water treatment plants, the Earl Schmidt Filtration Plant located near Castaic Lake and the Rio Vista Water Treatment Plant located in the Saugus area. SCV Water produces water that meets drinking water standards set by the USEPA and DDW. SWP water has different aesthetic characteristics than groundwater with lower TDS concentrations of approximately 250 to 400 mg/L.

Historically, the SWP delivered only surface water from northern California through the Sacramento-San Joaquin River Delta. However, with the increase in conjunctive use and integrated water supply planning to minimize impacts on available water supplies during periods of drought, SCV Water and other SWP contractors began “water banking” programs where SWP water could be stored or exchanged during wet years and withdrawn in dry years. During the dry-year periods, a greater portion of water in the SWP includes banked water supplies. The banked water has met all water quality standards established by DWR under its pump-in policy for the SWP.







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Groundwater Quality in Saugus Wells

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Figure 4-4

Chapter 5
Water Use and Demands

Total Calendar Year 2021 water use and demands in the Valley were approximately 81,800 AF. This includes 68,050 af for municipal use, and 13,700 af estimated for agricultural, domestic, and other uses including environmental uses (**Table 5-1**) and (**Figure 5-1**).

Total water use was met by a combination of approximately 39,600 af from local groundwater resources (approximately 25,900 af for municipal supply and 13,700 af for agricultural and other uses), 41,600 af from SWP and other imported water sources, and approximately 500 af from recycled water (**Figure 5-2**). The water use in **Table 5-1** is approximately 5% higher in 2021 than it was in 2020.

Table 5-1. Summary of 2021 Water Supplies and Uses

Municipal	
Imported Water	41,636
Groundwater	25,933
Recycled Water	480
Subtotal	**68,049**
Agriculture and Miscellaneous	
Groundwater	13,710
Subtotal	**13,710**
TOTAL	**81,759**

Figure 5-1. Water Use by Sector

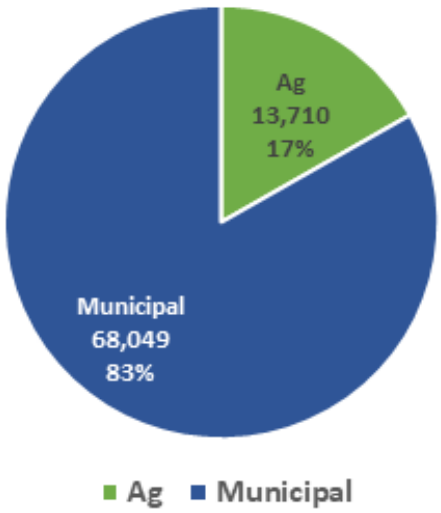
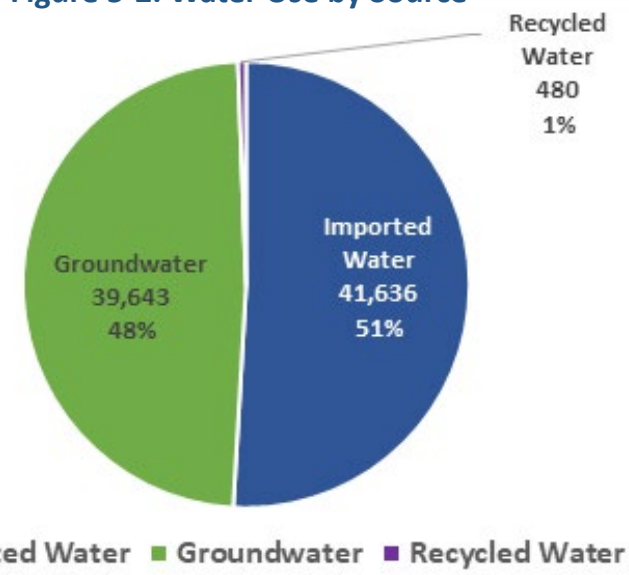


Figure 5-2. Water Use by Source

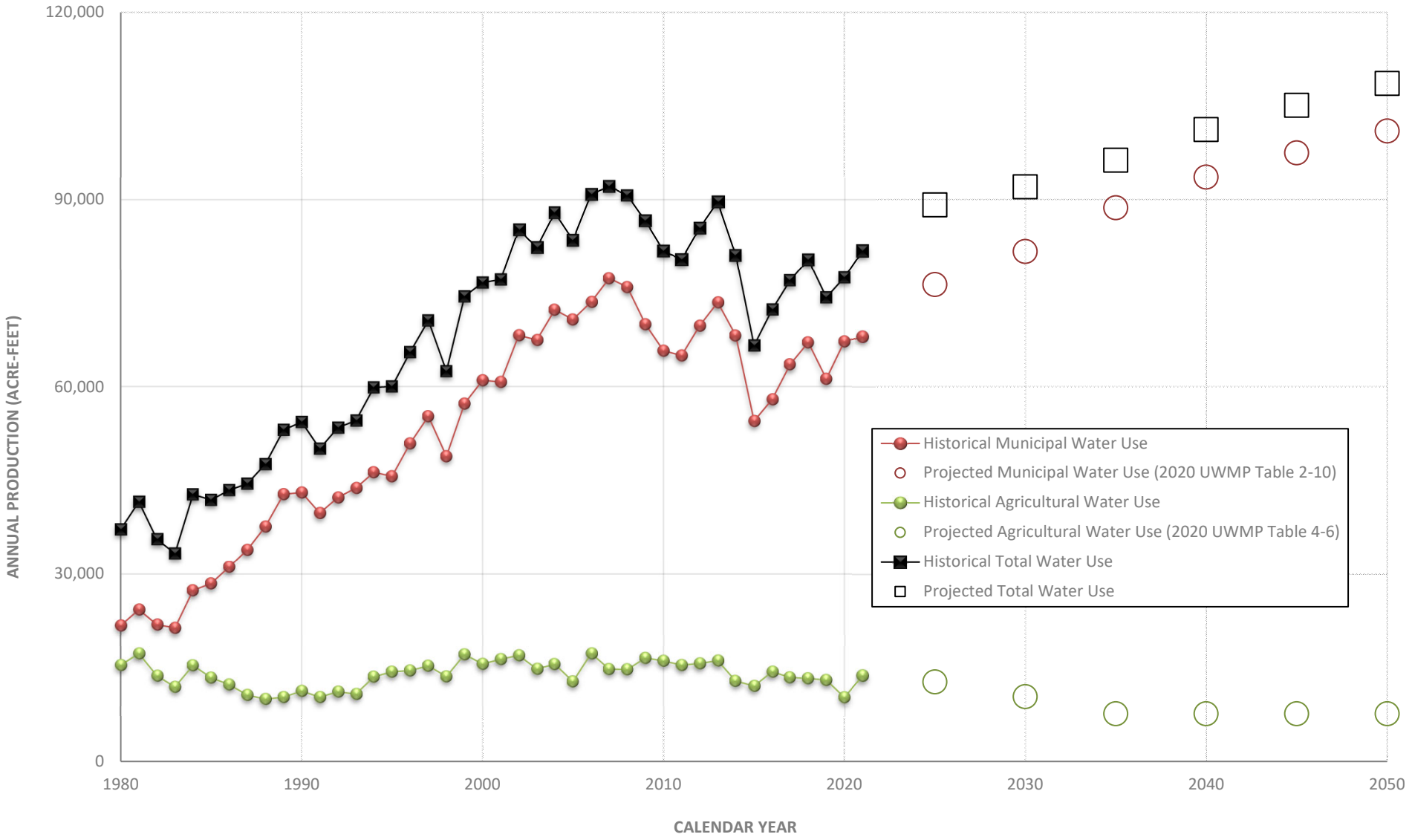


5.1 2021 Water Demand

2021 was characterized as an extreme year statewide in terms of precipitation and temperatures following 2020 which was also warm and dry. As drought conditions persisted the state moved toward communicating the increased need for conservation measures. In April 2021, state emergency proclamations for drought were issued to a few northern California counties, and by July these were expanded to fifty counties and included a call for 15% voluntary conservation statewide. In October 2021, the drought emergency had expanded to all California counties. On November 16, 2021, in response to the drought emergency, SCV Water's Board of Directors enacted Stage 1 of the WSCP and Ordinance.

In response to dry conditions and call for conservation statewide, the total water demand in 2021 (81,759 af) was below the projected water demand in the 2020 UWMP (84,400 af) and below the short-term projected demand that was estimated in the 2020 Water Report (86,000 af).

Figure 5-3 illustrates long term demand, historical water use from 1980 through 2021 and currently projected municipal and agricultural water demands in the 2020 UWMP through 2050. Historically, the primary factors causing year-to-year fluctuations in water demands have been related to weather, implementation of conservation efforts, economic conditions, and variations in the number of service connections. In the short term, wet years have typically resulted in decreased water demand, and dry years have typically resulted in higher water demand. Extended dry periods, however, have resulted in decreases in demand due to conservation, increased state mandates, and water shortage awareness related to outreach by the water suppliers. The decline in water demand toward the end of the 1989 to 1992 drought is a good example. Similarly, over the recent multi-year dry period beginning in 2006, total water demands progressively declined from a historical high in 2007 to the lowest in nearly two decades in 2015 (except for a couple of interim wet years that saw a corresponding increase). These low demand levels were influenced in part from a slowing in the rate of growth in service connections that started in 2008, but they were primarily the result of intense conservation efforts following state mandated conservation measures in 2014 through 2017. In 2021, as emergency declarations were announced throughout California and voluntary calls for conservation increased awareness of the drought, demand decreases were slow to follow. Due to the delay in drought response, there was a slight increase in overall demands in comparison to 2020.



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Historical and Projected Water Use

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Figure 5-3

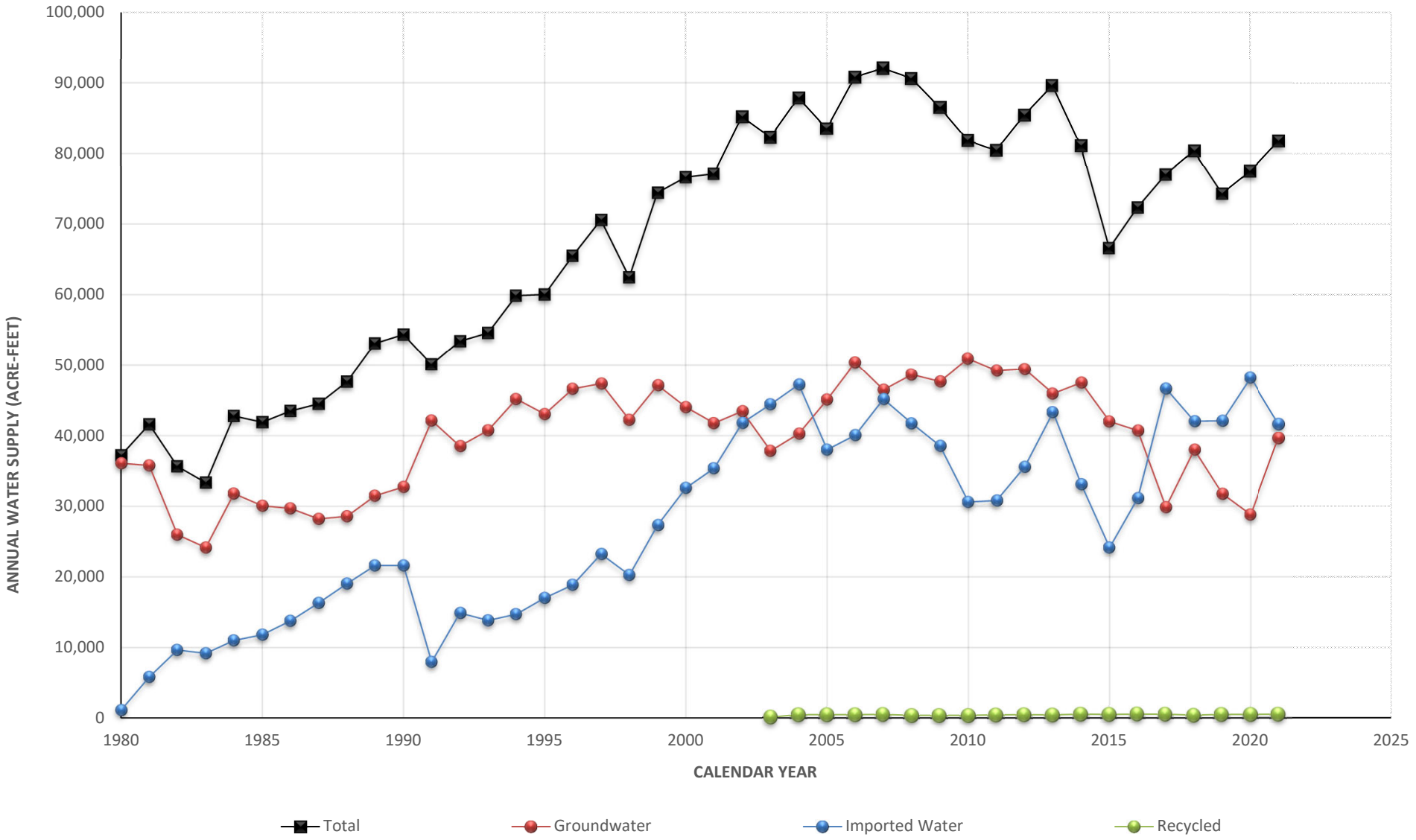
5.2 2012-2021 Water Use Trends

Water supply utilization for all uses in the Valley for the ten-year period 2012 through 2021, is summarized in **Table 5-2**.

Table 5-2. Total Water Supply Utilization (af)				
Year	Imported Water	Groundwater	Recycled Water	Total
2012	35,558	49,420	428	85,406
2013	43,281	45,930	400	89,611
2014	33,092	47,497	474	81,063
2015	24,148	41,972	450	66,570
2016	31,130	40,688	507	72,325
2017	46,651	29,841	501	76,993
2018	41,999	37,982	352	80,333
2019	42,072	31,737	458	74,267
2020	48,196	28,802	468	77,466
2021	41,636	39,643	480	81,759

The annual utilization of local groundwater and imported water since 1980, complemented by the addition of recycled water, are graphically illustrated in **Figure 5-4**. Detailed summary tables of water utilization by municipal and agricultural entities over the complete record beginning in 1980 (when SWP supplies were first delivered into the Valley) are provided in Appendix A. As depicted in **Figure 5-4**, total annual water use in the Valley was nearly linearly increasing from the early 1980s (42,000 af) through 2007 (92,000 af), with some climatic-related fluctuations in certain years. Since 2007, total water use has continued to fluctuate between levels last seen in the late 1990s and rebound to levels seen in the early 2000's (81,759 af in 2021). The initial decline is associated with the economic slowdown that began in 2008, however, subsequent declines can be associated with increasing drought awareness and increased conservation efforts during the 2013 to 2016 drought. In addition, conjunctive use between import and groundwater supplies is apparent in 2017 and 2019 when imported supplies were plentiful.

Figure 5-4 also demonstrates greater proportions of imported water being used to supplement the historical increase in water demand from 1980 through 2021. Total groundwater use has generally remained constant through 2014. Since then, groundwater use declined in 2015 and 2016 due to drought conservation measures, in 2017 and 2019 as higher SWP allocations provided the opportunity to reduce draws on the groundwater basin after the drought, and in 2020 when wells were taken out of service due to PFAS. The increase in 2021 groundwater use is reflective of the first municipal PFAS treatment facility coming online, and Agricultural and Other use increasing back to historic production amounts.



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Total Water Supply Utilization

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Figure 5-4

5.2.1 2012-2021 Municipal Water Use

Recent municipal water uses and service connections over the past 10 years are summarized in **Table 5-3**; detailed use by SCV Water and LACWD 36 over the longer-term period (1980-2021) is provided in Appendix A.

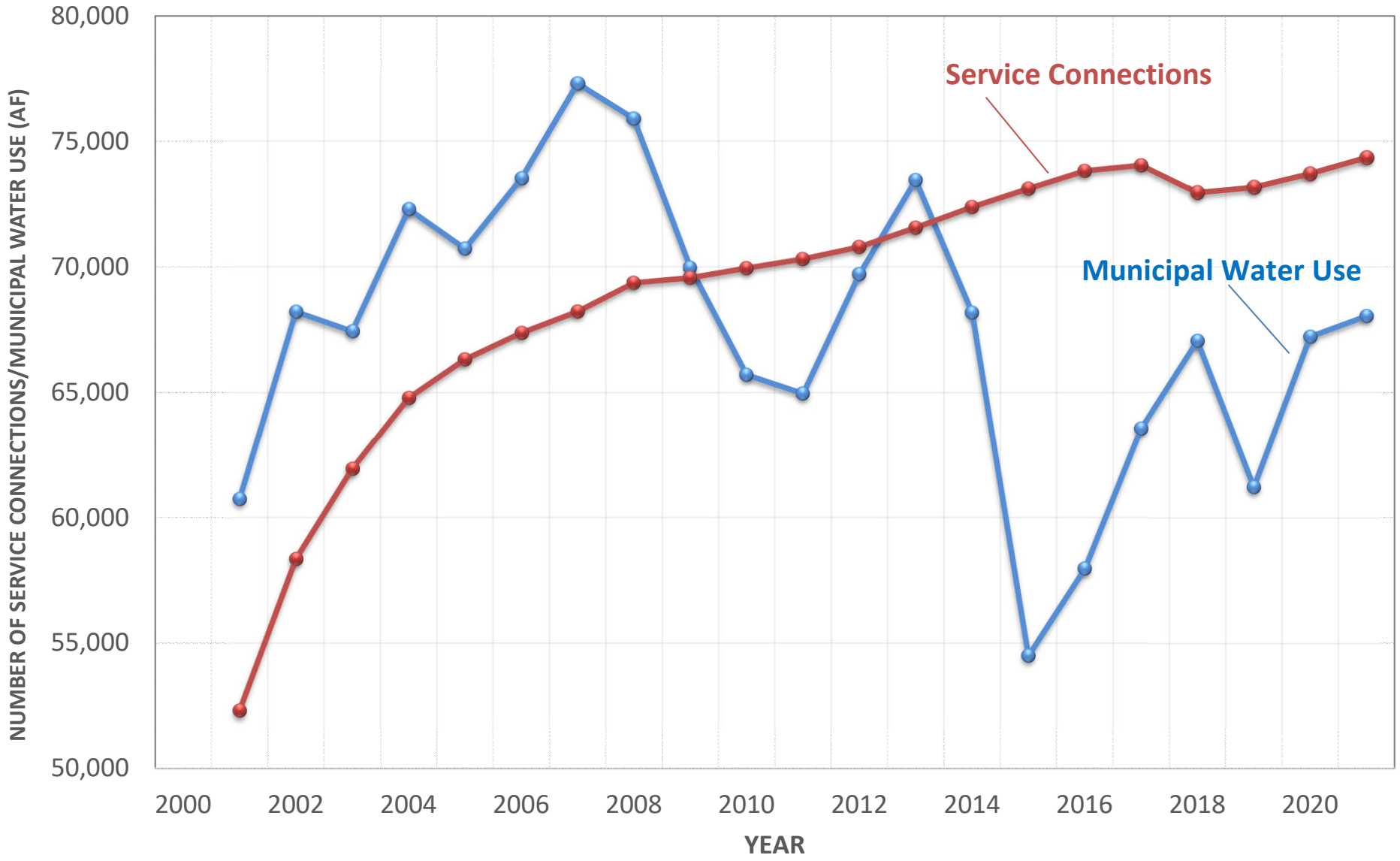
Table 5-3. Municipal Water Supply Utilization (af) and Service Connections

Year	Municipal Water Use (af)	Service Connections	Use per Service Connections
2012	69,712	70,799	1.0
2013	73,460	71,561	1.0
2014	68,178	72,385	0.9
2015	54,491	73,115	0.7
2016	57,966	73,821	0.8
2017	63,555	74,046	0.9
2018	67,053	72,953	0.9
2019	61,233	73,161	0.8
2020	67,217	73,706	0.9
2021	68,049	74,353	0.9

Since 2012, the annual increase in the number of new service connections has ranged from approximately 200 to 800. The number of new service connections in the last ten years is small compared to the number added each year during the 2000s when the number of new service connections ranged from 1,000 to 6,000 (**Figure 5-5**). In 2001, 52,300 service connections used 60,700 af of water, and in 2021, 74,350 service connections used 68,049 af (**Figure 5-5**).

5.2.2 2012-2021 Agricultural and Other Water Uses

Water supply utilization for agricultural and other non-municipal uses are summarized in **Table 5-4**; detailed use by Agricultural and Other Users over a longer-term period (1980 to 2021) is provided in Appendix A. The category of Small Private Domestic, Irrigation and Golf Course Uses includes an estimated 500 afy of individual private pumping from the Alluvium. Long term annual water supply utilization for all agricultural and other non-municipal uses has generally remained stable.



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Service Connections and Municipal Water Use

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Figure 5-5

Table 5-4. Water Supply Utilization by Agricultural and Other Users (af)					
Year	Five Point	Pitchess Detention Center	Whittaker Bermite SATP	Small Private Domestic, Irrigation, and Golf Courses	All Agriculture Users
2012	11,296	2,722		1,676	15,694
2013	12,091	2,309		1,751	16,151
2014	9,262	2,082		1,541	12,885
2015	8,868	1,768		1,443	12,079
2016	11,276	1,616		1,467	14,359
2017	10,348	1,630		1,460	13,438
2018	10,231	1,611	209	1,229	13,280
2019	9,790	1,560	524	1,160	13,034
2020	7,291	1,282	448	1,228	10,249
2021	10,363	1,529	495	1,323	13,710

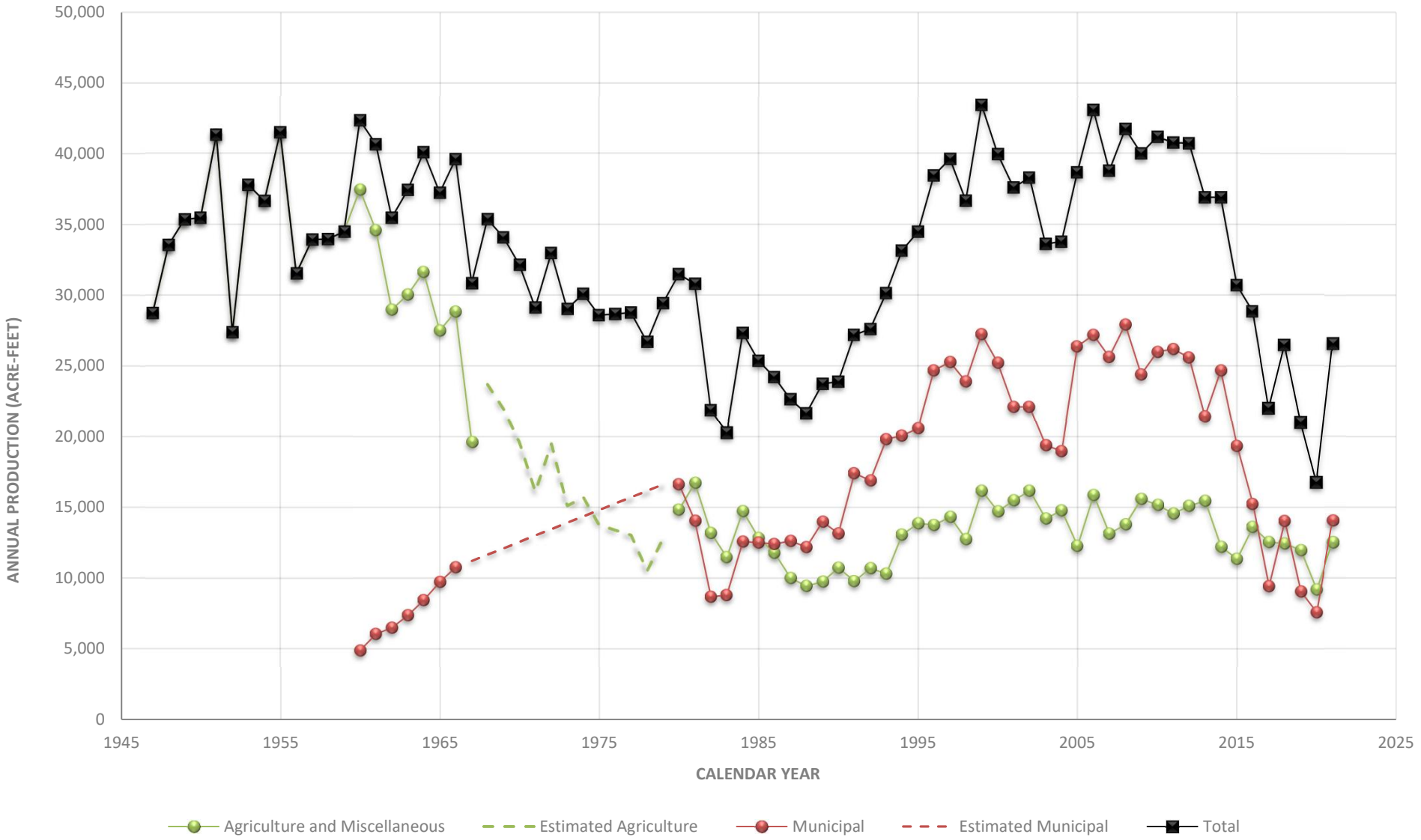
5.3 2021 Imported Water Supply and Disposition

SCV Water has a contractual Table A Amount of 95,200 afy of water from SWP. The initial allocation for 2021 was announced as 10 percent on December 1, 2020, and after a dry winter the final allocation of Table A Amount was reduced to 5% (4,760 af) on May 23, 2021. **Table 5-5** summarizes SCV Water's 2021 imported water supplies available (57,653 af) and disposition of water to various entities included delivery to SCV Water customers and LACWD 36.

The largest portion of supplies were delivered to SCV Water customers and LACWD 36 (41,636 af). In addition, to assure full Flexible Storage for potential recurrent dry conditions in 2022, remaining Table A water was utilized to payback flex supplies used during the 2021 summer peak months. Due to the extended dry period, well restoration projects in progress, and uncertainty of 2022 hydrology, SCV Water also maximized banking program recovery in 2021. Surplus banked water recovered was stored in San Luis Reservoir (SLR) as "Backed Up" water to be more readily available in 2022. In total, 13,745 af of combined carryover and SLR backup supplies were intentionally reserved to minimize shortage risks for persistent drought conditions in 2022.

5.4 Alluvium – 2021 Groundwater Extractions

Total pumping from the Alluvium in 2021 was approximately 26,600 af, approximately 9,800 af more than was pumped in 2020 and below the Current Operating Plan range for a second dry year (30,000-35,000 af). Of the total alluvial pumping in 2021, approximately 53% was for municipal water supply, and approximately 47% was for agriculture and other private uses, including individual domestic uses. The increase in groundwater pumping from the Alluvium in 2021 can be attributed to the extremely dry conditions statewide resulting in low SWP allocation, the completion of the first municipal PFAS treatment facility, and non-municipal uses returning to historical averages as shown in **Figure 5-6**. With three municipal alluvial wells returning to service, a higher proportion of demands were met by groundwater supplies, shifting demands away from the drought impacted imported supplies.



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Groundwater Production - Alluvium

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Santa Clarita Valley, Los Angeles County, California

Figure 5-6

Table 5-5. 2021 SCVWA Imported Water Supply and Disposition (acre-feet)	
Supply	
2021 Final SWP Table A Allocation[1]	4,760
Total SWP Carryover to 2021[2]	13,466
Buena Vista/Rosedale Rio-Bravo[3]	11,000
Rosedale Rio-Bravo WSD Banking Program[4]	20,000
Semitropic SWRU	5,000
SWC Dry Year Purchase Transfer Program	208
Flexible Storage Withdrawal	1,966
Yuba Accord Water	1,253
Total 2020 Imported Water Supply	**57,653**
Disposition	
Service Deliveries[5]	41,636
SCVWA/DWR/Purveyor Metering[6]	306
Flex Payback[7]	1,966
Total Carryover to 2022[8]	8,750
Total SLR Backup Storage Balance[9]	4,995
Total 2021 Imported Water Disposition	**57,653**

1 Final 2021 allocation was 5% of contractual Table A amount of 95,200 af, which progressed as follows:
Initial allocation, December 1, 2020 10% 9,520 af
Final allocation, March 23, 2021 5% 4,760 af

2 Total carryover from 2020 available in 2021 was 13,466 af. Of that amount, 6,526 af were delivered between January and August 2021 and the rest was carried over to 2022.

3 Final 2021 BVRRB disposition of total 11,000 AF (9,685 AF delivered to SCV Water, remaining 1,315 AF allocated to San Luis Reservoir Backup Storage Balance for use in 2022)

4 Final 2021 RRB Water Banking Recovery disposition of total 20,000 AF (16,320 AF delivered to SCV Water, remaining 3,680 AF allocated to San Luis Reservoir Back Storage Balance for use in 2022)

5 Includes water used at Groundwater Treatment Facilities for blending and discharging to stormwater system.

6 Reflects water loss, use by the Rio Vista Water Treatment Plan (including 194 AF in 2021 for Water Conservation Garden), and meter reading differences.

7 Flexible Storage supply used in 2021 was 1,966 AF. In December 2021 Table A water was delivered to payback flexible storage supplies used. Available balance for 2022 is 6,060 AF.

8 Total Table A carryover from 2021 available in 2022.

9 Total San Luis Reservoir Backup Storage supply from 2021 available in 2022.

5.5 Saugus Formation – 2021 Groundwater Extractions

Since the importation of SWP water beginning in 1980, total pumping from the Saugus Formation has ranged between 3,700 afy in 1999 to a high of nearly 15,000 afy in 1991. 2021 had the second highest production totals from the Saugus Formation. Average annual pumping from 1980 through 2021 has been approximately 7,800 afy, but since 2014 the annual average has been approximately 11,100 afy as drought conditions have persisted. These pumping rates remain well within, and generally at the lower end of the range, of the Current Operating Plan for the Saugus Formation. The overall historic record of pumping from the Saugus Formation is illustrated in **Figure 5-7**.

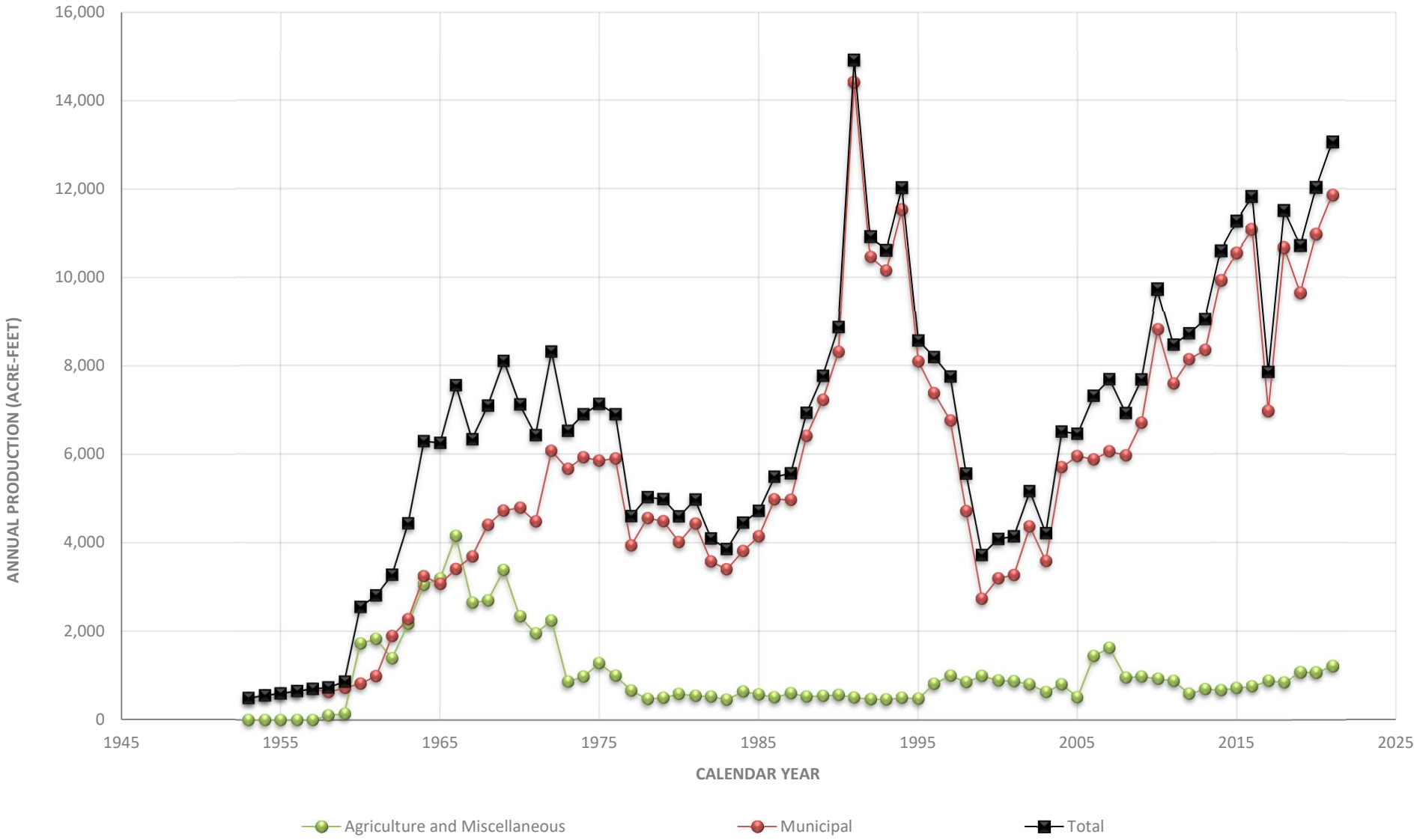
Total pumping from the Saugus Formation in 2021 was approximately 13,065 af, or approximately 1,000 af more than in the preceding year. The bulk of Saugus Formation pumping in 2021 (approximately 11,865 af) was for municipal water supply, and the balance (1,200 af) was for agricultural and other uses. The increase in municipal Saugus pumping since 2020 is reflective of dry conditions and lack of alluvial production capacity.

5.6 Projected 2022 Water Demand and Supplies

With record breaking rainfall in December 2021, followed by record breaking dry and warm conditions in January through March of 2022, municipal water demands in the first quarter of 2022 were elevated, yet trended similarly to the first quarter demand in 2021. Recognizing those early dry-year conditions, increased state mandates for conservation, the shift from Stage 1 (0-10%) to Stage 2 (11-20%) of the WSCP locally, and continued growth in the Valley, total water demand in 2022 is estimated to be approximately 77,300 af. The 2022 demand estimation assumes a conservative 11.5% overall municipal demand reduction from the 2020 UWMP estimates reflecting the Board's decision to move from Stage 1 to Stage 2 of the WSCP at the end of April 2022. As customer engagement with conservation measures take time, this estimate takes into account the increase in conservation regulations enacted four months into the year and produces a conservative estimate for demand reductions to the end of the year.

It is expected that both municipal and agricultural water demands in 2022 will continue to be met with a mix of water supplies as in previous years, notably local groundwater, SWP and other supplemental imported water supplies, complemented by recycled water that will continue to supply a small fraction of total water demand.

In 2022, the SWP allocation schedule proceeded as follows: on December 1, 2021, the initial allocation was for Human Health and Safety set at 0 percent allocation of water from the SWP. On January 20, 2022, after record setting precipitation in December, the 2022 allocation was increased to 15 percent. On March 18, 2022, after the driest January through March recorded in 100 years and other aspects of the water supply conditions, the allocation was decreased to 5 percent SWP Table A allocation (4,760 af). Projected 2022 demand, available water supplies, and banked water supplies are summarized in **Table 5-6**. Due to intensifying water conservation regulations, worst case scenario planning, and diversified sources of water supply, which include a safety net of sufficient Article 56 and backed up supplies, SCV Water anticipates having adequate supplies to meet all water demands in 2022, pending anticipated demand reductions from increased conservation efforts.



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Groundwater Production - Saugus Formation

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Santa Clarita Valley, Los Angeles County, California

Figure 5-7

Table 5-6. 2022 Water Demand and Water Resources (acre-feet)		
Projected 2022 Demand[1]		**84,800**
Available 2022 Water Supplies		
Local Groundwater		**39,700**
Alluvium[2]	*27,400*	
Saugus Formation[3]	*12,300*	
Imported Water		**50,505**
Table A Amount[4]	*4,760*	
Carryover from 2021[5]	*13,745*	
Buena Vista/Rosedale-Rio Bravo Annual Supply	*11,000*	
Rosedale-Rio Bravo Water Banking Program[6]	*15,000*	
Semitropic SWRU Groundwater Banking Program	*5,000*	
Yuba Accord	*1,000*	
Recycled Water		**450**
Total Available 2021 Supplies		**90,655**
Balance of Banking and Exchange Programs[7]		
Semitropic (SWRU) Groundwater Banking Program		35,278
Rosedale-Rio Bravo Water Banking Program		78,810
Two-for-One Exchange Programs		2,844
Antelope Valley East Kern	*2,344*	
United Water Conservation District	*500*	
Total Additional Dry Year Supplies		**116,932**

1 Estimate based on 2022 first quarter municipal operating plan demand estimate + UWMP Ag and Other production estimates. Municipal increase to account for growth. No conservation program demand reductions assumed.

2 The Alluvium represents 30,000 to 40,000 afy of available supply under local wet-normal conditions, and 30,000 to 35,000 afy under local dry conditions

3 The Saugus Formation represents 7,500 – 15,000 afy of available water supply under non-drought conditions, and up to 35,000 afy under dry conditions, dependent on available well capacity. Estimated supply for 2022 takes into consideration current available capacity and conditions in 2021 and assumed updates in 2022.

4 SCV Water's SWP Table A amount is 95,200 af. The initial 2022 allocation on December 1, 2021, was 0 percent (0 af). On January 20, 2022, after record setting rain it was increased to 15 percent. On March 18, 2022, after the driest January through April periods on record, the allocation was decreased to 5 percent (4,760 af).

5 At the beginning of 2022, a total of 8,750 af of carryover supplies were available in addition to 4,995 af of water backed up in San Luis Reservoir Storage. Up to half of these supplies combined is anticipated to be delivered in 2022 whereupon the rest will be reserved for potential continued dry year conditions in 2023.

6 SCV Water's current withdrawal pumping capacity is 10,000 afy, though up to 20,000 afy is permitted if other RRBWSD pumping capacity is available for use. In addition, 5,000 af of firm recovery capacity is available through short term exchange agreement with IRWD executed in May 2022 if needed.

7 Described in Section 3.3. The programs reflect balances at the end of 2021; some of this water will be used in 2022.

Chapter 6
Groundwater Elevations

A series of hydrographs with historical data for the Alluvial Aquifer and Saugus Formation are presented below. The hydrographs demonstrate that the aquifers experience periods of groundwater level decline, followed by periods of groundwater level recovery. These trends show that over the long-term groundwater recharge is balanced with groundwater discharge.

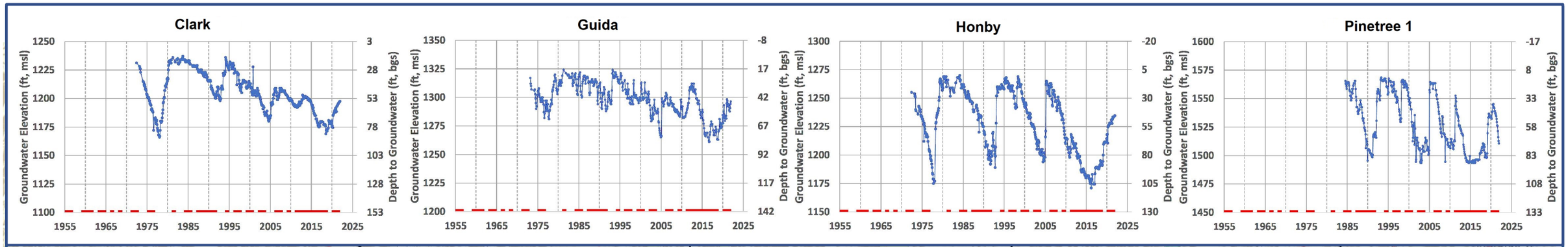
Groundwater elevations often show the effect of more than just one factor. For example, groundwater elevations in these hydrographs may represent combined effects of climate cycles, evapotranspiration, precipitation, recharge, groundwater extraction, importation of water, and water reclamation plant discharges to the river.

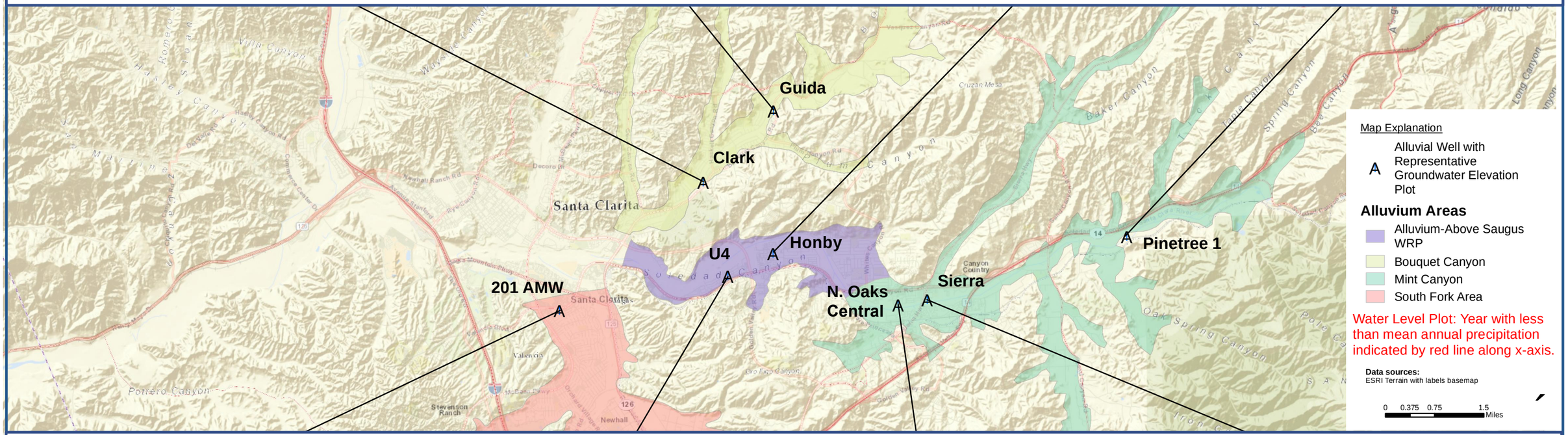
The 2020 UWMP takes a long term look at development of the Valley through build out. Similarly, the GSP incorporates the groundwater pumping outlined in the 2020 UWMP and projects future water levels at build out, including climate change factors (GSP Figures 6.1-10, and 6.1-11). Hydrographs representing future conditions at build out, say for example single- or multiple-dry years when the Saugus Formation groundwater extractions are up to 35,000 acre feet per year, identify that future Saugus Formation water levels will generally be lower than in the past. The GSP identifies that future Alluvial Aquifer water levels may be lower or higher than the past depending on the area of the basin.

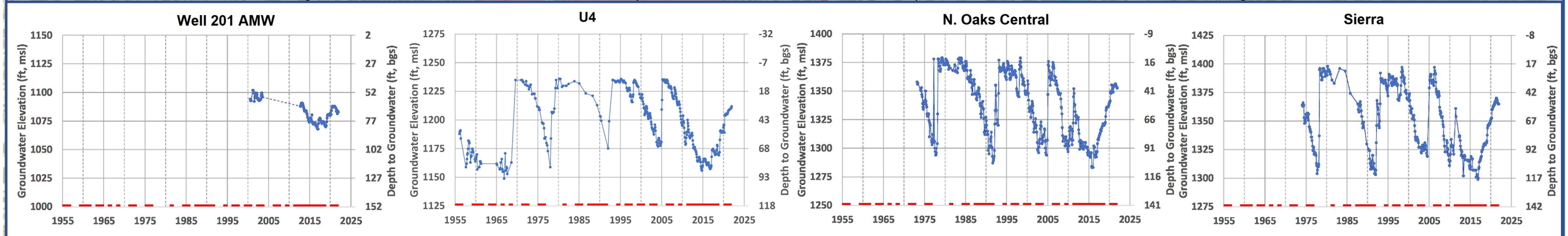
The GSP describes there could be a slight decrease in basin storage over the longer term due to applied climate change factors which show some decreases in precipitation into the future. Importantly the GSP's water budget analysis does not find chronic water level declines in the Saugus Formation or Alluvial Aquifer.

6.1 Alluvium Hydrographs

Hydrographs with historical groundwater level data are presented in **Figures 6-1**, and **6-2**. Also shown on bottom of these plots is a red marker indicating below-average rainfall (note below average rainfall is also shown in the cumulative departure data in **Figure 7-1**). In addition to the hydrograph figures, corresponding alluvial groundwater production graphics are included within this section, illustrated in **Figure 6-3**. Larger hydrographs are also provided in Appendix B for reference.







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Groundwater Elevations in Eastern Santa Clarita Valley Alluvial Wells

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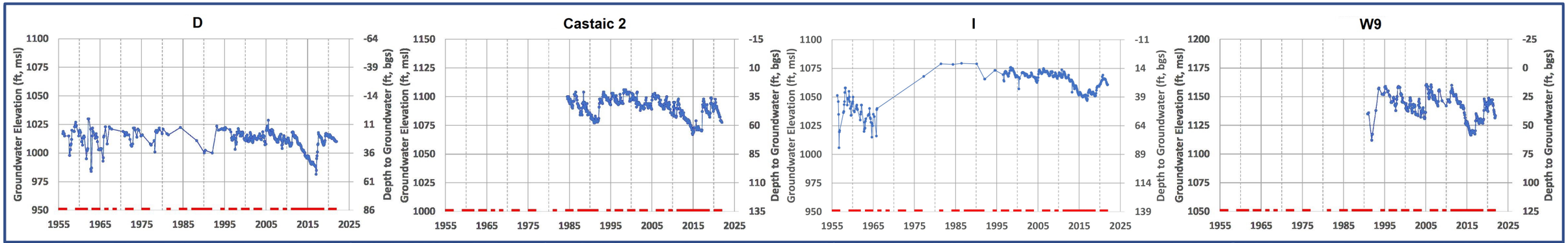
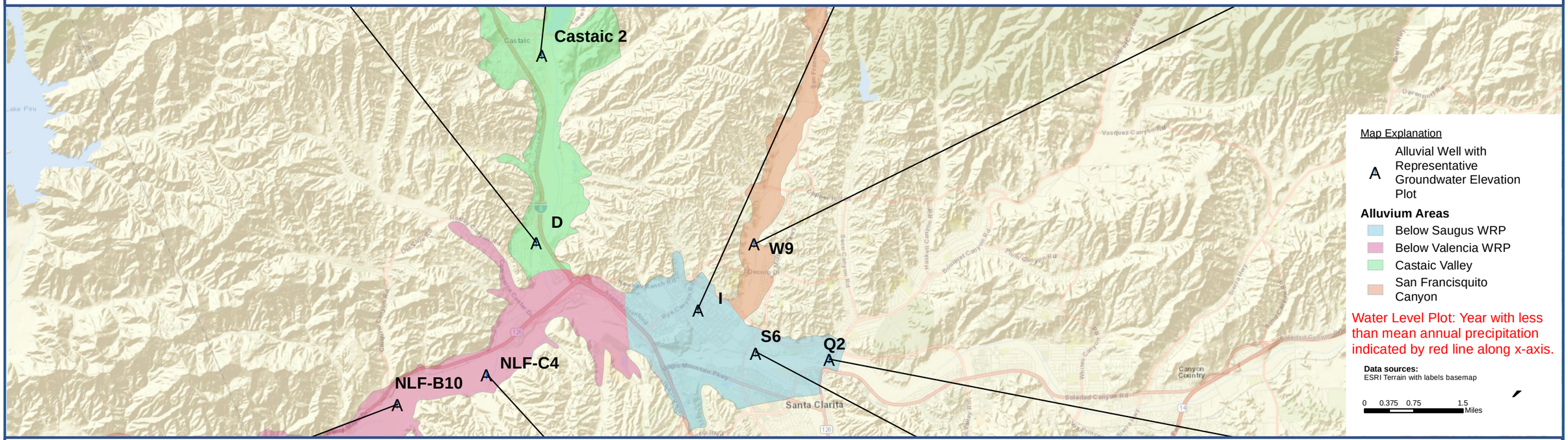
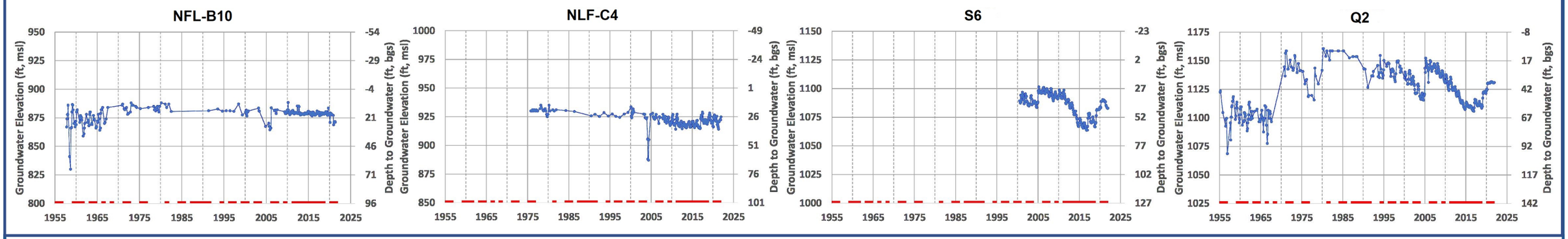
Figure 6-1







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Groundwater Elevations in Western Santa Clarita Valley Alluvial Wells

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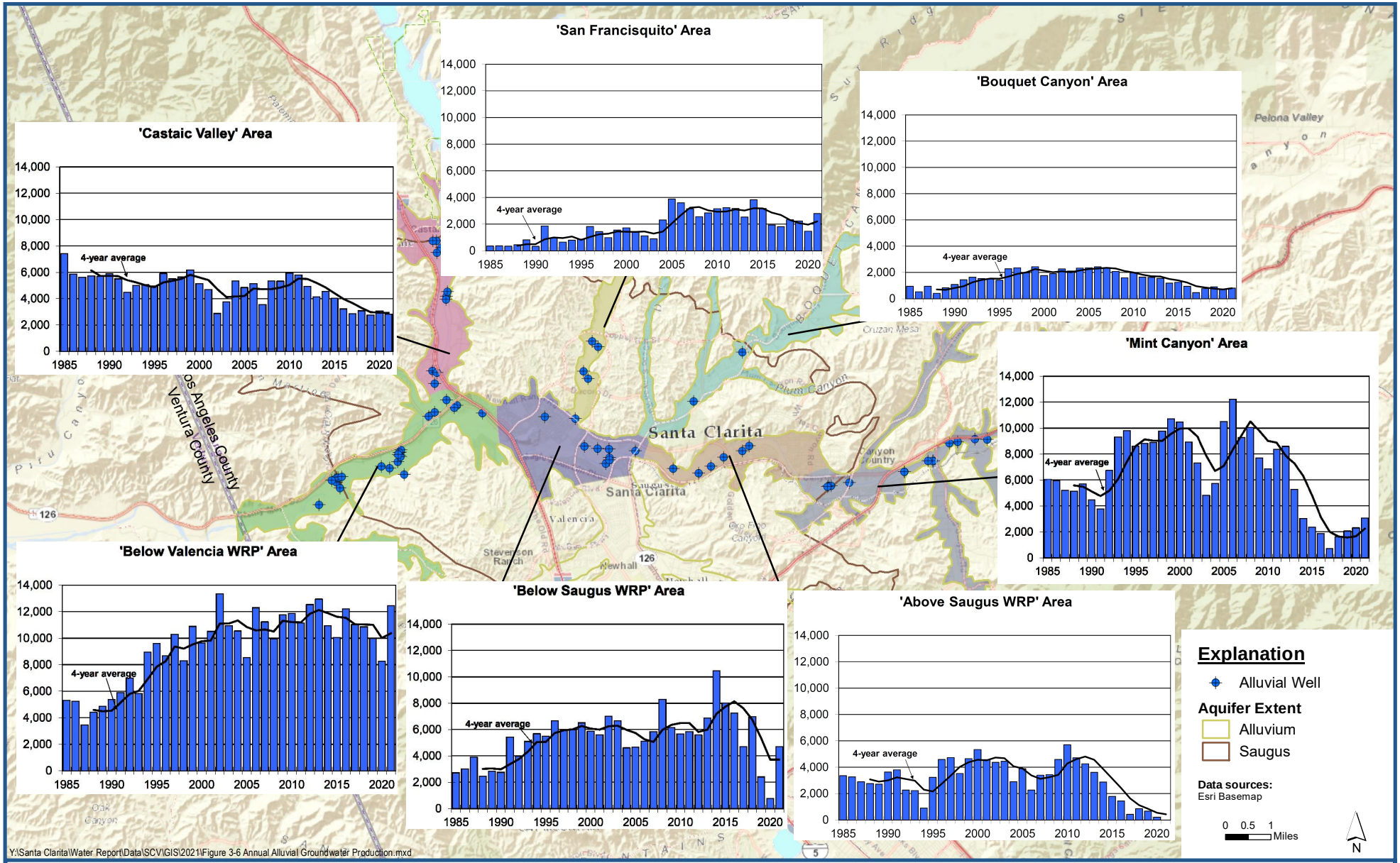
Figure 6-2



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Annual Groundwater Production from Alluvium by Area (Acre-feet)

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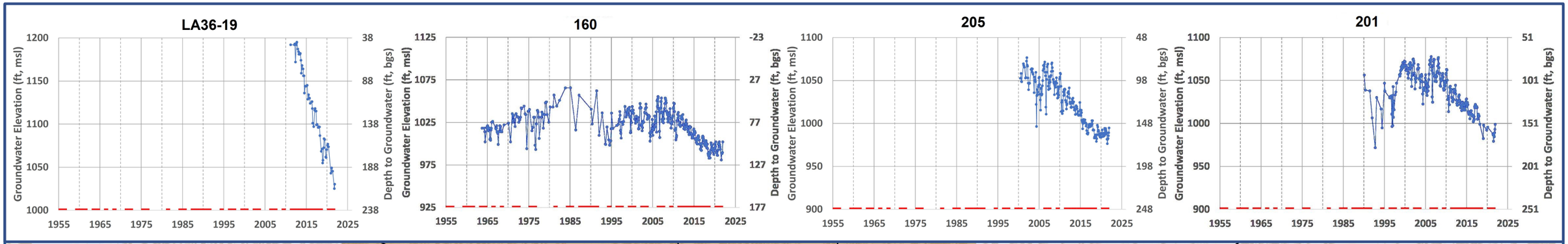
Figure 6-3

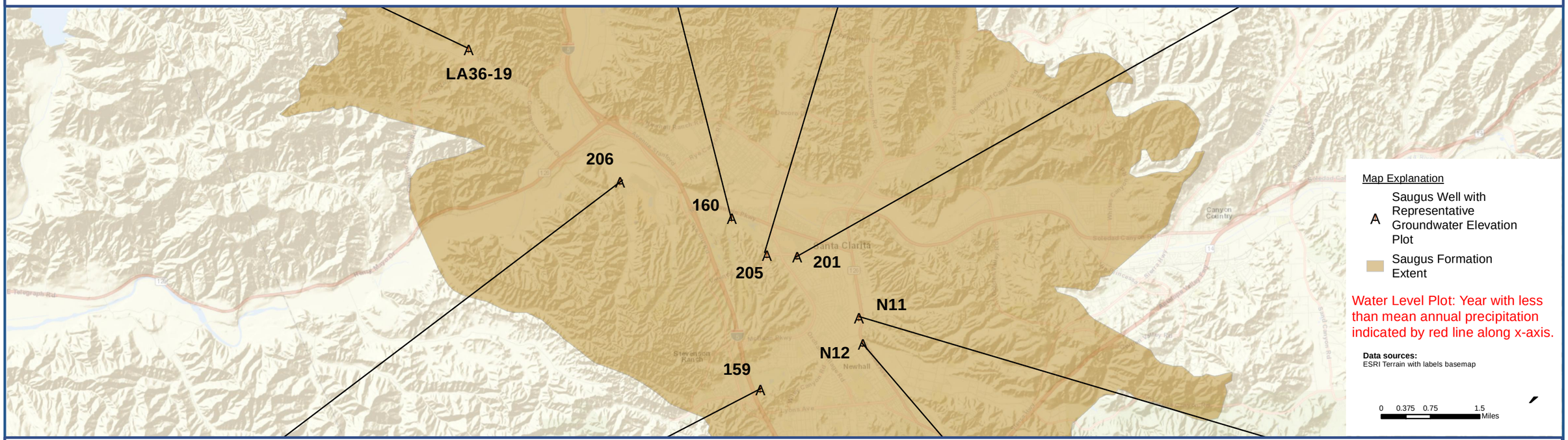
6.2 Saugus Formation Hydrographs

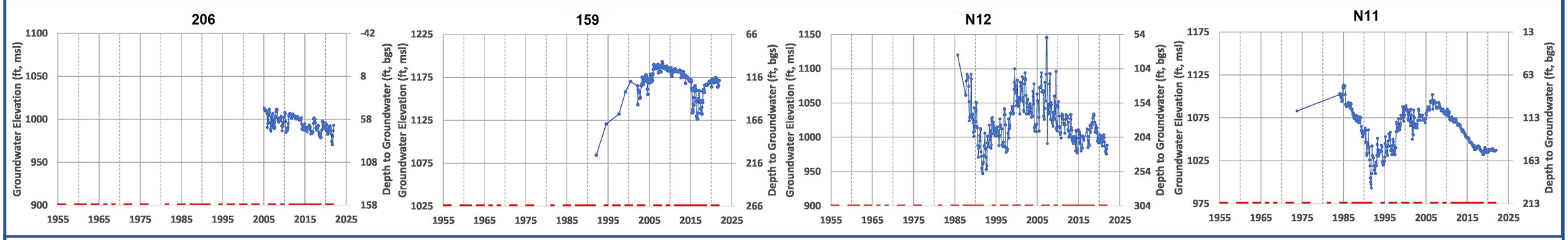
Hydrographs with historical groundwater level data are presented in **Figure 6-4**. Also shown on the bottom of these plots is a red marker indicating below-average rainfall (Note: Below average rainfall is also shown in the cumulative departure data **Figure 7-1**). Saugus Formation groundwater extractions have also increased some since 2006.

Each of the hydrographs demonstrate that the most recent high groundwater elevation occurred in 2006, and generally groundwater elevations have declined, with some leveling out or even some increases in groundwater elevations. This post 2006 water level decline is consistent with the decline in annual precipitation cumulative departure data (**Figure 7-1**). As stated above, future groundwater elevations at build out will be lower than historic groundwater elevations. The GSP includes specialized monitoring and responses if needed to avoid undesirable results from lowered groundwater elevations in both the Alluvial Aquifer, and the Saugus Formation.

The LA36-19 Well has a strong declining water level trend and LACWD 36 is reviewing trends to evaluate further. It is located in a portion of the Saugus Formation that is not strongly connected in terms of groundwater flow, to the other Saugus Formation wells on **Figure 6-4**.







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Groundwater Elevations in Saugus Wells

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Figure 6-4

Chapter 7
Watershed Area

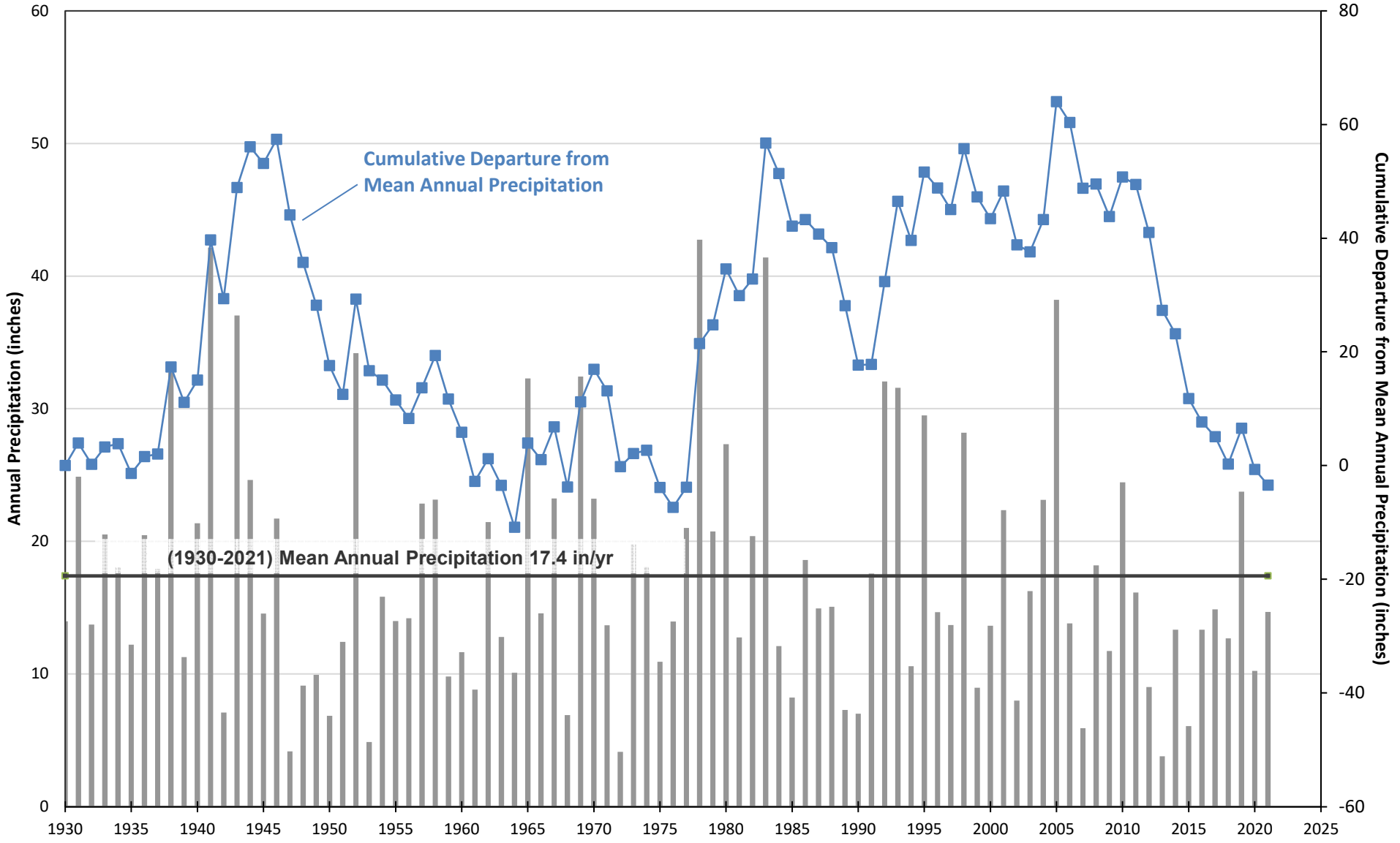
7.1 Rainfall Trends

The Valley is characterized as having an arid climate. Historically, intermittent periods of below-average precipitation have typically been followed by periods of above-average precipitation in a cyclical pattern. The longer-term precipitation records for the Newhall Fire Station #73 gage are illustrated in **Figure 7-1**. Long-term annual (calendar year) average precipitation at that gage is 17.4 inches calculated for the 1930 through 2021 period. **Figure 7-1** also shows the cumulative departure from mean annual precipitation which shows periods of above average rainfall (increasing slope or trend with time) and below average rainfall (declining trend or slope with time). In general, periods of below-average precipitation have been longer and more moderate (slopes are less steep) than periods of above average precipitation (where slopes are generally steeper). Precipitation in the 2021 calendar year was below the long-term average at 14.7 inches.

Significantly more information is available regarding precipitation and climatic periods in the watershed from various reports including 2022 GSP, the 2021 GSP Annual Report, and the IRWMP.

7.2 Santa Clara River

Historical Santa Clara River flow has been monitored at an upstream gage located at Santa Clara River above Lang Railroad Station, at Lang gage and Capra Road Railroad Crossing, and two downstream gages (County Line and SCR at Piru) (**Figure 7-2**). The Lang gage (F93B-R) shows a wide range of annual streamflow. As described in previous Annual Water Reports, the older data from the gage was not always accurate and in 2010, Los Angeles County Department of Public Works (LADPW) removed the stream gage transducer. Between 2010 and 2012, without the continuous data monitoring, LADPW conducted manual measurements of streamflow as staff were available. In June 2013, LADPW relocated the Lang gage to a more suitable location 150 feet upstream on the Santa Clara River, and it was renamed Capra Road Railroad Crossing (F93C-R).



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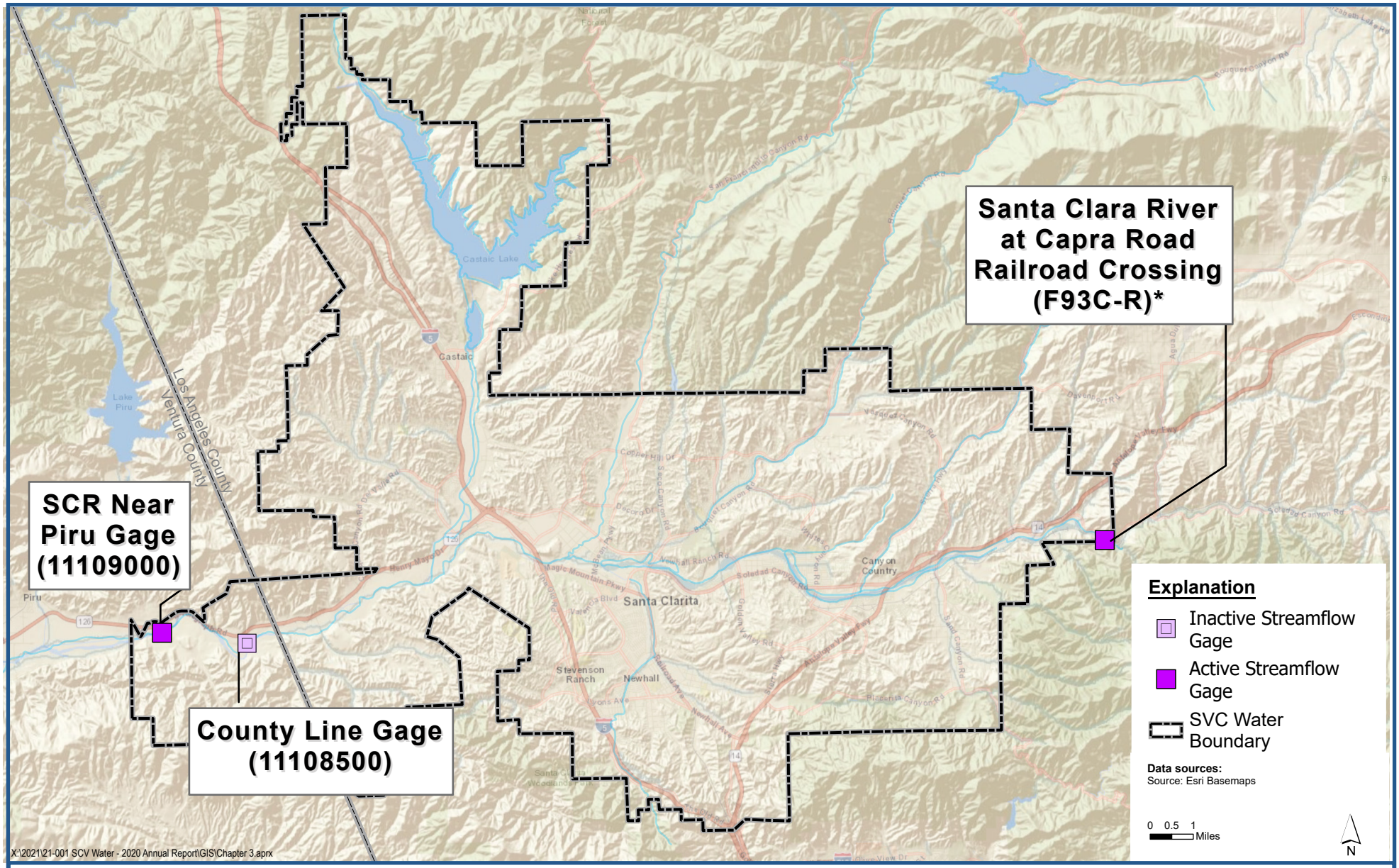
Annual Precipitation and Cumulative Departure from Mean Annual Precipitation at Newhall Fire Station #73 Gage

Santa Clarita Valley Water Report
Santa Clarita Valley, Los Angeles County, California

Figure 7-1



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Streamflow Discharge Gage Locations

Santa Clarita Valley Water Report
Santa Clarita Valley, Los Angeles County, California

Figure 7-2

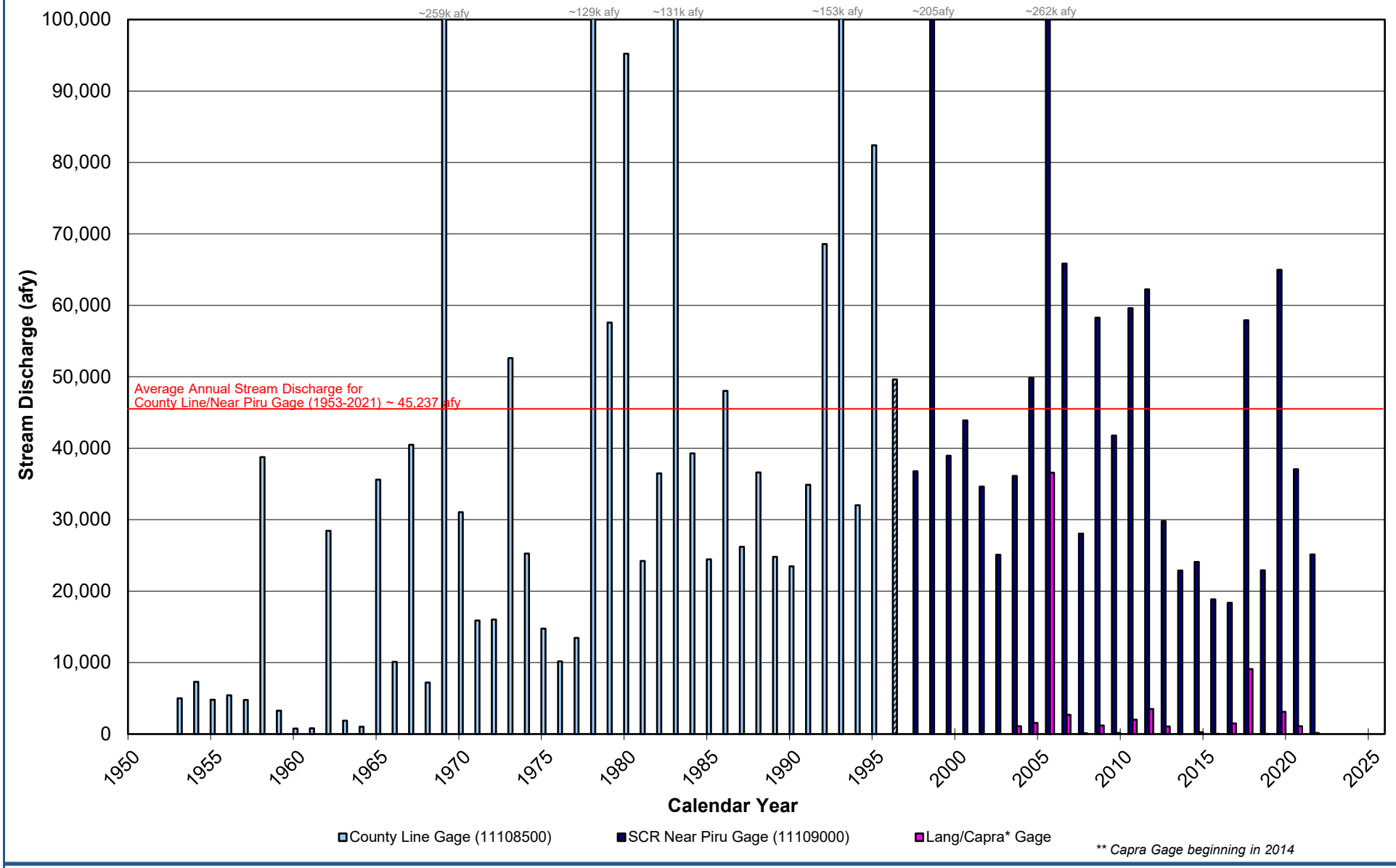
The downstream County Line gage (11108500), was moved approximately 2 miles further downstream in 1996 to its present location near Piru and renamed SCR at Piru (11109000). The combined record (1953-2019) of the two downstream gages indicates an annual average stream discharge (including storm flow) of approximately 45,530 afy (**Figure 7-3**). Certain non-storm flow increases began starting in 1980 as urbanization continued in the Valley (reflecting factors related to urbanization such as importation of water, and increased WRP discharges).

The GSP analysis included evaluation of streamflow data from a United States Geological Survey stream gage near Interstate 5 at the Santa Clara River, in addition to the Los Angeles County stream gages described above. The Draft GSP (adopted in January 2022) includes estimates of non-storm streamflow exiting the Upper Santa Clara River Basin (just west of the County Line). Non-storm streamflow is also an important component of the overall streamflow.

Figure 6.5-6 of the GSP depicts annual non storm flows at the western basin boundary for year 2042 conditions (full build out with 2030 average climate change) to range from ~19,000 acre feet per year to ~ 80,000 acre feet per year. Similarly, Figure 6.5-9 of the GSP describes annual non storm flows at the western basin boundary for year 2072 (full build out with 2070 average climate change) to range from ~18,000 acre feet per year to ~79,000 acre feet per year.

The key point from the GSP analysis, ignoring storm flows, even with build out of the valley, shows significant non storm stream discharges do continue into Ventura County. The GSP describes in more detail the role of urbanization in the Valley, and how starting in the 1980's the initiation of water imports and increasing water reclamation plant discharges to the river, caused non storm streamflow to increase.

Water quality in the upper Santa Clara River is affected by natural and urban runoff, WRP discharges and source water quality from reservoir releases and potentially groundwater inflow. Annually, during the dry summer season, the composition of streamflow in the Upper Santa Clara River section, is predominantly composed of WRP discharges, and the TDS concentrations are generally higher compared to the wet winter/spring periods. During the wet season, streamflow in the river is composed of runoff from the watershed and urban areas, along with WRP discharges resulting in relatively lower TDS concentrations. Water quality data from surface flows in the River in the central part of the Valley (Mass Emission Station located near the I-5 overpass) were obtained from surface water monitoring by the Upper Santa Clara River Watershed Management Group as required for the region's municipal stormwater permit. Review of those results from the 2003-2020 period (2021 currently unavailable) indicate that TDS concentrations vary from approximately 800 to 900 mg/L during the dry summer season and approximately 100 to 300 mg/L during the wet winter/spring season. This range of concentrations is comparable to the range of TDS concentrations observed in the alluvial aquifer.



Luhdorff & Scalmanini
Consulting Engineers

Annual Stream Discharge

Figure 7-3

Santa Clarita Valley Water Report
Santa Clarita Valley, Los Angeles County, California

Chapter 8
Water Conservation

As California continues to manage its valuable water resources through the challenges of climate change and water reliability issues, SCV Water is committed to providing a robust water conservation program comprised of several measures, including education, incentives, and conservation mandates, to its customers in the Valley. As a promotional partner for the US EPA's WaterSense Program, member of the Alliance for Water Efficiency, and member of the California Water Efficiency Partnership, SCV Water prioritizes urban water use efficiency and conservation in its management strategy and public messaging.

8.1. Previous Conservation Efforts

The Santa Clarita Valley Water Use Efficiency Strategic Plan (2008 SCV WUESP) is a comprehensive long-term conservation plan for the Valley with objectives, policies, and programs designed to promote proven and cost-effective conservation practices. The preparation of the 2008 SCV WUESP included input from stakeholders and the community at large and provided a detailed study of residential and commercial water use, and recommended programs designed to reduce overall Valley-wide water demand by ten percent by 2030. Following the completion of the 2008 SCV WUESP, Senate Bill SB X7-7 was passed in November 2009 as part of the Water Conservation Act of 2009. SB X7-7 included requirements for reductions in per capita water use by 2020 of 20 percent which exceeded the targets outlined in the 2008 SCV WUESP.

In January 2014, as a response to drought conditions, the Governor of the State of California declared a drought emergency and asked that all Californians take voluntary action to reduce their 2013 water use by 20 percent. In February 2014, the Santa Clarita Valley Family of Water Suppliers approved the Water Conservation Action Plan that provided a series of water conservation guidelines customers could implement to reduce their water use by 20 percent. In July 2014, the SWRCB adopted temporary emergency water conservation regulations that required water agencies to implement the actions of their WSCP's that imposed multiple mandatory restrictions on indoor and outdoor water use. These orders were modified by the Governor in 2016 to allow for local management needs while also directing the state to develop state-wide plans for long-term conservation goals and water use efficiency.

In 2015, an updated Water Use Efficiency Strategic Plan (WUESP) that incorporated the SB X7-7 targeted reductions was finalized. The updated WUESP was supported by a thorough economic analysis intended to guide local water conservation efforts planned and implemented by SCV Water in the coming years. The economic analysis concluded that water conservation measures are more economically feasible as compared to the economic benefit of adding recycled water infrastructure in meeting a portion of future water demands. The WUESP is consistent with SCV Water's Strategic Plan Objectives including:

- Ensure long-term average water supply meets current and future demand.
- Meet local water demands.
- Achieve the water conservation target of 20 percent per capita by 2020.

As mandated by the Water Conservation Act of 2009 (SBx7-7) and initially described in the 2010 and 2015 UWMP, SCV Water has demonstrated compliance with the Interim Daily Per Capita Water Use Target every year since 2015 through 2020.

Beginning with the 2020 UWMP, and summarized in **Table 8-1**, SCV Water started reporting water use reduction and SBx7-7 compliance as one entity (SCV Water combination of Newhall, Santa Clarita and Valencia Divisions, does not include LACWD 36). To report water use reduction as one agency, individual Division 2020 Compliance Water Use Targets were combined and recalculated at 220 gallons per capita per day (GPCD), and in 2020 the Base Daily Per Capita water use was met and compliance with SBx7-7 was achieved (Kennedy/Jenks, 2021).

For 2021, and in anticipation of new standards identified in the conservation long-term framework, discussed below, SCV Water maintained a 20% reduction in GPCD for 2021, with an aggregate conservation target of 22% reduction in GPCD by 2021. Additionally, beginning in 2021 and in support of the Agency's continued reporting consolidation efforts, SCV Water tracks and reports its conservation performance as a single entity.

Table 8-1. Interim Conservation GPCD Targets and Current Levels

Division	Baselines	2020 Targets	Actual 2020	2021 Targets	Actual 2021	Percent Reduction
LACWD 36a	235	188	125	183		--
SCV Water Total (combined)	272	220	204	212	208	24%

Source: 2021 Actual GPCD
a) Since Los Angeles County Waterworks District No. 36 does not have 3,000 AF served or 3,000 connections, SB X7-7 did not apply

8.2 Current and Future Conservation Efforts

In 2018, the State Legislature and Governor Brown enacted AB 1668 and SB 606 in support of continuing efforts to "make water conservation a California way of life." The legislation recognizes that the efficient use of water is both cost-effective and critical to ensuring water supply reliability during drought and non-drought conditions. Water agencies are developing a series of long-term urban water use efficiency standards including indoor and outdoor efficiency targets, with consideration

for local weather conditions, and distribution system water losses. Beginning in 2023, SCV Water will be required to comply with its urban water use objective on an annual basis. The SWRCB may issue informational or conservation orders to agencies failing to meet their objectives. Details specific to AB 1668 and SB 606 standards and protocols are scheduled for release in 2022. The AB 1668 and SB 606 compliance period starts July 1, 2022, with the first performance reports due by January 1, 2024.

SCV Water has worked with Los Angeles County and the City of Santa Clarita to aggressively implement water conservation in the SCV Water service area. SCV Water, Los Angeles County, and the City of Santa Clarita have formed SWAT (formerly convened as the Santa Clarita Drought Committee). The specific purpose of the committee is to work collaboratively to manage the conjunctive use of the Valley's water supplies, respond to drought conditions, and ensure the progressive implementation of water use efficiency programs in the Valley.

SCV Water provides additional information on their website regarding water conservation tips, gardening classes, and rebates. The agency website provides steps residents can take to conserve water for both indoor and outdoor use, along with a calendar for upcoming gardening classes. Rebates for water efficient products and services are provided for individual residential customers, businesses, and areas with large landscapes or homeowners associations (HOA). This includes pool covers, soil moisture sensors, smart irrigation controllers, lawn replacement, irrigation rebates (Healthy and Efficient Landscape Programs-HELP), in-person and virtual home checkups, school retrofit program, and free landscape irrigation surveys. More information on these services and rebates can be found on the SCV Water website (https://yourscvwater.com/save-water-money/#_rebates).

8.3 2021 Water Use

2021 saw a continued return to dry conditions for the Valley and the State. However, despite a continued growth in service connections, there has been a long-term overall decrease in water consumption since 2013.

As drought conditions worsened through the dry winter, in April 2021 the Governor and SWRCB began issuing Drought Emergency Declarations, starting with 2 Northern California counties and expanding to over 41 counties by May 2021. In July 2021 the emergency declarations were expanded to 50 Counties and included a request for voluntary conservation of 15% versus 2020 usage. In September 2021 the SWRCB began requesting monthly reporting from all water agencies to track conservation progress, and in October the drought emergency was expanded to include all counties. SCV Water enacted Stage 1 of its WSCP and Water Conservation and Water Supply Shortage Ordinance in November 2021.

The 2021 calendar year ended with record wet conditions in December. Unfortunately, this was followed by the driest January through March conditions ever experienced. With record dry conditions holding through the beginning of 2022, the Governor issued an emergency order that mandated adoption of Stage 2 of the conservation plans (11-20% conservation) and the Agency moved into Stage 2 by April of 2022.

As noted in **Table 8-1** above, each division in the Valley has met its respective SB X7-7 20% by 2020 reduction in GPCD requirement and SCV Water achieved its 22% by 2021 interim conservation target.

Chapter 9
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APPENDIX A

Tables A1-A3 Historical Water Supply Utilization

Appendix A Table 1
Water Supply Utilization by Santa Clarita Valley Water Agency and Los Angeles County Waterworks District No. 36
Santa Clarita Valley Water Report
(Acre-Feet)

	Santa Clarita Water Division				Los Angeles County Waterworks District No. 36				Newhall Water Division				Valencia Water Division					SCV Water[1]			SCV Water, All Municipal Divisions, and LACWD 36				
	SCV Water	Local Production			SCV Water	Local Production			SCV Water	Local Production			SCV Water	Local Production		Other		SCV Water	Local Production		SCV Water	Local Production		Other	
Year	*Imported Water*[2]	*Alluvium*	*Saugus Formation*[3]	**Total**	*Imported Water*[2]	*Alluvium*[4]	*Saugus Formation*	**Total**	*Imported Water*[2]	*Alluvium*	*Saugus Formation*[3]	**Total**	*Imported Water*[2]	*Alluvium*	*Saugus Formation*	*Recycled Water*[5]	**Total**	*Imported Water*[2,6]	*Saugus Formation*	**Total**	*Imported Water*[1]	*Alluvium*	*Saugus Formation*	*Recycled Water*	**Total**
1980	1,126	9,467	0	**10,593**	0	-	-	**0**	0	1,170	2,363	**3,533**	0	5,995	1,644	-	**7,639**	--	--	**--**	1,126	16,632	4,007	-	**21,765**
1981	4,603	7,106	0	**11,709**	0	-	-	**0**	0	1,350	2,621	**3,971**	1,214	5,597	1,808	-	**8,619**	--	--	**--**	5,817	14,053	4,429	-	**24,299**
1982	6,454	4,091	0	**10,545**	145	-	-	**145**	0	1,178	2,672	**3,850**	3,060	3,415	897	-	**7,372**	--	--	**--**	9,659	8,684	3,569	-	**21,912**
1983	5,214	4,269	0	**9,483**	207	-	-	**207**	0	1,147	2,787	**3,934**	3,764	3,387	611	-	**7,762**	--	--	**--**	9,185	8,803	3,398	-	**21,386**
1984	6,616	6,057	0	**12,673**	240	-	-	**240**	0	1,549	2,955	**4,504**	4,140	4,975	854	-	**9,969**	--	--	**--**	10,996	12,581	3,809	-	**27,386**
1985	6,910	6,242	0	**13,152**	272	-	-	**272**	0	1,644	3,255	**4,899**	4,641	4,633	885	-	**10,159**	--	--	**--**	11,823	12,519	4,140	-	**28,482**
1986	8,366	5,409	0	**13,775**	342	-	-	**342**	0	1,842	3,548	**5,390**	5,051	5,167	1,427	-	**11,645**	--	--	**--**	13,759	12,418	4,975	-	**31,152**
1987	9,712	5,582	0	**15,294**	361	-	-	**361**	22	2,127	3,657	**5,806**	6,190	4,921	1,305	-	**12,416**	--	--	**--**	16,285	12,630	4,962	-	**33,877**
1988	11,430	5,079	63	**16,572**	434	-	-	**434**	142	2,283	4,041	**6,466**	7,027	4,835	2,300	-	**14,162**	--	--	**--**	19,033	12,197	6,404	-	**37,634**
1989	12,790	5,785	0	**18,575**	457	-	-	**457**	428	2,367	4,688	**7,483**	7,943	5,826	2,529	-	**16,298**	--	--	**--**	21,618	13,978	7,217	-	**42,813**
1990	12,480	5,983	40	**18,503**	513	-	-	**513**	796	1,936	4,746	**7,478**	7,824	5,232	3,516	-	**16,572**	--	--	**--**	21,613	13,151	8,302	-	**43,066**
1991	6,158	5,593	4,781	**16,532**	435	-	-	**435**	675	1,864	4,994	**7,533**	700	9,951	4,642	-	**15,293**	--	--	**--**	7,968	17,408	14,417	-	**39,793**
1992	6,350	8,288	2,913	**17,551**	421	-	-	**421**	802	1,994	5,160	**7,956**	6,338	6,615	2,385	-	**15,338**	--	--	**--**	13,911	16,897	10,458	-	**41,266**
1993	3,429	12,016	2,901	**18,346**	465	-	-	**465**	1,075	1,977	5,068	**8,120**	8,424	5,815	2,182	-	**16,421**	--	--	**--**	13,393	19,808	10,151	-	**43,352**
1994	5,052	10,996	3,863	**19,911**	453	-	-	**453**	906	2,225	5,103	**8,234**	7,978	6,847	2,565	-	**17,390**	--	--	**--**	14,389	20,068	11,531	-	**45,988**
1995	7,955	10,217	1,726	**19,898**	477	-	-	**477**	1,305	1,675	4,775	**7,755**	7,259	8,698	1,586	-	**17,543**	--	--	**--**	16,996	20,590	8,087	-	**45,673**
1996	9,385	10,445	2,176	**22,006**	533	-	-	**533**	1,213	1,803	4,871	**7,887**	6,962	12,433	326	-	**19,721**	--	--	**--**	18,093	24,681	7,373	-	**50,147**
1997	10,120	11,268	1,068	**22,456**	785	-	-	**785**	1,324	2,309	5,168	**8,801**	9,919	11,696	516	-	**22,131**	--	--	**--**	22,148	25,273	6,752	-	**54,173**
1998	8,893	11,426	0	**20,319**	578	-	-	**578**	1,769	1,761	4,557	**8,087**	9,014	10,711	149	-	**19,874**	--	--	**--**	20,254	23,898	4,706	-	**48,858**
1999	10,772	13,741	0	**24,513**	654	-	-	**654**	5,050	1,676	2,622	**9,348**	10,806	11,823	106	-	**22,735**	--	--	**--**	27,282	27,240	2,728	-	**57,250**
2000	13,751	11,529	0	**25,280**	800	-	-	**800**	6,024	1,508	2,186	**9,718**	12,004	12,179	1,007	-	**25,190**	--	--	**--**	32,579	25,216	3,193	-	**60,988**
2001	15,648	9,941	0	**25,589**	907	-	-	**907**	5,452	1,641	2,432	**9,525**	13,362	10,518	835	-	**24,715**	--	--	**--**	35,369	22,100	3,267	-	**60,736**
2002	18,916	9,513	0	**28,429**	1,069	-	-	**1,069**	5,986	981	3,395	**10,362**	15,792	11,603	965	-	**28,360**	--	--	**--**	41,763	22,097	4,360	-	**68,220**
2003	20,665	6,424	0	**27,089**	1,175	-	-	**1,175**	6,572	1,266	2,513	**10,351**	16,004	11,707	1,068	50	**28,829**	--	--	**--**	44,416	19,397	3,581	50	**67,444**
2004	22,045	7,146	0	**29,191**	854	380	-	**1,234**	5,896	1,582	3,739	**11,217**	18,410	9,862	1,962	420	**30,654**	--	--	**--**	47,205	18,970	5,701	420	**72,296**
2005	16,476	12,408	0	**28,884**	857	343	-	**1,200**	5,932	1,389	3,435	**10,756**	14,732	12,228	2,513	418	**29,891**	--	--	**--**	37,997	26,368	5,948	418	**70,731**
2006	16,548	13,156	0	**29,704**	1,289	-	-	**1,289**	5,898	2,149	3,423	**11,470**	16,313	11,884	2,449	419	**31,065**	--	--	**--**	40,048	27,189	5,872	419	**73,528**
2007	20,488	10,686	0	**31,174**	1,406	-	-	**1,406**	6,478	1,806	3,691	**11,975**	16,779	13,140	2,367	470	**32,756**	--	--	**--**	45,151	25,632	6,058	470	**77,311**
2008	18,598	11,878	0	**30,476**	1,354	-	-	**1,354**	5,428	1,717	4,195	**11,340**	16,325	14,324	1,770	311	**32,730**	--	--	**--**	41,705	27,919	5,965	311	**75,900**
2009	17,739	10,077	0	**27,816**	1,243	-	-	**1,243**	4,832	1,860	3,868	**10,559**	14,732	12,459	2,836	328	**30,355**	--	--	**--**	38,545	24,396	6,704	328	**69,973**
2010	15,188	10,607	0	**25,795**	1,141	-	-	**1,141**	3,035	2,323	4,173	**9,531**	11,214	13,054	2,995	336	**27,599**	--	1,643	**1,643**	30,578	25,984	8,811	336	**65,709**
2011	13,593	10,195	2,038	**25,826**	1,172	-	-	**1,172**	1,325	3,216	5,135	**9,676**	14,718	12,775	265	373	**28,131**	--	150	**150**	30,808	26,186	7,588	373	**64,955**
2012	15,600	10,192	2,164	**27,956**	471	-	794	**1,265**	2,965	2,631	4,873	**10,469**	16,522	12,770	302	428	**30,022**	--	--	**--**	35,558	25,593	8,133	428	**69,712**
2013	20,059	7,262	2,275	**29,596**	485	-	811	**1,296**	4,488	1,405	4,668	**10,561**	18,249	12,764	594	400	**32,007**	--	--	**--**	43,281	21,431	8,348	400	**73,460**
2014	21,478	4,220	1,832	**27,530**	4	-	1,238	**1,242**	3,942	1,383	4,520	**9,845**	7,668	19,080	2,339	474	**29,561**	--	--	**--**	33,092	24,683	9,929	474	**68,178**
2015	15,019	4,597	2,167	**21,783**	3	-	973	**976**	2,478	1,131	4,491	**8,100**	6,648	13,605	2,929	450	**23,632**	--	--	**--**	24,148	19,333	10,560	450	**54,491**
2016	17,943	3,485	2,494	**23,922**	3	-	1,047	**1,050**	2,876	626	4,755	**8,257**	10,308	11,133	2,789	507	**24,737**	--	--	**--**	31,130	15,244	11,085	507	**57,966**
2017	23,257	907	2,191	**26,355**	1	-	1,093	**1,094**	5,831	780	2,325	**8,936**	17,562	7,737	1,370	501	**27,170**	--	--	**--**	46,651	9,424	6,979	501	**63,555**
2018	21,611	2,465	2,136	**26,212**	5	-	1,106	**1,111**	5,583	728	2,662	**8,973**	12,555	10,837	2,837	352	**26,581**	2,245	1,931	**4,176**	41,999	14,030	10,672	352	**67,053**
2019	19,002	2,762	2,332	**24,096**	7	-	972	**979**	3,770	1,044	3,518	**8,332**	17,950	5,243	1,676	458	**25,327**	1,343	1,156	**2,499**	42,072	9,049	9,654	458	**61,233**
2020	23,110	2,517	2,045	**27,672**	5	-	1,257	**1,262**	5,439	1,322	4,018	**10,779**	18,248	3,741	2,441	468	**24,898**	1,394	1,212	**2,606**	48,196	7,580	10,973	468	**67,217**
2021	23,028	2,884	1,870	**27,782**	5	-	1,239	**1,244**	4,938	1,749	4,803	**11,490**	13,071	9,435	3,566	480	**26,552**	594	387	**981**	41,636	14,068	11,865	480	**68,049**

1. Initial operation at SCV Water Groundwater Treatment Facilities required discharging treated groundwater to the stormwater system including Saugus 1 and 2 startup in 2010/2011 and V201 startup in 2018-2020.
2. Reflects State Water Project through 2006; includes imported water from State Water Project and Buena Vista WSD Agreement beginning in 2007 and continuing through the present year.
3. In January 2011, SCV Water began operation of the Saugus groundwater containment project as part of municipal water supply. The amounts of treated groundwater from Saugus 1 and 2 utilized by SCWD and NWD reflect the estimated distribution to each Division consistent with the proportions in the December, 2006 MOU that establishes amounts to be delivered to SCWD and NWD. Although the MOU indicates all the treated Saugus 1 and 2 water is delivered to NWD and SCWD, a minor, unquantifiable amount of the water may have been delivered to the other purveyors as a result of varying distribution system operations.
4. Groundwater purchased from Pitchess Detention Center.
5. Recycled water totals for 2012 and 2013 are estimates based on the water treament plant production meter; estimates were necessary due to customer meter failure.
6. Imported water was utilized to blend with the treated V201 water to lower the sulfate concentration to a permissable level for discharge to the Stormwater System. The tracking of this water began in 2019 and is estimated for 2018.

Appendix A Table 2
Individual Water Supply Utilization by Agricultural and Other Users
Santa Clarita Valley Water Report
(Acre-Feet)

Year	Five Point			Pitchess Detention Center[1]			Small Private Domestic, Irrigation, and Golf Course Uses			Whittaker-Bermite SATP[2]		All Agricultural and Other Users			
	Local Production		Total	SCV Water	Local Production	Total	Local Production		Total	Local Production	Total	SCV Water	Local Production		Total
	Alluvium	*Saugus Formation*		*Imported Water*[3]	*Alluvium*		*Alluvium*[4]	*Saugus Formation*[5]		*Saugus Formation*		*Imported Water*[3]	*Alluvium*	*Saugus Formation*	
1980	11,331	20	**11,351**	0	3,000	**3,000**	500	562	**1,062**	--	**--**	0	14,831	582	**15,413**
1981	13,237	20	**13,257**	0	3,000	**3,000**	500	521	**1,021**	--	**--**	0	16,737	541	**17,278**
1982	9,684	20	**9,704**	0	3,000	**3,000**	500	501	**1,001**	--	**--**	0	13,184	521	**13,705**
1983	7,983	20	**8,003**	0	3,000	**3,000**	500	434	**934**	--	**--**	0	11,483	454	**11,937**
1984	11,237	20	**11,257**	0	3,000	**3,000**	500	620	**1,120**	--	**--**	0	14,737	640	**15,377**
1985	9,328	20	**9,348**	0	3,000	**3,000**	500	555	**1,055**	--	**--**	0	12,828	575	**13,403**
1986	8,287	20	**8,307**	0	3,000	**3,000**	500	490	**990**	--	**--**	0	11,787	510	**12,297**
1987	6,512	20	**6,532**	0	3,000	**3,000**	500	579	**1,079**	--	**--**	0	10,012	599	**10,611**
1988	5,951	20	**5,971**	0	3,000	**3,000**	500	504	**1,004**	--	**--**	0	9,451	524	**9,975**
1989	6,243	20	**6,263**	0	3,000	**3,000**	500	522	**1,022**	--	**--**	0	9,743	542	**10,285**
1990	8,225	20	**8,245**	0	2,000	**2,000**	500	539	**1,039**	--	**--**	0	10,725	559	**11,284**
1991	7,039	20	**7,059**	0	2,240	**2,240**	500	480	**980**	--	**--**	0	9,779	500	**10,279**
1992	8,938	20	**8,958**	987	1,256	**2,243**	500	446	**946**	--	**--**	987	10,694	466	**12,147**
1993	8,020	20	**8,040**	443	1,798	**2,241**	500	439	**939**	--	**--**	443	10,318	459	**11,220**
1994	10,606	20	**10,626**	311	1,959	**2,270**	500	474	**974**	--	**--**	311	13,065	494	**13,870**
1995	11,174	20	**11,194**	6	2,200	**2,206**	500	453	**953**	--	**--**	6	13,874	473	**14,353**
1996	12,020	266	**12,286**	780	1,237	**2,017**	500	547	**1,047**	--	**--**	780	13,757	813	**15,350**
1997	12,826	445	**13,271**	1,067	1,000	**2,067**	500	548	**1,048**	--	**--**	1,067	14,326	993	**16,386**
1998	10,250	426	**10,676**	12	2,000	**2,012**	500	423	**923**	--	**--**	12	12,750	849	**13,611**
1999	13,824	479	**14,303**	20	1,842	**1,862**	500	509	**1,009**	--	**--**	20	16,166	988	**17,174**
2000	11,857	374	**12,231**	3	1,644	**1,647**	1,220	513	**1,733**	--	**--**	3	14,721	887	**15,611**
2001	12,661	300	**12,961**	0	1,604	**1,604**	1,224	573	**1,797**	--	**--**	0	15,489	873	**16,362**
2002	13,514	211	**13,725**	0	1,602	**1,602**	1,063	589	**1,652**	--	**--**	0	16,179	800	**16,979**
2003	10,999	122	**11,121**	0	2,273	**2,273**	931	504	**1,435**	--	**--**	0	14,203	626	**14,829**
2004	10,991	268	**11,259**	0	2,725	**2,725**	1,071	535	**1,606**	--	**--**	0	14,787	803	**15,590**
2005	8,648	6	**8,654**	0	2,499	**2,499**	1,133	499	**1,632**	--	**--**	0	12,280	505	**12,785**
2006	11,477	934	**12,411**	0	3,026	**3,026**	1,369	506	**1,875**	--	**--**	0	15,872	1,440	**17,312**
2007	9,968	971	**10,939**	0	2,085	**2,085**	1,088	656	**1,744**	--	**--**	0	13,141	1,627	**14,768**
2008	9,191	330	**9,521**	0	3,506	**3,506**	1,100	623	**1,723**	--	**--**	0	13,797	953	**14,750**
2009	11,061	379	**11,440**	0	3,432	**3,432**	1,097	595	**1,692**	--	**--**	0	15,590	974	**16,564**
2010	10,772	366	**11,138**	0	3,446	**3,446**	957	558	**1,515**	--	**--**	0	15,175	924	**16,099**
2011	10,323	344	**10,667**	0	3,226	**3,226**	1,013	533	**1,546**	--	**--**	0	14,562	877	**15,439**
2012	11,296	0	**11,296**	0	2,722	**2,722**	1,090	586	**1,676**	--	**--**	0	15,108	586	**15,694**
2013	12,091	0	**12,091**	0	2,309	**2,309**	1,061	690	**1,751**	--	**--**	0	15,461	690	**16,151**
2014	9,262	0	**9,262**	0	2,082	**2,082**	869	672	**1,541**	--	**--**	0	12,213	672	**12,885**
2015	8,868	0	**8,868**	0	1,768	**1,768**	723	720	**1,443**	--	**--**	0	11,359	720	**12,079**
2016	11,276	0	**11,276**	0	1,616	**1,616**	713	754	**1,467**	--	**--**	0	13,605	754	**14,359**
2017	10,348	0	**10,348**	0	1,630	**1,630**	576	884	**1,460**	--	**--**	0	12,554	884	**13,438**
2018	10,231	0	**10,231**	0	1,611	**1,611**	595	634	**1,229**	209	**209**	0	12,437	843	**13,280**
2019	9,790	0	**9,790**	0	1,560	**1,560**	617	543	**1,160**	524	**524**	0	11,967	1,067	**13,034**
2020	7,291	0	**7,291**	0	1,282	**1,282**	616	612	**1,228**	448	**448**	0	9,189	1,060	**10,249**
2021	10,363	0	**10,363**	0	1,529	**1,529**	618	705	**1,323**	495	**495**	0	12,510	1,200	**13,710**

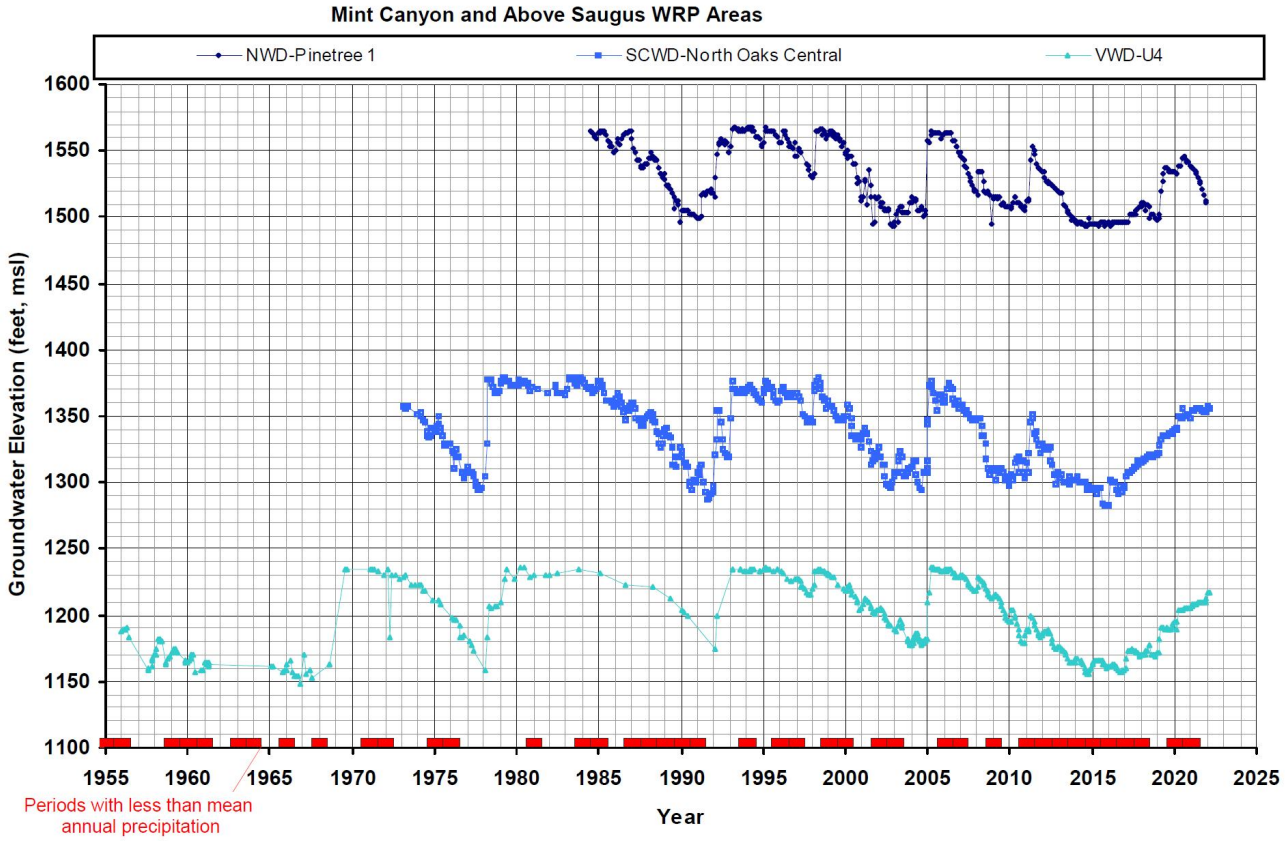
1. Formerly called Los Angeles County Honor Farm; groundwater sold to LACWD 36 in 2004 and 2005.
2. Whittaker-Bermite SATP pumping beginning in 2018, although operation reportedly began in August, 2017.
3. Reflects State Water Project through 2006; includes imported water from State Water Project and Buena Vista WSD Agreement beginning in 2007.
4. Sand Canyon Country Club irrigation and estimated private pumping.
5. Valencia Country Club and Vista Valencia Golf Course irrigation.

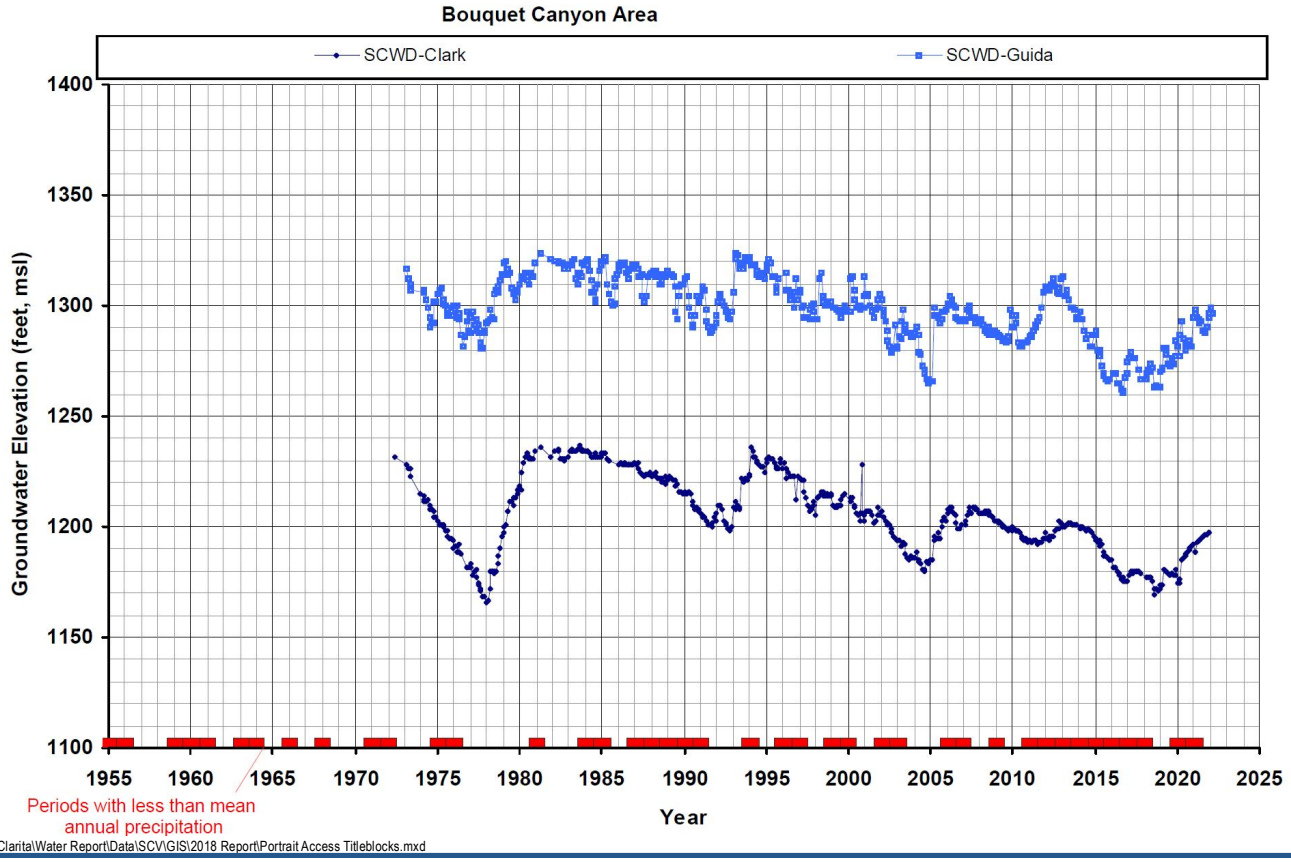
Appendix A Table 3
Total Water Supply Utilization for Municipal, Agricultural, and Other Uses
Santa Clarita Valley Water Report
(Acre-Feet)

	SCV Water	Local Production		Other	
Year	*Imported Water*	*Alluvium*	*Saugus Formation*	*Recycled Water*	**Total**
1980	1,126	31,463	4,589	-	**37,178**
1981	5,817	30,790	4,970	-	**41,577**
1982	9,659	21,868	4,090	-	**35,617**
1983	9,185	20,286	3,852	-	**33,323**
1984	10,996	27,318	4,449	-	**42,763**
1985	11,823	25,347	4,715	-	**41,885**
1986	13,759	24,205	5,485	-	**43,449**
1987	16,285	22,642	5,561	-	**44,488**
1988	19,033	21,648	6,928	-	**47,609**
1989	21,618	23,721	7,759	-	**53,098**
1990	21,613	23,876	8,861	-	**54,350**
1991	7,968	27,187	14,917	-	**50,072**
1992	14,898	27,591	10,924	-	**53,413**
1993	13,836	30,126	10,610	-	**54,572**
1994	14,700	33,133	12,025	-	**59,858**
1995	17,002	34,464	8,560	-	**60,026**
1996	18,873	38,438	8,186	-	**65,497**
1997	23,215	39,599	7,745	-	**70,559**
1998	20,266	36,648	5,555	-	**62,469**
1999	27,302	43,406	3,716	-	**74,424**
2000	32,582	39,937	4,080	-	**76,599**
2001	35,369	37,589	4,140	-	**77,098**
2002	41,763	38,276	5,160	-	**85,199**
2003	44,416	33,599	4,207	50	**82,273**
2004	47,205	33,757	6,503	420	**87,885**
2005	37,997	38,648	6,453	418	**83,516**
2006	40,048	43,061	7,312	419	**90,840**
2007	45,151	38,773	7,685	470	**92,079**
2008	41,705	41,716	6,918	311	**90,650**
2009	38,545	39,986	7,678	328	**86,537**
2010	30,578	41,159	9,735	336	**81,808**
2011	30,808	40,748	8,465	373	**80,394**
2012	35,558	40,701	8,719	428	**85,406**
2013	43,281	36,892	9,038	400	**89,611**
2014	33,092	36,896	10,601	474	**81,063**
2015	24,148	30,692	11,280	450	**66,570**
2016	31,130	28,849	11,839	507	**72,325**
2017	46,651	21,978	7,863	501	**76,993**
2018	41,999	26,467	11,515	352	**80,333**
2019	42,072	21,016	10,721	458	**74,267**
2020	48,196	16,769	12,033	468	**77,466**
2021	41,636	26,578	13,065	480	**81,759**

APPENDIX B

Groundwater Elevation Hydrographs





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Groundwater Elevations in Eastern Santa Clarita Valley Alluvial Wells

Santa Clarita Valley Water Report
Santa Clarita Valley, Los Angeles County, California

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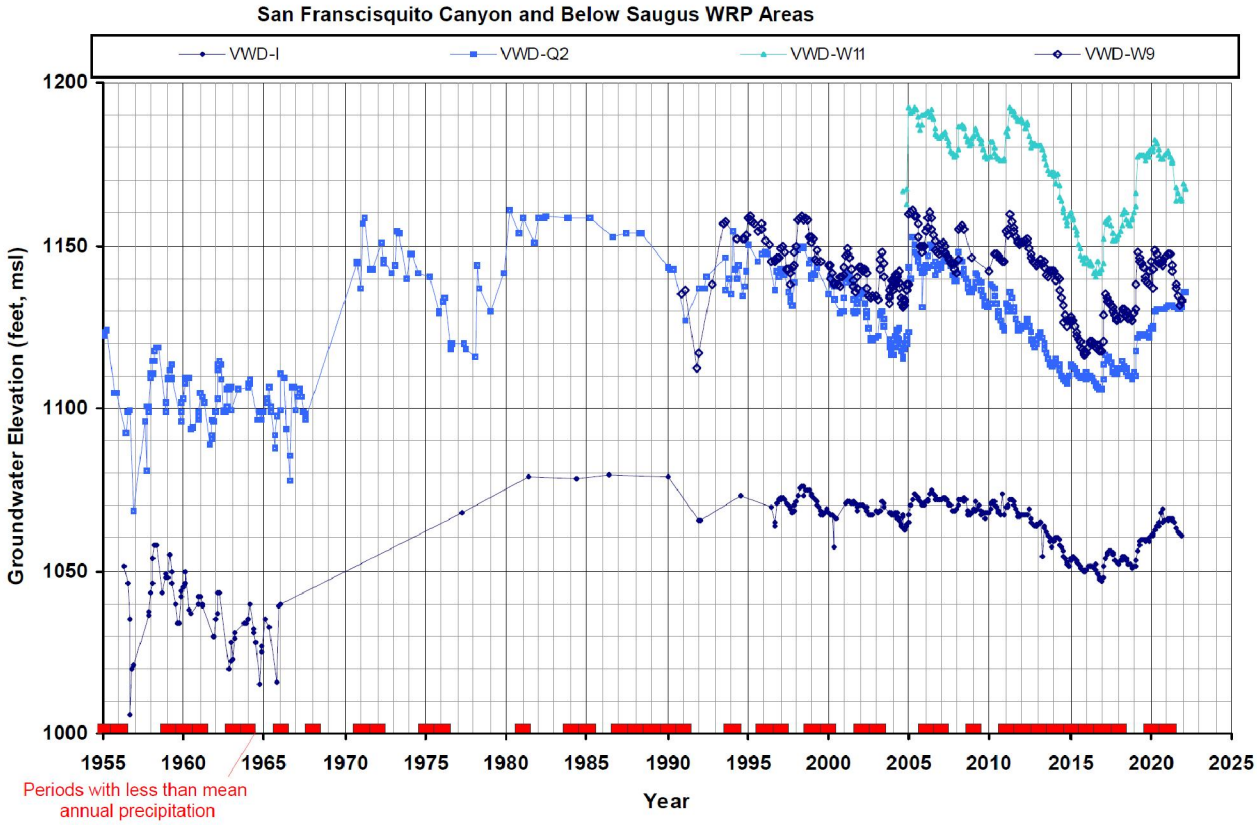

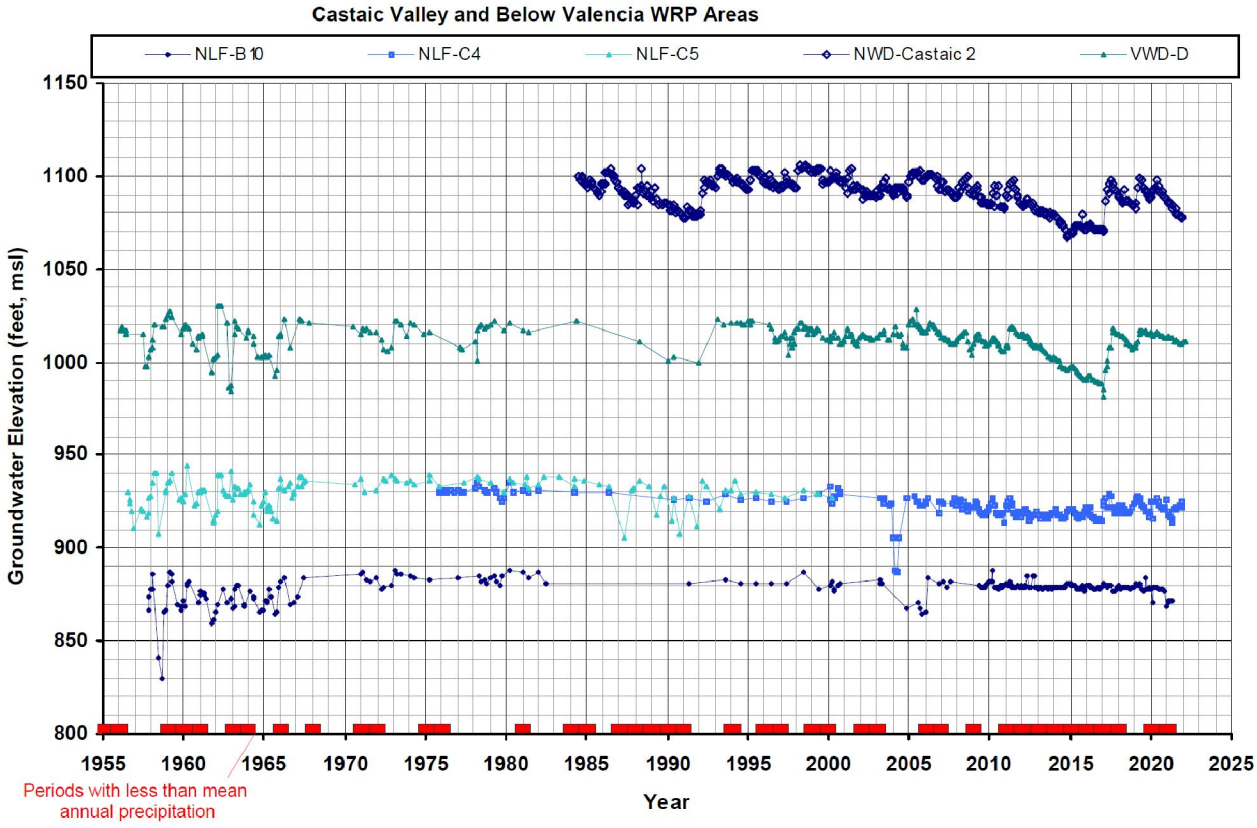

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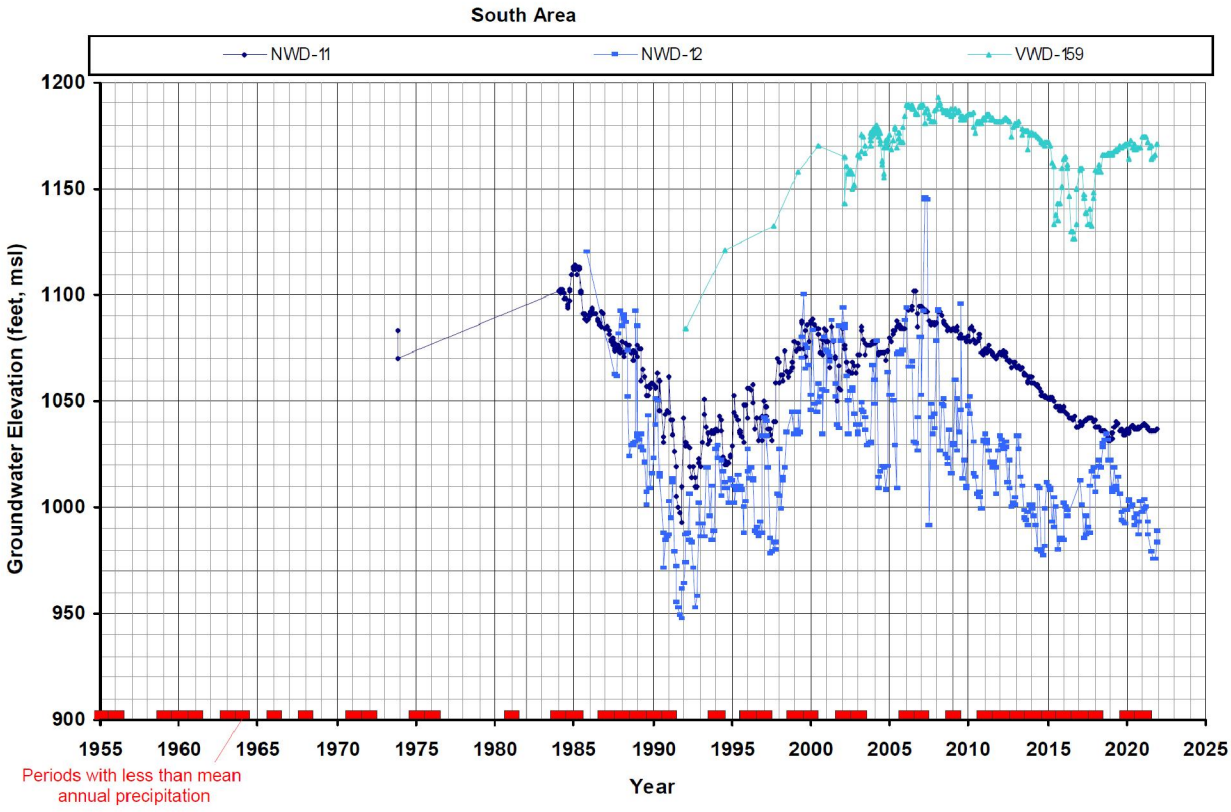
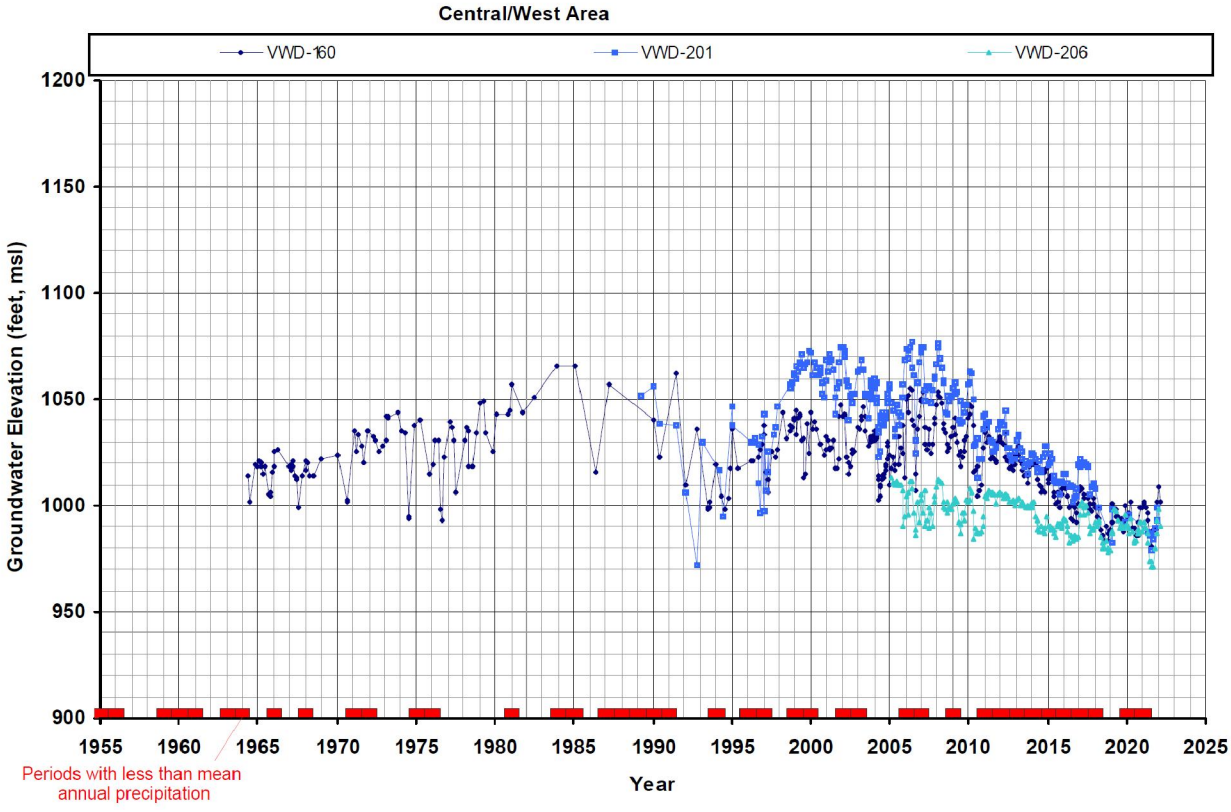
Groundwater Elevations in Western Santa Clarita Valley Alluvial Wells

Santa Clarita Valley Water Report
Santa Clarita Valley, Los Angeles County, California

Appendix B - B2





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Groundwater Elevations in Saugus Wells

Santa Clarita Valley Water Report
Santa Clarita Valley, Los Angeles County, California

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