ITEM NO.
5.1

DRAFT 2020 Urban Water Management Plan

Public Comments

Comment Period: April 27, 2021 – May 26, 2021

Comments in this packet are additional comments received between June 11, 2021 and June 16, 2021

From:	Friends of the Santa Clara River
To:	uwmp; uwmp; Gary Martin; Matt Stone
Cc:	Peter.Brostrom@water.ca.gov
Subject:	comments on the Santa Clarita Water AGency UWMP
Date:	Sunday, June 13, 2021 10:02:27 PM
Attachments:	FSCR UWMP Final Draft.pdf

CAUTION - EXTERNAL SENDER

Please find our comments attached

-----Original Message-----
From: uwmp uwmp@scvwa.org
Sent: May 26, 2021 3:57 PM
To: Friends of the Santa Clara River friendsofthesantaclarariver@earthlink.net, uwmp uwmp@scvwa.org, Gary Martin gmartin@scvwa.org, Matt Stone mstone@scvwa.org
Cc: Peter.Brostrom@water.ca.gov Peter.Brostrom@water.ca.gov
Subject: RE: Request for an extension to file comments UWMP

Mr. Danza,

Please find our attached response to your comment. Thank you.

Sarah Fleury

-----Original Message-----
From: Friends of the Santa Clara River
Sent: Tuesday, May 25, 2021 4:10 PM
To: uwmp ; Gary Martin ; Matt Stone
Cc: Peter.Brostrom@water.ca.gov
Subject: Request for an extension to file comments UWMP

CAUTION - EXTERNAL SENDER

Please fnd our request attached.

Friends of the Santa Clara River
PO Box 7719 Ventura, California 93006 (805) 320-2265
www.fscr.org

6-12-21

Board of Directors and
Sarah Fleury, Project Manager
SCV Water Agency
26521 Summit Circle
Santa Clarita, CA 91350

Re: **SCV Urban Water Management Plan – Final Draft Redlined Version Dated 6-10-21**

Sent via email to: uwmp@scvwa.org
Please copy all Board Members

Honorable Board Members and Ms. Fleury:

Thank you for honoring our request for an extension of time to comment on the UWMP with your clarifying letter that all comments would be accepted and considered through the June 16th hearing. We appreciated that change since we seem to be commenting on a moving target. On May 27th, the Agency posted an Errata document to the UWMP section of its website consisting of 26 pages. This posting occurred almost a month after the release of the draft document for comment and only six days before the close of the comment period. It includes substantial adjustments to several key tables in the Plan, Table 4-1, 4-7. 4-10 and other statements that materially affect the water supply and the comments we would make concerning that supply. Now a redlined version with changes has been posted for review on June 10th, giving the public little time to review and include these changes in their comments.

Our focus on this UWMP is to ensure that water supplies for the upper Santa Clara River are accurately disclosed. Over-stating existing supplies and modeling supplies that most likely will not be available in the future frustrates the ability to supply clean, high quality water as new development is approved, as well as undermining the work on the Ground Water Sustainability Plan to not over pump the Santa Clara River and protect ground water dependent eco-systems. Over-pumping in the upper river will also impact the health of the entire river system.

Therefore, the following comments focus on addressing areas where we see an over statement of water supplies or language that is so confusing that planners are not able to use this document to determine water availability for future needs.

Chapter 4
We concur with the changes made to table 4-1. Including the banked water emergency drought storage in the previous table 4-1, implied that the Agency could supply an enormous amount of water on a yearly basis. According to statements in footnotes and elsewhere in the document, it is disclosed that this water is to “firm” existing supplies, not to be used to approve new development, however this was very vague. Thank you for clarifying this.

However, we note that you have continued to include the Nichols water before it is contractually available. As plaintiffs in litigation over Newhall Ranch and water issues during the last two decades, we are very aware of agreements made between yourselves and Newhall Land and Farming, particularly in the 2012 contract agreement for the purchase of Valencia Water Co where it states:

> *6.8 Conveyance of the Nichol Water. Notwithstanding any other provision of this agreement, by not later than ninety (90) days after Newhall has received from Los Angeles County a final non reviewable approval (and a final non-appealable judgment or order is obtained in any legal, equitable or administrative action challenging such approval) of the final tentative map for the Newhall Ranch project, Newhall , the Agency and the Company shall determine (based on the amount if any)by which the ground water amounts set forth in the Newhall/SVR/Company agreements are insufficient to meet potable water requirements within the Newhall Ranch Specific Plan) how much, if any, Nickel water is needed to make up such insufficiency. At that time Newhall Shall convey and assign to the Agency or the Company (as determined by the Agency) all of its rights in and to the Nickel Water and all of its rights and obligations under the Nickel Agreement.*[1]

The Newhall Ranch project Specific plan consists of five tracts and some 25,000 units[2] with an estimated buildout time of 25-30 years. While it was approved many years ago, work has only just begun on a first tract with an initial approximately 500 units in the first phase of this tract not yet offered for sale.[3] Based on this information, it is not plausible to begin including the Nickels water in 2035 as stated in Section 4.2, 4.2.3.2 7.3.6 and elsewhere in the document. Further, we wonder if it is legal to direct water to one specific project developer where that water has paid for by the all residents of the Santa Clarita Valley through 1% their property taxes and water rates paid to the Agency.

State Water Supply Reporting

After over a decade of litigation starting in the 1990s and spilling over into the new millennium regarding the overstatement of state water supply reliability and the Monterey Agreement, we were surprised to see the Agency continue with this mis-representation and overstatement of SWP supplies in your Plan

We object to the inclusion of the full 95,000AF Table A amount on Table 4.3 when the agency is well aware that only about half that amount is available in an average year. It is obvious from Table 4-2 of state water deliveries to the Agency found on page 4-23 that since the Agency began requesting its full entitlement in the early 2000s, less than half its full entitlement has been available for delivery on average. (Years previous to 2000 also saw low SWP project availability, but the agency may not have needed or requested its full amount. Please refer to the DWR Delivery Notices for more accurate historical data). This year is a repeat of the lowest amount ever previously obtained (only 5%). It is inaccurate and deceptive to include the full entitlement amount as though this amount is obtainable. We suggest that Table 4-3 should state in the heading "with an entitlement of 95,000AF we expect to

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[1] ***Eminent Domain Settlement Agreement Among Castaic Lake Water Agency, The Newhall Land and Farming Company and Valencia Water Company***, December 2012, page 24-25 Relevant pages attached, entire agreement available on file at Santa Clarita Valley Water Agency which assumed all of Castaic Lake Water Agency's contracts upon the formation of SantaCLarita Water Agency (see Agency's enabling legislation, SB634, 2018.

[2] Newhall Ranch Specific Plan, May 27th, 2003 pg. 1-1

[3] "Today, March 31, 2021, that changed when I receive an announcement that "traditional" single-family homes would be part of the growing list of Valencia homes. The models are currently under construction and will be opening soon! The date for the Valencia Homes Grand Opening event has not been announced yet, but it is rumored to be Summer 2021. When I know the exact date, I will let you know." https://ranchontheriver.com/mission-village/

receive these amounts if it is an average year, then include the average received in the SCV area for the last two decades.

Your Agency and its predecessor has never actually received 100% of your 95,000AF entitlement that is included in this list, or the "95.000AF" as mentioned elsewhere as being available. One hundred per cent has only been achieved in two years in the 1980's according to DWR's most recent Water Delivery report (2019) and has not been realized since then (in a 40 year period). To give residents the false hope and planners the false impression that the Santa Clarita Valley might ever receive a full water entitlement is not realistic, and not transparent. It challenges your agency's supposed commitment to transparency and diminishes its credibility. We include the table below from the DWR SWP Water Delivery Capability Report for wet years for your reference[4]:

Table 5-5. Estimated Average and Wet-Period Deliveries of SWP Table A Water (Existing Conditions, in TAF/year) and Percent of Maximum SWP Table A Amount, 4,133 TAF/year

Year	Long-term Average		Single Wet Year (1983)		Wet Periods							
					2-Year (1982-1983)		4-Year (1980-1983)		6-Year (1978-1983)		10-Year (1978-1987)	
2017 Report	2,571	62%	4,098	99%	3,967	96%	3,569	86%	3,433	83%	3,163	77%
2019 Report	2,414	58%	4,008	97%	3,750	91%	3,330	81%	3,210	78%	2,967	72%

As you can see, the 2019 Report states the long term average is 58% for wet years. Any reference to 100% should be removed.

Of course, average and dry years will produce much less water from the State Water Project on which your Agency depends[5].

Table 5-6. Estimated Average and Dry-Period Deliveries of SWP Table A Water, Excluding Butte County and Yuba City (Existing Conditions, in TAF/year) and Percent of Maximum SWP Table A Amount, 4,133 TAF/year

Year	Long-term Average		Single Dry Year (1977)		Dry Periods							
					2-Year Drought (1976-1977)		4-Year Drought (1931-1934)		6-Year Drought (1987-1992)		6-Year Drought (1929-1934)	
2017 Report	2,571	62%	336	8%	1,206	29%	1,397	34%	1,203	29%	1,408	34%
2019 Report	2,414	58%	288	7%	1,311	32%	1,228	30%	1,058	26%	1,158	28%

Accurately reporting State Water Supply has been an issue of concern to the Friends of the Santa Clara River for over two decades as indicated by our objection in 2000 and the resulting litigation that ended in the Court setting aside a state water transfer CEQA document (*Friends of the Santa Clara River v. Castaic Lake Water Agency*, Feb. 6, 2002, 95 Cal.App.4th 1373)

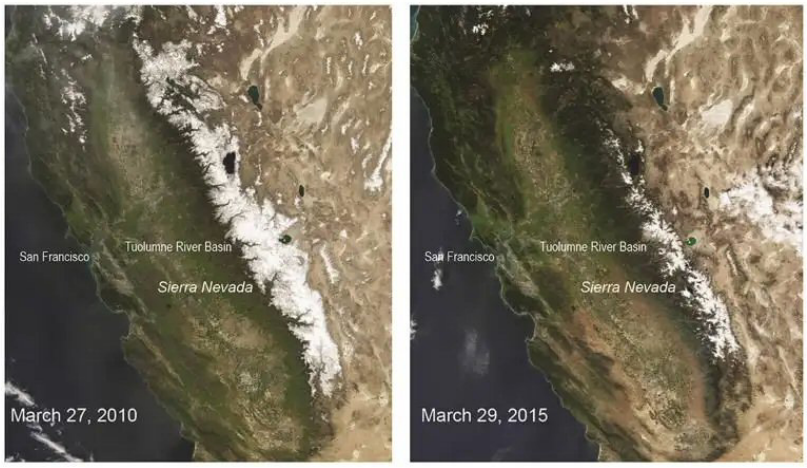
Reduced Future Availability of Water Supply from Northern California

The Santa Clarita Valley currently receives approximately 50% of its water from Northern California in normal years. But due to climate change, scientists have modeled a severe loss of the snowpack that will

[4] The Final State Water Project Delivery Capability Report 2019 August 26, 2020, pg 28
[5] *Ibid*. page 30

supply that water in future years. While previously State Water Project Water from Northern California could be relied upon to provide that water, scientists now say that Climate Change will reduce snowfall in the Sierras by as much as 64%[6] and thus reduce water available from that source for communities in Southern California. For example, in drought years, such as the most recent severe drought of 2010-2016 snow pack all but disappeared and communities such as the Santa Clarita Valley were left to rely only on their own ground water.

March 2015, snow pack estimated to be at a five hundred



Again, although snowpack was higher than normal year in 2017, that trend has not continued and with the rise in temperatures predicted by climate change, average Sierra snowpack will decrease in the future making imported water from Northern California more difficult to obtain. Droughts are cyclical, but as they become longer and more severe, water from Northern California will become less available.
While we understand the Agency may have a legal requirement to use the DWR Water Delivery Capability Report, we urge you to include more information about the effect of climate change on the Sierra snowpack and the State Water Project so that the public will be aware of the probability of a severely shrinking water supply due to climate change.

And now in 2021 we face a similar situation a mere six years later - Lake Oroville is at 36% of average and may reach its lowest level ever by this September, after experiencing less than expected run off from winter snows. DWR has issued a notice that only 5% of SWP allocations will be delivered this year as occurred in 2015.

The Plan lists several potential reservoir improvements that may increase water supply in the SCV. We remind everyone that with predicted reduced snowfall in the Sierras as a result of climate change, there will likely be no water to fill future dams. Thus, DWR is urging a reduction in dependence on SWP imported water supply.

It is therefore important that the UWMP accurately disclose state water supply reliability estimates and do a better job of explaining climate change impacts, since the SCV is so crucially dependent on it.

[6] See Los Angeles Times article by *Alex Hall is a professor of atmospheric and oceanic sciences at UCLA and director of the university's Center for Climate Science, https://www.latimes.com/opinion/op-ed/laoe-hall-reich-sierra-snowpack-climate-change-20180402-story.html*

4.3.2.3 Ground Water Availability is Overstated

After reviewing the well level documents posted on the UWMP website (included by reference in these comments), we note that some of your alluvial wells (such as the P wells) have not produced and others have produced at lower production levels for many years. We believe this may be due to extensive new pumping in the Aqua Dulce area for vineyards and livestock. Thus, it appears inaccurate to state that these wells will be returned to service without further investigation of water levels.

We object to the use of well "capacity" rather than a range of actual well production for alluvial wells as described in greater detail for Saugus wells below. Obviously, if an alluvial well has stopped producing for many years due to drought, loss of recharge and upstream production, it does not matter what its capacity is, it is not going to produce water. This kind of exaggeration and failure to take real facts into consideration can only result in a future water shortage. We request that wells with zero or reduced production be recorded as such and that all references to well capacity be removed.

We note that since Richard Slade produced his investigation of the Alluvial Aquifer[7] (report included by reference), that found perennial production to be 31,600 to 32,600 for two decades, every water report in the SCV used that figure. Then in 2009 a flow model was produced by GSI and Scalmanini, two consultants that had also done extensive work for Newhall Land and Farming, developer of the Newhall Ranch project. The Agency flow model claims a much high production of up to 40,000AF can be obtained. However, this much water has never been produced from the Upper watershed as is documented in the posted water well production records. It was even further reduced during the 2013-16 drought, according to those records. We urge you to include the actual data of well production from alluvial wells rather than data from a model, as this is obviously a far more accurate representation of what is actually available. We ask that you change the projected alluvial supplies in all tables to reflect actual production.

Saugus Formation Wells

According to page 4-30 "Saugus pumping ranges between 7,500 and 15,000 AFY. Planned dry-year pumping from the Saugus Formation ranges between 15,000 and 25,000 AFY during a drought year and can increase to between 21,000 and 35,000AF. These amounts are entirely hypothetical. The agency is well aware that at the moment, several Saugus wells are closed due to ammonium perchlorate treatment and other wells have reduced production due to constraints of the well head treatment system. There is no engineering study on aquifer pumping that indicates 35,000 AFY can be withdrawn from the Saugus aquifer, nor are there wells drilled that can supply this amount of water, therefore 35,000 AF seems to be an amount pulled out of thin air. While we see that you have indicated the number of wells that would be required to provide this amount of water, again, this figure seems to be related to pumping capacity, NOT actual possible well production. The location of some of these wells are near areas that have been contaminated by ammonium perchlorate or close to other wells which might negatively influence production. You state in a different section that permitting has been delayed for the two newest wells, since they are located near existing abandoned oil wells and the Dept of Drinking Water has raised concerns about this. There is no approximation of additional costs that ratepayers will be asked to bear. A timeline is proposed, but does not discuss remediation for pollutants, a time line for new well studies or well development.

While we understand that the Plan does include a discussion of a probable timeline to bring wells polluted with ammonium perchlorate, PCE , TCE and PFAS back on line, these amounts and the timeline

[7] Slade, Richard, *Perennial Yeild and Artificial Recharge of the Santa Clara River*, 1988

should be consistently disclosed throughout the document. Therefore, especially Table 4.4, but other tables also should be adjusted downward to include these realities.

Use of "Permitted and Maximum Capacity" in Tables 4-7A and 4-8A
Listing permitted capacity for wells that currently do not pump that much and cannot pump that much in a drought is confusing for planners that may not understand that "capacity" of the pump does not equate with well production and is often not achievable. We do not understand why it is included other than to create an illusion that more water is available than is actually the case. For instance, during a drought a well may produce less or the water table may drop below its bowl so that it stops producing altogether. This column should be eliminated on both tables.

The inclusion of a "Maximum" capacity where capacity beyond permitted limits is listed in the table is even more concerning. Why is the Agency listing this capacity when it is unpermitted, unobtainable and not an example of what actually is produced from the various wells? We request that this column be removed for accurate disclosure of real water supply.

Thus, the statement on page 4.43 *"With the restored capacity of Well 205 and the additional planned new Saugus Formation wells, the total dry year combined capacity will increase to about 54,680 AFY. As shown in Table 4-9, this combined capacity is more than sufficient to meet the multiple dry year municipal production target of 33,880 AFY,"* **is totally inaccurate and extremely miss-leading because it refers to "capacity" rather than production. The figures also do not coincide with the table it references.**

We request that all references to capacity be removed and well production ranges be inserted in their stead in all tables. If capacity is required by law to be included, a large warning at the top of the table should be inserted stating that capacity is not an indication of well production.

Addendum to the 2015 Urban Water Management Plan – reduction of reliance on the State Water Project.
Regional reliance cannot be accomplished by merely crunching numbers and statistical percentage analysis as proposed in this Addendum. It will take real actions. The Agency can and should provide letters to planning agencies during the land use process suggesting actions that can be taken to enhance ground water recharge of local aquifers such as:

- Mapping of potential re-charge areas to promote their protection
- Channel widening where possible to enhance recharge
- Oppose concreting of tributaries
- relocation of land uses vulnerable to flooding so that floodplain recharge areas can be protected
- Providing flood protection outside of the main channel to protect specific structures as needed
- Reduce peak stream flow using detention and storage in a manner that enhances natural habitat and conserves water
- Use of or acquisition of flood plains to reduce river flows and enhance recharge
- Use of native trees and shade to prevent evaporation
- Promote and encourage permeable pavement where feasible

Conclusion
We look forward to reviewing an updated version of this plan before it is approved. Please notify us of any further edits that are made. We also request that the comment letter we wrote on the Drought Contingency Plan, which is a part of the UWMP, be included as a comment on this document.

Sincerely,

James M. Danza, MS, AICP
Chair

Cc: DWR, Peter.Brostrom@water.ca.gov

From: lgibson@scvwa.org
To: uwmp
Subject: New submission from URBAN WATER MANAGEMENT PLAN Form
Date: Tuesday, June 15, 2021 12:27:48 PM

My comments or questions on the Urban Water Management Plan

The Santa Clarita Valley has been my home since 1968. During that period of time our lovely valley has experienced many variations in the available water supply, including numerous times when water use has been rationed or restricted. Yet we seem to continue to "have enough water" to take care of any and all developers that have designs on building here.
I often wonder how these residential developments can be justified, under existing circumstances. I fear that semantics may be playing a role in these decisions. Having worked in contracts for a large corporation for many years, I learned early on that the same word can have one meaning when used in a contract, and a totally different meaning when used in the accounting reports and budgets. This was within the same company!
Let me explain what I see as a problem relating to the very important issue of how our water supply is described in the Urban Water Management Plan, especially on pages 4-42 through 4-43. Among the various charts and explanations, that seem to show there is "plenty of water" to build any number of new dwellings, the Water Agency seems to have confused the words "capacity" and "availability" (or "production") when discussing the amount of water that each well can produce. It is obvious that in some places the Agency is referring to the capacity of a well pump, pipe line, etc., were they to be working at their maximum mechanical ability. That is quite different from "available" water supply, which means, just as stated, how much (producible, drinkable, hopefully) water is there. Right now? That is absolutely a very different number! It could be so different, that if properly heeded, no more new developments would be built.
The semantics gets into the picture when the words "capacity" and "available" (or in other words, the actual production that a well can provide), though not the same word, are used interchangeably, as if they were the same word, and had the same meaning, which they absolutely do not. This could cause someone looking as these charts to believe there is a large amount of water available merely because the well pump could operate at that level, regardless of whether that water is really there to be "produced" from that source
I see the proper use of these words as a matter of being honest with the citizens of our valley and the planners who must rely on this information to make decisions.. The actual facts of our water supply must be fully disclosed and made available to all, especially to any person or agency involved with the consideration of allowing more development to take place in this area that will be supplied by Santa Clarita Valley Water.

Sally Louise White
26242 Park View Road
Valencia CA 91355

Name

SALLY WHITE

Email

sallywhite24@sbcglobal.net

From:	SCOPE
To:	uwmp
Subject:	Comment letter on Final dfrat SCV UWMP
Date:	Wednesday, June 16, 2021 7:48:25 AM
Attachments:	UWMP2020draft finalComments.pdf

CAUTION - EXTERNAL SENDER

_____

Please see attached

SCOPE
Santa Clarita Organization for Planning and the Environment
TO PROMOTE, PROTECT AND PRESERVE THE ENVIRONMENT, ECOLOGY
AND QUALITY OF LIFE IN THE SANTA CLARITA VALLEY
POST OFFICE BOX 1182, SANTA CLARITA, CA 91386
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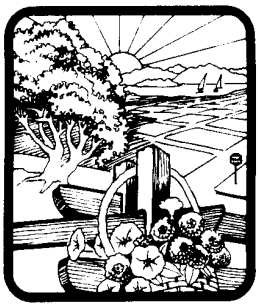


6-14-21

Sarah Fleury, Project Manager
SCV Water Agency
26521 Summit Circle
Santa Clarita, CA 91350

Re: **SCV Urban Water Management Plan**

Sent via email to: uwmp@scvwa.org
Please copy all Board Members

Honorable Board Members and Ms. Fleury:

Santa Clarita Organization for Planning and the Environment was founded in 1987 to focus on planning and conservation issues in the Santa Clarita Valley, watershed of the Santa Clara River. We have participated in numerous water planning processes over the past two decades

We previously submitted comments on the SCVWA Water Shortage Contingency Plan. We ask that you and include those comments in the UWMP since the WSCP is a part of the UWMP .

After we expressed concern about the late release of the Errata document and requested an extension of time to comment, we received a letter from your General Manager indicating that all comments would be accepted and revised through the June 16th hearing. Now additional changes have been made in a June 10th document. We will be addressing that document as it stands now.

Amendment to the 2015 UWMP and Comments on Chapter

We do not agree that the Agency can re-do a plan that was approved 5 years ago and was relied upon for landuse approvals during that time. Further, the many steps that the Agency could have taken to reduce reliance on imported water such as regularly commenting during landuse approvals to promote protection of re-charge areas, permeable pavement, opposing box channels in tributaries of the Santa Clara River, etc. are not being under taken. Regional self reliance will only occur through the Water Agency's willingness to promote and protect ground water recharge, require conservation measures and increase the use of recycled water throughout the whole valley, not just for new development in the Newhall Ranch project..

Though the calculations in this plan this amendment reduce the percentage of use of state water supply as demand increases, it shows a substantial increase the actual amount of state water used. The calculations also seem to treat the exchange and banking supplies as though they are not from the State Water Supply, full well knowing that to be their origin

As climate warming progresses. NOAA scientists and others predict a reduction and potential complete loss of snow run off from the Sierras. It is therefore imperative that we protect local sources and wean ourselves off of imported water to the extent possible for the future health and welfare of the residents of the Santa Clarita Valley. We therefore believe that this amendment should include some real actions that the Water Agency intends to take to make that reduction possible.

Comments on the UWMP 2020 Report

Inappropriate Use of Castaic Lake As a Cover Photo

We continue to object to the Water Agency and its predecessor agency CLWA using photos of Castaic Lake for its reports as though it owns or has access to all the water there. The Water Agency has tried for many years to associate in the public's mind the water stored in Castaic Lake as a vast reliable source for the Santa Clarita Valley. The Agency is fully aware that the this reservoir is owned by the Department of Water Resources and that the Agency has only about 4600 AF of flexible storage, an amount that would only supply around month of water demand to the Santa Clarita Valley. This constant visual of the Castaic Reservoir creates a false impression in the public's mind as to the actual sources and availability of water in the Santa Clarita Valley.

Miss-representation and over-statement of the availability of Nickel Water.

The SCVWA and its predecessor agency has included this source of water in its water supply portfolio for many years when in fact it does not own the water and has no contractual right to it until after the last tract of the Newhall Ranch Specific Plan is completed, approved and all litigation is over[1]. The Specific Plan was anticipated to have a 30 year build out, so a firm contractual supply would not be available until after that time. But in fact the whole project may never be completed. Should that scenario occur, the Nickels water would not be available for any of the some 25,000 units to be built before the last tract.

Until Newhall gets approval for the last tract, Newhall is under no obligation to provide the Nickel water to the Agency. That water could be sold or disposed of to any other party for any purpose.

We appreciate your removal of this water from Table 4-1 on page 4-6 (we note that there is a second table apparently erroneously labeled 4-1 on page 4-16). that corrected this issue We also appreciate that the Agency has not included the Nickel Water in other charts until 2035 and has removed the 4650 Semi-tropic pumping capacity, as it appeared the Agency was counting that water twice. However since buildout of the Newhall Ranch Specific Plan was anticipated to occur over a 25 year period, and the first building is just beginning to occur in the initial tract (Mission Village), it is highly improbable that this water will be available before 2045. Unless there is a change in the contract with Newhall Land and Farming (now FivePoint) Corporation, we ask that you move the 1607 Nickel Water from 2035 to 2045 for accuracy.

In addition to these problems, Newhall's Semi tropic storage facility has a limited amount of water and a limited amount of capacity. As of 2020, it supposedly contains 36,844 AF (See attachment 2). If this were used at the rate indicated as available in Table 4-1 (4950AF), there would only be enough of this water to last around seven years. Even at its full capacity of

[1] Eminent Domain Settlement Agreement Between Newhall Land, Castaic Lake Water Agency and Valencia Water Co., Dec 17, 2012, See page 24 Section 6.8 Entire document attached as appendix A

55,000AF, if this amount of water is achieved, that is only 5,000 AF of water a year (far less than would be needed for the 25,000 units at build out) for 11 years. Therefore we do not believe that the Agency can legitimately make the statement "Based on current estimates, the Nickel Water and the stored water in the Semi tropic bank provide adequate reserves for potential future needs within the Specific Plan area," as stated on page 4-23.

Reserving and Directing Water for Specifically Identified Future Developments

The UWPM states on page 4-20:

> *SCV Water has entered into agreements that reserved 3,378 AF of the Buena Vista-Rosedale Rio Bravo Water for potential annexations into its service area. 389 AF is reserved for the second phase of the Tesoro Del Valle development. This development is scheduled to be completed by the end of 2025. 489 AF has been reserved for the Tapia Ranch development with development estimated to be completed in the late 2020s. 2,500 AF is reserved for the planned Legacy Village development. This development is assumed to occur after 2030 but before 2035. During the periods before demands for these developments occur, or if these developments occur but do not use all the amounts reserved for them in any year or years, the remaining supply would be available to the entire SCV Water service area.*

In addition to the above directed water sources, the Nickel water is obligated for use ONLY for the Newhall Ranch project.

While we question the equity of "reserving" water for a particular developer's annexation to the agency, particularly where that water has been purchased at public expense for the use of existing residents, at least it ought to be reported in such a way that planners know it is not available for general use and new housing approvals because it is reserved. We suggest that you do that by showing this water available at the estimated time that the project will come on line, for instance 10 or fifteen years from now, or 25 years in the case of the Nickel water, and that all charts should be adjusted accordingly.

Water Storage Project water should not be in included as available in the Total Water Supply, giving the appearance that it can be used for new demand in the document

The purpose of an Urban Water Management is to give planners an accurate picture of the water supply in an area so that they can make good planning decisions that protect public health and safety and do not underestimate finite resource needs, in particular, water supply.

The Agency has planned for drought over the last decade by contracting for storage in the Semi-tropic and Rosedale Rio Bravo ground water storage facilities and arranging for other dry period supplies and exchanges. This is prudent. However, these sources were not meant to be a source of permanent supply. They were intended as a backup supply for drought relief. If used fully each year, they would only be available for around ten years. Further as the snowpack continues to dwindle due to climate change, replenishment of these facilities will likely not be available in the future. Therefore they must not be identified as a permanent supply for new long-term housing or business demand.

While we appreciate the changes the Agency made to Table 4-1 to try to address this problem, this table still does not make it immediately apparent that the water banked supplies are not meant to be used for development approvals. They are there as "firming" supplies for drought back up, as they are being used this year under drought circumstances. Thus to include them in "Total Supply" on Tables 4-1(page 4-5), remains confusing and gives an inaccurate picture to planners and the public that overstates total supply.

This same problem occurs in tables 7-3, 7-4, 7-5A and 75B, where again, it is unclear that banking supplies are for firming and should not be used to approve new development. The tables are set up in such a way that it appears those supplies would be available all the time on a firm long-term basis. This is not the case.

The Agency has tried to remedy this problem by the use of footnotes, again explaining that the banked water is only for dry year back up (for example - *(j) Supplies shown are annual amounts that can be withdrawn using existing firm withdrawal capacity and would typically be used only during dry years*.) **This is not sufficient.**

These banked and other infrequent short term supplies should be removed from the "Total Existing Supply" row, since they cannot provide a long-term supply. Instead we suggest that they be recorded in a separate section that clearly indicates that they are firming supplies only. At the very least, the Title Row should include "Firming Supplies only for drought Back-up" or a similar heading. **Without such a change, the Agency is providing both planners and the public an inaccurate overstatement of the actual total available long term supply.**

4.3.2.3 Available Groundwater Supplies- Alluvial and Saugus availability is overstated

For nearly three decades, hydrological reports set the yield of the Santa Clara River at 30,000 to 32,000 AF. (see compendium of water reports attached, full reports included by reference), yet this report states that up to 40,000 AF of water can be withdrawn from the alluvial aquifer based on a 2009 flow ***model*** operating plan. This amount has never been withdrawn from the upper watershed wells (see SCV 2019 Water Supply Report[2]).

Additionally, that 2009 operating plan didn't work in the 2010-2015 drought. Water levels dropped, which reduced or eliminated production from several wells. In a 2015 Technical Memorandum produced by GSI Solutions[3] for CLWA, SCW Agency's predecessor agency found that without digging deeper or additional wells:

> *Rainfall records, groundwater level monitoring, and groundwater modeling together indicate that little to no recharge has occurred to the Alluvial Aquifer since the winter of 2010/spring of 2011 rainfall season. The groundwater level monitoring program shows that groundwater levels have declined at a fairly steady rate since that time, as has been observed in other past periods of local drought conditions (such as occurred in 1984 through 1992 and again in 1999 through 2004). The continued decline in groundwater levels that was observed in 2014 at many Alluvial Aquifer wells will continue in 2015 if little to no rainfall and streamflow recharge occurs to the local aquifer systems during the winter of 2014/spring of 2015 rainfall season.*
>
> *Under this scenario, and assuming there are no new wells or modifications to existing wells and pumping systems, GSI's primary conclusions regarding the achievability of the target pumping volumes from the Alluvial Aquifer in 2015 are presented in Table 1 and are summarized as follows:*
> *1. For the three retail water purveyors combined, the achievable yield from the Alluvial Aquifer in 2015 is likely between 17,100 and 21,800 AFY. The Groundwater Operating Plan's drought-year target of 27,400 AFY of collective*

[2] https://yourscvwater.com/wp-content/uploads/2020/08/2019-Santa-Clarita-Valley-Water-Report.pdf

[3] Evaluation of Groundwater Pumping Targets for the Alluvial Aquifer in 2015 Santa Clara River Valley East Subbasin (Santa Clarita Valley, California), John Porcello, GSI Water Solutions, Inc., Dec. 2014. Report attached. We note that while the agency has chosen to use other draft reports in the past, they choose not to use this one. We surmise that this was because they did not want to make it public. This is critical information for the health and welfare of the Santa Clarita Valley.

production by the three retail water purveyors will not be achievable if the drought continues through the winter of 2014/spring of 2015 rainfall season.
2. The largest shortfall in yield is estimated to occur for VWC. The estimated achievable production volume for VWC wells (between 14,600 and 17,900 AFY in 2015) creates shortfalls of (a) 3,600 to 6,900 AFY compared with VWC's target production under the Groundwater Operating Plan and (b) 1,100 to 4,400 AFY compared with the 2015 target production volume that was of interest to VWC.

Thus, if the Agency subjectively chooses to use the operating supply of 30,000 to 40,000 which it knows to be unachievable in a drought and too high in average years, this Plan will substantially overstate the amount of water during dry and wet periods, causing severe water shortages and cutbacks in the future.

Future production from the Saugus Aquifer is also over stated. For instance Table 4-4 (and elsewhere such as Table 4-9) on page 4-31 substantially overstates current pumping ability. As the SCV Water Supply Report shows, currently only 7500AF can be pumped in an average year due to closed polluted wells[4], not 15,000AF. The increased amount for a dry year is not achievable now because the Agency doesn't have the wells to pump that much. The 35,000AF figure in this chart and described on page 4-30 is completely hypothetical. There is no engineering study on aquifer pumping that indicates 35,000 AFY can be withdrawn from the Saugus aquifer, nor are there wells drilled that can supply this amount of water. While the document claims elsewhere that proposed new wells will provide this "capacity", there is no study that indicates water can actually be produced at this amount. Therefore, 35,000 AF seems to be an amount pulled out of thin air.

We Request that these amounts be adjusted downward to reflect what is actually currently available. Additional charts should be used to show restored or planned wells to ensure that planners and the public understand what the real current supplies are and when additional supplies *might* become available.

Saugus Recharge and Recovery – This potential resource should not be listed since it is unlikely that the cleanup of this currently contaminated aquifer would be completed within the timeline of the report. Thus, a recharge permit from the State would likely not be granted in a time period that would allow its use for a drought.

State Water Project Table A Supply

Over the past 20 years, a significant amount of litigation has been brought by the public in an effort to ensure that actual state water supplies were not exaggerated by using the full entitlement amount. In fact, one such effort involved our organization and Castaic Lake Water Agency in the early 2000s.

So it is discouraging to see this number, the full 95,000AF Table A amount, appear yet again on Table 4.3 as though "demand" is what can be delivered. This is confusing to planners and to the public and gives a false impression of the real amount that can be supplied. The agency is well aware that only about half that amount is available in an average year. It is obvious from Table 4-2 of state water deliveries to the Agency found on page 4-23 that since the Agency began requesting its full entitlement in the early 2000s, less than half its full entitlement has been available for delivery on average. We note that the agency has never received a full 100% of entitlement, and that this level of delivery is not anticipated anywhere, even for wet years in the

[4] At the moment, several Saugus wells are closed due to ammonium perchlorate treatment and other wells have reduced production due to constraints of the well head treatment system as described elsewhere in the document.

DWR's Delivery Capability Report[5]. Therefore, all references to receiving 100% of entitlement or 95,200AF should be removed from the Plan, and instead, an amount derived from the actual water received or percentage of the state water allocation should be used..

Recycled Water

While we concur that recycled water is a needed offset, however the Agency currently has some large impediments to producing that water. For instance, the Agency may not take additional recycled water without applying for a permit to reduce flow to the Santa Clara River. The Sanitation has refused to do this. Only "new" water can be used. It is unclear how much additional recycled water beyond what is already in use might be available, and any estimate would only be a subjective projection at this time.

The Agency appears to be building the recycled water infrastructure only for Newhall Ranch as indicated by tanks and pipelines being constructed in an area to serve the Mission Tract of the Newhall Ranch Project. We are also aware of the 2012 purchase agreement that promised all the recycled water it needs or wants to the Newhall Ranch[6]. So it appears that recycled water will not be available elsewhere in the Valley, except for the immediate neighborhoods adjacent to Vista Canyon.

The Table 5-2 on Page 5-9 overstates 2021 recycled water availability for the Newhall Ranch project. That project cannot start generating recycled water until housing is occupied and waste water is generated. As no housing has yet even been completed for occupancy, there will be no 2021 generation of recycled water from that development. Even when the first housing of around 500 units is occupied, these houses will generate nowhere near 5, 174 AF as stated on this chart. This figure must be moved to at least 2030 to comply with the "new drop" concept. Why is the Agency over-stating this figure?

Third, during the development of the Salt and Nutrient Plan for the Valley, use of recycled water for landscaping was identified as a potential major obstacle foe recycled water use. We understand that the Valencia treatment plant will use RO to reduce salt, however, to our knowledge, the Vista Plant does not have an RO facility for salt removal. Please address how it will comply with the RWQCB' s Chloride reduction order.

Climate Change

Since warming is possibly the greatest threat to the SCV water supplies, we were astonished to see a mere half page of discussion on the issue. We understand that the Agency has considered drought, but global warming is predicted to go beyond the normal wet/dry scenarios that have been experienced over the last 80 years.

Several sections in the water code emphasize that climate change is appropriate to consider, including the projected future uses, water supply characterization projections, and reliability of

[5] **Table 5-5. Estimated Average and Wet-Period Deliveries of SWP Table A Water(Existing Conditions, in TAF/year) and Percent of Maximum SWP Table A Amount, 4,133 TAF/year**

Year	Long-term Average		Single Wet Year (1983)		Wet Periods							
					2-Year (1982-1983)		4-Year (1980-1983)		6-Year (1978-1983)		10-Year (1978-1987)	
2017 Report	**2,571**	**62 %**	**4,098**	**99%**	**3,967**	**96%**	**3,569**	**86%**	**3,433**	**83%**	**3,163**	**77%**
2019 Report	**2,414**	**58 %**	**4,008**	**97%**	**3,750**	**91%**	**3,330**	**81%**	**3,210**	**78%**	**2,967**	**72%**

(The Final State Water Project Delivery Capability Report 2019 , August 26, 2020, pg 28)

[6] See section 6.11, Valencia Water Company purchase agreement, 2012, included by reference

supplies. The flexibility within the Water Code to conduct the analysis appropriately allows water suppliers to incorporate climate change when it is relevant for their sources and water uses such as in the SCV where dependence on imported water and low precipitation from warming will impact supplies.

Many sections in the revised California Water Code (Water Code) relevant to urban water management plans (UWMPs) refer directly to climate change. Some have been added since the 2015 UWMP Guidebook:

Water Code Section 10609

(a) (c) It is the intent of the Legislature that the following principles apply to the development and implementation of long-term standards and urban water use objectives: …

(2) Long-term standards and urban water use objectives should advance the state's goals to mitigate and adapt to climate change.

Water Code Section 10610.2

(a) The Legislature finds and declares all of the following: […]

(3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate, and increasing long-term water conservation among Californians, improving water use efficiency within the state's communities and agricultural production, and strengthening local and regional drought planning are critical to California's resilience to drought and climate change.

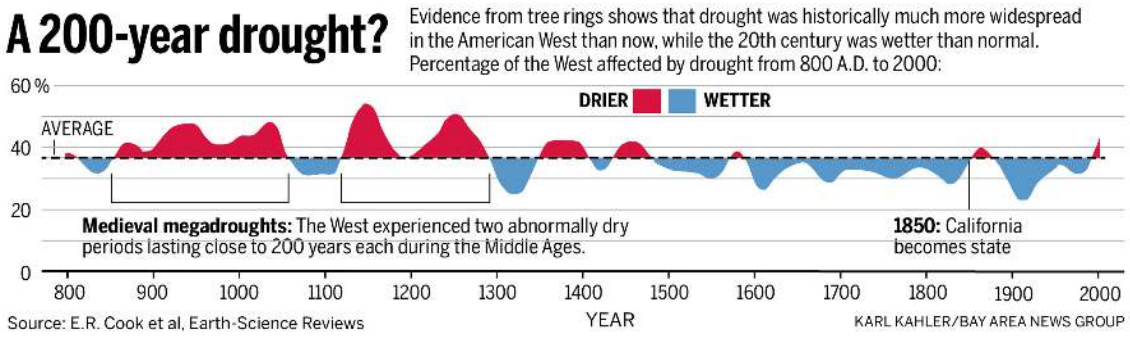
Water Code Section 10630

It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied, while accounting for impacts from climate change.

In the Urban Water Management Plan Guidebook, Climate Change Appendix, DWR recommends three main steps to conduct a climate change analysis, which is a common approach for adaptation. First is a screening process to determine what assets and other aspects of the supplier's system may be at risk to climate change. The second step involves selecting and conducting the full analysis on those assets and other system aspects at risk. The third step involves developing strategies and actions to mitigate the impacts of climate change.

While in depth analysis may not be available for this plan, at least a potential worst case scenario should be outlined based on predictions f loss of snowpack in the Sierras and lower precipitation in Southern California with some thoughts as to how this situation would be addressed on a long term basis.

The SCV is now suffering its lowest rainfall in over a hundred years and our imported SWP allotment has been reduced to 5% for the second time in 5 years. Climate scientists have been predicting the possible return of a mega drought. Should such an event occur, it will take more than the vague discussion about possible climate impacts found in this UWMP to address it.



Further, water quality may also be affected by climate change by increasing salt in the SWP and other regional affects. Please include some analysis of these impacts.[7]

Water Code section 10635(b) states that demands under climate change considerations must be included as part of the drought risk assessment. We do not see any additional analysis for climate change in the UWMP Risk Assessment chapter.

Resources and References - Additional References that should be included or referenced

1. 2020 SCV Water Supply Report and 2019 Water Supply Report.
2. Final State Water Project Delivery Capability Report 2019 , August 26, 2020
3. Evaluation of Groundwater Pumping Targets for the Alluvial Aquifer in 2015 Santa Clara River Valley East Subbasin (Santa Clarita Valley, California), John Porcello, GSI Water Solutions, Inc., 2015
4. A link to the SCWA well records located on the Agency website so that the public can be made aware that these records are available for reference and research. (They are listed on the website, but not listed as referenced documents.

Conclusion

We request that you address the issues outlined in this letter by clarifying tables and descriptions in a way that identifies actual water availably amounts and separates the backup drought supplies in such a way that planners can easily identify the amount available for development approvals.

Thank you for your attention to our concerns.

Sincerely

Lloyd E. Carder II
SCOPE Board Member

Attachment:
Amount of water stored in Newhall Land's privately held water bank
Newhall Ranch Specific Plan excerpt
Compendium of water reports
GSI Alluvial Production Report
2021 Notice of State Water Project 5% Allocation

[7] Kimbrough D. 2019. Impact of local climate change on drinking water quality in a distribution system. *Water Quality Research Journal* 54 (3): 179–192. https://doi.org/10.2166/wqrj.2019.054

Attachments

1. Amount of water stored in Newhall Land's privately held water bank
2. Newhall Ranch Specific Plan excerpt
3. Compendium of water reports
4. GSI 2015 Alluvial Production Report
5. 2021 Notice of State Water Project 5% Allocation

Attachment 1

Amount of water stored in Newhall Land's privately held water bank

1101 Central Avenue, P.O. Box 8043
Wasco, California 93280-0877

Telephone: (661) 758-5113
Bakersfield: (661) 327-7144
Facsimile: (661) 758-3219
Email: mail@semitropic.com

February 6, 2020

Newhall Land & Farming Company
Attention: Marianne Linder
25124 Springfield Court, Suite 300
Valencia, CA 91355

Dear Ms. Linder:

As of December 31, 2019, Newhall Land and Farming Company has 36,844 acre-feet of water stored in Semitropic Water Storage District. Please let me know if you need further information.

Sincerely,

Bobby Salinas, CPA
Controller

Attachment 2

Newhall Ranch Specific Plan excerpt

1.1 PURPOSE AND INTENT OF SPECIFIC PLAN

1. Purpose

The *Specific Plan*[*] is a comprehensive document to guide future development of the Newhall Ranch property. The document sets forth a comprehensive set of plans, development regulations, design guidelines, and implementation programs designed to produce a project consistent with the goals, objectives, and policies of the Los Angeles County General Plan and Santa Clarita Valley Area Plan, as proposed for amendment according to General Plan Amendment No. 94-087.

Flexibility has been designed into the Newhall Ranch Specific Plan to respond to the changes in society and the economic marketplace which will occur over the 25-year buildout of the community. Further, the *Specific Plan* establishes the regulations and standards for the protection of open areas adjacent to development and two large special resource management areas totaling approximately 6,170 acres.

This *Specific Plan* is regulatory in nature and serves as zoning for the Newhall Ranch community. Subsequent development plans and subdivision maps must be consistent with both this *Specific Plan* and the County of Los Angeles General Plan. Should there be a conflict between this *Specific Plan* and existing County ordinances, the provisions of the *Specific Plan* shall prevail. Any situation or condition not specifically and directly covered by the provisions contained within this *Specific Plan* shall be subject to the non-conflicting regulations of the Los Angeles County Planning and Zoning Code.

Certain modifications to the *Specific Plan* are permitted and shall occur in accordance with Section 3.5, Adjustment, Transfer, and Conversion Regulations and/or the Implementation Procedures set forth in Section 5.2.

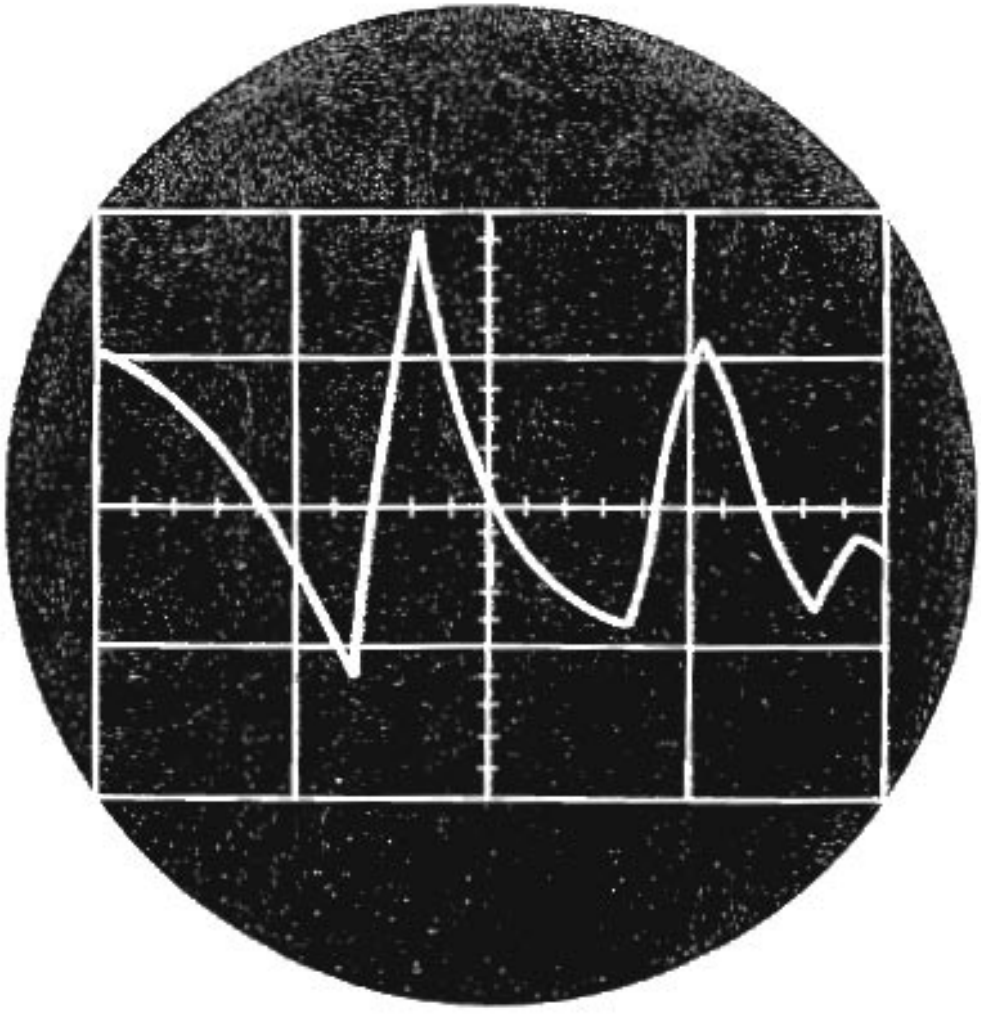
[*] Terms which are defined in Chapter 6, Glossary, are italicized throughout the text of this document.

Attachment 3

Compendium of water reports

WATER-RESOURCES INVESTIGATION USING ANALOG MODEL TECHNIQUES

IN THE SAUGUS-NEWHALL AREA LOS ANGELES COUNTY, CALIFORNIA



UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

OPEN-FILE REPORT
Menlo Park, California
1972

PREPARED IN COOPERATION WITH THE NEWHALL COUNTY WATER DISTRICT

Because of the lack of data only four short-term deep-well hydrographs were available to use in the non-steady-state verification of the Saugus aquifer (pl. 7). The measurements indicate that in the area south of the San Gabriel fault and east of Castaic Junction, the potentiometric surface produced by the model is too flat (pl. 7). This was also indicated by the steady-state run. The model-based heads shown on plate 7 are correct south of Castaic Junction but are about 70 feet low at Newhall. This is shown by the discrepancy between the two hydrographs for well 4N/16W-35L1 (pl. 7). Because there are no water-level measurements for the area north of the San Gabriel fault and Castaic Junction, it is not known whether or not the potentiometric surface shown for that area is correct.

In view of the lack of definitive data for the Saugus aquifer, it is felt that this layer of the model is adequately verified for present needs. The hydrologic parameters used to model the Saugus aquifer are initial estimates. Consequently, before more detailed information about the Saugus aquifer can be obtained from the model, additional studies of the hydrologic characteristics of the aquifer should be made. With present data only general information can be deduced regarding the ground-water flow network in the Saugus aquifer.

A comparison of the assumed steady-state potentiometric surface (pl. 6), with the 1963 potentiometric surface (pl. 7) shows that in the model the Saugus aquifer has undergone a decline in head over most of the area of the aquifer. This decline is due to pumping from the Saugus aquifer and to water-level declines in the overlying alluvial aquifer. The model-generated hydrographs on plate 7 indicate that the declines in the Saugus aquifer have been similar to those that occurred at adjacent points in the alluvial aquifer. This suggests that future pumping from or artificial recharge to one of the aquifers will have an effect on the head in the other aquifer. Head changes in the Saugus aquifer, however, are generally less than the corresponding changes in the alluvial aquifer. This is due to the low vertical component of permeability between the two aquifers and lesser quantities of pumping from the Saugus aquifer than from the alluvial aquifer.

WATER BUDGET

Table 5 shows the water budgets for the steady-state and the non-steady-state model. All quantities of inflow and outflow used in the model are shown. Under steady-state conditions the quantity of inflow to the model must equal the quantity of outflow. As shown, the total inflow and total outflow are both equal to about 25,000 acre-feet per year. Surface-water recharge and underflow are the major sources of inflow, and ground-water discharge is the principal outflow.

In the water budget for the non-steady-state condition the figures shown are the total quantities of inflow or outflow which occurred in each area during the 23-year study period. When the ground-water storage depletion is added to the inflow data, the total inflow must equal the total outflow within the limits of accuracy of the model. As shown, these totals agree within 5.2 percent or about 44,000 acre-feet. Surface-water recharge and underflow are still the main sources of inflow, but ground-water pumpage is by far the greatest source of outflow from the basin.

MODEL READOUTS

The major water purveyors in the Saugus-Newhall area are presently considering the effects of various water-resources management practices in order to arrive at management techniques that will make the best use of the existing and future water resources of the areas. The analog model was used to supply information about the response of the aquifers to each of the following conditions:

1. What are the effects of loss of natural floodwater recharge to the aquifers?

2. What are the effects on the aquifers of artificial recharge of imported water?

3. What are the effects on the aquifers of increased pumpage to meet future water requirements?

Effects of Loss of Floodflow

Because water levels in the alluvial aquifer respond to variations in surface-water recharge, information about the effects of an extended drought during which no floodflow recharge occurs is of value.

To simulate an extended drought, the model was run for the 1945-67 period under the following conditions:

1. The surface-water recharge to the model did not exceed steady-state surface-water recharge.

2. Loss of floodflow recharge to the aquifers will cause large water-level declines which will decrease the quantity of ground-water discharge in the Santa Clara River below Castaic Junction. This ground-water discharge cannot be decreased by more than the original steady-state ground-water discharge. To simulate this limit in the model, the induced recharge in the area was not allowed to exceed the value of the steady-state ground-water discharge.

3. The aquifers were assumed to be in steady-state conditions at the beginning of the drought.

4. All other hydrologic parameters were maintained at the values which were normally used in the non-steady-state model during the 1945-67 study period.

Under these conditions the model produced the hydrographs shown in figure 9. Because the transmissibility in the model does not vary as a function of head, these hydrographs represent the theoretical response of the basin to the conditions set forth above. Under actual field conditions the decrease in transmissibility with decline in head would cause the alluvial aquifer to be dewatered sooner than indicated by the hydrographs in figure 9. The hydrographs do indicate, however, that without the effects of floodflow recharge most of the alluvial aquifer could not support the modeled rate of ground-water pumpage for more than 14 to 18 years after steady-state conditions. The aquifer would support this pumpage for an even shorter perio of time if the basin were not at steady-state condition at the beginning of the drought. The benefit the basin receives from floodflow recharge can be seen by comparing the hydrographs produced by the model for the alluvial aquifer under 1945-67 historic conditions with the hydrographs for the no-floodflow condition.

The loss of floodflow recharge in the alluvial aquifer causes head declines in the Saugus aquifer. As shown by the hydrographs in figure 10, after 23 years the no-floodflow condition produces declines in the Saugus aquifer about 100 feet below those of the normal condition. These declines do not produce complete dewatering of the aquifer because of its large saturated thickness.

Effects of Artificial Recharge

The Upper Santa Clara Valley Water Agency has contracted with the State of California for delivery of northern California water to meet future water requirements in the study area. The quantities of imported water tentatively will range from 1,600 acre-feet per year in 1971 to 41,500 acre-feet per year in 1990 but could be increased somewhat if required (table 6). One management procedure under consideration proposes that all water imported between 1971 and 1980 be artificially recharged to defer the cost of treatment facilities. The channel of the Santa Clara River between Solemint and Saugus was chosen as a possible site for artificial recharge on the basis of the hydrology of this area and the proposed alinement of a 36-inch diameter pipeline. The analog model was used as an aid in determining the effects of the recharge on the aquifers.

A second model run was made to show the effects on the basin of the conditions imposed in the previous run without artificial recharge in the Santa Clara River. The hydrographs produced under these conditions are shown on plate 9.

The model indicated that the alluvial aquifer would be dewatered in the upper and lower Soledad Canyon areas prior to 1980. This is primarily due to the heavy pumping in the lower Soledad Canyon area between 1970 and 1980 which is not compensated for by artificial recharge as it was in the previous run. After 1980 the hydrographs for this run and the previous run are almost parallel with the previous run water levels between 10 and 50 feet higher than those for this run.

In the Saugus aquifer the hydrographs for this run are between 10 and 30 feet lower than the corresponding hydrographs for the previous run. In general the removal of the artificial recharge from the alluvial aquifer does not produce a significant change in water levels in the Saugus aquifer. The same management problems are produced by this set of conditions as were produced in the previous run, the major differences being that the problems occur as much as 10 years sooner. These model-generated readouts are subject to the same limitations as are the readouts from the previous run (page 54).

CONCLUSIONS

On the basis of the study of the hydrology of the area and the readouts from the analog model the following conclusions have been reached:

1. The alluvial aquifer has been the source of most of the ground water pumped in the area. The quality of water in this aquifer is readily affected by small quantities of inflow of either better or poorer quality water because of the relatively small quantity of ground water in storage in the aquifer. The water in this aquifer can in turn affect the chemical quality of the water in the Saugus aquifer. Urbanization will place additional stress on both aquifers by increasing the quantity of poor-quality sewage effluent and good-quality imported water available for recharge into the alluvial aquifer. In addition, heavy pumping from the Saugus aquifer to meet future water demands could drastically reduce the ground-water discharge from the basin. This could result in the buildup of salts within the basin because of the lost flushing action of the ground-water discharge.

These conditions substantiate the belief that a proper water-quality management program must be established within the basin. This should include the initiation and operation of a systematic periodic water-quality sampling program. These data can then be used to evaluate the effects on the basin of the above water-quality considerations.

2. The ability of the alluvial aquifer to accept artificial recharge is dependent on the storage space available within the aquifer. In the Saugus-Newhall area the space available for recharge in the alluvial aquifer varies widely depending on the quantity of surface-water recharge that occurs each year. To determine how much artificial recharge could take place each year, a water-level measuring program should be initiated in the lower Soledad Canyon area. Using these measurements and other data, estimates of the space available for the storage of water in the aquifer in the coming year could be made. This would facilitate obtaining the proper quantities of imported water for artificial recharge each year.

3. The model indicates that under historic pumping conditions the full entitlement of imported water to the year 1980 probably could not be artificially recharged in the 3.5-mile reach of the Santa Clara River below Solemint. This is due to the lack of storage in the alluvial aquifer. When an estimated maximum pumping rate to 1990 is distributed so the pumping near the artificial recharge reach is greatly increased, it seems possible to artificially recharge all the imported water to be delivered prior to 1980.

4. On the basis of readouts from the analog model it seems that the maximum quantities of pumping that might be demanded of the alluvial aquifer to 1990 cannot be supplied by that aquifer. To meet the maximum water requirements of the area, either more water must be imported than was used in the model run or pumping from the Saugus aquifer must be increased. However, the model indicates that increased pumping from the Saugus aquifer causes large head declines in that aquifer and induces declines in the alluvial aquifer. In the model declines were large enough to greatly diminish the ground-water discharge from the alluvial aquifer and to eliminate all natural outflow from the Saugus aquifer. If this condition were allowed to continue unchecked, water-quality problems could develop in the basin because of the imbalance of salts being carried in and out of the basin.

As a result, pumping in the Saugus aquifer cannot be increased indiscriminately without producing detrimental effects in both aquifers. A proper choice of pumping patterns in the Saugus and alluvial aquifers could minimize the adverse effects of increased pumpage. However, further interrogation of the model is required to determine whether or not the Saugus aquifer can support the proposed rate of pumping without dewatering the alluvial aquifer.

5. The Saugus aquifer is a potentially large source of ground water with an estimated maximum of 6 million acre-feet of recoverable water in storage. Further study of this aquifer is required to delineate the areas of poor water quality and to determine more accurately the transmissibility and storage coefficients of the aquifer. Future studies of the Saugus aquifer should give prime consideration to the area north of Castaic Junction and the San Gabriel fault because few hydrologic data are available for this area. With greater knowledge of this aquifer the ground-water basin model could be updated to give more precise information about the response of this aquifer to various ground-water management practices and to more accurately determine the potential for future utilization of the aquifer.

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
Southern District
Water Projects Branch

PRELIMINARY EVALUATION OF STATE WATER PROJECT GROUND WATER STORAGE PROGRAM: SANTA CLARA RIVER VALLEY BASINS

-by-

Evelyn Tompkins
Graduate Student Assistant

This Technical Information Record (TIR) was prepared to document information developed during a reconnaissance-level investigation of the Santa Clara River Valley Ground Water Basins to determine if inclusion of these basins in the State Water Project Future Supply Program is feasible. Therefore, it should be considered as preliminary and subject to revision. This is primarily an internal office document with distribution limited to the cooperating agencies only.

February 1979

basins. Ground water is classed mainly as desirable for domestic and irrigation uses. TDS concentrations range from 260 mg/l to 500 mg/l.

Ground Water Use

The volume of ground water in storage is reduced by: pumped extractions, consumptive use of water by phreatophytes, and the outflow of rising water to Eastern Basin.

Currently, water demand is met entirely by pumped extractions; however, by 1980 imported water will be needed to meet the projected demands of an increasing population. Annual extractions were estimated to be 14.8 cubic hectometres (12,000 acre-feet) per year.

Storage Capacity

Ground water in storage between high and low water levels was estimated to be 19.7 cubic hectometres (16,000 acre-feet). Specific yield is approximately 20 percent.

The ground water level is often at or near the surface during storm flows. Therefore, the river channel alluvium has little capacity for further recharge immediately after heavy rains.

EASTERN BASIN

Description

Eastern Basin is downstream from Acton Basin and lies almost entirely within Los Angeles County. The basin is separated from Acton Basin by an impermeable bedrock constriction. Eastern Basin is composed of water-bearing deposits occurring along the Santa Clara River between the towns of Lang and Blue Cut and in the numerous canyons tributary to this area. The water-bearing deposits cover an approximate surface area of 11 655 hectares (29,000 acres).

The major aquifers in the basin are the Saugus Formation and the river channel alluvium. Only 1 067 metres (3,500 feet) of the Saugus Formation contribute to ground water development. This formation has been faulted, folded, and eroded. The river channel alluvium ranges from a few metres in thickness to about 61 metres (200 feet) thick near the town of Saugus.

Newhall-Saugus is the largest population center for the basin as well as for the whole Santa Clara River Valley.

Ground Water Occurrence

Ground water in the alluvium is unconfined, while ground water in the Saugus Formation is confined. Ground water moves westward. The San Gabriel and Holser Faults cross the water-bearing sediments and cause a water level differential of approximately 3 to 6 metres (10 to 20 feet).

No measurable subsurface inflow occurs from Acton Basin; inflow from Acton Basin occurs as rising water only. Outflow occurs either as subsurface outflow or as rising water. Rising water outflow was estimated to average 13 cubic hectometres (10,600 acre-feet) per year. The subsurface outflow was estimated to be 0.3 cubic hectometre (240 acre-feet) per year.

Percolation of precipitation, streamflow and the return flows of irrigation water recharge the basin. To a minor extent, inflow is derived from the semi-permeable formations which flank the main ground water basin. Other sources of recharge water for the basin are sewage and industrial waste effluents.

Quality

Widely ranging ground water conditions in this basin may cause localized variations from the favorable water quality of the basin. Ground water quality for domestic use ranges from suitable in most areas of the basin to unsuitable in the western portion. Ground water is generally suitable for irrigation of all but the most sensitive crops.

TDS ranges from 600 mg/l to 1 800 mg/l. The concentration of mineral constituents in the ground water increases westward along the basin. Concentrations of chlorides and nitrates are generally lower than 100 mg/l and 45 mg/l respectively.

Ground Water Use

Wells tapping the alluvium are very productive with yields up to 7 570.8 litres (2,000 gallons) per minute. Well extractions from both the alluvium and the Saugus Formation average 28.7 cubic hectometres (23,300 acre-feet) per year. Near Blue Cut, the Newhall Land and Farming Company pumps and exports from 4.9 to 8 cubic hectometres (4,000 to 6,500 acre-feet) per year to Piru Basin for agricultural purposes.

Storage Capacity

No data is available for the total storage capacity of the basin or the current volume in storage; however, data does indicate the basin had an available capacity of 24.7 cubic hectometres (20,000 acre-feet). The safe yield was estimated at 28.5 cubic hectometres (23,100 acre-feet) per year.

PIRU BASIN

Description

Piru Basin is the easternmost basin lying entirely within Ventura County between the towns of Blue Cut and Fillmore. The ground water basin covers a surface area of about 2 843 hectares (7,025 acres).

Piru Basin is comprised of two principal aquifers: alluvium beneath the flood-plains and permeable freshwater-bearing zones in the San Pedro Formation. Over most of the basin the thickness of the alluvial aquifer ranges from 26 to 70 metres (85 to 230 feet). The alluvium consists of fluvial sand and gravel of Recent and

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VOLUME I — REPORT TEXT

HYDROGEOLOGIC INVESTIGATION

PERENNIAL YIELD
and
ARTIFICIAL RECHARGE POTENTIAL
of the
ALLUVIAL SEDIMENTS
in the
SANTA CLARITA RIVER VALLEY
of
LOS ANGELES COUNTY, CALIFORNIA

FOR
UPPER SANTA CLARA WATER COMMITTEE
MEMBERS: LOS ANGELES COUNTY WATERWORKS
DISTRICT NO. 36 — VAL VERDE
NEWHALL COUNTY WATER DISTRICT
SANTA CLARITA WATER COMPANY
VALENCIA WATER COMPANY

AFFILIATE: CASTAIC LAKE WATER AGENCY

DECEMBER 1986

RICHARD C. SLADE
CONSULTING GROUNDWATER GEOLOGIST

RICHARD C. SLADE
CONSULTING GROUNDWATER GEOLOGIST

4950 BELLAIRE AVENUE
NORTH HOLLYWOOD, CA 91607
(818) 506-0416

December 16, 1986

Mr. Kenneth R. Putnam, Chairman
Upper Santa Clara Water Committee
Post Office Box 779
Newhall, California 91322

S8605

Subject: Executive Summary
Hydrogeologic Investigation
Perennial Yield and Artificial
Recharge Potential of the Alluvial
Sediments, Santa Clarita Valley

Dear Mr. Putnam:

I am pleased to present this Volume I report of our hydrogeologic investigation of the alluvial sediments within the Santa Clara River Valley area of Los Angeles County, California. This project was undertaken to evaluate the magnitude of the perennial yield of groundwater that is available to wells from the alluvial sediments and to assess the hydrogeologic feasibility of artificially recharging these sediments.

Work on this project included collecting and reviewing pertinent data from numerous sources, conducting a limited field reconnaissance of the region, providing detailed hydrogeologic analyses of these records, and writing and preparing this report of investigation. Documenting this report are figures and tables, and a list of references reviewed. A separately bound Volume II provides all plates.

Principal conclusions and recommendations include:

1. The study area lies within the Eastern Groundwater Basin of Los Angeles County; alluvium along the stream channels and the Saugus Formation comprise the water-bearing sediments in this basin.

   Because the alluvium is thin (less than 200 feet in maximum thickness) and because it is comprised of coarse-grained, permeable sediments, it is readily subjected to seasonal and long-term climatic (rainfall) changes and water quality impairment. Such climate changes or water quality problems (such as underground leaky tanks) will occur more rapidly and to

a larger degree in the shallow wells of the alluvium compared to wells in the underlying Saugus Formation.

The Saugus Formation ranges in thickness between at least 1500 feet and at least 5000 feet from the northerly to the southerly sides of the San Gabriel fault, respectively. Little is known of the hydrogeology and water-yielding characteristics of the Saugus Formation.

2. Groundwater flows from east to west across the alluvium in the river valley; April 1945 represents the all-time water level high, while November 1965 represents the all-time water level low in much of the alluvium. In general, 1985 water levels are 10 to 30 feet lower than the 1945 levels. Water levels west of Castaic Junction have remained high throughout the period of record.

3. Groundwater in storage in the alluvium has ranged from a high in April 1945 of 201,000 ac-ft, to a low of 107,000 ac-ft in November 1965; at present (Fall 1985) groundwater in storage is approximately 176,400 ac-ft. Because the theoretical maximum storage capacity in the alluvium is 239,900 ac-ft, there is a theoretically available storage capacity of 63,500 ac-ft between the 1985 storage and the theoretically maximum possible storage.

4. Though historic groundwater extraction data are somewhat contradictory, groundwater production for 1985 was: 24,103 ac-ft from the alluvium, using 59 active wells; and 4892 ac-ft from the underlying Saugus Formation, using 8 active wells. The numbers, locations, and annual production from wells actively used by private homeowners, industries and/or commercial establishments are not known; it is probable that total annual production from these sources does not presently exceed a few hundred ac-ft/yr.

5. For our base period of study of 1957-58 through 1984-85, we calculate a practical perennial yield for the alluvium of 31,600 to 32,600 ac-ft per year.

6. Alluvial groundwater quality ranges from a natural calcium-bicarbonate character on the east near Lang to a degraded sodium-sulfate character west of Castaic Junction. Generally, TDS increases in the

their annual extractions are not metered. Because the cumulative total production by these private pumpers is not considered to be large, it has not been included in our perennial yield assessment.

Prior to 1954, alluvial groundwater production accounted for almost 100 percent of the total water production in the study area. However, in 1954, this percentage decreased to approximately 95 percent because in that year Newhall County Water District constructed the first of six wells which tap the Saugus Formation for domestic use. By 1985, production from the Saugus Formation approached 16 percent of total groundwater extractions (refer also to Table 2).

In recent years, there have been several shifts in the supply/demand usage of water in the region. Groundwater extractions from the Saugus Formation have gradually increased to about 15 percent of the total local production, while total extractions (alluvium plus Saugus Formation) have declined slightly. Water usage has shifted toward a greater proportion for urban uses, with a reduction for agricultural uses, as the region has become urbanized. In the future, it is projected that local alluvium production will remain relatively constant with more water going to urban uses as the agriculture is phased out, and there will be greater use of groundwater from the Saugus Formation.

Urbanization has had a rather startling impact on the availability of areas for recharge, however. All recharge to the aquifer system does not occur in the low-flow channels of the river and its tributaries, but infiltrates over much of the alluviated areas which are not within the flood channels of the Santa Clara River system. Paving of these areas has, and will continue to reduce the net effective area for natural recharge to the underlying groundwater system.

Conjunctive Use of the Saugus Aquifer

Castaic Lake Water Agency

January 1990
K/J/C 884605.00

Kennedy/Jenks/Chilton

CLWA. Consequently, the water is currently utilized for agricultural lease operations within the Devil's Den Water District.

The SWP release pattern from its storage reservoirs is based on maintaining a supply of water to satisfy demand in a drought. Consequently, SWP entitlements are subject to cutbacks at times. To assess potential future reductions, Reiter created a model of the SWP supply available for release using a Monte-Carlo iteration, a random analysis, to project precipitation. Historical hydrologic data are incorporated into the analysis. Because the State plans to develop additional sources of water in the future, the Reiter model includes scenarios for each projected yield increase. The expected increases are 60,000 acre-feet/year in 1991, 300,000 acre-feet/year in 1995 and 300,000 acre-feet/year in 2000. Based on the method of determining reductions discussed in Chapter 3, the potential reductions to CLWA's deliveries (assuming full entitlement amounts were requested), and thus the projected water available for CLWA's use, are calculated for each scenario.

The sources of groundwater available to users within CLWA's boundaries in the future will continue to be the alluvial and Saugus aquifers. From the alluvial aquifer the safe yield is anticipated to be 32,500 acre-feet/year, a portion of which will be used for agricultural purposes and, therefore, is not available for M&I use. The Saugus aquifer production is anticipated to be 11,000 to 22,000 acre-feet/year of which the assumption is made that 10,000 acre-feet/year is allocated for use by the water purveyors and 2,000 acre-feet/year is utilized by other water users.

In addition to groundwater and imported water, reclaimed water will be available for CLWA's use. A reclaimed water system with a maximum capacity of 8,600 acre-feet/year is planned for construction in a phased program. It is anticipated that reclamation will begin in 1992 and will increase until reaching the maximum in 1999. The reclaimed water will be used for landscape irrigation, and, therefore, will most likely be utilized from May through September.

From Table 4-1 and Figure 4-1, it can be seen that, based on Reiter's analysis, the supply does not meet the demand every year. The remaining 1,000 to 10,000 acre-feet/year of unused Saugus water is available for development by CLWA for use in the years of shortfall. Development of additional supplies in the Saugus aquifer will be considered in the following chapters.

Final Report

Reclaimed Water System Master Plan

Castaic Lake Water Agency

September 1993
K/J 894012.00

Kennedy/Jenks Consultants

CHAPTER 3

EXISTING AND PROJECTED WATER SUPPLY AND DEMAND

In order to evaluate the need for reclaimed water, water supplies and demands were projected into the future. This chapter describes the existing and future water supplies, demands, and facilities within the Castaic Lake Water Agency (CLWA) service area.

EXISTING WATER SUPPLY, DEMAND AND FACILITIES

Water Supply

Water demands in the Santa Clarita Valley are currently met by two sources: the State Water Project (SWP) and local groundwater supplies. The estimated average total supply available for municipal and industrial (M&I) and agricultural uses is 98,000 to 109,000 acre-feet per year, depending on the yield available from the local groundwater aquifers. CLWA purchases State water and wholesales it to four domestic water purveyors, these being the Los Angeles County Waterworks District No. 36, the Newhall County Water District, the Santa Clarita Water Company and the Valencia Water Company. The approximate boundaries of the water purveyors are shown on Figure 3-1. CLWA has SWP entitlements of 41,500 acre-feet per year for M&I uses. In addition, SWP agricultural entitlements of 12,700 acre-feet per year have been transferred to CLWA from the Devil's Den Water District in Kern and Kings Counties. To date, the Devil's Den entitlements have not been used within the CLWA service area.

In addition to imported water, local groundwater supplies have been developed by domestic water purveyors and by agricultural water users. Two fresh-water bearing aquifers, the alluvial and Saugus aquifers, underlie CLWA's boundaries and form the Eastern Groundwater Basin of the Santa Clara River Valley Basin.

The alluvial aquifer lies above the Saugus aquifer and is comprised of the alluvial sediments along the river and its major tributaries. The maximum thickness of the alluvium is about 200 feet. A large number of wells penetrate this upper aquifer, and, historically, most water extracted from the groundwater basin has been from the alluvial aquifer. The perennial yield of the aquifer is considered to be 32,500 acre-feet, a portion of which is used for agricultural purposes and is increasingly available for M&I uses as agricultural land is developed for urban use.

Much less information is known about the Saugus aquifer. Historically, few wells penetrated the Saugus aquifer. However, as water demands in the valley have increased, more wells have been drilled into the aquifer. The anticipated annual

VALENCIA WATER COMPANY

WATER MANAGEMENT PROGRAM

DECEMBER, 1995

TABLE III-1

WATER SOURCES FOR SANTA CLARITA VALLEY

SOURCE Acre-Feet per Year	Minimum	Maximum
Santa Clara River Alluvium	31,600	32,600
Saugus Formation Normal Pumping	11,000	22,000
Saugus Short Term Overdraft	20,300	None
State Project Water		
CLWA Table A Entitlement[1]	43,360	54,200
TOTAL CURRENT RESOURCES	106,260	108,800
Reclaimed Water Potential	10,000	10,000
TOTAL WATER RESOURCES AVAILABLE	116,260	118,800
NON DOMESTIC & OTHER		
Agricultural uses	12,000	5,000[3]
Pitchess Honor Rancho	2,000[2]	3,000[3]
NET WATER RESOURCES FOR M & I	102,260	110,800

[1] Entitlements are subject to drought related cutbacks. Maximum cutback on Table A is estimated to be 20%. CLWA plans a conjunctive use program to mitigate the effects of State Project Water cutbacks which are shown in the column designated as minimum. This requires **Saugus Short Term Overdraft**.

[2] Estimated current use.

[3] Estimated future use.

Castaic Lake Water Agency

Draft

Integrated Water Resources Plan
Water Demand and Supply Evaluation

February 1998

MONTGOMERY WATSON

BOOKMAN-EDMONSTON
ENGINEERING, INC.

Pumping from the Saugus Aquifer has varied from about 3,900 acre-ft/yr up to 14,800 acre-ft/yr. In 1996, Saugus pumping was about 8,200 acre-ft/yr. Installed pumping capacity can produce 15,000 to 16,000 acre-ft/yr from the Saugus Aquifer.

In 1991, groundwater was pumped into the CLWA distribution system because of SWP supply deficiencies and the cost of water was less than purchasing State Drought Bank water. By moving groundwater from areas of adequate supply into areas with limited groundwater, the local water community illustrated a major element of a conjunctive use program.

Estimated Dry Period Groundwater Production Capability

Slade (1984) reported that the perennial yield of the Alluvial Aquifer is about 32,000 acre-ft/yr. This yield is the historical annual production adjusted for a minor change in storage. Because of he limited storage capacity in the Alluvium, this groundwater source may be limited in dry periods. Wells in the Alluvium near the eastern reaches of the Santa Clara River are known to have groundwater levels which decline during consecutive dry years by as much as 100 feet, reducing pumping capacity. A series of winter storms recharge the aquifer and result in water level recovery.

The data reviewed for the Pardee area (located near Bouquet Canyon Road and the Santa Clara River) shows that in 1990 and 1991, groundwater levels did not decline as much as those in the easterly areas. In 1991, the Valencia Water Company increased its pumping to offset limited SWP water supplies. Valencia Water Company reported delivery of about 5,000 acre-ft/yr into the CLWA distribution system. Total pumping from the Alluvium by Valencia Water Company in 1991 was about 9,900 acre-ft/yr, as reported to the State Water Resources Control Board.

Based on historical data, the Alluvial Aquifer east of Castaic Junction can support production of at least 20,400 acre-ft/yr as shown in Table 3-2.

Table 3-2
1991 Alluvial Groundwater Production
East of Castaic Junction

Water Purveyor	Annual Production (acre-ft/yr)
Newhall CWD	1,900
Santa Clarita WC	5,900
Valencia WC [1]	10,400
Wayside Honor Rancho	2,200
Total	20,400

1. Includes 500 acre-ft pumped in 1991 by Newhall Land & Farming Co. east of Castaic Junction.

PROPOSED FINAL

Supplemental

Water Project

Environmental

Impact Report

SCH # 98041127

FEBRUARY 1999

3.2 SURFACE WATER, WATER USE, GROUNDWATER

Surface Water. The primary drainage course in the CLWA area is the Santa Clara River. Principal tributaries to the Santa Clara River include Mint Canyon, Bouquet Canyon, San Francisquito Canyon, Castaic Creek Canyon, Oak Spring Canyon, Sand Canyon, and Potrero Canyon. Water flow in the stream canyons is ephemeral, and diminishes rapidly after most rainfall events. Surface water resources include the Santa Clara River, Bouquet Reservoir, and Castaic Lake. Water (both imported and naturally occurring) is diverted from Pyramid Lake located a few miles to the north, through hydroelectric power generation facilities, into Castaic Lake. Water quality in the Santa Clara River is generally poor due to high concentrations of total dissolved solids, however, water in Pyramid Lake, Castaic Lake, and Bouquet Reservoir is suitable for municipal use. Primary flood hazard areas occur in and along natural drainage channels, such as the Santa Clara River and its tributaries, and in areas where sheetflow may occur during high intensity rainfall (CLWA 1988, 1998; Slade 1986).

Water Supplies. The existing local water supply in the CLWA service area is groundwater extracted from the alluvial aquifer and from the underlying Saugus Formation aquifer. Historically, groundwater has been the primary source of water in the Santa Clarita Valley. Since 1980, local groundwater supplies have been supplemented with imported water from the SWP. From 1984 to 1996, historic SWP entitlement has averaged 24,568 acre-feet per year (AFY) (including deliveries to Devil's Den in Kern County and Kings County), which is 45 percent of the existing 54,200 AFY entitlement.

Groundwater. Large quantities of water are pumped from relatively shallow wells in the highly permeable alluvial aquifer. Although this alluvial aquifer is the smaller of the two-aquifer systems, as measured by storage capacity, most water wells within CLWA are drilled into the alluvial aquifer. Slade (1986) estimated the perennial yield of the alluvial aquifer to be from 31,600 AFY to 32,600 AFY. The maximum historic quantity of water stored in the alluvium has been estimated to be approximately 201,000 acre-feet, following substantial rainfall in 1945 (CLWA 1998). Recharge amounts are highly variable, depending on annual precipitation with documented annual water level recoveries of 70 feet or more. Dry years have resulted in water level drops of approximately 100 feet, particularly in Soledad Canyon. However, groundwater levels have remained near the ground surface in the vicinity of Castaic Junction, due to the east-

SANTA CLARITA VALLEY WATER REPORT
1999

Castaic Lake Water Agency

Los Angeles County Waterworks District #36

Newhall County Water District

Santa Clarita Water Company

Valencia Water Company

Prepared by: The Upper Santa Clara Valley Water Committee
February 2000

Executive Summary

Santa Clarita Valley Water Report
1998

This annual report provides factual information about the current water resources within the Santa Clarita Valley. The Upper Santa Clara Valley Water Committee, (Committee) whose members are responsible for ensuring that Valley residents have a safe, adequate and reliable water supply, prepared this report.

The Santa Clarita Valley is served by four retail water purveyors: Los Angeles County Waterworks District 36, Newhall County Water District, Santa Clarita Water Company and Valencia Water Company. The Castaic Lake Water Agency (CLWA) provides imported water from California's State Water Project to the four purveyors for distribution. These five entities meet regularly as the Upper Santa Clara Valley Water Committee to coordinate the beneficial use of water in the Valley.

This report provides information about the area's geology, the local groundwater basin, imported water supplies, water quality, precipitation, recycled water, existing and projected water demand and an overall outlook of water supply and demand.

In 1998, the Committee reports a total water supply of approximately 107,000 acre-feet per year and an existing water demand of 48,858 acre-feet. The Santa Clarita Valley currently has a surplus of supply of about 58,142 acre-feet over existing demand. The Committee projects this condition to continue for the foreseeable future given the overall availability of local and imported water supplies, the levels of precipitation both locally and regionally, the favorable operating condition of the groundwater basin and the existing facilities in place to deliver water throughout the valley.

Water Supplies include groundwater from the shallow Alluvial Aquifer and the underlying deeper Saugus Formation and imported water from the State Water Project. The following summarizes the water resources of the Valley in 1998:

Alluvial Aquifer

- The annual perennial yield for the Alluvial Aquifer is 32,500 acre-feet per year. This quantity of water represents an amount of water that can be pumped annually from the aquifer on a long-term basis and during dry year conditions without causing an undesirable result.

Section I

Introduction

Section I.A Background

For most residents of the Santa Clarita Valley (Valley), domestic water service is provided by four retail water purveyors. They are Los Angeles County Waterworks District 36, Newhall County Water District, Santa Clarita Water Company, and Valencia Water Company. The Castaic Lake Water Agency (CLWA) is a wholesaler that obtains water from California's State Water Project. CLWA draws water from Castaic Lake where it is filtered and disinfected at two treatment plants before distribution to the purveyors. These five entities meet regularly as the Upper Santa Clara Valley Water Committee (Committee) to coordinate the beneficial use of water in the Valley. Their respective service areas are shown in **Figure I-1**.

The Committee was officially formed in 1967 when its members requested the United States Geological Survey (USGS) to prepare a joint water resources study of the Santa Clara River Watershed. The purpose of the Committee was to consult with the USGS regarding the study, to assist with the accumulation of data, and to continue working toward coordinating water management programs for the area. The study was completed in 1972 by S. G. Robson of the USGS and provides the initial baseline information of the valley's groundwater resources.

Over the years, the Committee has continued to review and document the availability of water resources in the region. Past studies have assessed the condition of the local groundwater aquifers, their hydro-geologic character, aquifer storage capacity, perennial yield and recharge rate and the potential for conjunctive use of both groundwater and imported water resources.

Other efforts have included developing drought contingency plans, evaluating the impact of landfills on the groundwater basin, coordinating emergency response

Section II

Water Supplies

Historically, local groundwater extracted from the Alluvial and Saugus Aquifers has been the primary source of water in the Santa Clarita Valley. However, local groundwater supplies since 1980 have been supplemented with imported water from the State Water Project. This Section describes the geologic setting of the Santa Clarita Valley, the local and imported water supplies, water quality, precipitation records and recycled water programs.

Section II.A Eastern Groundwater Basin

Figure II-1 shows the approximate boundaries of the Eastern Groundwater Basin, which is the largest and most developed groundwater body of the Upper Santa Clara River HA. It is an alluvial-valley aquifer-stream system. The basin consists of Holocene Alluvium, Pleistocene terrace deposits, and the Plio-Pleistocene Saugus Formation.

Information on the hydrologic conditions of the groundwater basin comes from three previous studies. Robson (1972) evaluated the availability, quantity, and potential for development of the groundwater resources of the Saugus-Newhall area. Slade (1986) conducted an evaluation of the hydrologic conditions of the Alluvial Aquifer underlying the Santa Clarita Valley and its potential for artificial recharge. In 1988, Slade conducted a hydrologic evaluation of the Saugus Formation, its quantity, and potential for development.

Section II.A.1.a. Alluvial Aquifer - General

The Holocene Alluvium exists extensively on the valley floor and becomes restricted at the narrow channels of the river's tributaries in the upper reaches. The Alluvium is deepest along the center of the present river channel, with a

values where the alluvium is thickest in the center of the valley and generally west of Bouquet Canyon.

The amount of groundwater in storage in the Alluvium can vary considerably because of the effects of recharge and discharge from the aquifer. Based on an Alluvial area of 15,410 acres, variable thickness, and specific yield of 9 to 16 percent, it has been estimated that the theoretical maximum amount of groundwater that could be held and retrieved in usable storage is 240,000 acre-feet. Based on historical fluctuations in groundwater levels, calculated volumes of groundwater in storage in the Alluvium have ranged from a high of 201,000 acre-feet in April 1945 to a low of 107,000 acre-feet in November 1965.

Three of the four water companies pump local groundwater in addition to purchasing imported water from CLWA. The Los Angeles County Waterworks District 36 presently has no operating groundwater extraction facilities. Also, the County of Los Angeles and the Newhall Land and Farming Company pump from the Alluvial Aquifer to service their own lands.

In 1986, the Committee hired Richard C. Slade and Associates to study the Alluvial Aquifer and determine, among other things, the aquifer's hydrogeologic condition, perennial yield, storage capacity and potential for artificial recharge. Based on historical pumpage and hydrologic conditions over a 28 year base period (1957-58 through 1984-85), Slade estimated that the annual perennial yield for the Alluvial Aquifer is 31,600 acre-ft to 32,600 acre-ft per year (one acre-ft is +/- 325,900 gallons). Based on the results of that hydrogeologic report and the operating experience of its members, the Committee has adopted a perennial yield of 32,500 acre-ft per year. This quantity represents the amount of water that can be pumped annually from the aquifer on a long-term basis, including fluctuations above and below the perennial yield amount during wet and dry year conditions, without causing an undesirable result. Undesirable results could include long-term groundwater level decline (and associated decline in groundwater storage), degradation of water quality in the aquifer, or land

Attachment 4

GSI 2015 Alluvial Production Report

GSI Water Solutions, Inc.

DRAFT Technical Memorandum

To: Keith Abercrombie/Valencia Water Company
Steve Cole/Newhall County Water District
Mauricio Guardado/Santa Clarita Water Division of CLWA
Dirk Marks/Castaic Lake Water Agency (CLWA)

From: John Porcello/GSI Water Solutions, Inc.
Walt Burt/GSI Water Solutions, Inc.

Date: December 15, 2014

Subject: Evaluation of Groundwater Pumping Targets for the Alluvial Aquifer in 2015 Santa Clara River Valley East Subbasin (Santa Clarita Valley, California)

Introduction

This technical memorandum presents the results of an analysis conducted by GSI Water Solutions, Inc. (GSI), to evaluate the achievability of target production volumes identified by the local retail water purveyors for groundwater pumping during 2015 from the local Alluvial Aquifer system in the Santa Clarita Valley, California. As specified in GSI's scope of work (dated October 6, 2014), this effort evaluated whether the target production volumes from Alluvial Aquifer wells during 2014 would be achievable in 2015 if ongoing local drought conditions and curtailments of State Water Project water were to continue into 2015.

The analysis was conducted for the 33 purveyor-owned production wells that currently operate in the Alluvial Aquifer (15 wells owned and operated by Valencia Water Company [VWC]; 6 wells owned and operated by Newhall County Water District [NCWD]; and 12 wells owned and operated by the Santa Clarita Water Division [SCWD] of the Castaic Lake Water Agency [CLWA]). The purveyors' Groundwater Operating Plan calls for the Alluvial Aquifer to provide between 30,000 and 35,000 acre-feet per year (AFY) of groundwater supply during local drought years. Of this amount, approximately 27,500 AFY are specified to be pumped by the three retail water purveyors (VWC, SCWD, and NWCD). The Groundwater Operating Plan was first established for the local groundwater basin during the 2000s (CH2M HILL and LSCE,

2005) and subsequently was updated in 2009 (LSCE and GSI, 2009) and 2014 (GSI and LSCE, 2014).

From the fall of 2013 through the fall of 2014, the three retail water purveyors together pumped approximately 25,000 AFY of Alluvial Aquifer groundwater, or about 10 percent less than the 27,500 AFY target production volume that is identified in the Groundwater Operating Plan for the Alluvial Aquifer during locally dry years. Several wells experienced difficulty achieving their target volumes during 2014, particularly wells owned by SCWD and NCWD that are located in the upper reaches of the watershed (where groundwater levels and groundwater recharge rates are highly sensitive to year-to-year variations in rainfall and streamflow). During the period from the fall of 2013 to the fall of 2014, each of three wells owned by SCWD pumped less than 100 AFY, and four wells owned by SCWD did not operate at all. Personnel from SCWD and NCWD have stated to GSI that in the absence of recharge during the winter of 2014/spring of 2015, more wells could be taken offline or used in an even more restricted manner than occurred in 2014.

Approach

GSI's study approach consisted of first developing an initial assessment of each well's recent and projected operating condition. In November 2014, GSI provided these detailed assessments to each purveyor for their review, comment, and follow-on discussion. GSI then conducted a final assessment that incorporated any new information provided by a given water purveyor, as well as any changes to the 2015 target pumping volumes that the retail water purveyor requested by analyzed.

For both the draft and final assessments, the results were derived by combining (1) groundwater modeling projections of groundwater level trends in the aquifer with (2) information on well designs, pump settings, and pumping operations at each production well. The groundwater modeling work was conducted using the water purveyors' numerical model of the local groundwater basin. GSI's analysis assumed that in 2015:

- No new wells would be drilled.
- No modifications would occur to the depths or shut-off settings at any existing well.
- No deepening, reconditioning, or other alterations would occur to the construction of any existing well.

Conclusions

Rainfall records, groundwater level monitoring, and groundwater modeling together indicate that little to no recharge has occurred to the Alluvial Aquifer since the winter of 2010/spring of 2011 rainfall season. The groundwater level monitoring program shows that groundwater levels have declined at a fairly steady rate since that time, as has been observed in other past periods of local drought conditions (such as occurred in 1984 through 1992 and again in 1999 through 2004). The continued decline in groundwater levels that was observed in 2014 at many Alluvial Aquifer wells will continue in 2015 if little to no rainfall and streamflow recharge occurs to the local aquifer systems during the winter of 2014/spring of 2015 rainfall season.

Under this scenario, and assuming there are no new wells or modifications to existing wells and pumping systems, GSI's primary conclusions regarding the achievability of the target pumping volumes from the Alluvial Aquifer in 2015 are presented in Table 1 and are summarized as follows:

1. For the three retail water purveyors combined, the achievable yield from the Alluvial Aquifer in 2015 is likely between 17,100 and 21,800 AFY. The Groundwater Operating Plan's drought-year target of 27,400 AFY of collective production by the three retail water purveyors will not be achievable if the drought continues through the winter of 2014/spring of 2015 rainfall season.
2. The largest shortfall in yield is estimated to occur for VWC. The estimated achievable production volume for VWC wells (between 14,600 and 17,900 AFY in 2015) creates shortfalls of (a) 3,600 to 6,900 AFY compared with VWC's target production under the Groundwater Operating Plan and (b) 1,100 to 4,400 AFY compared with the 2015 target production volume that was of interest to VWC.
3. The estimated shortfalls in groundwater production from the Alluvial Aquifer are notably smaller for SCWD and NCWD than for VWC.
    a. SCWD's wells likely can produce between 1,700 and 2,700 AFY from the Alluvial Aquifer in 2015. This represents a shortfall of 1,800 to 2,800 AFY compared with the Groundwater Operating Plan, and a shortfall of 1,500 to 2,500 AFY compared with the 2015 target production volume that was tested by GSI.
    b. NCWD's wells likely can produce between 800 and 1,200 AFY from the Alluvial Aquifer in 2015. This represents a shortfall of 200 to 600 AFY compared with the Groundwater Operating Plan, and a shortfall of zero to 500 AFY compared with the 2015 target production volume that was tested by GSI.
4. The estimates of the achievable yield listed in Table 1 are reasonable estimates of the groundwater production capacity from the Alluvial Aquifer that the three retail water purveyors can expect to achieve in 2015 should the local drought

continue. Actual groundwater production volumes from the Alluvial Aquifer could be notably higher if there are appreciable amounts of rainfall, streamflow, and groundwater recharge during the winter of 2014/spring of 2015 rainfall season.

5. Some of the purveyors' wells currently have pump depths that pose a significant limitation on usage of the well. Higher volumes of production may be possible in 2015 if the pumps are lowered for those wells where the pumps are set notably higher than the bottom of the well. Based on GSI's analysis and conversations with representatives of each water purveyor, it appears that the right physical conditions may exist to lower the pump columns of certain wells (7 wells owned by VWC; at least 1 well, and perhaps 5 wells, owned by SCWD; and 2 or 3 wells owned by NCWD). However, any increases in 2015 groundwater production that arise from lowering the pump at a given well may prove to be only temporary if the drought continues. This in turn means that the post-modification production volumes ***after*** 2015 could be the same as (or lower than) the production that would have been achieved ***during*** 2015 without any modifications to the pumps and their shut-off settings.

References

CH2M HILL and LSCE. 2005. *Analysis of Groundwater Basin Yield, Upper Santa Clara River Groundwater Basin, East Subbasin, Los Angeles County California.* Prepared for The Upper Basin Water Purveyors (Castaic Lake Water Agency, Newhall County Water District, Santa Clarita Water Division of CLWA, and Valencia Water Company) by CH2M HILL and Luhdorff and Scalmanini Consulting Engineers (LSCE). August 2005.

LSCE and GSI. 2009. *Analysis of Groundwater Supplies and Groundwater Basin Yield, Upper Santa Clara River Groundwater Basin, East Subbasin.* Prepared for the Santa Clarita Valley Municipal Water Purveyors by Luhdorff and Scalmanini Consulting Engineers (LSCE) and GSI Water Solutions (GSI). August 2009.

GSI and LSCE. 2014. *Draft Report: Perchlorate Containment Plan for Well V201 and Saugus Formation Groundwater in the Santa Clarita Valley (Task 3 of the Well V201 Restoration Program).* Prepared for Valencia Water Company. Prepared by GSI Water Solutions (GSI) and Luhdorff and Scalmanini Consulting Engineers (LSCE). March 2014.

Table 1

DRAFT

Alluvial Aquifer Pumping Analysis for 2015 - All Retail Water Purveyors

Prepared by GSI Water Solutions, Inc.

Retail Water Purveyor	Drought-Year Pumping Target in Groundwater Operating Plan	2015 Pumping Target Tested by GSI	Estimated Achievable Yield in 2015 from Existing Alluvial Aquifer Wells	Potential Shortfall in Meeting the Drought-Year Pumping Target in the Groundwater Operating Plan	Potential Shortfall in Meeting the 2015 Pumping Target Tested by GSI	Retail Water Purveyor
VWC	21,500	19,000	14,600 to 17,900	-6,900 to -3,600	-4,400 to -1,100	VWC
SCWD	4,500	4,200	1,700 to 2,700	-2,800 to -1,800	-2,500 to -1,500	SCWD
NCWD	1,400	1,300	800 to 1,200	-600 to -200	-500 to -100	NCWD
TOTAL	**27,400**	**24,500**	**17,100 to 21,800**	**-10,300 to -5,600**	**-7,400 to -2,700**	**TOTAL**

All volumes are in units of acre-feet per year (AF/year).

All listed values for shortfalls and likely achievable yields are estimates and are not guaranteed.

VWC = Valencia Water Company SCWD = Santa Clarita Water Division of the Castaic Lake Water Agency NCWD = Newhall County Water District

Attachment 5

2021 Notice of State Water Project 5% Allocation

NOTICE TO STATE WATER PROJECT CONTRACTORS

Date: **March 23, 2021**

Number: **21-06**

Subject: **2021 State Water Project Allocation Decrease – 5 Percent**

From: Original signed by

Ted Craddock
Deputy Director, State Water Project
Department of Water Resources

Due to the persistent dry conditions, the Department of Water Resources (DWR) is decreasing the allocation of 2021 State Water Project (SWP) water for long-term contractors from 422,848 acre-feet to 210,266 acre-feet. Based on the recent low amount of precipitation and runoff, and an assessment of overall water supply conditions, SWP supplies are projected to be 5 percent of most SWP contractors' 2021 requested Table A amounts, which totals 4,172,786 AF. Attached is the revised 2021 SWP 5 percent allocation table.

This allocation is made consistent with the long-term water supply contracts and public policy. DWR's approval considered several factors including existing storage in SWP conservation reservoirs, SWP operational constraints such as the conditions of the 2019 Biological Opinions for federally listed species, the 2020 Incidental Take Permit for State listed species and the 2021 SWP contractors' demands. DWR may revise this and any subsequent allocations if warranted by the developing hydrologic and water supply conditions.

To develop the 5 percent schedule, DWR will scale down the current long-term SWP contractors' 15 percent schedules that were submitted in October 2020 (as part of the initial requests), unless SWP contractors submit updated schedules. DWR will send the approved monthly water delivery schedules to the long-term SWP contractors.

If you have any questions or need additional information, please contact John Leahigh, Water Operations Executive Manager, at (916) 651-2447.

Attachment

2021 STATE WATER PROJECT ALLOCATION
(ACRE-FEET)

SWP CONTRACTORS	TABLE A (1)	INITIAL REQUEST (2)	APPROVED ALLOCATION (3)	PERCENT INITIAL REQUEST APPROVED (3)/(2) (4)
FEATHER RIVER				
County of Butte	27,500	27,500	3,000	11%
Plumas County FC&WCD	2,700	2,700	135	5%
City of Yuba City	9,600	9,600	480	5%
Subtotal	**39,800**	**39,800**	**3,615**	
NORTH BAY				
Napa County FC&WCD	29,025	29,025	1,451	5%
Solano County WA	47,756	47,756	2,388	5%
Subtotal	**76,781**	**76,781**	**3,839**	
SOUTH BAY				
Alameda County FC&WCD, Zone 7	80,619	80,619	4,031	5%
Alameda County WD	42,000	42,000	2,100	5%
Santa Clara Valley WD	100,000	100,000	5,000	5%
Subtotal	**222,619**	**222,619**	**11,131**	
SAN JOAQUIN VALLEY				
Oak Flat WD	5,700	5,700	285	5%
County of Kings	9,305	9,305	465	5%
Dudley Ridge WD	41,350	41,350	2,068	5%
Empire West Side ID	3,000	3,000	150	5%
Kern County WA	982,730	982,730	49,137	5%
Tulare Lake Basin WSD	87,471	87,471	4,374	5%
Subtotal	**1,129,556**	**1,129,556**	**56,479**	
CENTRAL COASTAL				
San Luis Obispo County FC&WCD	25,000	25,000	1,250	5%
Santa Barbara County FC&WCD	45,486	45,486	2,274	5%
Subtotal	**70,486**	**70,486**	**3,524**	
SOUTHERN CALIFORNIA				
Antelope Valley-East Kern WA	144,844	144,844	7,242	5%
Santa Clarita Valley WA	95,200	95,200	4,760	5%
Coachella Valley WD	138,350	138,350	6,918	5%
Crestline-Lake Arrowhead WA	5,800	5,800	290	5%
Desert WA	55,750	55,750	2,788	5%
Littlerock Creek ID	2,300	2,300	115	5%
Metropolitan WDSC	1,911,500	1,911,500	95,575	5%
Mojave WA	89,800	89,800	4,490	5%
Palmdale WD	21,300	21,300	1,065	5%
San Bernardino Valley MWD	102,600	102,600	5,130	5%
San Gabriel Valley MWD	28,800	28,800	1,440	5%
San Gorgonio Pass WA	17,300	17,300	865	5%
Ventura County WPD	20,000	20,000	1,000	5%
Subtotal	**2,633,544**	**2,633,544**	**131,678**	
TOTAL	**4,172,786**	**4,172,786**	**210,266**	

SWPAO
3/24/2021