

September 5, 2019

MEETING NOTICE**WATER CONSERVATION AND DEMAND MANAGEMENT COMMITTEE**

Members of the Water Conservation and Demand Management Committee:

Director Nai Hsueh
Director Linda J. LeZotte, Vice Chair
Director Richard P. Santos, Chair

Staff Support of the Water Conservation and Demand Management Committee:

Norma J. Camacho, Chief Executive Officer
Nina Hawk, Chief Operating Officer, Water Utility
Rick Callender, Chief of External Affairs
Stanly Yamamoto, District Counsel
Aaron Baker, Deputy Operating Officer, Raw Water Division
Garth Hall, Deputy Operating Officer, Water Supply Division
Bhavani Yerrapotu, Deputy Operating Officer, Treated Water Operations & Maintenance Division
Rachael Gibson, Deputy Administrative Officer, Office of Government Relations
Bart Broome, Assistant Officer, Office of Government Relations
Antonio Alfaro, Government Relations Advocate, Office of Government Relations
Jerry De La Piedra, Assistant Officer, Water Supply Division
Vanessa De La Piedra, Groundwater Management Manager, Groundwater Monitoring and Analysis Unit
Metra Richert, Unit Manager of the Water Supply Planning and Conservation Unit, Water Supply Division,
Karen Koppett, Senior Water Conservation Specialist

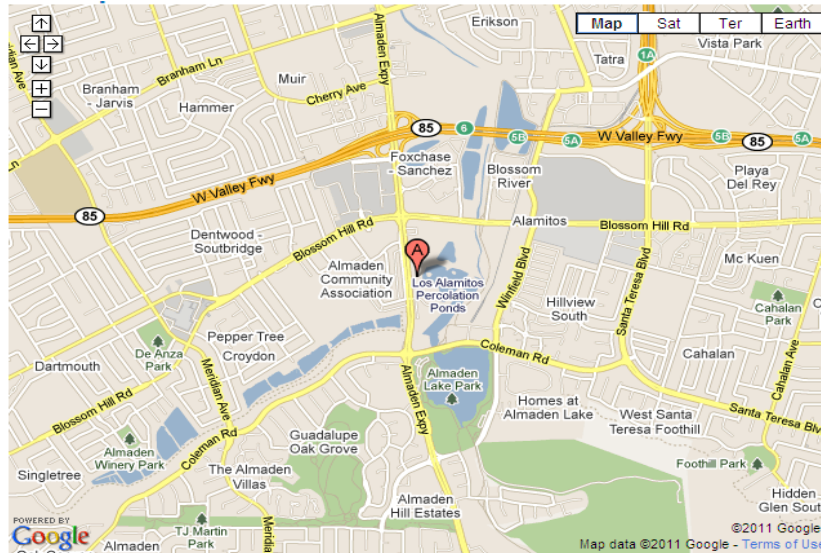
The regular meeting of the Water Conservation and Demand Management Committee is scheduled to be held on **Tuesday, September 17, 2019, at 10:00 a.m.** in the Headquarters Building Boardroom, located at the Santa Clara Valley Water District, 5700 Almaden Expressway, San Jose, California.

Enclosed are the meeting agenda and corresponding materials. Please bring this packet with you to the meeting.

Enclosures



**Santa Clara Valley Water District - Headquarters Building,
5700 Almaden Expressway, San Jose, CA 95118**



From Oakland:

- Take 880 South to 85 South
- Take 85 South to Almaden Expressway exit
- Turn left on Almaden Plaza Way
- Turn right (south) on Almaden Expressway
- At Via Monte (third traffic light), make a U-turn
- Proceed north on Almaden Expressway approximately 1,000 feet
- Turn right (east) into the campus entrance

From Morgan Hill/Gilroy:

- Take 101 North to 85 North
- Take 85 North to Almaden Expressway exit
- Turn left on Almaden Expressway
- Cross Blossom Hill Road
- At Via Monte (third traffic light), make a U-turn
- Proceed north on Almaden Expressway approximately 1,000 feet
- Turn right (east) into the campus entrance

From Sunnyvale:

- Take Highway 87 South to 85 North
- Take Highway 85 North to Almaden Expressway exit
- Turn left on Almaden Expressway
- At Via Monte (third traffic light), make a U-turn
- Proceed north on Almaden Expressway approximately 1,000 feet
- Turn right (east) into the campus entrance

From San Francisco:

- Take 280 South to Highway 85 South
- Take Highway 85 South to Almaden Expressway exit
- Turn left on Almaden Plaza Way
- Turn right (south) on Almaden Expressway
- At Via Monte (third traffic light), make a U-turn
- Proceed north on Almaden Expressway approximately 1,000 feet
- Turn right (east) into the campus entrance

From Downtown San Jose:

- Take Highway 87 - Guadalupe Expressway South
- Exit on Santa Teresa Blvd.
- Turn right on Blossom Hill Road
- Turn left at Almaden Expressway
- At Via Monte (first traffic light), make a U-turn
- Proceed north on Almaden Expressway approximately 1,000 feet
- Turn right (east) into the campus entrance

From Walnut Creek, Concord and East Bay areas:

- Take 680 South to 280 North
- Exit Highway 87-Guadalupe Expressway South
- Exit on Santa Teresa Blvd.
- Turn right on Blossom Hill Road
- Turn left at Almaden Expressway
- At Via Monte (third traffic light), make a U-turn
- Proceed north on Almaden Expressway approximately 1,000 feet
- Turn right (east) into the campus entrance



Santa Clara Valley Water District Water Conservation and Demand Management Meeting

**HQ Boardroom
5700 Almaden Expressway
San Jose CA 95118**

REGULAR MEETING AGENDA

**Tuesday, September 17, 2019
10:00 AM**

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

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

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

Santa Clara Valley Water District
Water Conservation and Demand Management
REGULAR MEETING
AGENDA

Tuesday, September 17, 2019

10:00 AM

HQ Boardroom

1. CALL TO ORDER:

1.1. Roll Call.

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

Notice to the public: This item is reserved for persons desiring to address the Committee on any matter not on this agenda. Members of the public who wish to address the Committee on any item not listed on the agenda should complete a Speaker Form and present it to the Committee Clerk. The Committee Chair will call individuals in turn. Speakers comments should be limited to two minutes or as set by the Chair. The law does not permit Committee action on, or extended discussion of, any item not on the agenda except under special circumstances. If Committee action is requested, the matter may be placed on a future agenda. All comments that require a response will be referred to staff for a reply in writing. The Committee may take action on any item of business appearing on the posted agenda.

2A. SAN DIEGO CITY AMI IMPLEMENTATION

3. APPROVAL OF MINUTES:

3.1. Approval of Minutes.

[19-0756](#)

Recommendation: Approve the June 18, 2019, Meeting Minutes

Manager: Michele King, 408-630-2711

Attachments: [Attachment 1: 061819 WCDaM Comm DRAFT Mins](#)

Est. Staff Time: 5 Minutes

4. ACTION ITEMS:

4.1. Sustainable Groundwater Management Act (SGMA) Update.

[19-0757](#)

Recommendation: This is an information only item and no action is required.

Manager: Garth Hall, 408-630-2750

Attachments: [Attachment 1: DWR Approval Santa Clara Subbasin](#)

[Attachment 2: DWR Approval Llagas Subbasin](#)

[Attachment 3: Assessment Summary](#)

Est. Staff Time: 20 Minutes

- 4.2. Collaboration with UC Water [19-0776](#)

Recommendation: Receive an update on potential collaboration with UC Water.

Manager: Garth Hall, 408-630-2750

Est. Staff Time: 15 Minutes

- 4.3. Review Water Conservation and Demand Management Committee Work Plan, the Outcomes of Board Action of Committee Requests; and the Committee's Next Meeting Agenda.. [19-0758](#)

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

Manager: Michele King, 408-630-2711

Attachments: [Attachment 1: WCaDMC 2019 Work Plan](#)
[Attachment 2: WCaDMC TBD 2019 Draft Agenda](#)

Est. Staff Time: 5 Minutes

5. CLERK REVIEW AND CLARIFICATION OF COMMITTEE REQUESTS.

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

6. ADJOURN:

- 6.1. Adjourn

Potential AMI Implementation Issues - an Alert

(1) Smart Water Meter Implementation Inadequacies - NBC 7 Responds Consumer Investigative Unit - July 11, 2019

<https://www.nbcsandiego.com/news/local/Auditor-Finds-Major-Inadequacies-in-Citys-Push-to-Move-to-Smart-Water-Meters-512611591.html>

(2) City to Hire Third Party to Take Over Smart Water Meter Program -NBC 7 Responds Consumer Investigative Unit - Jul 12, 2019

<https://www.nbcsandiego.com/news/local/City-To-Hire-Third-Party-to-Take-Over-Smart-Water-Meter-Program-512655791.html>

(3) Installation of San Diego's Advanced Water Metering Infrastructure Beset with Problems - California Water News Daily - July 17, 2019

<http://californiawaternewsdaily.com/infrastructure/installation-of-san-diegos-advanced-water-metering-infrastructure-beset-with-problems/>

Summary

- AMI is wireless technology designed to reduce human error in manual meter readings; rapidly detect leaks; and, monitor real time customer consumption to assist in water conservation.

- San Diego's Water Department failed to "plan, budget, or manage" \$76 million dollar rollout of conversion to wireless water meters, says [new report from the City Auditor](#).

- July 11 audit comes after Public Utilities Department restructuring due to \$8.3 million of citywide water bill refunds since 2015 due to water bill irregularities.

- Two year investigation of the city's largest department shows retrofitted water meters incapable of recording accurate water usage, and unreported meter defects.

- Significant management deficiencies, staffing shortages, implementation of a new work order tracking system, inadequate technician pay, and poor productivity contributed to implementation presently being \$16 million dollars over budget.

- 280,000 water customers were scheduled to have a working wireless smart meter conversion completed by December 2017. Today only six percent have them.

- The audit found managers failed to place controls to track and monitor data entry errors, resulting in some customers receiving either no or multiple water bills at once.

- The AMI Pilot Program initiated in 2012 was supposed to lead to starting the remaining installations in 2015 and completing in 2017.

- The results of the AMI audit have resulted in the city's plan to hire a third-party company to take charge and complete the city's conversion to smart water meters.

- **The audit specifically identified that the project lacked a designated executive sponsor, a project manager with sufficient authority and an executive steering committee; a deployment plan; and a project plan, budget, and timeline that used realistic assumptions.**

Extensive management changes have occurred since then.

- PUD lacked a policy or directive outlining appropriate project management practices for major projects that PUD conducts in-house. PUD created and issued this directive in June 2019.

(4) This link will take you to the actual 99 page two year audit by the City of San Diego:

<https://drive.google.com/file/d/1USV37Oe9L62klOFFzWkvCU3Ssexyauw/view>

Of special interest:

- On page 40, it states that before implementation, utilities should calculate costs and savings (cost/benefits). *There should be enough information developed and presented during the pilot program to develop a realistic project plan before approval of the implementation phase and budget.*

- Finding 4 on pages 62-75 points out numerous deficiencies in the data control system that will not be controlled through lower priority Recommendations 11 through 13 for another year. This will perpetuate a lack of credibility that could have serious consequences for the utility.

-The Conclusion on page 76, and 13 Recommendations on pages 78 through 81 are especially important to read and understand. Pages 87 - 94 present Management's response to all 13 recommendations, which they support.

All information in the audit can aid in pointing out areas that need to be understood and addressed by everyone responsible for the future AMI implementation. That is the only way to avoid the mostly preventable issues that San Diego faced, and to achieve a successful, cost effective implementation of this technology.

Personal Concerns about Planned Valley AMI Implementation

(a). Advice Letter 503 initiated a \$475,000 AMI Pilot Program on 1/23/2017. Resulting information was planned for availability in January, 2018 to lead to subsequent criteria for estimating the net benefits of full implementation. ??????

(b). I attended a customer presentation and demonstration by SJWC in Campbell on May 22. At that session, I asked the SJWC representative manning the booth, describing their AMI project, numerous questions. Three answers raised my concern about how effectively plans were progressing:

indication
Audit.

(1) They were planning to approach the CPUC sometime in the fall with an advice letter to start the implementation of this \$50- \$100 million project. I have seen no indication that they would be ready based on the points made in the San Diego

AMI

(2) I understood that they were considering requiring customers to pay for their new meter installation. This would not work.

(3) I was told that they planned to implement the system at the time of routine meter replacement, presently a 20 year cycle. This compares to an optimum schedule for a well thought out project of this size and complexity of around 4 years



Santa Clara Valley Water District

File No.: 19-0756

Agenda Date: 9/17/2019
Item No.:3.1.

COMMITTEE AGENDA MEMORANDUM

Water Conservation and Demand Management

SUBJECT:

Approval of Minutes.

RECOMMENDATION:

Approve the June 18, 2019, Meeting Minutes

SUMMARY:

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

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

ATTACHMENTS:

Attachment 1: 061819 WCaDM Comm Draft Mins.

UNCLASSIFIED MANAGER:

Michele King, 408-630-2711



WATER CONSERVATION AND DEMAND MANAGEMENT COMMITTEE MEETING

DRAFT MINUTES

**TUESDAY, JUNE 18, 2019
10:00 AM**

A regularly scheduled meeting of the Water Conservation and Demand Management Committee was held on June 18, 2019, in the Headquarters Building Boardroom at the Santa Clara Valley Water District, 5700 Almaden Expressway, San Jose, California.

1. CALL TO ORDER/ROLL CALL

Committee Chair, Director Richard P. Santos called the meeting to order at 10:01 a.m.

Board Members in attendance were: Director Nai Hsueh-District 5, Director Linda J. LeZotte-District 4, and Director Richard P. Santos District 3.

Staff members in attendance were: Neeta Bijoor, Glenna Brambill, Jerry De La Piedra, Vanessa De La Piedra, Samantha Greene, Karen Koppett, Roger Pierno, Metra Richert, Ashley Shannon, Stan Yamamoto and Beckie Zisser.

Guests in attendance were: Keith Bennett, Alexander Cao, Carl Darling, Kurt Elvert, Anthony Eulo, Tim Guster, Charles Ice, Doug Muirhead, Esther Nigenda, William Sherman, Bill Tuttle, Samantha Vu and Gregory Zicarelli.

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

Ms. Esther Nigenda spoke on, Green Building Workshop in Palo Alto and the comments someone made regarding Valley Water's Landscape Program.

3. APPROVAL OF MINUTES

3.1 APPROVAL OF MINUTES

It was moved by Director Nai Hsueh, seconded by Director Linda J. LeZotte and unanimously carried, to approve the minutes of the April 26, 2019, Water Conservation and Demand Management Committee meeting with an amendment to page 4 under Agenda Item 4.4. second paragraph:

Staff clarified work plan item #13 (Ag Water-Reality vs talk) this references the baseline study of Agriculture in Santa Clara county. Would like to have the Farm

Bureau give their input and have this item on the next meeting's agenda. Consider possible tours in the field and include the Agricultural Water Advisory Committee. to read: Staff clarified work plan item #13 (Ag Water-Reality vs talk) this references the baseline study of Agriculture in Santa Clara county. Would like to have the Farm Bureau give their input and have this item on the next meeting's agenda. Consider possible tours in the field and include the Agricultural Water Advisory Committee. Have the agenda item named Agricultural Water User Baseline Study.

4. ACTION ITEMS

4.1 EVALUATION ON THE EXTENT OF SHALLOW GROUNDWATER DEWATERING BY OBTAINING AND ANALYZING INFORMATION FROM LAND USE AND REGULATORY AGENCIES

Mr. Roger Pierno reviewed the materials as outlined in the agenda item.

Handout was received via email from Falecie Wang and Melody Cao.

Mr. Alexander Cao, Mr. Gregory Zicarelli, Mr. Keith Bennett, Ms. Esther Nigenda, Mr. Charles Ice addressed issues on: dewatering, construction practices, cut-off-walls, metering dewatering discharges, groundwater, sustainability. Shallow groundwater in Palo Alto, underground parking, water waste, contractor's actions, sea level rise, flooding, impacted areas, pumping issues, lack of land use, commercial studies, CEQA process, mitigating negative impacts, SGMA regulations and explained how Valley Water is a Special District along with our District Act regulations.

Ms. Vanessa De La Piedra, Directors Richard P. Santos, Linda J. LeZotte and Mr. Stan Yamamoto were available to answer questions. The Committee commended those that wrote the email handout.

Committee discussion: taking a look at other alternatives-extending the list, current environmental issues, pursue costs and what other actions can be taken, engagement of other agencies/cities and when completed the report should go to the full Board.

The Committee took no action.

4.2 UPDATES TO ONGOING AND FUTURE WATER CONSERVATION PROGRAMS AND RESOURCES

Ms. Neeta Bijoor reviewed the materials as outlined in the agenda item.

Committee discussion: lawn busters is continuing, new strategic plan for FY20, "instant hot", new technology and question on tankless water heaters and "on demand" water heaters.

Mr. Doug Muirhead spoke on Recycled Water, Water Reuse Master Plan, Model Ordinance.

Mr. Jerry De La Piedra, Ms. Karen Koppett and Mr. Anthony Eulo were available to answer questions.

The Committee took no action. However, staff supplied the following links to the committee and guests via email:

Study looking into Sensor Activated Fixtures

<http://www.allianceforwaterefficiency.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=5026>

More information about Sensor Activated Faucets are located here:

<http://www.allianceforwaterefficiency.org/1Column.aspx?id=1822&LangType=1033&terms=sensor>

Excellent article in the *LA Times* about manual vs sensor flush toilets:

<https://www.latimes.com/opinion/op-ed/la-oe-shioiri-clark-drought-phantom-flushes-20150510-story.html>

4.3 DISCUSS AGRICULTURAL WATER USE BASELINE STUDY

Ms. Ashley Shannon reviewed the materials as outlined in the agenda item.

The Committee discussed the following items: what are ag users 'real' water use, mobile lab rebates, open space credit concerns and the consultant's scope of work and review process.

Mr. Doug Muirhead spoke on what institutional knowledge still exists, 2011 Farm Bureau Irrigation Efficiency Final Report, 2014 Technical Memo Crop Irrigation Update, 2016 Annual Report Valley Water and Loma Prieta RCD and what has been covered over the years and would the purpose of this study be to start over.

Mr. Anthony Eulo spoke on fallow land and potential compensation during drought,

Mr. Jerry De La Piedra, Ms. Samantha Greene and Director Richard P. Santos were available to answer questions.

The Committee took no action.

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

Ms. Glenna Brambill reviewed the materials as outlined in the agenda items.

The Committee scheduled the next meeting for Wednesday, August 28, 2019, at 10:00 a.m.

5. CLERK REVIEW AND CLARIFICATION OF COMMITTEE'S REQUESTS

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

6. ADJOURNMENT

Chair Santos adjourned at 11:17 a.m. to the next scheduled meeting on Tuesday, August 28, 2019, at 10:00 a.m. in the Headquarters Building Boardroom at 5700 Almaden Expressway, San Jose, California.

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

Approved:



Santa Clara Valley Water District

File No.: 19-0757

Agenda Date: 9/17/2019

Item No.: 4.1.

COMMITTEE AGENDA MEMORANDUM

Water Conservation and Demand Management

SUBJECT:

Sustainable Groundwater Management Act (SGMA) Update.

RECOMMENDATION:

This is an information only item and no action is required.

SUMMARY:

SGMA requires that local agencies managing basins ranked as medium- or high-priority develop groundwater sustainability plans (GSPs) or submit an alternative to a GSP by the applicable statutory deadline. Alternatives can be an existing groundwater management plan, groundwater management pursuant to an adjudication, or an analysis of basin conditions that demonstrates the basin has operated within its sustainable yield for at least ten years.

The Santa Clara Valley Water District (Valley Water) submitted the 2016 Groundwater Management Plan for the Santa Clara and Llagas Subbasins to the Department of Water Resources (DWR) as an alternative in December 2016. In July 2019, DWR released the assessment of the fifteen alternatives submitted by water agencies. The Santa Clara and the Llagas Subbasins are now among the nine basins in California with approved SGMA alternatives.

DWR provided separate approval for the Santa Clara Subbasin (Attachment 1) and the Llagas Subbasin (Attachment 2). This approval confirms Valley Water's alternative satisfies SGMA objectives for sustainable groundwater management. In the Assessment Summary (Attachment 3), DWR notes that "the alternative demonstrated a long history of meeting the requirements of the SCVWD Act, and that SCVWD has sustainably managed groundwater resources to meet the demands of the beneficial uses and users."

The DWR staff report for each basin includes recommended actions to facilitate DWR evaluation and improve the alternative for the next five-year update due in January 2022. These recommended actions are described in detail in Attachments 1 and 2 and are summarized below:

1. Identify groundwater dependent ecosystems.
2. Incorporate climate change and expected population growth into the water budget over the 50-year planning and implementation horizon.
3. Create separate outcome measures for water quality in the Santa Clara and Llagas subbasins.
4. Develop specific seawater intrusion outcome measures in the Santa Clara Subbasin.

5. Clarify how meeting outcome measures relates to the avoidance of undesirable results and provide additional clarification and metrics, if needed, to determine what effects represent undesirable results.

Staff will incorporate these recommended actions into the next five-year update to Valley Water's alternative in coordination with basin stakeholders. Valley Water will continue implementing its Groundwater Management Plan, provide annual SGMA reports by April 1, and submit the five-year progress update by January 2022.

With ninety years of groundwater management history, Valley Water has established effective goals, strategies, and activities to ensure sustainable groundwater supplies. DWR approval of Valley Water's alternative is a testament to the organization's ongoing commitment to groundwater sustainability.

ATTACHMENTS:

Attachment 1: DWR Approval for the Santa Clara Subbasin Alternative

Attachment 2: DWR Approval for the Llagas Subbasin Alternative

Attachment 3: DWR Assessment Summary

UNCLASSIFIED MANAGER:

Garth Hall, 408-630-2750



SUSTAINABLE GROUNDWATER MANAGEMENT OFFICE

901 P Street, Room 313-B | Sacramento, CA 95814 | P.O. Box 942836 | Sacramento, CA 94236-0001

July 17, 2019

Ms. Vanessa De La Piedra
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, California 95118

Dear Ms. De La Piedra,

The Department of Water Resources (Department) has evaluated the alternative submitted for the Santa Clara Subbasin. Based on recommendations from the Staff Report, included as an exhibit in the attached Statement of Findings, the Department has determined that the Santa Clara Alternative satisfies the objectives of the Sustainable Groundwater Management Act (SGMA) and is approved. The Staff Report also proposes recommended actions for the consideration of the Santa Clara Valley Water District that the Department believes will enhance the Alternative and facilitate future evaluation by the Department. The recommended actions do not constitute a qualified approval of the Alternative; however, the Department encourages they be given due consideration and suggest incorporating any resulting changes to the Alternative in future updates.

As required by SGMA, the Department shall review approved alternatives to ensure they remain in compliance with the objectives of the Act. Approved alternatives are required to submit annual reports to the Department on April 1 of each year, and to resubmit the alternative by January 1 every five years. The first five-year update is due by January 1, 2022.

Please contact me at (916) 651-0870 or Craig.Altare@water.ca.gov if you have any questions related to the Department's evaluation or your implementation of the approved alternative.

Thank You,

Craig Altare, P.G.
Supervising Engineering Geologist

Attachments:

1. Statement of Findings Regarding the Approval of the Santa Clara Subbasin Alternative

**STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES**

**STATEMENT OF FINDINGS REGARDING THE
APPROVAL OF
THE SANTA CLARA SUBBASIN ALTERNATIVE**

The Department of Water Resources (Department) is required to evaluate and assess whether submitted alternatives to groundwater sustainability plans satisfy the objectives of the Sustainable Groundwater Management Act (SGMA) pursuant to Water Code Section 10733.6. This Statement of Findings explains the Department's decision regarding the alternative (Alternative) submitted by the Santa Clara Valley Water District for the Santa Clara Subbasin (No. 2-009.02). The Alternative was submitted under Water Code Section 10733.6(b)(1), which allows for the submittal of alternate plans developed pursuant to Part 2.75 (commencing with Water Code Section 10750) or other law authorizing groundwater management.

Department management has reviewed the Department staff report, entitled Sustainable Groundwater Management Program Alternative Assessment Staff Report – Santa Clara Subbasin (Staff Report), attached as Exhibit A, recommending approval of the Alternative. Based on its review of the Staff Report, Department management is satisfied that staff have conducted a thorough evaluation and assessment of the Alternative and concurs with staff's recommendation and all the recommended actions, and thus hereby approves the Alternative on the following grounds:

1. The Alternative was submitted within the statutory deadline of January 1, 2017 (Water Code Section 10733.6(c)).
2. The Alternative is within a subbasin that is in compliance with Part 2.11 (commencing with Water Code Section 10920) as required by Water Code Section 10733.6(d).
3. The Alternative has been submitted by the Santa Clara Valley Water District pursuant to Water Code Section 10733.6(b)(1) and a copy of the documents making up the groundwater management plan were submitted as required by 23 CCR Section 358.2(c)(1).
4. The Santa Clara Valley Water District explained how the elements of the Alternative are functionally equivalent to the elements of a groundwater sustainability plan required by Articles 5 and 7 of the GSP Regulations, 23 CCR Section 350 et seq., in the Groundwater Management Plan Appendix B - Demonstration of Functional Equivalency of the Alternative submitted by the District.

5. Based on Paragraphs 3 and 4 above, the Alternative is considered complete and includes the information required by SGMA and the GSP Regulations, sufficient to warrant an evaluation by the Department. 23 CCR Section 358.4(a)(3).
6. The Alternative applies to and covers the entire subbasin as required by 23 CCR Section 358.2(a) and 358.4(a)(4), respectively, and as discussed in Section IV.D of the Staff Report.
7. The Santa Clara Valley Water District has the legal authority and financial resources necessary to implement the Alternative.
8. The Department has received public comments on the Alternative and has considered them in the evaluation of the Alternative as required by 23 CCR Section 358.2(f).

Department management makes the following specific findings based on the evaluation and assessment of the Alternative prepared by Department staff:

9. The Alternative demonstrated that the Santa Clara Valley Water District has established goals and implemented projects and management actions to maintain groundwater levels, manage the subbasin to maintain a quantified level of groundwater storage, and address historical overdraft and subsidence in the Subbasin.
10. The Alternative demonstrates that the Santa Clara Valley Water District has a sufficient and reasonable understanding of the current and historical groundwater conditions related to groundwater elevations, land subsidence, surface water and groundwater interactions, water quality, and seawater intrusion in the Santa Clara Subbasin that would cause undesirable results and have a well-developed program to avoid those undesirable results by maintaining groundwater elevations above defined thresholds at index wells in the Subbasin.
11. The Santa Clara Valley Water District has demonstrated a commitment to mitigating agricultural and industrial water quality issues and seawater intrusion.
12. In light of Paragraphs 1-11 above, the Alternative satisfies the objectives of SGMA.

In addition to the grounds listed above, the Department also finds that:

1. The Alternative has demonstrated that the Subbasin will be operated within the range of historical data, sufficient to avoid undesirable results, and is consistent

with the state policy regarding the human right to water (Water Code Section 106.3) and the public trust doctrine.

2. The evaluation and assessment of whether the Alternative submitted by the Santa Clara Valley Water District for the Santa Clara Subbasin satisfies the objectives of SGMA is a project under CEQA, but that the project is exempt from CEQA under the common sense exemption for the following reasons.

No physical change to the environment is associated with the evaluation and assessment of the alternatives undertaken by the Department. The Alternative submitted by the District is based on a Groundwater Management Plan and projects and management actions that were previously adopted and the Agency has already begun implementing.

By finding that the Alternative satisfies the objectives of SGMA, the District is authorized to continue to manage the subbasin subject to that Alternative, without the need to develop a GSP. As a result, the evaluation and assessment of the Alternative undertaken by the Department creates no foreseeable indirect impacts, and any impacts that might occur would be difficult to predict with any accuracy and too speculative to allow the Department to provide for meaningful analysis and review.

Based on the above, the Alternative submitted by the Santa Clara Valley Water District for the Santa Clara Subbasin is approved. The recommended actions in the Staff Report will assist the Department's review of the Alternative's implementation for consistency with SGMA and are thus recommended to be included in the resubmitted Alternative, due on January 1, 2022, as required by Water Code Section 10733.6(c).

Signed:



Karla Nemeth, Director

Date: July 17, 2019

Exhibit A: Sustainable Groundwater Management Program Alternative Assessment
Staff Report – Santa Clara Subbasin

State of California
Department of Water Resources
Sustainable Groundwater Management Program
Alternative Assessment Staff Report

Groundwater Basin Name: Santa Clara Valley – Santa Clara (Basin No. 2-009.02)
Submitting Agency: Santa Clara Valley Water District
Recommendation: Approve
Date Issued: July 17, 2019

I. Summary

The Santa Clara Valley Water District (District) submitted an alternative (Santa Clara Alternative or Alternative) to the Department of Water Resources (Department) for evaluation and assessment as provided by the Sustainable Groundwater Management Act (SGMA).¹ The District submitted an existing plan, which relies primarily on the District's 2016 Groundwater Management Plan (Groundwater Management Plan or Plan).²

The District was formed in 1929, following enactment of the first voter-approved groundwater protection law in Santa Clara County. The law charged the District with the responsibility of stopping groundwater overdraft and subsidence in accordance with the Santa Clara Valley Water District Act (District Act).³ The District manages water resources for the entire County, which includes two groundwater subbasins, the Santa Clara Subbasin of the Santa Clara Valley Groundwater Basin (Santa Clara Subbasin or Subbasin) and the Llagas Subbasin of the Gilroy-Hollister Valley Groundwater Basin. The District's Groundwater Management Plan includes both subbasins.⁴

The Alternative demonstrates a long history of implementing the requirements of the District Act. The District has done this by developing a good understanding of the hydrogeologic conditions of the Subbasin, establishing significant water imports, and managing those resources to meet the demands of the beneficial uses and users. The

¹ Water Code § 10720 *et seq.*

² Water Code § 10733.6(b)(1)

³ Wat. Code, § App. § 60-1 *et seq.* (Stats.1951, c. 1405, p. 3337)

⁴ The District submitted the 2016 Groundwater Management Plan as an Alternative for both the Santa Clara and Llagas subbasins. This assessment is specifically related to the Department's review for the Santa Clara Subbasin.

District has conducted numerous studies to identify appropriate actions to capture surface water runoff and store it for the purposes of replenishment of the groundwater. The quantification of required volumes, timing, and distribution of recharge have resulted in management of the Subbasin that has avoided overdraft and subsidence. The District's Groundwater Management Plan has established objectives to maintain the avoidance of adverse groundwater conditions in the Subbasin and documents specific plans and management actions to achieve those objectives. These plans and management actions are based on proven technologies, are reasonable and feasible, and present solutions to meet the objectives of the District Act.

Based on review of the Groundwater Management Plan, other related documents, and consideration of public comments, Department staff believe the Santa Clara Alternative satisfies the objectives of SGMA for the Santa Clara Subbasin and recommends approval of the Alternative. Staff consider the information provided by the District to be sufficient and credible, and that implementation of the District's Groundwater Management Plan is reasonably likely to lead to sustainable groundwater management⁵ of the Subbasin. In addition, staff have identified recommended actions that are designed to facilitate the Department's ongoing evaluation and assessment of the Alternative including implementation and a determination of whether the Alternative continues to satisfy the objectives of SGMA or adversely affects an adjacent basin.

The remainder of this assessment is organized as follows:

- **Section II. Review Principles** describes legal and other considerations regarding Department staff's assessment and evaluation of alternatives.
- **Section III. Alternative Materials** describes materials (i.e., plans, reports, data, and other information) submitted by the Agency that, collectively, the Department staff considered as the Alternative.
- **Section IV. Required Conditions** describes whether the Alternative satisfies each of the four conditions required for the Department to review an alternative.
- **Section V. Alternative Contents** describes the information contained in the Alternative submittal.
- **Section VI. Assessment** describes Department staff's evaluation of the Alternative, whether it satisfies the objectives of SGMA, and, if applicable, describes recommended actions proposed for the first five-year update.

⁵ Water Code § 10721(v). See also discussion in Section II. Review Principles. Sustainable groundwater management is achieved by meeting the basin's sustainability goal.

II. Review Principles

The District submitted an alternative based on a groundwater management plan to the Department for evaluation and assessment to determine whether it satisfies the objectives of SGMA for the Santa Clara Subbasin. To satisfy the objectives of SGMA, an alternative based on a groundwater management plan prepared pursuant to Part 2.75 of Division 6 of the Water Code⁶ or a plan developed pursuant to another law authorizing groundwater management must demonstrate that implementation of the plan has led to or will lead to sustainable groundwater management, which means the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.⁷ Undesirable results are defined quantitatively by the managing agency.⁸

An alternative, to be evaluated by the Department, must be submitted by the statutory deadline and be within a basin that complies with Part 2.11 of Division 6 of the Water Code.⁹ The submitted alternative must also be complete and must cover the entire basin.¹⁰ The Groundwater Sustainability Plan (GSP) Regulations¹¹ require the Department to evaluate an Alternative “in accordance with Sections 355.2, 355.4(b), and Section 355.6, *as applicable*, to determine whether the Alternative complies with the objectives of the Act”.¹² The elements of the cited sections are not all applicable to alternatives. Some provisions apply to GSPs and alternatives alike, to alternatives only prospectively, or do not apply to alternatives at all.¹³ Ultimately, the purpose of the evaluation is to determine whether an alternative satisfies the objectives of SGMA.¹⁴ The agency must explain how the elements of an alternative are “functionally equivalent” to the elements of a GSP required by Articles 5 and 7 of the GSP Regulations and are

⁶ Water Code § 10750 *et seq.*

⁷ Water Code § 10721(v)

⁸ 23 CCR § 354.26

⁹ Water Code § 10733.6(c)-(d)

¹⁰ 23 CCR § 358.4(a)

¹¹ 23 CCR § 350 *et seq.*

¹² 23 CCR § 358.4(b) (emphasis added)

¹³ Procedural requirements, including submissions by the agency, posting by the Department, and the public comment period, apply equally to plans and alternatives (23 CCR § 355.2(a)-(c)). The periodic review of Plans (23 CCR § 355.6(a)) applies to alternatives prospectively but does not apply to initial submissions. Other regulatory provisions are inapplicable to alternatives, including the two-year review period (23 CCR § 355.2(e)), which is based on the statutory time-frame that applies to Plans but not alternatives (Water Code § 10733.4(d)); the “incomplete” status that allows the agency to address “one or more deficiencies that preclude approval, but which may be capable of being corrected by the Agency in a timely manner” (23 CCR § 355.2(e)(2)), which applies to plans undergoing development, but not alternatives that purportedly satisfy the objectives of SGMA at the time of their submission (Water Code § 10733.6(a)); and, for the same reason, corrective actions to address deficiencies in plans (23 CCR § 355.4(a)(4)), which applies to plans developed after the adoption of SGMA, but is inapplicable to alternatives that predate SGMA.

¹⁴ 23 CCR § 358.2(d), based on the statutory threshold of “whether the alternative satisfies the objectives of [SGMA] for the basin” (Water Code § 10733.6(a)).

sufficient to demonstrate the ability of an alternative to achieve the objectives of SGMA.¹⁵ The explanation by the agency that elements of an alternative are functionally equivalent to elements of a GSP furthers the objective of demonstrating that an alternative satisfies the objectives of SGMA. Alternatives based on groundwater management plans or historical basin management practices that predate the passage of SGMA or adoption of GSP Regulations, although required to satisfy the objectives of SGMA, are not necessarily expected to conform to the precise format and content of a GSP. The Department's assessment is thus focused on the ability of an alternative to satisfy the objectives of SGMA as demonstrated by information provided by the agency; it is not a determination of the degree to which an alternative matched the specific requirements of the GSP Regulations.

When evaluating whether an alternative satisfies the objectives of SGMA and thus is likely to achieve the sustainability goal for the basin, staff review the information provided by and relied upon by the agency for sufficiency, credibility, and consistency with scientific and engineering professional standards of practice.¹⁶ The Department's review considers whether there is a reasonable relationship between the information provided and the assumptions and conclusions made by the agency, whether sustainable management criteria and projects and management actions described in an alternative are commensurate with the level of understanding of the basin setting, and whether those projects and management actions are feasible and likely to prevent undesirable results.¹⁷ Staff will recommend that an alternative be approved if staff believe, in light of these factors, that alternative has achieved or is likely to achieve the sustainability goal for the basin.¹⁸

An alternative that relies on an existing plan may be approved based on information that demonstrates the basin is being or will be managed sustainably based on groundwater management pursuant to that plan, including any related projects and management actions, as necessary. Even when staff review indicates that an alternative will satisfy the objective of SGMA, the Department may recommend actions to facilitate future evaluation of that alternative and to allow the Department to better evaluate whether an alternative adversely affects adjacent basins. The Department proposes that recommended actions be addressed by the submission date for the first periodic evaluation.

Staff assessment of an alternative involves the review of information presented by the agency, including models and assumptions, and an evaluation of that information based on scientific reasonableness. The assessment does not require Department staff to recalculate or reevaluate technical information provided in an alternative or to perform its

¹⁵ 23 CCR § 358.2(d)

¹⁶ 23 CCR § 351(h)

¹⁷ 23 CCR § 355.4(b)(1), (3), and (5).

¹⁸ 23 CCR § 355.4(b)

own geologic or engineering analysis of that information. The staff recommendation to approve an alternative does not signify that Department staff, were they to exercise the professional judgment required to develop a plan for the basin, would make the same assumptions and interpretations as those contained in an alternative, but simply that Department staff have determined that the assumptions and interpretations relied upon by the submitting agency are supported by adequate, credible evidence, and are scientifically reasonable.

III. Alternative Materials

The District submitted an alternative based on a groundwater management plan pursuant to Water Code Section 10733.6(b)(1). The Alternative thus relies primarily upon the following document:

- Santa Clara Valley Water District 2016 Groundwater Management Plan, November 2016 (Groundwater Management Plan or Plan)

The District submitted the following additional plans, reports, and other documents prepared prior to the implementation of SGMA that the Department has determined to be sufficiently related to the Groundwater Management Plan to warrant their consideration as part of the Alternative:

- Santa Clara Valley Water District, 2016, Annual Groundwater Report for Calendar Year 2015 (2015 Annual Report)
- Santa Clara Valley Water District, June 2016, Revised Final Salt and Nutrient Management Plan (Salt and Nutrient Management Plan)
- Santa Clara Valley Water District, 2016, 2015 Urban Water Management Plan (2015 Urban Water Management Plan)
- Santa Clara Valley Water District, Online – Historical Groundwater Elevation Data, <https://gis.valleywater.org/groundwaterelevations/map.php>
- Santa Clara Valley Water District Act (District Act), <https://www.valleywater.org/how-we-operate/about-the-water-district/district-act>

The District submitted a Groundwater Management Plan Appendix B - Demonstration of Functional Equivalency of the Alternative to address the required Alternative Elements Guide. The Agency has also submitted Annual Reports.¹⁹ Other material submitted by the District, public comments, other documents submitted by third parties,

¹⁹ The Annual Report is not part of the Alternative and was not reviewed by the Department for the purpose of approving the Alternative.

correspondence, and other information provided to or relied upon by the Department have been posted on the Department's website.²⁰

IV. Required Conditions

An alternative, to be evaluated by the Department, must be submitted by the statutory deadline and be within a basin that complies with Part 2.11 of Division 6 of the Water Code.²¹ The submitted alternative must also be complete and must cover the entire basin.²²

A. Submission Deadline

SGMA requires that an alternative for a basin categorized as high- or medium-priority as of January 31, 2015, be submitted no later than January 1, 2017.²³

The District submitted its Alternative on December 21, 2016, before the statutory deadline.

B. Part 2.11 (CASGEM) Compliance

SGMA requires that the Department assess whether an alternative is within a basin that is in compliance with Part 2.11 of Division 6 of the Water Code,²⁴ which requires that groundwater elevations in all groundwater basins be regularly and systematically monitored and that groundwater elevation reports be submitted to the Department.²⁵ To manage its obligations under this law, the Department established the California Statewide Groundwater Elevation Monitoring (CASGEM) Program. The acronym CASGEM is used in this document to denote both the program and the groundwater monitoring law.²⁶

SGMA specifies that an alternative does not satisfy the objectives of SGMA if the basin is not in compliance with the requirements of CASGEM.²⁷ The Department confirmed that the Santa Clara Subbasin was in compliance with the requirements of CASGEM prior to evaluating the Alternative and confirmed that the Subbasin remained in compliance with CASGEM through the last reporting deadline prior to issuing this assessment.

²⁰ <https://sgma.water.ca.gov/portal/alternative/print/18>

²¹ Water Code § 10733.6(c)-(d)

²² 23 CCR § 358.4(a)

²³ Water Code § 10733.6(c). Pursuant to Water Code § 10722.4(d), a different deadline applies to a basin that has been elevated from low- or very low-priority to high- or medium-priority after January 31, 2015.

²⁴ Water Code § 10733.6(d)

²⁵ Water Code § 10920 *et seq.*

²⁶ Stats.2009-2010, 7th Ex.Sess., c. 1 (S.B.6), § 1

²⁷ Water Code § 10733.6(d)

C. Completeness

GSP Regulations specify that the Department shall evaluate an alternative if that alternative is complete and includes the information required by SGMA and the GSP Regulations.²⁸ An alternative submitted pursuant to Water Code Section 10733.6(b)(1) must include a copy of the groundwater management plan and an explanation of how the elements of the Alternative are functionally equivalent to the elements of a GSP required by Articles 5 and 7 of the GSP Regulations and are sufficient to demonstrate the ability of the Alternative to achieve the objectives of SGMA.²⁹

The District submitted a completed and final Groundwater Management Plan for the Santa Clara Subbasin, complementary documents, as indicated above, and other materials as required. Department staff found the Alternative to be complete and containing the required information, sufficient to warrant an evaluation by the Department.

D. Basin Coverage

An alternative must cover the entire basin.³⁰ An alternative that is intended to cover the entire basin may be presumed to do so if the basin is fully contained within the jurisdictional boundaries of the submitting agency.

The jurisdictional boundaries of the District cover the entire Santa Clara Subbasin.³¹ The Districts' authority aligns with Santa Clara County's jurisdictional boundaries and wholly cover the Santa Clara Subbasin.

V. Alternative Contents

GSP Regulations require the submitting agency to explain how the elements of an alternative are functionally equivalent to the elements of a GSP as required by Article 5 of the GSP Regulations³² and are sufficient to demonstrate the ability of an alternative to achieve the objectives of SGMA.³³

As stated previously, alternatives based on historical basin management practices that predate the passage of SGMA or adoption of GSP Regulations, although required to satisfy the objectives of SGMA, are not necessarily expected to conform to the precise format and content of a GSP, and the criteria for adequacy of an alternative is whether

²⁸ 23 CCR § 358.4(a)(3)

²⁹ 23 CCR § 358.2(c)-(d)

³⁰ 23 CCR § 358.4(a)(4)

³¹ SGMA Alternative Portal, Attachment B-3 (<https://sgma.water.ca.gov/portal/alternative/print/18>)

³² 23 CCR § 354-354.44

³³ 23 CCR § 358.2(d). The requirements pertaining to Article 7 of the GSP Regulations (23 CCR § 356-356.4) relate to annual reports and periodic evaluation and are not applicable to review of the initial alternative.

the Department is able to determine that an alternative satisfies the objectives of SGMA. Department staff rely on the submitting agency's determination of functional equivalence of alternative elements to facilitate its evaluation and assessment of an alternative (see Assessment, below). Although the exact components of a GSP are not required for an alternative, for organizational purposes the discussion of information contained in the Groundwater Management Plan and related documents provided by the District generally follows the elements of a GSP provided in Article 5 of the GSP Regulations. The reference to requirements of the GSP Regulations at the beginning of each section is to provide context regarding the nature of the element discussed but is not meant to define a strict standard applicable to alternatives.

A. Administrative Information

GSP Regulations require information identifying the submitting agency, describing the plan area, and demonstrating the legal authority and ability of the submitting agency to develop and implement a plan for that area.³⁴

The Groundwater Management Plan contains information describing the history, governance structure, and financial capabilities for the District.³⁵ The Plan describes the structure the District, a water wholesaler, uses to engage with the various water retailers, land use agencies, local, state, and federal agencies, and other stakeholders. A discussion with supporting documentation of the specific public outreach conducted as part of the Plan development is also provided.³⁶

The District Act, established in 1929 to address the primary objectives of overdraft and subsidence, provides the District with the statutory authority to manage groundwater in the county, identifies the consideration of all beneficial uses and users, and defines the primary objectives for the Subbasin.³⁷ The description of the administration and groundwater management associated with the District Act implementation includes an overview of decades of engagement by a public agency responsible for managing the groundwater and surface water resources of the basin. The District determined that, to meet water demand in the basin and avoid adverse conditions, additional supply was necessary and developed agreements to receive surface waters from the San Francisco Public Utility Commission and the Central Valley Project through a series of projects to store and distribute these waters.³⁸ The Plan also describes the District's ability to adapt to changing demands and conditions in the basin, such as the evolution of land use from agricultural to urban and industrial, with concomitant changes to water quality protection

³⁴ 23 CCR § 354.2 et seq.

³⁵ Groundwater Management Plan, Section 1-4, p. 1-3

³⁶ Groundwater Management Plan, Appendix A, p. A-1

³⁷ District Act, Section 5(5)

³⁸ Groundwater Management Plan Section 1.4.1, p. 1-8

efforts including hazardous materials storage permit requirements.³⁹ Other examples include conservation programs, recycled water programs, and cooperative engagement with the Regional Water Quality Control Boards to address point source contaminants from leaky underground storage tank sites and other significant industrial contaminant release sites.⁴⁰

B. Basin Setting

GSP Regulations require information about the physical setting and characteristics of the basin and current conditions of the basin, including a hydrogeologic conceptual model, a description of historical and current groundwater conditions, and an assessment of the water budget.⁴¹

1. Hydrogeologic Conceptual Model

The GSP Regulations require a descriptive hydrogeologic conceptual model of the basin that includes a written description supported by cross sections and maps.⁴²

The Groundwater Management Plan includes a hydrogeologic conceptual model that describes the lateral and vertical extents of the Subbasin, recharge areas, principal aquifers and aquitards, and significant faults within the basin.⁴³ The basin is situated between faults associated with the San Andreas system and generally drains from south to north into the San Francisco Bay. The District has subdivided the Santa Clara Subbasin into two primary management areas: the Santa Clara Plain area and the Coyote Valley area⁴⁴ (see Management Areas, below). Figure 1 illustrates the relationship of the Santa Clara Plain area and Coyote Valley area including confined and recharge areas, and location of cross section line A-A'.

³⁹ Groundwater Management Plan Section 1.4.1, p. 1-9

⁴⁰ Groundwater Management Plan Section 1.4.1, p. 1-7

⁴¹ 23 CCR § 354.12 et seq.

⁴² 23 CCR § 354.14(a)

⁴³ Groundwater Management Plan, Section 2.1, p. 2-1

⁴⁴ Groundwater Management Plan, Section 2.1, p. 2-1

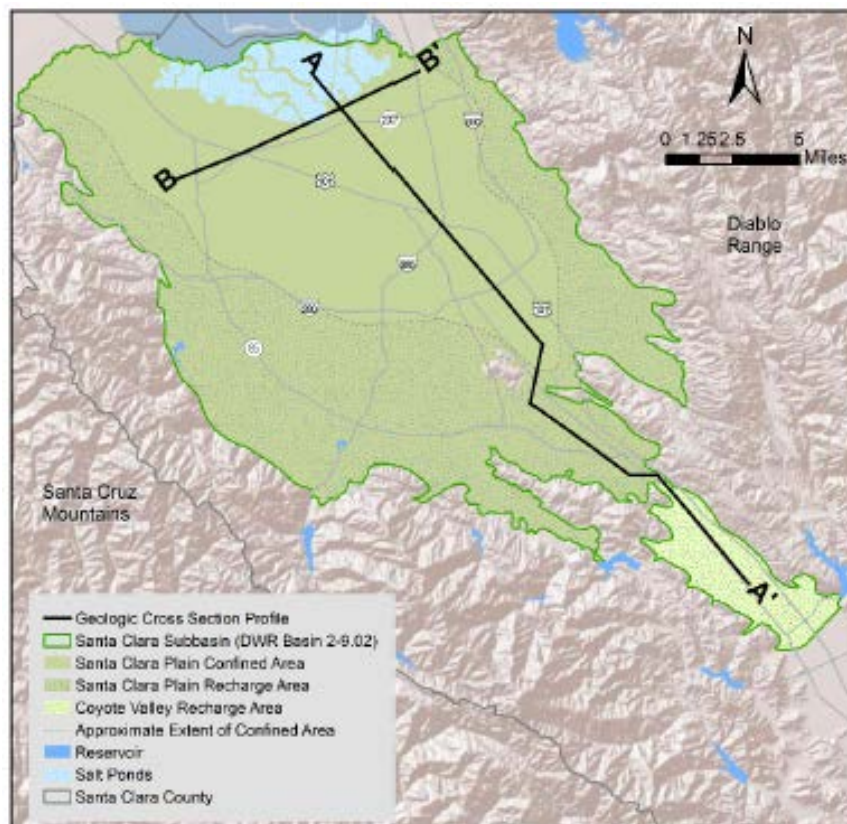


Figure 1 - Cross-Section Locations (Figure 2-3 of Groundwater Management Plan)

These two areas differ in geology, hydrology, land use, and water use. The Plan describes the Coyote Valley area as being in the southern portion of the basin with groundwater flowing northward through a bedrock constriction into the Santa Clara Plain area.⁴⁵ The Santa Clara Plain area is described as containing two significant aquifers, identified as the “shallow aquifer zone” and the “principal aquifer zone”, which are separated by an aquitard and are generally dipping toward the bay.⁴⁶ The Coyote Valley area is characterized by unconsolidated sand and gravels with discontinuous clays. Figure 2 presents cross-section A-A’ which illustrates the relationship of the shallow aquifer zone, major aquitard, and principal aquifer zone for the Coyote Valley and Santa Clara Plain areas, and also shows the general dip toward the north and San Francisco Bay.⁴⁷ The Plan provides maps of the depth to bedrock based on geophysical and borehole cutting analysis and characterizes the Subbasin as ranging in depth from approximately 150 feet in Coyote Valley area to approximately 1,500-feet deep in the center of the Santa Clara Plain area.⁴⁸ The Plan describes the recharge areas as occurring where the principal

⁴⁵ Groundwater Management Plan, Section 2.2.1, p. 2-9

⁴⁶ Groundwater Management Plan Section 2.1.3, p. 2-3

⁴⁷ Groundwater Management Plan, pp. 2-4 through 2-6 and Figures 2-3, 2-4, and 2-5

⁴⁸ Groundwater Management Plan Section 2.1.4, p. 2-7

aquifer zone is generally unconfined - along the margins of the basin - allowing for percolation of water into the strata that dip northward and continuing into areas that are overlain by a fine grained confining layer in the center of the basin.

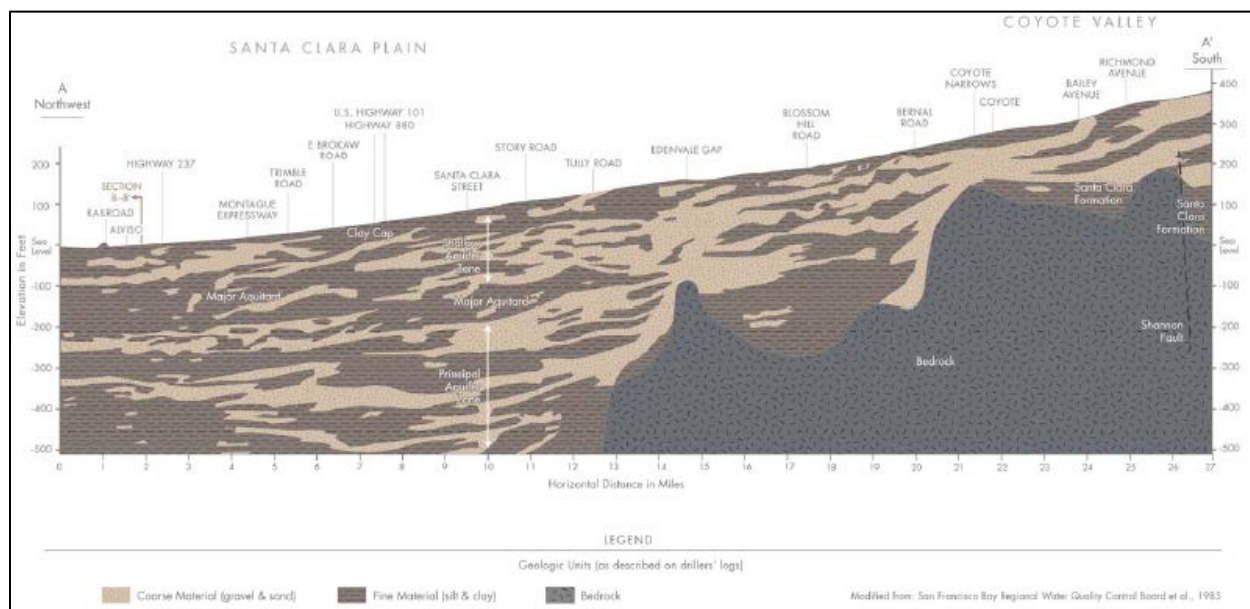


Figure 2 - Cross-Section A-A' (Fig 2-4 of Groundwater Management Plan)

2. Groundwater Conditions

The GSP Regulations require a description of historical and current groundwater conditions in the basin that includes information related to groundwater elevations, groundwater storage, seawater intrusion, groundwater quality, subsidence, and interconnected surface water, as applicable. The GSP Regulations also require an identification of groundwater dependent ecosystems.⁴⁹

The Groundwater Management Plan characterizes current and historical groundwater conditions including groundwater elevations, land subsidence, surface water and groundwater interactions, water quality, and seawater intrusion.⁵⁰ Additional and supporting information regarding groundwater conditions in the Subbasin are provided in the 2015 Annual Report, online Historical Groundwater Elevation Data, Salt and Nutrient Management Plan, and the 2015 Urban Water Management Plan which were submitted to the Department as part of the Alternative.

Groundwater elevation information is presented in the Plan based upon a monitoring network that collects information on water quality, water elevation, and subsidence (see Monitoring Network, below). The District compiles data from its monitoring network to

⁴⁹ 23 CCR § 354.16

⁵⁰ Groundwater Management Plan, Section 2.2, p. 2-9

produce groundwater elevation contour maps and hydrographs that illustrate small-scale variations in groundwater conditions of the principal aquifer zone. The District provides information about current groundwater elevations in contour maps representing spring and fall conditions from its most recent annual report,⁵¹ and provides maps from 2012 in the Plan, which the District describes as characterizing “typical” basin conditions.⁵² These maps illustrate the general groundwater flow directions and gradients within the principal aquifer zone and the change in seasonal flow patterns associated with recharge operations and typical pumping conditions and depressions. The Plan and the 2015 Annual Report also provide hydrographs for index wells from pre-1950 to present.⁵³ Each of the index wells have long periods of record and are described as being representative of the general aquifer response in Coyote Valley and Santa Clara Plain areas. Historical Groundwater Elevation Data, showing groundwater elevation trends for the wells monitored in the basin, is made available online for public review.⁵⁴

The District estimated the operational storage capacity for the Santa Clara Plain area to be 350,000 acre-feet and estimated a range from 23,000 to 33,000 acre-feet for the Coyote Valley Area. The Subbasin has a total estimated groundwater storage of 1.9 million acre-feet; however, much of this total is deemed inaccessible by the District using wells without causing undesirable results. The storage estimates are based on numerical modeling studies that describe the annual change in storage from 1970 to 2016 and from 1987 to 2016 in the Santa Clara Plain and Coyote Valley areas, respectively.⁵⁵

The District describes seawater intrusion as impacting the Santa Clara Plain area, but not the Coyote Valley area which is isolated inland and outside the potential for seawater intrusion conditions (see Figure 2). Within the Santa Clara Plain area, the District describes seawater intrusion as most prevalent in the shallow aquifer zone which is believed to be impacted by saline water intruding through interconnected intertidal salt marshes and creeks on the flanks of the bay. The District conducts regular monitoring and tracking of chloride concentrations in the shallow aquifer zone.⁵⁶ Impacts to the principal aquifer zone are believed to be from old poorly constructed wells that penetrate the shallow and principal aquifer zones, allowing for vertical migration of seawater.⁵⁷ The hydrogeologic conceptual model referenced above describes the extent of bay muds that isolate the principal aquifer zone strata from direct connection with seawater in the bay. The District also describes chloride concentrations in the principal aquifer zone as relatively low, but specific information regarding the extent of impacts were not included.

⁵¹ 2015 Annual Groundwater Report, Figures 14, 15, 16, pp. 21-23

⁵² Groundwater Management Plan, Section 2.2.1 p. 2-9

⁵³ Groundwater Management Plan, Section 2.2.1 p. 2-11

⁵⁴ Historical Groundwater Elevation Data, <https://gis.valleywater.org/GroundwaterElevations/map.php>

⁵⁵ Groundwater Management Plan, Section 4.4.1.3, p. 4-11

⁵⁶ Groundwater Management Plan, Section 2.2.5, p. 2-29

⁵⁷ Groundwater Management Plan, Section 2.2.5, p. 2-29

According to the District, chloride isoconcentration contours for 1945, 1980, and 2015 demonstrate a progressive retreat of the chloride contour following the import of Central Valley Project water in the 1980's.⁵⁸

Other groundwater quality issues have evolved as the Santa Clara Subbasin has changed from an agricultural area to an industrial and urban one.⁵⁹ Water quality issues affecting groundwater include contaminants from legacy agriculture, domestic septic discharges, and industrial chemical and waste releases. The District coordinates with federal and state agencies to address known point source contaminants and aids with legacy domestic nitrate concerns. The Plan characterizes the water quality conditions within the Santa Clara and Coyote Valley areas from the period of 2006 to 2015, although water quality conditions in the Santa Clara and Coyote Valley areas have been monitored and managed for decades.⁶⁰ The water quality data presented is based on ongoing monitoring conducted by the District and its member agencies, including data reported to the State Water Resources Control Board, Division of Drinking Water to provide a spatially distributed understanding of water quality. The Plan identifies the distribution of key constituents with respect to the maximum contaminant level (MCL) and secondary maximum contaminant level (SMCL) from 2006 to 2015.⁶¹ Tabular water quality summary information for organic and inorganic constituents of the Santa Clara Plain and Coyote Valley areas provide a generalized 10-year perspective of the distribution and relative exceedances of primary and secondary MCLs.⁶²

In association with the District's recycled water program, a detailed analysis of the Subbasin-wide salt and nutrient loading was presented in the Salt and Nutrient Management Plan. The Salt and Nutrient Management Plan was prepared with respect to the San Francisco Water Quality Control Board's Basin Plan objectives for all beneficial uses and users. The Salt and Nutrient Management Plan presents additional information regarding the existing distribution of total dissolved solids and nitrates and impacts associated with additional salt and nutrient loading within the basin using an assimilative capacity analysis.⁶³ The Groundwater Management Plan provides a map of locations of known contaminated sites managed by other regulatory agencies.⁶⁴

The Plan states that the Santa Clara Valley was the first area in the United States where permanent land subsidence due to groundwater withdrawal was recognized. Land subsidence was a driving force behind the District Act, whose purposes included to address overdraft, subsidence, and increased potential and occurrence of flooding

⁵⁸ Groundwater Management Plan, Figure 2-21, p. 2-30

⁵⁹ Groundwater Management Plan, Section 1.5.2, p. 1-15

⁶⁰ Groundwater Management Plan, Section 2.2.2, p. 2-12

⁶¹ Groundwater Management Plan, Figures 2-18 and 2-19, p. 2-20

⁶² Groundwater Management Plan, Section 2.2.4, p. 2-28

⁶³ Salt and Nutrient Management Plan, Section 3.4.5.7, p. 83

⁶⁴ Groundwater Management Plan, Figure 6-1, p. 6-16

because of subsidence.⁶⁵ The Groundwater Management Plan notes that subsidence in the Santa Clara Subbasin has been a significant issue in the past, but explains that whereas subsidence has been documented in the Santa Clara Plain area, it is absent from the Coyote Valley area due to geologic differences in the two areas. Basin fill in the Santa Clara Plain area consists of discontinuous sand lenses and fine-grained clay and muds which are subject to compaction due to groundwater extraction, whereas the Coyote Valley area contains predominantly coarser grained sands and gravel basin fill, with significantly less fine-grained material susceptible to compaction that causes subsidence(See Figure 2 above).⁶⁶ The Plan provides analysis of the spatial distribution of total subsidence that has occurred in the Subbasin as well as the remaining potential for subsidence⁶⁷ and describes how additional detailed studies have established specific groundwater levels at key wells to avoid conditions when subsidence has been observed (see Land Subsidence, below).

As described in the Groundwater Management Plan, the District utilizes the creeks and streams as part of its management practices to recharge groundwater in the Subbasin.⁶⁸ The District describes that its recharge activities are an important factor in maintaining flows in the surface water bodies in the Subbasin, many of which would only flow intermittently in the absence of that recharge.⁶⁹ The District has identified relatively short stream segments with suspected groundwater-surface water interactions on the margins of the basin,⁷⁰ and stated they were not aware of any areas where groundwater pumping has a significant or unreasonable effect on interconnected surface water.⁷¹ The Plan provides a historical ecology map described as representing conditions from “circa the early 1800s” depicting the distribution of vegetative communities and the occurrence of historical intermittent and perennial creeks.⁷² The Plan describes that historically, only the Guadalupe River was perennial and other creeks were intermittent.

3. Water Budget

GSP Regulations require a water budget for the basin that provides an accounting and assessment of the total annual volume of groundwater and surface water entering and leaving the basin, including historical, current and projected water budget conditions, and the change in the volume of water stored, as applicable.⁷³

⁶⁵ Groundwater Management Plan, Section 2.2.2, p. 2-12

⁶⁶ Groundwater Management Plan, Section 2.2.2, p. 2-13

⁶⁷ Groundwater Management Plan, Section 2.2.2, p. 2-13

⁶⁸ Groundwater Management Plan, Section 2.2.3, p. 2-17

⁶⁹ Groundwater Management Plan, Section 2.2.3, p. 2-14

⁷⁰ Groundwater Management Plan, Figure 2-14, p. 2-15

⁷¹ Groundwater Management Plan, Section 2.2.3, p. 2-14

⁷² Groundwater Management Plan, Section 2.2.3, p. 2-16

⁷³ 23 CCR § 354.18

The Groundwater Management Plan provides a description of the countywide water supplies, use, and management for the Santa Clara Subbasin.⁷⁴ The Plan also provides a detailed quantification of the groundwater budget summarizing natural and managed inflows and outflows for a period of 2003 through 2012. The District selected this 10-year period as representing dry, wet, and normal years, without incorporating recent periods of exceptionally dry years.⁷⁵ A summary of the water budget over this period indicates the Santa Clara Plain area and the Coyote Valley area have an average annual change in storage of positive 2,000 and 500 acre-feet per year, respectively.⁷⁶ The District utilizes groundwater models to support development of the groundwater budget in conjunction with monitoring data.⁷⁷ The models provide a quantification of groundwater flow, recharge, and discharge conditions for both the Santa Clara Plain area and the Coyote Valley area. Projected water budget is described in the Groundwater Management Plan and the 2015 Urban Water Management Plan. The Groundwater Management Plan describes increasing demand in both the Santa Clara Plain and Coyote Valley areas.⁷⁸ Climate change is indirectly addressed in the 2015 Urban Water Management Plan acknowledging that climate change is expected to have an effect on future water supply and demands, but due to viability of the current hydrology it is difficult to quantify climate change impact on future year demands.⁷⁹ The 2015 Urban Water Management Plan provides descriptions of projected water demand through 2040 for various water use sectors and are summarized in Table 4-1 and Figure 4-5, which indicate an anticipated steady increase in population and water use dominated by water retailer water use increases.⁸⁰

4. Management Areas

GSP Regulations authorizes, but does not require, an agency to define one or more management areas within a basin if the agency has determined that creation of management areas will facilitate implementation of the GSP.⁸¹

The District has identified two management areas in the Santa Clara Subbasin: the Santa Clara Plain area and the Coyote Valley area. These areas are based on significant differences in geologic setting, land use, and water use (see Hydrogeologic Conceptual Model, above). The District considers these as discrete areas for quantification of water

⁷⁴ Groundwater Management Plan, Sections 4.1 – 4.3, p. 4-1

⁷⁵ Groundwater Management Plan, Section 4.4, p. 4-7

⁷⁶ Groundwater Management Plan, Section 4.4.1.4, p. 4-12

⁷⁷ Groundwater Management Plan, Section 4.4.1.3, p. 4-11

⁷⁸ Groundwater Management Plan, Section 4.5, p. 4-17

⁷⁹ 2015 Urban Water Management Plan, Section 4.4, p. 4-8

⁸⁰ 2015 Urban Water Management Plan, Section 4.2, p. 4-2

⁸¹ 23 CCR § 354.20

budget, groundwater monitoring, and for setting specific sustainable management criteria.

C. Sustainable Management Criteria

GSP Regulations require a sustainability goal that defines conditions that constitute sustainable groundwater management for the basin, the characterization of undesirable results, and establishment of minimum thresholds and measurable objectives for each applicable sustainability indicator, as appropriate.⁸²

1. Sustainability Goal

GSP Regulations require that sustainable management criteria include a sustainability goal that culminates in the absence of undesirable results within the appropriate timeframe, and includes a description of the sustainability goal, describes information used to establish the goal for the basin, describes measures that will be implemented to ensure the basin operates within its sustainable yield, and contains an explanation of how the sustainability goal will be met.⁸³

The Groundwater Management Plan describes the correlation of the sustainable management criteria defined in SGMA with the driving principles of the District Act.⁸⁴ The Plan identifies two sustainability goals: (1) “groundwater supplies are managed to optimize water supply reliability and minimize subsidence”, and (2) “groundwater is protected from contamination, including salt water intrusion.”⁸⁵ The implementation of groundwater management activities associated with the District Act resulted in establishing organizational terminology and policy to implement the necessary actions to achieve these objectives. Figure 5-1 and 5-2 of the Plan illustrate the policy framework and definitions of the sustainability goals down to specific measurable outcomes.⁸⁶

2. Sustainability Indicators

GSP Regulations specify that an agency define conditions that constitute sustainable groundwater management for a basin, including the characterization of undesirable results and the establishment of minimum thresholds and measurable objectives for each applicable sustainability indicator.⁸⁷

Sustainability indicators are defined as any of the effects caused by groundwater conditions occurring throughout the basin that, *when significant and unreasonable*, cause

⁸² 23 CCR § 354.22

⁸³ 23 CCR § 354.24

⁸⁴ Groundwater Management Plan, Section 5.1, p. 5-1

⁸⁵ Groundwater Management Plan, Section 5.2, p. 5-2

⁸⁶ Groundwater Management Plan, Section 5.1, p. 5-1

⁸⁷ 23 CCR § 354.22

undesirable results.⁸⁸ Sustainability indicators thus correspond with the six undesirable results – chronic lowering of groundwater levels indicating a depletion of supply if continued over the planning and implementation horizon, reduction of groundwater storage, seawater intrusion, degraded water quality, including the migration of contaminant plumes that impair water supplies, land subsidence that substantially interferes with surface land uses, and depletions of interconnected surface water that have adverse impacts on beneficial uses of the surface water⁸⁹ – but refer to groundwater conditions that are not, in and of themselves, significant and unreasonable. Rather, sustainability indicators refer to the effects caused by changing groundwater conditions that are monitored, and for which criteria in the form of minimum thresholds are established by the agency to define when the effect becomes significant and unreasonable, producing an undesirable result.

This section thus consolidates three facets of sustainable management criteria: undesirable results, minimum thresholds, and measurable objectives. Information pertaining to the processes and criteria relied upon to define undesirable results applicable to the basin, as quantified through the establishment of minimum thresholds, are addressed for each sustainability indicator. However, a submitting agency is not required to establish criteria for undesirable results that the agency can demonstrate are not present and are not likely to occur in a basin.⁹⁰

a. Chronic Lowering of Groundwater Levels.

GSP Regulations specify that the minimum threshold for chronic lowering of groundwater levels be based on groundwater elevations indicating a depletion of supply that may lead to undesirable results.⁹¹

The Plan describes that the District developed groundwater-level-based thresholds for the avoidance of land subsidence in 1991 and has since managed the Subbasin to those levels.⁹² Description of those thresholds is provided below (see Land Subsidence).

b. Reduction of Groundwater Storage

GSP Regulations specify that the minimum threshold for reduction of groundwater storage shall be a total volume of groundwater that can be withdrawn from the basin without causing conditions that may lead to undesirable results.⁹³

⁸⁸ 23 CCR § 351(ah)

⁸⁹ Water Code § 10721(x)

⁹⁰ 23 CCR § 354.26(d)

⁹¹ 23 CCR § 354.28(c)(1)

⁹² Groundwater Management Plan, Section 5.4.2, p. 5-6

⁹³ 23 CCR § 354.28(c)(2)

The Plan describes end-of-year storage targets of 278,000 and 5,000 acre-feet for the Santa Clara Plain and Coyote Valley areas, respectively.⁹⁴ The District's Functional Equivalency Report cites the sections of the Plan describing the storage targets as being equivalent to the minimum thresholds required in a GSP.⁹⁵ The storage targets were derived from the District's 2015 Urban Water Management Plan, which identified a combined storage target of 300,000 acre-feet for the Santa Clara and Llagas subbasins as the bottom of the "normal" range where no contingency actions are needed.⁹⁶ The Urban Water Management Plan provides additional details of the storage analysis and describes subsequent contingency actions to be taken if the end-of-year storage targets are not met.⁹⁷ The 2015 Annual Groundwater Report describes that the end-of-year storage volumes were not met in 2015 (a drought year), when a total of approximately 215,000 acre-feet of groundwater was in storage.⁹⁸ This condition triggered a countywide water use reduction of 30 percent in 2015, which was reduced to a 20 percent reduction in 2016; the water use reduction triggers were described as being consistent with District's Water Shortage Contingency Plan.⁹⁹

c. Seawater Intrusion

GSP Regulations specify that the minimum threshold for seawater intrusion be defined by a chloride concentration isocontour for each principal aquifer where seawater intrusion may lead to undesirable results.¹⁰⁰

The Plan provides chloride isoconcentration contours to support its description of historical seawater intrusion in the shallow aquifer (see Groundwater Conditions, above). A specific contour depicting an operational threshold was not used for the District's groundwater management planning. The District also includes chloride in its water quality outcome measure (see Degraded Water Quality, below) for the stated purpose of evaluating potential seawater intrusion.¹⁰¹

d. Degraded Water Quality

GSP Regulations specify that the minimum threshold for degraded water quality shall be the degradation of water quality, including the migration of contaminant plumes that impair

⁹⁴ Groundwater Management Plan, Section 5.4.1, p. 5-6

⁹⁵ Groundwater Management Plan, Appendix B, p. B-13

⁹⁶ Groundwater Management Plan, Section 5.4.1, p. 5-6

⁹⁷ 2015 Urban Water Management Plan, Table 8-1, p. 8-3

⁹⁸ 2015 Annual Groundwater Report, Section 3.2, p. 24

⁹⁹ 2015 Annual Groundwater Report, Section 3.2, p. 19

¹⁰⁰ 23 CCR § 354.28(c)(3)

¹⁰¹ Groundwater Management Plan, Section 5.4.3, p. 5-8

water supplies or other indicator of water quality as determined by the agency that may lead to undesirable results.¹⁰²

The Plan describes two water quality outcome measures for the Plan area, which covers both the Santa Clara Subbasin and the adjacent Llagas Subbasin. The first outcome measure is that at least 95 percent of countywide water supply wells meet primary drinking water standards and 90 percent of wells in the “South County” area (comprised of the Coyote Valley management area of the Santa Clara Subbasin and the adjacent Llagas Subbasin) meet agricultural objectives defined in the Regional Water Quality Control Board’s Basin Plan.¹⁰³ The Plan describes that this outcome measure is primarily related to groundwater that is used (i.e., extracted) and, because most groundwater is extracted from the principal aquifer zone, only wells in that zone are tracked for this measure.¹⁰⁴ The 2015 Annual Report describes that the drinking water component of this outcome measure was not met in 2015, when 84 percent of wells county-wide met primary drinking water standards.¹⁰⁵ The 2015 Annual Report explained that all of the instances where drinking water standards were not met were due to nitrate detections in domestic wells located in the “South County” area. The agricultural water quality component of the outcome measure was met in 2015, with 98 percent of wells meeting agricultural water quality objectives.

The second outcome measure is that at least 90 percent of wells in both the shallow and principal aquifer zones have stable or decreasing concentrations of nitrate, chloride, and total dissolved solids.¹⁰⁶ The 2015 Annual Report describes that the nitrate and total dissolved solids components of this outcome measure were met in 2015, but that it was not met for chloride, when 84 percent of wells showed stable or decreasing chloride concentrations.

e. Land Subsidence

GSP Regulations specify that the minimum threshold for land subsidence shall be the rate and extent of subsidence that substantially interferes with surface land uses and may lead to undesirable results.¹⁰⁷

The Plan states the District defined groundwater-level thresholds for land subsidence in 1991 and identifies maintenance of groundwater levels above the thresholds, which are identified at 10 monitoring sites, as an outcome measure for the Subbasin.¹⁰⁸ The Plan

¹⁰² 23 CCR § 354.28(c)(4)

¹⁰³ Groundwater Management Plan, Section 5.4.3, p. 5-7

¹⁰⁴ Groundwater Management Plan, Section 5.4.3, p. 5-7

¹⁰⁵ 2015 Annual Groundwater Report, Section 5, p. 34

¹⁰⁶ Groundwater Management Plan, Section 5.4.3, p. 5-8

¹⁰⁷ 23 CCR § 354.28(c)(5)

¹⁰⁸ Groundwater Management Plan, Table 5-1, p. 5-7

notes that exceedance of those groundwater-level thresholds may represent conditions under which subsidence could exceed the 0.01 foot per year rate that was agreed to in 1991 as a maximum acceptable rate of subsidence.¹⁰⁹

f. Depletion of Interconnected Surface Water

GSP Regulations specify that the minimum threshold for depletions of interconnected surface water shall be the rate or volume of surface water depletions caused by groundwater use that has adverse impacts on beneficial uses of the surface water and may lead to undesirable results.¹¹⁰

The District identifies interconnected surface water as only occurring in discrete areas on the margins of the Subbasin which are associated with recharge and discharge zones and largely appear to be controlled by the underlying geologic conditions.¹¹¹ The Plan states surface water flows are an integral part of the District's groundwater management, as creeks and streams are largely utilized for the purpose of controlled, deliberate groundwater recharge and the District relies on losing stream reaches to achieve this purpose.¹¹² As such, sustainable management criteria have not been established to avoid significant and unreasonable depletion of interconnected surface water.¹¹³

D. Monitoring Networks

GSP Regulations require that each basin be monitored, and that a monitoring network include monitoring objectives, monitoring protocols, and data reporting requirements be developed that shall promote the collection of data of sufficient quality, frequency, and distribution to characterize groundwater and related surface water conditions in the basin and evaluate changing conditions.¹¹⁴

The Plan describes the groundwater level, subsidence, water quality, and surface water (flow and quality) monitoring programs in place to measure progress or maintenance of the District's outcome measures and sustainability goals.

Groundwater level monitoring includes a network of 158 wells monitored directly by the District, and in addition to these, over 100 production wells monitored by water retailers in the Subbasin.¹¹⁵ The wells are distributed throughout the basin to describe various pumping and recharge locations such that detailed mapping of the potentiometric surface can be performed. The District provides detailed descriptions of the monitoring well

¹⁰⁹ Groundwater Management Plan, Section 5.4.2, p. 5-6

¹¹⁰ 23 CCR § 354.28(c)(6)

¹¹¹ Groundwater Management Plan, Section 2.2.3, p. 2-14

¹¹² Groundwater Management Plan, Section 2.2.3, p. 2-14

¹¹³ Groundwater Management Plan, Section 2.2.3, p. 2-14

¹¹⁴ 23 CCR § 354.32

¹¹⁵ Groundwater Management Plan, Section 7.1.1, p. 7-1

network including construction details, well type, monitoring frequency, and other details.¹¹⁶ The District provides a description of the range of monitoring frequency for these wells based upon management needs and include frequencies of daily, weekly/biweekly, monthly, bimonthly, and quarterly. The 158 District monitoring wells are all monitored at least monthly to provide the agency timely information to support management actions.¹¹⁷ The Groundwater Management Plan provides a description of accuracy of well head reference elevation and potential error associated with the variety of methods used.¹¹⁸

Subsidence monitoring is an essential element and driving condition for management of the groundwater resources in the Subbasin. As such the District describes a monitoring network that includes annual surveys of over 150 benchmarks, use of two continuously monitoring extensometers, and a network of 10 subsidence index wells monitoring groundwater levels.¹¹⁹ The subsidence index wells serve as an early warning effort to monitor if groundwater levels are above minimum thresholds on at least a monthly basis. The monitoring results are confirmed by use of the additional extensometer measurements and benchmark surveys to evaluate progress toward the District's outcome measures and sustainability goals.

The District maintains a water quality monitoring network of 55 wells in the Subbasin (30 in the shallow aquifer zone and 25 in the principal aquifer zone) that are sampled annually for trace elements, ions, nutrients, and field parameters (e.g., pH, specific conductance, and temperature), and every three years for volatile organic compounds.¹²⁰ In addition, results from annual Division of Drinking Water quality compliance testing are included for approximately 225 production wells from the Santa Clara and Llagas subbasins.¹²¹ The District also collects water quality samples from more than 200 domestic wells in the Santa Clara and Llagas subbasins and near recycled water irrigation sites. The District also incorporates, on an as-needed basis, water quality information from other agencies and programs including, the State Water Resources Control Board's Groundwater Ambient Monitoring and Assessment Program and the Irrigated Lands Regulatory Program.¹²²

Surface water monitoring described by the District includes the evaluation of water quality and discharge of surface waters within the Subbasin to properly manage recharge efforts. The District identifies the sampling locations for water quality and discharge locations throughout the Subbasin. Water quality samples are collected at seven stream recharge

¹¹⁶ Groundwater Management Plan, Appendix E, p. E-3

¹¹⁷ Groundwater Management Plan, Section 7.1.1, p. 7-1

¹¹⁸ Groundwater Management Plan, Section 7.1.2.1, p. 7-3

¹¹⁹ Groundwater Management Plan, Section 7.2, p. 7-6

¹²⁰ Groundwater Management Plan, Section 7.3, p. 7-9

¹²¹ Groundwater Management Plan, Section 7.3.2, p. 7-13

¹²² Groundwater Management Plan, Section 7.3.5, p. 7-19

system sites on a triennial rotating basis during both dry and wet seasonal conditions with 90 samples being collected in total over the three-year period.¹²³ In addition to collecting surface water quality and discharge data, the District coordinates and incorporates data from other agencies and programs including: the Santa Clara Valley Urban Runoff Pollution Prevention Program and the Central Coast Regional Water Quality Control Board's Central Coast Ambient Monitoring Program.

Data collected as part of the District's monitoring programs are stored in databases and are largely available on the District's websites. The monitoring data is incorporated into various reporting structures that regularly inform management actions by the District, these include: Water Tracker (monthly), Monthly Groundwater Condition Report, Protection and Augmentation of Water Supplies Report (annual), and the Annual Groundwater Report.¹²⁴ These data and reports support ongoing modelling efforts to support the District's forecasting ability and ongoing evaluation of conditions in the Subbasin.

E. Projects and Management Actions.

GSP Regulations require a description of the projects and management actions the submitting agency has determined will achieve the sustainability goal for the basin, including projects and management actions to respond to changing conditions in the basin.¹²⁵

The Groundwater Management Plan provides a portfolio of projects and management actions that are currently being implemented by the District or other agencies to address the sustainability goals of optimizing groundwater reliability and the protection of groundwater quality. The District also explains that the District Act provides the authority to advance additional projects on an as-needed basis and advancement of significant projects through the capital improvement program. The Plan organizes these projects and management actions into three primary categories; projects supporting groundwater reliability, groundwater quality, and surface water - groundwater interactions.

Programs to maintain reliable groundwater supply include managed aquifer recharge, in-lieu recharge, protection of natural recharge, groundwater production management, water accounting, groundwater level and storage assessments, and asset management.¹²⁶ Programs to protect groundwater quality include a well ordinance program, domestic well testing program, salt and nutrient management, nitrate treatment system rebate program, vulnerability assessment studies, coordination with land use agencies, coordination with

¹²³ Groundwater Management Plan, Section 7.4, p. 7-23

¹²⁴ Groundwater Management Plan, Section 7.5, p. 7-28

¹²⁵ 23 CCR § 354.44

¹²⁶ Groundwater Management Plan Section 6.1, p. 6-1

regulatory agencies, and public outreach.¹²⁷ Programs related to surface water - groundwater interaction provide ongoing integrated management of these resources serve to address both reliability and quality needs of the beneficial uses and users in the Subbasin and include the managed in-stream releases of surface water, stormwater management, prevention of salt water intrusion, and watershed management.¹²⁸

VI. Assessment

The following describes the evaluation and assessment of the Alternative for the Santa Clara Subbasin as determined by Department staff. In undertaking this assessment, Department staff did not conduct geologic or engineering studies, although Department staff may have relied on publicly available geologic or engineering or other technical information to verify claims or assumptions presented in the Alternative.¹²⁹ As discussed above, Department staff have determined that the Santa Clara Alternative satisfied the conditions for submission of an alternative.¹³⁰ The Alternative was submitted within the statutory period, the Subbasin was found to be in compliance with the reporting requirements of CASGEM, and staff find the Alternative to be complete and to cover the entire basin (see Required Conditions, above). Based on its evaluation and assessment of the Santa Clara Alternative, as discussed below, Department staff find that the Alternative satisfies the objectives of SGMA.¹³¹

A. Evaluation of Alternative Contents

The District describes in sufficient detail its authority to manage groundwater within its statutory boundaries, which encompasses the Santa Clara Subbasin. The Groundwater Management Plan and the District Act document the legal authority and describe past and planned future authority to implement and finance necessary projects. The District describes the evolution of the District dating back to 1929 with the Santa Clara Valley Water Conservation District charged with the initial mission of stopping groundwater overdraft and subsidence. Since that time the District has grown through consolidation and annexation of other flood control and water districts. The District has demonstrated implementation of numerous projects and management actions to address the primary drivers of flood control, water reliability, and water quality conditions in the Subbasin. The District has funded and cooperated with numerous studies to characterize groundwater conditions in the County for a variety of factors to inform management strategies. That history of management in the Subbasin provides a reasonable level of confidence that

¹²⁷ Groundwater Management Plan, Section 6.2, p. 6-9

¹²⁸ Groundwater Management Plan, Section 6.3, p. 6-18

¹²⁹ Instances where the Department review relied upon publicly available data that was not part of the Alternative are specifically noted in the assessment.

¹³⁰ 23 CCR § 358.4(a)

¹³¹ Water Code § 10733.6(a); 23 CCR § 358.4(b)

the District can continue implementation of the Groundwater Management Plan to meet its sustainability goals.

The Groundwater Management Plan and associated technical studies and plans demonstrate a sufficient understanding of the basin setting, including the geology and groundwater conditions of the Santa Clara Subbasin. The Plan and supporting technical studies, including the 2015 Annual Report, 2015 Urban Water Management Plan, and the Salt and Nutrient Management Plan appear to rely on best available information and best available science and their conclusions are consistent with the Department's understanding of conditions in the Santa Clara Subbasin. The hydrogeologic conceptual model described in the Plan incorporates the relevant hydrologic processes in the entire basin to support analysis presented. The use of numerical models in the Subbasin to support operational and long-term planning decisions also provide support for water budget estimates. The District's numerical models are used to provide on-going estimates of groundwater storage to support management actions of required replenishment activities. The District's understanding of the basin setting is adequate to develop and implement a plan for sustainable groundwater management. However, Department staff recommend that the District address identification of groundwater dependent ecosystems (see Recommended Action 1) and incorporation of climate change into its projected water budget (see Recommended Action 2).

The Plan identifies sustainability goals for the County and specific, quantitative outcome measures for groundwater storage and land subsidence in the Santa Clara Subbasin and for water quality in the combined Santa Clara and Llagas subbasins. The District's storage outcome measure is an end-of-year storage target of 278,000 and 5,000 acre-feet for the Santa Clara Plain and Coyote Valley areas, respectively. The District has identified specific actions that occur if that storage target is not met, as defined in the 2015 Urban Water Management Plan. Land subsidence outcome measures are based on maintaining groundwater elevations above identified thresholds at a set of index wells. Except for minor exceedances at one of the ten subsidence index wells during the most recent drought, water levels have remained above these thresholds since approximately the mid-1990s. Water quality outcome measures utilize primary drinking water standards and Central Coast Regional Water Quality Control Board Basin Plan agricultural water quality standards. The water quality outcome measure address both the number of detections above the identified thresholds and trends of key constituents identified for the County. Department staff recommend that the water quality outcome measures, which in the Plan are defined County-wide (i.e., they are set based on water quality in both the Santa Clara and Llagas subbasins), be refined in future updates to the Alternative with separate quantitative measures specific to the respective subbasins (see Recommended Action 3). The District already reports water quality detections and trends separately by subbasin but, as presently configured in the Plan, it is not possible to determine whether failure to

achieve the outcome measures represents an undesirable result for both subbasins or whether the undesirable result is applicable to a specific subbasin.¹³² In separating the water quality outcome measures by subbasin and in light of the described anticipated sea level rise, Department staff also recommend identifying specific water quality measures to track for potential seawater intrusion in the Santa Clara Plain area (see Recommended Action 4).

Additionally, the outcome measures defined by the District are the only quantitative standards outlined in the Plan and, as indicated in the 2015 Annual Groundwater Report, several of those standards were not met in 2015 (e.g., for end-of-year storage). While alternatives are not required to follow the exact format of a GSP, the GSP Regulations do outline a process for GSP development that includes quantitative standards both for measurable objectives, which represent conditions that the basin is operated toward; and minimum thresholds, which represent conditions that generally are to be avoided so as to not cause undesirable results. It was not clear to Department staff whether those outcome measures were generally more equivalent to measurable objectives or minimum thresholds but, in the absence of any other quantifiable standard, the Department's ongoing review of whether the Alternative satisfies the objectives of SGMA will focus on whether the District is able to meet those outcomes to avoid undesirable results in the Subbasin. If the outcome measures are more equivalent to measurable objectives and there is another metric that is generally more representative of conditions that the District intends to avoid in the Subbasin to prevent undesirable results, then the District should provide those metrics in an update to the Alternative (see Recommended Action 5).

The District describes specific monitoring networks that address groundwater levels, groundwater quality, subsidence conditions, surface water quality, and surface water flows. The data collected from these locations typically represent long periods of observations and data collection. Based upon the description of the hydrogeologic system, the distribution of dedicated monitoring wells, subsidence monitoring locations, and use of existing water supply wells appears to be reasonable. The data provide an adequate and reasonable distribution of direct observations of conditions within the Subbasin to allow for informed decisions and planning for sustainable groundwater management. The frequency of data collected from the monitoring networks is adequate to characterize the seasonal variability and management-action based variability of the groundwater and related systems.

Management actions and projects described in the Plan are consistent with the requirements of SGMA and the GSP Regulations. The management actions and projects the District has implemented and is planning on implementing provide for continued progress toward meeting the sustainability goal for the Subbasin. The projects and

¹³² 2015 Annual Groundwater Report, Table 8, p. 37

management actions the District has developed have led to meeting or making significant progress to their specific measurable objectives for storage, land subsidence, and water quality. The groundwater conditions described in the Plan illustrate the maintenance of the targeted conditions described in the measurable objectives, with exception of drought periods where additional prescribed actions were implemented, such as water conservation and calls on banked water options. In addition, recovery following drought or dry periods was accomplished in accordance to the Plan and typically occurred within the next water year. Continued implementation of planned projects, programs, and coordinated effort on water quality objectives will likely result in continued progress toward this objective. Discussions of funding for projects appears to be reasonable. The District describes a clear process previously implemented to apply an adaptive management strategy for development, funding, and implementation of necessary projects to support the sustainability goals.

The Groundwater Management Plan for the Santa Clara Subbasin is specifically designed to manage groundwater supplies to optimize water supply reliability and to protect the basin against undesirable results including overdraft, subsidence, seawater intrusion, and other sources of groundwater contamination, and so appears consistent with Water Code Section 106.3, which establishes the state policy that “every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.” Department staff consider that the Groundwater Management Plan, which utilizes natural waterways in the basin to recharge the aquifers, appears also to be consistent with the public trust doctrine.

B. Recommended Actions

The following recommended actions include information that the District may wish to include in the first five-year update of the Alternative to facilitate the Department’s ongoing evaluation and assessment of the Alternative as well as recommendations for improvements to the Alternative.

Recommended Action 1.

Staff recommend that the District provide an identification of groundwater dependent ecosystems in the Subbasin.

Recommended Action 2.

Staff recommend that the District provide a projected water budget incorporating climate change and expected population growth over the planning and implementation horizon of 50 years.

Recommended Action 3.

Staff recommend that the District create separate outcome measures related to water quality in the Santa Clara and Llagas subbasins. Separate subbasin-specific criteria will allow for a determination of whether each subbasin, separately, is meeting or making progress toward the outcome measures.

Recommended Action 4.

Staff recommend the District develop specific seawater intrusion outcome measures separate from other water quality outcome measures.

Recommended Action 5.

Staff recommend that the District clarify how meeting its outcome measures relates to the avoidance of undesirable results in the Santa Clara Subbasin. Specifically, it should clarify whether not meeting the outcome measures represents an undesirable result for the applicable sustainability indicator. If that is not the intent of the District, then it should provide additional clarification and additional metrics that can be used by the District, and by the Department as it reviews the Alternative on an ongoing basis, to determine what effects represent undesirable results and to objectively assess the presence or absence of those undesirable results.

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SUSTAINABLE GROUNDWATER MANAGEMENT OFFICE

901 P Street, Room 313-B | Sacramento, CA 95814 | P.O. Box 942836 | Sacramento, CA 94236-0001

July 17, 2019

Ms. Vanessa De La Piedra
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, California 95118

Dear Ms. De La Piedra,

The Department of Water Resources (Department) has evaluated the alternative submitted for the Llagas Subbasin. Based on recommendations from the Staff Report, included as an exhibit to the attached Statement of Findings, the Department has determined that the Llagas Alternative satisfies the objectives of the Sustainable Groundwater Management Act (SGMA) and is approved. The Staff Report also proposes recommended actions for the consideration of the Santa Clara Valley Water District that the Department believes will enhance the Alternative and facilitate future evaluation by the Department. The recommended actions do not constitute a qualified approval of the Alternative; however, the Department encourages they be given due consideration and suggest incorporating any resulting changes to the Alternative in future updates.

As required by SGMA, the Department shall review approved alternatives to ensure they remain in compliance with the objectives of the Act. Approved alternatives are required to submit annual reports to the Department on April 1 of each year, and to resubmit the alternative by January 1 every five years. The first five-year update is due by January 1, 2022.

Please contact me at (916) 651-0870 or Craig.Altare@water.ca.gov if you have any questions related to the Department's evaluation or your implementation of the approved alternative.

Thank You,

Craig Altare, P.G.
Supervising Engineering Geologist

Attachments:

1. Statement of Findings Regarding the Approval of the Llagas Subbasin Alternative

**STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES**

**STATEMENT OF FINDINGS REGARDING THE
APPROVAL OF
THE LLAGAS SUBBASIN ALTERNATIVE**

The Department of Water Resources (Department) is required to evaluate and assess whether submitted alternatives to groundwater sustainability plans satisfy the objectives of the Sustainable Groundwater Management Act (SGMA) pursuant to Water Code Section 10733.6. This Statement of Findings explains the Department's decision regarding the alternative (Alternative) submitted by the Santa Clara Valley Water District for the Llagas Subbasin (No. 3-003.01). The Alternative was submitted under Water Code Section 10733.6(b)(1), which allows for the submittal of alternate plans developed pursuant to Part 2.75 (commencing with Section Water Code Section 10750) or other law authorizing groundwater management.

Department management has reviewed the Department staff report, entitled Sustainable Groundwater Management Program Alternative Assessment Staff Report – Llagas Subbasin (Staff Report), attached as Exhibit A, recommending approval of the Alternative. Based on its review of the Staff Report, Department management is satisfied that staff have conducted a thorough evaluation and assessment of the Alternative and concurs with staff's recommendation and all the recommended actions, and thus hereby approves the Alternative on the following grounds:

1. The Alternative was submitted within the statutory deadline of January 1, 2017 (Water Code Section 10733.6(c)).
2. The Alternative is within a subbasin that is in compliance with Part 2.11 (commencing with Water Code Section 10920) as required by Water Code Section 10733.6(d).
3. The Alternative has been submitted by the Santa Clara Valley Water District pursuant to Water Code Section 10733.6(b)(1) and a copy of the documents making up the groundwater management plan were submitted as required by 23 CCR Section 358.2(c)(1).
4. The Santa Clara Valley Water District explained how the elements of the Alternative are functionally equivalent to the elements of a groundwater sustainability plan required by Articles 5 and 7 of the GSP Regulations, 23 CCR Section 350 et seq., in the Groundwater Management Plan Appendix B - Demonstration of Functional Equivalency of the Alternative submitted by the District.

5. Based on Paragraphs 3 and 4 above, the Alternative is considered complete and includes the information required by SGMA and the GSP Regulations, sufficient to warrant an evaluation by the Department. 23 CCR Section 358.4(a)(3).
6. The Alternative applies to and covers the entire subbasin as required by 23 CCR Section 358.2(a) and 358.4(a)(4), respectively, and as discussed in Section IV.D of the Staff Report.
7. The Santa Clara Valley Water District has the legal authority and financial resources necessary to implement the Alternative.
8. The Department has received public comments on the Alternative and has considered them in the evaluation of the Alternative as required by 23 CCR Section 358.2(f).

Department management makes the following specific findings based on the evaluation and assessment of the Alternative prepared by Department staff:

9. The Alternative demonstrated that the Santa Clara Valley Water District has established goals and implemented projects and management actions to maintain groundwater levels, manage the subbasin to maintain a quantified level of groundwater storage, and address historical water quality issues in the Subbasin.
10. The Alternative demonstrates that the Santa Clara Valley Water District has a sufficient and reasonable understanding of the current and historical groundwater conditions related to groundwater elevations, surface water and groundwater interactions, and water quality in the Llagas Subbasin that would cause undesirable results and have a well-developed program to avoid those undesirable results by maintaining a groundwater storage range in the Subbasin.
11. The Santa Clara Valley Water District has demonstrated a commitment to mitigating agricultural water quality issues and maintaining groundwater level conditions.
12. In light of Paragraphs 1-11 above, the Alternative satisfies the objectives of SGMA.

In addition to the grounds listed above, the Department also finds that:

1. The Alternative has demonstrated that the Subbasin will be operated within the range of historical data, sufficient to avoid undesirable results, and is consistent

with the state policy regarding the human right to water (Water Code Section 106.3) and the public trust doctrine.

2. The evaluation and assessment of whether the Alternative submitted by the Santa Clara Valley Water District for the Llagas Subbasin satisfies the objectives of SGMA is a project under CEQA, but that the project is exempt from CEQA under the common sense exemption for the following reasons.

No physical change to the environment is associated with the evaluation and assessment of the alternatives undertaken by the Department. The Alternative submitted by the District is based on a Groundwater Management Plan and projects and management actions that were previously adopted and the Agency has already begun implementing.

By finding that the Alternative satisfies the objectives of SGMA, the District is authorized to continue to manage the subbasin subject to that Alternative, without the need to develop a GSP. As a result, the evaluation and assessment of the Alternative undertaken by the Department creates no foreseeable indirect impacts, and any impacts that might occur would be difficult to predict with any accuracy and too speculative to allow the Department to provide for meaningful analysis and review.

Based on the above, the Alternative submitted by the Santa Clara Valley Water District for the Llagas Subbasin is approved. The recommended actions in the Staff Report will assist the Department's review of the Alternative's implementation for consistency with SGMA and are thus recommended to be included in the resubmitted Alternative, due on January 1, 2022, as required by Water Code Section 10733.6(c).

Signed:

A handwritten signature in black ink, appearing to read "Karla Nemeth", is written over a horizontal line.

Karla Nemeth, Director

Date: July 17, 2019

Exhibit A: Sustainable Groundwater Management Program Alternative Assessment
Staff Report – Llagas Subbasin

State of California
Department of Water Resources
Sustainable Groundwater Management Program
Alternative Assessment Staff Report

Groundwater Basin Name: Gilroy-Hollister Valley – Llagas (Basin No. 3-003.01)
Submitting Agency: Santa Clara Valley Water District
Recommendation: Approve
Date Issued: July 17, 2019

I. Summary

The Santa Clara Valley Water District (District) submitted an alternative (Llagas Alternative or Alternative) to the Department of Water Resources (Department) for evaluation and assessment as provided by the Sustainable Groundwater Management Act (SGMA).¹ The District submitted an existing plan, which relies primarily on the 2016 Groundwater Management Plan (Groundwater Management Plan or Plan).²

The District was formed in 1929, following enactment of the first voter-approved groundwater protection law in Santa Clara County. The law charged the District with the responsibility of stopping groundwater overdraft and subsidence in accordance with the Santa Clara Valley Water District Act (District Act).³ The District manages water resources for the entire County, which includes two groundwater subbasins, the Santa Clara Subbasin of the Santa Clara Valley Groundwater Basin and the Llagas Subbasin of the Gilroy-Hollister Valley Groundwater Basin (Llagas Subbasin or Subbasin). While the District Act was primarily a result of adverse conditions in the Santa Clara Subbasin, it provided direction for the District to manage water resources County wide and, therefore, the Groundwater Management Plan includes both subbasins.⁴

The Alternative demonstrates a long history of implementing the requirements of the District Act. The District has done this by developing a good understanding of the hydrogeologic conditions of the Subbasin, establishing significant water imports, and

¹ Water Code § 10720 *et seq.*

² Water Code § 10733.6(b)(1)

³ Water Code, App. § 60-1 *et seq.* (Stats.1951, c. 1405, p. 3337)

⁴ The District submitted the 2016 Groundwater Management Plan as an Alternative for both the Santa Clara and Llagas subbasins. This assessment is specifically related to the Department's review for the Llagas Subbasin.

managing those resources to meet the demands of the beneficial uses and users. The District has conducted numerous studies to identify appropriate actions to capture surface water runoff and store it for the purposes of replenishment of the groundwater. The quantification of required volumes, timing, and distribution of recharge have resulted in management of the Subbasin that has avoided overdraft and subsidence. The District's Groundwater Management Plan has established objectives to maintain the avoidance of adverse groundwater conditions in the Subbasin and documents specific plans and management actions to achieve those objectives. These plans and management actions are based on proven technologies, are reasonable and feasible, and present solutions to meet the objectives of the District Act.

Based on review of the Plan, other related documents, and consideration of public comments, Department staff believe the Llagas Alternative satisfies the objectives of SGMA for the Llagas Subbasin and recommends approval of the alternative. Staff consider the information provided by the District to be sufficient and credible, and that implementation of the Groundwater Management Plan is reasonably likely to lead to sustainable groundwater management of the Subbasin.⁵ In addition, staff have identified recommended actions that are designed to facilitate the Department's ongoing evaluation and assessment of the Plan including implementation and a determination of whether the Plan continues to satisfy the objectives of SGMA or adversely affects an adjacent basin.

The remainder of this assessment is organized as follows:

- **Section II. Review Principles** describes legal and other considerations regarding the Department's assessment and evaluation of alternatives.
- **Section III. Alternative Materials** describes materials (i.e., plans, reports, data, and other information) submitted by the Agency that, collectively, the Department staff considered as the Alternative.
- **Section IV. Required Conditions** describes whether the Alternative satisfies each of the four conditions required for the Department to review an alternative.
- **Section V. Alternative Contents** describes the information contained in the Alternative submittal.
- **Section VI. Assessment** describes Department staff's evaluation of the Alternative, whether it satisfies the objectives of SGMA, and, if applicable, describes recommended actions proposed for the first five-year update.

⁵ Water Code § 10721(v). See also discussion in Section II. Review Principles. Sustainable groundwater management is achieved by meeting the basin's sustainability goal.

II. Review Principles

The District submitted an alternative based on a groundwater management plan to the Department for evaluation and assessment to determine whether it satisfies the objectives of SGMA for the Llagas Subbasin. To satisfy the objectives of SGMA, an alternative based on a groundwater management plan prepared pursuant to Part 2.75 of Division 6 of the Water Code⁶ or a plan developed pursuant to another law authorizing groundwater management must demonstrate that implementation of the plan has led to or will lead to sustainable groundwater management, which means the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.⁷ Undesirable results are defined quantitatively by the managing agency.⁸

An alternative, to be evaluated by the Department, must be submitted by the statutory deadline and be within a basin that complies with Part 2.11 of Division 6 of the Water Code.⁹ The submitted alternative must also be complete and must cover the entire basin.¹⁰ The Groundwater Sustainability Plan (GSP) Regulations¹¹ require the Department to evaluate an Alternative “in accordance with Sections 355.2, 355.4(b), and Section 355.6, *as applicable*, to determine whether the Alternative complies with the objectives of the Act”.¹² The elements of the cited sections are not all applicable to alternatives. Some provisions apply to GSPs and alternatives alike, to alternatives only prospectively, or do not apply to alternatives at all.¹³ Ultimately, the purpose of the evaluation is to determine whether an alternative satisfies the objectives of SGMA.¹⁴ The agency must explain how the elements of an alternative are “functionally equivalent” to

⁶ Water Code § 10750 *et seq.*

⁷ Water Code 10721(v)

⁸ 23 CCR § 354.26

⁹ Water Code § 10733.6(c)-(d)

¹⁰ 23 CCR § 358.4(a)

¹¹ 23 CCR § 350 *et seq.*

¹² 23 CCR § 358.4(b) (emphasis added)

¹³ Procedural requirements, including submissions by the agency, posting by the Department, and the public comment period, apply equally to plans and alternatives (23 CCR § 355.2(a)-(c)). The periodic review of Plans (23 CCR § 355.6(a)) applies to alternatives prospectively but does not apply to initial submissions. Other regulatory provisions are inapplicable to alternatives, including the two-year review period (23 CCR § 355.2(e)), which is based on the statutory time-frame that applies to Plans but not alternatives (Water Code § 10733.4(d)); the “incomplete” status that allows the agency to address “one or more deficiencies that preclude approval, but which may be capable of being corrected by the Agency in a timely manner” (23 CCR § 355.2(e)(2)), which applies to plans undergoing development, but not alternatives that purportedly satisfy the objectives of SGMA at the time of their submission (Water Code § 10733.6(a)); and, for the same reason, corrective actions to address deficiencies in plans (23 CCR § 355.4(a)(4)), which applies to plans developed after the adoption of SGMA, but is inapplicable to alternatives that predate SGMA.

¹⁴ 23 CCR § 358.2(d), based on the statutory threshold of “whether the alternative satisfies the objectives of [SGMA] for the basin” (Water Code § 10733.6(a)).

the elements of a GSP required by Articles 5 and 7 of the GSP Regulations and are sufficient to demonstrate the ability of an alternative to achieve the objectives of SGMA.¹⁵ The explanation by the agency that elements of an alternative are functionally equivalent to elements of a GSP furthers the objective of demonstrating that an alternative satisfies the objectives of SGMA. Alternatives based on groundwater management plans or historical basin management practices that predate the passage of SGMA or adoption of GSP Regulations, although required to satisfy the objectives of SGMA, are not necessarily expected to conform to the precise format and content of a GSP. The Department's assessment is thus focused on the ability of an alternative to satisfy the objectives of SGMA as demonstrated by information provided by the agency; it is not a determination of the degree to which an alternative matched the specific requirements of the GSP Regulations.

When evaluating whether an alternative satisfies the objectives of SGMA and thus is likely to achieve the sustainability goal for the basin, staff review the information provided by and relied upon by the agency for sufficiency, credibility, and consistency with scientific and engineering professional standards of practice.¹⁶ The Department's review considers whether there is a reasonable relationship between the information provided and the assumptions and conclusions made by the agency, whether sustainable management criteria and projects and management actions described in an alternative are commensurate with the level of understanding of the basin setting, and whether those projects and management actions are feasible and likely to prevent undesirable results.¹⁷ Staff will recommend that an alternative be approved if staff believe, in light of these factors, that alternative has achieved or is likely to achieve the sustainability goal for the basin.¹⁸

An alternative that relies on an existing plan may be approved based on information that demonstrates the basin is being or will be managed sustainably based on groundwater management pursuant to that plan, including any related projects and management actions, as necessary. Even when staff review indicates that an alternative will satisfy the objective of SGMA, the Department may recommend actions to facilitate future evaluation of that alternative and to allow the Department to better evaluate whether an alternative adversely affects adjacent basins. DWR proposes that recommended actions be addressed by the submission date for the first periodic evaluation.

Staff assessment of an alternative involves the review of information presented by the agency, including models and assumptions, and an evaluation of that information based

¹⁵ 23 CCR § 358.2(d)

¹⁶ 23 CCR § 351(h)

¹⁷ 23 CCR § 355.4(b)(1), (3), and (5).

¹⁸ 23 CCR § 355.4(b)

on scientific reasonableness. The assessment does not require Department staff to recalculate or reevaluate technical information provided in an alternative or to perform its own geologic or engineering analysis of that information. The staff recommendation to approve an alternative does not signify that Department staff, were they to exercise the professional judgment required to develop a plan for the basin, would make the same assumptions and interpretations as those contained in an alternative, but simply that Department staff have determined that the assumptions and interpretations relied upon by the submitting agency are supported by adequate, credible evidence, and are scientifically reasonable.

III. Alternative Materials

The District submitted an alternative based on a groundwater management plan pursuant to Water Code Section 10733.6(b)(1). The Alternative thus relies primarily upon the following document:

- Santa Clara Valley Water District 2016 Groundwater Management Plan, November 2016 (Groundwater Management Plan *or* Plan).

The District submitted the following additional plans, reports, and other documents prepared prior to the implementation of SGMA that the Department has determined to be sufficiently related to the Groundwater Management Plan to warrant their consideration as part of the Alternative:

- Santa Clara Valley Water District, 2016, Annual Groundwater Report for Calendar Year 2015 (2015 Annual Report).
- Santa Clara Valley Water District, December 2014, Final Salt and Nutrient Management Plan – Llagas Subbasin (Salt and Nutrient Management Plan).
- Santa Clara Valley Water District, 2016, 2015 Urban Water Management Plan (2015 Urban Water Management Plan).
- Santa Clara Valley Water District, Online – Historical Groundwater Elevation Data, <https://gis.valleywater.org/groundwaterelevations/map.php>.
- Santa Clara Valley Water District Act (District Act), <https://www.valleywater.org/how-we-operate/about-the-water-district/district-act>.

The District submitted a Groundwater Management Plan Appendix B - Demonstration of Functional Equivalency of the Alternative to address the required Alternative Elements Guide. The District has also submitted Annual Reports.¹⁹ Other material submitted by the District, public comments, other documents submitted by third parties, correspondence,

¹⁹ The Annual Report is not part of the Alternative and was not reviewed by the Department for the purpose of approving the Alternative.

and other information provided to or relied upon by the Department have been posted on the Department's web site.

IV. Required Conditions

An alternative, to be evaluated by the Department, must be submitted by the statutory deadline and be within a basin that complies with Part 2.11 of Division 6 of the Water Code.²⁰ The submitted alternative must also be complete and must cover the entire basin.²¹

A. Submission Deadline

SGMA requires that an alternative for a Basin categorized as high- or medium-priority as of January 31, 2015, be submitted no later than January 1, 2017.²²

The Santa Clara Valley Water District submitted its Alternative on December 21, 2016, before the statutory deadline.

B. Part 2.11 (CASGEM) Compliance

SGMA requires that the Department assess whether an alternative is within a basin that is in compliance with Part 2.11 of Division 6 of the Water Code,²³ which requires that groundwater elevations in all groundwater basins be regularly and systematically monitored and that groundwater elevation reports be submitted to the Department.²⁴ To manage its obligations under this law, the Department established the California Statewide Groundwater Elevation Monitoring (CASGEM) Program. The acronym CASGEM is used in this document to denote both the program and the groundwater monitoring law.²⁵

SGMA specifies that an alternative does not satisfy the objectives of SGMA if the Basin is not in compliance with the requirements of CASGEM.²⁶ The Department confirmed that the Llagas Subbasin was in compliance with the requirements of CASGEM prior to evaluating the Alternative and confirmed that the Subbasin remained in compliance with CASGEM through the last reporting deadline prior to issuing this assessment.

²⁰ Water Code § 10733.6(c)-(d)

²¹ 23 CCR § 358.4(a)

²² Water Code § 10733.6(c). Pursuant to Water Code § 10722.4(d), a different deadline applies to a Basin that has been elevated from low- or very low-priority to high- or medium-priority after January 31, 2015.

²³ Water Code § 10733.6(d)

²⁴ Water Code § 10920 *et seq.*

²⁵ Stats.2009-2010, 7th Ex.Sess., c. 1 (S.B.6), § 1

²⁶ Water Code § 10733.6(d)

C. Completeness

GSP Regulations specify that the Department shall evaluate an alternative if that alternative is complete and includes the information required by SGMA and the GSP Regulations.²⁷ An alternative submitted pursuant to Water Code Section 10733.6(b)(1) must include a copy of the groundwater management plan and an explanation of how the elements of the Alternative are functionally equivalent to the elements of a Plan required by Articles 5 and 7 of the GSP Regulations and are sufficient to demonstrate the ability of the Alternative to achieve the objectives of SGMA.²⁸

The District submitted a completed and final 2016 Groundwater Management Plan for the Llagas Subbasin, complementary documents, as indicated above, and other materials as required. Department staff found the Alternative to be complete and containing the required information, sufficient to warrant an evaluation by the Department.

D. Basin Coverage

An alternative must cover the entire basin.²⁹ An alternative that is intended to cover the entire basin may be presumed to do so if the basin is fully contained within the jurisdictional boundaries of the submitting agency.

The jurisdictional boundaries of the Santa Clara Valley Water District cover the entire Llagas Subbasin.³⁰ The Districts' authority aligns with Santa Clara County's jurisdictional boundaries and wholly cover the Llagas Subbasin.

V. Alternative Contents

GSP Regulations require the submitting agency to explain how the elements of an alternative are functionally equivalent to the elements of a GSP as required by Article 5 of the GSP regulations³¹ and are sufficient to demonstrate the ability of an alternative to achieve the objectives of SGMA.³²

As stated previously, alternatives based on historical basin management practices that predate the passage of SGMA or adoption of GSP Regulations, although required to satisfy the objectives of SGMA, are not necessarily expected to conform to the precise

²⁷ 23 CCR § 358.4(a)(3)

²⁸ 23 CCR § 358.2(c)-(d)

²⁹ 23 CCR § 358.4(a)(4)

³⁰ SGMA Alternative Portal, Attachment B-3 (<https://sgma.water.ca.gov/portal/alternative/print/20>)

³¹ 23 CCR § 354-354.44

³² 23 CCR § 358.2(d). The requirements pertaining to Article 7 of the GSP Regulations (23 CCR § 356-356.4) relate to annual reports and periodic evaluation and are not applicable to review of the initial alternative.

format and content of a GSP, and the criteria for adequacy of an alternative is whether the Department is able to determine that an alternative satisfies the objectives of SGMA. Department staff rely on the submitting agency's determination of functional equivalence of alternative elements to facilitate its evaluation and assessment of an alternative (see Assessment, below). Although the exact components of a GSP are not required for an alternative, for organizational purposes the discussion of information contained in the Groundwater Management Plan and related documents provided by the District generally follows the elements of a GSP provided in Article 5 of the GSP Regulations. The reference to requirements of the GSP Regulations at the beginning of each section is to provide context regarding the nature of the element discussed but is not meant to define a strict standard applicable to alternatives.

A. Administrative Information

GSP Regulations require information identifying the submitting agency, describing the plan area, and demonstrating the legal authority and ability of the submitting agency to develop and implement a plan for that area.³³

The Groundwater Management Plan contains information describing the history, governance structure, and financial capabilities for the Santa Clara Valley Water District.³⁴ The Plan describes the structure that the District, a water wholesaler, uses to engage with the various water retailers; land use agencies; local, state, and federal agencies; and other stakeholders. A discussion and supporting documentation of the specific public outreach that was conducted as part of the Plan development is provided.³⁵

The District Act, established in 1929 to address the primary objectives of overdraft and subsidence, provides the District with the statutory authority to manage groundwater in the county, identifies the consideration of all beneficial uses and users, and defines the primary objectives for the Subbasin.³⁶ The description of the administration and groundwater management associated with the District Act implementation includes an overview of decades of engagement by a public agency responsible for managing the groundwater and surface water resources of the Subbasin. The District determined that, to meet water demand in the Subbasin and avoid adverse conditions, additional supply was necessary and developed agreements to receive surface waters from the San Francisco Public Utility Commission and the Central Valley Project through a series of projects to store and distribute these waters.³⁷ The Plan also describes the District's

³³ 23 CCR § 354.2 et seq.

³⁴ Groundwater Management Plan, Section 1-4, pp. 1-3

³⁵ Groundwater Management Plan, Appendix A

³⁶ District Act, Section 5(5)

³⁷ Groundwater Management Plan, Section 1.4.1, p. 1-8

ability to adapt to changing demands and conditions in the Subbasin, such as the evolution of land use from agricultural to urban and industrial, with concomitant changes to water quality protection efforts including hazardous materials storage permit requirements.³⁸ Other examples include conservation programs, recycled water programs, and cooperative engagement with the Regional Water Quality control boards to address point source contaminants from leaky underground storage tank sites and other significant industrial contaminant release sites.³⁹

B. Basin Setting

GSP Regulations require information about the physical setting and characteristics of the basin and current conditions of the basin, including a hydrogeologic conceptual model, a description of historical and current groundwater conditions, and an assessment of the water budget.⁴⁰

1. Hydrogeologic Conceptual Model

The GSP Regulations require a descriptive hydrogeologic conceptual model of the basin that includes a written description supported by cross sections and maps.⁴¹

The Groundwater Management Plan includes a hydrogeologic conceptual model that describes the lateral and vertical extents of the Basin, recharge areas, principal aquifers and aquitards, and significant faults within the Basin.⁴² The Plan describes the Subbasin as unconsolidated alluvial material with two main aquifers generally dipping to the southeast toward the Pajaro River. The Plan identifies “shallow aquifer zones” as those aquifer zones less than 150 below ground surface and “principal aquifer zones” as aquifer zones occurring generally at depths greater than 150 feet below ground surface.⁴³ The northwestern and margins of the Subbasin are largely unconfined and serve as recharge areas, while in the central and southeastern portions of the Subbasin the principal aquifer zone is confined and the shallow aquifer zone is unconfined.⁴⁴ The Subbasin ranges in thickness from a few feet on the eastern and western margins to about 500 feet in the middle of the northwestern end of the Subbasin and over 1,000 feet thick in the central southeastern end of the Subbasin.⁴⁵

³⁸ Groundwater Management Plan, Section 1.4.1, p. 1-9

³⁹ Groundwater Management Plan, Section 1.4.1, p. 1-9

⁴⁰ 23 CCR § 354.12 *et seq.*

⁴¹ 23 CCR § 354.14(a)

⁴² Groundwater Management Plan, Section 3.1, pp. 3-1 to 3-7

⁴³ Groundwater Management Plan, Section 3.1.3, p. 3-2

⁴⁴ Groundwater Management Plan, Figure 3-3, p. 3-3

⁴⁵ Groundwater Management Plan, Figures 3-3 to 3-6, pp. 3-3 to 3-6

2. Groundwater Conditions

The GSP Regulations require a description of historical and current groundwater conditions in the basin that includes information related to groundwater elevations, groundwater storage, seawater intrusion, groundwater quality, subsidence, and interconnected surface water, as applicable. The GSP Regulations also require an identification of groundwater dependent ecosystems.⁴⁶

The Groundwater Management Plan characterizes current and historical groundwater conditions in the Llagas Subbasin, including groundwater elevations, land subsidence, surface water and groundwater interactions, and water quality.⁴⁷ Additional or supporting information regarding groundwater conditions in the Basin are provided in the District's 2015 Annual Report, online historical groundwater elevation data, Salt and Nutrient Management Plan, and the 2015 Urban Water Management Plan which were submitted to the Department as part of the Alternative.

The District provides information about current groundwater elevations in contour maps representing spring and fall conditions from its most recent annual report,⁴⁸ and provides maps from 2012 in the Plan, which the District describes as characterizing "typical" Subbasin conditions.⁴⁹ These maps illustrate the general groundwater flow directions and the change in seasonal flow patterns associated with recharge operations and typical pumping conditions and depressions. The Plan provides a hydrograph from an "index well" that illustrates periods of drawdown during droughts in the late 1970s and late 1980s/early 1990s followed by subsequent recovery, as well as drawdown beginning in 2011 following the recent drought. Historical Groundwater Elevation Data, showing groundwater elevation trends for wells monitored in the Subbasin, is made available online for public review.⁵⁰

The District estimated the operational storage in the Subbasin to range between 152,000 to 165,000 acre-feet based on estimated aquifer properties of specific yield, area, and groundwater elevation changes.⁵¹ The range was based on a high and low water elevation for years 1982-1983 and 1976-1977, respectively. The District does not provide an estimate of the total Subbasin storage but states that the operational range of storage was set to be less than total Subbasin storage to avoid adverse impacts.⁵² The Groundwater Management Plan presents a graphical representation of the annual

⁴⁶ 23 CCR § 354.16

⁴⁷ Groundwater Management Plan, Section 3.2, p. 3-8

⁴⁸ 2015 Annual Groundwater Report, Figures 14, 15, 16, pp. 21-23

⁴⁹ Groundwater Management Plan, Section 3.2.1, p. 3-8

⁵⁰ Historical Groundwater Elevation Data, <https://gis.valleywater.org/GroundwaterElevations/map.php>

⁵¹ Groundwater Management Plan, Section 4.4.2.3, p. 4-16

⁵² Groundwater Management Plan, Section 4.4.2.3, p. 4-16

change in storage from 1987 to 2016.⁵³ The Plan described that numerical modeling estimations of operational storage will be evaluated to determine if refinement of the operational storage estimate is necessary.

The Plan describes that a 2005 study by researchers from University of California, Berkeley, found no evidence of long-term subsidence.⁵⁴ The study evaluated InSAR satellite imagery from the period from 1992 to 2000 and, while elastic subsidence was observed during seasonal wet and dry conditions, no inelastic subsidence was found.⁵⁵

The Plan identifies the Llagas Subbasin as an interior subbasin that is not located near any saltwater bodies and, therefore, the Subbasin is not vulnerable to seawater intrusion (see Seawater Intrusion, below).⁵⁶

The Groundwater Management Plan describes and characterizes water quality conditions within the Llagas over the period of 2006 to 2015 and states that the District has monitored water quality conditions regularly since the 1980's.⁵⁷ The District maintains a water quality monitoring network of 36 wells in the Subbasin, but also includes water quality data from public water supply wells, domestic well testing, recycled water monitoring programs, and from other regulatory agencies (see Monitoring Networks, below).⁵⁸ The Groundwater Management Plan includes maps showing the distribution of key constituents with respect to maximum contaminant levels (MCL) and secondary maximum contaminant level (SMCL).⁵⁹ The Plan states that the groundwater in the Subbasin is generally of good quality and does not require treatment beyond disinfection at public water supply wells.⁶⁰ However, the Plan identifies that nitrate and perchlorate detections in domestic wells presents an "ongoing groundwater protection challenge".⁶¹ Perchlorate is noted to be from a former highway safety flare plant and the Plan states that the District's recharge activities, removal of perchlorate from the source area, and other remediation efforts have combined to reduce the occurrence in the Subbasin, with fewer than 10 domestic wells requiring treatment or replacement water sources.⁶² Nitrate in the Subbasin is attributed to man-made sources including application of fertilizers and from septic systems. A map of nitrate concentrations in the Plan indicates that elevated concentrations occur

⁵³ Groundwater Management Plan, Figure 4-13, p. 4-16

⁵⁴ Bürgmann and Johanson, South County Subsidence Study – Phase I and Phase II, University of California, Berkeley, 2005.

⁵⁵ Groundwater Management Plan, Section 3.2.2, p. 3-10

⁵⁶ Groundwater Management Plan, Section 3.2.5, p. 3-19

⁵⁷ Groundwater Management Plan, Section 3.2.4, p. 3-12

⁵⁸ Groundwater Management Plan, Section 7.3.1.1, p. 7-9

⁵⁹ Groundwater Management Plan, Figures 3-14 and 3-15, pp. 3-15 to 3-16

⁶⁰ Groundwater Management Plan, Section 3.2.4, p. 3-12

⁶¹ Groundwater Management Plan, Section 3.2.4, p. 3-12

⁶² Groundwater Management Plan, Figure 3-13, p. 3-14

throughout the Subbasin.⁶³ The District has a nitrate treatment system rebate program to promote the purchase and installation of nitrate treatment systems for domestic well owners.⁶⁴

In association with the Districts' recycled water program, a detailed analysis of the Subbasin-wide salt and nutrient loading was presented in the Salt and Nutrient Management Plan. The Salt and Nutrient Plan was prepared with respect to the Central Coast Regional Water Quality Control Board's Basin Plan water quality objectives for identified beneficial uses and users. The Salt and Nutrient Management Plan presents additional information regarding the existing and projected trends of total dissolved solids and nitrates associated with additional salt and nutrient loading within the Basin using an assimilative capacity analysis.⁶⁵ The Groundwater Management Plan provides a map of locations of known contaminated sites managed by other regulatory agencies.⁶⁶

As described in the Groundwater Management Plan, the District utilizes the creeks and streams as part of its management practices to recharge groundwater in the Subbasin.⁶⁷ The District describes that its recharge activities are an important factor in maintaining flows in the surface water bodies in the Subbasin, many of which would only flow intermittently in the absence of that recharge.⁶⁸ Surface water bodies are described as being generally disconnected from groundwater and the District states they are not aware of any areas where groundwater pumping has a significant or unreasonable effect on interconnected surface water.⁶⁹

The Plan describes two prominent wetlands along the southern Subbasin boundary. The Uvas-Carnadero wetlands are located in the southwestern corner of the Subbasin and represent an area of groundwater upwelling as it flows south into San Benito County. The Soap Lake area wetlands are located along the southeastern boundary and their source of water is believed to be from flooding and poorly draining soils.⁷⁰ The District provides a historical ecology map to serve as an indicator of historic stream conditions and vegetation types that may have once been associated with shallow groundwater.⁷¹ The Plan presents a map of depth to first groundwater based on leaking underground storage

⁶³ Groundwater Management Plan, Figure 3-14, p. 3-15

⁶⁴ Groundwater Management Plan, Section 6.2.4, p. 6-12

⁶⁵ Salt and Nutrient Management Plan, Section 4.3, p. 20

⁶⁶ Groundwater Management Plan, Figure 6-2, p. 6-17

⁶⁷ Groundwater Management Plan, Section 2.2.3, p. 2-17

⁶⁸ Groundwater Management Plan, Section 2.2.3, p. 2-14

⁶⁹ Groundwater Management Plan, Section 3.2.3, p. 3-10

⁷⁰ Groundwater Management Plan, Section 3.2.3, p. 3-10

⁷¹ Groundwater Management Plan, Figure 3-11, p. 3-11

tank sites, indicating where shallow groundwater may occur and be associated with surface water.⁷²

3. Water Budget

GSP Regulations require a water budget for the basin that provides an accounting and assessment of the total annual volume of groundwater and surface water entering and leaving the basin, including historical, current and projected water budget conditions, and the change in the volume of water stored, as applicable.⁷³

The Groundwater Management Plan provides a description of countywide water supply, demand, and management for both the Santa Clara and the Llagas subbasins.⁷⁴ The Plan provides a quantification of the groundwater budget summarizing natural and managed inflows and outflows for a period of 2003 through 2012. This 10-year period was selected due to a representative distribution of dry, wet, and normal years, without incorporating periods of exceptionally dry years.⁷⁵ Over that period, the Llagas Subbasin had a total inflow of approximately 47,000 acre-feet per year, with 24,000 acre-feet per year coming from managed recharge sources, and a total outflow of 47,000 acre-feet per year, with 44,000 acre-feet per year attributed to groundwater pumping and 3,000 acre-feet per year discharging to the adjacent basin. The average change in storage over that time period was zero.⁷⁶ The Plan notes that the groundwater budget was developed through use of a groundwater flow model, which is briefly described in the Plan.⁷⁷ Additional detail on the model as it was originally developed in 2005 was found in the consultant report, although the Plan indicates the model has been updated since that time.⁷⁸

Anticipated future demands are described in the Plan and the 2015 Urban Water Management Plan. The Plan describes that municipal demand is projected to increase from the “current long-term average” of 44,000 acre-feet per year to 47,000 acre-feet per year by 2020 and then to 53,000 acre-feet per year by 2040; no change is expected for agricultural and “independent (non-retailers)” pumpers.⁷⁹ The 2015 Urban Water Management Plan provides descriptions of projected water demand through 2040 for various water use sectors which, consistent with the descriptions in the Groundwater

⁷² Groundwater Management Plan, Figure 3-12, p. 3-12

⁷³ 23 CCR § 354.18

⁷⁴ Groundwater Management Plan, Sections 4.1 to 4.3, pp. 4-1 to 4-6

⁷⁵ Groundwater Management Plan, Section 4.4, p. 4-7

⁷⁶ Groundwater Management Plan, Table 4-6, p. 4-17

⁷⁷ Groundwater Management Plan, Section 7.6.2, p. 7-32

⁷⁸ CH2MHill, Llagas Basin Numerical Groundwater Model Report, 2005 – Entire Report

⁷⁹ Groundwater Management Plan, Section 4.5, p. 4-18

Management Plan, indicates an anticipated steady increase in population and water demand by water retailers.⁸⁰

4. Management Areas

GSP Regulations authorizes, but does not require, an agency to define one or more management areas within a basin if the agency has determined that creation of management areas will facilitate implementation of the GSP.⁸¹

The District did not identify any specific management areas for the Llagas Subbasin in its Groundwater Management Plan.

C. Sustainable Management Criteria

GSP Regulations require a sustainability goal that defines conditions that constitute sustainable groundwater management for the basin, the characterization of undesirable results, and establishment of minimum thresholds and measurable objectives for each applicable sustainability indicator, as appropriate.⁸²

1. Sustainability Goal

GSP Regulations require that sustainable management criteria include a sustainability goal that culminates in the absence of undesirable results within the appropriate timeframe, and includes a description of the sustainability goal, describes information used to establish the goal for the basin, describes measures that will be implemented to ensure the basin operates within its sustainable yield, and contains an explanation of how the sustainability goal will be met.⁸³

The Groundwater Management Plan describes the correlation of the sustainable management criteria defined in SGMA with the driving principles of the District Act.⁸⁴ The Plan identifies two sustainability goals: (1) “groundwater supplies are managed to optimize water supply reliability and minimize subsidence”, and (2) “groundwater is protected from contamination, including salt water intrusion”.⁸⁵ The implementation of groundwater management activities associated with the District Act resulted in establishing organizational terminology and policy to implement the necessary actions to

⁸⁰ 2015 Urban Water Management Plan, Section 4.2, p. 4-2

⁸¹ 23 CCR § 354.20

⁸² 23 CCR § 354.22

⁸³ 23 CCR § 354.24

⁸⁴ Groundwater Management Plan, Section 5.1, p. 5-1

⁸⁵ Groundwater Management Plan, Section 5.2, p. 5-2

achieve these objectives. Figure 5-1 and 5-2 of the Plan illustrate the policy framework and definitions of the sustainability goals down to specific measurable outcomes.⁸⁶

2. Sustainability Indicators

GSP Regulations specify that an agency define conditions that constitute sustainable groundwater management for a basin, including the characterization of undesirable results and the establishment of minimum thresholds and measurable objectives for each applicable sustainability indicator.⁸⁷

Sustainability indicators are defined as any of the effects caused by groundwater conditions occurring throughout the basin that, *when significant and unreasonable*, cause undesirable results.⁸⁸ Sustainability indicators thus correspond with the six undesirable results – chronic lowering of groundwater levels indicating a depletion of supply if continued over the planning and implementation horizon, reduction of groundwater storage, seawater intrusion, degraded water quality, including the migration of contaminant plumes that impair water supplies, land subsidence that substantially interferes with surface land uses, and depletions of interconnected surface water that have adverse impacts on beneficial uses of the surface water⁸⁹ – but refer to groundwater conditions that are not, in and of themselves, significant and unreasonable. Rather, sustainability indicators refer to the effects caused by changing groundwater conditions that are monitored, and for which criteria in the form of minimum thresholds are established by the agency to define when the effect becomes significant and unreasonable, producing an undesirable result.

This section thus consolidates three facets of sustainable management criteria: undesirable results, minimum thresholds, and measurable objectives. Information pertaining to the processes and criteria relied upon to define undesirable results applicable to the basin, as quantified through the establishment of minimum thresholds, are addressed for each sustainability indicator. However, a submitting agency is not required to establish criteria for undesirable results that the agency can demonstrate are not present and are not likely to occur in a basin.⁹⁰

⁸⁶ Groundwater Management Plan, Section 5.1, pp. 5-1 to 5-2

⁸⁷ 23 CCR § 354.22

⁸⁸ 23 CCR § 351(ah)

⁸⁹ Water Code § 10721(x)

⁹⁰ 23 CCR § 354.26(d)

a. Chronic Lowering of Groundwater Levels

GSP Regulations specify that the minimum threshold for chronic lowering of groundwater levels be based on groundwater elevations indicating a depletion of supply that may lead to undesirable results.⁹¹

The District does not manage the Subbasin to specific groundwater-level thresholds. Instead, the District uses a threshold for end-of-year groundwater storage (see Reduction of Groundwater Storage, below). However, water levels are monitored throughout the year to “support groundwater supply assessment and forecasting, recharge operations, efforts to monitor concentrated pumping and land subsidence, and other purposes.”⁹²

b. Reduction of Groundwater Storage

GSP Regulations specify that the minimum threshold for reduction of groundwater storage shall be a total volume of groundwater that can be withdrawn from the basin without causing conditions that may lead to undesirable results.⁹³

The Groundwater Management Plan describes an end-of-year groundwater storage target of 17,000 acre-feet for the Llagas Subbasin.⁹⁴ The District’s Functional Equivalency Report cites the sections of the Plan describing the storage targets as being equivalent to the minimum thresholds required in a GSP.⁹⁵ The storage targets were derived from the District’s 2015 Urban Water Management Plan, which identified a combined storage target of 300,000 acre-feet for the Santa Clara and Llagas subbasins as the bottom of the “normal” range where no contingency actions are needed.⁹⁶ The Urban Water Management Plan provides additional details of the storage analysis and describes subsequent contingency actions to be taken if the end-of-year storage targets are not met.⁹⁷ The 2015 Annual Groundwater Report describes that the end-of-year storage volumes were not met in 2015 (a drought year), when a total of approximately 13,900 acre-feet of groundwater was in storage.⁹⁸ This condition triggered a countywide water use reduction of 30 percent in 2015, which was reduced to a 20 percent reduction in 2016; the water use reduction triggers were described as being consistent with District’s Water Shortage Contingency Plan.⁹⁹

⁹¹ 23 CCR § 354.28(c)(1)

⁹² Groundwater Management Plan, Section 7.1.1, p. 7-1

⁹³ 23 CCR § 354.28(c)(2)

⁹⁴ Groundwater Management Plan, Section 5.4.1, p. 5-6

⁹⁵ Groundwater Management Plan, Appendix B, p. B-13

⁹⁶ Groundwater Management Plan, Section 5.4.1, p. 5-6

⁹⁷ 2015 Urban Water Management Plan, Table 8-1, p. 8-3

⁹⁸ 2015 Annual Groundwater Report, Section 3.2, p. 24

⁹⁹ 2015 Annual Groundwater Report, Section 3.2, p. 19

c. Seawater Intrusion

GSP Regulations specify that the minimum threshold for seawater intrusion be defined by a chloride concentration isocontour for each principal aquifer where seawater intrusion may lead to undesirable results.¹⁰⁰

As noted above (see Groundwater Conditions), the District identified that the Llagas Subbasin is not vulnerable to seawater intrusion due to the landlocked, interior location of the subbasin and no criteria for this sustainability indicator were provided in the Plan.

d. Degraded Water Quality

GSP Regulations specify that the minimum threshold for degraded water quality shall be the degradation of water quality, including the migration of contaminant plumes that impair water supplies or other indicator of water quality as determined by the agency that may lead to undesirable results.¹⁰¹

The Plan describes two water quality outcome measures for the plan area, which covers both the Santa Clara and Llagas subbasins. The first outcome measure is that at least 95 percent of countywide water supply wells meet primary drinking water standards and 90 percent of wells in the “South County” area (comprised of the Llagas Subbasin and the adjacent Coyote Valley management area of the Santa Clara Subbasin) meet agricultural objectives defined in the Regional Water Quality Control Board’s Basin Plan.¹⁰² The Plan describes that this outcome measure is primarily related to groundwater that is used (i.e., extracted) and, because most groundwater is extracted from the principal aquifer zone, only wells in that zone are tracked for this measure.¹⁰³ The 2015 Annual Report describes that the drinking water component of this outcome measure was not met in 2015, when 84 percent of wells met primary drinking water standards.¹⁰⁴ The 2015 Annual Report explained that all of the instances where drinking water standards were not met were due to nitrate detections in domestic wells located in the “South County” area. The agricultural water quality component of the outcome measure was met in 2015, with 98 percent of wells meeting agricultural water quality objectives.

The second outcome measure is that at least 90 percent of wells county-wide in both the shallow and principal aquifer zones have stable or decreasing concentrations of nitrate, chloride, and total dissolved solids.¹⁰⁵ The 2015 Annual Report describes that the nitrate and total dissolved solids components of this outcome measure were met in 2015, but

¹⁰⁰ 23 CCR § 354.28(c)(3)

¹⁰¹ 23 CCR § 354.28(c)(4)

¹⁰² Groundwater Management Plan, Section 5.4.3, p. 5-7

¹⁰³ Groundwater Management Plan, Section 5.4.3, p. 5-7

¹⁰⁴ 2015 Annual Groundwater Report, Section 5, p. 34

¹⁰⁵ Groundwater Management Plan, Section 5.4.3, p. 5-8

that it was not met for chloride, when 84 percent of wells showed stable or decreasing chloride concentrations.

e. Land Subsidence

GSP Regulations specify that the minimum threshold for land subsidence shall be the rate and extent of subsidence that substantially interferes with surface land uses and may lead to undesirable results.¹⁰⁶

The District has not provided sustainable management criteria for subsidence in the Llagas Subbasin. As noted above (see Groundwater Conditions), the Plan states that technical studies support that there is no evidence for long-term inelastic subsidence in the Subbasin.¹⁰⁷

f. Depletion of Interconnected Surface Water

GSP Regulations specify that the minimum threshold for depletions of interconnected surface water shall be the rate or volume of surface water depletions caused by groundwater use that has adverse impacts on beneficial uses of the surface water and may lead to undesirable results.¹⁰⁸

The Plan does not identify any management criteria related to depletions of interconnected surface water in the Llagas Subbasin. The District notes that streams and creeks in the Subbasin are largely disconnected and that flows in those surface water bodies would only occur intermittently if not for the District's recharge activities.¹⁰⁹ The Plan identifies that interconnected surface water potentially only occurs in a discrete southwestern wetland area of the Llagas Subbasin associated with the area where groundwater discharges south into San Benito County (see Groundwater Conditions, above).

D. Monitoring Networks

GSP Regulations require that each basin be monitored, and that a monitoring network include monitoring objectives, monitoring protocols, and data reporting requirements be developed that shall promote the collection of data of sufficient quality, frequency, and distribution to characterize groundwater and related surface water conditions in the basin and evaluate changing conditions.¹¹⁰

¹⁰⁶ 23 CCR § 354.28(c)(5)

¹⁰⁷ Groundwater Management Plan, Section 3.2.2, p. 3-10

¹⁰⁸ 23 CCR § 354.28(c)(6)

¹⁰⁹ Groundwater Management Plan, Section 3.2.3, p. 3-10

¹¹⁰ 23 CCR § 354.32

The District describes the groundwater level, water quality, and surface water (flow and quality) monitoring programs in place to measure progress or maintenance of the District's outcome measures and sustainability goals.

Groundwater level monitoring includes a network of 58 wells distributed throughout the Subbasin and monitored directly by the District.¹¹¹ The District provides descriptions of the monitoring well network including total depth, screen interval (provided for less than half of the monitoring wells), well type, monitoring frequency, and other details.¹¹² Nearly all of the District monitoring wells are monitored no less frequent than monthly. The Groundwater Management Plan provides a description of the accuracy associated with various methods used to determine wellhead elevation (i.e., wellhead survey, interpolation from topographic maps, or interpolation from lidar data).¹¹³ The Plan notes that wellhead elevations for approximately half of the wells monitored by the District were determined by surveying, which is the method associated with the highest accuracy, and that the District is working to survey the remaining wells as resources allow.¹¹⁴

The District maintains a water quality monitoring network of 36 wells¹¹⁵ (15 in the shallow aquifer zone and 21 in the principal aquifer zone) that are sampled annually for trace elements, ions, nutrients, and field parameters (e.g., pH, specific conductance, and temperature), and every three years for volatile organic compounds.¹¹⁶ The District also obtains water quality sampling results from public water supply wells,¹¹⁷ domestic wells tested as part of the District's free basic water quality testing program,¹¹⁸ recycled water monitoring programs,¹¹⁹ and groundwater quality data from other regulatory agencies (including the Water Board's Groundwater Ambient Monitoring and Assessment and Irrigated Lands Regulatory Program).¹²⁰

Surface water monitoring described by the District includes the evaluation of water quality and discharge of surface waters within the Subbasin to properly manage recharge efforts.¹²¹ The District identifies the sampling locations for water quality and discharge

¹¹¹ Groundwater Management Plan, Section 7.1.1, pp. 7-1 to 7-3

¹¹² Groundwater Management Plan, Appendix E, p. E-13

¹¹³ Lidar (or LiDAR) refers to "light detection and ranging", a laser-based remote-sensing technology that is capable of penetrating overlying vegetation and forest canopies. (Arlen F. Chase, et al., Geospatial revolution in Mesoamerican archaeology, Proc. Nat. Acad. Sciences, Aug 2012, 109 (32) 12916-12921; DOI: 10.1073/pnas.1205198109x)

¹¹⁴ Groundwater Management Plan, Section 7.1.2.1, p. 7-3

¹¹⁵ Groundwater Management Plan, Section 7.3.1.1, p. 7-9

¹¹⁶ Groundwater Management Plan, Section 7.3, p. 7-9

¹¹⁷ Groundwater Management Plan, Section 7.3.2, p. 7-13

¹¹⁸ Groundwater Management Plan, Section 7.3.3, p. 7-14

¹¹⁹ Groundwater Management Plan, Section 7.3.4, p. 7-15

¹²⁰ Groundwater Management Plan, Section 7.3.5, pp. 7-19 to 7-20

¹²¹ Groundwater Management Plan, Section 7.4.1, p. 7-23

locations throughout the Subbasin.¹²² Water quality samples are collected at six stream recharge system sites on a triennial rotating basis during both dry and wet seasonal conditions with 90 samples being collected in total over the three-year period (District wide).¹²³ In addition to collecting surface water quality and discharge data, the District coordinates and incorporates data from other agencies and programs including the Central Coast Regional Water Quality Control Board's Ambient Monitoring program.

Data collected as part of the District's monitoring programs are stored in databases and are largely available on the District's websites. The monitoring data is incorporated into various reporting structures that regularly inform management actions by the District, these include: Water Tracker (monthly), Monthly Groundwater Condition Report, Protection and Augmentation of Water Supplies Report (annual), and the Annual Groundwater Report.¹²⁴ These data and reports support ongoing modelling efforts to support the District's forecasting ability and ongoing evaluation of conditions in the Subbasin.

E. Projects and Management Actions

GSP Regulations require a description of the projects and management actions the submitting agency has determined will achieve the sustainability goal for the basin, including projects and management actions to respond to changing conditions in the basin.¹²⁵

The Groundwater Management Plan provides a portfolio of projects and management actions that are currently being implemented by the District or other agencies to address County-wide sustainability goals. The District also explains that the District Act provides the authority to advance additional projects on an as-needed basis through the capital improvement program.¹²⁶ The Plan organizes these projects and management actions into three primary categories: projects supporting groundwater reliability, groundwater quality, and surface water - groundwater interactions.

Programs to maintain reliable groundwater supply include managed aquifer recharge, in-lieu recharge, protection of natural recharge, groundwater production management, water accounting, groundwater level and storage assessments, and asset management.¹²⁷ Programs to protect groundwater quality include a well ordinance program, domestic well testing program, salt and nutrient management, nitrate treatment system rebate program,

¹²² Groundwater Management Plan, Figure 7-14, p. 7-25

¹²³ Groundwater Management Plan, Section 7.4, p. 7-23

¹²⁴ Groundwater Management Plan, Section 7.5, p. 7-28

¹²⁵ 23 CCR § 354.44

¹²⁶ Groundwater Management Plan, Section 6.0, p. 6-1

¹²⁷ Groundwater Management Plan, Section 6.1, p. 6-1

vulnerability assessment studies, coordination with land use agencies, coordination with regulatory agencies, and public outreach.¹²⁸ Programs related to surface water - groundwater interaction provide ongoing integrated management of these resources serve to address both reliability and quality needs of the beneficial uses and users in the Basin and include the managed in-stream releases of surface water, stormwater management, prevention of salt water intrusion, and watershed management.¹²⁹

VI. Assessment

The following describes the evaluation and assessment of the Alternative for the Llagas Subbasin as determined by Department staff. In undertaking this assessment, Department staff do not conduct geologic or engineering studies, although Department staff may rely on publicly available geologic or engineering or other technical information to verify claims or assumptions presented in the Alternative.¹³⁰ As discussed above, Department staff have determined that the Llagas Alternative satisfied the conditions for submission of an alternative.¹³¹ The Alternative was submitted within the statutory period, the Subbasin was found to be in compliance with the reporting requirements of CASGEM, and staff find the Alternative to be complete and to cover the entire basin (see Required Conditions, above). Based on its evaluation and assessment of the Llagas Alternative, as discussed below, Department staff find that the Alternative satisfies the objectives of SGMA.¹³²

A. Evaluation of Alternative Contents

The District describes in sufficient detail its authority to manage groundwater within its statutory boundaries, which encompasses the Llagas Subbasin. The Groundwater Management Plan and the District Act document the legal authority and describe past and planned future authority to implement and finance necessary projects. The District describes the evolution of the District dating back to 1929 with the Santa Clara Valley Water Conservation District charged with the initial mission of stopping groundwater overdraft and subsidence. Since that time the District has grown through consolidation and annexation of other flood control and water districts. The District has demonstrated implementation of numerous projects and management actions to address the primary drivers of flood control, water reliability, and water quality conditions in the County. The District has funded and cooperated with numerous studies to characterize groundwater

¹²⁸ Groundwater Management Plan, Section 6.2, p. 6-9

¹²⁹ Groundwater Management Plan, Section 6.3, p. 6-18

¹³⁰ Instances where the Department review relied upon publicly available data that was not part of the Alternative are specifically noted in the assessment.

¹³¹ 23 CCR § 358.4(a)

¹³² Water Code § 10733.6(a); and 23 CCR § 358.4(b)

conditions in the County for a variety of factors to inform management strategies. That history of management in the County provides a reasonable level of confidence that the District can continue implementation of the Groundwater Management Plan to meet its sustainability goals.

The Groundwater Management Plan and associated technical studies and plans demonstrate a sufficient understanding of the basin setting, including the geology and groundwater conditions of the Llagas Subbasin. The Plan and supporting technical studies, including the 2015 Annual Report, 2015 Urban Water Management Plan, and the Salt and Nutrient Management Plan appear to rely on best available information and best available science, and their conclusions are consistent with the Department's understanding of conditions in the Llagas Subbasin. The hydrogeologic conceptual model described in the Plan incorporates the relevant hydrologic processes in the entire basin to support analysis presented. The use of numerical models in the Basin to support operational and long-term planning decisions also provide support for water budget estimates. The District's numerical models are used to provide on-going estimates of groundwater storage to support management actions of required replenishment activities. The District's understanding of the basin setting is adequate to develop and implement a plan for sustainable groundwater management. However, Department staff recommend the District address identification of groundwater dependent ecosystems (see Recommended Action 1) and incorporate climate change into its projected water budget (see Recommended Action 2).

The Plan identifies sustainability goals for the County and specific, quantitative outcome measures for groundwater storage in the Llagas Subbasin and water quality in the combined Santa Clara and Llagas subbasins. The District's storage outcome measure is an end-of year storage target of 17,000 acre-feet in the Llagas Subbasin. The District has identified specific actions that occur if that storage target is not met, as defined in the 2015 Urban Water Management Plan. Water quality outcome measures utilize primary drinking water standards and Central Coast Regional Water Quality Control Board Basin Plan agricultural water quality standards. The water quality outcome measure address both the number of detections above the identified thresholds and trends of key constituents identified for the County. Department staff recommend that the water quality outcome measures, which in the Plan are defined County-wide (i.e., they are set based on water quality in both the Santa Clara and Llagas subbasins), be refined in future updates to the Alternative with separate quantitative measures specific to the respective subbasins (see Recommended Action 3). The District already reports water quality detections and trends separately by subbasin but, as presently configured in the Plan, it is not possible to determine whether failure to achieve the outcome measures represents

an undesirable result for both subbasins or whether the undesirable result is applicable to a specific subbasin.¹³³

Additionally, the outcome measures defined by the District are the only quantitative standards outlined in the Plan and, as indicated in the 2015 Annual Groundwater Report, several of those standards were not met in 2015 (e.g., for end-of-year storage). While alternatives are not required to follow the exact format of a GSP, the GSP Regulations do outline a process for GSP development that includes quantitative standards both for measurable objectives, which represent conditions that the basin is operated toward; and minimum thresholds, which represent conditions that generally are to be avoided so as to not cause undesirable results. It was not clear to Department staff whether those outcome measures were generally more equivalent to measurable objectives or minimum thresholds but, in the absence of any other quantifiable standard, the Department's ongoing review of whether the Alternative satisfies the objectives of SGMA will focus on whether the District is able to meet those outcomes to avoid undesirable results in the Subbasin. If the outcome measures are more equivalent to measurable objectives and there is another metric that is generally more representative of conditions that the District intends to avoid in the Subbasin to prevent undesirable results, then the District should provide those metrics in an update to the Alternative (see Recommended Action 4).

The District describes specific monitoring networks that address groundwater levels, groundwater quality, surface water quality, and surface water flows and the data collected from these locations typically represent long periods of observations. The distribution of dedicated monitoring wells and other monitoring sites appears to be reasonable based upon the description of the hydrogeologic system. The data provide an adequate and reasonable distribution of direct observations of conditions within the Basin to allow for informed decisions and planning for sustainable groundwater management. The frequency of data collected from the monitoring networks is adequate to characterize the seasonal variability and management-action based variability of the groundwater and related systems.

The District's management actions and projects related to groundwater management, which include direct managed recharge, in-lieu recharge, protection of natural recharge, management of groundwater production, water accounting, groundwater storage assessments, and asset management (i.e., maintenance of infrastructure) appear to have resulted in significant progress in meeting County-wide sustainability goals and toward meeting the outcome measures for storage and water quality applicable to the Llagas Subbasin. The groundwater conditions described in the Plan illustrate the maintenance of the targeted conditions, with exception of drought periods where additional prescribed

¹³³ 2015 Annual Groundwater Report, Table 8, p. 37

actions were implemented, such as water conservation and withdrawal of banked water. Continued implementation of planned projects, programs, and coordinated effort on water quality objectives will likely result in continued progress toward meeting the goals and outcome measures. The District describes a clear process for development, funding, and implementation of necessary projects to support the sustainability goals.

The Groundwater Management Plan for the Llagas Subbasin is specifically designed to manage groundwater supplies to optimize water supply reliability and to protect the basin against undesirable results including overdraft and groundwater contamination, and so appears consistent with Water Code Section 106.3, which establishes the state policy that “every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.” Department staff consider that the Groundwater Management Plan, which utilizes natural waterways in the basin to recharge the aquifers, appears also to be consistent with the public trust doctrine.

B. Recommended Actions

The following recommended actions include information that the District may wish to include in the first five-year update of the Alternative to facilitate the Department’s ongoing evaluation and assessment of the Alternative as well as recommendations for improvements to the Alternative.

Recommended Action 1.

Staff recommend that the District provide an identification of groundwater dependent ecosystems in the Subbasin.

Recommended Action 2.

Staff recommend that the District provide a projected water budget incorporating climate change over the planning and implementation horizon of 50 years.

Recommended Action 3.

Staff recommend that the District create separate outcome measures related to water quality in the Santa Clara and Llagas subbasins. Separate subbasin-specific criteria will allow for a determination of whether each subbasin, separately, is meeting or making progress toward the outcome measures.

Recommended Action 4.

The District should clarify how meeting its outcome measures relates to the avoidance of undesirable results in the Llagas Subbasin. Specifically, it should clarify whether not meeting the outcome measures represents an undesirable result for the applicable sustainability indicator. If the intent of the outcome measures is not to represent

undesirable results, the District should provide additional clarification about their purpose. In addition, the District should provide metrics that it can use and can be used by the Department to objectively assess the presence or absence of undesirable results.



Sustainable Groundwater Management Program Alternative Assessment Summary Santa Clara Subbasin

Determination: APPROVED

Submitting Agency:

Santa Clara Valley Water District (SCVWD)

Alternative Type:

Groundwater Management Plan

Assessment Summary:*

- The alternative prepared by SCVWD satisfied the objectives of the Sustainable Groundwater Management Act (SGMA) by successfully demonstrating that the agency's existing groundwater management plan is likely to lead to sustainable groundwater management for the Santa Clara Subbasin within the statutory timelines identified in SGMA.
- The alternative demonstrated a long history of meeting the requirements of the SCVWD Act, and that SCVWD has sustainably managed groundwater resources to meet the demands of the beneficial uses and users.
- The alternative included an acceptable hydrogeologic conceptual model that describes the basin, a well-developed monitoring network, analytical tools, and quantified projects and management actions that allow SCVWD to maintain groundwater conditions at, or near, the sustainability goal for the basin.
- SCVWD, which was identified as an exclusive local agency in SGMA and is the exclusive groundwater sustainability agency within its service area in the basin, has sufficient authority to implement the groundwater management plan.
- The Department of Water Resources provided recommendations for SCVWD to address in its first five-year update to the alternative, which is due in January 2022. The recommendations are related to clarification of the quantifiable outcome measures, identifying groundwater dependent ecosystems, and incorporating climate change analysis into the water budget.





Sustainable Groundwater Management Program Alternative Assessment Summary Llagas Area Subbasin

Determination: APPROVED

Submitting Agency:

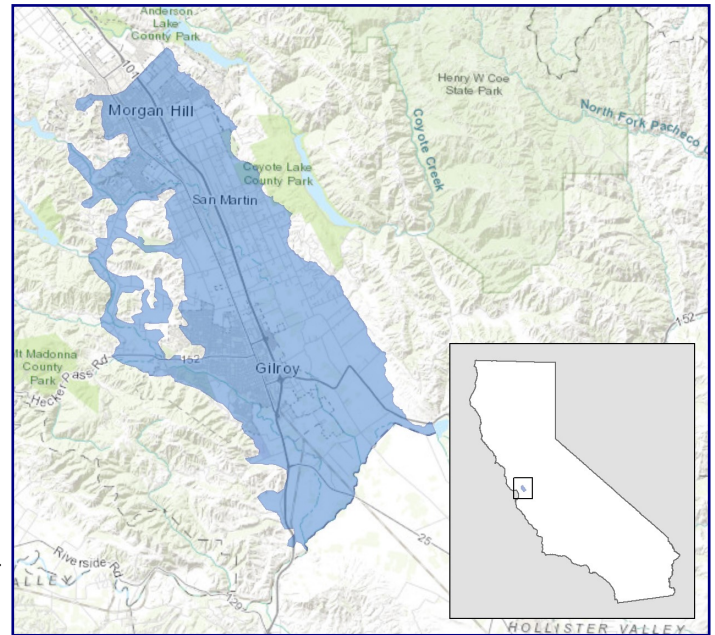
Santa Clara Valley Water District (SCVWD)

Alternative Type:

Groundwater Management Plan

Assessment Summary:*

- The alternative prepared by SCVWD satisfied the objectives of the Sustainable Groundwater Management Act (SGMA) by successfully demonstrating that the agency's existing groundwater management plan is likely to lead to sustainable groundwater management for the Llagas Area Subbasin within the statutory timelines identified in the SGMA.
- The alternative demonstrated a long history of meeting the requirements of the SCVWD Act, and that SCVWD has sustainably managed groundwater resources to meet the demands of the beneficial uses and users.
- The alternative included an acceptable hydrogeologic conceptual model that describes the basin, a well-developed monitoring network, analytical tools, and quantified projects and management actions that allow SCVWD to maintain groundwater conditions at, or near, the sustainability goal for the basin.
- SCVWD, which was identified as an exclusive local agency in SGMA and is the exclusive groundwater sustainability agency within its service area in the basin, has sufficient authority to implement the groundwater management plan.
- The Department of Water Resources provided recommendations for SCVWD to address in its first five-year update to the alternative, which is due in January 2022. The recommendations include clarification of quantifiable outcome measures, identification of groundwater dependent ecosystems, and inclusion of climate change analysis into the water budget.





Santa Clara Valley Water District

File No.: 19-0776

Agenda Date: 9/17/2019

Item No.: 4.2.

COMMITTEE AGENDA MEMORANDUM

Water Conservation and Demand Management

SUBJECT:

Collaboration with UC Water

RECOMMENDATION:

Receive an update on potential collaboration with UC Water.

SUMMARY:

The Santa Clara Valley Water District (Valley Water) is exploring a collaborative program with researchers from the University of California Water Security and Sustainability Research Initiative (UC Water). UC Water is a group of self-selected researchers that focuses on strategic research to support water resources management and decision-making.

Valley Water and UC Water initially met in February 2019 to discuss the focus and interests of each entity and potential knowledge gaps where collaboration would be beneficial. While many interesting topics were discussed, Valley Water staff identified two key areas of most mutual benefit: investigating the feasibility of Flood-Managed Aquifer Recharge (Flood-MAR) and furthering the understanding of groundwater/surface water interaction, with both issues primarily focused on the unique conditions in Santa Clara County.

Building on the initial meeting, Water Utility and Watersheds staff have had several follow up discussions with UC Water researchers. These have helped narrow the scope of collaboration by clarifying interests, priorities, potential deliverables, and timing. Both Flood-MAR and groundwater-surface water interaction have a nexus to the Water Conservation and Demand Committee (Committee).

Flood-MAR, or the potential to use agricultural or other open lands for stormwater recharge, is being investigated as part of Valley Water's Water Supply Master Plan and has been discussed in several Committee meetings. UC Water Researchers have direct experience with the planning and implementation of similar projects and are interested in piloting other projects to demonstrate efficacy, understand and remove bottlenecks to wider use, and identify technical and policy needs. Valley Water and UC Water are developing a multi-year scope of work that will help evaluate technical, legal, and institutional issues and advance a local pilot project.

Groundwater-surface water interaction is another key area where Valley Water is looking to advance our understanding, particularly in light of related Sustainable Groundwater Management Act (SGMA) requirements. In previous Committee items related to shallow groundwater dewatering, Valley Water

has committed to further exploring the interaction of shallow groundwater with deeper, principal aquifers and with interconnected surface water. A multi-year collaboration to further explore these complex interactions will benefit both Valley Water and UC Water.

Valley Water and UC Water staff are planning to complete an initial proposed scope of work by November 2019 to support consideration for funding and implementation in 2020. Due to the nexus of both the Flood-MAR and groundwater-surface water interaction themes to the Committee, staff will continue to provide updates on the potential collaboration as this work progresses.

ATTACHMENTS:

None

UNCLASSIFIED MANAGER:

Garth Hall, 408-630-2750



Santa Clara Valley Water District

File No.: 19-0758

Agenda Date: 9/17/2019

Item No.: 4.3.

COMMITTEE AGENDA MEMORANDUM

Water Conservation and Demand Management

SUBJECT:

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

RECOMMENDATION:

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

SUMMARY:

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

BACKGROUND:

Governance Process Policy-8:

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

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

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

ATTACHMENTS:

Attachment 1: WCADM Committee 2019 Work Plan

Attachment 2: WCADM Committee Next Meeting's Draft Agenda

File No.: 19-0758

Agenda Date: 9/17/2019
Item No.: 4.3.

UNCLASSIFIED MANAGER:
Michele King, 408-630-2711

2019 Work Plan: Water Conservation and Demand Management Committee

Update: July 2019

The annual work plan establishes a framework for committee discussion and action during the annual meeting schedule. The committee work plan is a dynamic document, subject to change as external and internal issues impacting the District occur and are recommended for committee discussion. Subsequently, an annual committee accomplishments report is developed based on the work plan and presented to the District Board of Directors.

ITEM	WORK PLAN ITEM	MEETING	ACTION/DISCUSSION OR INFORMATION ONLY	ACCOMPLISHMENT DATE AND OUTCOME
1	Election of Chair and Vice Chair for 2019	2-15-19	Discussion/Action Item	Accomplished February 15, 2019: The Committee voted to retain Director Richard P. Santos as Chair and Director Linda J. LeZotte as Vice Chair for 2019; {note the election of chair and vice chair does not apply to this committee}.
2	Water Conservation and Demand Management Committee 2018 Accomplishments Report	2-15-19	Discussion/Action Item	Accomplished February 15, 2019: The Committee reviewed the 2018 work plan accomplishments and were pleased with their 2018 accomplishments.
3	Water Supply Master Plan Conservation and Stormwater Capture Project Update	2-15-19	Discussion/Action Item	Accomplished February 15, 2019: The Committee received a presentation Water Supply Master Plan Conservation and Stormwater Capture Project Update and took no action.
4	Sustainable Groundwater Management Act Basin Prioritization Update	2-15-19	Discussion/Action Item	Accomplished February 15, 2019: The Committee received a presentation Sustainable Groundwater Management Act Basin Prioritization Update and took no action.

Yellow = Update Since Last Meeting

Blue = Action taken by the Board of Directors

Attachment 1
Page 1 of 3

2019 Work Plan: Water Conservation and Demand Management Committee

Update: July 2019

ITEM	WORK PLAN ITEM	MEETING	ACTION/DISCUSSION OR INFORMATION ONLY	ACCOMPLISHMENT DATE AND OUTCOME
5	Review of Water Conservation and Demand Management Committee Work Plan, the Outcomes of Board Action of Committee Requests and the Committee's Next Meeting Agenda	2-15-19 3-25-19 4-26-19 6-18-19 8-28-19	Discussion/Action Item	Accomplished February 15, 2019: The Committee received an overview of the 2019 work plan and took no action. Accomplished March 25, 2019: The Committee received an overview of the 2019 work plan and took no action.
6	Fixed/variable charges	3-25-19	Discussion/Action Item	Accomplished March 25, 2019: The Committee received a presentation on Fixed/Variable Charges and took no action.
7	Stormwater Resources Plan (SWRP) Green Stormwater Infrastructure – Upper Penitencia Concept	3-25-19	Discussion/Action Item	Accomplished March 25, 2019: The Committee received a presentation on SWRP Green Stormwater infrastructure-Upper Penitencia Concept and took no action.
8	Update on Model Water Efficient New Development Ordinance (MWENDO)	4-26-19	Discussion/Action Item	Accomplished April 26, 2019: The Committee received an update on Model Water Efficient New Development Ordinance (MWENDO) and took no action.
9	Water Supply Master Plan Conservation and Stormwater Capture Project Update	4-26-19	Discussion/Action Item	Accomplished April 26, 2019: The Committee received an update on the Water Supply Master Plan Conservation and Stormwater Capture Project and took no action.

Yellow = Update Since Last Meeting

Blue = Action taken by the Board of Directors

Attachment 1
Page 2 of 3

2019 Work Plan: Water Conservation and Demand Management Committee

Update: July 2019

ITEM	WORK PLAN ITEM	MEETING	ACTION/DISCUSSION OR INFORMATION ONLY	ACCOMPLISHMENT DATE AND OUTCOME
10	Water Supply Master Plan - Advanced Metering Infrastructure "AMI"	4-26-19	Discussion/Action Item	Accomplished April 26, 2019: The Committee received an update on the Water Supply Master Plan - Advanced Metering Infrastructure "AMI" and took no action.
11	Evaluation on the Extent of Shallow Groundwater Dewatering by Obtaining and Analyzing Information from Land Use and Regulatory Agencies	6-18-19	Discussion/Action Item	Accomplished June 18, 2019: The Committee received an update on the evaluation on the extent of shallow groundwater dewatering by obtaining and analyzing information from land use and regulatory agencies and took no action.
12	Updates to Ongoing and Future Water Conservation Programs and Resources	6-18-19	Discussion/Action Item	Accomplished June 18, 2019: The Committee received an update on the ongoing and future Water Conservation Programs and Resources and took no action.
13	Discuss Agricultural Water Baseline Study	6-18-19	Discussion/Action Item	Accomplished June 18, 2019: The Committee discussed the Agricultural Water Baseline Study and took no action.
14	E-2 2.1 Policy Review	8-28-19	Discussion/Action Item	
15	Update on Climate Change Action Plan	TBD	Discussion/Action Item	

Yellow = Update Since Last Meeting

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Attachment 1
Page 3 of 3

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DRAFT AGENDA

WATER CONSERVATION AND DEMAND MANAGEMENT COMMITTEE

(TBD)

10:00 a.m. - 12:00 p.m.

**Santa Clara Valley Water District
Headquarters Building Boardroom
5700 Almaden Expressway
San Jose, CA 95118**

Time Certain

10:00 a.m.

1. **Call to Order/Roll Call**
2. **Time Open for Public Comment on Any Item Not on the Agenda**
Comments should be limited to two minutes. If the Committee wishes to discuss a subject raised by the speaker, it can request placement on a future agenda.
3. **Approval of Minutes**
3.1 Approval of Minutes – August 28, 2019, meeting
4. **Discussion/Action Items**
 - 4.1 Update on Climate Change Action Plan
Recommendation: This is a discussion item and the Committee may provide comments. However, no action is required.
 - 4.2 Review of Water Conservation and Demand Management Committee Work Plan, the Outcomes of Board Action of Committee Requests and the Committee's Next Meeting Agenda (Committee Chair)
Recommendation: Review of Water Conservation and Demand Management Committee Work Plan, any Outcomes of Board Action or Committee Requests and the Committee's Next Meeting Agenda.
5. **Clerk Review and Clarification of Committee's Requests**
This is an opportunity for the Clerk to review and obtain clarification on any formally moved, seconded, and approved requests and recommendations made by the Committee during discussion of Item 4.

6. Adjourn: Adjourn

REASONABLE EFFORTS TO ACCOMMODATE PERSONS WITH DISABILITIES WISHING TO ATTEND COMMITTEE MEETINGS WILL BE MADE. PLEASE ADVISE THE CLERK OF THE BOARD OFFICE OF ANY SPECIAL NEEDS BY CALLING (408) 630-2277.

Meetings of this committee will be conducted in compliance with all Brown Act requirements. All public records relating to an open session item on this agenda, which are not exempt from disclosure pursuant to the California Public Records Act, that are distributed to a majority of the legislative body will be available for public inspection at the same time that the public records are distributed or made available to the legislative body, at the following location:

Santa Clara Valley Water District, Office of the Clerk of the Board
5700 Almaden Expressway, San Jose, CA 95118

Water Conservation and Demand Management Committee:

Purpose: To support the Board of Directors in achieving its policy to provide a reliable water supply to meet current and future water usage by making policy recommendations related to demand management.