SANTA CRUZ MID-COUNTY GROUNDWATER AGENCY
Thursday, November 15, 2018 - 7:00 p.m.
Simpkins Family Swim Center
979 17th Avenue, Santa Cruz, California

AGENDA

1. **Call to Order**

2. **Roll Call**

3. **Oral Communications -** Community members may address matters not on the agenda and within the purview of the Agency. Guidelines are attached.

4. **Consent Agenda (Page 3)**
   - 4.1 Approve Minutes from September 20, 2018 Meeting
   - 4.2 Accept Treasurer's Report
   - 4.3 Affirm Use of Soquel Creek Water District Protocol for Manager Authority on Contract Task Budget Management

5. **General Business (Page 21)**
   - 5.1 Board Discussion and Direction to Staff and the Groundwater Sustainability Plan (GSP) Advisory Committee on the Board's Thinking about the MGA's Role in Developing and Implementing Projects and Management Actions to Achieve Basin Sustainability and How the Advisory Committee Should Deal with Projects and Management Actions as it Works on Developing Advice to the Board on the Content of GSP Sections 4 and 5.

6. **Informational Updates (Page 48)**
   - 6.1 Summary Tables of the Groundwater Modeling Assumptions and Scenarios
   - 6.2 Groundwater Sustainability Plan Advisory Committee Update (Oral)
   - 6.3 Groundwater Sustainability Advisory Committee Meeting Summaries from August, September 2018
   - 6.4 Outreach Reports (Oral)
   - 6.5 Board Member Reports (Oral)
   - 6.6 Staff Reports (Oral)

7. **Future Agenda Items**

8. **Adjournment**

Guidance for Public Input during MGA Board Meetings

All information furnished to the MGA Board of Directors with this agenda is provided on the MGA website located here: http://www.midcountygroundwater.org/committee-meetings.

Submittal of Written Correspondence and Informational Materials

Submittal of written correspondence and/or informational materials (e.g., handouts) must be received by 5:00 pm on the Monday of the week prior to the scheduled board meeting (10 days prior to the meeting) to be included in the meeting materials for board review (commonly referred to as the board packet). Due to holidays and other factors there may be instances when even the above deadline is not adequate. Submittals received after the deadline but prior to the start of the board meeting will be included in the meeting materials for the next board meeting. Submittals received after the deadline may not have time to reach board members or be read by them prior to the consideration of an item. Materials may also be submitted in-person immediately preceding the start of a board meeting by giving those materials directly to the Board Chair. Organized groups wishing to make a presentation are asked to contact Laura Partch at lpartch@cfscc.org or 831.662.2053 prior to the board meeting. Soquel Creek Water District serves as the designated administrative headquarters of the MGA. Written correspondence and materials may be directed to: Santa Cruz Mid-County Groundwater Agency, c/o Soquel Creek Water District, Attention: Exec. Secretary/Board Clerk, 5180 Soquel Drive, Soquel, CA 95073.

Public Comments

Non-Agenda Items

At the outset of the meeting during the time set aside for public comment, members of the public can comment on any item not on the agenda as long as it is related to the subject matter of the MGA. Each speaker will be limited to a single presentation of up to three minutes. The maximum time set aside for public comment will be 15 minutes total for all speakers. Time limits may be increased or decreased at the Board Chair's discretion. Those wishing to speak should come to the front of the room and be recognized by the Board Chair. Speakers must address the entire board: dialogue will not be permitted either between speakers and board members or amongst board members.

Items on the Agenda

Comments may also be given during the remainder of the meeting pertaining to each agenda item. For items listed on the agenda, the board will deliberate and take action after speakers have concluded their remarks. Each speaker will be limited to up to three minutes per agenda item. The maximum time set aside for public comment will be 15 minutes total for all speakers. Time limits may be increased or decreased at the Board Chair's discretion. Additional comments may be given at the Board Chair's discretion related to specific items listed on the agenda. Additional public comment will not be allowed during the board's deliberation unless the Board Chair specifically calls on someone in the audience.

Disability Access

The meeting room is wheelchair accessible. Please contact Laura Partch at lpartch@cfscc.org or 831.662.2053 if you need assistance in order to participate in a public meeting or if you need the agenda and public documents modified as required by Section 202 of the Americans with Disabilities Act.

SANTA CRUZ MID-COUNTY GROUNDWATER AGENCY
Thursday, September 20, 2018 - 7:00 p.m.
Simpkins Family Swim Center
979 17th Avenue, Santa Cruz, California

MINUTES

1. Call to Order

The meeting was called to order at 7:00 by Vice Chair Matthews.

2. Roll Call

Board members present: Mr. Abramson, Mr. Baskin, Dr. Daniels, Mr. Kennedy, Mr. Kerr, Chair LaHue (arrived late), Ms. Matthews, Mr. Romanini (Alternate for Mr. Marani).

Board members absent: Mr. Benich, Mr. Friend, Mr. Leopold, Mr. Marani.

Staff present: Mr. Bracamonte, Mr. Carson, Mr. Duncan, Ms. Luckenbach, Ms. Partch, Ms. Pruitt, Mr. Ricker, and Ms. Strohm.

Others present: Two members of the public.

3. Oral Communications: None.

4. Consent Agenda

4.1 Approve Minutes from July 19, 2018 Joint Meeting of the Board and the Groundwater Sustainability Plan (GSP) Advisory Committee
4.2 Accept Treasurer's Report
4.3 Acknowledge Biennial Review of the Santa Cruz Mid-County Groundwater Agency (MGA) Conflict of Interest Code
4.4 Accept Semi-Annual Groundwater Monitoring Report for the Santa Cruz Mid-County Basin

MOTION: Mr. Baskin; Second: Mr. Kennedy. To approve the consent agenda with minor typos to be corrected. Motion passed unanimously with one abstention (Mr. Romanini).

Chair LaHue arrived and began chairing the meeting.

5. General Business

5.1 Approve Amendment to Contract 2017-02 with Montgomery & Associates to Update the Groundwater Model

Staff reported this amendment includes changes to the schedule, scope and budget of the contract. The amendment extends the contract schedule from July 31, 2018, to June 30, 2019, but includes no proposed change to the total contract amount. The proposal adds two additional tasks, totaling $70,000, and removes a task that is being funded under the County's Stressed-Basin Grant with the Department of Water Resources (DWR) that was estimated at $70,000.

The additional tasks, as laid out in a supporting letter from Montgomery & Associates, involve additional work on climate change scenarios. Task 5.1.1c considers new information related to the City of Santa Cruz's climate change modeling and incorporates more recent information from DWR. Task 5.6 involves additional modeling tied to the development of the GSP.

The precise scope of these two tasks is yet to be to be determined. Both relate to project management actions and require input from both the GSP advisory committee and executive staff. When the original contract was proposed, Hydrometrics laid out the modeling tasks anticipated for the 2018 - 2019 fiscal year, but did not assign budget numbers because they thought it was too speculative. Although the tasks are still not fully defined, Montgomery & Associates now has a better understanding of the range of these tasks. With the task for evaluation of the inland pumpers being funded under the County grant, this offset results in no change to the overall contract budget.

Board Comments, Questions, and Staff Responses:

What does the task to evaluate the effect of inland pumpers involve?

- Primarily, in the modeling, turning off all the inland pumping and comparing that to the baseline in terms of the effects on coastal groundwater levels and groundwater levels along the streams.

Is this for the municipal production wells?

- No, the inland pumpers are essentially inland, up in the hills. They are still trying to figure out where to draw that line, whether that is a

land-surface elevation, the distance inland, or groundwater elevation. That has not yet been determined. If it a land-surface issue, they are not sure what exactly that would be.

Public comment:

Becky Steinbruner requested that the model include the effects of turning off the Soquel Creek Water District pumping.

MOTION: Ms. Mathews; Second: Dr. Daniels. To approve Amendment 2 to Contract No. 2017 – 02. Motion passed unanimously.

MOTION: Ms. Mathews; Second: Dr. Daniels. To authorize the General Manager of the Soquel Creek Water District to sign Amendment 2 to Contract No. 2017 – 2 and the purchase order. Motion passed unanimously.

5.2 Endorse the Water Supply and Water Quality Act of 2018 (Proposition 3) on the November 2018 Ballot

Staff reported that Proposition 3 is a statewide voter initiative on the November 2018 ballot that would authorize $8.9 billion in state bonds for a variety of water infrastructure projects. The initiative sets aside $640 million to support the implementation of groundwater sustainability plans. These funds would be made available through competitive grants and could be a potential funding source for the MGA. The City of Santa Cruz has identified $3 billion in potential grant funds for water projects, and the Santa Cruz City Council has endorsed the measure.

Based upon the funding potential, there is support among the executive team for MGA Board to endorse Proposition 3.

Board Comments, Questions, and Staff Responses:

Is the board endorsing only part of the measure?

- The proposal is for the board to endorse the entire Proposition 3.

Have all the MGA member agencies endorsed the measure?

- The County and City of Santa Cruz have endorsed the measure. Soquel Creek Water District has not, as it needs to pick and choose among requests for endorsements, and Central Water has not.

MOTION: Ms. Mathews; Second: Mr. Baskin. To endorse Proposition 3, to state how Proposition 3 might benefit the work of the MGA, and to publicize MGA support. Motion passed unanimously.

6. Informational Updates

6.1 Groundwater Sustainability Plan Advisory Committee (Oral)

Staff invited input from board members and executive team and who also serve on the GSP Advisory Committee to speak to the process so far.

It was reported that over the past six months the GSP Advisory Committee has been working with the seven sustainability indicators and has moved through the minimum thresholds for each of those except for storage. They are still working with issues related to surface water. For groundwater, seawater intrusion indicators are driving the other issues, so the committee is focused on those. Storage issues still need to be evaluated. The committee is preparing to look into sustainability strategies informed by the results of the groundwater modeling scenarios in the coming months.

Public Comment:

Becky Steinbruner requested presentations by Dr. Andy Fisher (UCSC) to both the board and the advisory committee, and for both entities to communicate with Dr. Helen Dahlke (UC Davis).

6.2 Groundwater Sustainability Advisory Committee Meeting Summaries from April, May, June, July 2018

No comments.

6.3 Outreach Reports (Oral)

Staff reported the MGA sends out a monthly electronic newsletter to about 650 subscribers, and recently updated the GSP advisory committee sections of the MGA website. Staff recently purchased outreach materials, and will have a table at the Water Harvest Festival on October 20th, in Soquel.

The GSP Advisory Committee will also have a half-day hour field trip on October 23rd. Field trip participants will visit monitoring wells at the coast, where Soquel Creek Water District (SqCWD) staff will demonstrate sampling as part of water level and water quality monitoring. The field trip will visit a few production wells and the Heart of Soquel Park, a multi-benefit project at a public plaza that includes a low-impact development, stormwater management, and habitat enhancement features. This will be an opportunity for participants to meet individuals from local agencies working to protect groundwater and enhance local habitats. The public is invited to attend.

6.4 Board Member Reports (Oral)

No reports.

6.5 Staff Reports (Oral)

An update was provided on the progress of the grant the County received from the DWR for counties with stressed water basins. This project has been going on for about two years, and is due to wrap up in December, but staff will be requesting an extension for three to six months. The County been making good progress, and has completed work with the Resource Conservation District by responding to requests from private well owners for evaluations of water conservation and irrigation practices. Visits were made to over 20 properties, including a few small agricultural operations. Assessments were completed for both indoor and outdoor water use, and potential steps were identified to increase efficiency or reduce water use. Staff did not see a lot of low hanging fruit, as many in rural areas have already reduced outdoor irrigation, and staff did not see any big turf areas in the areas visited. But there is some potential there.

Montgomery & Associates continues with groundwater modeling to look at the impact of inland pumping and refine the model to better understand the groundwater/ streamflow interactions, particularly looking at the alluvial areas. They are focusing on the way the model treats the alluvium and the interaction between deeper groundwater, the alluvium, and the stream flow to try to make that work better. They will also model turning off some of the SqCWD wells, the Main Street well, to see if that results in any significant changes in groundwater levels or stream flows in Soquel Creek. This should be done by the end of the year, including the assessment of the effects of inland pumping.

Staff is working with the consulting firm Raftelis to look at various fee mechanisms that might be used in the future and how they might be used

based on different allocations of cost and benefit. After the November board meeting, staff will be sending a questionnaire to board members regarding board objectives and what the board would like to accomplish with fees. Staff will then come back to the board in January or March with a presentation of the results and possible options to consider moving forward.

There are funds available for designs for potential groundwater recharge projects. Staff is looking particularly at the 38th Avenue detention basin as a potential project. A grant was received from the State Water Resources Control Board (SWRCB) for subsurface investigations, borings, and percolation testing at a number of areas to better assess recharge suitability. The work Dr. Andy Fisher did with the Resource Conservation District (RCD) maps suitable locations based upon geology and soil. Using the DualEM electromagnetic geophysical instruments, accompanied by representatives from Denmark, staff measured the permeability at depth. Next steps will be to drill in some of the places looked at before, to see how well the DualEM and Dr. Fisher's mapping work characterizes the subsurface conditions. The SWRCB is interested in this work, and may potentially use the DualEM technology in other places if there is a good correlation between its findings and what is actually found by boring into the ground. This will be happening in the next six months.

Board Comments, Questions and Staff Responses:

Will the results be presented to the board?

- Yes.
- The SWRCB grant is probably good for a year and a half. The County is trying to coordinate with SqCWD for some of the managed recharge projects. Funding will be used for investigations. The big issue now is the potential sale of the golf course property, which looked good for recharge, but we need a willing partner and that is up in the air right now.

Regarding a questionnaire to the board regarding fees, a request for the questionnaire to include the board's statutory authority and information on what other groundwater agencies are doing, to provide context.

- An existing draft document does provide context, and statutory authority will be included. This is something that other water agencies have done, so some board members may already be familiar with the procedure of going out to the elected bodies.

The City has worked with Raftelis, and you get what you ask for.

- They seem to be fairly responsive, so I will ask about that.

Board member Dr. Bruce Daniels described a study about 16 years ago that looked at water levels and flow in the creek when the Main Street production well was turned off for several months for maintenance. It was observed stream flows increased about 10 days after the well was shut off. Since then, similar observations have been made with the well was shut off. Dr. Daniels offered to provide that data to use to assist with calibrating the model.

- That would be interesting and helpful data to see.

With regard to potential rates and charges, and tying that to impact on the basin, where do you recommend that the discussion of defining "impact on the basin" take place, at the advisory committee or the board?

- Probably both. Some of it is a technical work, and so would probably start with the advisory committee, but it would then need to come to the board for discussion. That is what is being done with the model, looking at the impacts of pumping in different areas, return flows and similar issues. There are no real numbers yet to share, but there may be by the end of next months.

When do you think the advisory committee should start considering that concept in some defining detail, next spring, or before that?

- Probably before. This work should be done by the end of this year, so I would say that by the end of this year or early next year we should be able to start working on this issue.

Staff provided an update on the GSP planning grant award from DWR. After several rounds of back and forth to get the scope of work and budget finalized, this agreement is in final review at DWR. Hopefully, by the next board meeting the agreement will be executed.

Staff reported that the SqCWD gave a presentation to about 60 students in an environmental studies class at Cabrillo College that included the MGA's helicopter-based data collection and mapping of seawater intrusion in the groundwater aquifers offshore done with SkyTEM and Ramboll. The students were really impressed. One student commented on how great it was to see a government agency doing this kind of thing and pushing innovation. Passing along the kudos to the board and staff.

7. Future Agenda Items

Requests from the Board:

Future collaboration with other groundwater sustainability agencies, perhaps inviting San Margarita and Pajaro Valley Water Agencies for a dialogue. The executive team will schedule this and get it on a future agenda.

It was noted that several requests that are carried forward in the prior minutes that have not yet been addressed.

Continued updates on community outreach. (This was addressed in the oral reports.)

Requests and Questions from the Public:

Becky Steinbruner requested that the board and advisory committee work with Dr. Fisher and Dr. Dahlke.

What is the turnout for the MGA's monthly informational drop-in sessions?

- Staff reported that there are typically two to three people per meeting, sometimes as many as seven to eight people.

It was requested that the size of the signs for the meetings be increased.

8. Written Communications and Submitted Materials

None.

9. Adjournment

The Chair adjourned the meeting at 7:34 p.m.

November 15, 2018

MEMO TO THE MGA BOARD OF DIRECTORS

Subject: Agenda Item 4.2

Title: Treasurer's Report

Attachments

1. Treasurer's Report for the Period Ending October 31, 2018

Attached is the Treasurer's Report for September and October 2018. The report contains three sections:

- Statement of Changes in Revenues, Expenses and Net Position
  - This interim financial statement provides information on the revenue that has been invoiced to the member agencies and the expenses that have been recorded as of October 31, 2018.
- Statement of Net Position
  - This interim financial statement details the cash balance at Wells Fargo Bank, the depository institution for the Santa Cruz Mid-County Groundwater Agency (MGA), the membership revenue still owed through accounts receivable, and the resulting net income as reported on the Statement of Changes in Revenues, Expenses and Net Position from the preceding page.
- Warrants
  - The list of warrants reflects all payments made by the MGA, either by check or electronic means, for the period covered by the Treasurer's Report.
  - Warrants #10110 and #10114 were recognized as expenses in July and August 2018 and appear on the Statement of Changes in Revenue, Expenses and Net Position for that period, but payment was not issued until October.
- 2017-18 Audit
  - Fieldwork for the 2017-18 financial statement audit was completed by Fedak and Brown LLP, on October 18, 2018. The annual financial statement presentation will be made in January 2019. There were no audit findings.

The Treasurer's Report will be provided at each board meeting according to statutory requirement and to promote transparency of the agency's financial transactions.

Possible Board Actions:

1. Informational, no motion necessary.

By _____

Leslie Strohm
Treasurer
Santa Cruz Mid-County Groundwater Agency

Treasurer's Report

Santa Cruz Mid-County Groundwater Agency
For the period ended October 31, 2018

Prepared on
November 8, 2018

Statement of Revenues, Expenses and Changes in Net Position

September - October, 2018

	Total
INCOME	
Total Income	
GROSS PROFIT	**0.00**
EXPENSES	
5315 Office Services	100.00
5340 Computer Services	60.00
5355 Insurance	476.78
5415 Outreach Services	229.80
Total Expenses	**866.58**
NET OPERATING INCOME	**-866.58**
NET INCOME	**$ -866.58**

Statement of Net Position

As of October 31, 2018

	Total
ASSETS	
Current Assets	
Bank Accounts	
1100 Wells Fargo Business Checking	1,270,112.34
Total Bank Accounts	**1,270,112.34**
Accounts Receivable	
1200 Accounts Receivable - Membership Revenue	178,084.00
Total Accounts Receivable	**178,084.00**
Other Current Assets	
1400 Prepaid Expenses	158.93
Total Other Current Assets	**158.93**
Total Current Assets	**1,448,355.27**
TOTAL ASSETS	**$1,448,355.27**
LIABILITIES AND EQUITY	
Liabilities	
Total Liabilities	
Equity	
Retained Earnings	325,638.35
Net Income	1,122,716.92
Total Equity	**1,448,355.27**
TOTAL LIABILITIES AND EQUITY	**$1,448,355.27**

Warrants

September - October, 2018

Date	Transaction Type	Num	Name	Memo/Description	Clr	Amount
Bill Payment (Check)						
10/18/2018	Bill Payment (Check)	10113	ACWA/JPIA	Member# S073	R	-635.71
						-635.71
10/18/2018	Bill Payment (Check)	10114	Errol L Montgomery & Associates Inc		R	-53,352.82
						-53,352.82
10/02/2018	Bill Payment (Check)	10110	Errol L Montgomery & Associates Inc		R	-2,452.50
						-2,452.50
10/02/2018	Bill Payment (Check)	10111	Soquel Creek Water District (2)	0000260	R	-60.00
						-60.00
10/02/2018	Bill Payment (Check)	10112	Mickey’s Cafe & Catering		R	-229.80
						-229.80
Expense						
10/05/2018	Expense	US0019E0LI	Google - Online Payments		R	-50.00
				Google Payment - G Suit		50.00

Date	Transaction Type	Num	Name	Memo/Description	Clr	Amount
09/05/2018	Expense	US0018Nulu	Google - Online Payments		R	-50.00
				Google Payment - G Suit		50.00

November 15, 2018

MEMO TO THE MGA BOARD OF DIRECTORS

Subject: Agenda Item 4.3

Title: Affirm Use of Soquel Creek Water District Protocol for Manager Authority on Contract Task Budget Management

Attachments:
1. Extractions from the March 17, 2016 Minutes

At the March 17, 2016 Santa Cruz Mid-County Groundwater Agency (MGA) board meeting, the board voted to establish Soquel Creek Water District (SqCWD) as the parent agency for the MGA's policies and procedures related to contracting, purchasing, financial management and reporting, and operations. SqCWD adopted budget procedures in June 2016 that allow managers the flexibility to move operating budget funds from one line-item allocation to another without requiring board approval, as long as departmental spending does not exceed the total budget allotted to that department for the fiscal year. This procedure affords managers the flexibility to adapt and manage contract budgets to respond to the MGA's needs as tasks progress and to do so in a timely manner.

This memo seeks to affirm the use of SqCWD procedures for matters related to the budget, and acknowledge that the General Manager of SqCWD, with input from the Treasurer, may move budget funds from one budget line item or contract task to another as long as spending does not exceed the total agency budget authority for the fiscal year.

Recommended Action:

1. By MOTION, affirm use of Soquel Creek Water District protocol for manager authority on contract task budget management.

By _____

Leslie Strohm
Treasurer
Santa Cruz Mid-County Groundwater Agency

MOTION: Mr. Benich; Second: Mr. Ricker. To elect Rob Marani as Vice Chair. Motion passed unanimously.

The group noted that the SAGMC has been dissolved. Mr. Kennedy observed as a point of order that it seems strange that private well owners do not get to vote. The group discussed this item briefly then concluded that the procedure should be upheld as written because the by-laws need to be developed first. The group discussed the practical need for a Secretary. Mr. Friend noted that if the Chair and Vice-Chair are not present, the Secretary runs the meeting.

MOTION: Mr. Posner; Second: Mr. Friend; To elect Cynthia Mathews as Secretary. Motion carried unanimously.

C. Appointment of Interim Representatives of Private Well Owners

Ms. Menard reviewed the intended plan; to appoint Private Well Owner Representatives now, complete the bylaws by July, and use the mechanism in the bylaws to confirm the representatives. Dr. Jaffe reviewed the process of selecting the current representatives. The group responded to a public comment asking why Private Well Owner Representatives cannot vote. Ms. Menard clarified that the representatives will be able to vote on officers and policy decisions once they become formally appointed and the bylaws are finalized. At the present time there is no official mechanism to appoint them. Mr. Posner invited the representatives to provide input on the decision of whether or not he will step down, and encouraged them to talk with Ms. Mathews.

MOTION: Dr. LaHue; Second: Mr. Ricker; To appoint the current representatives as interim representatives of Private Well Owners to the Board. Motion carried unanimously.

D. Establish a Parent Agency

Ms. Menard suggested voting on items D through I in one block.

MOTION: Dr. LaHue; Second: Mr. Benich; To address items D through I in one block. Motion carried unanimously.

Mr. Friend clarified that since the group is not a small body, the Chair can vote but may not make a motion. Dr. Jaffe reported that legal counsel recommended going with an agency with greater powers, and that practically it makes sense for the Soquel Creek Water District to serve as the Parent Agency. Ms. Menard agreed. Mr. Kennedy added that for situations where policies are not outlined in the bylaws, the SCMCGA would adopt the existing policies of the Parent Agency. Mr. Marani asked about existing guidance for creating bylaws for GSAs. Ms. Menard replied that the Subcommittee will look for models, and will follow up with Association of California Water Agencies (ACWA). Mr. Olvera reported that the Department of Water Resources offers a facilitation service.

MOTION: To establish the Agency's Principal Office and the Agency's parent agency, for the Agency's policies, procedures, and operating systems. Motion carried unanimously.

E. Appoint a Treasurer

MOTION: To appoint Leslie Strohm as Agency Treasurer and, if appropriate, authorize including reimbursement for these services to the district or member agency providing these services in the Agency's annual budget. Motion carried unanimously.

F. Appoint an Attorney

MOTION: To provide direction on the appointment of one or more Agency attorney (s). Motion carried unanimously.

G. Assume contracts for services from the former JPA (Basin Implementation Group and/or the Soquel-Aptos Groundwater Management Committee)

MOTION: To approve assumption of existing contracts for services entered into by the BIG/SAGMC JPA. Motion carried unanimously.

H. Assume responsibility as the Requesting Agency for the Santa Cruz Mid-County Groundwater Basin Boundary Modification Request Initiated by SAGMC

MOTION: To approve assumption of responsibility for the Santa Cruz Mid-County Groundwater Basin Boundary Modification Request initiated by SAGMC. Motion carried unanimously.

I. Establish the Agency's Fiscal Year

MOTION: To establish the fiscal year as July 1 – June 30 for the Santa Cruz Mid-County Groundwater Agency. Motion carried unanimously.

J. Appoint a Bylaws Subcommittee

Ms. Menard reported that the Subcommittee intends to bring the bylaws to the May meeting, and hopes that the bylaws will be in place by the July meeting of this group. Dr. LaHue asked if the Subcommittee members can be provisional. Ms. Menard answered yes, and said that the Subcommittee can have up to five members. Mr. Benich suggested that the Subcommittee be made up of one representative from each District and one Private Well Owner. The group agreed. Dr. Jaffe asked for volunteers: Mr. Friend, Mr. Marani, Mr. Kennedy, Dr. Jaffe, and Ms. Mathews volunteered. The group responded to a public comment asking how small water companies have been incorporated into the process. Mr. Ricker mentioned that during the process of selecting Private Well Owner Representatives non-municipal entities (e.g., small water systems, Cabrillo College, Seascape Golf Course, and agricultural users) were able to apply.

November 15, 2018

MEMO TO THE MGA BOARD OF DIRECTORS

Subject: Agenda Item 5.1

Title: Board Discussion and Direction to Staff and the Groundwater Sustainability Plan (GSP) Advisory Committee on the Board's Thinking about the MGA's Role in Developing and Implementing Projects and Management Actions to Achieve Basin Sustainability and How the Advisory Committee Should Deal with Projects and Management Actions as it Works on Developing Advice to the Board on the Content of GSP Sections 4 and 5.

Attachments:

1. Groundwater Sustainability Plan Annotated Outline (DWR: December 2016)
2. Projects Matrix: Water Supply Augmentation Options for the Santa Cruz Mid-County Groundwater Basin

INTRODUCTION: As part of implementing the Sustainable Groundwater Management Act (SGMA), the California Department of Water Resources (DWR) has developed detailed guidelines about what content has to be covered in the required Groundwater Sustainability Plan (GSP). A required element of the GSP is a description and analysis of the management actions and projects that may need to be implemented to achieve basin sustainability by 2040, as well as a plan and financing strategy to support GSP implementation. Attachment 1 to this memo is DWR's Annotated Outline of the required GSP content.[1]

As presented and discussed at the July 19, 2018 meeting of the Santa Cruz Mid-County Groundwater Agency (MGA) Board meeting, MGA member agencies have been actively exploring a variety of supplemental supply projects over the past several decades. Projects under current consideration are reflected in the matrix table provided as part of the July 19th MGA Board packet (Item 8.1.2), which is attached here as Attachment 2. In addition, member agencies have also been exploring and implementing various management actions such as managing water demand through conservation programs and pricing structures and moving some

[1] For detailed regulations on the required elements of a GSP see: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Groundwater-Sustainability-Plans/Files/GSP/Final-GSP-Emergency-Regulations.pdf

pumping inland to reduce pumping along the coast, which helps hinder the further advancement of seawater intrusion.

This memo is intended to provide the context needed to inform and support a discussion by the MGA Board about how the Board wants the Groundwater Sustainability Plan Advisory Committee (Advisory Committee or Committee) to address two specific GSP requirements. The two GSP requirements are:

1. The requirement that the GSP must identify and evaluate management actions and projects (Section 4 of the GSP); and
2. The requirement that the GSP identify actions to be taken during plan implementation (Section 5 of the GSP), including how implementation of the plan will be financed.

Staff's assessment is that before the MGA Board can decide what direction to provide to the Advisory Committee on these topics, it must first discuss how the MGA Board currently sees its potential role in implementing projects needed to achieve basin sustainability. If the Board is in agreement about what role the MGA is going play in implementing and/or financing management actions and projects that will be included in the GSP, that agreement should help the Board provide direction to the Advisory Committee that is consistent with the MGA Board's vision for its role and the roles of its member agencies in bringing the basin into sustainability.

In sections A through D below, background information on key topics is provided, and where appropriate to the content of the sections, questions that the Board could discuss as part of its deliberations are included.

A. BACKGROUND – Discussion of MGA Role in Implementing Projects During Groundwater Sustainability Agency Formation

During the 2015-2016 process for creating the new SGMA agency, board members of the Soquel-Aptos Groundwater Management Committee (SAGMC) had several discussions about what was envisioned to be the role of the MGA in planning and implementing projects.

The SGMA clearly envisions that the newly created Groundwater Sustainability Agencies (GSAs) would be capable of implementing projects. However, SAGMC members participating in the GSA Formation Subcommittee expressed concerns about both the practical reality of that approach as well as about the potential financial implications to individual member agencies of having the GSA develop and implement projects.

The practical reality issue focused mostly on what the staffing requirements would need to be for the MGA to oversee project development and implementation and whether creating an agency that was capable of doing so would be redundant considering the capabilities of the member agencies. The financially related concern was mostly focused on any potential liability that might accrue to the member agencies from the actions of the MGA.

SAGMC board members acknowledged these concerns and took two specific steps to respond:

1. They proposed and adopted a Joint Powers Agreement (JPA) that was written to support a broad and comprehensive purpose statement:

   > "The purpose of this Agency is to serve as the GSA for the Basin and to develop, adopt, and implement the GSP for the Basin pursuant to SGMA and other applicable provisions of law."[2]

2. They included the following statement in section 6.3 of their bylaws:

   > STAFFING STRATEGY REVIEW UPON COMPLETION OF THE GROUNDWATER SUSTAINABILITY PLAN. The collaborative staffing model for the Agency will be reviewed and revised if or as needed upon completion of the development of the Groundwater Sustainability Plan. In particular, the performance of the collaborative staffing model in meeting the Agency's needs and the proposed role of the Agency in implementing projects identified and recommended for implementation in the GSP will be considered when determining the potential need (sic) future staffing needs of the Agency.[3]

These two decisions left the door open to the potential that the MGA would play a role in implementing projects, but called for a specific discussion of that role and its implications for agency staffing needs once the GSP requirements were better understood. The thought was that the future role of the MGA in financing GSP implementation would be discussed when the details of the GSP were better understood.

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[2] See the JPA Section 2.2 at: http://www.midcountygroundwater.org/sites/default/files/uploads/Signed%20JPA%20Effective%20March%2017%202016.pdf

[3] See the Bylaws at: http://www.midcountygroundwater.org/sites/default/files/uploads/MGA-Bylaws.pdf

The work products described above were developed approximately two years ago, which was also a time when there SGMA rules, regulations, and requirements were rapidly developing. In addition, work on various supplemental supply options by member agencies was certainly underway but the potential benefits and challenges of those supplemental supply options with respect to addressing the threat of sea water intrusion and the need for sustainable supplies were not as well understood as they are today. The questions below are being raised in light of the current status of the work Soquel Creek Water District (District) and the City of Santa Cruz (City) are doing on supplemental supply projects.

Questions about the MGA's Current Thinking about its Potential Role in Project Implementation:

1. What is the Board's current thinking about the role of the MGA in implementing projects? Options seem to include at least the following possibilities:
   a. The MGA will limit its role to that of a basin planning agency and will look to member agencies for developing, implementing and financing management actions and/or projects needed to achieve basin sustainability.
   b. The MGA will be the basin planning agency and could play a role in funding projects but that role would likely be limited to generating revenues needed to fund management actions or projects from the potential implementation of something like a basin management fee.
   c. The MGA could play a role in funding, financing and implementing projects if projects need to be done and none of the member agencies are willing or able to do what is needed.
   d. The MGA will play a role in funding, financing, and developing and implementing management actions and projects needed to achieve basin sustainability.
2. Does the Board have agreement on an approach that it favors at this time? If so, to what degree does (or should) that approach influence the Board's direction to the Advisory Committee on the questions raised in Section E below?

B. BACKGROUND – MGA Member Agency Efforts to Develop and Implement Projects to Improve Groundwater Sustainability

As noted in the Introduction, MGA member agencies, in particular the District and the City have been involved during recent years in evaluating options for supplemental water supplies.

For the District, the issue they have identified as the key need to be met is the critical overdraft of the Santa Cruz Mid-County Groundwater Basin, which has created a serious threat of saltwater intrusion into the aquifer, as well as needing to take action to meet the goals of sustainable groundwater management. For the City, the issues are increasing drought supply and substantially reducing the water system's vulnerability to drought as well as ensuring the sustainability of the City's Beltz well field groundwater supply in the Santa Cruz Mid-County Groundwater Basin.

The District conducted a very public review process of its options to address the challenges it identified during its 2015 Community Water Plan development process. The Community Water Plan[4] identified a range of potential projects to explore including continuing water conservation efforts, the Pure Water Soquel groundwater replenishment project, surface water transfers from the City of Santa Cruz, the Deep Water Desalination project, and stormwater capture.

The City's 2014-2015 Water Supply Advisory Committee[5] (WSAC) process recommended to the City Council a five year work plan to explore the technical feasibility of a range of water supply augmentation strategies including continuing water conservation efforts, harvesting available surface water flows during the rainy season and storing it underground through both passive and active recharge strategies, advanced treated recycled water for potable reuse, and desalination. In November 2015, the Santa Cruz City Council unanimously adopted the recommendations of the Water Supply Advisory Committee, and Water Department staff is three years in to the implementation of the five year work plan with a recommendation of a supplemental supply project or portfolio of projects due to the Council in 2020.

Soquel Creek Water District, the MGA member agency with the greatest risk and the most to lose from salt water intrusion impacting its municipal production wells, has made significant progress on exploring projects included in its Community Water Plan, with current efforts focused on initiating a pilot project for in lieu water transfers with the City later in November and working to finalize an Environmental Impact Report for the Pure Water Soquel project in the coming months.

A key design condition of the Pure Water Soquel project is to halt the further progress of sea water intrusion in the District's service area. Modeling results showing how the project could achieve this goal are covered in the published draft

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[4] See the Soquel Creek Water District's Community Water Plan at: https://www.soquelcreekwater.org/cwp

[5] See the Water Supply Advisory Committee's Final Report on Agreements and Recommendations at: http://www.santacruzwatersupply.com/meeting/wsac-final-reportrecommendation-appendices

EIR. If the Pure Water Soquel project ultimately proceeds to construction, the project timeline indicates that it could be on line as early as 2022.

Preliminary modeling results for the City's potential to develop a groundwater storage project in the Santa Cruz Mid-County Basin using some combination of in lieu and aquifer storage and recovery (ASR) recharge projects were presented to the Advisory Committee at its October 24, 2018 meeting. Those results showed how various combinations of in lieu and ASR would affect groundwater levels with a focus on the effects on protective groundwater elevations for the salt water intrusion sustainability indicator. Because the City's focus has been on developing drought storage for its customers, preliminary analyses focus on how water stored through in lieu and aquifer storage and recovery could contribute to the City's need for improved supplies during periods of drought. Some modeling results presented to the Advisory Committee indicated water levels in key monitoring wells dropping below protective elevations during periods of drought withdrawals.

The City is also evaluating potential for drought storage and withdrawal in the Santa Margarita Basin, which may prove more or less suitable than the Mid-County Basin for the development of drought storage.

As the City's timeline for decision-making on its supplemental supply project is still a couple of years off, work is continuing on defining and refining potential approaches that would meet both the City's need for drought supply and contribute to achieving the sustainability goal for the Santa Cruz Mid-County Groundwater Basin.

C. BACKGROUND – Status Report on GSP Advisory Committee Process and Next Steps

The Advisory Committee has reached the stage in its process where preliminary metrics for key parameters, such as minimum thresholds and undesirable results for the six sustainability indicators have been identified. The sea water intrusion sustainability indicator and the coastal groundwater level indicator have been identified as being strongly linked. This means that achieving protective groundwater levels will be critically important to reducing the threat of further sea water intrusion into the aquifers.

Modeling work is being done and presented to the Committee to demonstrate how management actions, such as reducing pumping or relocating pumping inland and projects such as water transfers and water exchanges could influence groundwater levels along the coast where the threat of sea water intrusion is most critical. This work is designed to provide Advisory Committee members with a feel for how the model can be used to inform decision making.

The next steps call for modeling simulations based upon actual project proposals as part of the Committee's work. In theory at least, there are at least two options for how projects could be identified for the next steps of the Advisory Committee's work:

1. The Committee could pick from among any (or all) of the potential options described at the July 19th MGA meeting and/or any other ideas that might come to light through other means and the technical consultants would use the chosen management actions and projects in the modeling; or

2. The MGA Board could direct the Advisory Committee to specifically include one or more management action or projects being explored by a MGA member agency for implementation.

D. BACKGROUND – Details of the Specific Requirements for GSP Sections 4 and 5

The Advisory Committee needs to begin working with specific management actions and projects and some or all of those projects will end up in the GSP as items in Section 4, which requires listing, describing and analyzing projects and management actions needed to achieve the GSP's sustainability goal. Presumably, projects and management actions that end up being included in Section 5, the GSP's required section on Plan Implementation, which includes information about the cost of and schedule for implementation, will be drawn from those included in Section 4.

For context, the following is a detailed list of the information about each project and management action needed to achieve the basin's sustainability goal that must be included in **Section 4 of the GSP**.[6] For each potential management action or project included discussed in the GSP, DWR guidance requires:

4.1 Project description

- Measureable objective that is expected to benefit from the project or management action;
- Circumstances for implementation;
- Public noticing;
- Overdraft mitigation projects and management actions;
- Permitting and regulatory process;
- Time-table for initiation and completion and the accrual of expected benefits;
- Expected benefits and how they will be evaluated;

[6] CCR Title 23, Division 2 Chapter 1.5 Subchapter 2 Article 5 Subarticle 5, Section 354.44

- How the project or management action will be accomplished. If the project or management actions rely on water from outside the jurisdiction of the Groundwater Sustainability Agency, an explanation of the source and reliability of that water shall be included;
- Legal authority required;
- Estimated costs for the projects and management and plans to meet those costs (economic analysis and finance strategy for projects and management actions);
- Management of groundwater extractions and recharge; and
- Relationship to additional GSP elements as described in water code §10727.4.

The information listed above must be provided on each of the projects or management actions included in GSP Section 4.

Section 5 of the GSP focuses on Plan Implementation. Specifically Section 5 must cover the following:

5.1 Estimate of GSP Implementation Costs (Reg. §354.6)
5.2 Schedule for Implementation
5.3 Annual Reporting
- GSA's plan for required annual reporting

5.4 Periodic Evaluations
- GSA's process for required periodic evaluations.

Section 5 of the GSP needs to identify and lay out a schedule for implementing projects and management actions that will achieve and maintain basin sustainability within 20 years.

Discussion Questions for the MGA Board related to Projects and Management Actions to Include in the GSP

To assist the Advisory Committee in moving ahead with its work, staff suggests the MGA Board discuss and see if the Board has agreement on the following questions:

Management Actions and Projects to include in GSP Section 4[7]

1. Given the District's various projects in its Community Water Plan and particularly the Pure Water Soquel project's level of development and its

[7] See details of required elements of Sections 4 and 5 at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/GSP-Annotated-Outline.pdf

timeline for potential implementation, does the MGA Board want the Community Water Plan Projects included in those potential management actions and projects to be described in Section 4 of the GSP?

2. Given the City's various projects from the Council adopted recommendations of the WSAC and particularly water transfer/water exchange projects involving in lieu and ASR projects, does the MGA Board want WSAC recommended projects included in those potential projects to be described in Section 4 of the GSP?
3. Are there any other projects or management actions from Attachment 2 or from other sources that the MGA Board wants included in those potential projects to be described in Section 4 of the GSP?

For the Board's consideration, staff's perspective is that being inclusive in the projects and management actions described in Section 4 is probably a wise approach for a variety of reasons. First, given the various levels of project development, associated uncertainties, and the local history of projects that were pursued but ultimately not implemented, keeping the options open is probably a good idea. Second, having a wide range of potential projects and management actions included in the GSP may make it easier to acquire funding for future projects because the project or management action was included in the list of projects in an approved, adopted GSP. And, third, while the list of projects included in Attachment 2 is large, the exercise of completing the required project description in Section 4 will have the advantage, at a minimum, of developing common descriptive information for all the options that have been being worked on over the last few years.

Management Actions and Projects to Include in GSP Section 5, Plan Implementation

1. Given the District's various projects in its Community Water Plan, does the MGA Board want to direct the Advisory Committee to include one or more of the projects in the Soquel Creek Water District's Community Water Plan in the implementation focused Section 5 of the GSP?
2. Given the City's various projects from the Council adopted recommendations of the Water Supply Advisory Committee (WSAC) does the MGA Board want to direct the Advisory Committee to include one or more of the projects WSAC's recommendations in the implementation focused Section 5 of the GSP?
3. Are there any other projects or management actions from Attachment 2 or from other sources that the MGA Board wants included in the implementation focused Section 5 of the GSP?

Staff does not have a recommendation for the Board for either the Board's discussion of its potential role in developing and implementing projects or for the Board's potential direction to the Advisory Committee on projects or management actions to include in Section 5 of the GSP. Board action on both of these topics

needs to emerge from Board discussion of the questions provided here as well as any others that may arise as part of the Board's discussion. There is no right or wrong answer to either question.

Following the relevant discussions, staff recommends that the Board provide direction to staff and the Advisory Committee in each of the following areas:

1. By MOTION, provide direction to staff on the Board's current thinking of the MGA's role in developing and implementing projects; and

2. By MOTION, provide direction to the Advisory Committee on the Board's preferred approach to including projects and management actions in GSP Sections 4 and 5.

By _____

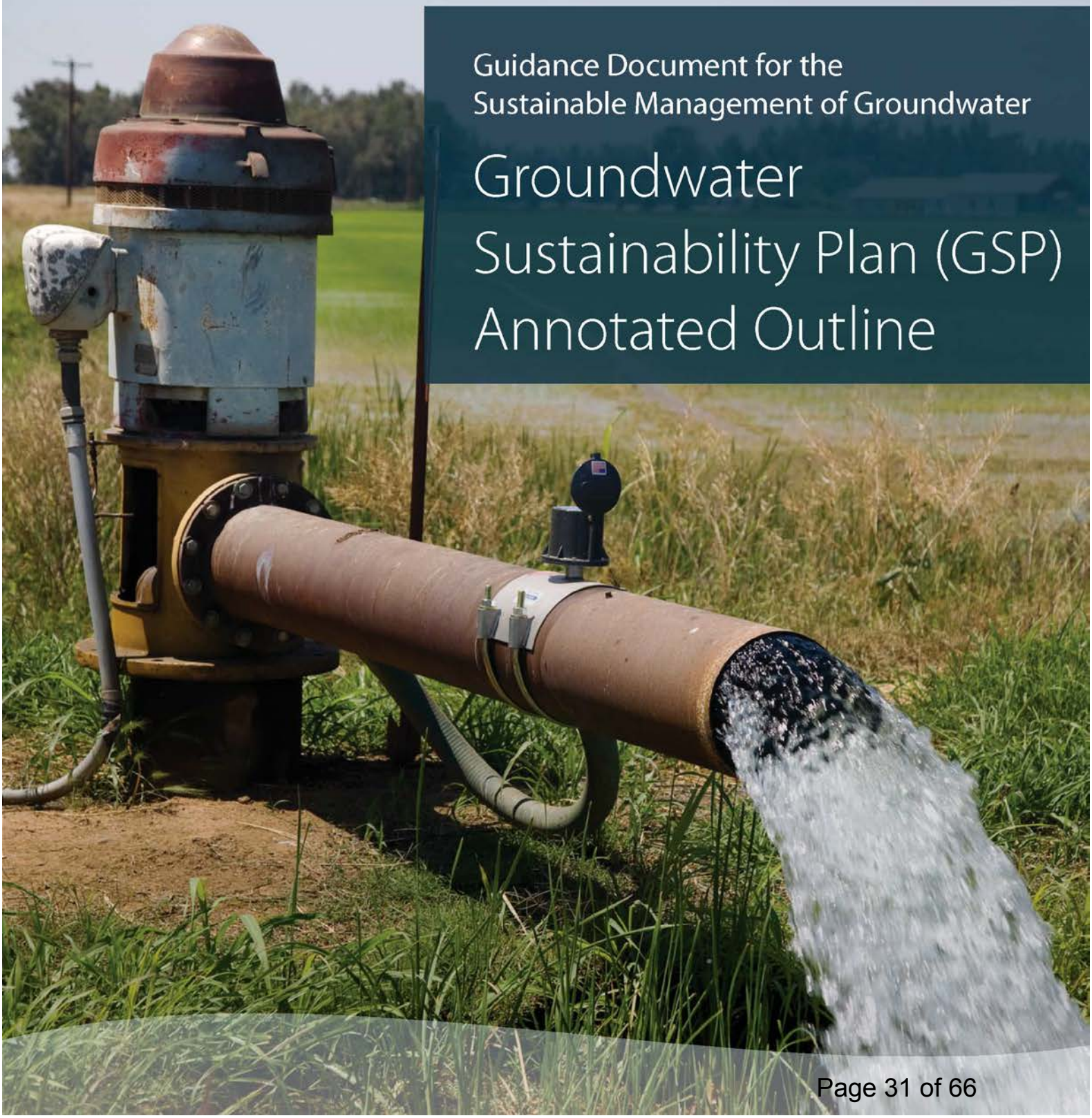
Rosemary Menard, Director
City of Santa Cruz Water Department

California Department of Water Resources
Sustainable Groundwater Management Program

December 2016

Guidance Document for the
Sustainable Management of Groundwater

Groundwater Sustainability Plan (GSP) Annotated Outline



Guidance Document for the Sustainable Management of Groundwater

Groundwater Sustainability Plan (GSP) Annotated Outline

December 2016

The objective of this Guidance Document is to provide Groundwater Sustainability Agencies (GSAs) and other stakeholders an example **Groundwater Sustainability Plan (GSP) Annotated Outline** to aid in GSP development and standardize future reporting.

The GSP Annotated Outline is only intended to be a guide. GSAs have the option of using this information as they develop a GSP. The content provided here does not create any new requirements or obligations for the GSA or other stakeholders.

Guidance Documents are not a substitute for the GSP Emergency Regulations (GSP Regulations) or the Sustainable Groundwater Management Act (SGMA). Those GSAs developing a GSP are strongly encouraged to fully read the GSP Regulations and SGMA. In addition, using this Guidance Document to develop a GSP does not equate to an approval determination by DWR.

Context with GSP Regulations and SGMA

The GSP Annotated Outline can be used by GSAs, in conjunction with the *Preparation Checklist for GSP Submittal Guidance Document*, to develop a GSP and determine if the GSP (or coordinated GSPs) meets the minimum requirements of the GSP Regulations and statutory provisions of SGMA. The detailed requirements of a GSP may be found in the GSP Regulations, primarily in Article 5 – Plan Contents, and in SGMA, primarily in Chapter 6 beginning with California Water Code Section 10727. All references to GSP Regulations relate to Title 23 of the California Code of Regulations, Division 2, Chapter 1.5, and Subchapter 2. All references to SGMA relate to California Water Code sections in Division 6, Part 2.74.

California Department of Water Resources
Sustainable Groundwater Management Program
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Potential Groundwater Sustainability Plan Outline

Executive Summary *(Reg. § 354.4)*

1.0 Introduction

1.1 Purpose of the Groundwater Sustainability Plan (GSP or Plan)

1.2 Sustainability Goal

1.3 Agency Information *(Reg. § 354.6)*

1.3.1 Organization and Management Structure of the Groundwater Sustainability Agency (GSA or Agency)

1.3.2 Legal Authority of the GSA

1.3.3 Estimated Cost of Implementing the GSP and the GSA's Approach to Meet Costs

1.4 GSP Organization

- Description of how the GSP is organized
- Preparation Checklist for GSP Submittal

2.0 Plan Area and Basin Setting

2.1 Description of the Plan Area *(Reg. § 354.8)*

2.1.1 Summary of Jurisdictional Areas and Other Features *(Reg. § 354.8 b)*

- Map(s) *(Reg. § 354.8 a)*:
  - Area covered by GSP
  - Adjudicated areas, other Agencies within the basin, and areas covered by an Alternative
  - Jurisdictional boundaries of federal or State land
  - Existing land use designations
  - Density of wells per square mile

2.1.2 Water Resources Monitoring and Management Programs *(Reg. § 354.8 c, d, e)*

- Description of water resources monitoring and management programs
  - Description of how monitoring networks of those programs will be incorporated into the GSP
  - Descriptions of how those programs may limit operation flexibility in the basin
  - Description of conjunctive use programs

2.1.3 Land Use Elements or Topic Categories of Applicable General Plans *(Reg. § 354.8 f)*

- Summary of general plans and other land use plans
  - Information could include crop types and acreages, urban land designation, and identification of open spaces.
- Description of how implementation of the GSP may change water demands or affect achievement of sustainability and how the GSP addresses those effects
- Description of how implementation of the GSP may affect the water supply assumptions of relevant land use plans
- Summary of the process for permitting new or replacement wells in the basin
- Information regarding the implementation of land use plans outside the basin that could affect the ability of the Agency to achieve sustainable groundwater management

2.1.4 Additional GSP Elements *(Reg. § 354.8 g)*

- Control of saline water intrusion
- Wellhead protection
- Migration of contaminated groundwater
- Well abandonment and well destruction program
- Replenishment of groundwater extractions
- Conjunctive use and underground storage
- Well construction policies

- Groundwater contamination cleanup, recharge, diversions to storage, conservation, water recycling, conveyance, and extraction projects
- Efficient water management practices
- Relationships with State and federal regulatory agencies
- Land use plans and efforts to coordinate with land use planning agencies to assess activities that potentially create risks to groundwater quality or quantity
- Impacts on groundwater dependent ecosystems

2.1.5 **Notice and Communication** ***(Reg. § 354.10)***

- Description of beneficial uses and users in the basin
- A Communications Section that describes:
  - Decision-making processes
  - Public engagement opportunities
  - Encouraging active involvement
  - Informing the public on GSP implementation progress

2.2 Basin Setting

2.2.1 **Hydrogeologic Conceptual Model** ***(Reg. § 354.14)***

- Graphical and narrative description of the physical components of the basin
- At least two scaled cross-sections
- Map(s) of physical characteristics
  - Topographic information
  - Surficial geology
  - Soil characteristics
  - Delineation of existing recharge areas that substantially contribute to the replenishment of the basin, potential recharge areas, and discharge areas
  - Surface water bodies
  - Source and point of delivery for local and imported water supplies

2.2.2 **Current and Historical Groundwater Conditions** ***(Reg. § 354.16)***

- Groundwater elevation data
- Estimate of groundwater storage
- Seawater intrusion conditions
- Groundwater quality issues
- Land subsidence conditions
- Identification of interconnected surface water systems
- Identification of groundwater-dependent ecosystems
    - Including potentially related factors such as instream flow requirements, threatened and endangered species, and critical habitat.

2.2.3 **Water Budget Information** ***(Reg. § 354.18)***

- Description of inflows, outflows, and change in storage
- Quantification of overdraft (as applicable)
- Estimate of sustainable yield
- Quantification of current, historical, and projected water budget
- Description of surface water supply used or available for use for groundwater recharge or in-lieu use

2.2.4 **Management Areas (as Applicable)** ***(Reg. § 354.20)***

- Reason for creation of each management area
- Level of monitoring and analysis
- Description of management areas
- Explanation of how management of management areas will not cause undesirable results outside the management area

3.0 Sustainable Management Criteria

3.1 Sustainability Goal *(Reg. § 354.24)*

- Description of sustainability goal, including:
    - Information from the basin setting used to establish the sustainability goal
    - Discussion of the measures that will be implemented to ensure that the basin will be operated within its sustainable yield

- Explanation of how the sustainability goal is likely to be achieved within 20 years of Plan implementation and is likely to be maintained through the planning and implementation horizon

3.2 Measureable Objectives *(Reg. § 354.30)*

- Description of each measureable objective and how the measurable objectives were established for each relevant sustainability indicator
- Description of how a reasonable margin of safety was established for each measureable objective
- Description of a reasonable path to achieve and maintain the sustainability goal including a description of interim milestones for each relevant sustainability indicator
  - Measurable Objective for Sustainability Indicator 1
    - Interim Milestone at 5 years
    - Interim Milestone at 10 years
    - Interim milestone at 15 years
    - Milestone at 20 years
  - Measurable Objective for Sustainability Indicator 2
    - Interim Milestone at 5 years
    - Interim Milestone at 10 years
    - Interim milestone at 15 years
    - Milestone at 20 years
  - Measurable Objective for Sustainability Indicator X
- If management areas are used, a description of *(Reg. § 354.20 b)*:
  - The measurable objectives established for each management area, and an explanation of the rationale for selecting those values, if different from the basin at large.
  - An explanation of how the management area can operate under different measurable objectives without causing undesirable results outside the management area, if applicable.

3.3 Minimum Thresholds *(Reg. § 354.28)*

- Description of each minimum threshold and how they were established for each relevant sustainability indicator

- Relationship for each sustainability indicator
- Description of how minimum thresholds have been selected to avoid causing undesirable results
- Description of how minimum thresholds may affect the interests of beneficial uses and users of groundwater or land uses and property interests.
- Standards related to sustainability indicators
- How each minimum threshold will be quantitatively measured for each relevant sustainability indicator
- If management areas are used, a description of *(Reg. § 354.20 b)*:
    - The minimum thresholds established for each management area, and an explanation of the rationale for selecting those values, if different from the basin at large.
    - An explanation of how the management area can operate under different minimum thresholds without causing undesirable results outside the management area, if applicable.

3.4 Undesirable Results *(Reg. § 354.26)*

- Description of undesirable results for any of the sustainability indicators
- Cause of groundwater conditions that would lead to undesirable results
- Criteria used to define undesirable results based on minimum thresholds
- Potential effects on the beneficial uses and users of groundwater, on land uses and property interests, and other potential effects that may occur or are occurring from undesirable results

3.5 Monitoring Network

3.5.1 Description of Monitoring Network *(Reg. § 354.34)*

- Description of how the monitoring network is capable of collecting sufficient data to demonstrate short-term, seasonal, and long-term trends in groundwater and related surface conditions, and yield representative information about

groundwater conditions as necessary to evaluate Plan implementation

- Description of monitoring network objectives including explanation of how the network will be developed and implemented to monitor:
  - Groundwater and related surface conditions
  - Interconnection of surface water and groundwater
- Description of how implementation of the monitoring network objectives demonstrate progress toward achieving the measureable objectives, monitor impacts to beneficial uses or users of groundwater, monitor changes in groundwater conditions, and quantify annual changes in water budget components
- Description of how the monitoring network is designed to accomplish the following for each sustainability indicator:
  - Chronic Lowering of Groundwater Levels. Demonstrate groundwater occurrence, flow directions, and hydraulic gradients between principal aquifers and surface water features
  - Reduction of Groundwater Storage. Estimate the change in annual groundwater in storage
  - Seawater Intrusion. Monitor seawater intrusion
  - Degraded Water Quality. Determine groundwater quality trends
  - Land Subsidence. Identify the rate and extent of land subsidence
  - Depletions of Interconnected Surface Water. Calculate depletions of surface water caused by groundwater extractions
- Description of how the monitoring plan provides adequate coverage of the sustainability indicators
- Density of monitoring sites and frequency of measurements required to demonstrate short-term, seasonal, and long-term trends

- Scientific rational (or reason) for site selection
- Consistency with data and reporting standards
- Corresponding sustainability indicator, minimum threshold, measureable objective, and interim milestone
- Location and type of each site on a map
- If management areas are used, a description of the level of monitoring and analysis appropriate for each management area. *(Reg. § 354.20 b)*

3.5.2 Monitoring Protocols for Data Collection and Monitoring *(Reg. § 352.2)*

- Description of technical standards, data collection methods, and other procedures or protocols to ensure comparable data and methodologies.

3.5.3 Representative Monitoring *(Reg. § 354.36)*

- Description of representative sites if designated
- Demonstration of adequacy of using groundwater elevations as proxy for other sustainability indicators
- Adequate evidence demonstrating site reflects general conditions in the area

3.5.4 Assessment and Improvement of Monitoring Network *(Reg. § 354.38)*

- Review and evaluation of the monitoring network
- Identification and description of data gaps
- Description of steps to fill data gaps
- Description of monitoring frequency and density of sites

4.0 Projects and Management Actions to Achieve Sustainability Goal *(Reg. § 354.44)*

4.1 Project #1 Description

- Measureable objective that is expected to benefit from the project or management action
- Circumstances for implementation

- Public noticing
- Overdraft mitigation projects and management actions
- Permitting and regulatory process
- Time-table for initiation and completion, and the accrual of expected benefits
- Expected benefits and how they will be evaluated
- How the project or management action will be accomplished. If the projects or management actions rely on water from outside the jurisdiction of the Agency, an explanation of the source and reliability of that water shall be included.
- Legal authority required
- Estimated costs for the projects and managements and plans to meet those costs (economic analysis and finance strategy for projects and management actions)
- Management of groundwater extractions and recharge
- Relationship to additional GSP elements as described in Water Code §10727.4.

4.2 Project #2 Description

4.3 Project #X Description

5.0 Plan Implementation

5.1 Estimate of GSP Implementation Costs *(Reg. § 354.6)*

5.2 Schedule for Implementation

5.3 Annual Reporting

- GSA's plan for required annual reporting

5.4 Periodic Evaluations

- GSA's process for required periodic evaluations

6.0 References and Technical Studies *(Reg. § 354.4)*

Appendices

- Interbasin and Coordination Agreements (as applicable) *(Reg. § 357)*
- Contact Information for Plan Manager and GSA Mailing Address *(Reg. § 354.6)*
- List of Public Meetings *(Reg. § 354.10)*
- Technical Appendices
- Groundwater Model Documentation
- Comments and Responses *(Reg. § 354.10)*

ATTACHMENT 2

Working Draft

Water Supply Augmentation Options for the Santa Cruz Mid-County Groundwater Basin

Source	Agency	Opportunity	Constraint(s)	Status
Water Conservation	Soquel Creek Water District Program	Reduce demand through increasing the efficiency of water use by existing and future water users	The success of existing SqCWD demand management programs may limit the potential for achieving future savings.	Soquel Creek Water District's (SqCWD) 2015 Urban Water Management Plan shows an actual 2015 system wide gallons per capita per day (gpcd) of 69, with a residential gpcd of 50. The projected system wide gpcd in 2035 is estimated to be 67, with a residential gpcd of 49. New water demand is offset through the Water Demand Offset program which uses development fees for conservation projects which save approximately two times the development's expected demand.
	City of Santa Cruz Program	Reduce demand through increasing the efficiency of water use by existing and future water users	No significant constraints.	The City's 2015 Urban Water Management Plan documents the current system wide gallons per capita per day (gpcd) of 70, with a residential gpcd of 43. For 2035 the projected system wide gpcd is estimated to be 80, with a residential gpcd of 46.[1]
	Central Water District Program	Reduce demand through increasing the efficiency of water use by existing and future water users	No Significant Constraints	Central Water District's (CWD) water conservation program includes the following elements: • Enforcement of an ordinance on all residential users prohibiting wasteful uses of water. • Participation in the Water Conservation Coalition of Santa Cruz County to provide outreach and education to residents. • Maintains/enforces the CWD "Drought/Water Shortage Contingency Plan"; the Plan includes Four Stages of drought response with escalating water use restrictions at each stage. • Provides rebate programs for installation of water efficient toilets and clothes washing machines. • Provides water efficient hose timers.
	County of Santa Cruz Programs for Small Water Systems and Private Wells	Reduce demand through increasing the efficiency of water use by existing and future water users.	The County has no ratepayers and therefore is not able to provide rebates, relying on State rebate programs and grants to offer incentives.	The County participates in the Water Conservation Coalition of Santa Cruz County to provide outreach and education to residents. The County requires source metering and reporting of monthly usage on all public water systems with 5 or more connections. Systems with 15 or more connections are required to meter individual connections, but are not required to report individual connection usage to the County. County staff will offer well soundings to private well owners who want to see if their water levels have changed. The County's water conservation program includes the following elements: • Enforcement of an ordinance on all residential users prohibiting wasteful uses of water. • Requirement for replacement of inefficient toilet and showerheads at time of property sale. • Implementing building code requirements for efficient fixtures for all new construction and remodels. • Requiring water conservation forms as part of any new well permits for wells expected to use over 2 AFY. • Implementing a currently grant-funded program to do water conservation assessments for of private well owner's properties.

[1] Note – the data used to calculate gpcd for the 2015 update to the City's Urban Water Management Plan was heavily influenced by water restrictions associated with the drought. Future estimated gpcd are higher because water restrictions aren't assumed to be in place and therefore wouldn't influence the projected figures.

ATTACHMENT B

Working Draft

Water Supply Augmentation Options for the Santa Cruz Mid-County Groundwater Basin

Source	Project/Program	Opportunity	Constraint(s)	Status
Surface Water	In Lieu Recharge (passive recharge) and Water Transfers	Near term – now to 5 years: Provide surface water from the City's North Coast sources to off-set part of the Soquel Creek Water District's wet season demand to rebuild groundwater resources by eliminating or reducing pumping during some part of the year. Rebuilding groundwater resources is an important because it ultimately would create an opportunity to supply water back to the City for use as a drought supply. Without this opportunity, this Project/Program would be a Water Transfer project only.	• Volume of the City's available water from its North Coast Sources is limited due to fish flows, although it is not constrained by water right Place of Use restrictions. • Water quality issues involving the mixing of treated drinking water from surface water and groundwater sources were identified and have been evaluated and full scale testing is the next step. • Potential volume of the District's wet season demand that could be off-set by providing treated surface water is a limiting factor and may not provide for enough of an increase in groundwater levels within a desired time frame to address the City's need for drought supplies.	• Soquel and the City of Santa Cruz have an existing agreement to explore a small scale in lieu exchange with an estimated volume of about 300 acre feet/year. The term of the agreement is for 5 years with a current ending date of 12/31/2020, but a time extension is feasible and has been preliminarily discussed. • Water Quality analyses and planning for initiation of water transfer is underway. Bench scale testing confirmed both water qualities are compatible; however, additional full scale testing and monitoring will be the next step to confirm. As per the agreement, there are several conditions that must be met for the water transfer to be permissible in any given year, drought conditions being one of them. Earliest initiation is winter of 2018/19.
		Long term – 5 years into the future Provide surface water from the City's North Coast sources and the San Lorenzo River to off-set some or all of the Soquel Creek Water District's wet season demand and rebuild groundwater resources by eliminating or reducing pumping during some part of the year. Similar to the near term project described above, rebuilding groundwater resources is an important component as it relates to the opportunity to supply water back to the City. Without this opportunity, this Project/Program would be a Water Transfer project only.	• Potential volume of wet season demand that could be off-set by providing treated surface water is a limiting factor and may not provide for restoration of the basin within a desired time frame. • Water rights – the Place of Use for the City of Santa Cruz surface water rights from the San Lorenzo River do not include the Soquel Creek Water District or the parts of the Santa Cruz Mid-County Groundwater Basin that are outside the City's current water service area. • Current infrastructure allows about 1 to 1.5 mgd capacity – could be enlarged if determined to be cost-effective. Estimated annual capacity of existing infrastructure during could be approximately 800 acre feet during the wet season.	• The City has initiated work to modify its San Lorenzo River water rights to open up the place of use so that water from San Lorenzo River sources could be used in providing long term in lieu to the District. Estimated time for resolution – 1 to 2 years. • Modeling and other studies are needed to determine limitations of the City and District infrastructure and identify where improvements may be needed to convey additional water.
	Aquifer Storage and Recovery (active recharge)	Create an underground reservoir of stored treated surface water using available winter flows (above those required for ongoing operations, water rights, and fish flows). Stored water would provide drought supply for Santa Cruz and could be designed with additional capacity to contribute to the restoration of the Santa Cruz Mid-County Groundwater Basin and provide drought storage for Santa Cruz. (Note: An ASR project using surface water from the San Lorenzo River source to store water in the Santa Margarita Groundwater Basin is also being evaluated.)	• The technical feasibility of storing and retrieving stored water from the Santa Cruz Mid-County Groundwater Basin may be a constraint. • The adequacy of existing infrastructure to deliver available water to potential injection wells as well as the sizing and location of wells to extract water needed to meet Santa Cruz's drought needs are being evaluated. • Availability of appropriate and available real property parcels or rights of way for the development of necessary wells and delivery infrastructure may be a constraint.	• The City of Santa Cruz is working to assess the feasibility of injecting treated drinking water from its surface water sources into regional groundwater aquifers. Phase I of the work is nearing completion; Phase II, which includes pilot testing injection in each aquifer, will begin in 2019 and be completed in 2 to 3 years. • Information generated by these evaluations will be used to determine the degree to which ASR is a feasible part of the City's strategy to improve the reliability of its water supply and will be used as part of the City's planned supplemental supply decision process in 2020..
			General Constraint for surface water options: • City's need to build drought supply through a combination of passive and/or active recharge could result in significant future withdrawals from the basin that may interfere with the timeframe or even ultimate success of reaching basin recovery goals. • Long term reliability of surface water as a supply may be an issue if climate change results in some shift in the amount or pattern of precipitation and/or if multi-year drought conditions occur.	

ATTACHMENT B

Working Draft

Water Supply Augmentation Options for the Santa Cruz Mid-County Groundwater Basin

Source	Project/Program	Opportunity	Constraint(s)	Status
Storm Water	Distributed Storm Water Managed Aquifer Recharge (DSWMAR)	Where feasible, install small to medium scale (10 acre feet/year up to 1000 acre feet/year/site) facilities to capture storm water and recharge more shallow zones of aquifers through surface spreading and/or constructed dry wells.[2]	• The scale of recharge DSWMAR may be a constraint to achieving timely recharge of the Mid-County Basin. • Topographic, ground cover and local vegetation, and surface and sub-surface geology/hydrogeology can provide significant constraints for siting DSWMA. • DSWMAR introduces water to the upper levels of aquifers and most drinking water production draws from deeper levels. Depending on the configuration of aquifers, DSWMAR may never reach the aquifers drinking water is being drawn from.	• UCSC Professor Andrew Fisher has initiated work on this approach working with land owners in the Pajaro Valley Water Management Agency on several surface spreading projects and has good data about the effectiveness of this approach given the right surface and subsurface hydro-geologic conditions. • Santa Cruz County has installed dry wells to capture and recharge storm water in Live Oak and Aptos. • Soquel Creek Water District and the County of Santa Cruz partnered to identify potential sites and conducted geophysical surveys (using DualEM technology) of eight potential sites to assess recharge suitability. Results indicate that three sites warrant further evaluation. HydroMetrics calculated stormwater runoff volume estimates and evaluated infiltration rates and recharge to the aquifer at these three sites.
Recycled Waste-water	Non-Potable Reuse (NPR)	Off-set peak season irrigation demand by replacing use of treated drinking water with treated wastewater	• Existing infrastructure does not allow for the distribution of NPR, so new infrastructure would be required to develop this alternative. • Peak season irrigation demand is time limited (typically no more than 4 to 6 months) and there are relatively few concentrated centers of irrigation demand that would allow for the cost of distribution infrastructure to be spread across a large enough rate base to make NPR a cost-effective alternative for the user. • Active water conservation programs in both the Soquel Creek and Santa Cruz water service areas are targeting irrigation demand and working to reduce this demand through incentive programs, making an effort to produce a new product to replace existing potable demand likely to be even less effective over time. • The Santa Cruz Wastewater Treatment Facility currently does not treat the majority of the wastewater it receives to the treatment standard required for non-potable reuse. Expansion of the plants facilities to treat additional water to a tertiary level is under consideration, and at least a partial expansion is planned.	• As part of the implementation of the Water Supply Advisory Committee's recommendations, the City of Santa Cruz has completed an evaluation of a whole range of opportunities for greater future utilization of recycled water in its water service area including an evaluation of opportunities for NPR use, IPR and DPR as described below. As a next step, the City will evaluate several recycled water projects in more detail, and do a comparative analysis with ASR, In lieu and desalination, as per the WSAC recommendations. • Soquel Creek Water District has completed two feasibility studies evaluating NPR; including a market study evaluation of potential irrigation demands as well as a satellite reclamation facility to offset groundwater pumping of Seascape Golf Course.

[2] see further information at http://www.cityofsantacruz.com/home/showdocument?id=46143

ATTACHMENT B

Working Draft

Water Supply Augmentation Options for the Santa Cruz Mid-County Groundwater Basin

Source	Project/Program	Opportunity	Constraint(s)	Status
Recycled Waste-water	Indirect Potable Reuse (IPR) – Groundwater Augmentation (the **Pure Water Soquel** project is an example of this approach)	Provide advanced purification (AWP) to existing secondary- treated wastewater effluent that is currently being sent out into the Monterey Bay National Marine Sanctuary and store purified water into the aquifer to ultimately mix with native groundwater and contribute to the restoration of the groundwater basin, provide a barrier to seawater intrusion, and provide a sustainable source of supply. The National Water Research Institute (NWRI) was brought on by SqCWD as an independent panel to evaluate their proposed project's evaluation and "The Panel concludes that the Project is plausible, feasible, and protective of public health, with respect to the following elements: quality of the source water that would be provided by the SCWWTF and use of proven advanced treatment technologies to produce water that meets all drinking water requirements and is protective of public health and the environment." -NWRI Report (Dec. 2017)	• In general there are few technological constraints of this approach. The treatment techniques and processes used to produce drinking water from this supply source have a proven track record of performance and are already widely in use in California and elsewhere. • To the degree that there are constraints, they are more likely to be potential perception that there are public health issues associated with using waste water as a source; as many people don't realize that the water quality of purified water is cleaner than existing groundwater and surface water that goes through only conventional filtration.	• As part of the implementation of the Water Supply Advisory Committee's recommendations, the City of Santa Cruz has completed an evaluation of a whole range of opportunities for greater future utilization of recycled water in its water service area. • The Soquel Creek Water District is in Year 4 of its evaluation of an IPR project and has been coordinating with the City of Santa Cruz (City Manager, Public Works, and Water Departments) regarding the secondary treated wastewater that would be used as the source water for this project. • The draft EIR was released in July 2018 and the District has received over $2M in planning grants from the State Water Resources Control Board and a $150,000 planning grant from the US Bureau of Reclamation. The District is eligible to compete for implementation money should the Pure Water Soquel Project go forward ($50M under Prop 1 and $20M under Title XVI). • It is anticipated that the final EIR will be released in late 2018/early 2019 with the Board to consider whether to go into permitting and construction.
	Indirect Potable Reuse – Reservoir Water Augmentation	Provide advanced purification of wastewater and pump treated water back to Loch Lomond Reservoir to mix with existing surface water providing the water necessary for the City to meet its drought supply needs and/or to allow long term water service from surface water sources to the Soquel Creek Water District, thus substantially reducing or eliminating groundwater pumping in the Santa Cruz Mid-County Groundwater Basin.	• The first bullet from the option immediately above is relevant here as well. • In surface water augmentation, a constraint can be achieving necessary reservoir residence time as the dynamics of mixing and water movement in a reservoir are substantially different from those in aquifers. • If a reservoir is full due to natural run off, it is not feasible to add additional water to the system, which may limit the benefit from this approach. Policy issues may include potential perception that there are public health issues associated with using waste water as a source.	• The City of Santa Cruz's recycled water study is complete. See notes above for next steps.
Recycled Wastew ater	Direct Potable Reuse	Provide advanced purification of wastewater and pump treated water back to the Graham Hill Water Treatment Plant to mix with existing surface water providing the water necessary for the City to meet its drought supply needs and/or allow long term water service from surface water sources to the Soquel Creek Water District, thus substantially reducing or eliminating groundwater pumping in the Santa Cruz Mid-County Groundwater Basin.	• While under development, the regulatory framework for direct potable reuse in California is not yet in place and some estimates are that it will be as long as 10 years before it is. • The policy and political issues associated with the various approaches to indirect potable reuse are certainly relevant here.	• The City of Santa Cruz's recycled water study is complete. See notes above for next steps. • Soquel Creek Water District's recycled water feasibility study has evaluated this option using assumptions about what the regulatory framework would involve as well.

ATTACHMENT B

Working Draft

Water Supply Augmentation Options for the Santa Cruz Mid-County Groundwater Basin

Source	Project/Program	Opportunity	Constraint(s)	Status
Sea Water	Deep Water Desal[3]	Contract for the purchase of desalinated water from a privately developed and financed desalination facility at a site in Moss Landing. Desalinated water would replace water pumped from groundwater, which would allow the basin to recover. The proposed Deep Water Desal Plant would have a reduced energy requirement (compared to a regular desal plant) due to warming the sea water by using it to cool a proposed data center before it is desalinated. In addition, the Moss Landing site offers the opportunity to bring sea water into the facility from a deeper intake in the off-shore Monterey Canyon, which may reduce or eliminate any possible impacts of a facility intake.	• A constraint of this option is uncertainty about whether such a facility will actually be developed. • Water would need to be piped from Moss Landing to at least the Soquel-Aptos area, likely with those costs borne directly by Mid-County groundwater users. • Likely structure of any contract would be long term "take or pay," for the contracted amount. May or may not be flexibility to restructure contract in future to provide more or less water should needs change.	• The Soquel Creek Water District has signed a non-binding letter of interest with Deep Water Desal and has provided some funding to have evaluation of a potential pipeline between Moss Landing and Soquel included in any EIR prepared by Deep Water Desal for its proposed project. • It is anticipated that DWD will be seeking more formal involvement of water agencies as this project develops. • A draft EIR for the DWD project is anticipated to be released in Fall 2018.
	Local Desal	Construct a local desalination plant that would supply an alternate source of water, which would allow the basin to recover.	• In general there are few technological constraints of desalination. The treatment techniques and processes used to produce drinking water from sea water have a track record of performance and are in use in California and elsewhere in the US and the world. • Concerns raised during the consideration of an earlier local desal project jointly sponsored by the City of Santa Cruz and the Soquel Creek Water District included both the energy intensive nature desalination facilities as well as the potential for impacts to marine life due to the project intake.	• For six years (2007-2013), the City of Santa Cruz and the Soquel Creek Water District jointly financed and explored development of a desal plant, completing many studies, including developing and issuing a draft environmental impact report and receiving public comment on this report. • In the fall of 2013, the Santa Cruz City Council directed staff to discontinue working on this effort while it explored other alternatives. • As a result of the City's actions, Soquel Creek Water District looked into solely financing and developing the scwd2 desalination project on its own as well as a local-only desal facility developed within the mid-county region. Based on political nature and constraints, including the City's Charter amendment, a local only project was not selected by SqCWD to further pursue at this time. • Ultimately the Water Supply Advisory Committee (WSAC)recommendations included a local desal project similar to that under consideration as the joint project with the District was included as one of the back-up options for meeting Santa Cruz' water supply needs. The WSAC recommendations were adopted by the City Council in November 2015..
			General Constraint for desalination options: • As a result of the November 2012 passage of (City of Santa Cruz Charter Amendment) Measure P, requires that no legislative action to authorize, permit construction, operate and/or acquire a desal plant or incur any indebtedness for that purpose shall be valid unless authorized by an affirmative vote of qualified electors in the City of Santa Cruz.	

[3] See also http://www.deepwaterdesal.com/

November 15, 2018

MEMO TO THE MGA BOARD OF DIRECTORS

Subject: Agenda Item 6.1

Title: Summary Tables of the Groundwater Modeling Assumptions and Scenarios

Attachments:

1. 6.1.1 Summary of Groundwater Modeling Assumptions and Scenarios
2. 6.1.2 Modeled Basin Effects from Scenarios Reflecting Potential Management Actions and Projects

The attached tables were presented at the Groundwater Sustainability Plan Advisory Committee meeting on October 24, 2018, as part of a review and discussion on groundwater modeling assumptions, scenarios, and the modeled basin effects of management actions and projects.

These two summary tables are being provided to the Board as an informational update.

Recommended Action:

Informational, no motion necessary.

By _____

Ron Duncan
General Manager
Soquel Creek Water District

Summary of Groundwater Modeling Assumptions and Scenarios

Model Assumptions for Predictive Runs

The model assumptions provided below were discussed at the August and September GSP Advisory Committeee meetings.

Model Assumptions with Water Supply Augmentation Options as Superscript	Assumptions	Follow up work
Pumping demand [1]	CWD: pre-drought average 2008-2011 SqCWD: 2015 Urban Water Management Plan projections that reduce over time City of Santa Cruz: cooperative agreement with SqCWD Pre-drought estimates for non-municipal pumping	SqCWD projected demand may be too low; test SqCWD demand that is stable over time
Return Flow	Municipal system losses from sewer and water pipes	
Santa Margarita/Pajaro Valley boundaries	No annual changes in heads	
Stream-aquifer interaction	Streamflow calculated by model and calibrated to gauge flow data	Calibration of stream alluvium to gradient between shallow groundwater level and stream level
Climate change	Catalog Climate: 10% less rainfall, 1.5 degree F increase in temps	Model TAC approved use of Catalog Climate as opposed to individual global circulation models; will need to check approach with DWR
Sea level rise	+1.5 ft	Model TAC advised updating to 2018 Ocean Protection Council updated guidance +2.3 feet in 2070 based on 5% probability
Surface water transfer [2]	2015 AFY pilot transfer to SqCWD continues indefinitely	

Modeled Basin Effects from Scenarios Reflecting Potential Management Actions and Projects

The modeled scenarios provided below were discussed at the September and October GSP Advisory Committeee meetings.

Model Scenario with Water Supply Augmentation Options as Superscript	Type	General Effect on Groundwater Levels	Follow up work
Eliminate inland pumping in areas where simulated groundwater levels are > 50 ft above sea level	Sensitivity	small effect in coastal groundwater levels (< 1 ft increase)	Test effect of non-municipal pumping in Aromas area (Purisima F and Aromas)
Reduce septic tanks return flow from 90% to 50%	Sensitivity	small effect in coastal groundwater levels (~1 ft decrease)	
Pajaro Valley Boundary, groundwater increases 3 ft	Sensitivity	benefits groundwater levels in the Aromas area (up to 1.2 ft increase at protective elevation wells)	
Effect of non-municipal pumping in alluvium	Sensitivity	In progress	Move pumping in aquifers below alluvium and Terrace Deposits to alluvium and Terrace Deposits
Effect of non-municipal pumping in Soquel Creek and Bates Creek Valleys	Sensitivity	In progress	Turn off pumping in these areas
Effect of vertical distribution of pumping near Soquel Creek	Sensitivity	In progress	Move municipal pumping in wells screened in AA and Tu to only Tu
Remove surface water transfer to SqCWD	Management action	Lowers groundwater levels in coastal Purisima A unit and Tu unit up to 4 feet.	
Municipal pumping redistribution towards coast	Current operational limits	Lowers groundwater levels 1-4 feet in western coastal Purisima A unit. Increase groundwater levels 10+ feet in coastal Tu unit. Decreases groundwater levels <1 ft in coastal Aromas area.	
Reduce municipal pumping [1, 2a, 4a, 4bii, 4d, 5a, 5b]	Management action	- helps recover Purisima A-unit and BC unit, Purisima A/BC units can have increased pumping and still achieve sustainability - Aromas area/Purisima F unit pumping needs further reduction - Tu unit pumping needs further reduction - coastal elevations La Selva Beach area of Aromas aquifer (SC-A3A) are not impacted by reducing municipal pumping because municipal wells already inactive.	Redistribute municipal pumping further in an attempt to reach Minimum Thresholds and Measurable Objectives at more wells Test effect of non-municipal pumping in Aromas area (Purisima F and Aromas)
Aquifer storage and recovery by City of Santa Cruz [2b]	Project	Greater groundwater level declines near recovery wells for in-lieu scenarios compared to ASR injection scenarios	Continue feasibility evaluation by simulating different project configurations
Pure Water Soquel seawater intrusion prevention by SqCWD [4bi, 4c]	Project	see Draft EIR Project to be discussed at December 2018 GSP Advisory Committeee meeting	

SANTA CRUZ MID-COUNTY GROUNDWATER AGENCY

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Meeting Summary

Santa Cruz Mid-County Groundwater Sustainability Planning (GSP) Advisory Committee Meeting #10

August 22, 2018, 5:00 – 8:30 pm

This meeting was the tenth convening of the Groundwater Sustainability Planning (GSP) Advisory Committee. It took place on August 22, 2018 from 5:00-8:30 p.m. at the Simpkins Family Swim Center in Santa Cruz. This document summarizes key outcomes from Advisory Committee and staff discussions on the following topics: project updates; initial presentation on the role of groundwater modeling, describing the Santa Cruz Mid-County Basin model; groundwater model predictive simulations and relevant Committee questions and feedback on additional questions the model needs to address; and Committee review of draft Sustainable Management Criteria proposals for Subsidence and Groundwater Quality. It also provides an overview of public comment received. It is not intended to serve as a detailed transcript of the meeting.

Meeting Objectives

The primary objectives for the meeting were to:

- Build Advisory Committee familiarity with and understanding of:
  - the role of groundwater modeling in the GSP;
  - the use of groundwater models to explain complex local hydrogeology;
  - model data input, assumptions, and calibration;
  - assumptions used in predictive modeling;
  - predictive model scenarios developed to date and what is still to be modeled; and
  - the types of model results and how they will be used to evaluate Sustainable Management Criteria.
- Provide Advisory Committee input on questions to address through the groundwater model.

Action Items

Key action items from the meeting include the following:

- Ms. Darcy Pruitt to re-distribute the draft Seawater Intrusion management criteria proposal to the Committee members for their review.

- Regional Water Management Foundation (RWMF) to post the draft model data calibration report on the Mid-County Groundwater Agency (MGA) website once submitted to the MGA Board.
- Committee members to propose additional scenarios/questions to be incorporated into the groundwater modeling, and share with Ms. Pruitt.
- Committee members to review the Seawater Intrusion management criteria proposal by the end of August.
- Committee members to review the Subsidence and Groundwater Quality management criteria proposals by the September 26 Committee meeting.
  - Committee members to consider role of the MGA Board in addressing Groundwater Quality regulations and oversight already provided by state agencies).
- Kearns & West (K&W) to make edits to the June 27 and July 19 meeting summaries as directed by the Committee and forward to RWMF/MGA.
- Executive Team to forward June and July meeting summaries to the MGA Board for consideration.
- K&W to prepare meeting summary for August 22 Advisory Committee meeting.
- Ms. Georgina King to provide Committee members with a spreadsheet containing the underlying data representing the cumulative change in groundwater in storage for the entire Basin.
  - Also, provide members with a simplified version of data.

Meeting attendance

Committee members in attendance included:

1. Kate Anderton, Environmental Representative
2. John Bargetto, Agricultural Representative
3. David Baskin, City of Santa Cruz
4. Rich Casale, Small Water System Management
5. Keith Gudger, At-Large Representative
6. Dana Katofsky McCarthy, Water Utility Rate Payer
7. Jonathan Lear, At-Large Representative
8. Charlie Rous, At-Large Representative
9. Allyson Violante, County of Santa Cruz
10. Thomas Wyner for Cabrillo College, Institutional Representative

Committee members who were absent included:

1. Bruce Jaffe, Soquel Creek Water District
2. Jon Kennedy, Private Well Representative
3. Douglas P. Ley, Business Representative
4. Marco Romanini, Central Water District

Meeting Key Outcomes (linked to agenda items)

1. Introduction and Discussion of GSP Process Timeline and Project Updates

Ralph Bracamonte, Central Water District, opened the meeting and welcomed participants. Mr. Bracamonte asked the GSP Advisory Committee members, Santa Cruz Mid-County Groundwater Agency (MGA) Executive Team, and the consultant support team around the room to introduce themselves. He also addressed members of the public in attendance and asked them for self-introductions.

Eric Poncelet, Facilitator, reviewed the agenda, meeting objectives, and the updated GSP process timeline, and asked staff to provide the following project updates:

- **Advisory Committee Field Trip**
  Darcy Pruitt, RWMF, gave a brief update on the field trip and requested that the Committee members hold open both October 23rd and 24th from 9:00 AM to 1:00 PM. Ms. Pruitt indicated that she will confirm the date and details with the Committee in short order.

- **December 2018 Advisory Committee Meeting**
  Ms. Pruitt confirmed that the December 2018 Advisory Committee Meeting has been rescheduled from its original date, December 26, 2018 to December 12, 2018, due to the holiday schedule.

2. Oral Communications (for items *not* on the agenda)

Members of the public provided comments on non-agenda items during this session.

One speaker asked whether the field trip is open to the public. The same speaker also requested that Advisory Committee members review the written communication she submitted in advance of the meeting, encouraging the Committee members to invite Dr. Andrew Fisher to a future meeting to speak on the topic of groundwater recharge. Further, the speaker encouraged Committee members to use a water transfer model that limits restrictions on stream diversions, that reduces groundwater pumping, and transfers water from outside of the Basin. Finally, the speaker reminded the Committee and other members of the public that the public comment period for Pure Water Soquel ended on August 13 and that an extension was requested, but denied.

3. Role of Groundwater Modeling and Description of the Mid-County Model

Georgina King, Montgomery & Associates, presented on: the role of groundwater modeling in Basin management as well as for the groundwater sustainability plan (GSP), how it works in calculating water budgets and predicting change in storage, and using model data inputs and outputs and calibrations as

predictors. Ms. King emphasized that modeling is a critical tool for making better management decisions for the Basin, which can be complex and constantly changing.

Following Ms. King's presentation, Committee members and staff discussed clarifying questions on the following topics:

- Participants discussed the role of return flow from irrigation in modeling groundwater levels, considering the many other variables. The key takeaway from this discussion is that return flow from irrigation does not result in a total loss of water.
- Participants discussed whether horizontal and vertical hydraulic conductivity figures are informed by geology and whether the model modifications due to the geology in various locations turned up any unexpected results other than the fault leakage that Ms. King discussed in her presentation.
- The surface water flow component is complex, and staff is working on how best to characterize and understand stream/groundwater interactions better.
- What is the margin of error for the model and the risks involved in using models to develop management decisions in groundwater sustainability planning? Staff noted that there is a section in the Department of Water Resources' (DWR) GSP guidelines dedicated to the issue of uncertainty. The final GSP can address risk by explaining the application of an iterative process to adaptively address likely scenarios in a range of management actions, and by doing all this with the consideration of best available information at a given point in time.
- Isotope studies may help identify sources of water and linkages between injections and extractions with flows, and the model can be adapted to reflect these linkages.
- The groundwater flow model is a predictive model and therefore does not model pumping in other areas (e.g., Pajaro Valley). However, the model does extend into the Pajaro Valley and thus can take some factors into account. Staff noted that Pajaro Valley is an area that needs to be addressed in collaboration with Pajaro Valley Water Management Agency (PV Water); there is regular communication amongst the MGA member agency managers and PV Water.
- Committee members asked staff about their level of confidence in the model. Staff members responded that, given the level of expertise of the staff members and Technical Advisory Team members working on the model and its use of modeling standards, they have a relatively high level of confidence with the groundwater flow model.

Members of the public had the opportunity at the end of this session to ask questions regarding the role of the groundwater model. Their questions and staff responses are summarized below:

- A member of the public asked whether the groundwater model is available on the MGA website.

  - Ms. King explained that the model is still under MGA review and is not yet available to the public.
- Another member of the public asked how the groundwater model represents lower levels of the aquifer and whether it can show sea level interactions. Further, the participant asked whether SkyTem data is being used in the model.
  - Ms. King indicated that groundwater flows only go (one way) out to the sea, and those areas that have been intruded by seawater will be represented by denser seawater indicators. Ms. King explained that although inflow data tie in well with SkyTem data, the model uses only well data for calibration at this point.
- A member of the public asked whether the groundwater flow model and calibration methods are acceptable with DWR and whether DWR has suggested specific types of model or information to use. Further, the participant asked whether DWR is looking at other GSP development processes for other examples of models being used.
  - Ms. King said that DWR will only review the model report that will be included as a section in the GSP and that the modeling software is industry standard and is universally accepted. Ms. King noted that in some cases, DWR is providing the model to use.
  - Ron Duncan, Soquel Creek Water District, emphasized that the groundwater flow model is a premier model developed by USGS and is used internationally.
  - Ben Gooding, DWR, indicated that DWR will be conducted its review upon submittal of the GSP, at that time it, could request supporting documentation and data in the course of DWR's review of the GSP.
  - Rosemary Menard, City of Santa Cruz, confirmed that those working on the models are very actively engaged with DWR throughout the GSP process, and this working relationship is the conduit through which DWR receives modeling-related information.
  - In 2016, DWR issued Best Management Practice (BMP) guidance document on the use and development of groundwater and surface water models and MGA's approach is in line with the BMPs.
- A participant asked for the frequency at which the model is updated and whether there is a percentage level for the uncertainty factor.
  - Ms. King indicated that DWR requires that the model be updated every five (5) years and that decision on the frequency of future updates lies with the MGA. With respect to the percentage level of uncertainty of the model, Ms. King explained that it is within industry standard; this is also explained in the calibration report. This draft report is currently being vetted with the technical advisory committee and will be available on the MGA website in the next couple of months.

4. Public Comment

During this segment, Mr. Poncelet invited members of the public to comment on the Committee's discussions on the role of groundwater modeling and the Mid-County groundwater model, and any other Advisory Committee work.

One participant requested that the PowerPoint slides be numbered for reference ease. Staff noted this request.

5. Groundwater Model Predictive Simulations

In this segment of the meeting, Ms. King presented on the assumptions used in groundwater model predictive simulations--including assumptions on climate change, sea level rise, groundwater demand, and projects and management actions--and the types of results from such predictive simulations--including water budget, groundwater levels, and groundwater travel time. Throughout her presentation, Ms. King described key items currently planned for analysis, including:

1. Existing conditions to model baseline conditions (current demand and climate change scenarios from Urban Water Management Plans) as a starting point for comparisons.
2. Reduction of municipal pumping to evaluate impacts on basin-wide groundwater levels.
3. Basin replenishment through injection with a 20-year project horizon (Soquel Creek Water District's Pure Water Soquel, Groundwater Replenishment and Seawater Intrusion Prevention Project) currently in the Environmental Impact Report (EIR) review phase.
4. Aquifer Storage and Recovery feasibility (City of Santa Cruz project feasibility).
5. Changes in non-municipal pumping and return flow assumptions to test for basin impacts (to understand influence of private pumping on groundwater levels and streamflow).
6. Modification of municipal pumping to understand influence on streamflow.

Following her presentation, Ms. King addressed Committee member clarifying questions and provided them with the opportunity to give input on additional questions they would like addressed by the model. Below are key additional questions that the Committee members shared during this discussion:

- Population impacts on future basin water use (demand forecasting and basin recovery).
- In-lieu recharge sensitivity analysis (location and timing of decreased pumping) for basin recovery (related to items 2, 3, 4 & 6 above).
- Injection analysis (location and timing) for basin recovery (related to items 3 & 4 above).
- Sea level rise impacts on basin recovery.

Additionally, a few Committee members requested that staff provide them with a spreadsheet containing the underlying data representing the cumulative change in groundwater in storage for the entire Basin, as well as a simplified version containing only the sums of the data.

6. Public Comment

During this last public comment session, Mr. Poncelet invited members of the public to focus comments on the Committee's recent discussions on the groundwater model or on any other Advisory Committee work.

A participant asked for more details on the City of Santa Cruz Aquifer Storage and Recovery project and whether the project considers modeling at various pumping levels. Further, the participant asked what pumping level would be needed for the Basin to replenish its own water supply.

- Ms. Menard responded that the City is currently projecting pumping at a level of 160 million gallons, and up to 210 million gallons in a drought period, and is not contemplating expanding on these numbers. Ms. Menard noted that the pilot test injection in the Beltz 12 area would provide a better sense of losses and operational needs.

7. Confirm Various Project Documents

- **June 27, 2018 Advisory Committee Meeting Summary**

  The Advisory Committee did not have any edits or comments on the draft June 27, 2018 Advisory Committee meeting summary. Mr. Poncelet confirmed it for submission to the MGA Board.

- **July 19, 2018 Advisory Committee Meeting Summary**
  The Committee members requested that the MGA Board participants be listed on this summary and noted a small edit to a presenter's name. Mr. Poncelet confirmed that this summary will be submitted to the MGA Board once these edits have been incorporated.

- **Draft Sustainable Management Criteria Proposals for Subsidence and Groundwater Quality**

  Staff distributed draft sustainable management criteria proposals for both Subsidence and Groundwater Quality and invited Committee members to review them and provide feedback to Ms. Pruitt by the September 26th Advisory Committee meeting. Staff also requested that the Committee review the Seawater Intrusion Minimum Threshold proposal (distributed at the May 23, 2018 meeting) by the end of August. Ms. Pruitt will resend the Seawater Intrusion Minimum Threshold proposal to the Committee.

Ms. King also asked the Committee to consider the role of the MGA Board related to Water Quality regulations, which are already established and implemented by the State and Regional Water Quality Control Boards. She explained that this topic is relevant now as the MGA is in the beginning stages of discussing its authority related to water quality regulations under the Sustainable Groundwater Management Act (SGMA).

8. Next Steps

In closing, Mr. Poncelet provided an overview of the GSP process timeline from September through December 2018. Executive Team members closed the meeting by thanking the attendees for their participation.

SANTA CRUZ MID-COUNTY GROUNDWATER AGENCY

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Meeting Summary

Santa Cruz Mid-County Groundwater Sustainability Planning Advisory Committee Meeting #11

September 26, 2018, 5:00 – 8:30 pm

This meeting was the eleventh convening of the Santa Cruz Mid-County Groundwater Sustainability Planning (GSP) Advisory Committee. It took place on September 26, 2018 from 5:00 - 8:30 p.m. at the Simpkins Family Swim Center in Santa Cruz. This document summarizes key outcomes from Advisory Committee and staff discussions on the following topics: project updates; groundwater modeling presentation on pumping impacts on key sustainability indicators; articulation of a problem statement for the basin; and staff proposals on minimum thresholds for Chronic Lowering of Groundwater Levels and for developing measurable objectives for the Sustainability Indicators. It also provides an overview of public comment received. It is not intended to serve as a detailed transcript of the meeting.

Meeting Objectives

The primary objectives for the meeting were to:

- Share and discuss what the model tells us about pumping impacts by use type and location.
- Share and discuss proposed minimum thresholds for chronic lowering of Groundwater Levels and receive initial input from Advisory Committee.
- Discuss and provide Advisory Committee input on a draft proposal for developing measurable objectives.

Action Items

Key action items from the meeting include the following:

- Technical staff to address the following as they continue their work on groundwater modeling:
    - Review the new State guidelines[1] on sea level rise assumption recommendations and update Committee members.

[1] State of California Sea-Level Rise Guidance 2018 update:, http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf

  - Present an example of how the model can be run to simulate potentially reduced recharge resulting from increases in storm intensity.
  - Double-check and confirm whether monitoring well SC-8 is above 100 mg/L for Chloride level.
  - Technical staff to invite Technical Advisory Committee (TAC) thoughts on climate change assumptions and report back to the GSP Advisory Committee
- Ms. Pruitt to send a reminder to Committee members to submit comments on the proposed draft for Groundwater Levels Sustainable Management Criteria, presented at the 9/26 meeting.
  - Committee members to review proposed draft by 10/10.
- Executive Team
  to discuss the possibility of replacing recently-resigned Advisory Committee member Doug Ley with the Mid-County Groundwater Agency (MGA) Board at the Board's next meeting (November 15, 2018).
- Kearns & West to prepare September 26 meeting summary.
- Executive Team to submit the August 22, 2018 Advisory Committee meeting summary to the MGA Board for information.
- Ms. Pruitt to send field trip update to Committee and field trip participants with carpooling details and publically post the field trip to inform the public consistent with the Brown Act.

Meeting attendance

Committee members in attendance included:

1. Kate Anderton, Environmental Representative
2. John Bargetto, Agricultural Representative
3. David Baskin, City of Santa Cruz
4. Keith Gudger, At-Large Representative
5. Bruce Jaffe, Soquel Creek Water District
6. Jon Kennedy, Private Well Representative
7. Jonathan Lear, At-Large Representative
8. Marco Romanini, Central Water District
9. Charlie Rous, At-Large Representative
10. Allyson Violante, County of Santa Cruz
11. Thomas Wyner for Cabrillo College, Institutional Representative

Committee members who were absent included:

1. Rich Casale, Small Water System Management
2. Dana Katofsky McCarthy, Water Utility Rate Payer
3. Douglas P. Ley, Business Representative (resigned)

Meeting Key Outcomes (linked to agenda items)

1. Introduction and Discussion of GSP Process Timeline and Project Updates

John Ricker, Santa Cruz County, opened the meeting and welcomed participants. Mr. Ricker asked the GSP Advisory Committee members MGA Executive Team, and the consultant support team around the room to introduce themselves. He also addressed members of the public in attendance and asked them for self-introductions.

Eric Poncelet, Facilitator, reviewed the agenda, meeting objectives, the updated GSP process timeline, and the iterative process funnel graphic, noting that the group is still in the initial design phase of the GSP process.

Mr. Poncelet then asked staff to provide the following project updates:

- **Advisory Committee Field Trip**
  Darcy Pruitt, Regional Water Management Foundation (RWMF), announced that the final date and time for the field trip is October 23, 2018 from 9:00 AM to 1:00 PM. Ms. Pruitt indicated that she is in the process of coordinating transportation for Committee members, and she will send an updated on the logistics shortly. She also reminded Committee members to accept the calendar invitation to ensure that they receive the proper updates. Members of public are invited to attend but are responsible for their own transportation.

- **Committee Member Resignation**
  Mr. Poncelet announced that Committee member, Doug Ley has submitted his resignation and that the Executive Team is discussing possible adjustments accordingly.

2. Oral Communications (for items *not* on the agenda)

Members of the public provided comments on non-agenda items during this session.

- One participant indicated that he wanted to explore with the Committee water recycling and aquaculture utilizing the brackish groundwater that is in the basin due to seawater intrusion.
- Another participant requested the Committee's consideration of the Water for Santa Cruz project involving transfers from rivers to the Soquel Creek aquifers. The participant explained that she had presented this proposal to the Soquel Creek Water Board and that it has the Water Supply Advisory Committee's support.

3. Groundwater Modeling Results: Pumping Impacts on Sustainability Indicators

Georgina King, Montgomery & Associates, presented on pumping impacts on key sustainability indicators. Her presentation focused on modeled groundwater level sensitivity to changes related to different hypothetical scenarios, which included (1) management actions that redistribute and reduce municipal pumping, (2) sensitivity to changes in inland pumping, (3) sensitivity to changes in assumed septic return flow, and (4) sensitivity to increased assumed groundwater levels at the Pajaro Valley Water Management Agency (PVWMA) boundary.

Advisory Committee members asked questions to clarify their understanding of model performance. These questions involved underlying model assumptions regarding water use, return flow, and climate conditions that are included in the model report. Generally, the Committee members seemed satisfied with the water use and return flow assumptions.

Several members requested more details about the Technical Advisory Committee's (TAC) perspective on the historical climate catalog approach used by the model. Utilizing warmer and drier years from the historic record, the simulated future conditions used by the model assumptions are +1.5 degrees F temperature increase, 10% less rainfall, and 1.5 feet of sea level rise. Additionally, several members wanted more detailed information on how the climate catalog was introduced into the model over time. Some of these members thought temperatures might need to be hotter at a later time and that sea level rise might be higher. There was significant discussion on the nature of models and model assumptions. Advisory Committee members expressed a general willingness to rely on the TAC's opinion, but they wanted more details on the model assumptions and the TAC's perspective on those assumptions.

When asked about model scenarios, the Committee wanted more information on how the TAC viewed:

(1) more extreme climate scenarios (higher temps as we get closer to 2070),
(2) reduced recharge rate relative to rainfall due to increased storm intensity,
(3) changes to climate over time (want to understand model assumptions on climate over time), and
(4) continuing to check model calibration over time as projects are implemented (e.g., validate with results of water transfers.)

4. Public Comment

During this segment, Mr. Poncelet invited members of the public to comment on the Committee's discussions on the impacts of pumping on key sustainability indicators and any other Advisory Committee work.

One participant was interested in looking at economics of the model predictions and how changes in water quality impact traditional agriculture and point to potential benefits of aquaculture.

5. Proposed Minimum Thresholds for Chronic Lowering of Groundwater Levels

In this segment of the meeting, Ms. King presented on technical staff proposed Minimum Thresholds for Chronic Lowering of Groundwater Levels. Her presentation focused on a demand based approach to setting minimum thresholds for chronic lowering of Groundwater Levels using representative monitoring wells. Ms. King described the representative monitoring wells proposed for use and how they and the nearby production wells would be used to monitor this sustainability indicator.

The GSP Advisory Committee had questions about the interaction between this sustainability indicator and Groundwater Levels related to other sustainability indicators, including Seawater Intrusion and interconnected Surface Water. Ms. King explained that each sustainability indicator will, as appropriate, have its own set of representative monitoring wells. She also indicated that in situations where a monitoring well is used for more than one sustainability indicator, the higher groundwater elevation will be the target for that well. Further, she explained that currently there is no chronic lowering of groundwater levels in the basin, even though not all coastal monitoring wells are at their protective elevations to prevent Seawater Intrusion.

The Committee asked for recommendations on appropriately protective Groundwater Levels for the basin. Ms. King indicated that the Groundwater Levels should be realistic and should provide operational flexibility. There was general consensus that the basin's Measurable Objective should be aspirational but realistic in relationship to the basin's interest to prevent seawater intrusion and sustain stream flows.

6. Draft Proposal for Developing Measurable Objectives

Ms. King provided the Committee with a presentation on proposed approaches to take for setting Measurable Objectives for Sustainability Indicators in the Santa Cruz Mid-County Groundwater Basin. She discussed setting desirable groundwater elevations for the basin, because except for Water Quality, groundwater elevations will be the primary indicator used to measure progress toward sustainability. Ms. King noted that Measurable Objectives are not enforceable but should be achievable and provide operational flexibility for the basin.

The Committee discussed Measurable Objectives as aspirational goals. There was general consensus that the groundwater elevations should:

(1) provide a drought reserve,

(2) provide for ecological needs,

(3) protect against climate uncertainty,

(4) protect the basin under stress, and

(5) provide resilience to the basin's water supply.

The Committee discussed and provided initial feedback on the proposed processes for setting measurable objectives for each of the sustainability indicators. Key comments are captured below:

(1) *Seawater Intrusion*. The Committee discussed key issues regarding chloride isocontours and protective elevations as follows.
    a. For chloride, Committee members expressed some concern about using isocontours that cannot be accurately measured. In addition, they wanted to know if monitoring well SC-8 is over or under 100 mg/L. If it is over 100 mg/L, it might not be appropriate to select 100 mg/L as the Measurable Objective. [The data has been reviewed; SC-8 has always been below 100 mg/L.]
    b. For protective elevations, the Committee members wanted to know the relative cost to set Measurable Objective at increments between 70% and 100% of model simulations protect against seawater intrusion.

(2) *Chronic Lowering of Groundwater Levels.* As there is currently no chronic lowering of groundwater levels occurring in the basin, Committee members noted the following:
    a. The technical proposal of 2013-2017 average groundwater elevation is a good starting point to develop a Measurable Objective.
    b. Some Committee members expressed the interest to better understand the overall water budget

(3) *Reduction of Groundwater in Storage.* The Committee discussed water budget and model information that would be provided at future meetings, including the following points:
    a. The Committee wanted to understand the available information, especially modeling results regarding changing volume of groundwater in storage.
    b. There was some discussion about the limited usefulness of thinking in terms of the total storage volume for the entire basin, including contemplation of the following questions:
        i. Would it be useful to look at different areas within the basin?
            1. Purisima v. Aromas Red Sands
            2. Municipal and agricultural pumping impacts in specific areas
        ii. Would analysis of aquifer storage and recovery provide useful information to understand changes within the basin?

(4) *Depletion of Interconnected Surface Water*. The Committee recognized that the modeling work needed to address this sustainability indicator is still in process and will be reviewed first by the

Surface Water working group. The Committee will revisit this topic once it receives the next report back from the Surface Water working group.

(5) *Groundwater Quality.* Committee members acknowledged that native Groundwater Quality, with a few exceptions, is good.
   a. Committee members selected Maximum Contaminant Levels (MCLs) as Minimum Thresholds and discussed the following:
      i. They accept that exceedances that occur naturally or from septic systems or agriculture in the Aromas Red Sands, which are preexisting conditions that don't need to be addressed except as they impact delivered water.
      ii. They thought that using 2013-2017 average groundwater quality was a good Measurable Objective.

(6) *Subsidence*. This sustainability indicator is not applicable in the Santa Cruz Mid-County Groundwater Basin, and therefore there was no discussion.

7. Public Comment

During this last public comment session, Mr. Poncelet invited members of the public to focus comments on the Committee's recent discussions on staff's proposed minimum thresholds for chronic lowering of Groundwater Levels and staff's proposal for developing Measurable Objectives for each applicable sustainability indicator for the basin, and on any other Advisory Committee work.

There were no public comments during this session.

8. Confirm August 22, 2018 Advisory Committee Meeting Summary

The Advisory Committee did not have any edits or comments on the draft August 22, 2018 Advisory Committee meeting summary. Mr. Poncelet confirmed it for submission to the MGA Board.

9. Next Steps

In closing, Mr. Poncelet provided an overview of the GSP process timeline from October through December 2018.

Before the meeting adjourned, a Committee member asked staff for a brief update on water supply projects that may be under consideration for the basin and whether the focus will be only on projects in the basin. Staff responded that the MGA Board will discuss and provide guidance on which projects to consider in the GSP. Staff also noted that some projects being considered in adjacent basins could have impacts on the Mid-County basin and will therefore be taken into account in the GSP.

Staff and the Committee also discussed how the selected projects will be implemented and the associated costs, which agencies will be coordinating on the projects, and land use considerations. Staff indicated that the Committee will interact more with the MGA Board on project details early next year.

Executive Team members closed the meeting by thanking the attendees for their participation.