

SOQUEL APTOS GROUNDWATER MANAGEMENT COMMITTEE (SAGMC)

Thursday, January 21, 2016 - 7:00 p.m.

Community Room, Capitola City Hall
420 Capitola Avenue, Capitola, California

AGENDA

1. **CALL TO ORDER**
2. **ROLL CALL**
3. **APPROVAL OF MINUTES**
 - 3.1 Minutes of November 12, 2015
4. **ORAL COMMUNICATIONS** (*items not on the Agenda*)
5. **ADMINISTRATIVE BUSINESS**
 - 5.1 Basin Boundary Modification Update
 - 5.2 Approval of Cross-sectional Protective Elevation Technical Memorandum by Hydrometrics WRI
 - 5.3 Quarterly Monitoring Report
 - 5.4 Budget Increase Request for Boundary Modification Work by Hydrometric WRI
 - 5.5 Oral Report on Groundwater Model Update – Cameron Tana
 - 5.6 Results of Partner Agency Review of Draft Joint Powers Agreement
 - 5.7 Preliminary Work Plan And Staffing Strategy or Development of The Groundwater Sustainability Plan
 - 5.8 Preliminary Proposal for Using a Collaborative Staffing Model for the GSA, including a Working Draft of a Proposed Staff Work Plan for remainder of the current fiscal year
 - 5.9 Update on Public Outreach Efforts
6. **INFORMATION ITEMS**
 - 6.1 Flyer for Connecting the Drops; Working Together for Water
7. **REPORTS**
 - 7.1 Oral – time for any SAGMC member to report out
8. **WRITTEN COMMUNICATION**
 - 8.1 Email correspondence between Doug Deitch and John Ricker
9. **ADJOURNMENT**

**SOQUEL APTOS GROUNDWATER MANAGEMENT COMMITTEE (SAGMC)
MEETING MINUTES**

November 12, 2015

1. CALL TO ORDER

Tom Lahue called the meeting to order at 7:01 p.m.

2. ROLL CALL

Voting Committee Members Present:

Bruce Jaffe, Chair, Soquel Creek Water District (arrived at 7:08 p.m.)

Tom LaHue, Soquel Creek Water District

John Benich, Central Water District

Bob Postle, Central Water District

Zach Friend, County of Santa Cruz

John Leopold, County of Santa Cruz

Cynthia Mathews, City of Santa Cruz

Micah Posner, City of Santa Cruz (arrived at 7:07 p.m.)

Curt Abramson, Private Well Owner Representative

Jim Kerr, Private Well Owner Representative

Jon Kennedy, Private Well Owner Representative

Others Present:

John Ricker, County of Santa Cruz

Rosemary Menard, City of Santa Cruz

Ron Duncan, Soquel Creek Water District

Julia Townsend, Regional Water Management Foundation

Cameron Tana, HydroMetrics WRI

Sierra Ryan, County of Santa Cruz

Matt Orbach, Soquel Creek Water District

Marci DuPraw, Center for Collaborative Policy, CSU Sacramento

Charles Baughman, San Lorenzo Valley Water District

Brian Lockwood, Pajaro Valley Water Management Agency

3. APPROVAL OF MINUTES

3.1 Minutes of September 17, 2015

MOTION: Cynthia Mathews; Second; John Leopold: To approve the minutes of September 17, 2015. Motion carried unanimously. Zach Friend abstained.

4. ORAL COMMUNICATIONS (*items not on the Agenda*)

None mentioned

5. ADMINISTRATIVE BUSINESS

5.1 Accept Quarterly Monitoring Report

Cameron Tana presented the Quarterly Monitoring Report, and discussed historic and current levels of seawater intrusion at well sites. Although freshwater levels are rising in the Purisima due to conservation, they are not yet at adequate elevations to prevent long term seawater intrusion. Ron Duncan added that decreased demand has allowed water levels to rise, but the lack of rainfall and subsequent lack of recharge will result in a delayed decrease. He reported on a recent event at Stanford that had related coastal intrusion graphics. John Ricker added that the data should be tied to coastal monitoring. Jon Kennedy wondered how anticipated sea level rise (SLR) will impact the freshwater interface over the next ten years. Cameron Tana reported that current research points to SLR as less of a concern with respect to confined aquifers than one might think. He continued that the Purisima is more confined and the effect may be mitigated over the long term. Additionally, the effect in unconfined aquifers is highly theoretical at the present moment. He closed by suggesting that pumping goals be the focus rather than SLR, and that lower recharge over the long term would be a greater factor.

MOTION: John Leopold; Second: Bruce Jaffe; To accept the Quarterly Monitoring Report. Motion carried unanimously.

5.2 Review Basin Boundary Modification and Approve Resolution 15-01

Cameron Tana presented the draft boundary modifications, local basin units, and priority levels. He reported that boundary regulations are to be adopted next week. Mr. Tana explained that the Department of Water Resources defines a basin as a stacked series of aquifers that create a shared resource, and that in this area they are stacked and tilted. He commented that external and internal modifications require different information in the state submittal, and discussed potential scientific and jurisdictional modifications.

The group discussed when and how small basins outside of the boundary would be incorporated. John Ricker suggested that one option would be to prevent conflict by stating that if a site is on the line they are outside of the boundary. Cameron Tana acknowledged that he needs to correct the basins attributed to the locations listed in Table 1. The group discussed different scenarios depending on how the smaller basins end up being classified. Mr. Tana reported that he worked with Ralph Bracamonte to incorporate the Central Water District's position since last meeting. They do not want to be in more than one GSA or be managed by the state. Micah Posner suggested that if the proposal is not accepted as written, the group do the paperwork to bring the rest of the West Santa Cruz Terrace basin into the picture.

MOTION: Cynthia Mathews; Second: Jon Kennedy; To accept the basin boundary modification and approve resolution 15-01. Motion carried unanimously.

MOTION: Cynthia Mathews; Second: Micah Posner; To continue to monitor WSCT basin status, and revisit the boundaries if it changes. Motion carried unanimously.

John Ricker said he would circulate a model letter of support. Rosemary Menard suggested that the letters accompany the state submittal. The group discussed basin naming options. Cynthia Mathews asked to have the minutes show that staff should take this resolution back to their respective agencies.

MOTION: Bruce Jaffe; Second: Tom LaHue; To have Cameron Tana vet the name Santa Cruz Mid-County Groundwater Basin and Agency with the Department of Water Resources and adopt it officially if acceptable. Motion carried unanimously.

5.3 Receive Information Pertaining to the Department of Water Resource's Sustainable Groundwater Planning (SGWP) Grant for Counties with Stressed Basins and Approve Support for Santa Cruz County to Apply

John Ricker summarized the guidelines that were released recently related to the \$250,000 available, and reported that the work plan and budget are still being developed. The focus will most likely be the Soquel-Aptos basin, and the grant will address short term overdraft. Components include: public outreach, technical assistance to private well owners, and information on how private well usage affects the basin. Bob Postle asked about the grant/match split, and John replied that the match for this grant cannot come from other sources.

Cynthia Mathews reported that the Water Supply Advisory Committee has presented their final recommendations and that the city of Santa Cruz will take formal action at their next meeting. For the next stage it would be helpful to fund a model from HydroMetrics. Micah Posner suggested that the grant include how successful county-level voluntary conservation actions have been. Bruce Jaffe arrived at 7:08 p.m., and asked about the match details. John Ricker mentioned that the budget for this group for this year is \$500,000.

MOTION: John Leopold; Micah Posner Second; To approve support for Santa Cruz County to apply for the SGWP Grant. Motion carried unanimously.

5.4 Provide Direction on Draft Joint Powers Agreement (JPA)

Ron Duncan reported back from the GSA Formation Subcommittee which met last week. Jon Kennedy (Subcommittee Chair) reviewed the work of the Subcommittee over the past eight months. They have agreed on the GSA scope and structure, reviewed legal issues, met with legal counsel regarding the JPA, reviewed the draft JPA, and requested that members take draft JPA back to agencies for suggestions.

Mr. Kennedy acknowledged that the Subcommittee is otherwise ready to adopt the draft JPA, and that the remaining details will be figured out in the GSA development process. The Subcommittee is not recommending weighted voting, and has agreed to one alternative representative per agency. Additionally, the draft JPA includes unanimous consent from all members. The group discussed the pros and cons of different voting options (e.g. proportional voting based on funding contribution, unanimity as a requirement, and weighted voting).

John Ricker added that the difference between this JPA and the existing structure is that decisions are made by the JPA board, and consultation with agencies has to happen prior to the final JPA vote. Bruce Jaffe suggested two voting sessions. Jon Kennedy confirmed that private well representatives will have a seat on the board which allows them to influence the process, but voting on financial decision will be left to the agencies. He added that some aspects are still to be determined through the Sustainability Plan and by-laws (e.g. assessments, etc.). Bruce Jaffe reported that legal counsel has requested feedback on what the JPA would be called.

Jon Kennedy shared that the Subcommittee is suggesting bi-monthly meetings, and will reconvene during the third week in February. Bruce Jaffe asked for comments from those not on the Subcommittee and suggested tabling the name of the JPA for later. Rosemary Menard asked the group to keep in mind during the review process that the JPA might need to be revised during the development of the Sustainability Plan. Ron Duncan reported that the draft JPA is built upon standard existing JPAs and allows MOUs to be created with individual agencies for implementation purposes.

Cynthia Mathews suggested a prologue reflecting Rosemary and Ron's comments so that agency review will focus on more substantive issues. Micah Posner concurred and added that the prologue should include the names and qualifications of the lawyer that drafted it. Bruce Jaffe highlighted that the members do not have to be elected officials and the mantra is to capture broad input. He added that the group needs to discuss which agency will be the procedural parent regarding items not outlined out in the JPA. Mr. Jaffe said that legal counsel has suggested the county or city of Santa Cruz for this role. John Leopold acknowledged the work of the subcommittee in drafting the JPA. Rosemary Menard volunteered to write an introductory paragraph before it goes out for review. The group agreed to review agency comments at the next meeting in January.

MOTION: Cynthia Mathews; Second: Bruce Jaffe; To accept the Santa Cruz Mid-County Groundwater Agency as a working group title. Motion carried unanimously.

MOTION: Micah Posner; Second: Tom LaHue; To accept the draft JPA and have each agency review it and provide comments by January 7th. Motion carried unanimously.

5.5 Approve Scope of Work for Coordination and Outreach Services to Assist with SAGMC Efforts

Ron Duncan reported that the current budget includes \$50,000 for outreach. He continued that Marci DuPraw is currently filling this gap and would like to continue.

MOTION: Cynthia Mathews; Second: John Leopold; To accept the Scope of Work for coordination and outreach services. Motion carried unanimously.

5.6 Update on Public Outreach Efforts

Jim Kerr reported that the website is live, and that John Ricker and Sierra Ryan will manage the website and send postcards to private well owners. Sierra Ryan said she would update the name of the group as appropriate. Micah Posner asked Sierra to tell the group when to refer others to the website. Cynthia Mathews suggested that the names and faces of group representatives be posted online. Sierra Ryan and Matt Orbach reported that they will work on the mailing list as needed.

5.7 Approve 2016 SAGMC Meeting Schedule

Ron Duncan suggested that the group continue meeting bi-monthly until the JPA is finalized then re-assess. If the group continues to meet on the third Thursday of odd months, then January 21st and March 17th are coming up next. The group agreed to send Rosemary Menard agency feedback on the JPA by January 7th. Rosemary committed to compile the feedback by January 17th for a staff report at the January 21st meeting. Bruce Jaffe requested an updated schedule for the next meeting, and Ron said he would update the schedule and ensure that it gets posted online as well.

MOTION: John Leopold; Second: Tom LaHue; To adopt the meeting schedule outlined above. Motion carried unanimously.

6. INFORMATION ITEMS

6.1 Circle of Blue Articles

6.2 ACWA Regulatory Summit (10/14/2015)

6.3 Letter from County Supervisor Designating Alternate SAGMC Representative

6.4 Other Information

Matt Orbach circulated a draft agenda for the December 10th Mid-County Groundwater Stakeholder Group meeting at the Regional Water Management Foundation in Aptos.

7. REPORTS

7.1 Oral – time for any SAGMC member to report out.

John Leopold reported that there will be a “State of Water” event in Santa Cruz County at the end of January focusing on a theme of “connecting the drops”. John Laird will provide the keynote, and there will be a panel highlighting community collaboration and the efforts going on around the county. The tentative date is currently January 28th.

Cynthia Mathews shared that at a chamber of community affairs meeting today, one of their three priorities for the coming year is water. It would be great to engage with them moving forward. John Leopold said that he will be reaching out to chambers and agencies for sponsorships and to get people involved in the “State of Water” event. Cynthia Mathews committed to reach out to chambers regarding the website. John Leopold said he would circulate a handout for the event. Ron Duncan added that sooner is better as far as getting the event posted in agency newsletters.

Micah Posner reported that the Water Supply Advisory Committee’s recommendations have been received and are currently online. He welcomed the group to provide input or support informally, by email, or by attending a meeting. He urged the group to get involved before the next council meeting in two weeks. Mr. Posner closed by saying that he hopes that the committee’s recommendations will be part the work plan of this group.

8. ADJOURNMENT

Being no further business, the meeting was adjourned at 9:05 p.m. The next meeting of the SAGMC will be on Thursday, January 21, 2016.

SUBMITTED BY:

APPROVED BY:

 Julia Townsend, Program Associate
 Regional Water Management Foundation

 Ron Duncan, Interim General Manager
 Soquel Creek Water District

January 21, 2016

MEMO TO THE SOQUEL APTOS GROUNDWATER MANAGEMENT COMMITTEE

Subject: Agenda Item 5.1

Basin Boundary Modification Update

- Attachments:
1. Memorandum from HydroMetrics WRI titled “*Santa Cruz Mid-County Basin Boundary Modification Update*”, dated January 15, 2016
 2. Draft report titled “*Santa Cruz Mid-County Groundwater Basin Boundary Modification*”, includes only Appendix D and Appendix F

The Initial Notification of Potential Basin Boundary Modification was submitted to the Department of Water Resources (DWR) on November 30, 2015. The draft report *Santa Cruz Mid-County Groundwater Basin Boundary Revision* and supporting information was posted on the SAGMC website to solicit local input. The County sent notification to water agencies and public water systems in the affected basins about the proposed modification, the public comment period, and the opportunity to provide resolutions or letters of support or opposition. Appendix D contains the letters to affected agencies and systems. The attached memorandum from HydroMetrics WRI includes more information about the initial notification and local input notice and consultation.

The public comment period for the basin boundary modification ended on Monday, January 11, 2016. The attached draft Appendix F to the renamed report *Santa Cruz Mid-County Groundwater Basin Boundary Modification* provides the comments received as well as draft responses. Based on a letter of opposition from Purisima Mutual Water Company, the attached memo discusses an alternative boundary for SAGMC to consider.

Cameron Tana from Hydrometrics WRI will be in attendance at the meeting to discuss the attached draft Appendix F and the alternative boundary for SAGMC to consider. The attached memorandum from HydroMetrics WRI includes proposed edits and steps to finalize the report and describes the process for submitting the modification request online to DWR.

POSSIBLE ACTIONS

1. By MOTION, approve online submittal of the proposed basin boundary modification as described in the draft report.
2. By MOTION, adopt alternative boundary modification and direct staff and HydroMetrics WRI to revise report for alternative modification and solicit local input on the alternative boundary modification.

3. By MOTION, provide staff with direction on requirements for approval of online submittal of either the proposed basin boundary modification as described in the draft report or the alternative boundary modification.
4. No action.

By  (Ron Duncan)
on behalf of the staff executive team of
John Ricker, Ralph Bracamonte, Rosemary Menard, Ron Duncan



1814 Franklin St, Suite 501
Oakland, CA 94612

MEMORANDUM

To: Ron Duncan, Soquel Creek Water District
From: Cameron Tana
Cc: Ralph Bracamonte, Central Water District
Rosemary Menard, City of Santa Cruz
John Ricker, County of Santa Cruz
Date: January 15, 2016
Subject: Santa Cruz Mid-County Basin Boundary Modification Update

This memorandum summarizes activities by HydroMetrics WRI, Soquel Creek Water District, and Santa Cruz County staff for the Santa Cruz Mid-County Basin boundary modification request since the Soquel-Aptos Groundwater Management Committee passed Resolution 15-01 initiating the basin boundary modification request November 12, 2015.

INITIAL NOTIFICATION TO DWR

The basin boundary modification regulations went into effect November 15, 2015 and included requirement to provide initial notification to Department of Water Resources (DWR) that a modification request may occur. The Initial Notification of Potential Basin Boundary Modification was submitted online to DWR on November 30, 2015, on behalf of the Soquel-Aptos Groundwater Management Committee (SAGMC) by Soquel Creek Water District staff member Matt Orbach. See <http://sgma.water.ca.gov/basinmod/initprintview/42>

LOCAL INPUT

Notice and Consultation

The draft report *Santa Cruz Mid-County Groundwater Basin Boundary Revision* was posted on the SAGMC website in order to solicit local input. Supporting Geographical Information System (GIS) files (report Appendix C) and referenced documents (report Appendix H). Links can be found at

<http://www.midcountygroundwater.org/node/36#BoundaryDocs>. The County sent notification to water agencies and public water systems in the affected basins about the proposed modification, the public comment period, and the opportunity to provide resolutions or letters of support or opposition on December 14, 2015.

The attached Notice and Consultation (§ 344.4) section of the renamed report *Santa Cruz Mid-County Groundwater Basin Boundary Modification* includes edits for the final report.

Comments and Response to Comments

The public comment period for the basin boundary modification ended on Monday, January 11, 2016. The attached draft Appendix F to the renamed report *Santa Cruz Mid-County Groundwater Basin Boundary Modification* includes the comments received as well as draft responses. The draft response to the letter of opposition from Purisima Mutual Water Company (MWC) provides a rebuttal for why the proposed modification is justified. However, SAGMC should consider an alternative boundary that would most likely resolve Purisima MWC's opposition as discussed below.

Local Agency Input

The attached Local Agency Input (§ 344.8) section of the renamed report *Santa Cruz Mid-County Groundwater Basin Boundary Modification* incorporates edits for the final report that lists the resolutions of support from the four member agencies of SAGMC as well as from Scotts Valley Water District. The aforementioned letter of opposition from Purisima MWC is also listed.

ALTERNATIVE BOUNDARY MODIFICATION

As discussed in the draft response to comments in Appendix F, the Santa Margarita Basin being proposed by Scotts Valley Water District (SVWD) is based on the extent of the underlying Lompico and Butano Formations, stacked aquifer units that provide water supply for SVWD and other pumpers to the west, and therefore fits the definition for groundwater basins in Bulletin 118. However, we acknowledge that production from shallow or marginal areas of the Purisima Formation in the area of the proposed shared basin boundary may be associated with groundwater of the shared resource of the Santa Cruz Mid-County Basin. In this area where aquifers for the two basins overlap, it is reasonable that pumping from the shallower Purisima Formation by Purisima Mutual Water Company affects the water budget of the Mid-County Basin more than the Santa Margarita Basin. Therefore, there is justification for including the area in the Mid-County Basin, especially since there is no other public water system

pumping from below the Purisima Formation in that area. Neighboring Jarvis MWC pumps from the Lompico Formation where it outcrops to the west.

Given this reasonable justification and Purisima Mutual Water Company's strong preference to be a part of the Santa Cruz Mid-County Basin instead of the Santa Margarita Basin, an alternative boundary modification is presented in Figure 1 for SAGMC consideration. The alternative boundary modification reflects pumping in the shallow Purisima Formation in the area of Purisima MWC by including in the Santa Cruz Mid-County Basin the outcrop of the Purisima Formation in this area east of the Lompico Formation outcrop around the Blackburn Gulch and west of the Lompico and Butano Formation outcrops near West Branch Soquel Creek.

SVWD is scheduled to consider this alternative boundary on January 14, 2016. Agreement between SAGMC and SVWD on this shared boundary is highly recommended before submittal of the modification requests to DWR.

CEQA COMPLIANCE

As stated in SAGMC Resolution 15-01, the basin boundary modification is exempt from the California Environmental Quality Act because it is not a project. County staff prepared a notice of exemption and filed it with the County clerk on January xx, 2016.

ADDITIONAL EDITS TO REPORT

Main Text

In addition to the attached Notice and Consultation (§ 344.4) and Local Agency Input (§ 344.8) sections and any revisions to describe and provide supporting information for the alternative boundary if adopted, the following edits in the main text will be included in the final report:

- Reference to "revision" and variants will be revised to "modification" for consistency with DWR terminology.
- Update reference to SAGMC Resolution 15-01
- Add section describing CEQA compliance (§ 344.18)

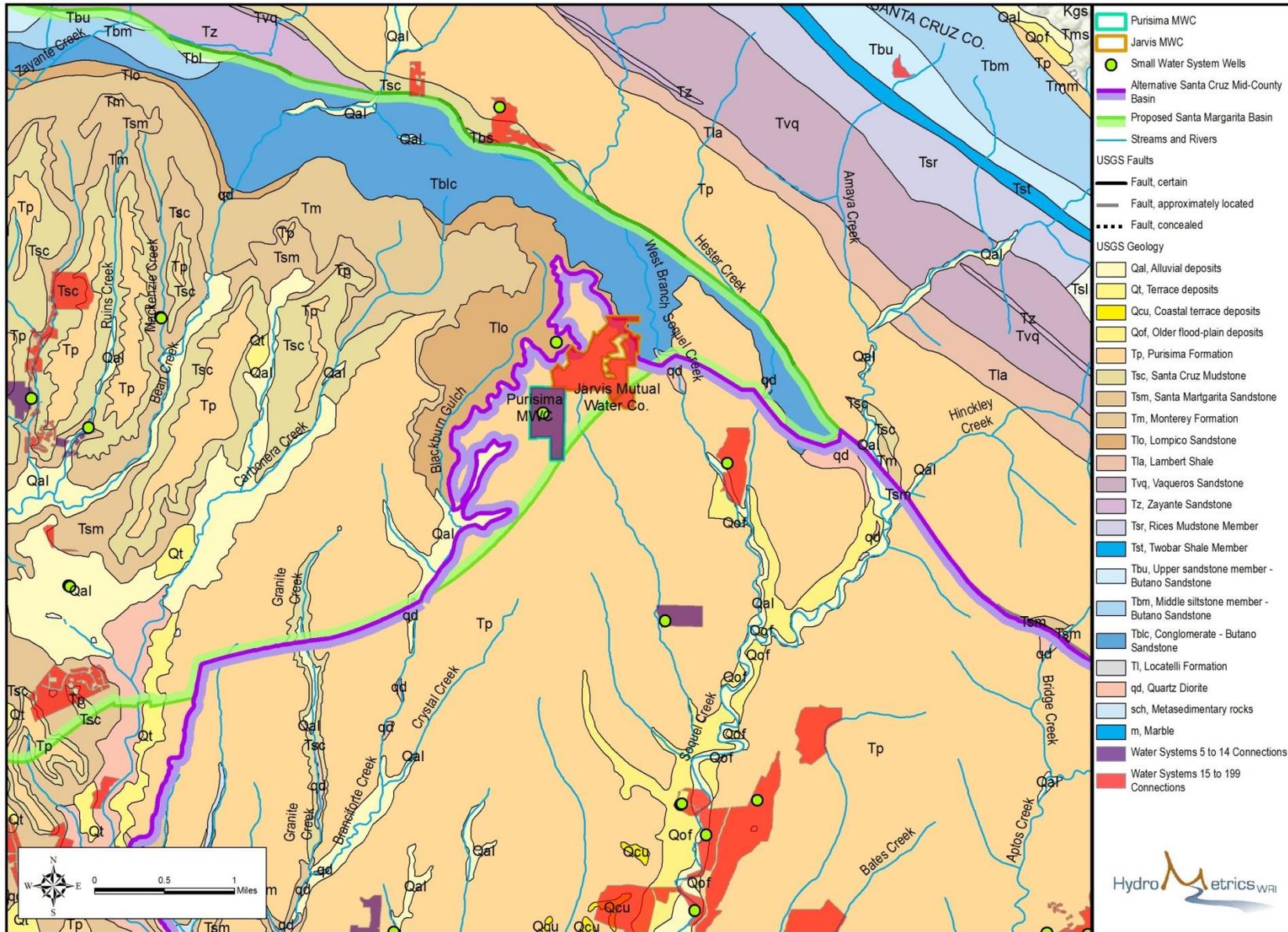


Figure 1. Alternative Boundary Modification for Santa Cruz Mid-County Basin

Appendices

The following appendices will need to be compiled for the final report.

Appendix A	SAGMC Joint Powers Authority Documentation
Appendix B	Basin Boundary Modification Request Resolution
Appendix C	GIS Files and Maps (CD)
Appendix D	Consultation Letters to Affected Agencies and Systems
Appendix E	Public Meeting Agendas or Minutes
Appendix F	Comments and Response-to-Comments
Appendix G	Resolutions and Letters of Support or Opposition
Appendix H	Electronic Copies of Relevant Technical Studies (CD)
Appendix I (new)	CEQA Notice of Exemption

Appendix C and H are online but would be revised if the alternative boundary is adopted. Appendix F would be revised if the alternative boundary is adopted. An update to the letter of opposition from Purisima Mutual Water Company would be sought if the alternative boundary is adopted.

ONLINE SUBMITTAL TO DWR

Although the final report would be compiled for SAGMC documentation, DWR is requiring submittal of the basin boundary modification request in its online system introduced in December. This will necessitate uploading excerpts of the final report for different entries in the online system.

NEXT STEPS

If the alternative boundary is not adopted by SAGMC and SVWD, SAGMC may approve online submittal of the proposed modification or request additional information before approving submittal.

If the alternative boundary is adopted by one of SAGMC and SVWD but not the other, more discussion between staffs of the agencies will be required to agree upon a boundary.

If the alternative boundary is adopted by both SAGMC and SVWD, SAGMC should post the change to its website, notify affected agencies and systems and other interested stakeholders of the change and accept comments on the change. SAGMC may need to review comments and responses after the comment period in order to approve online

Memorandum
Santa Cruz Mid-County Basin Boundary Modification Update

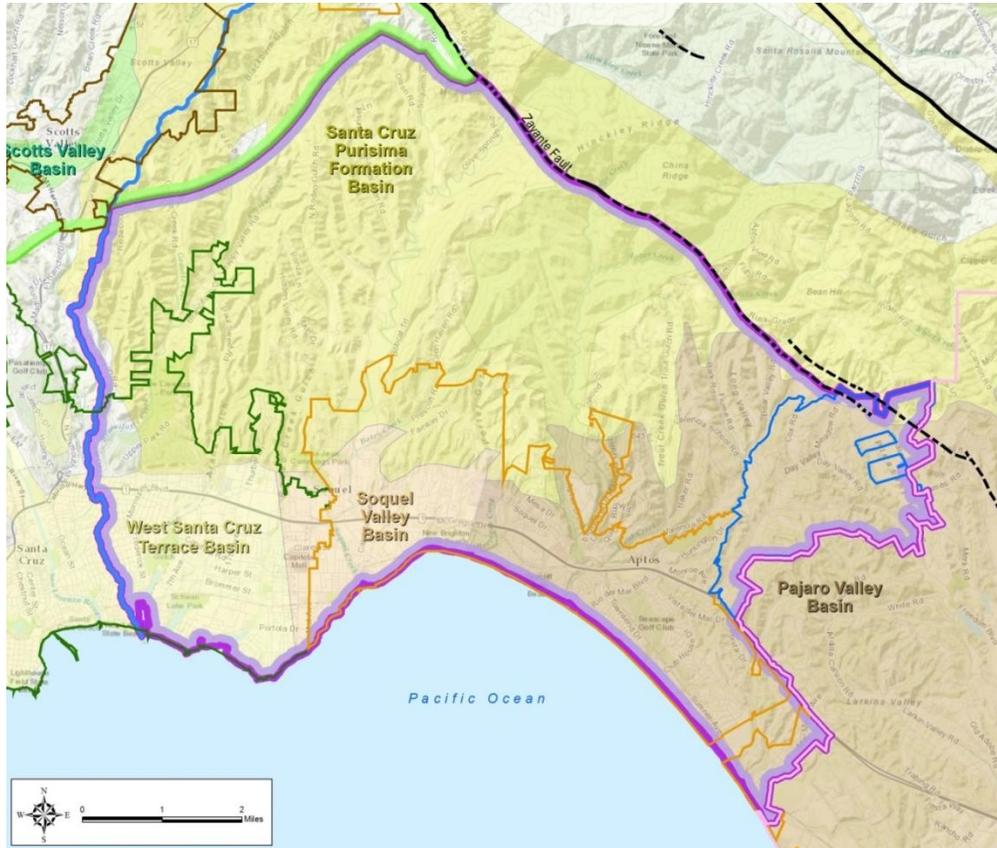
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submittal. The deadline for online submittal is March 31, 2016, but earlier submittal may result in early approval by DWR.

DRAFT FOR SAGMC APPROVAL

Edits

Santa Cruz Mid-County Groundwater Basin Boundary Modification



Prepared for:
Soquel-Aptos Groundwater Management Committee

January 2016

Prepared by:



DRAFT FOR SAGMC 1/21/2016

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SUMMARY

This memorandum presents proposed boundary modifications to Department of Water Resources' (DWR) Bulletin 118 groundwater basins within the mid-Santa Cruz County area. These proposed modifications are submitted on behalf of the Soquel-Aptos Groundwater Management Committee (SAGMC), and consist primarily of consolidating four Bulletin 118 basins that make up the shared groundwater resource to be managed by the Groundwater Sustainability Agency (GSA) that SAGMC plans to form. These modifications will promote sustainable groundwater management by the proposed GSA by consolidating the management area into a single, continuous basin called the Santa Cruz Mid-County Groundwater Basin. The supporting information provided in following sections are presented per the requirements listed in Article 5 of The California Code of Regulations (CCR) Title 23, Division 2, Chapter 1.5, Subchapter 1, which is referenced throughout.

REQUESTING AGENCY INFORMATION (§ 344.2)

The requesting agency's information is given below

- a) Soquel-Aptos Groundwater Management Committee (SAGMC)
c/o Soquel Creek Water District
PO Box 1550
Capitola, CA 95010-1550
- b) SAGMC's legal authority is a joint powers authority (JPA) between Central Water District, City of Santa Cruz, Santa Cruz County, and Soquel Creek Water District. A copy of the JPA is provided in Appendix A.
- c) SAGMC adopted Resolution No. 15-01 initiating the boundary modification request at its public meeting November 12, 2015. The resolution is provided in Appendix B.
- d) Name and contact information of request manager:
Ron Duncan
Soquel Creek Water District
PO Box 1550
Capitola, CA 95010-1550
(831) 475-8501 x144
rond@soquelcreekwater.org

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DESCRIPTION OF PROPOSED BOUNDARY MODIFICATIONS (§ 344.6)

List of Proposed Modifications (§ 344.6 (a))

The proposed modifications include a basin consolidation, internal modifications, and an external modification. The proposed basin is generally a result of basin consolidation, involving consolidating all or part of four existing basins. The four basins to be consolidated, as well as their associated Bulletin 118 basin numbers, are the Soquel Valley (3-1), West Santa Cruz Terrace (3-26), Santa Cruz Purisima Formation (3-21), and Pajaro Valley Basins (3-2). The proposed name for the consolidated basin is the Santa Cruz Mid-County Basin and the proposed number for the consolidated basin is 3-1. Figure 1 shows the proposed Santa Cruz Mid-County Basin.

The consolidated Santa Cruz Mid-County Basin is intended to include all areas where the stacked aquifer system of the Purisima Formation, Aromas Red Sands, and certain other Tertiary-age aquifer units underlying the Purisima Formation constitute the shared groundwater resource to be managed within this basin. Previous basin boundary definitions were based on surficial alluvium, and did not accurately represent the extent of the deeper aquifer units from which most groundwater is produced. Although there is a scientific basis for the basin consolidation, basin consolidation is considered a jurisdictional modification (§ 342.2).

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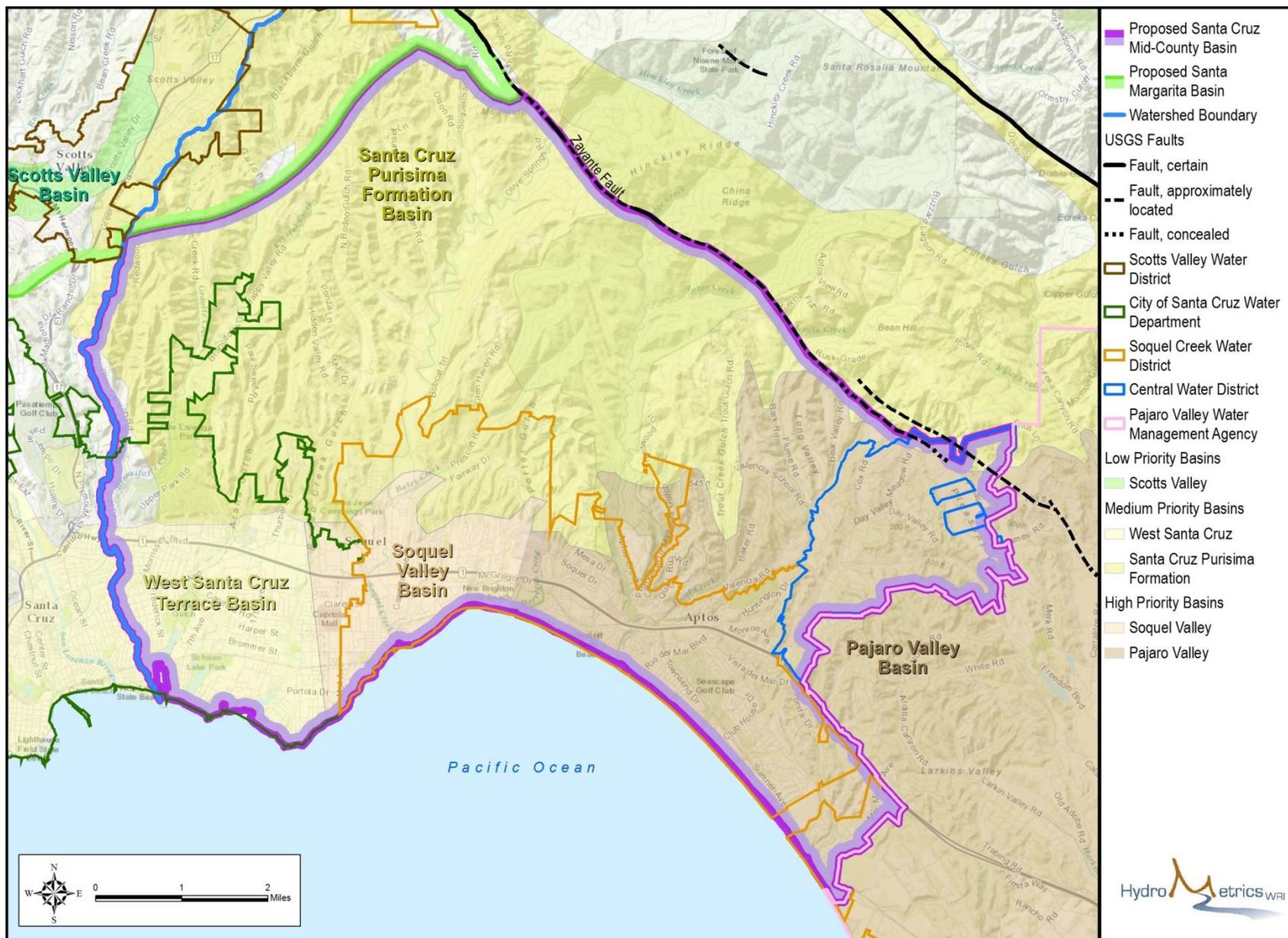


Figure 1: Proposed Santa Cruz Mid-County Basin Boundary Modification

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The following describes the areas of the affected basins to be included in the consolidated Santa Cruz Mid-County Basin (see Figure 1):

- The entire Soquel Valley Basin will be included in the consolidated Santa Cruz Mid-County Basin.
- The area of the existing West Santa Cruz Terrace Basin that consists of the stacked aquifer units of the Purisima Formation and underlying Tertiary-age unit will be included with the consolidated Santa Cruz Mid-County Basin.
- The area of the existing Santa Cruz Purisima Formation Basin south of the Zayante Fault comprising the stacked aquifer units of the Purisima Formation, the underlying Tertiary-age units, and the Aromas Red Sands will be incorporated into the Santa Cruz Mid-County Basin. A limited portion of the CWD service area that extends north of the Zayante Fault will also be included in the Santa Cruz Mid-County Basin.
- The portion of the Pajaro Valley Basin not managed by Pajaro Valley Water Management Agency (PVWMA), listed by SGMA as an exclusive GSA, will be included in the consolidated Santa Cruz Mid-County Basin.

Because the basin consolidation will incorporate only portions of the existing West Santa Cruz Terrace, Santa Cruz Purisima Formation, and Pajaro Valley basins, these basins will still exist following modification.

The proposed boundary modifications are described below clockwise according to location starting from the western boundary with the coastline. The boundaries of the proposed Santa Cruz Mid-County Basin are shown in Figure 1, and each boundary modification is identified on Figure 2.

- The proposed boundary of the Santa Cruz Mid-County Basin with the modified West Santa Cruz Terrace Basin is the watershed boundary between Carbonera Creek and Branciforte Creek. This is an internal boundary modification that is a scientific modification (§ 342.2).
- The proposed boundary of the Santa Cruz Mid-County Basin with the non-basin area north of the West Santa Cruz Terrace Basin is the watershed boundary between Carbonera Creek and Branciforte Creek. This is an external boundary modification that is a scientific modification (§ 342.2).

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- The proposed boundary of the Santa Cruz Mid-County Basin with the Santa Margarita Basin, which is a proposed boundary modification of the existing Scotts Valley Basin submitted by Scotts Valley Water District (SVWD), follows a line along the ridge of a granitic high that separates the eastward-dipping stacked aquifers of the Purisima Formation from the westward-dipping units of the proposed Santa Margarita Basin. As a result, SVWD will only overlie the proposed Santa Margarita Basin and not the proposed Santa Cruz Mid-County Basin. This is an internal boundary modification that is both a scientific (§ 342.2) and jurisdictional (§ 342.2) modification.
- The proposed boundary of the Santa Cruz Mid-County Basin with the Santa Cruz Purisima Formation up to the boundary of Central Water District (CWD) is the Zayante Fault. This is an internal boundary modification that is a scientific modification (§ 342.2).
- The proposed boundary of the Santa Cruz Mid-County Basin with the Santa Cruz Purisima Formation north of the Zayante Fault is the Central Water District boundary. This is an internal boundary modification that is a jurisdictional modification (§ 342.4).
- The proposed boundary of the Santa Cruz Mid-County Basin with the Pajaro Valley Basin is the Pajaro Valley Water Management Agency boundary. This is an internal boundary modification that is a jurisdictional modification (§ 342.4).

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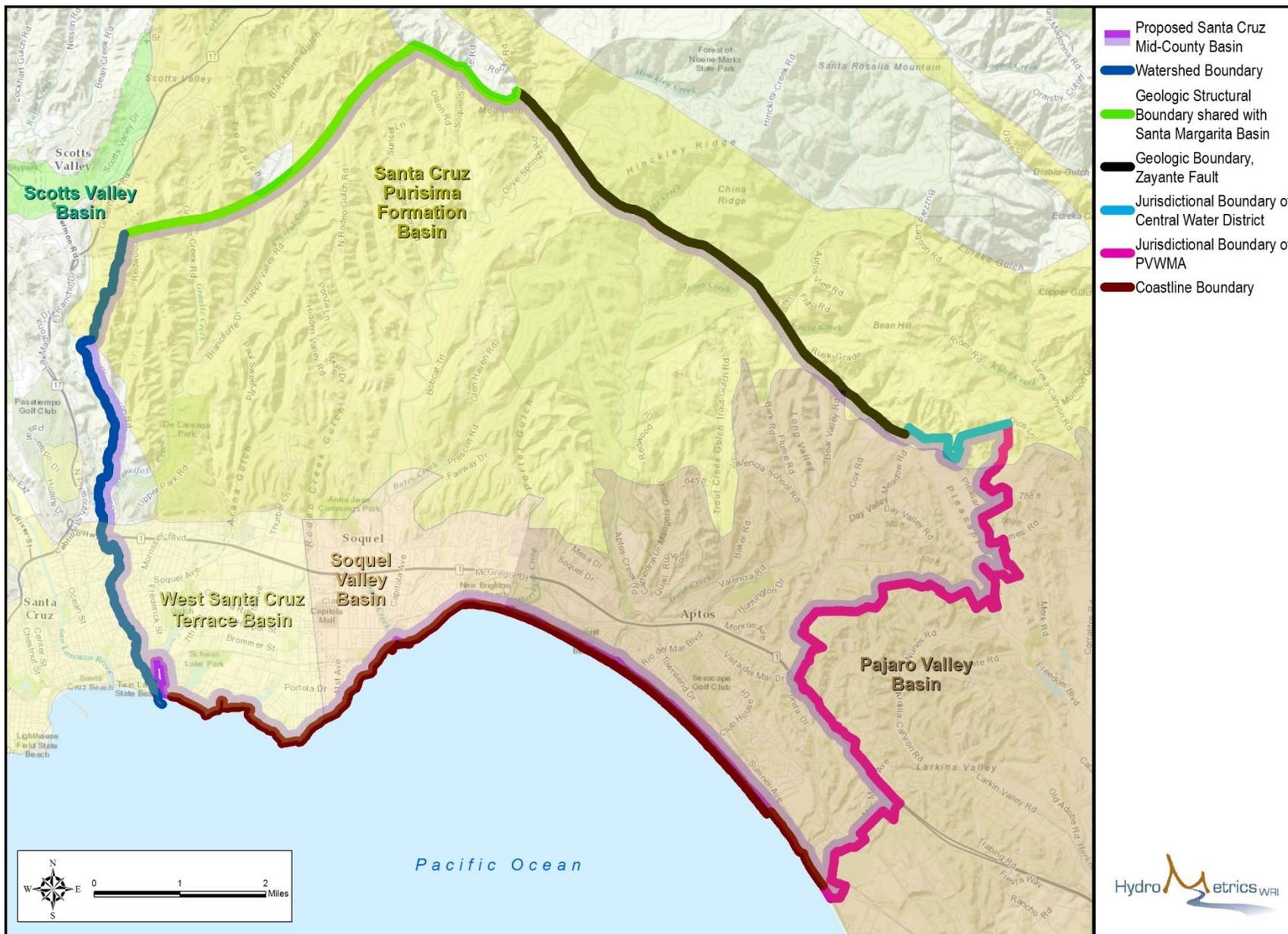


Figure 2: Summary of Proposed Santa Cruz Mid-County Basin Boundary Modifications

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Jurisdictional Modifications (§ 344.6 (b))

The basin consolidation and several of the boundary modifications are jurisdictional modifications. The following items are in reference to the requirements for jurisdictional boundary modifications in Section 344.6 (b) (1) through (4):

1. Incorporating the four Bulletin 118 basins into a single basin will improve sustainable management by consolidating the shared groundwater resource pumped by members of SAGMC into a single basin managed by a single GSA. The basin modification will clearly define the shared groundwater resource, which will facilitate management by SAGMC and its successor GSA. Matching the basin to the shared groundwater resource will allow for a single Groundwater Sustainability Plan (GSP) to cover the shared resource, improve governance for the shared resource, and be easier to communicate to the public.
2. The proposed boundary modifications will positively affect the ability of basins adjacent to the new Santa Cruz Mid-County Basin to sustainably manage groundwater.
 - In the case of both the West Santa Cruz Terrace and Santa Cruz Purisima Formation Basins, the basin consolidation will incorporate the vast majority of pumping of the shared groundwater resource of those basins into a single basin and GSA.
 - The proposed boundary with the Santa Margarita Basin will effectively define two separate sets of aquifers, and assign the aquifers to the appropriate basins to be managed by successor GSAs.
 - The shared boundary with the Santa Cruz Purisima Formation and Pajaro Valley Basin covered by PVWMA will define boundaries consistent with PVWMA's exclusive right to be GSA for its jurisdiction. This facilitates the development of a GSP or alternative submittal by PVWMA without the unnecessary technical requirements for intrabasin coordination.
 - Interbasin coordination between the Santa Cruz Mid-County Basin GSP and GSPs of adjacent basins (most likely Santa Margarita and Pajaro Valley) will still be necessary.
 - We anticipate that the modified West Santa Cruz Terrace and Santa Cruz Purisima Formation north of the Zayante Fault will be reprioritized from medium to low or very low priority when Bulletin

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118 is updated in 2017. This will remove the requirement for GSAs and GSPs to be developed for these basins. The anticipated reprioritization of these basins are described in its own section below.

3. The shared groundwater resource that defines the consolidated Santa Cruz Mid-County Basin has been managed under an AB3030 Groundwater Management Plan since 1996. The management plan was updated to meet SB-1938 requirements in the *Groundwater Management Plan -2007 Soquel-Aptos Area* (SCWD and CWD, 2007). The area covered by the Groundwater Management Plan is shown in Figure 2. Implementation of the plan and groundwater management activities are summarized in subsequent annual reviews and reports (HydroMetrics LLC, 2008; HydroMetrics LLC, 2009a; HydroMetrics WRI, 2010; HydroMetrics WRI, 2011a; HydroMetrics WRI, 2012a; HydroMetrics WRI, 2013; HydroMetrics WRI, 2014a; HydroMetrics WRI, 2015a).
4. The County is the CASGEM reporting agency for all basins in the County and will continue to serve that role after basin modification. The County reports data for CASGEM from a number of wells in the proposed Santa Cruz Mid-County, Santa Margarita, and Pajaro Valley Basins. The County does not include wells from the proposed West Santa Cruz Terrace Basin and proposed Santa Cruz Purisima Basin, as it considers those areas unimportant as a groundwater resource. This is in line with the expected reprioritization of these two basins as low or very low priority in the 2017 update of Bulletin, discussed in a later section.

GENERAL INFORMATION (§ 344.10)

This section presents a description of the lateral boundaries and definable bottom of the proposed Santa Cruz Mid-County Basin. The lateral boundaries of the proposed basin are shown in Figure 1 and Figure 2. The vertical extent of the major aquifer units of the proposed basin are shown in Figure 3. The granitic bottom of the basin is discussed in more detail in the following sections.

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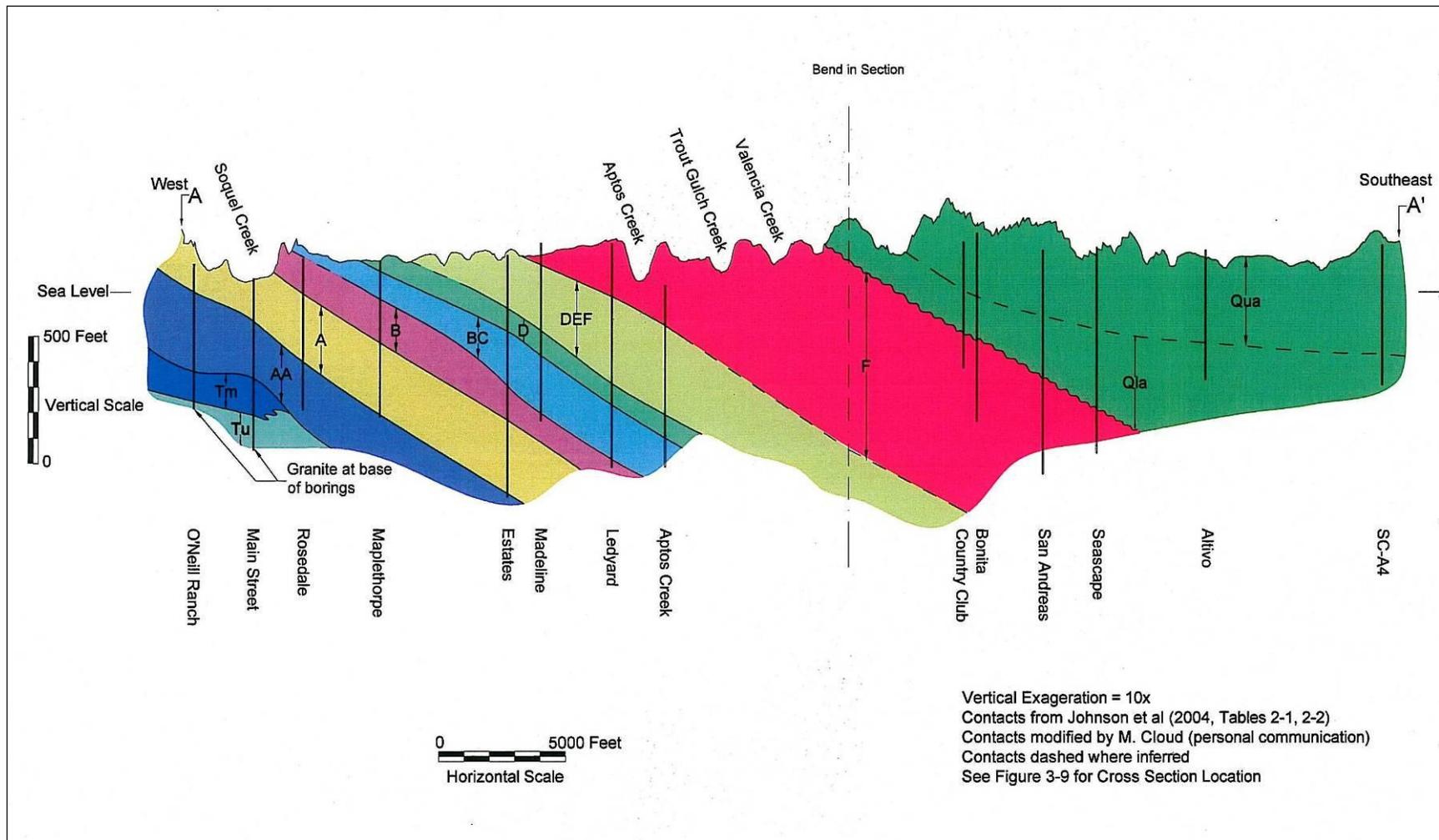


Figure 3: Generalized Hydrostratigraphic Cross-Section of Proposed Santa Cruz Mid-County Basin

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The lateral boundaries of the proposed Santa Cruz Mid-County Basin generally follow the definable limits of the stacked Purisima formation aquifer system, as well as the Aromas Red Sands and some other tertiary units between the base of the Purisima and the granitic basement of the basin (Johnson et. al., 2004). The western boundary of this basin follows the watershed boundary between Carbonera Creek and Branciforte Creek, which incises the Purisima formation. This watershed boundary runs north from the ocean to the proposed shared boundary with the Santa Margarita Basin. This shared boundary follows a marginal area of the Purisima Formation along a structural divide separating the productive units of the Santa Margarita Basin and the Purisima Formation. The Zayante Fault is the northern boundary of the basin from the shared Santa Margarita boundary to the boundary of CWD north of the fault where the consolidated basin boundary follows the CWD boundary. The eastern boundary of the basin is defined by the boundary of PVWMA, the exclusive GSA for its jurisdiction, between the Zayante Fault and the ocean. The productive units of the basin outcrop offshore, but the coastline constitutes the southern boundary of the Santa Cruz Mid-County Basin to remain within State and County jurisdiction.

Granitic basement rock constitutes the definable bottom of the Santa Cruz Mid-County Basin. This granitic rock is observable in boreholes and outcrops and underlays the stacked aquifer system over the entire extent of the basin.

Per Section 344.10 (b), a graphical map showing the proposed Santa Cruz Mid-County Basin, as well as the affected agencies and surrounding basins, is shown in Figure 1. The GIS files showing the proposed Santa Cruz Mid-County Basin, the affected agencies and surrounding basins are provided on the compact disk in Appendix C.

NOTICE AND CONSULTATION (§ 344.4)

List of Local Agencies and Public Water Systems (§ 344.4 (a))

Table 1 lists local water agencies and public water systems within or overlapping affected basins, the four existing basins subject to consolidation and the adjacent Scotts Valley Basin. Table 1 lists the agencies and systems' current basins. Affected agencies and systems are also identified in Table 1 by listing the basin associations after modification.

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Table 1: Public Water Systems Within Affected Basins

Agency Name	Current Associated Basin(s)	Associated Basin(s) Following Proposed Modifications
Allan Lane Water Assoc.	Santa Cruz Purisima, Pajaro Valley	Not Affected
Aptos High School	Pajaro Valley	Pajaro Valley, Santa Cruz Mid-County
Aptos Hills MWC	Pajaro Valley	Not Affected
Aptos Ridge MWC	Pajaro Valley	Not Affected
Baillers Rentals	Pajaro Valley	Not Affected
Big Redwood Park	Santa Cruz Purisima	Not Affected
Bluff Residents	Soquel Valley	Santa Cruz Mid-County
Buena Vista Migrant Center	Pajaro Valley	Not Affected
Cabrillo College	Santa Cruz Purisima, Soquel Valley, Pajaro Valley	Santa Cruz Mid-County
Calabasas Road	Pajaro Valley	Not Affected
Camp St. Francis	Pajaro Valley	Santa Cruz Mid-County
Cassin Ranch	Pajaro Valley	Pajaro Valley
Cathedral Hills MWC	Santa Cruz Purisima	Santa Cruz Mid-County
Cathedral Wood MWC	Santa Cruz Purisima	Santa Cruz Purisima Formation, Santa Margarita
Central Water District (CWD)	Pajaro Valley, Santa Cruz Purisima Formation	Santa Cruz Mid-County
City of Santa Cruz Water Department	Soquel Valley, Santa Cruz Purisima Formation, West Santa Cruz Terrace	Santa Cruz Mid-County, West Santa Cruz Terrace
City of Watsonville Public Utilities	Santa Cruz Purisima, Pajaro Valley	Not Affected
Corralitos Springs	Santa Cruz Purisima	Not Affected
County Fair Grounds	Pajaro Valley	Not Affected
Crestwood Heights Water Co.	Pajaro Valley	Not Affected
East Bel Mar	Pajaro Valley	Not Affected
Emerald City	Pajaro Valley	Not Affected
Enchanted Valley	Santa Cruz Purisima	Santa Cruz Mid-County
Enos Lane	Santa Cruz Purisima Formation	Not Affected
Freedom MWC	Pajaro Valley	Not Affected

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Agency Name	Current Associated Basin(s)	Associated Basin(s) Following Proposed Modifications
Gizdich Ranch	Pajaro Valley	Pajaro Valley
Hidden Falls Girl Scout Camp	Santa Cruz Purisima	Santa Margarita, Santa Cruz Mid-County
Hughes Road	Pajaro Valley	Not Affected
Jardines Del Valle	Pajaro Valley	Not Affected
Jarvis Mutual Water Co.	Santa Cruz Purisima	Santa Margarita, Santa Cruz Purisima
Kennolyn Camp	Santa Cruz Purisima	Santa Cruz Mid-County
Kitayama Brothers	Pajaro Valley	Pajaro Valley
Koinonia Conference Grounds	Santa Cruz Purisima	Not Affected
Lagunita MWC	Santa Cruz Purisima	Santa Cruz Mid-County
Lake View Apartments	Pajaro Valley	Not Affected
Land Of Medicine Buddha	Santa Cruz Purisima	Santa Cruz Mid-County
Larkin Ridge MWC	Pajaro Valley	Not Affected
Las Colinas Road and Water Assoc.	Santa Cruz Purisima, Pajaro Valley	Not Affected
Laurel Glen MWC	Santa Cruz Purisima	Santa Cruz Mid-County
Loma Alta MWC	Santa Cruz Purisima	Santa Cruz Mid-County
Meadowridge	Santa Cruz Purisima, Pajaro Valley	Not Affected
Milky Way MWC	Pajaro Valley	Not Affected
Monte Vista Christian School	Pajaro Valley	Pajaro Valley
Monterey Bay Acad.	Pajaro Valley	Not Affected
Mountain Elementary School	Santa Cruz Purisima	Santa Cruz Mid-County
Mystery Spot	Santa Cruz Purisima	Santa Cruz Mid-County
Pajaro Valley Water Management Agency (PVWMA)	Pajaro Valley, Santa Cruz Purisima Formation	Not Changed, but GSP requirements affected
Pine Tree Lane MWC	Pajaro Valley, Soquel Valley	Santa Cruz Mid-County
PureSource	Santa Cruz Purisima	Santa Cruz Mid-County
Purisima MWC	Santa Cruz Purisima Formation	Santa Cruz Mid-County, Santa Margarita
R&A Farms	Pajaro Valley	Not Affected
Rancho Corralitos	Pajaro Valley	Not Affected
Rancho San Andreas	Pajaro Valley	Not Affected
Rancho Soquel Water System	Santa Cruz Purisima	Santa Cruz Mid-County

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Agency Name	Current Associated Basin(s)	Associated Basin(s) Following Proposed Modifications
Renaissance High	Pajaro Valley	Not Affected
Salsipuedes Elementary	Pajaro Valley	Not Affected
San Andreas MWC	Pajaro Valley	Not Affected
Santa Cruz KOA	Pajaro Valley	Not Affected
Scotts Valley Water District (SVWD)	Scotts Valley, Santa Cruz Purisima	Santa Margarita
Seventh Day Adventist	Santa Cruz Purisima	Santa Cruz Mid-County
Sheriff's Rehab	Pajaro Valley	Not Affected
Smith Road	Santa Cruz Purisima	Not Affected
Soquel Creek Water District (SCWD)	Soquel Valley, Santa Cruz Purisima, Pajaro Valley	Santa Cruz Mid-County, Santa Margarita
Spring Valley Water Assoc.	Pajaro Valley	Not Affected
Springbrook Park MWC	Santa Cruz Purisima	Not Affected
St. Francis Tract Water System	Pajaro Valley	Not Affected
Summit West	Santa Cruz Purisima	Not Affected
Sun & Shadow MWC	None	Santa Cruz Mid-County
Sunny Acres MWC	None	Santa Cruz Mid-County
Sunset Beach	Pajaro Valley	Not Affected
Trout Gulch Mutual (formerly Mar Vista)	Santa Cruz Purisima, Pajaro Valley	Santa Cruz Mid-County
Vajrayana Foundation	Santa Cruz Purisima	Not Affected
Villa Glen	Santa Cruz Purisima	Not Affected
Vista Oaks	Santa Cruz Purisima	Not Affected
White Calabasas MWC	Pajaro Valley	Not Affected
Whiting Road	Pajaro Valley	Not Affected
Woodside	Pajaro Valley	Not Affected
Zelbar	Santa Cruz Purisima	Not Affected

None = System not currently within a Bulletin 118 Basin

Methods used to Identify Affected Agencies and Systems (§ 344.4 (b))

We used Geographic Information System (GIS) tools to visualize the extent and overlap of the above agencies and systems with the Bulletin 118 basins affected by these proposed modifications. The service areas of the affected agencies are shown on Figure 1 and the service areas of the affected systems in the proposed

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Santa Cruz Mid-County Basin are shown on Figure 4. The GIS files for these service areas are provided on the compact disk in Appendix C.

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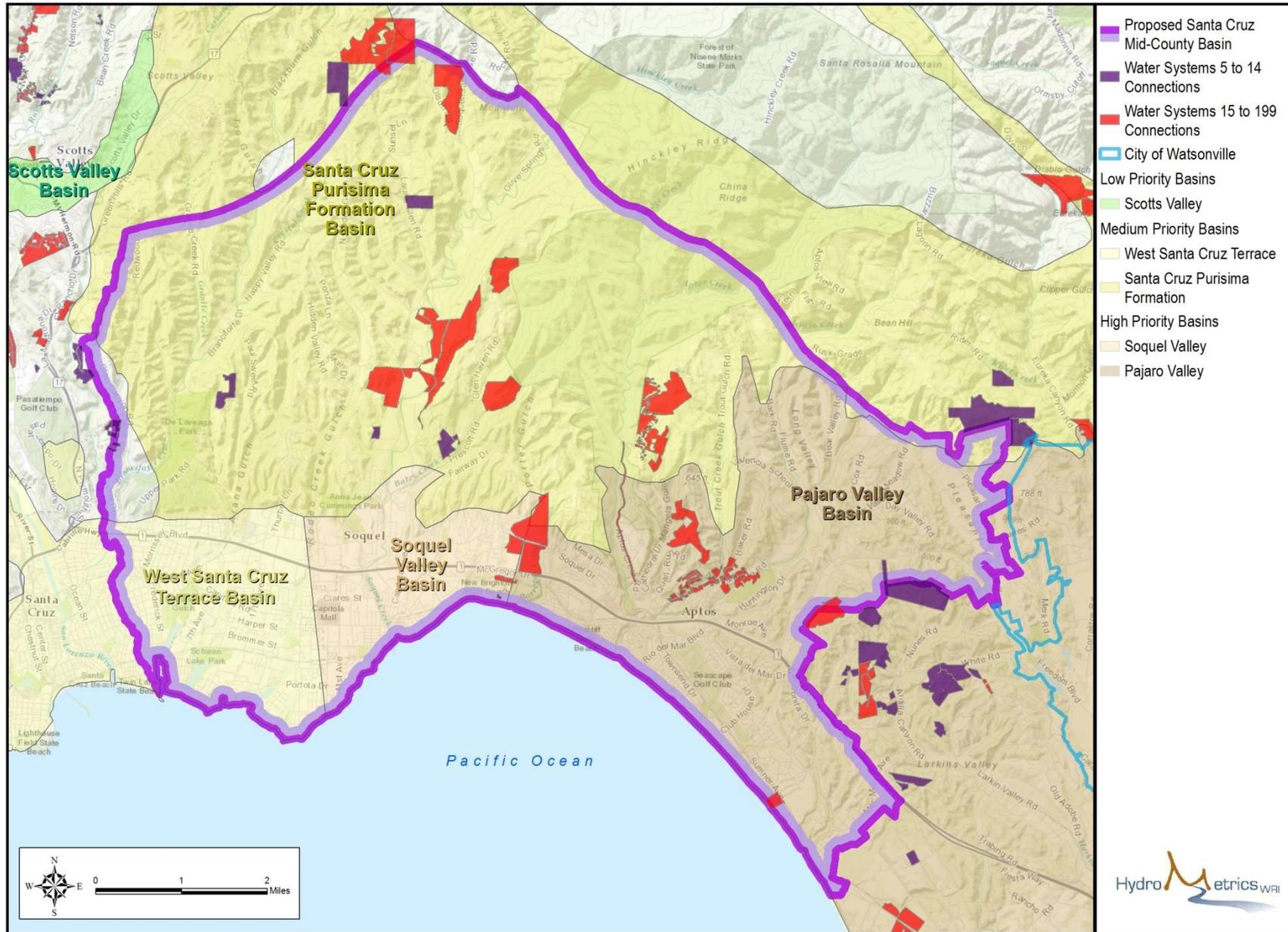


Figure 4: Map of Water Systems in and around Proposed Santa Cruz Mid-County Basin

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Nature of Consultation (§ 344.4 (c))

Santa Cruz County emailed letters on behalf of SAGMC to affected water agencies and public water systems on December 14, 2015. The letters included a map of the proposed modifications, a link to a website with the resolution initiating the boundary modification request, the available draft of this modification request report, and the GIS files defining the proposed basin boundaries, and information on providing comments and resolutions or letters of support or opposition. A copy of the letter, cover letter, and sample letter of support is provided in Appendix D.

Prior to sending its December 27, 2015 letter of opposition, Tom Sak of Purisima Water Company spoke with County staff about the basin boundary modification. After receipt of the Purisima Mutual Water Company's January 9, 2016 letter sent to County Supervisor John Leopold regarding its opposition, Supervisor Leopold and County Water Resources Director John Ricker spoke with Purisima Mutual Water Company representatives. These consultations are summarized in emails included in Appendix D.

Martin Mills of Pure Source Water spoke with HydroMetrics WRI's Cameron Tana by telephone January 12, 2016. This conversation was summarized as comments included in Appendix F.

On December 16, 2015, SCWD General Manager Ron Duncan emailed HydroMetrics WRI's Cameron Tana regarding specific features of the proposed basin boundary modification. These questions were answered and the email exchange is summarized in Appendix D.

Summary of Public Meetings (§ 344.4 (d))

SAGMC held the following public meetings where the basin boundary modifications were discussed:

- At its August 12, 2015 meeting, SAGMC approved HydroMetrics WRI's scope to prepare the basin boundary modification and HydroMetrics WRI presented on the modification approach and comments on draft emergency regulations.
- At its September 17, 2015 meeting, SAGMC discussed a preliminary map of basin boundary modifications.

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- At its November 12, 2015 meeting, SAGMC passed a resolution initiating the basin boundary modification request and directed staff to issue a draft of this modification request report to receive comment.

SAGMC member agencies held the following public meetings to pass resolutions of public support:

- Central Water District: December 15, 2015
- City of Santa Cruz: December 8, 2015
- County of Santa Cruz: January 12, 2016
- Soquel Creek Water District: December 15, 2015

All SAGMC and member agency public meetings were noticed under the Brown Act. Notices and agendas or minutes for these meetings are provided in Appendix E. The proposed basin boundary modifications were also discussed at the County's small water system forums on September 30, 2015 and December 2, 2015. The proposed basin boundary modifications and information on providing comments was presented at the community Mid-County Groundwater Stakeholder meeting on December 10, 2015.

Comments and Response-to-Comments (§ 344.4 (e))

Besides letters of support or opposition from affected agencies and systems, xx comments were received. These comments and response to comments are provided in Appendix F.

LOCAL AGENCY INPUT (§ 344.8)

Evidence that affected agencies and systems were provided required information is provided in Appendix D. Five sets of written comments, one set of telephone comments, and several comments made at the County Board meeting were received by January 12, 2016. Comments, response to comments, and rebuttals to opposition are provided in Appendix F.

The following affected agencies and systems provided resolutions or letters of support:

- Central Water District Resolution No, 11-15
- City of Santa Cruz Resolution No. NS-29,035
- County of Santa Cruz Resolution No. xx

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- Soquel Creek Water District Resolution No. 15-25
- Scotts Valley Water District Resolution No. 16-15

The following affected agencies and system provided resolutions or letters of opposition:

- Purisima Mutual Water Company: December 27, 2015

Resolutions and letters of support or opposition are provided in Appendix G.

CEQA COMPLIANCE (§ 344.18)

As stated in SAGMC's Resolution 15-01, the basin boundary modification is exempt from the California Environmental Quality Act (CEQA) because it is not a project under CEQA. Even if the basin boundary modification constitutes a project, it would be exempt because there it is no possibility that it will have a significant effect on the environment. On behalf of SAGMC, the County filed a notice of exemption on January xx, 2016. The notice of exemption is provided in Appendix I.

HYDROGEOLOGIC CONCEPTUAL MODEL (§ 344.12)

This section summarizes the hydrogeologic conceptual model for the proposed Santa Cruz Mid-County Basin. Additional details are given regarding features specific to the boundary modifications in the following section, which references CCR Section 344.14. In general, this follows the conceptual model outlined in *Technical Memorandum 2: Hydrogeologic Conceptual Model* (Johnson et. al., 2004), and the forthcoming *Soquel-Aptos Groundwater Flow Model: Subsurface Model Construction (Task 3)* (HydroMetrics WRI, 2015b).

Principal Aquifers (§ 344.12 (a) (1))

The conceptual model of the Santa Cruz Mid-County Basin, including vertical thicknesses of major aquifer units, is presented in *Technical Memorandum 2: Hydrogeologic Conceptual Model* (Johnson et. al., 2004). The general hydrogeology of the region is also documented in *Geology and ground water in north-central Santa Cruz County, California* (Johnson, 1980).

The principal aquifers of the Purisima Formation comprise a system of stacked aquifers that generally dip in the eastward direction over the extent of the

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Purisma-Aromas Basin. The individual aquifers and aquitards in and under the Purisima Formation include:

- Unit Tp/Tu: The base of the Purisima Formation is poorly defined. This unit, referred to as Tp? in *Technical Memorandum 2: Hydrogeologic Conceptual Model* (Johnson et. al., 2004) and Tu in *Soquel-Aptos Groundwater Flow Model: Subsurface Model Construction (Task 3)* (HydroMetrics WRI, 2015b) defines an aggregated unit between the base of the Purisima and the granitic basement of the basin.
- Purisima AA Aquifer: a well-defined aquifer that is the deepest unit of the Purisima.
- Purisima A Aquifer: a thick, consistently coarse-grained aquifer zone.
- Purisima B Aquitard: primarily an aquitard with a well-defined claystone basal unit.
- Purisma BC Aquifer: a composite aquifer combining the upper coarse-grained portion of the B aquitard overlain by moderately coarse-grained aquifer material.
- Purisima D Aquitard: primarily fine grained unit considered an aquitard. Few production wells are screened within this unit.
- Purisma DEF/F Aquifer: The unsubdivided upper portion of the DEF/F is also the shallowest portion of the Purisima Formation, consisting of several variably coarse grained internal subunits that thickens towards the east of the basin where it is uneroded.

The Purisima Formation is overlain by the following units:

- Aromas Red Sands: a poorly consolidated formation of interbedded fluvial, marine, and eolian sands with lenses of silt and clay. This formation is the shallowest aquifer in the eastern part of the basin where it overlays the Purisima Unit F in an angular unconformity.
- Other surficial alluvial units, including stream bed deposits and marine terrace deposits exist over the extent of the Santa Cruz Mid-County Basin, but are not the primary water-bearing units of the basin. The majority of pumping occurs in the deeper stacked aquifer system of the Purisima Formation and Aromas Red Sands.

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Lateral Boundaries (§ 344.12 (a) (2))

The lateral boundaries of the basin are described below.

- A) *Geologic features that significantly impede or impact groundwater flow:*
- The watershed boundary between Carbonara Creek and Branciforte Creek where the Purisima Formation is eroded to the granitic basement.
 - A granitic structural high near the shared boundary with the proposed Santa Margarita Basin that separates the aquifer units of each basin.
 - The Zayante Fault is a barrier to flow along the northern boundary of the Purisima-Aromas Basin.
- B) *Aquifer characteristics that significantly impede GW flow:*
- The stacked aquifers of the Santa Cruz Mid-County Basin terminate as they dip upward towards the west and are eroded (Figure 3).
 - Granitic outcrops are also observed between the Lompico and Butano formations of the Santa Margarita Basin and the Purisima Formation.
 - North of the Zayante Fault, the Purisima aquifer units have been impacted by folding and faulting such that they are poorly defined, and are not expressed as stacked aquifer units.
- C) *Significant geologic and hydrologic features and conditions:*
- The Zayante Fault is a barrier to flow in the stacked aquifer units offset by the fault.
- D) *Key surface water bodies, groundwater divides, and recharge sources:*
- The ocean provides a southern boundary to the Santa Cruz Mid-County Basin. However, portions of the Purisima Formation aquifers and probably portions of the Aromas Red Sands outcrop offshore (Johnson et. al., 2004). This has implications for seawater intrusion (HydroMetrics WRI, 2009b), as this offshore outcropping is an important boundary condition across which groundwater and seawater mix and area exchanged within the aquifer system.
 - The western boundary of the consolidated basin represents the boundary of the Soquel-Aptos watershed, across which no groundwater flow enters the aquifer units of the basin.
 - Groundwater recharge in the basin occurs through precipitation, stream recharge, and return flow from pumping and irrigation.
 - Important streams in the basin include Soquel Creek, Aptos Creek, and Valencia Creek.

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Recharge and Discharge Areas (§ 344.12 (a) (3))

Recharge areas identified by Santa Cruz County within the Santa Cruz Mid-County basin are shown on Figure 5. Groundwater discharge also occurs to the streams within the basin and into the ocean along the outcropping aquifer areas offshore.

Definable Bottom of Basin (§ 344.12 (a) (4))

As described above, the definable bottom of the Santa Cruz Mid-County Basin is the granitic basement rock underlying the stacked aquifer units of the basin, which is observed throughout the basin and is visible in outcrops. This granitic basement has been discussed in previous reports (Johnson et. al., 2004), and the structure has been defined by U.S. Geological Survey (USGS) gravity anomaly data (Roberts et al, 2004). The structure of the granitic basement has also been refined by review of borehole log and e-log data supporting the *Soquel-Aptos Groundwater Flow Model: Subsurface Model Construction (Task 3)* memo (HydroMetrics WRI, 2015b). The following section describes details of this basement structure as it relates to the proposed boundary modifications.

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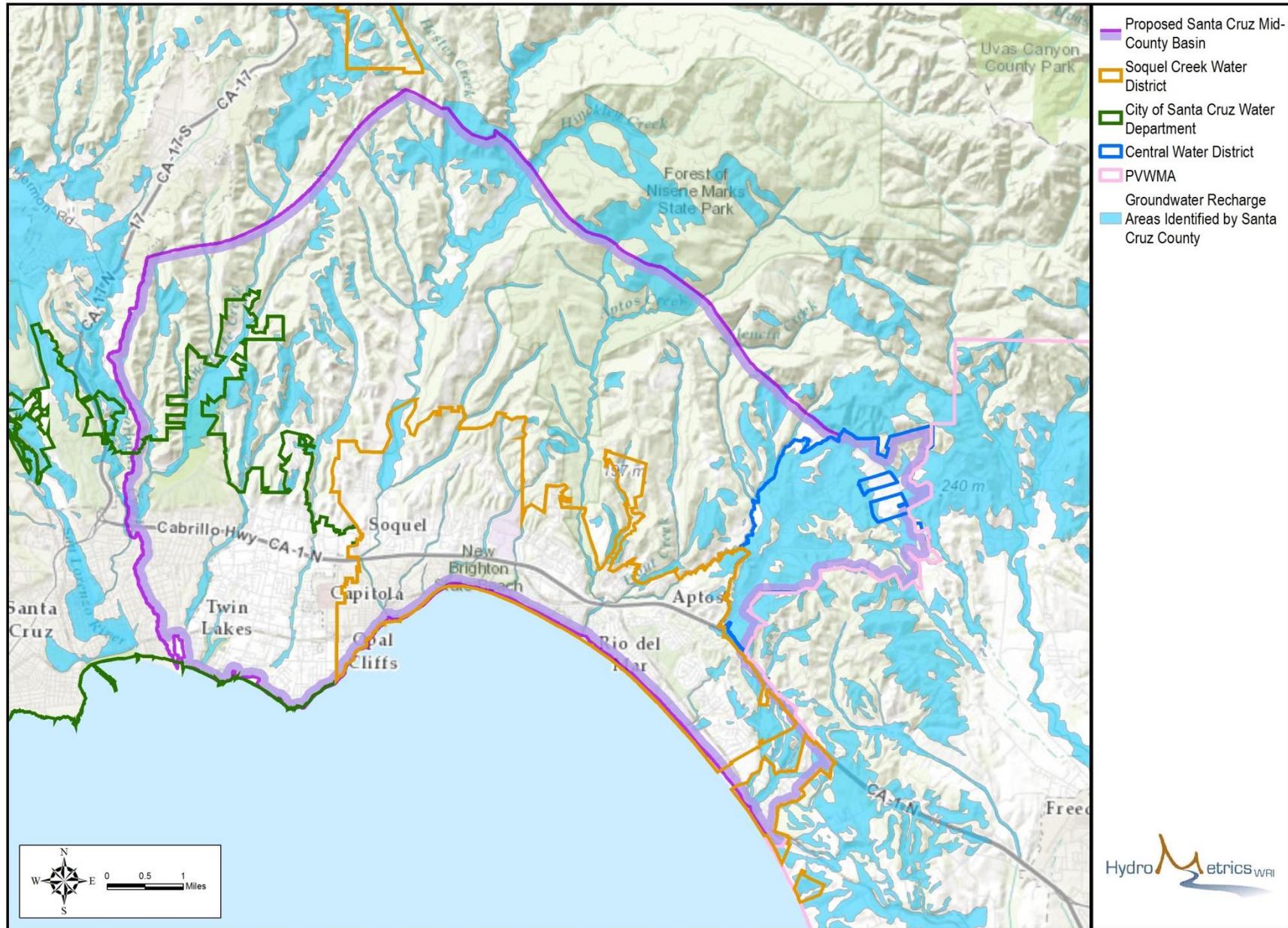


Figure 5: Recharge Areas in Santa Cruz Mid-County Basin

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TECHNICAL INFORMATION FOR SCIENTIFIC MODIFICATIONS (§ 344.14)

Extent of Aquifer System (§ 344.14 (a))

A generalized stratigraphic cross-section on Figure 3 shows the units described in the conceptual model. Table 3-13 of the Johnson et. al. (2004) report also contains information on the relevant physical properties of the stacked aquifer system that was updated for the Well Master Plan EIR (ESA, 2007 Appendix C). This information has been summarized in Table 2.

The extent and outcropping areas of the stacked aquifer system has been further refined in work supporting the *Soquel-Aptos Groundwater Flow Model: Subsurface Model Construction (Task 3)* memo (HydroMetrics WRI, 2015b). This document also contains maps showing the stratigraphy of the stacked aquifer system, as well as a summary of unit thicknesses shown in Table 2. The map from this memo showing the modeled outcropping extents of aquifers and the fault that depicts the lateral boundaries of the aquifers is reproduced with the proposed basin boundary in Figure 6. The memo was prepared by Professional Geologists, the U.S. Geological Survey reviewed this memo as part of the modeling team and a Technical Advisory Committee also reviewed the memo.

Electronic copies of the relevant technical studies are included on the compact disk in Appendix H.

Table 2: Summary of Hydrostratigraphic Unit Properties

Hydrogeologic Unit	Modeled Thickness within Proposed Basin (feet)	Hydraulic Conductivity (feet/day)	Vertical Hydraulic Conductivity (feet/day)	Storativity	Specific Yield
Surficial Alluvium	20-50	3 – 40	0.05 – 2	NA	0.04 – 0.14
Aromas Red Sands	30-750	6 – 50	0.05 – 2	1 × 10 ⁻⁵ – 0.007	0.01 – 0.10
DEF/F Aquifer	25-2,500	2 – 6	0.005 – 0.5		
D Aquitard	170	0.005 - 1	0.001 - 0.1		
BC Aquifer	190	1 – 3	0.005 – 0.1		
B Aquitard	130	0.005 – 1	0.001 – 0.1		
A Aquifer	200-300	7 – 18	0.05 – 2		
AA Aquifer	300-400	1 – 13	0.001 – 0.1		
Unit Tu	25-700	1 – 30	0.01 – 0.5		

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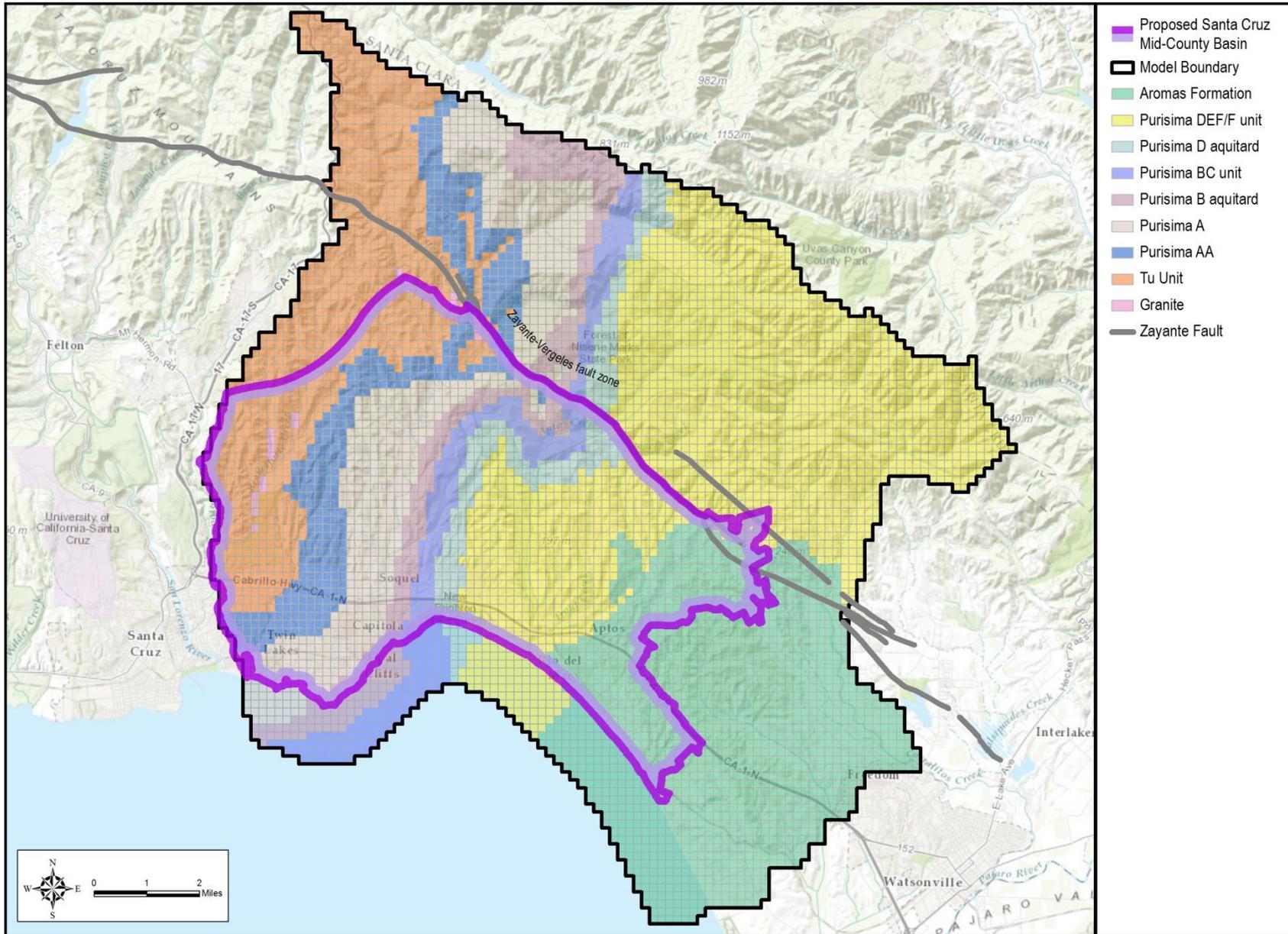


Figure 6: Modeled Extent of Aquifer Outcrops and Faults

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Barriers and Impediments to Groundwater Flow (§ 344.14 (b))

Figure 2 includes three features that significantly impede groundwater flow that are the basis for scientific modification: the Zayante Fault, the structural granitic high between the Santa Margarita Basin and the Santa Cruz Mid-County Basin, and the watershed boundary between Carbonara Creek and Branciforte Creek.

- The location of the Zayante Fault is presented in Figure 1 based on GIS files of the qualified USGS geologic map of Santa Cruz County (Brabb et al., 1997). The map and GIS files are provided on the compact disk in Appendix H.
- The location of the structural granitic high between the Santa Margarita Basin and the Santa Cruz Mid-County Basin is based on the technical work discussed below. Relevant GIS files are provided on the compact disk in Appendix H.
- The watershed boundary between Carbonara Creek and Branciforte Creek was defined using hydrologic modeling of a USGS's 3DEP 10 meter digital elevation model (DEM) in GIS (USGS, 2015). This results in a finer resolution than the National Hydrography Dataset's (NHD) Watershed Boundary Dataset (WBD). Hydrologic modeling splits watersheds into sub-watersheds of equal contributing area. The watershed boundaries generated from the DEM watershed boundaries were smoothed with a GIS smoothing tool to remove the inherent stepped nature of boundaries derived from a raster DEM. The GIS files of the DEM and smoothed watershed boundary are provided on the compact disk in Appendix H.

Per Section 344.14 (b) (2), the findings of technical studies providing geologic and hydrologic evidence of groundwater conditions are summarized below.

The Zayante Fault defines the defined stacked aquifer units of the Purisima Formation south of the fault and the undifferentiated sediments of the Purisima Formation north of the fault. Near some portions of the fault zone there are visible outcrops of granite and Butano sandstone, which have limited water-bearing properties. Limited groundwater exchange may occur over some areas of the fault, most likely over shallower units to the east near Central Water District, but minimal pumping from the undifferentiated Purisima Formation occurs north of the fault. *Technical Memorandum 2: Hydrogeologic Conceptual Model* (Johnson et. al., 2004) contains description of the Zayante Fault. The USGS report by Johnson (1980) also contains information regarding hydrogeology of the Purisima in the vicinity of this fault.

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A structural high divides the westward-dipping stacked aquifer units of the Santa Margarita Basin from the eastward-dipping stacked aquifer units of the Santa Cruz Mid-County Basin.

- A granitic structural high delineates the boundary between each basin. This feature is visible in gravity anomaly surveys of the area, as shown in Figure 7. Gravity anomaly data regarding the granitic basement structure are published in a USGS geophysical investigation (Roberts et al, 2004).
- As part of work performed for the ongoing development of a groundwater model for the Santa Cruz Mid-County Basin area (HydroMetrics WRI, 2015b), a series of boring logs and e-logs were reviewed to refine the structure of the granitic basement, which will be the base of the groundwater model. This study resulted in a refined set of granite elevation contours, as shown in Figure 8. This figure shows the proposed boundary of the Santa Cruz Mid-County Basin following the line delineating the strike of this refined granite feature eastward from where it intersects the watershed boundary that is the western boundary of the basin.
- Figure 9 shows a cross-section that overlaps the proposed shared boundary between the Santa Cruz Mid-County Basin and the Santa Margarita Basin. A steep trough in the granitic basement is evident in the vicinity of Carbonera Creek. The eastern slope of this trough is associated with the western slope of the structural high shown in Figure 8. This cross-section also demonstrates the physical separation of the Santa Margarita, Lompico, and Butano Formations, the sources of groundwater in the Santa Margarita Basin, from the Purisima Formation, which slopes eastward from the granitic structural high between Blackburn Gulch and West Branch Soquel Creek.
- The structure of the granitic basement in the vicinity of the shared Santa Cruz Mid-County Basin and Santa Margarita Basin boundary was also documented by Todd Engineers (1997) and ETIC Engineering (2006) in groundwater modeling technical studies of the area. These studies presented evidence for a structural high coincident with the edge of the basin's aquifer units in this area.

Published USGS maps (Brabb et al, 1997) aided in the definition of the shared Santa Margarita boundary by defining the extent of outcropping units not associated with the Santa Cruz Mid-County Basin.

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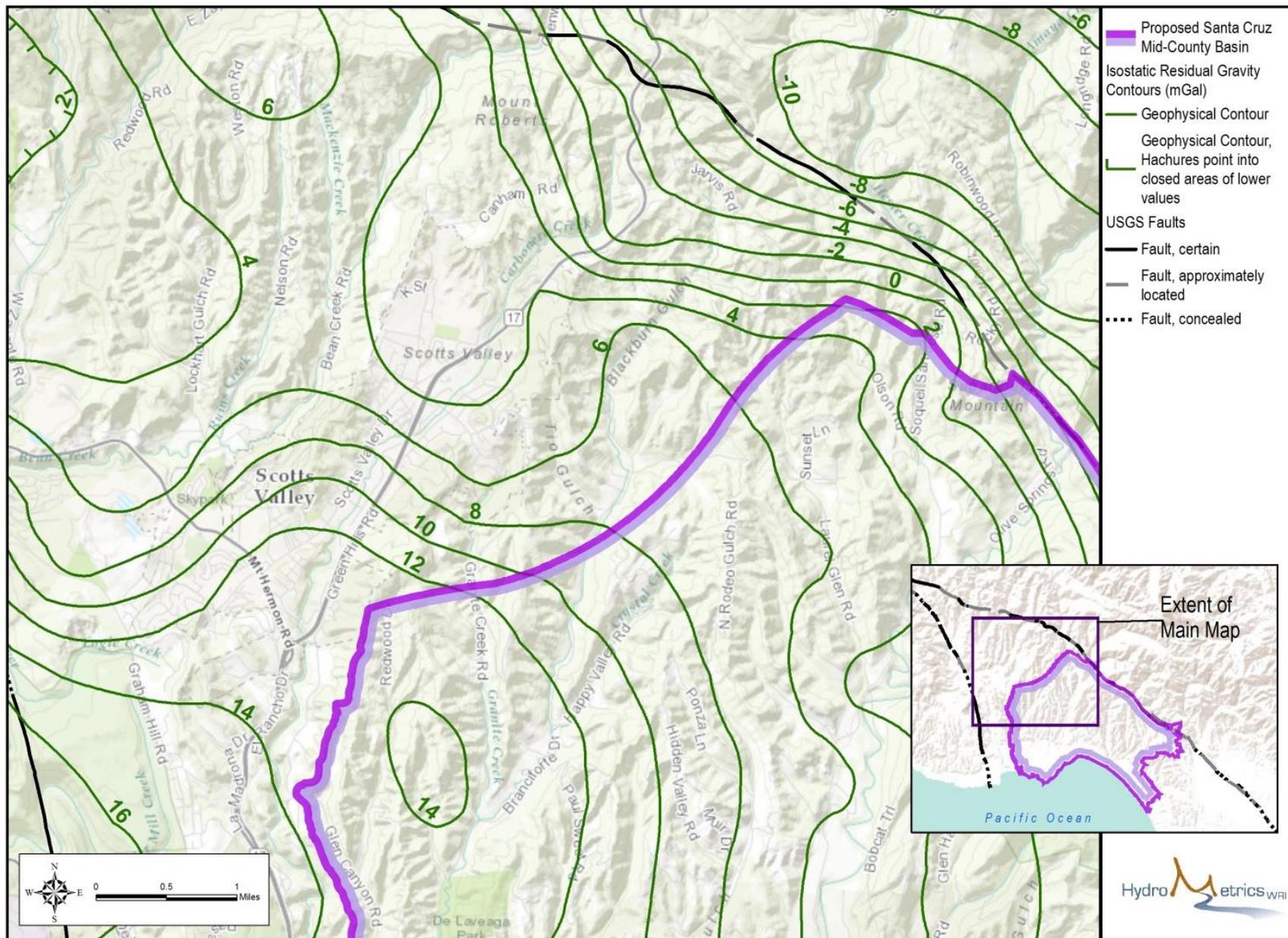


Figure 7: Gravity Anomaly Near Shared Boundary of Proposed Santa Cruz Mid-County and Santa Margarita Basins

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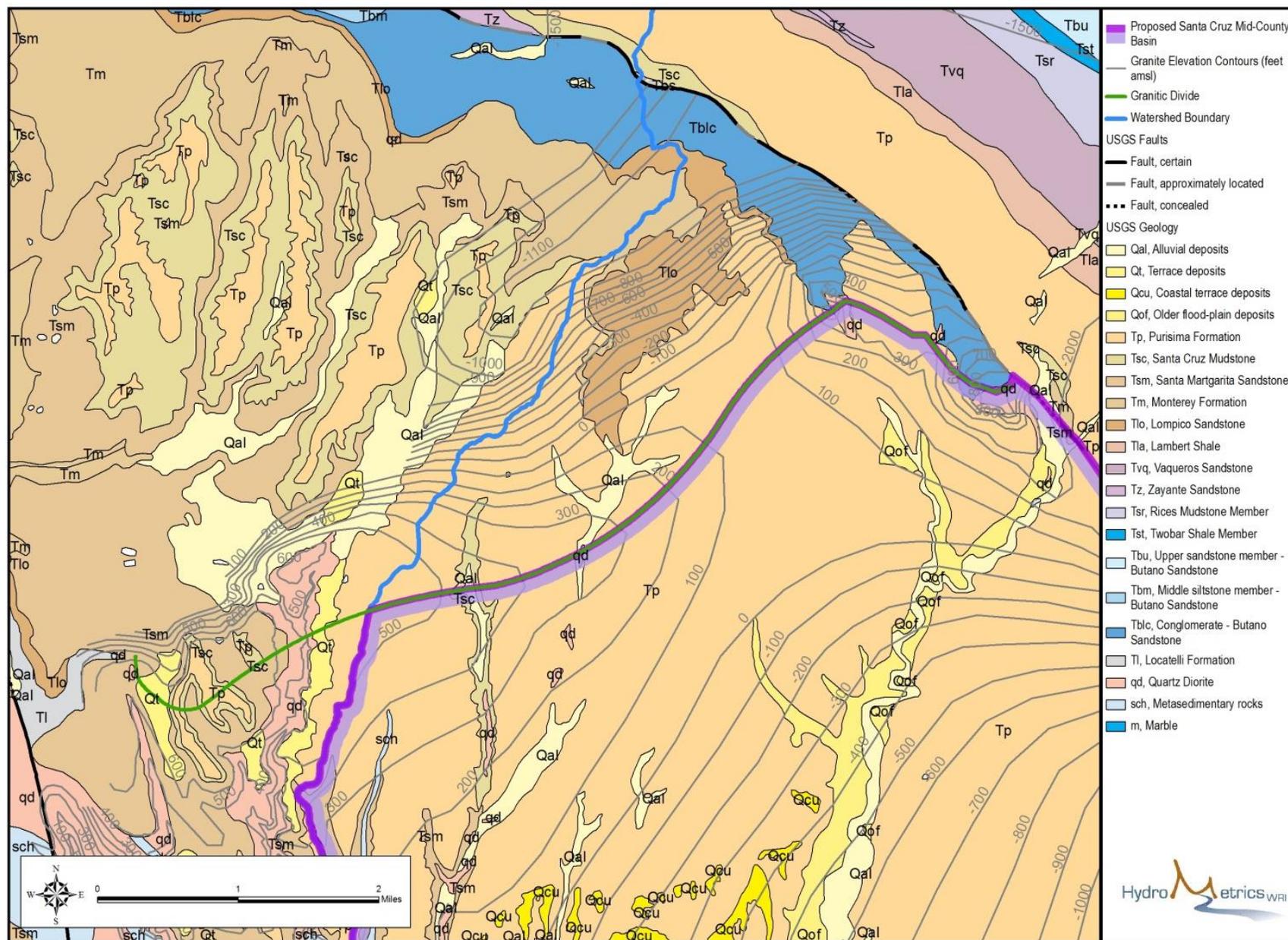


Figure 8: Granite Elevations, Geology & Watershed Near Shared Boundary of Santa Cruz Mid-County and Santa Margarita Basins

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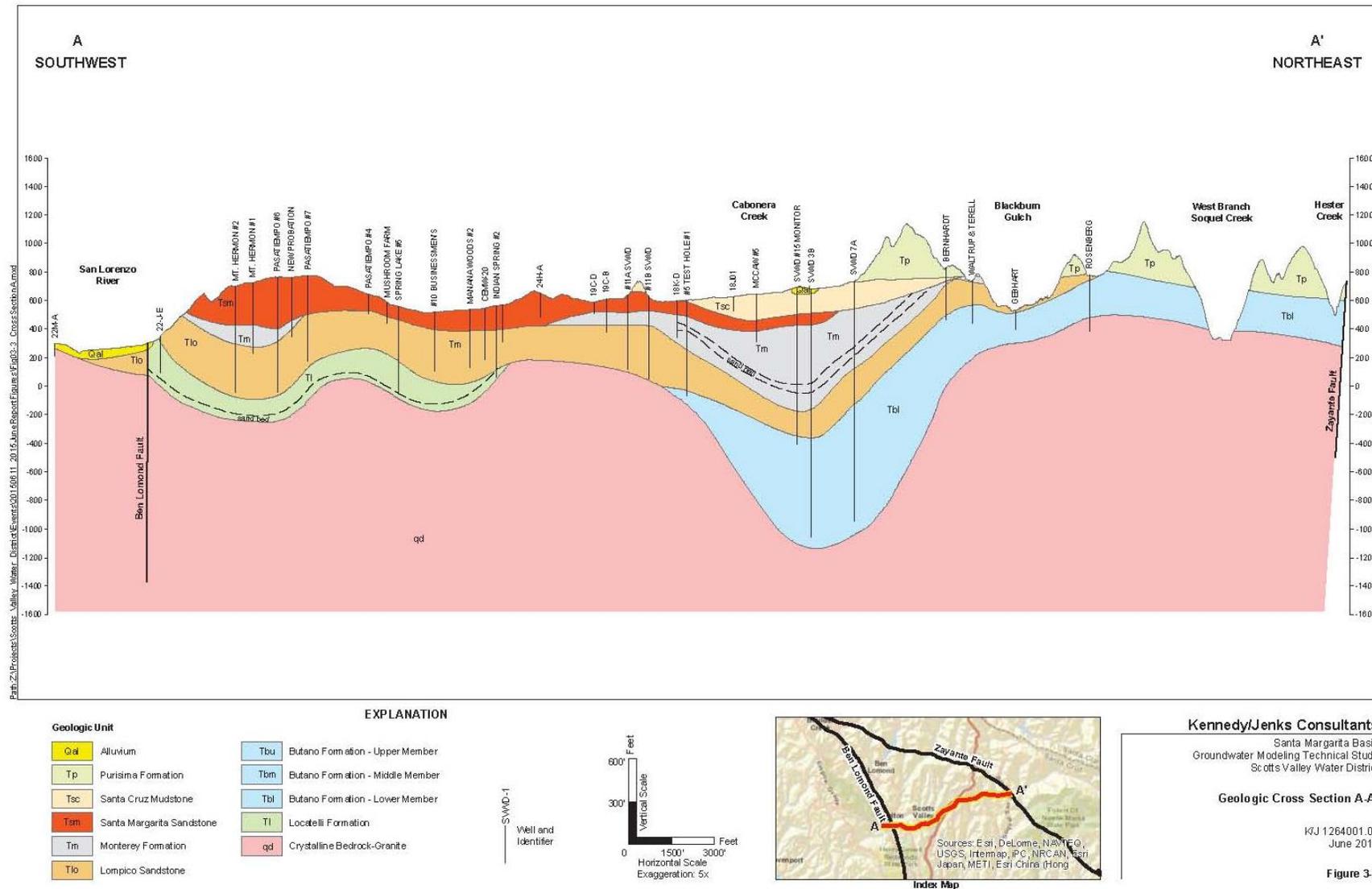


Figure 9: Cross-Section Near Shared Boundary of Santa Cruz Mid-County Basin and Santa Margarita Basin (from Kennedy/Jenks Consultants, 2015)

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The watershed boundary extending from the ocean to the Santa Margarita Basin boundary is also shown as the western boundary of the Santa Cruz Mid-County Basin in Figure 1 and Figure 2. Geologic maps of the area indicate outcrops of granite along the length of this boundary, indicating that the stacked aquifers of the Purisima Formation are incised by erosion and are not continuous over this boundary. Outcrops of granite near the watershed boundary are shown in Figure 10 and the cross section on Figure 9 demonstrates the lack of Purisima Formation west of Carbonera Creek. The structure of the granitic basement dividing the Santa Margarita Basin from the Santa Cruz Mid-County Basin is shown in Figure 7, Figure 8, and Figure 9. Figure 8 also shows outcropping areas of the Lompico and Butano sandstones which are associated with the Santa Margarita Basin, and as such outside the boundary of the Santa Cruz Mid-County Basin. The extent of watersheds overlying the basin, including the watershed boundary defining the western boundary of the Santa Cruz Mid-County Basin, are discussed in *Estimation of Deep Groundwater Recharge Using a Precipitation-Runoff Watershed Model Soquel-Aptos, California* (HydroMetrics WRI, 2011b), and are available in *Soil survey geographic (SSURGO) database for Santa Cruz County, CA* (Natural Resources Conservation Service, 2009).

Historical potentiometric surface maps are available in the Johnson et. al. (2004) report, as well as annual groundwater reports (HydroMetrics LLC, 2008; HydroMetrics LLC, 2009a; HydroMetrics WRI, 2010; HydroMetrics WRI, 2011a; HydroMetrics WRI, 2012a; HydroMetrics WRI, 2013; HydroMetrics WRI, 2014a; HydroMetrics WRI, 2015). Groundwater contours are generated only for areas south of the Zayante Fault due to the hydraulic separation between the aquifers of the Santa Cruz Mid-County Basin and the undifferentiated Purisima north of the fault.

Per Section 344.14 (c), other technical information relevant to the scientific boundary modifications presented here are listed below:

- Recharge areas as defined by Santa Cruz County are shown in Figure 5.
- Annual groundwater reports (HydroMetrics LLC, 2008; HydroMetrics LLC, 2009a; HydroMetrics WRI, 2010; HydroMetrics WRI, 2011a; HydroMetrics WRI, 2012a; HydroMetrics WRI, 2013; HydroMetrics WRI, 2014a; HydroMetrics WRI, 2015a) also present water quality information related to seawater intrusion along the offshore boundary of the stacked aquifer system.

Available electronic copies of referenced technical studies are included on the compact disk on Appendix H.

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TECHNICAL INFORMATION FOR JURISDICTIONAL MODIFICATIONS (§ 344.16)

Groundwater Management Plan and Implementation (§ 344.16 (a) (1) (A))

The groundwater management plan that covers most of the proposed basin and meets the requirements of Water Code Section 10753.7(a) is the Groundwater Management Plan – 2007 (SqCWD and CWD, 2007). This Groundwater Management Plan (GMP) replaced the AB3030 Ground-Water Management Plan Soquel-Aptos Area (LSCE, 1996) to meet requirements of SB 1938. In its assessment of the GMP, DWR confirmed that the GMP is compliant with SB 1938. The GMP fully addresses 23 of the 24 required, voluntary, and suggested components evaluated by DWR (Hull, 2012). An electronic copy of the Groundwater Management Plan is included on the compact disk in Appendix G.

The groundwater management area for the GMP is generally larger than the proposed Santa Cruz Mid-County Basin (Figure 11). The GMP groundwater management area overlaps areas that will be managed by the Santa Margarita Groundwater Advisory Committee and Pajaro Valley Water Management Agency, and also includes undifferentiated Purisima Formation that is not part of the stacked aquifer units of the proposed Santa Cruz Mid-County basin. The proposed Santa Cruz Mid-County Basin does extend farther west than the GMP groundwater management area, as shown in Figure 11, to include the entire watershed potentially contributing to Tu unit underlying the Purisima Formation.

The GMP was developed under a Joint Powers Agreement (JPA) between Central Water District and Soquel Creek Water District (Appendix A). The Soquel-Aptos Area Groundwater Management Committee consisting of Board members from the two Districts and a private well representative guided implementation of the GMP and recommended approval of the GMP. Electronic copies of the Districts' Board ordinances (SqCWD and CWD, 2007) adopting the GMP are included on the compact disk in Appendix G.

Implementation of the GMP has been summarized annually with Annual Review and Reports for Water Years 2007-2014 (HydroMetrics LLC 2008; HydroMetrics LLC, 2009a; HydroMetrics WRI, 2010; HydroMetrics WRI, 2011a; HydroMetrics WRI, 2012a; HydroMetrics WRI, 2013; HydroMetrics WRI 2014a; HydroMetrics WRI, 2015a). The reports include updated pumping, groundwater elevations,

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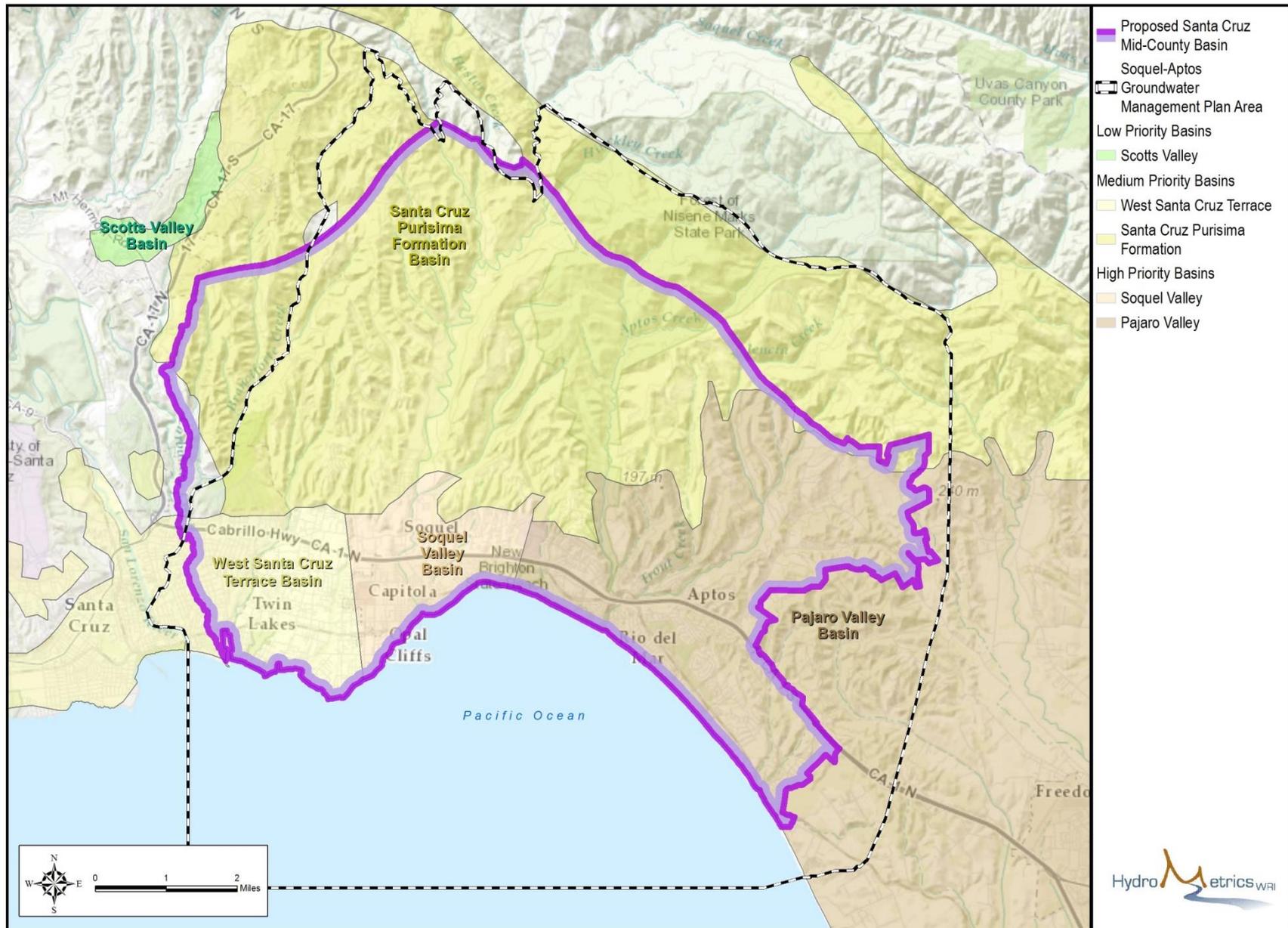


Figure 11: Groundwater Management Area and Proposed and Existing DWR Basins

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and seawater intrusion data as well as recharge estimates. The recharge map shown in Figure 5 has also been added to the annual reports to meet the 2013 requirements for Groundwater Management Plans. The reports also summarize status of groundwater management objectives and implementation of groundwater management elements.

Table 3 shows the status of basin management objectives as of the Water Year 2014 Annual Review and Report. An electronic copy of the compilation of Annual Review and Reports is included on the compact disk in Appendix H.

A Basin Advisory Group consisting of staff from Central Water District, City of Santa Cruz, County of Santa Cruz, Pajaro Valley Water Management Agency, and Soquel Creek Water District review a draft of the Annual Review and Report each year. A Basin Implementation Group consisting of Board members from Central Water District and Soquel Creek Water District and a private well representative has approved the Annual Review and Report each year. In 2015, amendments to the JPA renamed the Basin Implementation Group as the Soquel-Aptos Groundwater Management Committee and added Council members from the City of Santa Cruz and County of Santa Cruz and three private well representatives as members (Appendix A).

Table 3: Summary of Basin Management Objectives

Number (per GWMP)	Basin Management Objective	Status
<i>Goal 1: Ensure water supply reliability for current and future beneficial uses</i>		
1-1	Pump Within the Sustainable Yield	Pumping exceeds recovery goals
1-2	Develop alternative water supplies to achieve a long-term balance between recharge and withdrawals to meet current and future demand	Alternatives such as water transfers and recycled water being evaluated
1-3	Manage groundwater storage for future beneficial uses and drought reserve	Depends on achieving BMOs 1-1, 1-2, and 2-2
<i>Goal 2: Maintain water quality to meet current and future beneficial uses</i>		
2-1	Meet existing water quality standards for beneficial uses, such as drinking water standards.	Drinking water standards met
2-2	Maintain groundwater levels to prevent seawater intrusion	Achieved at 6 of 14 coastal well locations

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Number (per GWMP)	Basin Management Objective	Status
2-3	Prevent and monitor contaminant pathways	Activities ongoing
<i>Goal 3: Prevent adverse environmental impacts</i>		
3-1	Maintain or Enhance the Quantity and Quality of Groundwater Recharge by participating in land use planning process	Activities ongoing
3-2	Avoid alteration of stream flows that would adversely impact the survival of populations of aquatic and riparian organisms	Soquel Creek monitoring ongoing
3-3	Protect the structure and hydraulic characteristics of the groundwater basin by avoiding withdrawals that cause subsidence	No subsidence reported

Relevant Technical Studies (344.16 (a) (1) (C))

Since adoption of the GMP, there have been a number of technical studies that contribute to groundwater management of the relevant portions of the proposed consolidated basin. The studies most relevant to basin management are summarized below. Electronic copies of documents related to these studies are provided on the compact disk in Appendix H.

The GMP identifies seawater intrusion as the primary undesirable result that constrains the sustainable yield of the basin. Cross-sectional model studies (HydroMetrics WRI, 2012b and HydroMetrics LLC, 2009b) have been performed to define protective groundwater elevations at SqCWD’s coastal monitoring wells as measureable objectives to prevent seawater intrusion. The City of Santa Cruz has also defined protective groundwater elevations at its coastal monitoring wells based on the generalized Ghyzen-Herzberg principle (City and SqCWD, 2015). These protective elevations are the long-term groundwater elevations required to prevent seawater intrusion. Since groundwater levels are below protective elevations, the basin is considered in overdraft and recovery will be achieved when groundwater levels rise to protective elevations. A peer review (Todd Groundwater, 2014) of the protective elevations suggested testing modifications to the cross-sectional models. SAGMC has funded current work to

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implement the recommendations by testing models at one SqCWD well and one City of Santa Cruz well.

Central Water District, City of Santa Cruz, and Soquel Creek Water District funded a study to assess surface recharge to the Santa Cruz Mid-County aquifer system using the U.S. Geological Survey's Precipitation-Runoff Modeling System (PRMS), a distributed-parameter hydrologic model (HydroMetrics WRI, 2011b). SqCWD has used results of the study to develop interim estimates of sustainable yield and interim pre-recovery pumping goals. SqCWD has also used the study to guide its declaration of drought curtailment stages under its water shortage contingency plan. The study results have also been used for Central Water District's groundwater model update and the ongoing basinwide modeling effort.

Under a Proposition 84 Integrated Regional Water Management planning grant administered by DWR, Central Water District conducted a technical study of management of the Purisima and Aromas Red Sands aquifers from which it pumps (HydroMetrics WRI and Kennedy/Jenks, 2014). This included updating CWD's groundwater model of the area to evaluate re-distribution of pumping from Aromas Red Sands aquifer units to Purisima aquifer units to address groundwater quality concerns such as Chromium VI and move pumping farther inland to reduce the risk of seawater intrusion.

Under a Proposition 84 Integrated Regional Water Management planning grant administered by DWR, the County of Santa Cruz has evaluated the feasibility and benefits of water transfers using excess winter flows in City of Santa Cruz's surface water supply to provide in-lieu recharge to the proposed consolidated basin (Santa Cruz County Environmental Health Services, 2015). Both SqCWD and the City's Water Supply Advisory Committee have identified these water transfers as high priority alternatives to evaluate further. The City has also identified the possibility of using surface water as a source for aquifer storage and recovery in the basin.

Under a Proposition 50 Integrated Regional Water Management implementation grant administered by the State Water Resources Control Board, the County led an effort to implement demonstration projects to restore groundwater infiltration from developed areas at Polo Grounds Park and Brommer Street Park within the proposed consolidated basin. Installation of two separate facilities at Polo Grounds Park was completed in 2011 and 2012 (Santa Cruz County Environmental Health Services, 2013). The County also received a Prop 84

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stormwater grant to construct the Brommer Street project and provide additional infiltration measures as a part of a new park development at the Heart of Soquel Park.

Since adoption of the GMP, SqCWD and the City has each brought online a new municipal well primarily screened in the Tu unit underlying the Purisima in the western portion of the consolidated basin. After each developed Environmental Impact Reports (EIR) for the new wells (ESA, 2010 and Chambers, 2011), SqCWD and the City developed a cooperative monitoring and adaptive management agreement to address effects on the basin of bringing the two wells online (City and SqCWD, 2015). As part of the agreement, SqCWD and the City jointly fund a monitoring and adaptive management programs for pumping effects on private wells and streamflows in Soquel Creek (HydroMetrics WRI, 2015c). The cooperative monitoring and adaptive management agreement between the two agencies, the private well owner agreement, and the baseline monitoring report for Soquel Creek are included on the compact disk in Appendix G.

SqCWD has also brought online a municipal well screened in the Purisima F unit and has plans to bring at least one additional municipal well online. The Well Master Plan EIR included these wells. SqCWD is implementing a monitoring and adaptive management program for pumping effects on private wells near these wells. SqCWD and CWD also developed a cooperative monitoring and adaptive management agreement to address effects on CWD wells of pumping the new SqCWD well in the Purisima F unit, from which CWD wells produce (CWD and SqCWD, 2011)

SAGMC is funding development of an integrated surface water-groundwater model. The model will use the U.S. Geological Survey code GSFLOW that integrates the Precipitation Runoff Modeling System (PRMS) watershed model with the MODFLOW groundwater model. The model will be used to evaluate groundwater management alternatives by comparing simulated groundwater levels to prevent seawater intrusion and analyzing effects on stream-aquifer interaction. Simulating effects of climate change and simulation of the saltwater-freshwater interface are also included in the scope. The U.S. Geological Survey is on the modeling team in a review and advisory role and a Technical Advisory Committee will also review model development. The work plan (HydroMetrics WRI, 2015c) and the draft technical memorandum on subsurface model construction (HydroMetrics WRI, 2015a) cited as Scientific Information are included on the compact disk in Appendix G.

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Coordination of Sustainable Groundwater Management Activities and Responsibilities (344.16 (a) (2))

SAGMC is currently undertaking the formation of a Groundwater Sustainability Agency (GSA) to manage the consolidated basin. As the Soquel Valley and Pajaro Valley basins have been classified as critically overdrafted basin, SAGMC expects that the consolidated Santa Cruz Mid-County basin would also be a critically overdrafted basin. The GSA would be formed with the expectation that it would develop a Groundwater Sustainability Plan (GSP) by 2020 as required by SGMA for critically overdrafted basins. Based on its ongoing relationships with groundwater management agencies in the Santa Margarita Basin and Pajaro Valley Water Management Agency, SAGMC is committed to developing the inter-basin coordination agreements required for the GSP.

BASIN AREAS EXCLUDED BY BASIN CONSOLIDATION

This section does not refer to a specific section of the regulations, but summarizes the anticipated outcome of areas of existing Bulletin 118 basins that will fall outside of the proposed boundaries of the Santa Cruz Mid-County Basin (Figure 12) and do not have a planned GSA. The basins outside the proposed Santa Cruz Mid-County Basin with agencies that have or plan to form a GSA are the proposed Santa Margarita Basin and the Pajaro Valley Basin. The member agencies of the Santa Margarita Groundwater Advisory Committee are submitting its proposed modification of the Santa Margarita Basin as a precursor to forming a GSA. Pajaro Valley Water Management Agency is named in SGMA as an exclusive GSA for its jurisdiction and has elected be the GSA for its jurisdiction in the Pajaro Valley Basin. The basins outside the proposed Santa Cruz Mid-County Basin without a planned GSA are the proposed Santa Cruz Purisima Formation Basin and the proposed West Santa Cruz Terrace Basin.

The area of the Santa Cruz Purisima Formation Basin north of the Zayante Fault will remain as the Santa Cruz Purisima Formation Basin and is expected to be classified as low or very low priority in the update of Bulletin 118 scheduled for 2017. The re-classification would be based on groundwater pumping totals below the threshold of 2,000 acre-feet per year below which basins are classified as very low priority (DWR, 2014). Estimates of groundwater pumping for the area will be developed for the groundwater model under development and will be available prior to update of Bulletin 118 in 2017. There are also no

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documented impacts on the groundwater such as overdraft, subsidence, saline intrusion or other water quality degradation in the proposed basin.

Areas of the West Santa Cruz Terrace Basin west of the watershed boundary defining the extent of the Santa Cruz Mid-County Basin will remain as the West Santa Cruz Terrace Basin. The remaining area of this basin is expected to be reclassified as a low or very low priority basin in the update of Bulletin 118 scheduled for 2017. The aquifers are not considered productive and groundwater pumping is well below the threshold of 2,000 acre-feet per year below which basins are classified as very low priority (DWR, 2014). Most of the areas are within City of Santa Cruz's water service area receiving surface water supply and groundwater pumped from the proposed Santa Cruz Mid-County Basin. There are also no documented impacts on the groundwater in the proposed basin.

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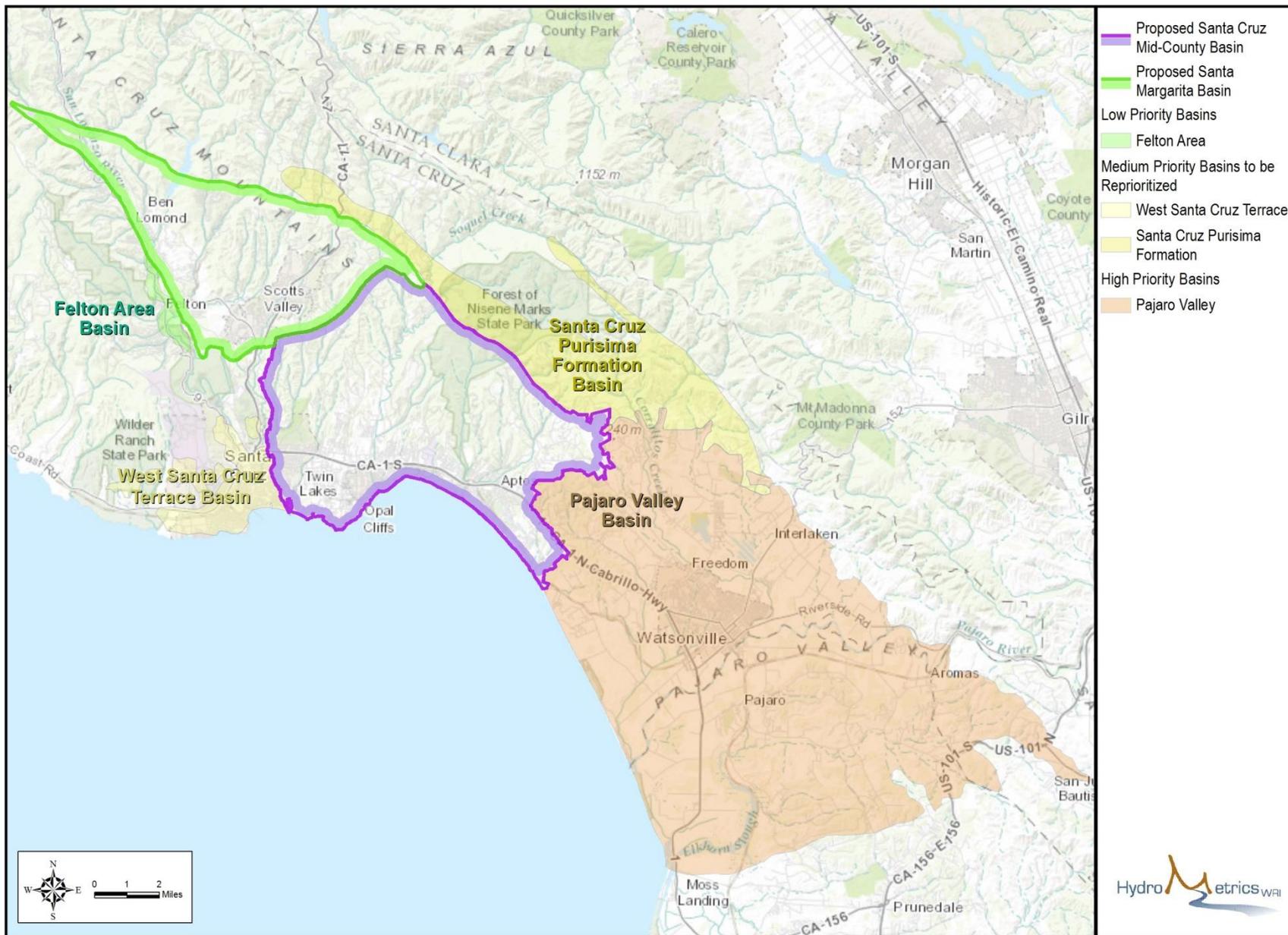


Figure 12. Summary of Proposed DWR Basins for Combined Requests

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LIST OF APPENDICES

Appendix A	SAGMC Joint Powers Authority Documentation
Appendix B	Basin Boundary Modification Request Resolution
Appendix C	GIS Files and Maps (CD)
Appendix D	Consultation Letters to Affected Agencies and Systems
Appendix E	Public Meeting Minutes
Appendix F	Comments and Response-to-Comments
Appendix G	Resolutions and Letters of Support or Opposition
Appendix H	Electronic Copies of Relevant Technical Studies (CD)
Appendix I	CEQA Notice of Exemption

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APPENDIX D

Consultation with Affected Agencies and Systems

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From: John Ricker [mailto:John.Ricker@santacruzcounty.us]

Sent: Monday, December 14, 2015 4:59 PM

To: John Ricker

Cc: Sierra Ryan; Piret Harmon; 'Matt Orbach'; Cameron Tana; John Hodges; Troy Boone

Subject: Groundwater Basin Boundary Modifications

Dear Public Water System Representative:

The County of Santa Cruz and local water agencies are working together to implement California's Sustainable Groundwater Management Act of 2014 (SGMA), which is aimed at strengthening local control and management of groundwater basins throughout the state. The California Department of Water Resources (DWR) has defined the boundaries for groundwater basins that require management under SGMA, but provides an opportunity for local agencies to request modification of those boundaries to better reflect current geologic understanding and local approach to management. The process requires notification and consultation with water systems that are located within the boundaries of basins that are affected by the boundary modification. Your system is being contacted because you are located in one or more of the basins that is proposed for modification.

Please see the attached material for information on this process and how your water system can be involved.

Additional technical information regarding the proposed modification can be found at the following websites:

1. The Santa Cruz Mid-County Groundwater Basin

www.midcountygroundwater.org/soquel-aptos-basin-area/basin-boundary-modification-process

2. The Santa Margarita Groundwater Basin in the Scotts Valley/Ben Lomond/Boulder Creek Area

<http://svwd.org/about-district/news/draft-report-santa-margarita-groundwater-basin-revision-request>

Please feel free to contact me or Sierra Ryan (454-3133) if you have any questions.

Thank you.

John Ricker

Water Resources Division Director

County of Santa Cruz

831-454-2750



Date: December 14, 2015

To: Water Systems in Basins Affected by Proposed Boundary Modifications

From: John Ricker, Santa Cruz County Water Resources Division Director

Subject: Definition of Groundwater Basins for Management under the California Sustainable Groundwater Management Act

The County of Santa Cruz and local water agencies are working together to implement California's Sustainable Groundwater Management Act of 2014 (SGMA), which is aimed at strengthening local control and management of groundwater basins throughout the state. The California Department of Water Resources (DWR) has defined the boundaries for groundwater basins that require management under SGMA, but provides an opportunity for local agencies to request modification of those boundaries to better reflect current geologic understanding and local approach to management. The process requires notification and consultation with water systems that are located within the boundaries of basins that are affected by the boundary modification. Your system is being contacted because you are located in one or more of the basins that is proposed for modification.

Two basin modification requests are being proposed in Santa Cruz County and are shown on the attached map(s). The attached table lists water systems and indicates which basin(s) each water system is in before and after the proposed boundary modifications. Additional information about the proposed basin boundary revision, along with the draft report detailing the justification for the boundary revision, can be found at the indicated websites. Additional information about rules regulating public and local input as well as links to information from DWR on the basin boundary modification process are also provided on the websites.

1. The Santa Cruz Mid-County Groundwater Basin

www.midcountygroundwater.org/soquel-aptos-basin-area/basin-boundary-modification-process

2. The Santa Margarita Groundwater Basin in the Scotts Valley/Ben Lomond/Boulder Creek Area

<http://svwd.org/about-district/news/draft-report-santa-margarita-groundwater-basin-revision-request>

If your system elects to support or oppose the proposed boundary modification, please provide one of the following:

- A copy of a resolution formally adopted by the decision making body of the affected system
- A letter signed by an executive officer or other official with appropriate delegated authority who represents the affected system. An example letter of support is attached.

Resolutions or letters of support or opposition for the proposed boundary modifications and other comments or questions should be provided to Ms. Sierra Ryan at:

Ms. Sierra Ryan, Water Resources Planner

701 Ocean Street Room 312

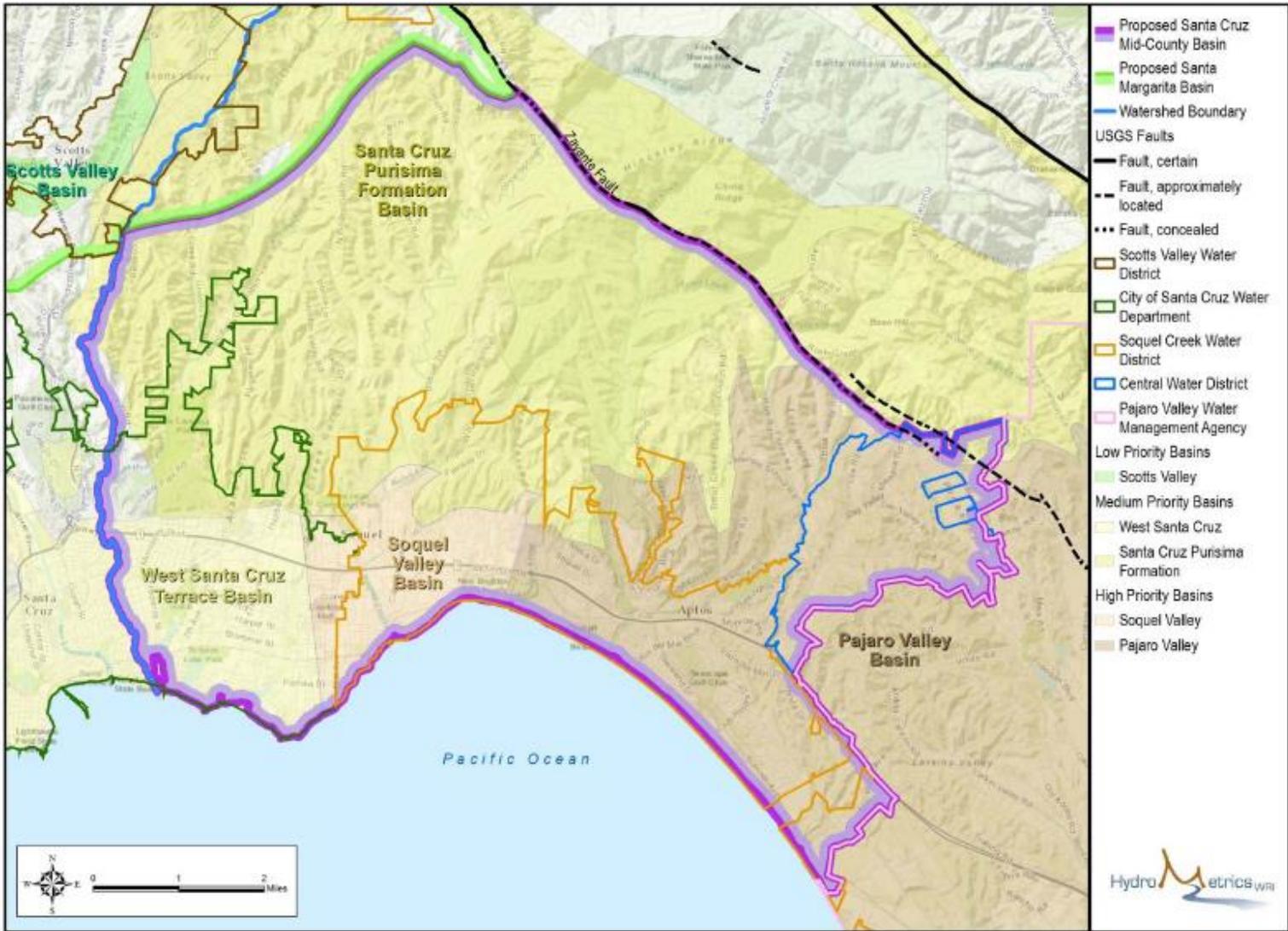
Santa Cruz, CA 95060

(831)454-3133 Sierra.ryan@santacruzcounty.us

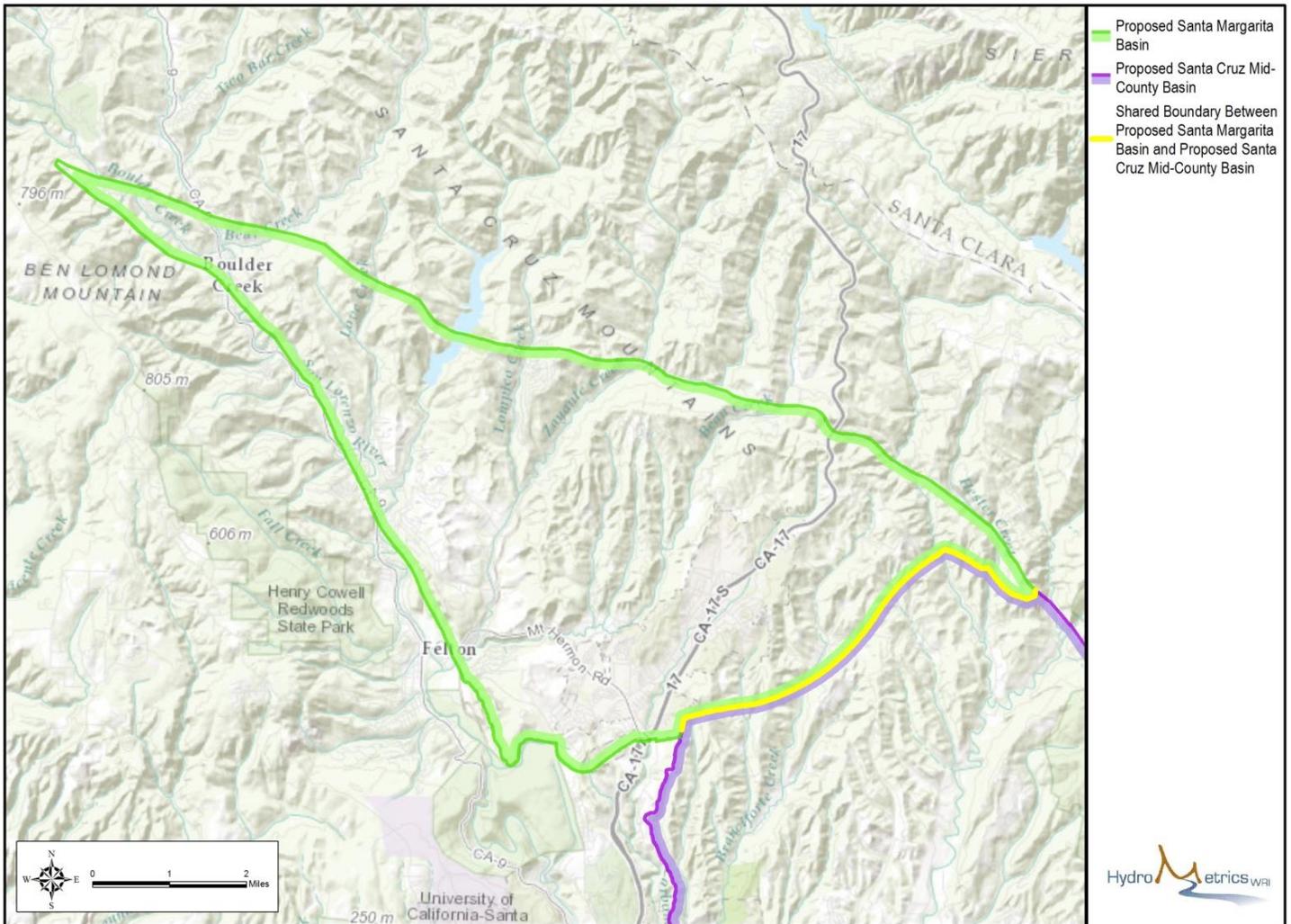
All comments, resolutions and letters of support and opposition, and supporting documents will be provided to DWR with the modification request. Response to comments and any evidence that the local agencies believes rebuts opposition to the proposed modification will also be provided to DWR.

Please provide any input by January 11, 2016. Thank you.

Proposed Santa Cruz Mid-County Groundwater Basin



Proposed Santa Margarita Groundwater Basin



System Name	Current Associated Basin(s)	Associated Basin(s) Following Proposed Modifications	Mid-County Basin		Santa Margarita Basin	
			Within Basin Boundary (Affected)	Outside Basin Boundary (Not Affected)	Within Basin Boundary (Affected)	Outside Basin Boundary (Not Affected)
Allan Lane Water Assoc.	Santa Cruz Purisima, Pajaro Valley	Santa Cruz Purisima, Pajaro Valley		X		X
Aptos High School	Pajaro Valley	Pajaro Valley		X		
Aptos Hills MWC	Pajaro Valley	Pajaro Valley		X		
Aptos Ridge MWC	Pajaro Valley	Pajaro Valley		X		
Big Redwood Park	Santa Cruz Purisima	Santa Cruz Purisima		X		X
Bluff Residents	Soquel Valley	Santa Cruz Mid-County	X			
Boulder Creek Scout Reserve						X
Bracken Brae Country Club						X
Buena Vista Migrant Center	Pajaro Valley	Pajaro Valley		X		
Cabrillo College	Pajaro Valley, Soquel Valley, Santa Cruz Purisima	Santa Cruz Mid-County	X			X
Calabasas Road	Pajaro Valley	Pajaro Valley		X		
Camp St. Francis	Pajaro Valley	Santa Cruz Mid-County	X			
Cassin Ranch	Pajaro Valley	Pajaro Valley		X		
Cathedral Hills MWC	Santa Cruz Purisima	Santa Cruz Mid-County	X			X
Cathedral Wood MWC	Santa Cruz Purisima	Santa Cruz Purisima		X		X
Central Water District	Pajaro Valley, Santa Cruz Purisima Formation	Santa Cruz Mid-County	X			X
City of Santa Cruz Water Department	Soquel Valley, Santa Cruz Purisima Formation, West Santa Cruz Terrace	Santa Cruz Mid-County, West Santa Cruz Terrace	X			X
City of Watsonville Public Utilities	Santa Cruz Purisima, Pajaro Valley	Pajaro Valley		X		X
Corralitos Springs	Santa Cruz Purisima	Santa Cruz Purisima		X		X
County Fairgrounds	Pajaro Valley	Pajaro Valley		X		

System Name	Current Associated Basin(s)	Associated Basin(s) Following Proposed Modifications	Mid-County Basin		Santa Margarita Basin	
			Within Basin Boundary (Affected)	Outside Basin Boundary (Not Affected)	Within Basin Boundary (Affected)	Outside Basin Boundary (Not Affected)
Crestwood Heights Water Co.	Pajaro Valley	Pajaro Valley		X		
East Bel Mar	Pajaro Valley	Pajaro Valley		X		
Emerald City	Pajaro Valley	Pajaro Valley		X		
Enchanted Valley	Santa Cruz Purisima	Santa Cruz Mid-County	X			X
Enos Lane	Santa Cruz Purisima	Santa Cruz Purisima		X		X
Fern Grove Club		Santa Margarita			X	
Fernbrook Woods		Santa Margarita			X	
Forest Springs						X
Freedom MWC	Pajaro Valley	Pajaro Valley		X		
Gizdich Ranch	Pajaro Valley	Pajaro Valley		X		
Hidden Falls Girl Scout Camp	Santa Cruz Purisima	Santa Margarita, Santa Cruz Mid-County	X		X	
Hidden Meadow		Santa Margarita			X	
Hughes Road	Pajaro Valley	Pajaro Valley		X		
Jardines Del Valle	Pajaro Valley	Pajaro Valley		X		
Jarvis Mutual Water Co.	Santa Cruz Purisima	Santa Margarita		X	X	
JB Ranch						X
Karl's Dell		Santa Margarita			X	
Kennolyn Camp	Santa Cruz Purisima	Santa Cruz Mid-County	X			X
Kitayama Brothers	Pajaro Valley	Pajaro Valley		X		
Koinonia Conference Grounds	Santa Cruz Purisima	Santa Cruz Purisima		X		X
Lagunita MWC	Santa Cruz Purisima	Santa Cruz Mid-County	X			X
Lakeview Apartments	Pajaro Valley	Pajaro Valley		X		
Land Of Medicine Buddha	Santa Cruz Purisima	Santa Cruz Mid-County	X			X
Larkin Ridge MWC	Pajaro Valley	Pajaro Valley		X		

System Name	Current Associated Basin(s)	Associated Basin(s) Following Proposed Modifications	Mid-County Basin		Santa Margarita Basin	
			Within Basin Boundary (Affected)	Outside Basin Boundary (Not Affected)	Within Basin Boundary (Affected)	Outside Basin Boundary (Not Affected)
Las Colinas Road and Water Assoc.	Santa Cruz Purisima, Pajaro Valley	Santa Cruz Purisima, Pajaro Valley		X		X
Laurel Glen MWC	Santa Cruz Purisima	Santa Cruz Mid-County	X			X
Loma Alta MWC	Santa Cruz Purisima	Santa Cruz Mid-County	X			X
Lompico County Water District		Santa Margarita			X	
Love Creek Heights		Santa Margarita			X	
Manana Woods		Santa Margarita			X	
Meadowridge	Santa Cruz Purisima, Pajaro Valley	Santa Cruz Purisima, Pajaro Valley		X		X
Milky Way MWC	Pajaro Valley	Pajaro Valley		X		
Mission Springs Conference		Santa Margarita			X	
Monte Vista Christian School	Pajaro Valley	Pajaro Valley		X		
Monterey Bay Academy	Pajaro Valley	Pajaro Valley		X		
Moon Meadows		Santa Margarita			X	
Mount Hermon Association, Inc		Santa Margarita			X	
Mountain Elementary School	Santa Cruz Purisima	Santa Cruz Mid-County	X			X
Mystery Spot	Santa Cruz Purisima	Santa Cruz Mid-County	X			X
Pajaro Valley Water Management Agency	Pajaro Valley, Santa Cruz Purisima	Pajaro Valley		X		X
Pine Tree Lane MWC	Pajaro Valley, Soquel Valley	Santa Cruz Mid-County	X			
PureSource Water Inc.	Santa Cruz Purisima	Santa Cruz Mid-County	X			X
Purisima MWC	Santa Cruz Purisima	Santa Margarita		X	X	
Quail Hollow Circle		Santa Margarita			X	

System Name	Current Associated Basin(s)	Associated Basin(s) Following Proposed Modifications	Mid-County Basin		Santa Margarita Basin	
			Within Basin Boundary (Affected)	Outside Basin Boundary (Not Affected)	Within Basin Boundary (Affected)	Outside Basin Boundary (Not Affected)
R&A Farms	Pajaro Valley	Pajaro Valley		X		
Rancho Corralitos	Pajaro Valley	Pajaro Valley		X		
Rancho San Andreas	Pajaro Valley	Pajaro Valley		X		
Rancho Soquel Water System	Santa Cruz Purisima	Santa Cruz Mid-County	X			X
Renaissance High School	Pajaro Valley	Pajaro Valley		X		
Roaring Camp	Felton Basin	Felton Basin				X
Salsipuedes Elementary	Pajaro Valley	Pajaro Valley		X		
San Andreas MWC	Pajaro Valley	Pajaro Valley		X		
San Lorenzo Valley Water District	Felton Basin, Scotts Valley	Santa Margarita			X	
Santa Cruz KOA	Pajaro Valley	Pajaro Valley		X		
Scotts Valley Water District	Scotts Valley, Santa Cruz Purisima	Santa Margarita	X		X	
Seventh Day Adventist	Santa Cruz Purisima	Santa Cruz Mid-County	X			X
Sheriff's Rehab	Pajaro Valley	Pajaro Valley		X		
Smith Road	Santa Cruz Purisima	Santa Cruz Purisima		X		X
Soquel Creek Water District	Soquel Valley, Santa Cruz Purisima, Pajaro Valley	Santa Cruz Mid-County, Santa Margarita	X		X	
Spring Valley Water Assoc.	Pajaro Valley	Pajaro Valley		X		
Springbrook Park MWC	Santa Cruz Purisima	Santa Cruz Purisima		X		X
St. Francis Tract Water System	Pajaro Valley	Pajaro Valley		X		
Summit West	Santa Cruz Purisima	Santa Cruz Purisima		X		X
Sun and Shadow		Santa Cruz Mid-County	X			
Sunny Acres MWC		Santa Cruz Mid-County	X			
Sunset Beach	Pajaro Valley	Pajaro Valley		X		

System Name	Current Associated Basin(s)	Associated Basin(s) Following Proposed Modifications	Mid-County Basin		Santa Margarita Basin	
			Within Basin Boundary (Affected)	Outside Basin Boundary (Not Affected)	Within Basin Boundary (Affected)	Outside Basin Boundary (Not Affected)
Trout Gulch	Santa Cruz Purisima, Pajaro Valley	Santa Cruz Mid-County	X			X
Vajrayana Foundation	Santa Cruz Purisima	Santa Cruz Purisima		X		X
Villa Glen	Santa Cruz Purisima	Santa Cruz Purisima		X		X
Vista Oaks	Santa Cruz Purisima	Santa Cruz Purisima		X		X
Vista Robles		Santa Margarita			X	
White Calabasas MWC	Pajaro Valley	Pajaro Valley		X		
Whiting Road	Pajaro Valley	Pajaro Valley		X		
Woodside	Pajaro Valley	Pajaro Valley		X		
Zayante Acres		Santa Margarita			X	
Zelbar	Santa Cruz Purisima	Santa Cruz Purisima		X		X

DRAFT FOR SAGMC 1/21/2016

Ms. Sierra Ryan, Water Resources Planner
701 Ocean Street Room 312
Santa Cruz, CA 95060

Sierra.ryan@santacruzcounty.us

Subject: Comment on Proposed Basin Boundary Modification for the Santa Cruz Mid-County Groundwater Basin and/or the Santa Margarita Groundwater Basin {choose one or both}

Dear Ms. Ryan:

We have received the notice of the proposed request for a groundwater basin boundary modification to the California Department of Water Resources (DWR) as part of implementation of the Sustainable Groundwater Management Act. Our public water system, {system name here}, has a service area or water source that is included in one of the affected basins.

We agree the proposed basin boundaries reflect the shared groundwater resource and hydrology of the basins. The proposed boundaries represent the appropriate area to manage for sustainability of our groundwater supply. Therefore, our system has elected to support the proposed boundary modification.

As our system's {position here}, I have the appropriate delegated authority to represent our system and sign this letter of support. Please continue to inform us on how to participate in groundwater management activities for the proposed basin(s).

Sincerely,

Name
Position, System

DRAFT FOR SAGMC 1/21/2016

January 9, 2016

Mr. John Leopold

First District Supervisor

Board of Supervisors

County of Santa Cruz

701 Ocean St

Santa Cruz, CA 95060

Dear Mr. Leopold:

As one of your constituents and on behalf of the Purisima Mutual Water Company, I request you do all in your power to reject adoption of the two resolutions on endorsing the boundary modification for the Mid-County (Soquel-Aptos) and Santa Margarita (Scotts Valley) groundwater basins.

In a letter to Mr. John Ricker, Water Resources Division Director, on December 27th, our small water company expressed our rejection of the proposed northern

boundary change of the Santa Cruz Purisima Formation Basin and the eastern boundary change of the Scotts Valley Basin. We provided supporting documentation. The proposed boundary change, in our opinion, is not scientifically justified and would produce a management nightmare. A copy of the Ricker letter, including the rationale for our objection, is attached.

Thank you for your assistance,

Tom Sak

Treasurer, Purisima Mutual Water Co, Inc

575 Rider Ridge Rd

Santa Cruz, CA 95065

831.457.0120

Attachment: Letter to John Ricker, December 27, 2015

Copy: Mr. Greg Caput, Mr. Ryan Coonerty, Mr. Zach Friend, Mr. Bruce McPherson

DRAFT FOR SAGMC 1/21/2016

From: John Ricker [mailto:John.Ricker@santacruzcounty.us]
Sent: Monday, January 11, 2016 10:35 PM
To: Cameron Tana; Piret Harmon; 'Ron Duncan'; Rosemary Menard; Christine Burnett; Brian Lee (BLee@slvwd.com)
Cc: Derrik Williams; Sean Culkin; Nick Byler; Sierra Ryan; Matt Orbach
Subject: RE: Purisima MWC comment on basin boundaries

John Leopold spoke with the Purisima Water representative by phone. Gary Greene may be at the Board meeting tomorrow and I will try to speak with him. The geo-hydrologic report he prepared in 1975 acknowledges that the Purisma is underlain by Santa Margarita/Lompico and that the Purisima MWC well may bottom out in the underlying sandy unit. However, his cross-section does not show the Lompico/Tsm dipping toward Scotts Valley.

I will send you a screen print of the Jarvis and Purisima well locations tomorrow.

John Ricker
Water Resources Division Director
Santa Cruz County Environmental Health Services
831-454-2750
<http://scceh.com/Home/Programs/WaterResources.aspx>

From: John Ricker [mailto:John.Ricker@santacruzcounty.us]
Sent: Tuesday, January 12, 2016 10:40 AM
To: Cameron Tana; Piret Harmon; 'Ron Duncan'; Rosemary Menard; Christine Burnett; Brian Lee (BLee@slvwd.com)
Cc: Derrik Williams; Sean Culkin; Nick Byler; Sierra Ryan; Matt Orbach
Subject: RE: Purisima MWC comment on basin boundaries

The County Board today adopted both resolutions in support of the basin boundary modifications and the draft JPA for mid-county. Gary Greene, the retired USGS coastal geologist who lives in Purisima Mutual Water Company got up to reiterate the points made in their letter. Both the Board members and I indicated to him that he should make his comments at the SAGMC meeting and potentially at the Scotts Valley Water District meeting this Thursday. He is fully prepared to do that and wondered if he should prepare a power point presentation. I told him I would get back to him after discussing with our group. The Purisima folks feel very strongly that should be in mid-county from both a technical and a jurisdictional perspective, and I believe will continue to make that argument, probably going to the state if we do not respond locally.

DRAFT FOR SAGMC 1/21/2016

From: John Ricker [mailto:John.Ricker@santacruzcounty.us]
Sent: Tuesday, January 12, 2016 10:32 PM
To: Derrick Williams; Cameron Tana; Piret Harmon; 'Ron Duncan'; Rosemary Menard; Christine Burnett; Brian Lee (BLee@slvwd.com)
Cc: Sean Culkin; Nick Byler; Sierra Ryan; Matt Orbach
Subject: RE: Purisima MWC comment on basin boundaries

Garry Greene is a registered geologist who has retired from USGS and Moss Landing Marine Lab. He helped form the Purisima MWC and has lived up there since 1969. He has walked the area, knows the outcrops, and feels he is very familiar with the local geology. He has discussed local and regional geology with Earl Brabb, Joe Clarke and Ken Muir. In short he is very convinced that he is and has always been a part of the Soquel-Aptos groundwater basin. They named their water system after the Purisima formation. He feels strongly that the formations dip to the southeast where he is and that groundwater their well draws from flows toward the main Soquel-Aptos basin. He is not convinced that the gravity info or the schematic of the granitic ridge is completely accurate as he is familiar with the type of data those sorts of things are based on. He also thinks that historically Scotts Valley has not done a great job managing the Santa Margarita Basin and does not want to be a part of that basin. I have raised a number of counter points for him to consider, but he is pretty firm in his position and the rest of the Purisima water company folks defer to Gary.

John Ricker
Water Resources Division Director
Santa Cruz County Environmental Health Services
831-454-2750
<http://scceh.com/Home/Programs/WaterResources.aspx>

DRAFT FOR SAGMC 1/21/2016

From: Cameron Tana
Sent: Wednesday, December 16, 2015 2:15 PM
To: 'Ron Duncan'
Cc: Nick Byler
Subject: RE: boundary map questions

Hi Ron,

That's great the resolutions were passed. Regarding the questions.

1. We are not seeing that bump in our GIS file of the boundary. Perhaps you are using an older version. However, we have had to revise the boundary because the map we were using for PVWMA did not match the GIS file that PVWMA uses and we have now obtained. We'll be sending this along to Carol shortly. Still, it should be noted that no two GIS files define the coastline the same. We decided to just use the coastline boundaries of the existing basins. In the Aptos area, this seems to exclude the beach and is inside your District boundary. This can still be adjusted to something else, perhaps the County boundary.
2. Those part of SqCWD service areas are in PVWMA and therefore will be in PVWMA's GSA as PVWMA is named as the exclusive GSA for the area. So you are definitely a stakeholder for PVWMA's GSA. However, you don't have any production wells within PVWMA and therefore won't be subject PVWMA's groundwater regulation as a pumper.

Please let me know if you have any follow-up questions.

--

Cameron Tana, P.E.
Vice President
HydroMetrics Water Resources Inc

1814 Franklin Street, Suite 501
Oakland, CA 94612
Phone: (510) 903-0458 x302
<http://www.HydroMetricsWRI.com>

From: Ron Duncan [<mailto:RonD@soquelcreekwater.org>]
Sent: Wednesday, December 16, 2015 9:22 AM
To: Cameron Tana
Subject: boundary map questions

DRAFT FOR SAGMC 1/21/2016

Hi Cameron,

Our Board passed both the resolutions last night for the GSA boundary adjustments (for us and the SM basin).

However two questions arose about our map shown below.

No. 1 – what is the little bump in the map at the coast line about?

No. 2 How are we dealing with the part of service area outside our basin?

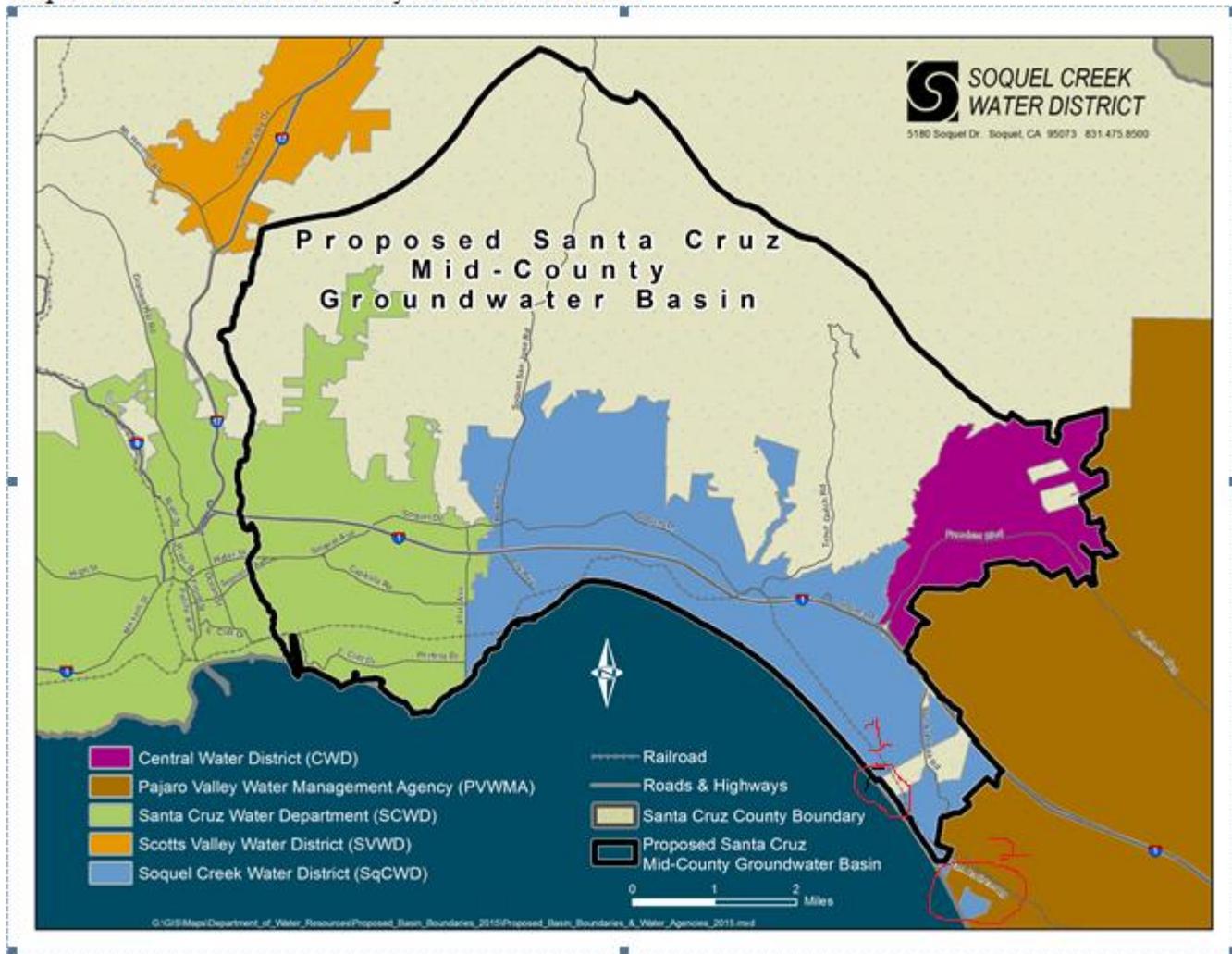
They noted they wanted SqCWD to be stakeholders for the GSAs for the SM basin and even PVWMA. Should I contact each of agencies and just ask them to put us on their lists.

Thanks – note I will be on vaca until Dec. 25.

Take care and wishing you good holidays a great new year.

DRAFT FOR SAGMC 1/21/2016

Proposed Santa Cruz Mid-County Groundwater Basin



Ron Duncan
 Interim General Manager
 Soquel Creek Water District
 5180 Soquel Dr.
 Mail to: P.O. Box 1550 Capitola, CA [95010](http://www.socalifornia.gov)
 Tel: [\(831\) 475-8501](tel:8314758501), Ext. 144
 Cell: (831) 419-3506
 Email: rond@soquelcreekwater.org
www.soquelcreekwater.org

DRAFT FOR SAGMC 1/21/2016

APPENDIX F
Comments and Response-to-Comments

DRAFT FOR SAGMC 1/21/2016

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DRAFT FOR SAGMC 1/21/2016

COMMENT 1 (BRUCE KORB)

-----Original Message-----

From: Bruce Korb [mailto:bruce.korb@gmail.com]

Sent: Tuesday, December 08, 2015 11:59 AM

To: MattO@soquelcreekwater.org

Subject: Wrong Basin Boundaries

Dear Matt,

I live downstream from and draw water from the Santa Margarita Aquifer. I do not live within its boundaries, but that is really my aquifer.

When, immediately upstream from me, Borland started pumping, my water level dropped precipitously. They were within that designated aquifer, but I am not.

Given that I am really in that aquifer and not within the Soquel aquifer, it would seem appropriate to designate terrain downstream from Santa Margarita to be within the domain of that aquifer, rather than lump us into an unrelated aquifer just because it is bureaucratically convenient.

We need to either say the ridge to the coast is one big sponge, or else divide it up based on water flow. Saying Scotts Valley is in Santa Margarita and folks directly downstream are in a different aquifer is, to be blunt, dumb.

Thank you. Regards, Bruce

RESPONSE TO COMMENT 1

The proposed Santa Margarita Basin is based on the series of stacked aquifers that provide most of the groundwater supply for Scotts Valley Water District and its partners on the Santa Margarita Basin Groundwater Management Committee. Therefore, the proposed Santa Margarita Basin boundaries are based on the estimated extent of the Lompico and Butano Sandstones. The best estimate of the extent of these aquifers is the granitic high to the north of the commenter's property (Figure F - 1).

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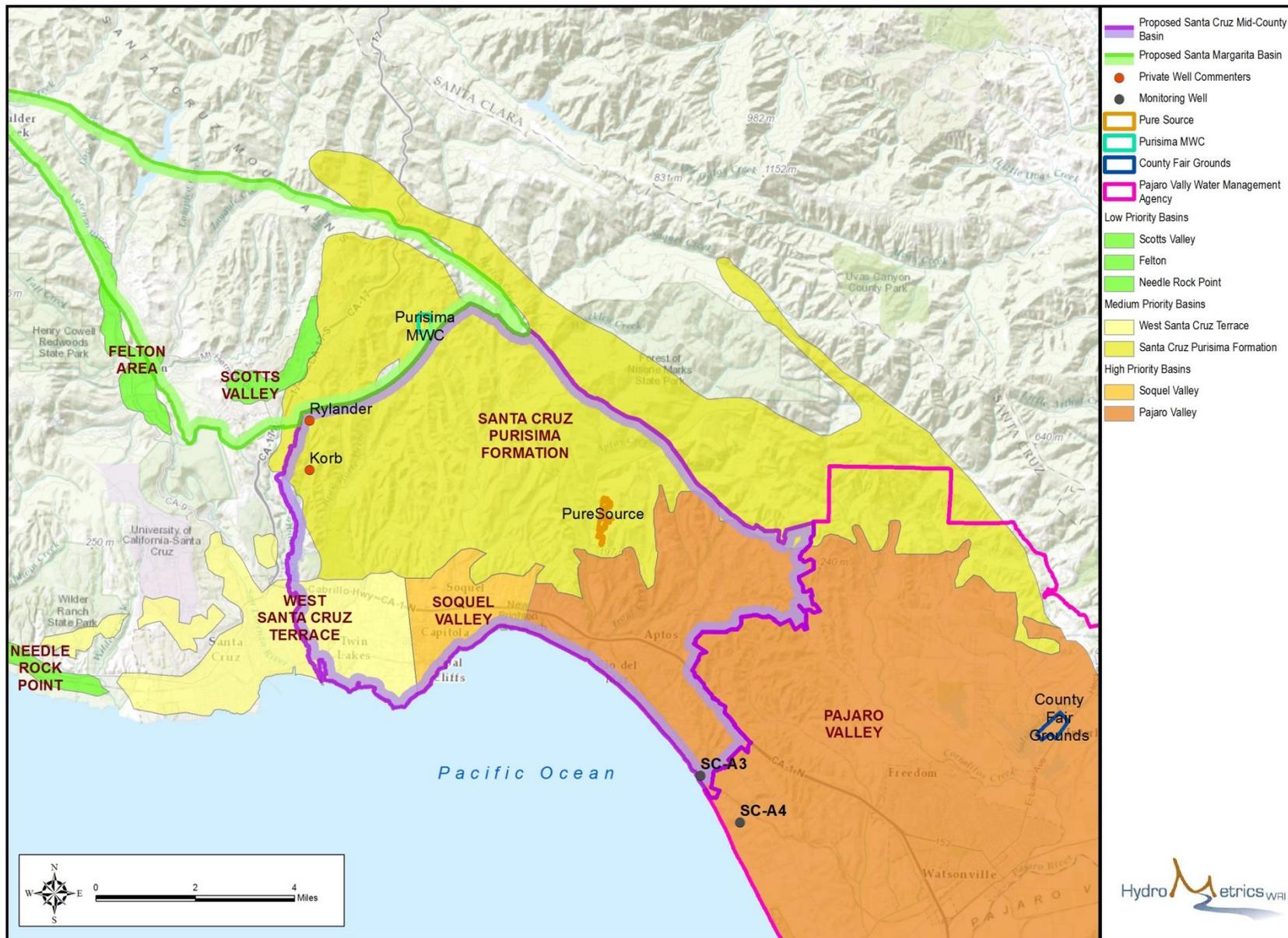


Figure F - 1: Relevant Locations for Comments and Responses

DRAFT FOR SAGMC 1/21/2016

There is pumping in the Scotts Valley area from the Santa Margarita Formation overlying the Lompico and Butano Sandstones and we acknowledge that the Santa Margarita Formation may extend beyond the proposed boundary of the Santa Margarita Basin. However, the extent of the Santa Margarita Formation to the south is not well defined. For example, U.S. Geological Survey maps (Brabb et al., 1997) define the surface geology for the area of the commenter's property as Purisima Formation, but other reports (Johnson et al., 2004) associate the Tu unit underlying the Purisima Formation observed in the Live Oak and Soquel areas with the Santa Margarita Formation. Either way, the stacked aquifer units of the Purisima Formation and underlying Tu unit define the proposed Santa Cruz Mid-County Basin as those stacked aquifer units provide groundwater supply to City of Santa Cruz and Soquel Creek Water District.

Issues related to pumping in the Santa Margarita Formation in the Scotts Valley area that affects groundwater conditions in the proposed Santa Cruz Mid-County Basin can be addressed by an inter-basin coordination agreement that will be required for the Groundwater Sustainability Plans for the two basins.

COMMENT 2 (DOUG DEITCH)

-----Original Message-----

From: Douglas Deitch [mailto:ddeitch@got.net]

Sent: Wednesday, December 09, 2015 7:23 AM

To: Bruce-Daniels; John Ricker; Zach Friend; Bruce McPherson; John Leopold; Ryan Coonerty; Greg Caput; citycouncil@cityofsantacruz.com; karenR@soquelcreekwater.org; melanies@soquelcreekwater.org;

cmathews@cityofsantacruz.com; mposner@cityofsantacruz.com; Ddeitch

Subject: Comments for Thursday GSA meeting December 10, 2015

Hi Micah Posner ,

https://www.facebook.com/permalink.php?story_fbid=939762522738785&id=100001151386333)

I heard you at the city council meeting soliciting for comments for the new GSA being formed. So, here are some for you ... images at facebook link

https://www.facebook.com/permalink.php?story_fbid=939762522738785&id=100001151386333)

DRAFT FOR SAGMC 1/21/2016

Here are my first comments for your GSA meeting Thursday which I can't attend. Please present them and forward them to all members of GSA for me have the GSA please confirm with me that his has been accomplished. I appreciate this very much. (Also, please return my umbrella I lent you in that rainstorm/squall I rescued you w/ your daughter from a few months back, Kid, too? tx, dd)

1. Boundary adjustments and unrepresented PVWMA GSA stakeholders: The current boundary adjustments being proposed are inadequate and insufficient. Please review this map charting ground water degradation and salt water intrusion from 2011-13 to appreciate the interface between PVWMA and SqCWD at their boundary on San Andreas Road

(
<https://www.facebook.com/MontereyBayConservancy/photos/pb.177055962316509.-2207520000.1449672857./948594631829301/?type=3&theater>,
<https://www.facebook.com/MontereyBayConservancy/photos/pb.177055962316509.-2207520000.1449672857./948594748495956/?type=3&theater>,
<https://www.facebook.com/MontereyBayConservancy/photos/pb.177055962316509.-2207520000.1449672857./948595021829262/?type=3&theater>)
<https://www.facebook.com/MontereyBayConservancy/photos/a.392629640759139.87659.177055962316509/951749101513854/?type=3&theater>).

A 2013-15 map would show increased degradation since pumping has escalated substantially because of the drought.

(
<https://www.facebook.com/MontereyBayConservancy/photos/pb.177055962316509.-2207520000.1449672857./948595285162569/?type=3&theater>)

The charted salt water intrusion on this map stops at SqCWD boundary BUT THE ACTUAL SALT WATER INTRUSION DOES NOT!

This San Andreas Road area in PVWMA needs to be included in a joint jurisdictional area between all stakeholders PVWMA, SqCWD, County of Santa Cruz, City of Watsonville, which is not now the case.

Additionally, it is my understanding that NEW first time deep water supply wells are being developed in Watsonville in the deep Purisima Formation, which comprises the majority of SqCWD's water (?).

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If this is the case or not, in any event attention should be given to this new recent development in terms of proper and complete stakeholder representation in PVWMA (see article in California Water Blog, below) and Pajaro Basin with all stakeholders, County of Monterey, County of Santa Cruz, Watsonville, SqCWD, private well owners in PVWMA, PVWMA and ? must be properly and fairly represented AND now they are not.

This, as Dr. Frank mentions below, is how to address the water wolves in our water hen house.

2. Irrespective of GSA, here is what DWR Czar Mark Cowin has most recently advised us is most IMPORTANT to do

...

<https://www.facebook.com/MontereyBayConservancy/photos/a.392629640759139.87659.177055962316509/1028178490537581/?type=3&theater>

DWR Czar Mark Cowin quoted from this article, 8/19/2015 :

"The most important thing that can happen is for counties to pass or strengthen ordinances that limit over-pumping," California Department of Water Resources director Mark Cowin, said at a Wednesday morning press conference releasing the new data, collected by the National Aeronautics and Space Administration.

"It will take that kind of action to have any real effect.

Last year, the state created a framework to regulate groundwater — the first time in state history — but it won't be fully implemented until 2020. And then it will take a decade or two for water levels to rebound, Cowin said."

<http://www.santacruzsentinel.com/general-news/20150819/central-valley-locales-sinking-2-inches-a-month-as-groundwater-is-drained/1>

... BUT what are we and our county supervisors, water districts, city councils, etc., et al here in the Monterey Bay and Santa Cruz County "doing" (or not doing?) instead for the last 30 plus years –

<https://www.facebook.com/MontereyBayConservancy/photos/a.392629640759139.87659.177055962316509/1028724980482932/?type=3&theater>

This ... <http://www.metrosantacruz.com/metro-santa-cruz/09.23.09/news4-0938.html> ?

DRAFT FOR SAGMC 1/21/2016

The GSA must IMMEDIATELY advocate to our supervisors that they start supervising, following our local laws and LCPs, and their oaths to do precisely this ...

AND AT THE MINIMUM, conduct a Public Hearing under our County Well Ordinance to consider declaration of a county wide ground water emergency

(
<https://www.facebook.com/MontereyBayConservancy/photos/pb.177055962316509.-2207520000.1449672866./943194802369284/?type=3&theater>),

as SqCWD has already requested that the BOS do well over a year ago.

The situation is now officially seriously degraded over this year. Please see:

<https://www.facebook.com/MontereyBayConservancy/photos/a.215880731767365.54128.177055962316509/983979478290816/?type=3&theater>

... and even Gary Patton, who originally wrote and signed

(
<https://www.facebook.com/MontereyBayConservancy/photos/pb.177055962316509.-2207520000.1449672866./943204325701665/?type=3&theater>)

the Well Ordinance in 1987 (www.pogonip.org/ord.htm ,
www.pogonip.org/alm.htm)

... seems to now agree:

<https://www.facebook.com/MontereyBayConservancy/photos/pb.177055962316509.-2207520000.1449672866./943298669025564/?type=3&theater>

TO REPEAT AGAIN ...

AS DWR CZAR HAS MOST RECENTLY TOLD US ...

DESPITE ANY GSA ...

"It will take that kind of action to have any real effect."

Respectfully submitted,

Douglas Deitch

Hudson Lane, Aptos, 95003

831.476.7662

RESPONSE TO COMMENT 2 #1

Email from Bruce Daniels, President of Soquel Creek Water District, member agency of Soquel-Aptos Groundwater Management Agreement, December 9, 2015

DRAFT FOR SAGMC 1/21/2016

-----Original Message-----

From: Bruce Daniels [<mailto:Bruce.Daniels@alum.MIT.edu>]

Sent: Wednesday, December 09, 2015 2:46 PM

To: Douglas Deitch; mposner@cityofsantacruz.com

Cc: John Ricker; Zach Friend; John Leopold; Greg Caput

Subject: Re: Comments for Thursday GSA meeting December 10, 2015

Doug,

Some impressions:

On 12/9/15 7:23 AM, Douglas Deitch wrote:

> The charted salt water intrusion on this map stops at SqCWD boundary

> BUT THE ACTUAL SALT WATER INTRUSION DOES NOT!

True, a well known and publicly documented fact.

>

> This San Andreas Road area in PVWMA needs to be included in a joint

> jurisdictional area between all stakeholders PVWMA, SqCWD, County of

> Santa Cruz, City of Watsonville, which is not now the case.

This is impossible - GSAs are required by the state law to never overlap. If they have any overlap, then the DWR must by law reject them as GSAs.

>

> Additionally, it is my understanding that NEW first time deep water

> supply wells are being developed in Watsonville in the deep Purisima

> Formation, which comprises the majority of SqCWD's water (?).

Yes, most of SqCWD's water and all of the City's Beltz wells pumped water and possibly all of Central's water too. The District may end up as the only agency here to utilize Aromas as drinking water since we have invested in Chrome 6 removal technology and are the first in the state to be approved to use it.

>

> If this is the case or not, in any event attention should be given to

> this new recent development in terms of proper and complete

> stakeholder representation in PVWMA (see article in California Water

> Blog, below) and Pajaro Basin with all stakeholders, County of

> Monterey, County of Santa Cruz, Watsonville, SqCWD, private well

> owners in PVWMA, PVWMA and ? must be properly and fairly represented

> AND now they are not.

Anyone can act as a stakeholder (fancy name for an observer) for any GSA(s). I am sure that we will be a stakeholder in PVWMA activities and they might well do the same to us.

> DWR Czar Mark Cowin quoted from this article, 8/19/2015 :

>

> "The most important thing that can happen is for counties to pass or

> strengthen ordinances that limit over-pumping," California Department

> of Water Resources director Mark Cowin, said at a Wednesday morning

> press conference releasing the new data, collected by the National

> Aeronautics and Space Administration. "It will take that kind of

> action to have any real effect.

It is really unclear what powers counties (or even the GSAs themselves) have to limit pumping. The SGMA law specifically says:

"Nothing in this part, or in any groundwater management plan adopted pursuant to this part, determines or alters surface water rights or groundwater rights under common law or any provision of law that determines or grants surface water rights."

This will keep lawyers fully employed for decades to come.

- thanks, Bruce Daniels

1. / 0

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RESPONSE TO COMMENT 2 #2

The response has been organized to respond to four points in the comment.

Point 2-1: Saltwater Intrusion crosses proposed basin boundary with Pajaro Valley Water Management Agency (PVWMA) and groundwater conditions continue to degrade.

SAGMC recognizes that long-term saltwater intrusion has been observed on both sides of the proposed boundary between the Santa Cruz Mid-County Basin and Pajaro Valley Basin and additional groundwater level recovery is required to prevent additional intrusion. However, data do not show increased degradation during the current drought. Groundwater levels have been stable over the drought period in coastal monitoring wells SC-A3 and SC-A4 on either side of the boundary (Figure F - 1). Salt concentrations have risen in one of the well intervals, but are declining or stabilizing in other wells (HydroMetrics WRI, quarterly report, 2016).

Point 2-2: There is potential for new pumping by City of Watsonville Pumping in the Purisima Formation, source of majority of Soquel Creek Water District's water supply

Potential Watsonville pumping in the Purisima Formation would likely be in the shallowest unit of the Purisima Formation (F unit), while the majority of Soquel Creek Water District's water supply (Service Areas I and II) are from deeper units of the Purisima Formation (AA, A, BC, and DEF units) well to the west of the basin boundary. The existing extent of the Pajaro Valley basin overlies some this pumping from the deeper Purisima Formation, while the proposed Santa Cruz Mid-County Basin better represents the stacked aquifers that provide water supply to the SAGMC member agencies and other pumpers. However, part of the proposed Santa Cruz Mid-County Basin does include Aromas Red Sands and Purisima F unit that provides supply to SAGMC member agencies and other pumpers; SAGMC recognizes the hydrogeologic connection with the Pajaro Valley Basin in these units across the basin boundary.

Point 2-3: Soquel Creek Water District and County of Santa Cruz need to be stakeholders for the San Andreas Road area within PVWMA

The Sustainable Groundwater Management Act gives PVWMA the exclusive right to be the GSA for its jurisdiction and PVWMA has decided to exercise that right. The proposed Santa Cruz Mid-County Basin includes a jurisdictional

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modification based on PVWMA's boundary that will promote sustainable groundwater management by allowing a Groundwater Sustainability Agency (GSA) to manage a consolidated Mid-County Basin without the technical requirements for intrabasin coordination with PVWMA. For example, the technical requirements for intrabasin coordination could require a consistent model be used by GSAs within a basin. PVWMA's model does not extend to the current western boundary of the Pajaro Valley basin and the model funded by SAGMC will not extend to Monterey County. Such technical requirements are unnecessary, because many groundwater issues in the proposed Santa Cruz Mid-County basin can be addressed without coordination with PVWMA. However, there is hydrogeologic connection across the jurisdictional boundary and interbasin coordination with PVWMA will be required as part of the Groundwater Sustainability Plan (GSP) for the proposed Santa Cruz Mid-County Basin. Therefore, the neighboring GSAs should be considered stakeholders in each other's basin. Soquel Creek Water District will also be a stakeholder for the PVWMA GSA as it has service area jurisdiction within PVWMA's jurisdiction.

Point 2-4: Water agencies and the GSA needs to take action such as a county-wide groundwater emergency

This point is more relevant to GSA formation and GSP development than basin boundary modifications.

COMMENT 3 PART 1(BEN RYLANDER)

From: Ben Rylander [mailto:ben@bowmanandwilliams.com]
 Sent: Thursday, December 10, 2015 12:12 PM
 To: John Ricker <John.Ricker@santacruzcounty.us>
 Cc: Sierra Ryan <Sierra.Ryan@santacruzcounty.us>
 Subject: RE: Santa Cruz County Wells

Thanks. I am looking forward to getting more information on the recent boundary revision. My property now lies on the western Mid-County boundary line next to the eastern Santa Margarita line, so my neighbors and I are particularly concerned that we may be effected by issues that the SQWD and other municipalities are facing, though our water supply seems very much removed from theirs. I'm particularly interested in learning more about the, "gravity anomalies," described in the draft report by Hydrometrics. It is also worrisome that we may be required to meter our private wells, pay fees, and

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have restricted water use when the majority of our small private SFR wells are very shallow and rely watershed supplies next to streams.

Ben Rylander, PE

Bowman & Williams Civil Engineers and Land Surveyors

1011 Cedar Street, Santa Cruz, CA 95060

(831)426-3560 x 22 voice

(831)426-9182 fax

Ben@bowmanandwilliams.com

www.bowmanandwilliams.com

RESPONSE TO COMMENT 3 (PART 1)

From: John Ricker

Sent: Thursday, December 10, 2015 3:09 PM

To: 'Ben Rylander' <ben@bowmanandwilliams.com>

Cc: Sierra Ryan <Sierra.Ryan@santacruzcounty.us>

Subject: RE: Santa Cruz County Wells

The map showing the slope of the underlying granite from your area toward Soquel Creek are shown in the technical report for the boundary modification:

http://www.midcountygroundwater.org/sites/default/files/uploads/DRAFT_boundaryrevisions_forlocalinput.pdf

and are pasted in below:

Metering is not required under the act for deminimis users, domestic uses under 2 acre-feet per year. Any charges if they ever occur would be based on impact on the groundwater overdraft. It may turn out that some areas may be determined to have minimal impact. The impact of pumping and the groundwater flow will be better determined through use of a groundwater model that is currently under development

John Ricker

Water Resources Division Director

County of Santa Cruz

831-454-2750

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COMMENT 3 PART 2 (BEN RYLANDER)

From: Ben Rylander [<mailto:ben@bowmanandwilliams.com>]
Sent: Thursday, December 10, 2015 3:35 PM
To: John Ricker <John.Ricker@santacruzcounty.us>
Subject: RE: Santa Cruz County Wells

John,

My land is right at the 500' contour label at the NW corner of the Mid-County boundary, at the intersection of the granite ridge (green) and the watershed boundary (blue), so my property line is right at the edge of the two basins. You can see how the delineation of the basin could make a big difference in whatever regulations are decided. If the Santa Margarita Basin is low priority it could mean that my neighbors to the north and west might not need to follow the future rules that I may be subject to, yet in reality my neighbors and I are pumping from the same creek. I think delineation of low-impact subbasins could be very useful to start the process of treating these areas differently when it comes to regulate. See you tonight, and thanks for getting back to me.

Thanks,

Ben Rylander, PE

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www.bowmanandwilliams.com

RESPONSE TO COMMENT 3 PART 2

As discussed in the response to Comment 1, the boundary between the proposed Santa Margarita and Santa Cruz Mid-County Groundwater Basin in this area was drawn per understanding and interpretation of the geologic structural boundary between the two basins in such a way that the deeper stacked aquifer units of the Santa Margarita Basin will be separated from the stacked aquifer units of the Purisima Formation and underlying Tu unit of the Santa Cruz Mid-County Groundwater Basin. That said, we acknowledge that some shallow or marginal areas of Santa Margarita Formation and/or Purisima Formation may extend across the shared basin boundary, and that local groundwater production may occur from these geologic units. The commenter's property in question is within an area (Figure F - 1) where geology is more indicative of the stacked aquifer

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units of the proposed Santa Cruz Mid-County Groundwater Basin than the deeper aquifer units of the proposed Santa Margarita Basin.

With respect to the commenter's statement of pumping impact and requirements on private wells, County staff has stated position that requirements on private wells would be based on impact on groundwater overdraft. At request of County staff, the groundwater model under development is being set up for the capability make this evaluation. It is an integrated watershed-groundwater model that will simulate flow to streams versus recharge of deeper aquifer units. This evaluation would take place as part of a development of a Groundwater Sustainability Plan (GSP) for the proposed basin. The state Department of Water Resources has indicated that it prefers management of low impact areas to be addressed in the GSP as opposed to defining these areas with basin boundaries.

It also should be noted that the commenter's area is within the existing Santa Cruz Purisima Formation Basin, which is categorized as medium priority and requires a Groundwater Sustainability Agency (GSA) and GSP equivalent to a high priority basin. Eligible agencies for GSA of an unmodified Santa Cruz Purisima Formation Basin are City of Santa Cruz, Soquel Creek Water District, Central Water District, Scotts Valley Water District, and Santa Cruz County.

Also, although the Scotts Valley Basin, which is the precursor to the proposed Santa Margarita Basin, is designated low priority, this prioritization may change following adoption of the basin boundary modifications, and the Scotts Valley Water District, San Lorenzo Valley Water District, and Santa Cruz County plan to form a GSA to manage the basin regardless of reprioritization.

COMMENT 4 (SANTA CRUZ COUNTY FAIRGROUNDS)

From: dave@bestberrys.com [mailto:dave@bestberrys.com]

Sent: Monday, December 14, 2015 5:09 PM

To: John Ricker

Cc: Sierra Ryan; Piret Harmon; 'Matt Orbach'; Cameron Tana; John Hodges; Troy Boone; Mary Bannister

Subject: Re: Groundwater Basin Boundary Modifications

John, just to make sure - it looks like you have the fairgrounds outside of the proposed new basin.

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I would assume that since we are in the PVWMA boundary that there is not some sort of proposal to create another overlapping agency.

Dave Kegebein - CEO
Santa Cruz County Fairgrounds

RESPONSE TO COMMENT 4

The Fairgrounds are not located in the proposed Santa Cruz Mid-County Basin and will continue to be located in the Pajaro Valley Basin (Figure F - 1). The commenter's assumption is correct; this is not a proposal to create an overlapping agency for the Pajaro Valley Basin as PVWMA has exclusive right to be GSA within its jurisdiction.

COMMENT 5 (PURISIMA MWC)

From: Tom Sak [mailto:tom.sak@pacbell.net]
Sent: Sunday, December 27, 2015 3:58 PM
To: Sierra Ryan <Sierra.Ryan@santacruzcounty.us>
Subject: Comment on Groundwater Basin Boundary Revision Requests

Sierra,

Following up on our conversation a few days ago, attached is our letter commenting on the proposed boundary between the proposed Santa Margarita basin and the Santa Cruz Mid-County basin and the inclusion of our small mutual water company in both.

I understand from our conversation that your office will receive and consider our comments and will also send copies to the Soquel-Aptos Groundwater Management Committee and the Scotts Valley Water District for their review.

Please confirm your receipt of this email and the attachment. You may use my email address as your requested point of contact regarding this matter.

We appreciate your assistance and look forward to understanding what action will be taken on our request.

Regards,

Tom
831 295-7617

Attached letter of opposition (4 pages) to John Ricker from Karl Hiltner, President, Purisima Mutual Water Company, December 27, 2015 follows.



Purissima Mutual Water Company
Rider Ridge Road, Santa Cruz, CA

December 27, 2015

Mr. John Ricker
Water Resources Division Director
County of Santa Cruz
701 Ocean St
Santa Cruz, CA 95060

via Email (sierra.ryan@santacruzcounty.us)

Dear Mr. Ricker:

In response to your e-mail of December 14, 2015, the Purissima Mutual Water Company reviewed the information made available to us for consideration and comment regarding the proposed modification of the water basin boundary in which we are located. Our understanding, based on your e-mail and the Sustainable Groundwater Management Act of 2014 (SGMA), is that local agencies are invited by the California Department of Water Resources (DWR) to request modifications of the DWR boundaries "to better reflect current geologic understanding and local approach to management." We, therefore, respond to, and reject the proposed northern boundary change of the Santa Cruz Purissima Formation Basin and the eastern boundary change of the Scotts Valley Basin.

Based upon our scientific review of both the Santa Cruz Mid-County Groundwater Basin Boundary Revision Request ("Mid-County report") (11/25/2015) and the Santa Margarita Groundwater Basin Boundary Revision Request ("Scotts Valley report") (December 2015), we found the geologic rationale for the boundary revision to be weak and lacking robust scientific evaluation. Although we found that an extensive amount of useful information was included in the reports, specific information such as data sample points, geologic attitudes (strike and dip), well locations, and proper explanations of figures were severely lacking, making comprehensive analyses of the cases for boundary adjustments put forth by the proponents difficult. Basically, the reason for requesting the boundary change is of concern to us is because it does not "hold water." It essentially splits off what should logically be the Santa Cruz Purissima Formation Basin and places part of this basin into the Scotts Valley Basin, which is geologically indefensible.

Following is our case for rejecting the boundary change:

First, a natural mapped geologic boundary exists between the older Miocene Santa Margarita Formation and the most contiguous part of the Pliocene Purissima Formation. This boundary lies basically along lower Jarvis Road in Blackburn Gulch with the Purissima located to the southeast of the road and Santa Margarita to the northwest (see attached modification of Figure 3 from the Scotts Valley report).

The structural rationale for including the Purissima Formation as part of the proposed new Santa Margarita Basin, and extension of the Scotts Valley basin (see Scotts Valley report) does not make geological sense as the Scotts Valley Syncline, which forms most of the Scotts Valley basin, pre-dates the deposition of the Purissima Formation.

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Mr. John Ricker

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December 27, 2015

The Purisima Formation in the vicinity of the Purisima Mutual Water Company's well and service area dips SE off the basement high and probable anticlinorium shown in Figure 6 (cross-section) of the Scotts Valley report and not toward Scotts Valley. In the Scotts Valley report the author states that the Purisima caps the older Miocene strata in which the syncline has been mapped, indicating a distinct structural difference.

Second, if the gravity anomaly map (Figure 8 of the Scotts Valley report) were to be interpreted correctly one would see that the inclination for water transport would be toward Soquel and not toward Scotts Valley as inferred by the proponents. Gravity anomalies basically represent density and where granite basement rock is high, a higher anomaly would be shown. Where the anomaly is lower granite is deeper and buried under a thicker package of sedimentary rocks, most likely water bearing strata. Therefore, we interpret this anomaly map to indicate that water in the Purisima aquifer would flow towards the south, not toward the north.

Third, the top of granite map (Figure 11 in the Scotts Valley report) also shows that the surface of the granite dips toward Soquel (south) at the location of the Purisima Mutual Water Company's water well (not accurately located on any figures in the reports), although we suspect that the resolution of these contours is poor because of the lack of subsurface data points. Nevertheless, the Purisima Mutual Water Company's well is located in south dipping (~5° SW) Purisima Formation sandstone and there is no indication that subsurface water flow in the vicinity of the well flows towards the Scotts Valley Basin.

Fourth, the present Scotts Valley Basin boundary as shown in Figure 1 of the Mid-County report is the logical geological boundary between the Santa Margarita and Santa Cruz Purisima Formations. Shifting this boundary as proposed would not produce a "cohesive basin" as stated in the Scotts Valley report, but rather fragments the basins.

Fifth, the Soquel-Aptos Groundwater Plan Management Area shown in Figure 11 of the Mid-County report makes much more sense as a basin boundary than that proposed by Scotts Valley report. The smooth arc-like change shown for the proposed boundary adjustment makes no geological sense and leaves one wondering if the proposed shift is the result of a GIS effort with limited or no geological or hydrological input.

Sixth, the map showing recharge areas for the Mid-County basin (see Figure 5 of the Mid-County report) and topographic maps that can be used to map drainage basins indicate that both recharge and drainage in the Purisima Mutual Water Company area lie within the Santa Cruz Purisima Formation Basin. It makes no logical sense to separate drainage and recharge areas from one basin to another.

Seventh, to our knowledge the Purisima Mutual Water Company was never invited to participate in any of the Scotts Valley public meetings to discuss the potential of incorporating us into the Santa Margarita jurisdiction as is stated in the Scotts Valley report (page 34).

Finally, we believe that fragmenting a part of the Soquel-Aptos Groundwater basin and including it in the Scotts Valley basin would severely impact the management of the resources. For us in the Purisima Mutual Water Company, we envision being split between two management agencies and being pulled in two different directions in regard to our reporting and usage of the resource.

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Mr. John Ricker

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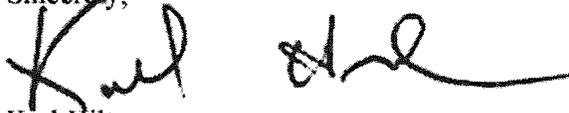
The proposed boundary change, in our opinion, is not scientifically justified and would produce a management nightmare. We, therefore, encourage rejection of the proposed revision. In addition, there is potential difficulties in coordinating efforts between water agencies when a water resource basin, drainage divide, and recharge areas are fragmented as it would be in the proposed revision.

In conclusion, we believe that the shared boundary of the proposed Santa Cruz Mid-County Basin and the proposed Santa Margarita Basin should be revised as shown on the attached map and that the Purisima Mutual Water Company should be exclusively located in the proposed Santa Cruz Mid-County Basin.

We encourage you and your agency to seriously consider our rejection of the proposed groundwater basin boundary change. Our analysis of the two reports and the conclusions drawn were prepared by H. Gary Greene, a California State Registered Geologist (certification number 2669). Dr. Greene is prepared to provide an in-depth comprehensive critique of the reports, and of our conclusions and recommendations, if requested.

Thank you for your consideration.

Sincerely,

Handwritten signature of Karl Hiltner in black ink.

Karl Hiltner

President

Attachment: Map

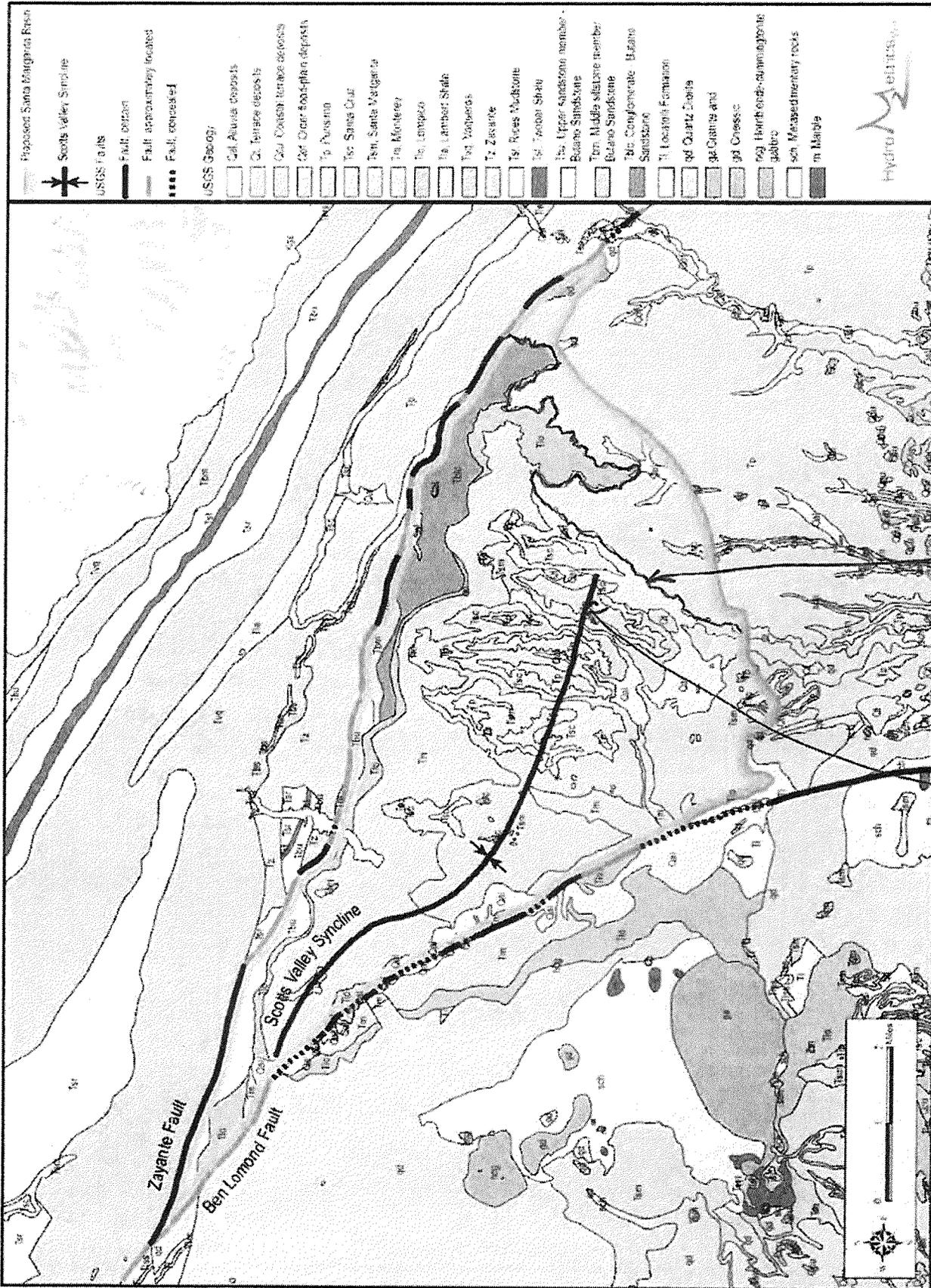


Figure 3: Santa Margarita Groundwater Basin Lateral Boundaries (geology from Brabb et al., 1997)

The scientific logical boundary

Syncline does not continue into TP

Santa Margarita Groundwater Basin Boundary Revision

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RESPONSE TO COMMENT 5

The comments in this letter of opposition refer to the area near the proposed shared boundary between the proposed Santa Margarita Groundwater Basin and the proposed Santa Cruz Mid-County Groundwater Basin. In general, the shared boundary between these basins was chosen with the understanding that a stacked aquifer system, including the Lompico and Butano sandstones, makes up the productive groundwater resource for the Santa Margarita Groundwater Basin. These units underlay shallow or marginal units of the Purisima Formation that is one of the principal aquifer formations of the Santa Cruz Mid-County Groundwater Basin. However, given the overlapping nature of the stacked aquifer systems of both basins, we believe that our scientific justification is the best solution for this shared boundary, and that the data and rationale for the selection of this boundary are defensible on a scientific basis.

The comments received were in eight main points which are summarized below, and the responses below follow that format. Some of the comments received specifically reference the Santa Margarita Basin report but also apply to the Santa Cruz Mid-County Basin.

Point 5-1A: "a natural mapped geologic boundary exists between the older Miocene Santa Margarita Formation and the most contiguous part of the Pliocene Purisima Formation... The structural rationale for including the Purisima Formation as part of the proposed new Santa Margarita Basin... does not make sense..."

There is evidence, in boring logs, as well as cross-sections and diagrams from previously-published reports, that indicated the Purisima Formation is underlain by portions of the Lompico and Butano sandstones, which are productive aquifer units associated with the Santa Margarita Basin. As such, reliance on a shared boundary defined strictly by the outcrop margin of the Purisima Formation would incorporate areas of the shared groundwater resource of the Santa Margarita Basin into the Santa Cruz Mid-County Groundwater Basin, regardless of the terminal area of the Scotts Valley Syncline.

Point 5-1B: "The Purisima Formation in the vicinity of the Purisima Mutual Water Company's well and service area dips SE off the basement high and probable anticlinorium..."

We acknowledge that some marginal areas of the Purisima Formation fall to the west of the proposed shared boundary, and that the dip and structure of the

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Purisima Formation in this area may indicate potential for groundwater flow into the Santa Cruz Mid-County Groundwater Basin.

Point 5-2: "...if the gravity anomaly map (Figure 8 of the Scotts Valley report) were to be interpreted correctly one would see that inclination for water transport would be towards Soquel and not toward Scotts Valley..."

Figure F - 2 shows the position of Purisima Mutual Water Company's service area with respect to both the gravity anomaly contours and the subsequent granite elevation contours in the area of the shared basin boundary. This figure indicates that the granitic basement of the basin is sloping away from the Santa Cruz Mid-County Groundwater Basin in according to both contoured datasets. If, as the comment suggest, groundwater flow potential is considered to be a function of the granitic structure, this figure would indicate potential for groundwater flow away from the Santa Cruz Mid-County Groundwater Basin and towards the Santa Margarita Basin in this area.

Point 5-3A: "...we suspect that the resolution of these [gravity] contours is poor because of the lack of subsurface data points."

With respect to the perceived lack of data, the granite structural contours presented in the proposed boundary revisions were the result of analysis using borehole, outcrop, and gravity anomaly data. Previous reports indicated the presence of a granitic structural high in this area, and the scientific rationale for the proposed shared boundary follows on previous work.

Point 5-3B "...the top of the granite map (Figure 11 in the Scotts Valley report) also shows that the surface of the granite dips toward Soquel (south) at the location of the Purisima Mutual Water Company's water well..."

Refer to the response to Point 5-2 and Figure F - 2.

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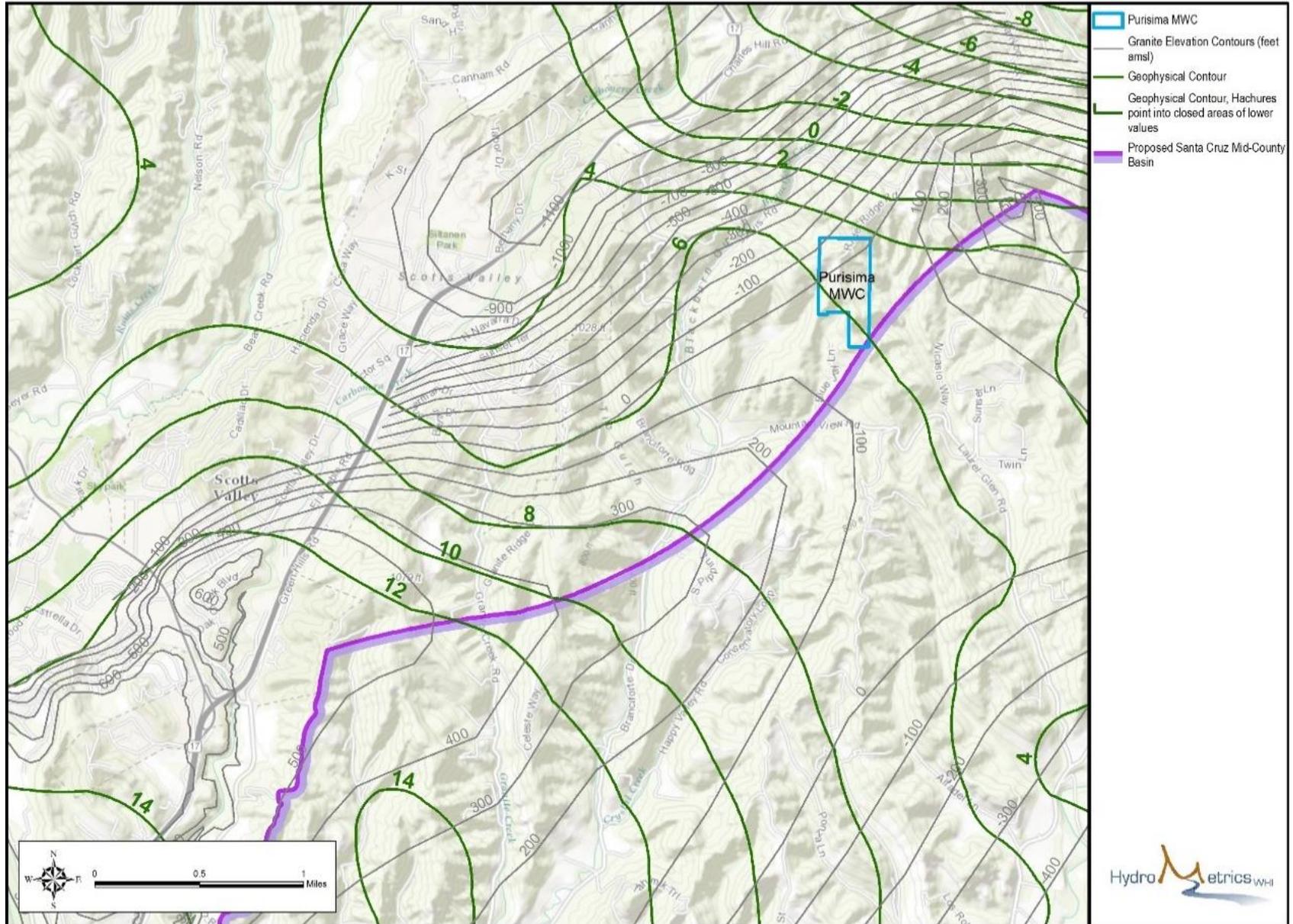


Figure F - 2: Gravity Anomaly Data and Granitic Basement Contours in Vicinity of Purisima Mutual Water Company

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Point 5-4: "...the present Scotts Valley Basin boundary as shown in Figure 1 of the Mid-County report is the logical boundary between the Santa Margarita and Sanat Cruz Purisima Formations."

As stated in the response to Point 1, there is significant evidence that the Lompico Sandstone and Butano Sandstone, main water supply units of the Santa Margarita Basin extend east of the current Scotts Valley Basin boundary to areas overlain by shallower marginal units of the Purisima Formation.

Point 5-5: "...the Soquel-Aptos Groundwater Plan Management Area shown in Figure 11 of the Mid-County report makes much more sense as a basin boundary than that proposed by the Scotts Valley report. The smooth arc-like change shown from the proposed boundary adjustment makes no geological sense..."

As discussed above, we did not use the watershed based Groundwater Management Plan area in the area of concern because we included the underlying Lompico and Butano sandstones with the Santa Margarita Basin. The "arc-like" boundary described in the comment was not chosen arbitrarily, and as stated in the response to Point 5-3A, was based on available structural data for the granitic basement. The proposed shared boundary follows the interpreted strike of the granitic structural high, and links areas of outcropping granite. As previously stated, this boundary reflects our understanding of a two overlapping stacked aquifer systems in the area of the shared boundary.

Point 5-6: "...the map showing recharge areas... and topographic maps that can be used to map drainage basins indicate that both recharge and drainage in the Purisima Mutual Water Company area lie within the Santa Cruz Purisima Formation Basin."

Figure F - 3 shows the Purisima Mutual Water Company's service area with respect to surface geology and the local Soquel Creek Watershed boundary. This figure indicates that Purisima Mutual Water Company overlaps two watershed areas. In the north and west of the company's service area, surface water or shallow groundwater may flow towards Blackburn Gulch, where a large area of the Lompico Sandstone is outcropping. As such, recharge to groundwater in Blackburn Gulch is more likely associated with the Santa Margarita Basin. We acknowledge the potential for runoff or recharge to the Santa Cruz Mid-County Groundwater Basin from Purisima Mutual Water Company's service area, as well, but inclusion of the company within one basin or another based on watershed area was not a consideration when drawing the proposed boundary.

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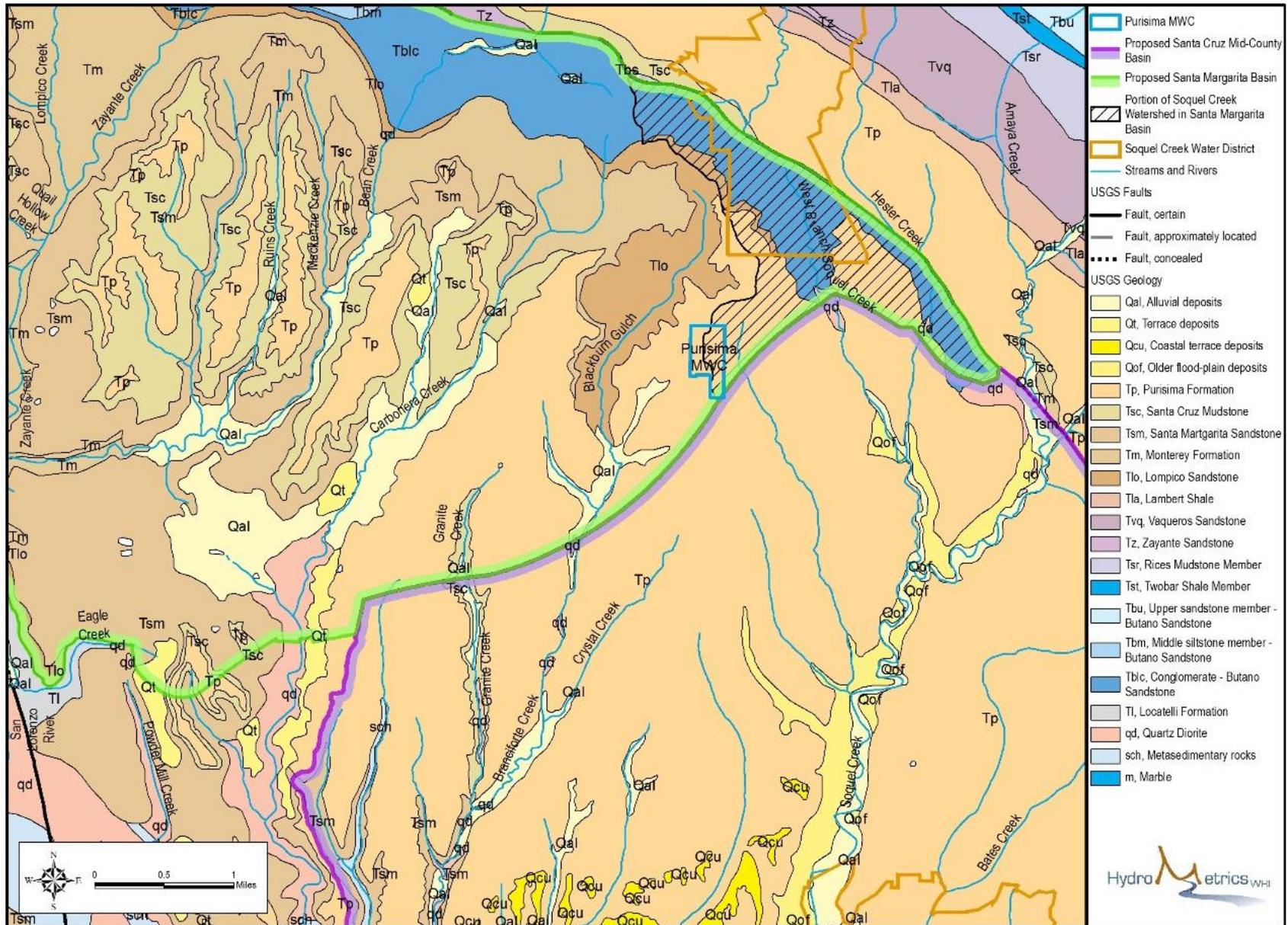


Figure F - 3: Surface Geology and Watershed Area in the Vicinity of Purisima Mutual Water Company Figure 13: Surface

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Point 5-7: "...to our knowledge the Purisima Mutual Water Company was never invited to participate in any of the Scotts Valley public meetings..."

No technical response is required. Requirements for local input were met by informing affected small water systems of the basin boundary modification proposal and receiving comments on the proposed modification. We appreciate the local input provided.

Point 5-8: "The proposed boundary change, in our opinion, is not scientifically justified and would produce a management nightmare."

We acknowledge that production from shallow or marginal areas of the Purisima Formation in the area of the proposed shared basin boundary may be associated with groundwater of the shared resource of the Santa Cruz Mid-County Groundwater Basin. However, the margin of the deeper productive units of the Santa Margarita Basin has been evaluated to underlay the Purisima Formation in this area, and the proposed boundary was assigned with this understanding.

COMMENT 6 (PURE SOURCE WATER)

Comments by Martin Mills, Pure Source Water, provided by telephone on January 12, 2016 to Cameron Tana, HydroMetrics WRI and paraphrased. Phone responses have been revised for clarity.

Question/Point 1: Will the groundwater model under development be used to evaluate the effect of inland pumpers on coastal groundwater issues such as seawater intrusion and what is the timeline for that?

Response: At the County's request, the groundwater model will be set up so this evaluation can be performed. However, use of the model for this evaluation has not been scoped and scheduled and would likely take place as part of Groundwater Sustainability Plan (GSP) development. The model would likely be used to evaluate the combined effect of inland pumpers as opposed to the effect of any individual inland pumper.

Question/Point 2: If inland pumpers in the existing Santa Cruz Purisima Formation Basin do not have effect on coastal issues, why should the Santa Cruz Purisima Formation Basin be consolidated with the coastal Soquel Valley and Pajaro Valley basins that have higher priority and are considered in critical overdraft?

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Response: The proposed Santa Cruz Mid-County Basin that consolidates a portion of the Santa Cruz Formation Basin with three coastal basins best represents the series of stacked aquifers that provide groundwater supply for pumpers in the area. Including the inland area which pumps from the same aquifer units and where recharge for those aquifer units occur will promote sustainable management for the area. As discussed above, the evaluation of effects of inland pumping can be performed for development of a GSP for the proposed basin that will define requirements for inland pumpers.

It also should be noted that no Sustainable Groundwater Management Act (SGMA) requirements change with the change from the medium priority assigned to Santa Cruz Purisima Formation Basins to a high priority when consolidating with high priority Soquel Valley and Pajaro Valley Basins. SGMA treats medium priority basins and high priority basins equivalently. If the Santa Cruz Purisima Formation Basin remained unchanged, a Groundwater Sustainability Agency (GSA) would still be required for the basin. Soquel Creek Water District, Central Water District, City of Santa Cruz, Scotts Valley Water District, and Santa Cruz County would all be eligible to form such a GSA. The only change for consolidating with critically overdrafted basins is the GSP is due in 2020 not 2022 and sustainability needs to be achieved by 2040 not 2042.

Question/Point 3: Jurisdiction for requiring metering on California Public Utilities Commission (PUC) regulated systems such as Pure Source Water lies with the PUC and not the County

This point is not relevant to the basin boundary modification request.

Question/Point 4: Is it too late to submit a letter of support or opposition or comments?

Response: If a letter of support or opposition is submitted prior to submittal of the modification request to DWR, it will be included in the submittal. The deadline has passed for written comments in order to provide time to prepare responses to provide the Soquel-Aptos Groundwater Management Committee meeting at its January 21 meeting.

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**COMMENTS MADE AT JAN 12, 2016 COUNTY BOARD OF SUPERVISORS
MEETING**

Gary Greene, Marilyn Garret, Becky Steinbruner made comments regarding the item on the Board Agenda to approve moving forward with the Basin Boundary Modification:

Mr. Greene spoke representing the Purisima Mutual Water Company and his comment was to reiterate the concerns written in their letter. They are on the Mid-County/Santa Margarita boundary and are concerned that they are getting mis-classified and should be in the Mid-County Basin.

Mrs. Steinbruner commented that the importance of the Basin Boundary Modification process was not clear at the public meeting on December 10th.

Ms. Garret re-iterated that it is important to take time to consider suggestions such as that of Gary Greene.

January 21, 2016

MEMO TO THE SOQUEL APTOS GROUNDWATER MANAGEMENT COMMITTEE

Subject: Agenda Item No. 5.2

Approval of Cross-sectional Protective
Elevation Technical Memorandum by
Hydrometrics WRI

Attachment: Technical Memorandum from Hydrometrics WRI titled “Cross-Sectional Model Modifications for Evaluation of Protective Groundwater Elevations to Prevent Seawater Intrusion,” dated January 11, 2016

Based on a peer review by Todd Groundwater of modeling work performed by Hydrometrics WRI, the Board directed Hydrometrics WRI to further evaluate groundwater evaluations necessary to protect against intrusion using an alternative method. The models were created to evaluate the protective elevations at the District’s SC-9 and City of Santa Cruz’s Moran Lake monitoring wells. Based on the evaluation they do not recommend changing the protective elevations.

The memo mentions two possibilities for future evaluation:

1. Test the alternative method for the inland boundary condition on cross-sections for Aromas wells where it may have a greater effect. However, Hydrometrics WRI does plan to look at movement of the saltwater interface with the basin-wide groundwater model, so it may be preferable to do that first.
2. Model seaward direction cross-section for the City of Santa Cruz wells. This has not been done to date, and is probably only needed if the City wants to re-evaluate their current targets based on the Ghyben-Herzberg relationship, which should be conservative.

POSSIBLE ACTIONS

1. By MOTION, accept the report.
2. By MOTION, provide staff direction regarding any modifications or further evaluation they would like to convey to the SAGMC to consider or Hydrometrics WRI to conduct.
3. Take no action.

By  (Ron Duncan)

on behalf of the staff executive team of
John Ricker, Ralph Bracamonte, Rosemary Menard, Ron Duncan



1814 Franklin St, Suite 501
Oakland, CA 94612

DRAFT TECHNICAL MEMORANDUM

To: |Soquel Aptos Groundwater Management Committee|
From: Sean Culkin and Cameron Tana
Date: January 11, 2016
Subject: Cross-Sectional Model Modifications for Evaluation of Protective Groundwater Elevations to Prevent Seawater Intrusion

BACKGROUND

This memorandum documents modified cross-sectional modeling to estimate protective groundwater elevations to respond to peer review recommendations. Hydrometrics LLC previously estimated groundwater elevations that protect producing aquifer units of the Purisima Formation within the Soquel-Aptos Basin using cross-sectional models (HydroMetrics LLC, 2009). Each cross-sectional model included a Soquel Creek Water District (SqCWD) coastal monitoring well cluster and was used to estimate the average groundwater elevation at the well that would prevent seawater intrusion by keeping the long-term equilibrium position of the freshwater/seawater interface at a protective distance from the well.

SqCWD retained Todd Groundwater (Todd) to perform a peer review of technical reports by HydroMetrics WRI, including the cross-sectional model approach for determining protective elevations. Within its review, Todd pointed out a limitation of the cross-sectional models in that their alignments were perpendicular to the coast, which is not parallel with the dip direction of the water producing Purisima Formation units. Due to the orientation of these units, it is possible that the flow pathway for seawater intrusion is along the dip from where the protected aquifer unit outcrops beneath the seafloor, as opposed to the shorter distance directly perpendicular from the coastline, whereby it may have to travel

through aquitard units. As such, Todd suggested modifications should be made to one or two of the existing cross-sectional models to investigate this possible shortcoming.

SqCWD also asked Todd to evaluate the target groundwater elevation proposed by the City of Santa Cruz (City) for the cooperative groundwater management agreement. Per this issue, Todd noted that the proposed protective elevations for the City's Pleasure Point, Soquel Point, and Moran Lake monitoring wells may be conservatively high. As such, Todd recommended that one or two cross-sectional models be built for the Santa Cruz area to address this issue.

Following these suggestions, HydroMetrics WRI developed two additional cross-sectional models. One model is a re-alignment of the previous SC-9 cross-sectional model. This section was chosen because the previously developed seaward cross-section has a seawater flow path through the Purisima D aquitard unit into the protected BC aquifer, but does not allow for seawater flow directly into the BC unit where it outcrops at the seafloor. The updated cross-sectional model for SC-9 (referred to herein as the "Outcrop Direction SC-9 cross-section") is oriented roughly west from the well cluster parallel to the dipping Purisima units, and was intended to minimize the length of BC aquifer to its outcrop at the seafloor, to allow for a conservative evaluation of seawater infiltration along that pathway to the well.

For evaluation of protective elevations in the Santa Cruz area, a single cross-section location was considered sufficient to simulate seawater intrusion in the outcrop direction at the Moran Lake Well cluster due to the Moran Lake well's closest proximity to the offshore outcrop. This approach can be considered conservative for developing protective groundwater elevations for this area, and we can assume that the protective elevations developed for the Moran Lake well will also protect the Soquel Point and Pleasure Point well clusters against seawater intrusion from the outcrop direction.

The following sections will describe the efforts taken to complete the tasks to develop modified cross-sectional models, as well as provide recommendations for how to use the results of the updated and previous cross-sectional models to achieve management objectives.

CROSS-SECTIONAL MODEL CONSTRUCTION

Two additional cross-sectional models were constructed per Tasks 1 and 3 listed above. Their extent and orientation are shown below on Figure 1.

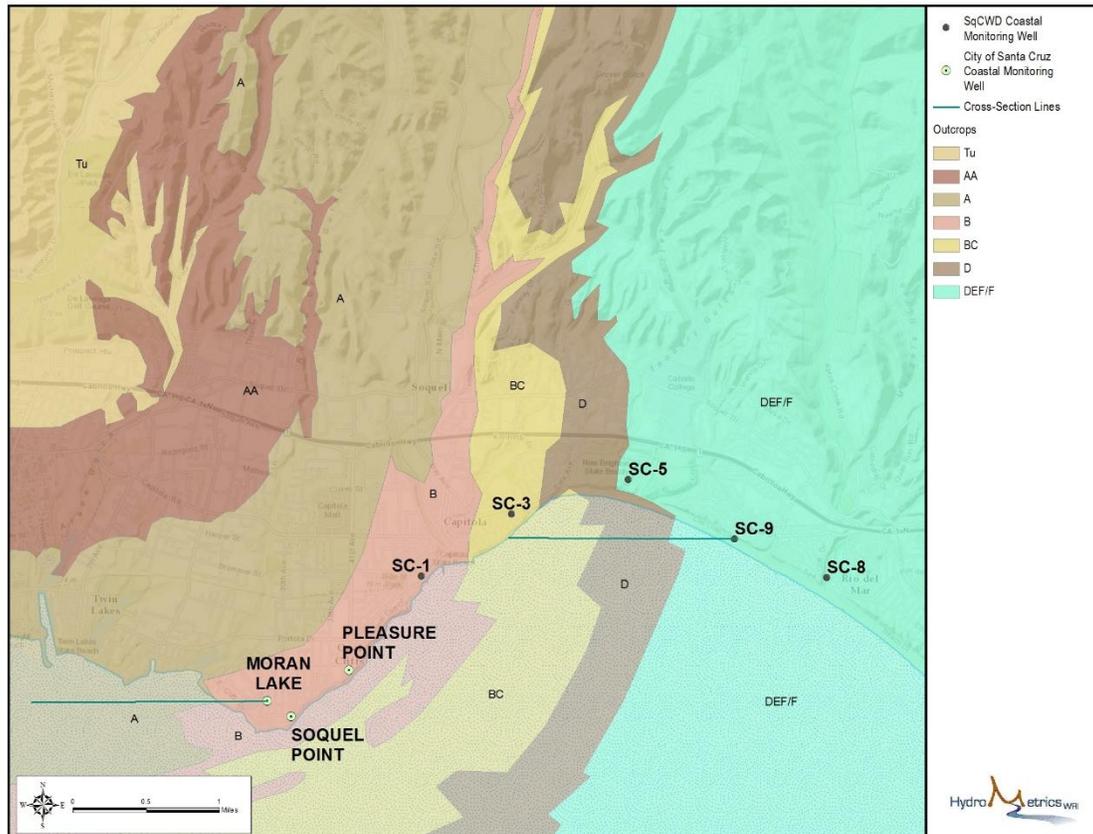


Figure 1: Coastal Monitoring Well and Cross-Section Locations

The Outcrop Direction SC-9 cross-section extends west from monitoring well SC-9 for a total distance of 8,000 feet, including 7,250 feet offshore from the coastline west of the well. As stated above, this alignment was chosen with the intention of minimizing the length of the BC Aquifer to its outcrop at the seafloor, in order to conservatively test the intrusion pathway of concern from the seafloor into the BC Aquifer in the direction of the well cluster. This revised orientation of the Outcrop Direction SC-9 cross-section also parallels the general dip direction of the Purisima formation units in this area, whereby the path of seawater infiltration towards SC-9 may represent a larger threat than the pathway represented by the previous Seaward Direction SC-9 cross-section, where seawater had to travel through aquitard layers with lower hydraulic conductivity (HydroMetrics WRI, 2014a). The cross section terminates prior to reaching the shoreline again at Capitola. The

terminus of this cross-section coincides approximately with the juncture of the outcropping BC Aquifer and the opposite shoreline to include all of the BC offshore outcrop to maximize potential saltwater interface in the BC unit.

For the Moran Lake and Soquel Point well clusters, a single cross-section was constructed extending a total of 8,400 feet west from the Moran Lake monitoring well, with a total offshore length of approximately 6,450 feet. The offshore length consists entirely of A unit outcrop offshore, which should be sufficient for representing the potential for seawater intrusion into the A unit. This cross-section also parallels the dip direction of the Purisima units offshore, and extends past the intersection of the outcropping A Aquifer and B Aquitard units.

The geologic units simulated in the Outcrop Direction SC-9 cross-section are, in order from shallowest to deepest: the DEF Aquifer, the D Aquitard, the BC Aquifer, the B Aquitard, and the A Aquifer. These units are the same as were previously simulated in the Seaward Direction SC-9 cross-section. The units simulated at the Moran Lake cross-section, in order of shallowest to deepest, are: the B Aquitard, the A Aquifer, and the AA Aquifer. As in previous cross-sectional models, the vertical extent only encompasses one geologic unit beneath the protected aquifer, as the addition of deeper units to the models were found to have no significant impact on the results. The cross-sectional models presented here followed the same conceptual model (Johnson et al., 2004) as was referenced in the 2009 cross-sectional modeling report, and details regarding the extent and properties of individual aquifer and aquitard units are extensively detailed in the 2009 report (HydroMetrics LLC, 2009). A generalized cross-sectional view of the regional hydrostratigraphy is presented in Figure 2.

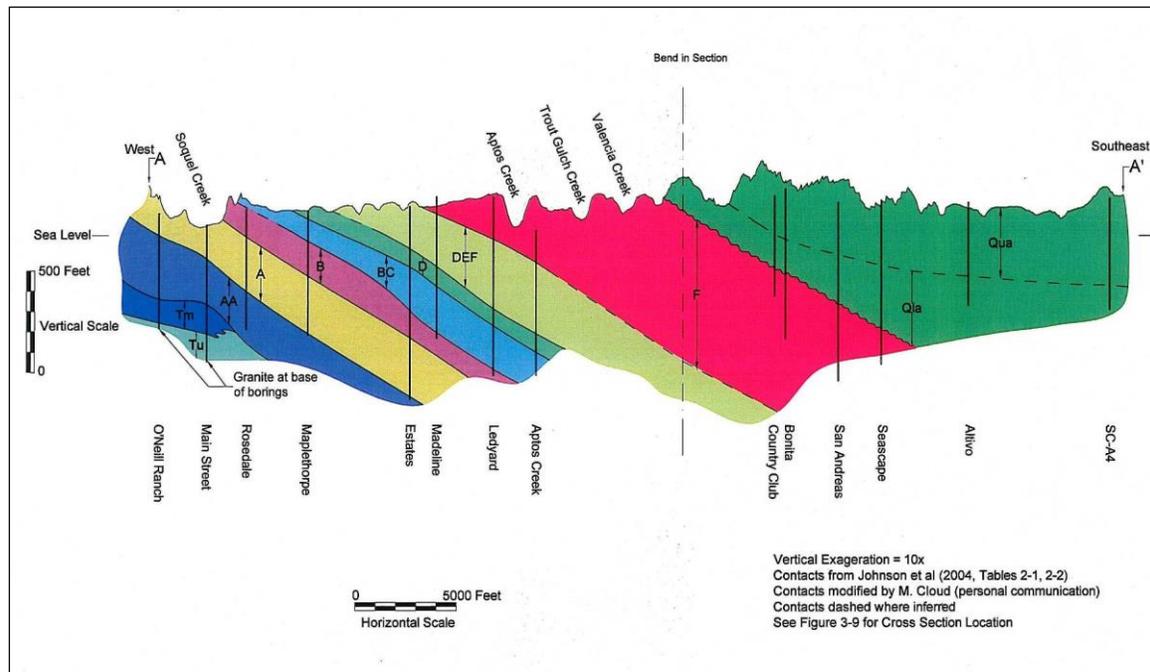


Figure 2: Generalized Hydrostratigraphy Cross-Section

The hydrostratigraphy of Purisima units along each of the new cross-sections was also developed in conjunction with ongoing work by HydroMetrics and others to construct a regional surface water-groundwater model of the Soquel-Aptos Basin. Regional hydrostratigraphic unit contact surfaces have been developed for the base of the B Aquitard, A Aquifer, and the granitic basement of the Soquel-Aptos Basin, using spatial interpolation of available borehole and outcrop, and gravity anomaly data. The D Aquitard, BC Aquifer, B Aquitard, and the combined thickness of the A and AA Aquifers were assigned uniform thicknesses of 170 feet, 190 feet, 130 feet, and 600 feet, respectively. Additional discussion of this regional hydrostratigraphic conceptual model development are provided in the Basin Model Task 3 Draft Technical Memorandum. Graphical representations of the Outcrop Direction SC-9 cross-section and the Moran Lake cross-section are shown in Figure 3 and Figure 4.

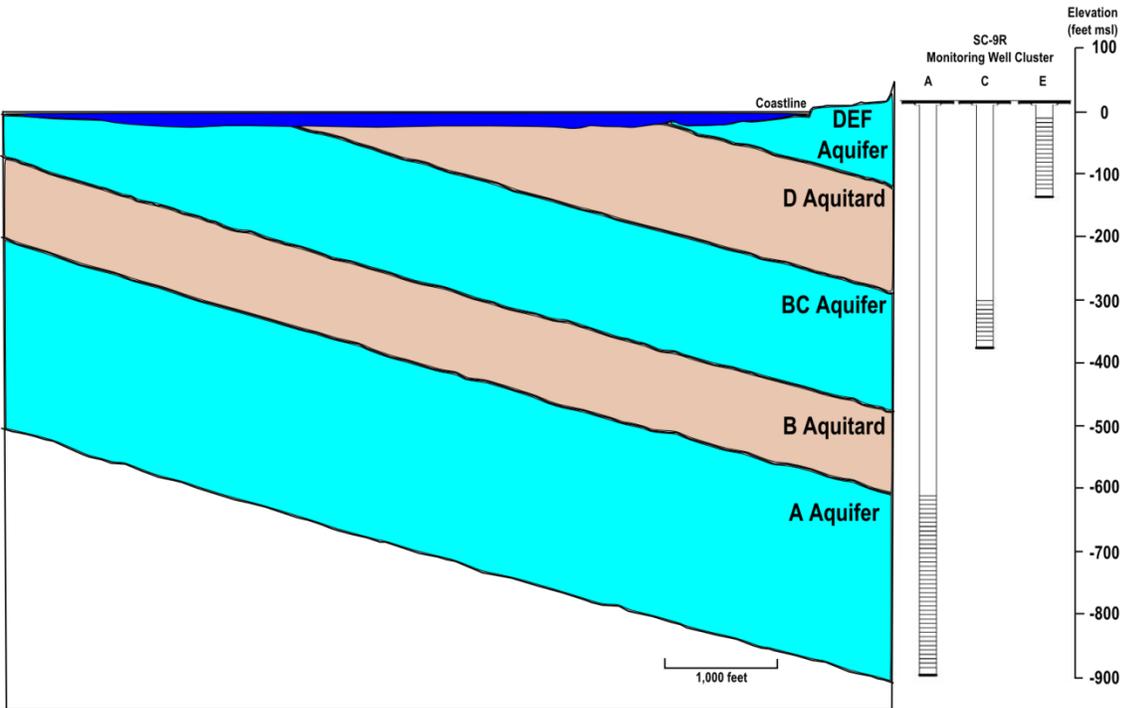


Figure 3: Outcrop Direction SC-9 Monitoring Well Cluster and Hydrostratigraphic Units

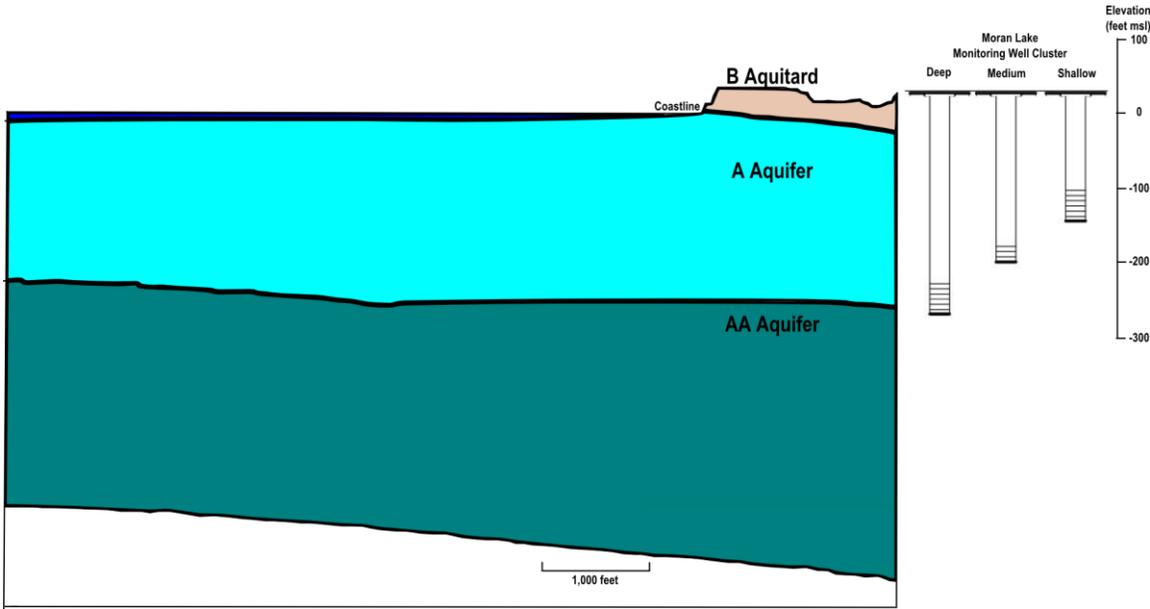


Figure 4: Moran Lake Well Cluster and Hydrostratigraphic Units

AQUIFER PARAMETERS

Estimated aquifer parameters for the hydrostratigraphic units simulated in the two new cross-sectional models are shown in Table 1. Following the previous cross-sectional model development (HydroMetrics LLC, 2009), aquifer horizontal hydraulic conductivities and aquitard vertical hydraulic conductivities are based on the *Draft Hydrogeological Conceptual Model* (Johnson et al., 2004) and the Well Master Plan EIR (HydroMetrics LLC, 2008). 20:1 anisotropy ratio is assumed for aquifer vertical hydraulic conductivities and aquitard horizontal hydraulic conductivities.

Table 1: Estimates of Hydraulic Conductivity for the Soquel-Aptos Area

Aquifer/Aquitard Unit	Horizontal Hydraulic Conductivity Kh (feet/day)	Vertical Hydraulic Conductivity Kv (feet/day)
	Range	Range
DEF Aquifer	2 – 6	0.1 – 0.3
D Aquitard	0.02-2	0.001 – 0.1
BC Aquifer	1 – 3	0.05 – 0.15
B Aquitard	0.2-2	0.001 – 0.1
A Aquifer	7 – 18	0.35 – 0.9
AA Aquifer	1 – 13	0.05 – 0.65

NUMERICAL MODEL CONSTRUCTION

The finite difference grids for the modified cross-sections were constructed in a similar manner as is described in the 2009 modeling report (HydroMetrics LLC, 2009). A uniform cell width of 50 feet was used in the lateral direction parallel to the direction of the cross-section, and individual layer thicknesses for each hydrostratigraphic unit varied per the number of layers and unit thicknesses simulated for each aquifer/aquitard unit. Model boundary conditions were also assigned as described in the 2009 modeling report, with a constant head and fresh water boundary assigned to the inland side of the cross-section at the location of the monitoring well, a constant sea level and seawater concentration boundary assigned to the farthest offshore end of the cross-section, a general head sea level boundary along the top layer in offshore model cells, and an impermeable boundary at the base of the cross-section (HydroMetrics LLC, 2009). The SEAWAT 2000 model code (Guo and Langevin, 2002) was used for groundwater flow and

transport simulation for the Outcrop Direction SC-9 cross-section and the Moran Lake cross-section as was used for the previous cross-sectional modeling.

Use of Time-Varying Constant Head (CHD) Package

One change incorporated into the two updated cross-sectional models was use of the Time-Varying Constant Head (CHD) package within SEAWAT 2000 to define the inland head boundary at the well as well as the constant sea level head at the downstream boundary of the cross-section. Previously, the constant head was assigned to the boundaries in the Basic package input file. The CHD package allows the calculation of an updated equivalent freshwater head after each time step to reflect concentration and density changes within model cells along the boundary (Guo and Langevin, 2002). This more accurately reflects the constant head conditions on the inland boundary as the toe of the saltwater intrusion reaches the inland boundary in the deeper model layers over the course of each model run. This effect was not captured in previous versions of the cross-sectional models, which resulted proportionally lower heads near the inland boundary at the toe of the intruding wedge of sea water.

Results from the previous Seaward Direction SC-9 cross-sectional model that defined the constant head boundaries in the Basic file were compared with the equivalent Seaward Direction SC-9 model using the CHD package to define the constant head boundaries. Histograms showing the distribution of protective levels are shown in **Error! Reference source not found.** Figure 5 for the Seaward Direction SC-9 models using the Basic and CHD package to assign constant head boundary conditions. This figure shows that the overall protective groundwater elevation distribution, and therefore the simulated seawater intrusion results, are generally similar in the two test cases. For example, the elevation that is protective at the 70th percentile is 10 feet for both models and 11 feet is protective for all runs using both models. Therefore, the recovery goal would not change at this well based on the different model implementation.

This small amount of variability is likely due to the protective wedge of seawater intruding the boundary condition several model cells below the protected aquifer zone. This occurs because the protected location is at the coast for Purisima wells, not at the well located at the boundary. As such, the time-varying water density at the inland boundary condition that changes as a result of variable concentrations over the length of each model run does not have a substantial impact on the head

condition in the overlaying protected aquifer. The version of the cross-sectional model that did not utilize the CHD package artificially prevented an upward gradient at the inland boundary from the seawater wedge intersecting this boundary, leading to a higher proportion of apparently protective water levels among the parameter sets tested in the 3 to 10 foot boundary head range (Figure 5). Based on these results, we do not expect protective elevations for other Purisima monitoring wells would change substantially using this different model implementation.

However, the protected location for certain Aromas area monitoring wells is at the well boundary because seawater intrusion has already occurred at these wells and the protective elevation is based on preventing additional seawater intrusion. In this case, the changing water density within the protected aquifer itself is expected to have a greater effect on the simulated head at the inland boundary condition. Therefore, HydroMetrics WRI recommends testing the effect of adding the CHD package to previously constructed cross-sections for Aromas area monitoring well clusters SC-A2 and SC-A8 that are completed within the freshwater-sea water interface.

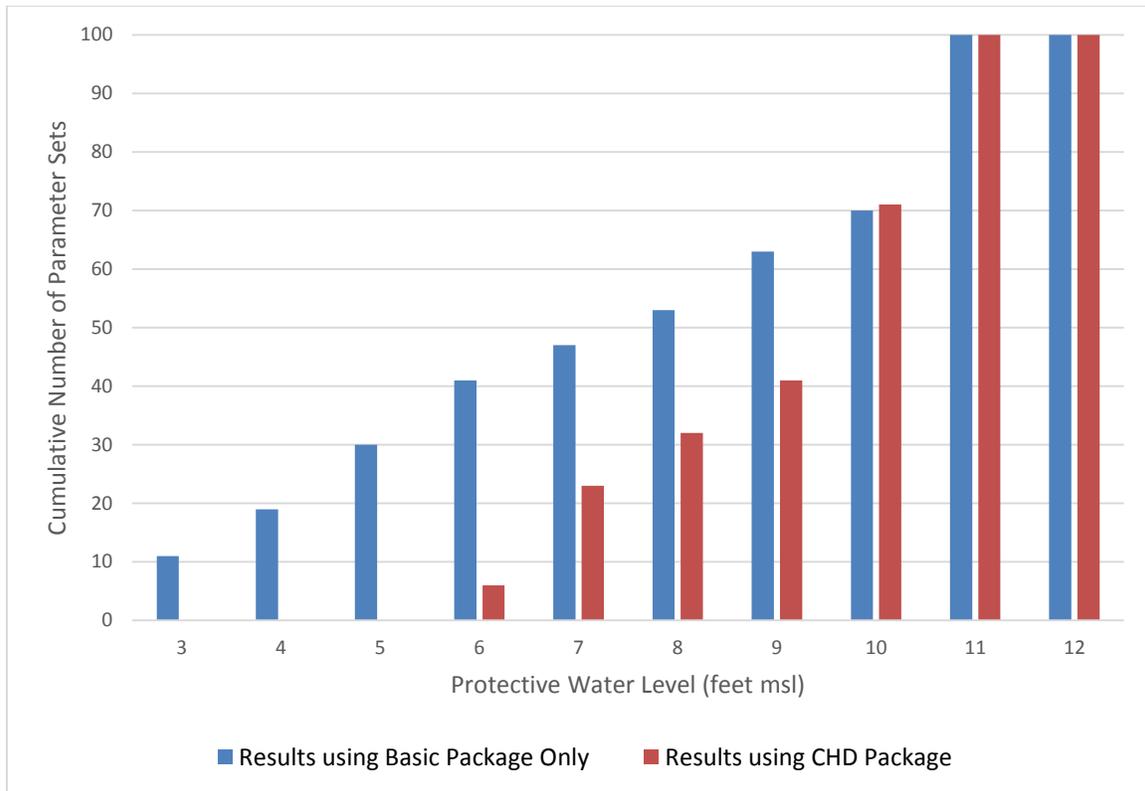


Figure 5: Seaward Direction SC-9 Cross-Section Protective Level Distribution, with and without CHD Package

Evaluation of SWI2 Package

Per Task 2 outlined in the proposed scope letter (HydroMetrics WRI, 2014a), an alternative MODFLOW modeling package, SWI2, was evaluated for simulation of the freshwater-saltwater interface to find protective groundwater elevations (Bakker et al., 2013). Unlike SEAWAT 2000, SWI2 simulates a sharp interface between groundwater of two or more different salinities, rather than a range of concentrations between two or more end-member concentrations. As such, it is less computationally-intensive. Attempts to reproduce the previous Seaward Direction SC-9 cross-sectional model results using the SWI2 package showed a significant level of disagreement with SEAWAT 2000 results for the same cross-section, and appeared highly sensitive to boundary conditions and other input parameters. Communication with the developers of the SWI2 package (Bakker, 2015 and Niswonger, 2015) confirmed that the cross-sectional model boundary conditions described above, where there is a constant head rather than a constant flux on the inland boundary, is not an appropriate application of the SWI2 model

package. As such, SEAWAT 2000 was considered a more robust model for providing reliable results to estimate protective elevations and used for the Outcrop Direction SC-9 cross-section and the Moran Lake cross-section.

PROTECTIVE GROUNDWATER ELEVATIONS

The goal of these cross-sectional model simulations is to estimate the coastal groundwater head conditions under which protective conditions occur over the range of known aquifer properties. As defined previously (HydroMetrics LLC, 2009), protective conditions at SqCWD's Purisima monitoring well location are considered to exist when the toe of the intruding seawater wedge just reaches the coastline at a specified elevation at the bottom of the aquifer with nearby production. Since the saltwater interface has not been identified onshore in its area of the Purisima, SqCWD set a goal to protect the aquifer and any non-SqCWD production wells that may exist between a monitoring well cluster and the coastline.

Cross-sectional models have not previously been constructed for the City monitoring wells including the Moran Lake well. However, the City did propose target groundwater levels based on the Ghyben-Herzberg relationship for the cooperative groundwater management agreement with SqCWD (SqCWD and City, 2015). This commonly used general relationship includes an implicit assumption that the protected location is at the well. This goal may be more appropriate for the City wells because seawater intrusion has been detected at its wells (Moran Lake and Soquel Point). Protective elevations for the Moran Lake model are therefore evaluated based on both protecting at the coastline and at the well location.

As in previous cross-sectional modeling efforts, the protected elevation for the Purisima Formation is defined as the bottom of the lowest producing aquifer in the area so that the entire producing aquifer is protected at the specified location (HydroMetrics LLC, 2009). **Error! Reference source not found.** Table 2 lists the protected aquifer for the two cross-sections presented here.

Table 2: Purisima Monitoring Wells and Protected Elevations

Monitoring Well in Protected Unit	Nearby Municipal Production Wells	Protected Aquifer Unit	Protected Location	Protected Elevation (feet msl)
SC-9B	Ledyard, Madeline	BC	Coastline	-443
Moran Lake Medium	Beltz #9	A	Coastline	-249
			Well	-275

Freshwater is defined as a chloride concentration below the secondary maximum contaminant limit (MCL) concentration of 250 milligrams per liter (mg/L). Therefore, if at the end of a given cross-sectional model run, if the simulated concentration at the location of the protective elevation within the associated producing aquifer unit is below the MCL of 250 mg/L chloride, protective conditions are considered to exist. An example schematic of the intruding wedge of seawater is shown below in Figure 6 based on a protected location at the coast.

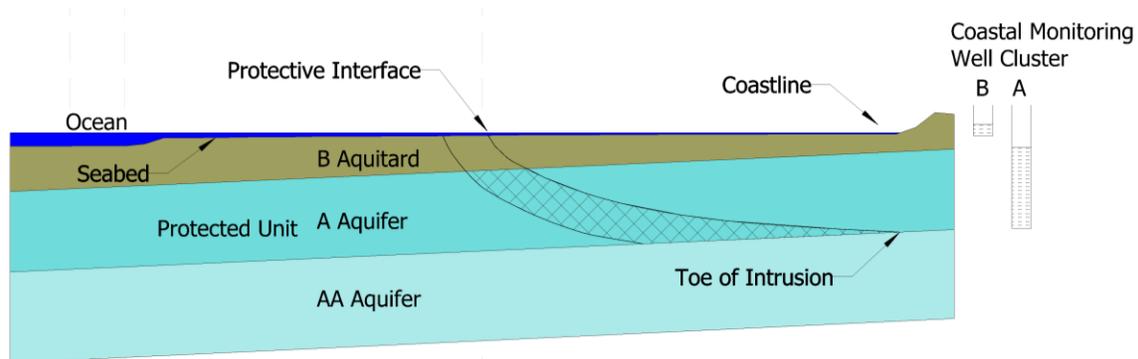


Figure 6: Example Cross-Sectional Model Concentration Results

The modeling approach for identifying protective groundwater elevations in the updated cross-sectional models is the same incremental approach described in the previous modeling report (HydroMetrics LLC, 2009). Each model is run with a constant head applied at the simulated monitoring well location (the inland side of the cross-section). This constant head value is varied over a specified range of integer values to identify the protective elevation.

The specific hydrogeologic parameters for the simulated units in each cross-sectional model cannot be determined due to insufficient data for calibration of the models to both hydraulic head and chloride concentration data (HydroMetrics LLC, 2009). Therefore, a Monte Carlo approach was used for an uncertainty analysis whereby a series of randomized inputs for Kh and Kv were developed to simulate a range of possible hydrogeologic conditions at each cross-section. Table 1 shows the range of values for Kh and Kv in each hydrostratigraphic unit simulated in the updated cross-sectional models. Parameters were varied within these ranges to determine estimate protective groundwater elevations based on the uncertainty of these parameters. The 20:1 anisotropy between horizontal hydraulic conductivity and vertical hydraulic conductivity is maintained.

As in the previous cross-sectional modeling, these flow parameters were varied in the units underlying and overlying the protected aquifer, as well as in the protected aquifer itself. Table 3 shows the units for which Kh and Kv were varied for the two updated cross-sectional models.

Table 3: Units varied for each Cross-Sectional Model in Uncertainty Analysis

Monitoring Well Cluster	Underlying Unit	Protected Aquifer	Overlying Unit
SC-9	B Aquitard	BC Aquifer	D Aquitard
Moran Lake	AA Aquifer	A Aquifer	B Aquitard

The Kh and Kv parameters were varied within the ranges shown in Table 1 using the same parameter sets as used for the 2009 modeling report. Additional details regarding the parameter selection used in this modeling process are presented in the 2009 modeling report, and in Appendix A of that report (HydroMetrics LLC, 2009). As in the previous cross-sectional models, transport parameters were fixed for all model simulations.

MODEL RESULTS

Table 4 summarizes the protective groundwater elevations estimated by the Outcrop Direction SC-9 and Moran Lake cross-sectional models. For each monitoring well cluster, a range of protective groundwater elevations is presented, corresponding to the range of constant head values tested for the 100 parameter sets of the uncertainty analysis. The suggested protective groundwater elevation

is considered to be that for which simulated protective conditions were achieved in at least 70% of the 100 parameter sets; SqCWD’s current protective elevations are based on this uncertainty level. The groundwater elevation for which 70% and 90% of the 100 parameter sets resulted in protective conditions are also shown in the table. The full distribution of protective groundwater elevations for all 100 parameter sets are presented in histograms for the Outcrop Direction SC-9 and Moran Lake cross-sections in Figure 7 and Figure 8. Two sets of results for the Moran Lake cross-sectional model are also presented: one where the protective location was chosen as the coastline, and one where the protective location was at the well itself.

Table 4: Simulated Protective Groundwater Elevations

Monitoring Well Cluster	Protective Groundwater Elevation Range Tested in Model (feet msl)	Current Protective Groundwater Elevation (feet msl)	Suggested (70%) Protective Groundwater Elevation (feet msl)	90% Protective Groundwater Elevation (feet msl)
SC-9	3 to 10	10	6	8
Moran Lake (coast)	3 to 16	N/A	13	14
Moran Lake (well)		5	4	5

Compared to the previous seaward direction cross-sectional model for SC-9, the protective elevation listed in Table 4 is slightly lower (6 feet compared to 10 feet from the seaward direction cross-sectional model). This may be due to the relative distance from the well to the coast in the updated cross-sectional model, which is longer than in the seaward direction cross-section. No previous cross-section was constructed at the Moran Lake or Soquel Point well clusters. The closest previous cross-sectional model was for SC-1, where the protective groundwater elevation was 4 feet to protect against seawater intrusion at the coastline (HydroMetrics LLC, 2009), as compared to 13 feet as shown in Table 4 at Moran Lake, but it should be noted that these two cross-sections have dissimilar orientations. The coastline is much closer to the well at SC-1 than Moran Lake. As discussed previously, using the well as the protected location may be more appropriate for the Moran Lake.

The suggested protective groundwater elevation of 4 feet based on the 70th percentile is lower than the current protective groundwater elevation of 5 feet based on the Ghyben-Herzberg estimate, which is protective for approximately 90% of the parameter sets simulated.

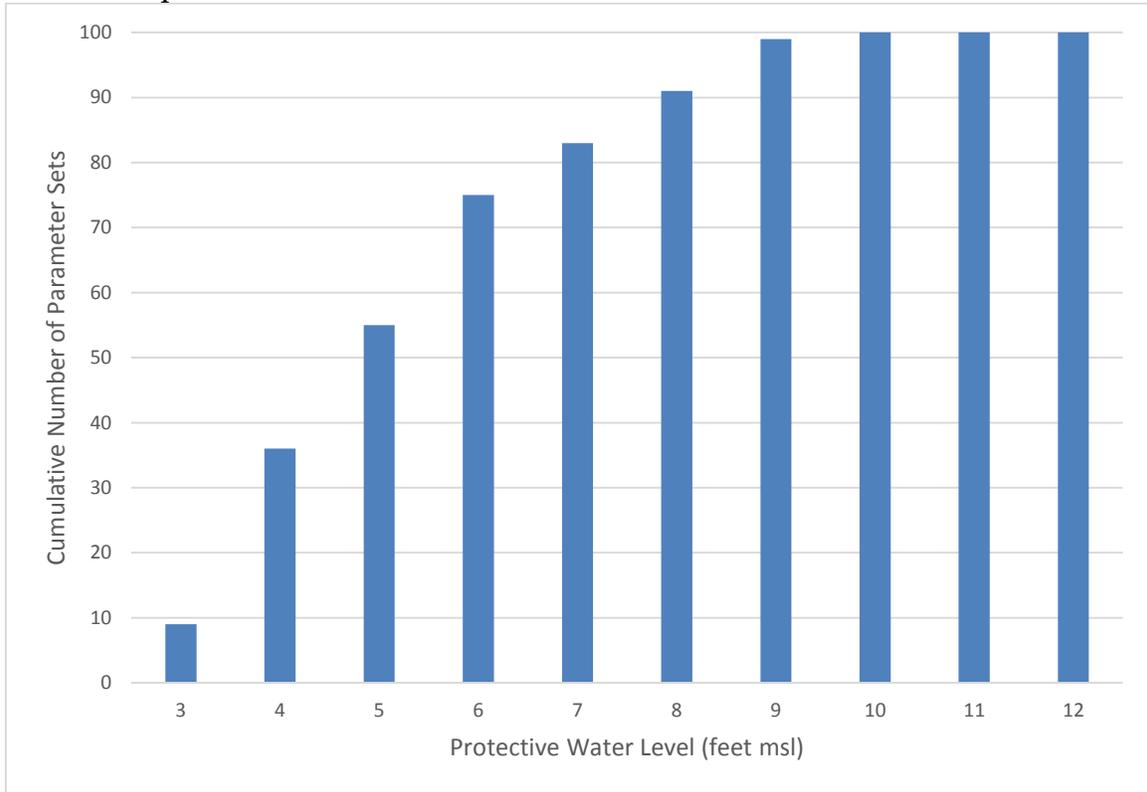


Figure 7: Protective Elevation Distribution at SC-9 from Outcrop Direction SC-9 Cross-Sectional Model

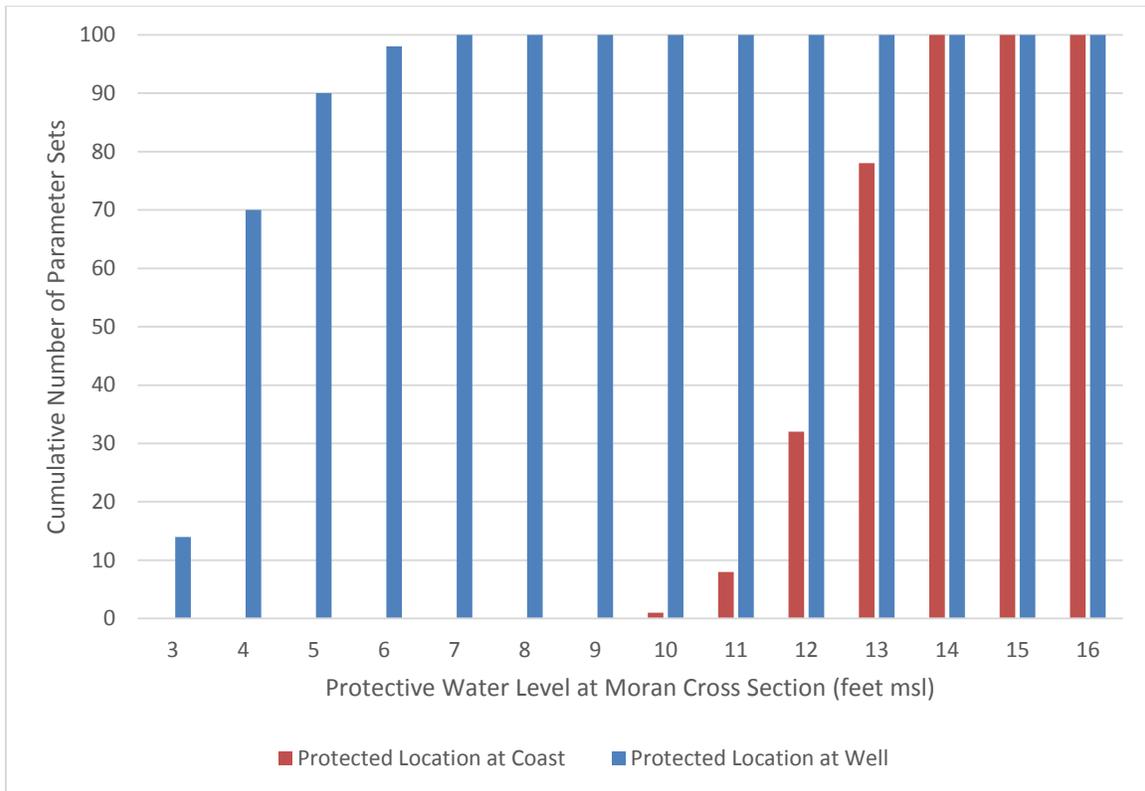


Figure 8: Protective Level Distribution at Moran Lake well for Protected Location at Coast and Well

COMPARISON OF MODEL RESULTS WITH CURRENT CONDITIONS

Figure 9 and Figure 10 show how the suggested protective groundwater elevations compare to recent groundwater level data at the SC-9 and Moran Lake wells. These plots show that at both well locations, recent groundwater elevations are below the suggested protective level.

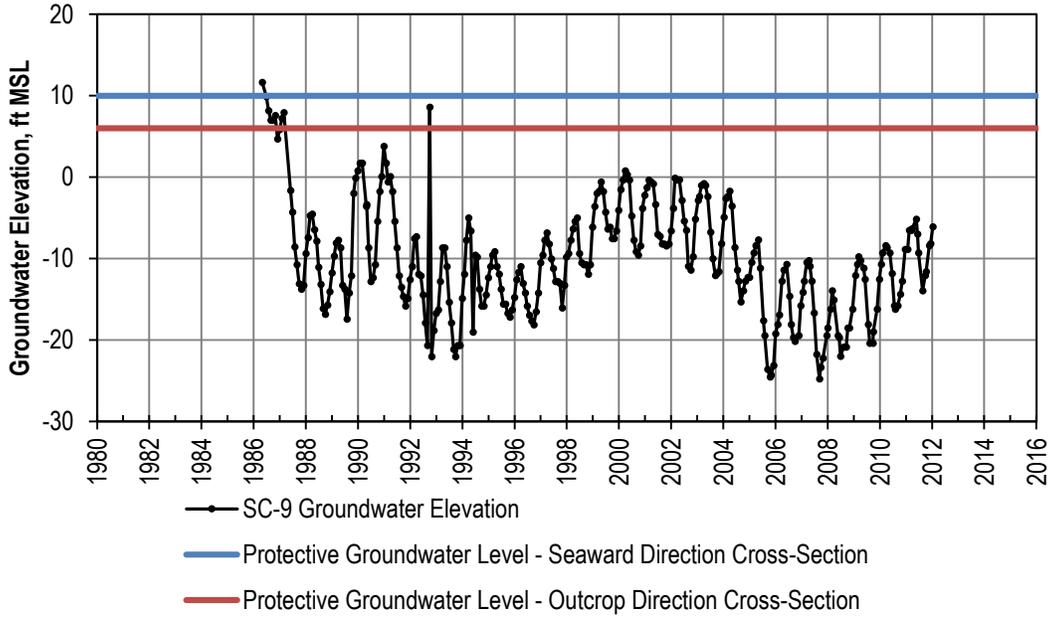


Figure 9: Historical and Protective Groundwater Elevations - SC-9B

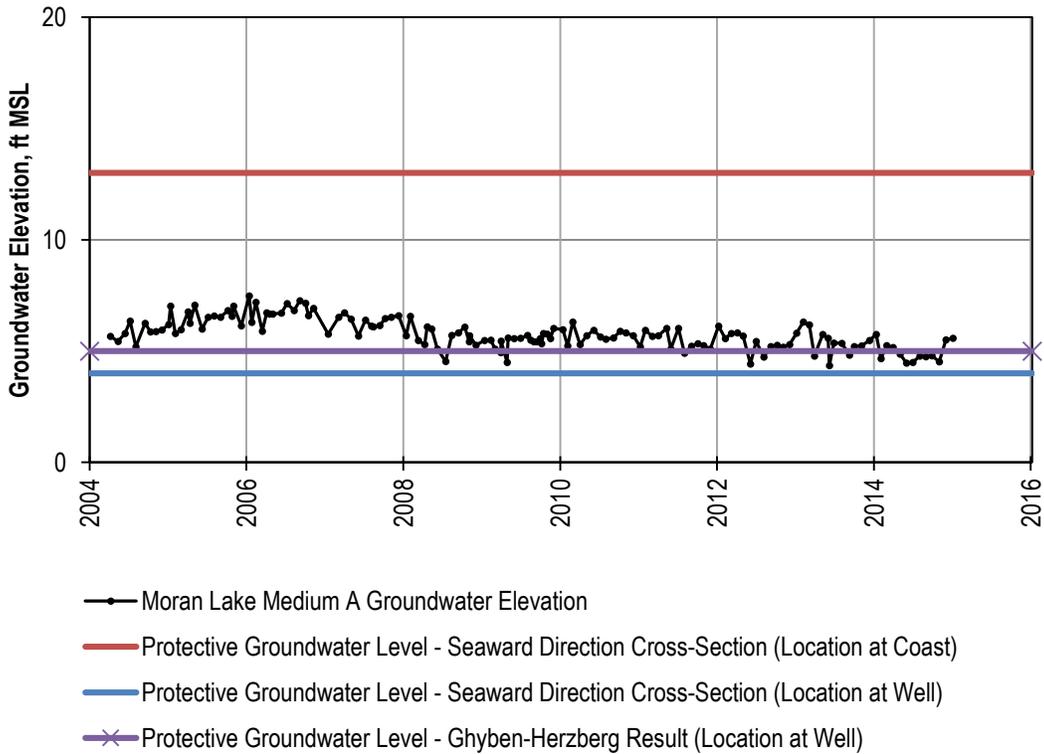


Figure 10: Historical and Protective Groundwater Elevations- Moran Lake Medium

MANAGING TO PROTECTIVE GROUNDWATER ELEVATIONS

The protective groundwater elevations developed here are intended to be long-term average ground water levels at the monitoring locations that will protect the production aquifers from seawater intrusion (HydroMetrics LLC, 2009). As such, long-term management should relate to these generalized protective water levels. The protective groundwater elevation for SC-9 for the Outcrop Direction model is lower than the Seaward Direction model, which confirms that the seaward direction is the most likely pathway for seawater intrusion. Therefore, the protective elevation of 10 feet based on the Seaward cross-sectional model should still be used as a conservative protective level in this area, and the recommendations made in the 2014 *Soquel-Aptos Groundwater Management Annual Review and Report* (HydroMetrics WRI, 2014b) should still apply. Figure 9 shows that groundwater levels continue to be below protective elevations based on both the Outcrop and Seaward models and the BC aquifer is at risk from seawater intrusion from both directions.

At the Moran Lake well cluster, a relatively conservative protective groundwater elevation of 13 feet was developed from the cross-sectional model would protect the aquifer west of the well to the coast. Using a protective elevation of 4 feet to protect the A aquifer unit at the well cluster and the City's production wells behind the Moran Lake well would be consistent with the implied groundwater management goals for the area included in the cooperative groundwater management agreement between SqCWD and the City (2015). However, since the protective elevation to prevent seawater intrusion from the seaward direction has not been evaluated with a cross-sectional model, the City should continue to use the conservative estimate of 5 feet based on the Ghyben-Herzberg relationship to protect against seawater intrusion in the A unit at the well. Figure 10 shows that groundwater levels have been above 4 feet but not consistently at or above 5 feet recently.

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Letter Report to Laura Brown, December 12.

January 21, 2016

MEMO TO THE SOQUEL APTOS GROUNDWATER MANAGEMENT COMMITTEE

Subject: Agenda Item No. 5.3

Quarterly Monitoring Report

Attachment: Quarterly Report for Coastal Monitoring Data through October 2015, dated January 13, 2016

Attached is the Quarterly Report for Coastal Monitoring Data through October 2015 prepared by Hydrometrics WRI. The report provides an update on groundwater levels and salt concentrations at coastal monitoring wells where protective elevations have been defined. Overall the situation does not appear to have changed significantly since last quarter. The most notable change is that annual average groundwater levels at SC-3A are at protective elevations for the first time, but groundwater levels at a majority of the coastal well sites remain below protective elevations.

POSSIBLE ACTIONS

1. By MOTION, provide direction as appropriate.
2. Take no action.

By  (Ron Duncan)
on behalf of the staff executive team of
John Ricker, Ralph Bracamonte, Rosemary Menard, Ron Duncan



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Mr. Ron Duncan
Interim General Manager
Soquel Creek Water District
PO Box 1550
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January 13, 2016

Subject: Quarterly Report for Coastal Monitoring Data through October 2015

Mr. Duncan:

This is the ninth quarterly report with updates on the attached groundwater level and salt concentration plots at the City of Santa Cruz (City) and Soquel Creek Water District's (SqCWD) coastal monitoring wells where target and protective elevations have been defined. These wells, as shown on Figure 1, include three City wells in the Purisima area (Moran Lake Medium, Soquel Point Medium, and Pleasure Point Medium), five wells in the Purisima area (SC-1A, SC-3A, SC-5A, SC-9C, and SC-8D) and five well clusters in the Aromas area (SC-A1A and B, SC-A8A and B, SC-A2A and B, SC-A3A and B, and SC-A4A and B). These wells are the key wells for assessing risk of seawater intrusion and the status of basin recovery in the Soquel-Aptos basin. Target and protective elevations¹ estimated to protect productive aquifer units from seawater intrusion and secondary drinking water standards (MCLs) for chlorides and total

¹ Target elevations for non-critically dry years for the City's wells and SC-1A were listed in the cooperative monitoring/adaptive groundwater management agreement between the City and SqCWD (2015). They are based on the generalized and conservative Ghyben-Herzberg relationship as seaward cross-sectional models have not been developed for the City wells. The target elevations for non-critically dry years represent the long-term recovery goals for that part of the basin. Protective elevations for the other SqCWD wells representing long-term recovery goals are based on seaward cross-sectional models. In the remainder of this quarterly report, protective elevations refer to both target elevations and protective elevations.

dissolved solids (TDS) are shown on the plots. Data through October 2015 are included, which includes groundwater level soundings at least quarterly at the wells. At the City wells and SC-1A, sampling for chlorides and TDS is quarterly with the last sampling event occurring in October. Sampling at the other SqCWD Purisima area monitoring wells occurs semi-annually with the last sampling event occurring in October. Sampling at the Aromas area wells occurs quarterly with the last sampling event included in the report occurring in September.

GROUNDWATER LEVEL LOGGER AVERAGES

Groundwater level loggers are also installed in these monitoring wells recording groundwater levels at least hourly. This report includes calculations of averages for the latest 90 days and 365 days of logger data at each well. Using logger data to calculate averages better represents average conditions over the time period than using averages of manual soundings during the time period. Manual sounding data can be skewed by the timing of the measurement especially in coastal wells that show tidal variation.

The averages of logger data are compared with protective groundwater elevations. Protective elevations are calculated as the long-term groundwater levels for protecting the productive aquifers of the basin from seawater intrusion. Therefore, the 365 day average is more appropriate for comparison to protective elevations in evaluating recovery. Table 1 shows the calculated averages for the coastal wells. Only the results from the A or B screen with lower annual averages are shown for the Aromas wells.

The coastal monitoring wells in the Purisima with 365 day averages above the protective elevations are Moran Lake, SC-1A, and for the first time SC-3A. The coastal monitoring wells in the Aromas with 365 day averages above the protective elevations are SC-A1, SC-A2, and SC-A3.

We have also attached plots of the logger data collected since installation in 2012 at the coastal wells with protective elevations. For the Aromas wells, the hydrograph for the B screen is placed on top of the hydrograph for the A screen as the B screen is shallower than the A screen for SqCWD wells.

Table 1. Groundwater Level Averages Calculated from Logger Data at Coastal Monitoring Wells

Well	Data Through	90 Day Avg (ft msl)	365 Day Avg (ft msl)	Protective Elevation (ft msl)
Moran Lake Medium	10/31/2015	5.1	5.2	5.0
Soquel Point Medium	10/31/2015	4.7	4.8	6.0
Pleasure Point Medium	10/31/2015	5.7	5.6	6.1
SC-1A	10/31/2015	9.2	9.1	6.2 (4 ¹)
SC-3A	10/7/2015	10.8	10.6	10
SC-5A	10/31/2015	2.6	5.0	13
SC-9C	7/14/2015	2.7	1.6	10
SC-8D	10/31/2015	9.0	9.5	10
SC-A1B	10/31/2015	6.7	7.5	3
SC-A8A	10/31/2015	5.1	5.8	6
SC-A2A	10/31/2015	6.2	6.3	3
SC-A3A	10/31/2015	4.2	3.7	3
SC-A4A	10/31/2015	1.5	1.8	3

¹ The protective elevation based on the cross-sectional model at SC-1A is 4 feet msl.

GROUNDWATER LEVEL TRENDS

The groundwater level trend in the City’s monitoring wells in the western Purisima area show a slight decline over the last five to ten years so averages groundwater levels are now below protective elevations at two of the three wells.

There has been a multi-year recovery trend in the SqCWD’s Purisima area groundwater levels over the last five to ten years, which has now resulted in annual average groundwater levels recovering to protective elevations at SC-3A as well as SC-1A. However, groundwater levels at three of the five wells remain below protective elevations in SqCWD’s Purisima area. As expected, there was a seasonal decline in summer and fall from groundwater levels observed in the late spring and early summer.

Even with the seasonal decline, groundwater levels at SC-3A, SC-9C and SC-8D in Water Year 2015 were at or near its highest level since the 1980s. Recovery since 2014 at these three wells likely relates to lower pumping in 2014-2015 related to drought curtailment. Over this time scale of several months, coastal groundwater levels have a greater response to reduced pumping than reduced

recharge caused by the four year drought through Water Year 2015. This is due to the coast being much closer to pumping wells compared to aquifer outcrops.

In the Aromas area, the groundwater level rise from October to December 2014 was reversed in the first quarter of 2015 and on whole stabilized through October 2015. Groundwater level trends over the last five years are increasing or stable. Over the last year, the data show that groundwater levels have been above protective elevations at the SC-A1, SC-A2, and SC-A3 wells.

In previous quarterly reports and the annual report, we have displayed equivalent freshwater head for Aromas area monitoring wells with high salt concentrations. We have decided it is more appropriate to conservatively use measured groundwater levels for comparison to protective elevations.

SALT CONCENTRATION TRENDS

Salt concentrations at the Medium screened wells in the City's monitoring well clusters at Moran Lake and Soquel Point were elevated when sampling began at those wells in 2004. At Moran Lake, a downward trend in concentrations has resulted in chloride and TDS concentrations dropping below the MCLs. At Soquel Point, chloride and TDS concentrations remain elevated but there is a slightly decreasing trend. Sampling of the Medium well at Pleasure Point has only taken place since 2012 and chloride and TDS concentrations have been low.

There are no notable changes in salt concentration trends over the last few quarters in the Purisima or northwestern area of the Aromas. In the southeastern area of the Aromas, where the long term (> 5 years) salt concentration trend has generally been increasing, the recent trends (3-5 years) in chloride and TDS at SC-A2B has been decreasing and after an increase in concentrations between 2012 and 2013, salt concentrations at SC-A4A have been declining. Over 2015, salt concentrations at the Aromas wells except for SC-A3B have been stable or declining slightly.

It is also notable that concentrations at SC-A3B have risen since equipment was installed in 2012. The concentrations are lower than concentrations prior to 2012 as the new equipment appears to have samples only the well's upper screen. The rise in concentrations from the new equipment may indicate salt water has moved higher into the upper screen. We recommended ordering a new drop tube to sample the bottom screen of the well to better monitor the freshwater-seawater interface at this location, but silt had covered up the bottom screen.

Attempts at redeveloping the well did not fully remove the silt so our recommendation was to place the drop tube at the top of the bottom screen. The four most recent samples are from this lower depth and show a higher concentration than measurements from the upper screen and an increasing trend, but do not necessarily represent an increasing trend from prior samples. The most recent concentration is still lower than measurements from before 2012.

ADDITIONAL NOTES

This quarterly report included averages based on available groundwater elevation data recorded by groundwater loggers that have been uploaded to SqCWD's new data management system.

Page numbers for the water quality plots are consistent with the Annual Report and Review figure sections 3B, 4B, and 5B, and therefore are not in consecutive order.

Thank you to City and District staff for making the data available expeditiously. Please let me know if you have any questions.

Sincerely,



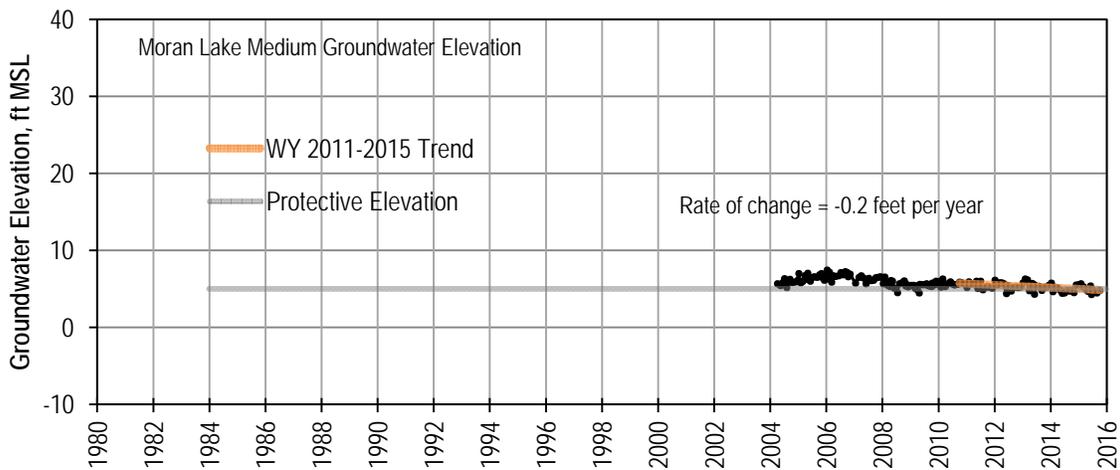
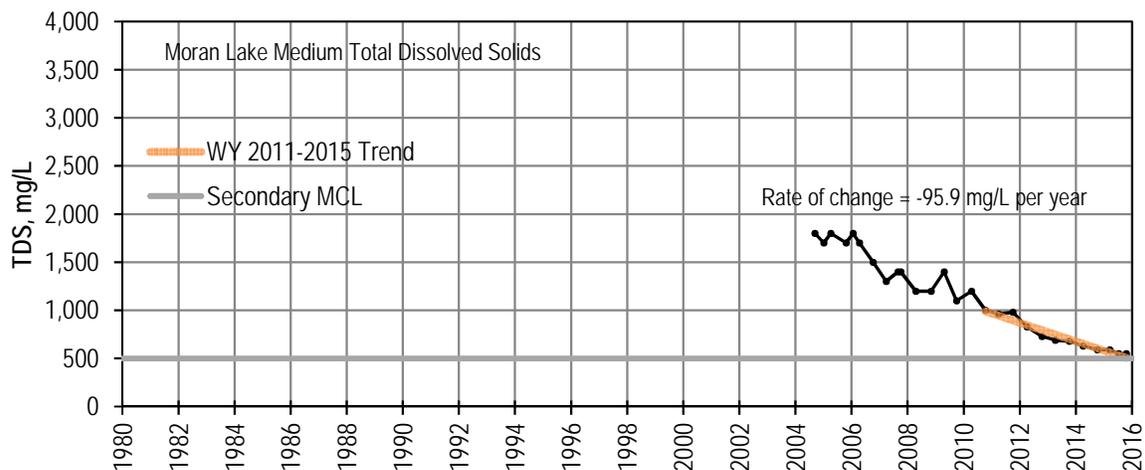
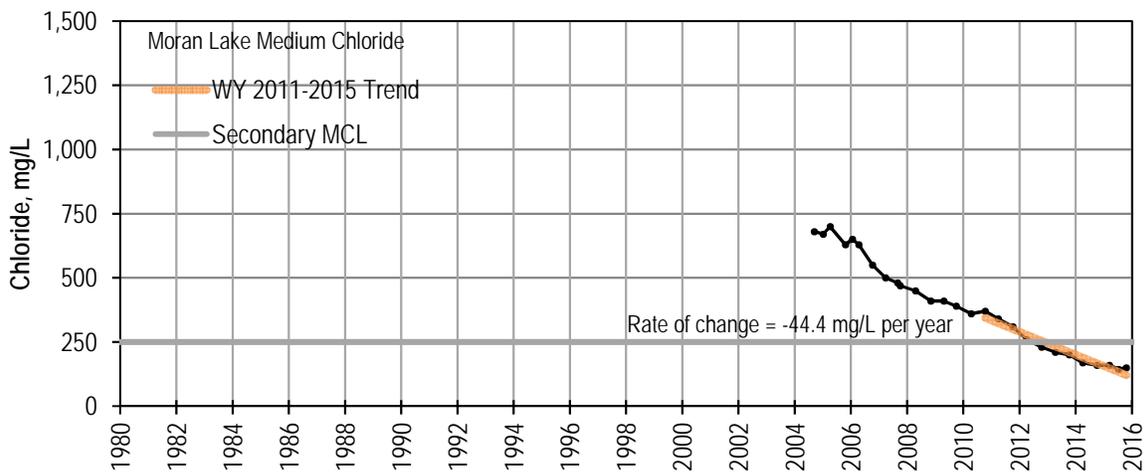
Cameron Tana, Vice President
HydroMetrics Water Resources Inc.

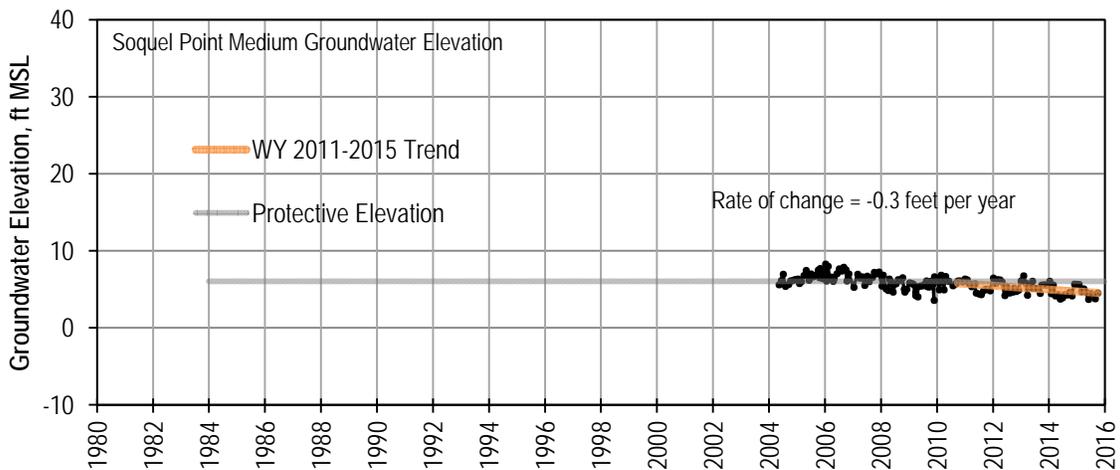
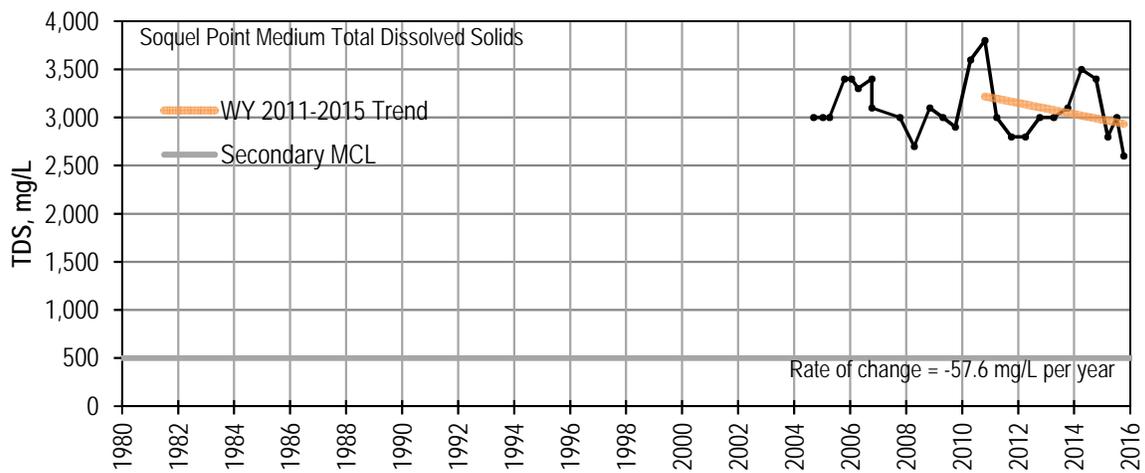
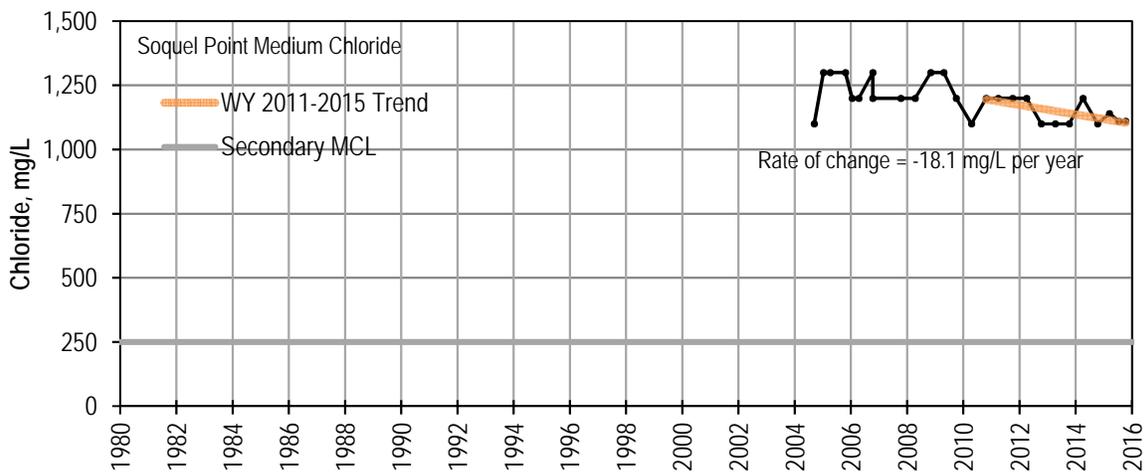
cc: Isidro Rivera, City of Santa Cruz Water Department
Ralph Bracamonte, Central Water District
John Ricker, Santa Cruz County Environmental Health

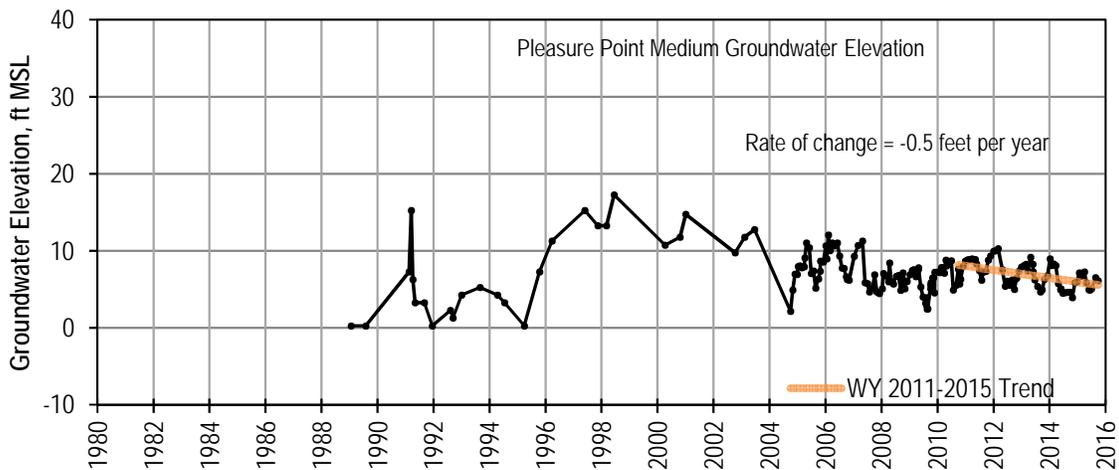
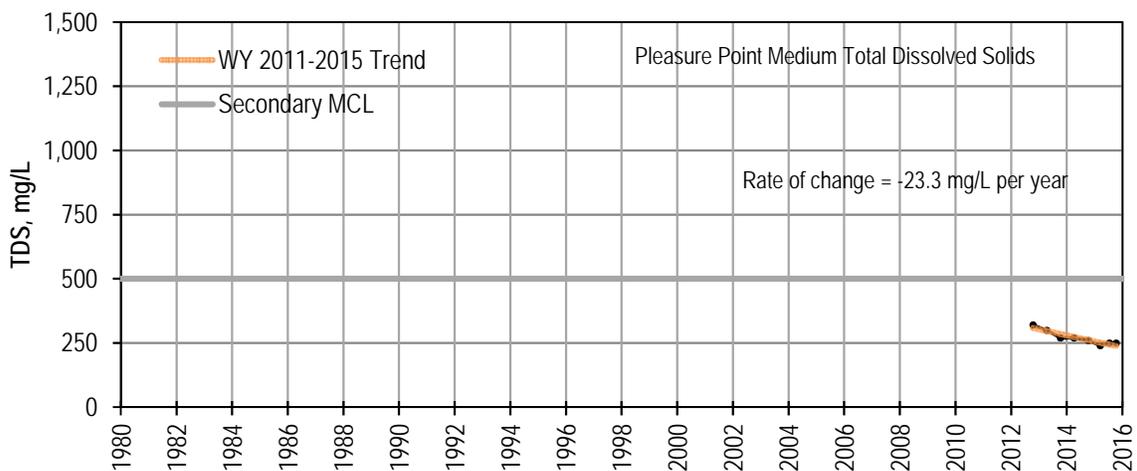
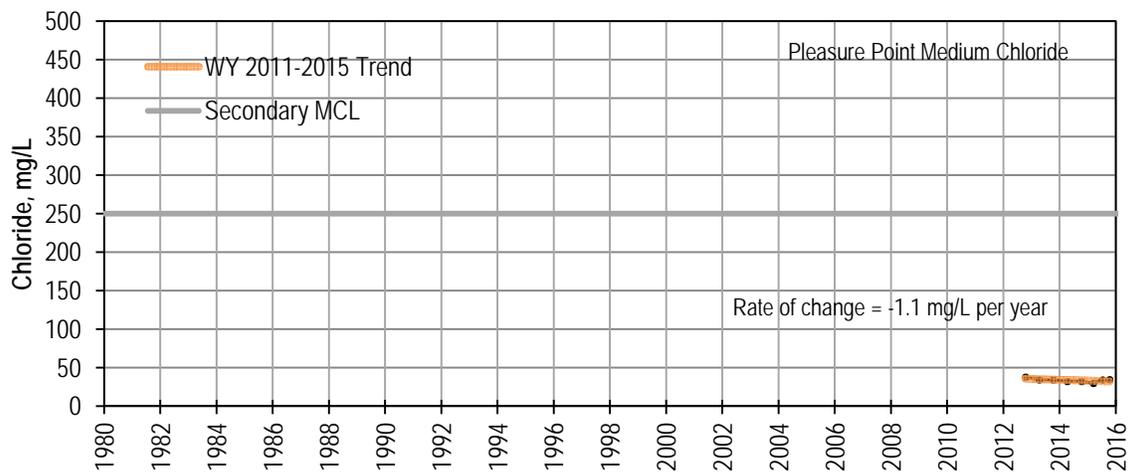
Attachment: City of Santa Cruz and Soquel Creek Water District coastal monitoring well hydrographs and chemographs

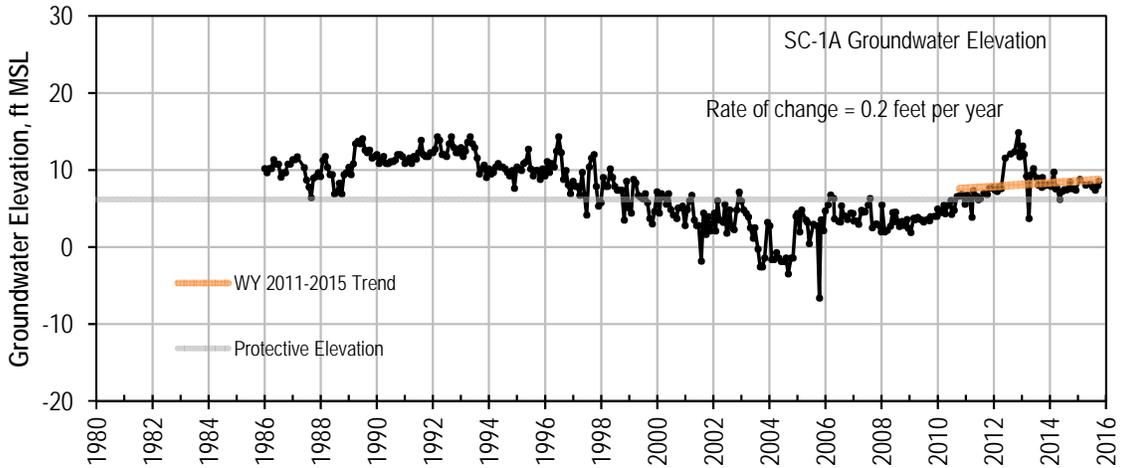
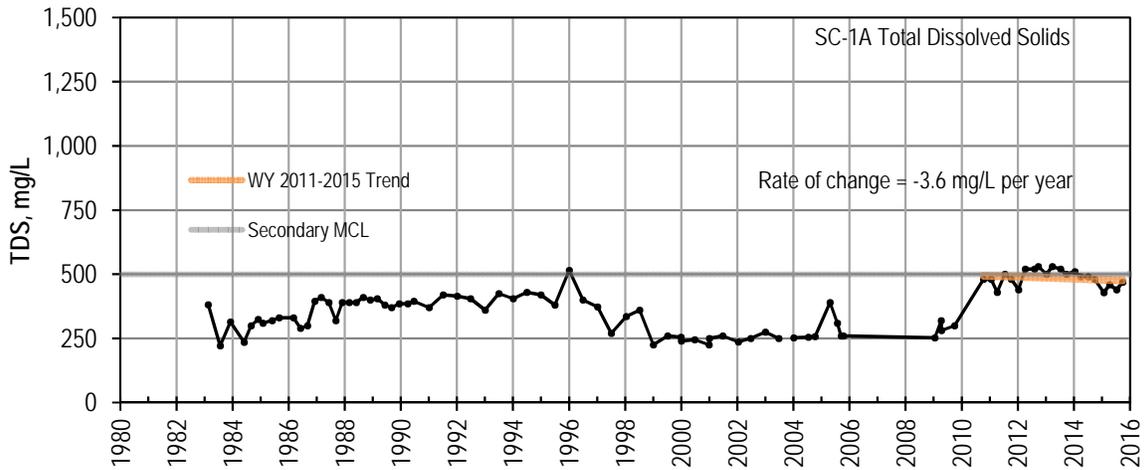
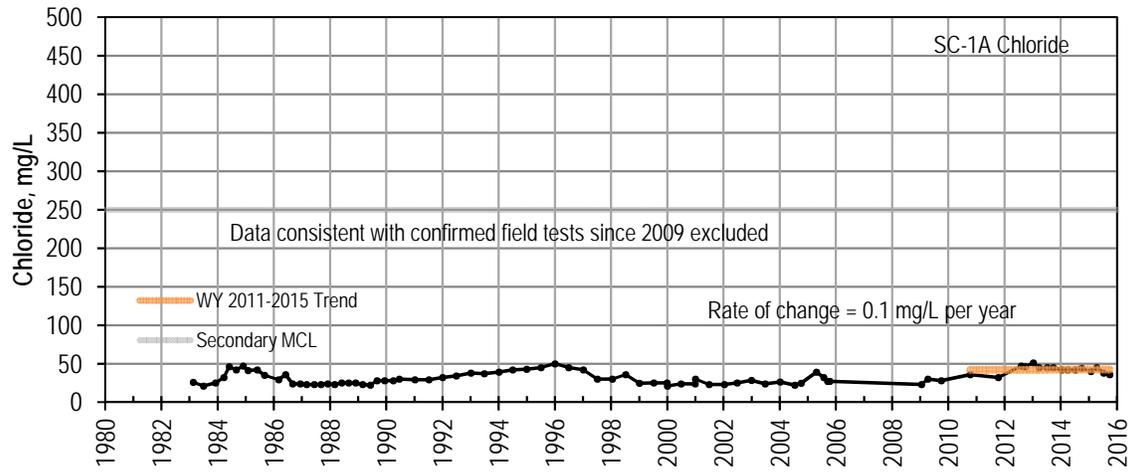


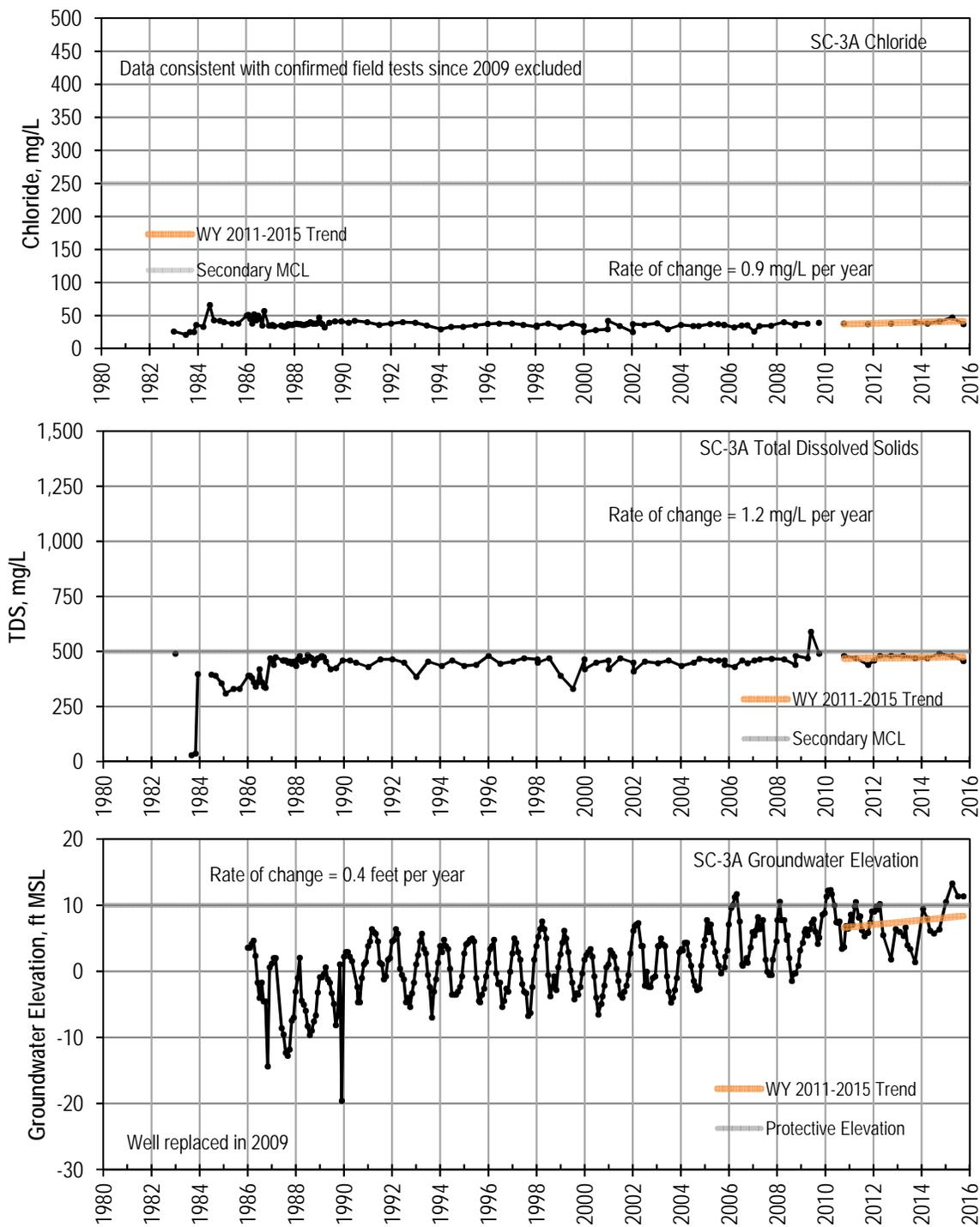
Figure 1. Locations of Coastal Monitoring Wells where Target or Protective Groundwater Elevations Have Been Estimated

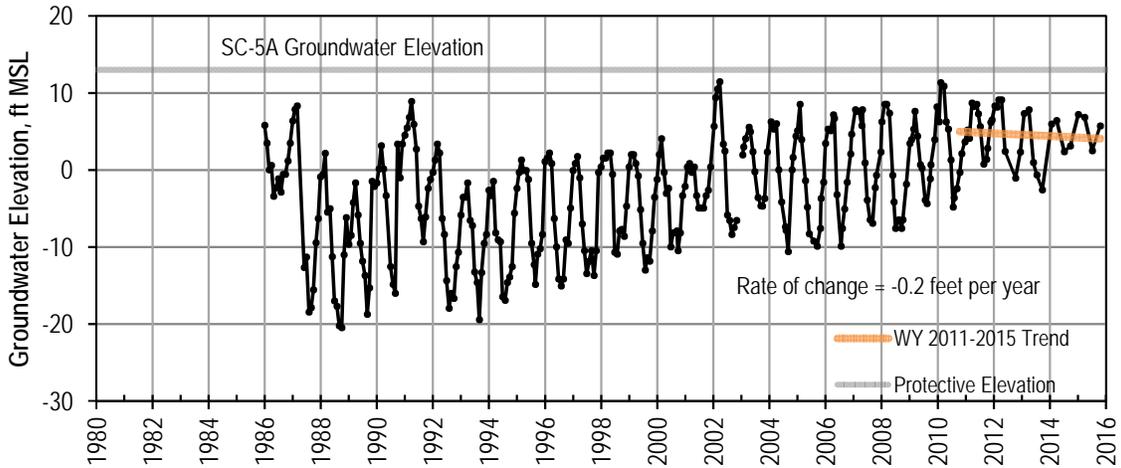
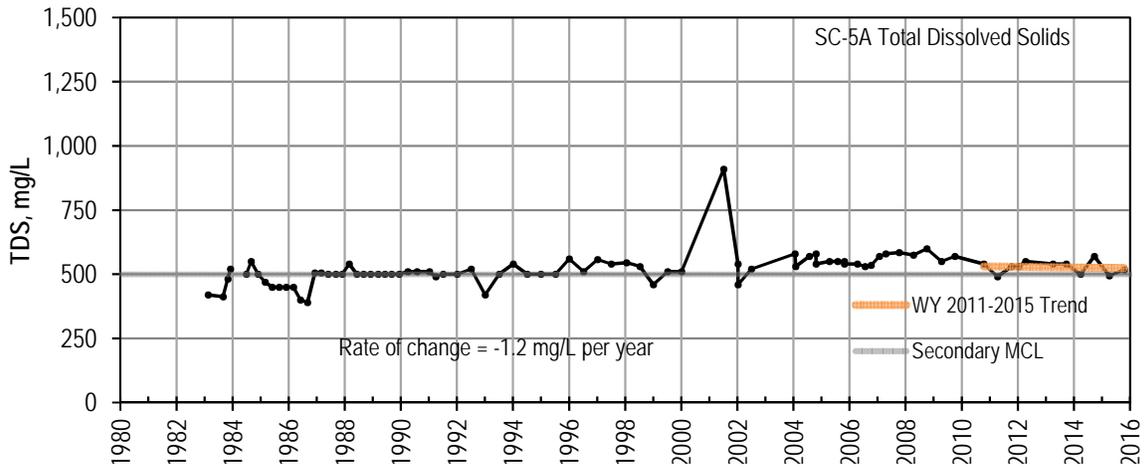
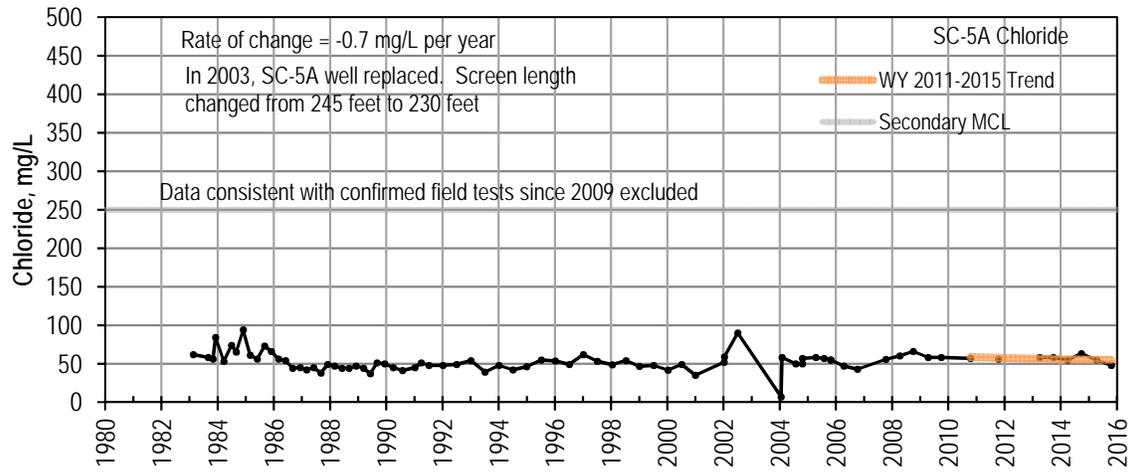


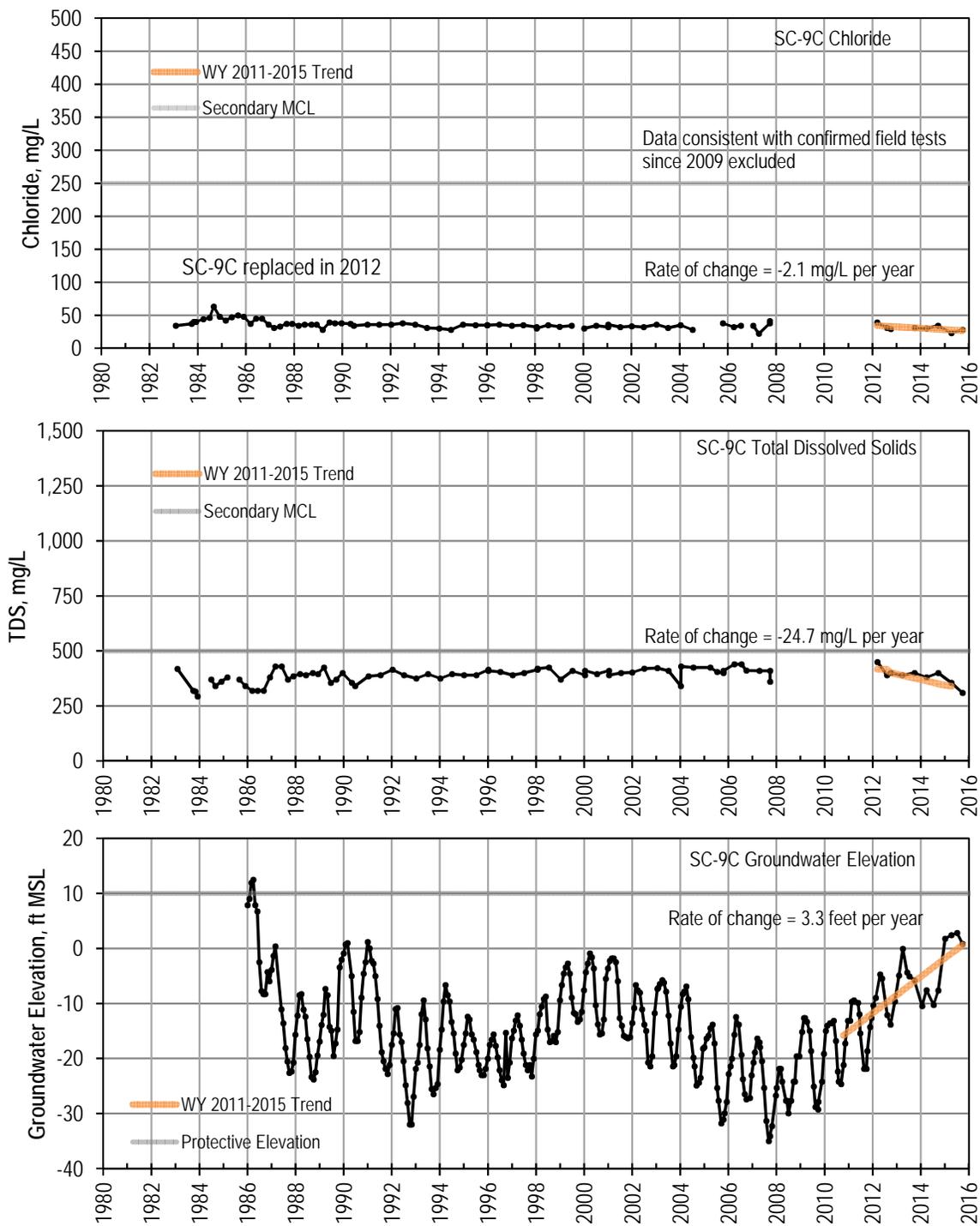


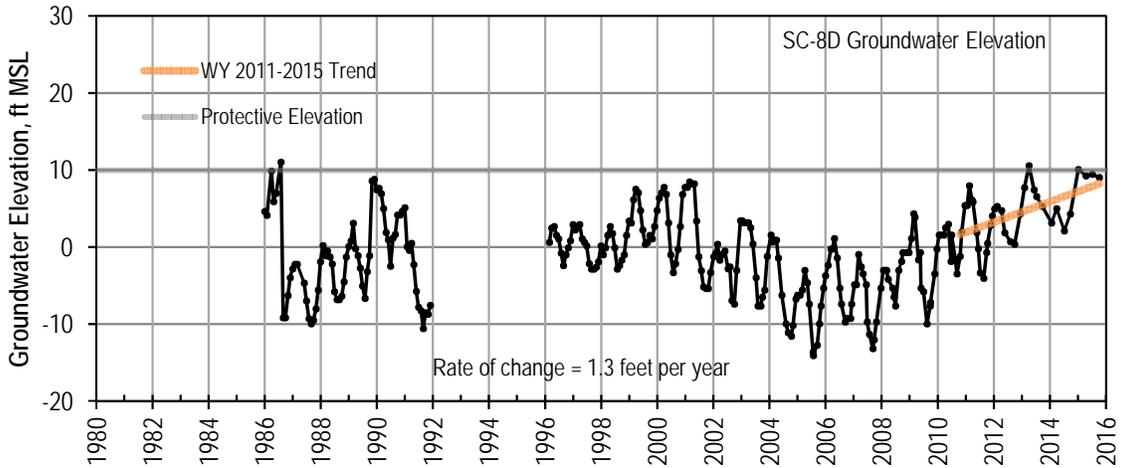
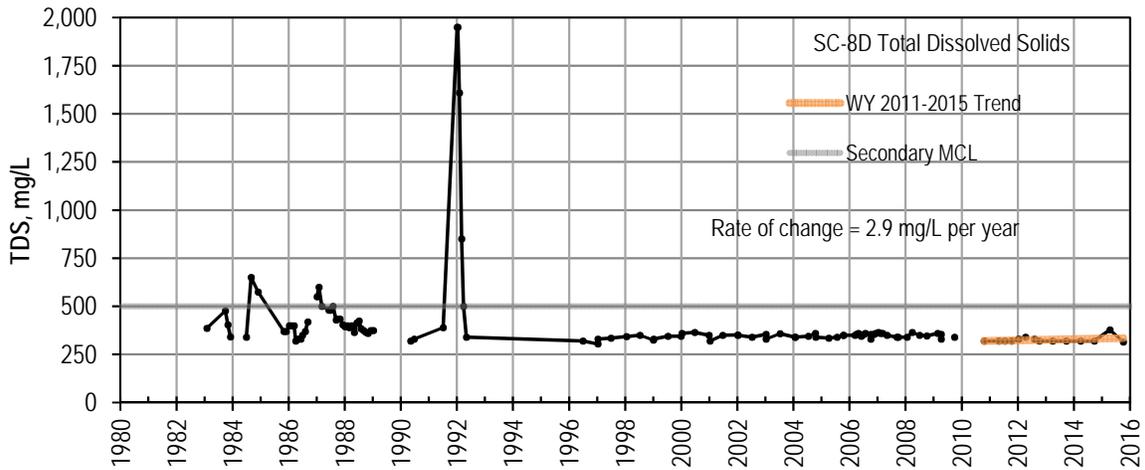
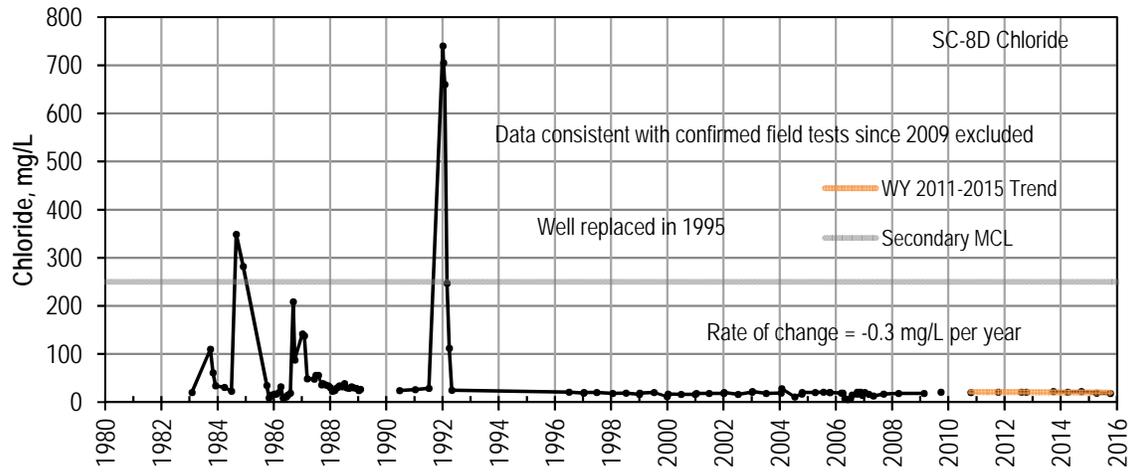


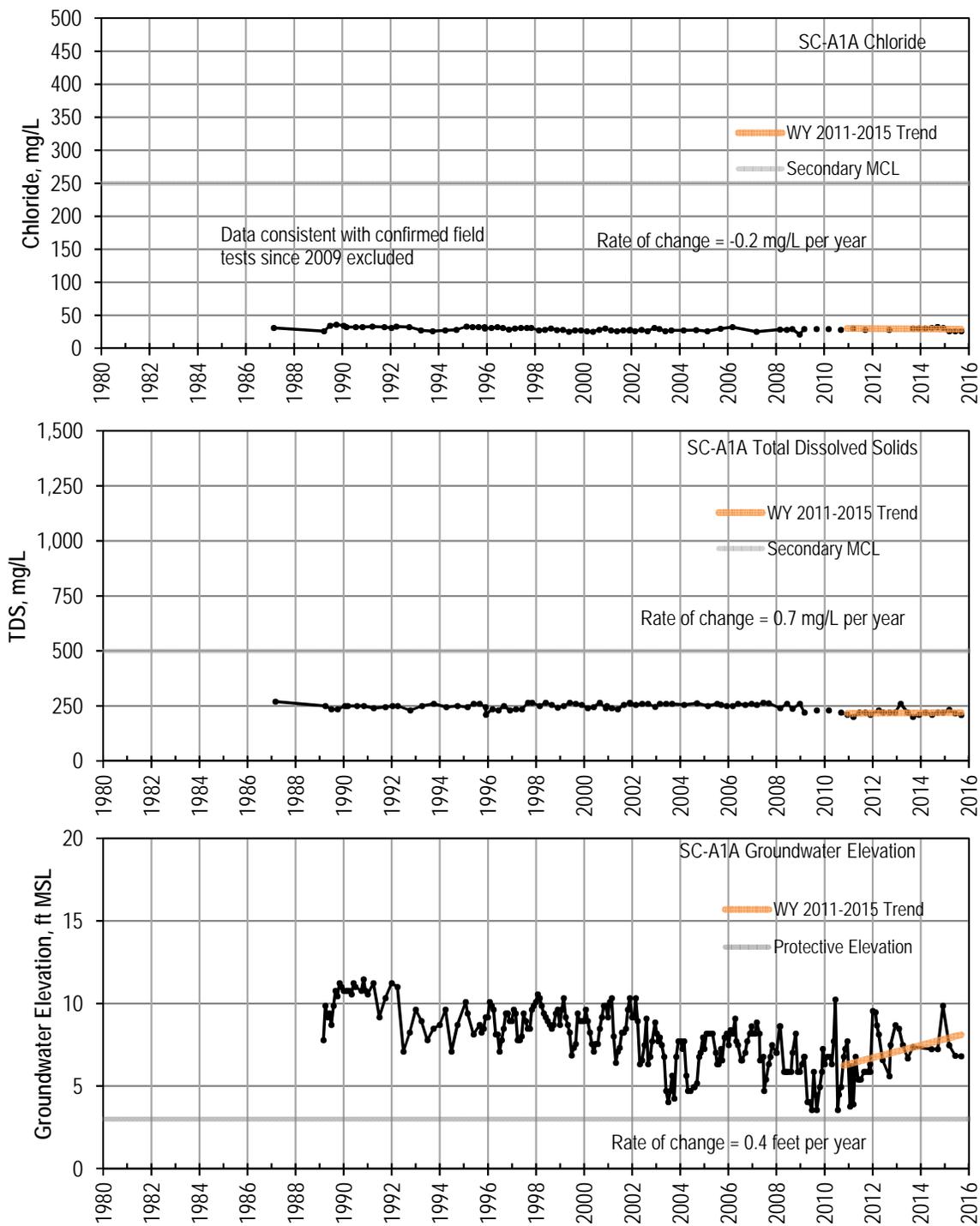


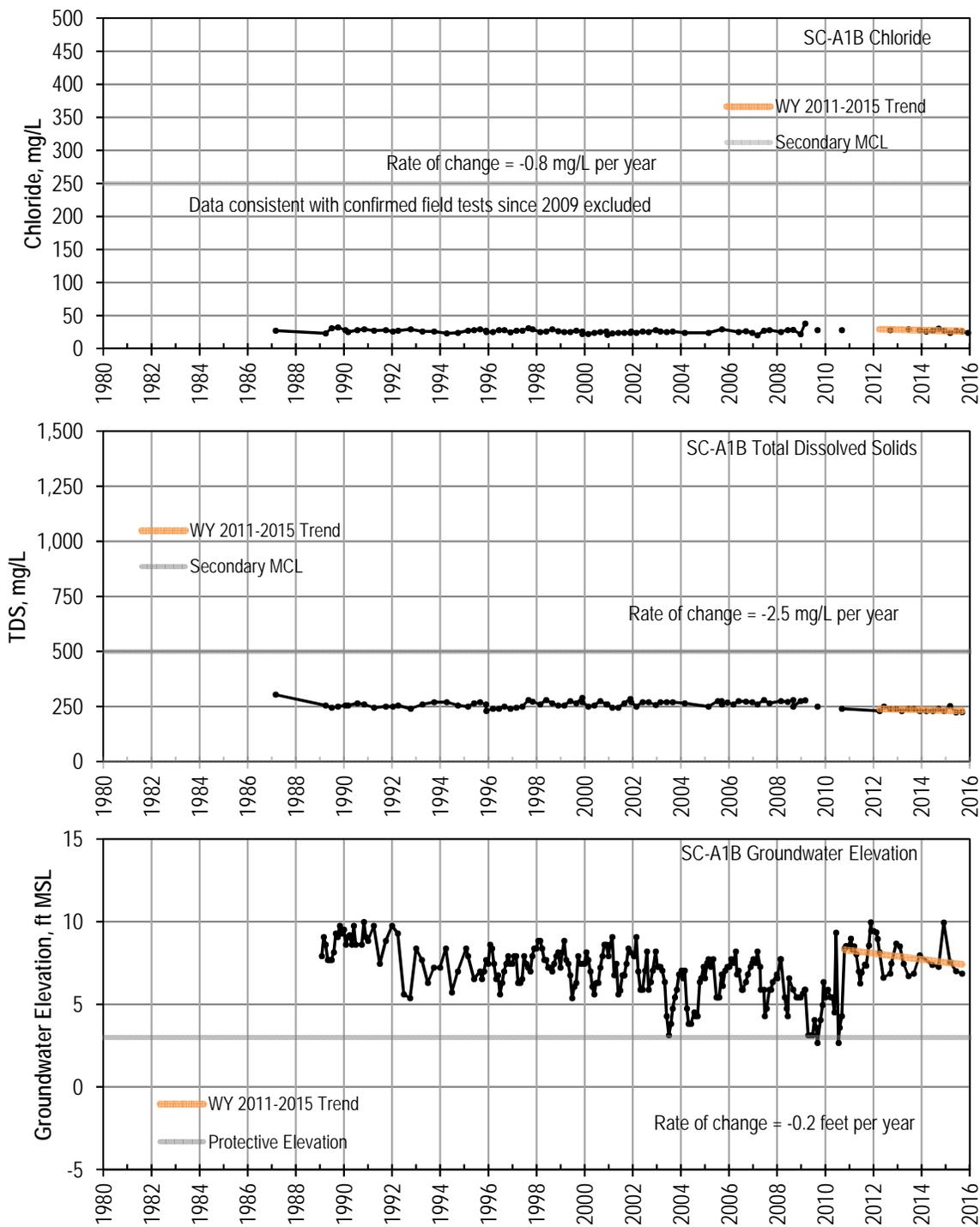


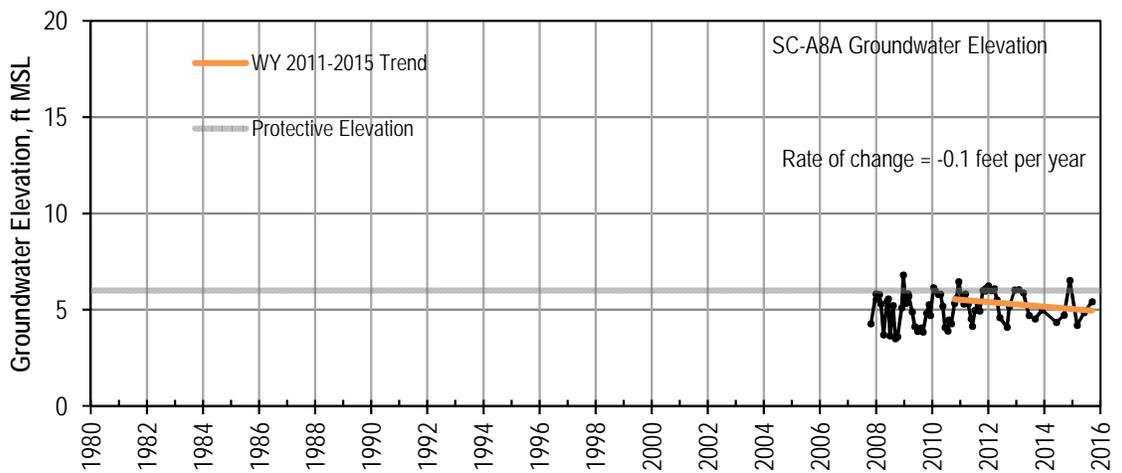
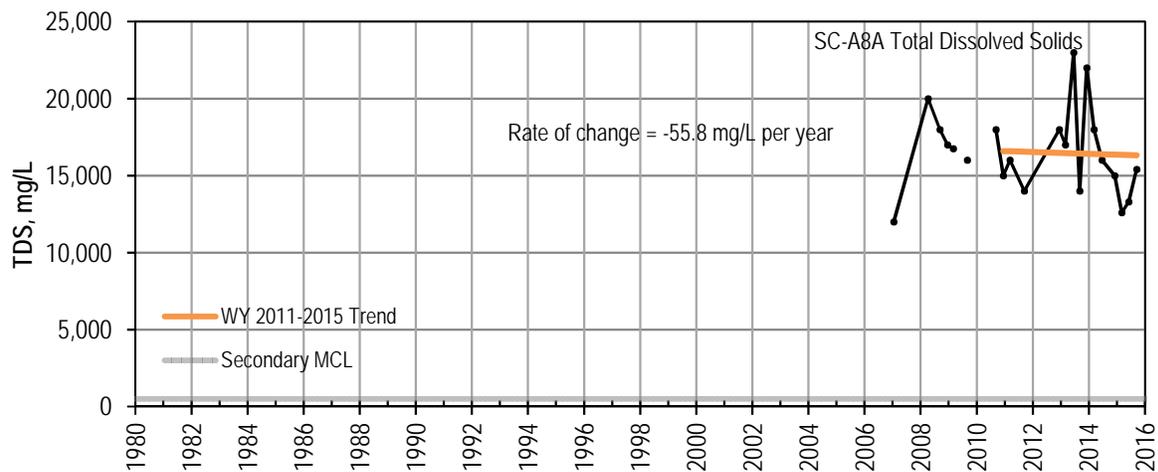
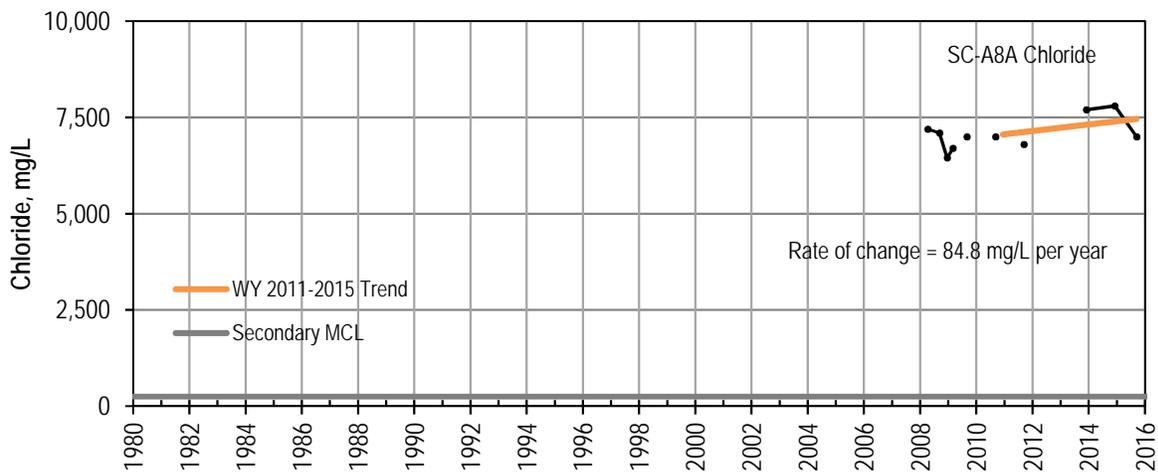


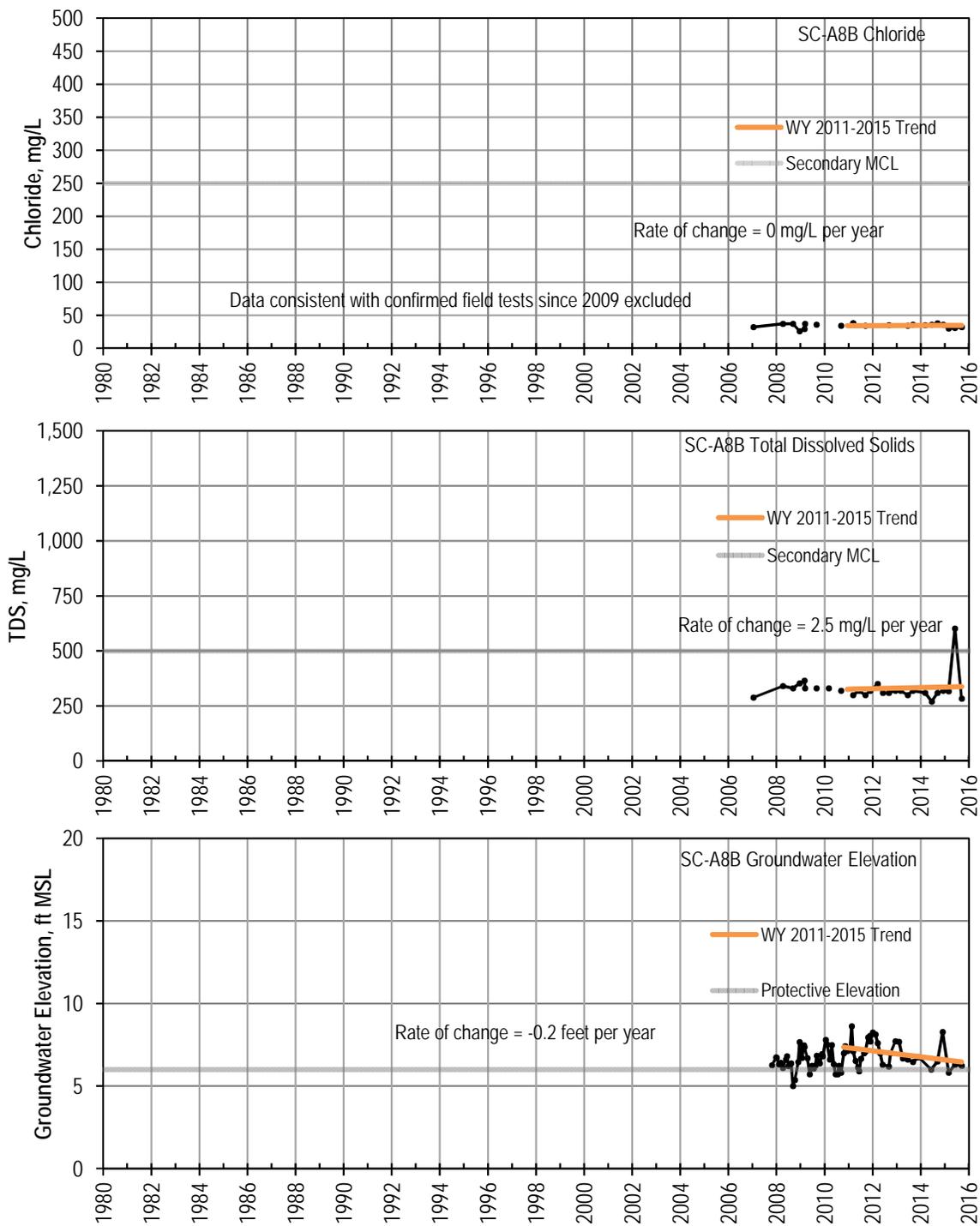


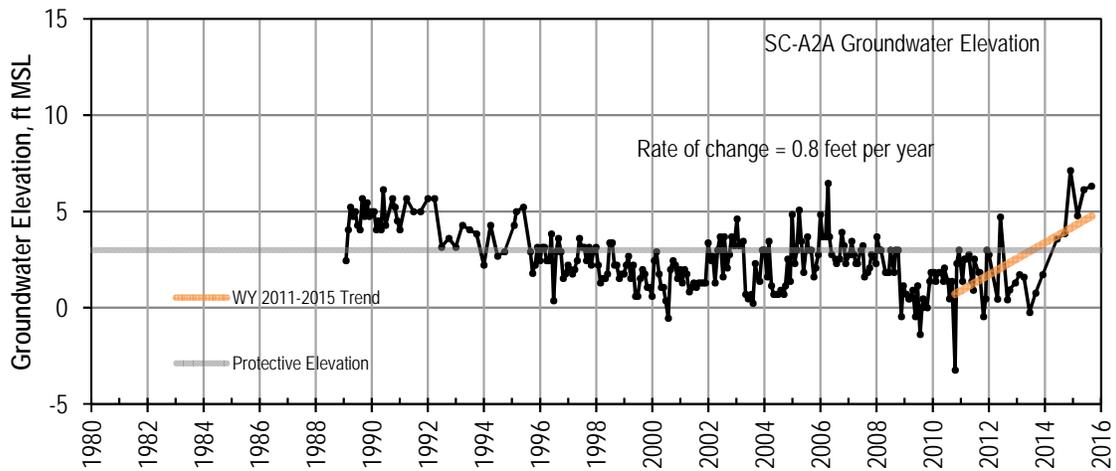
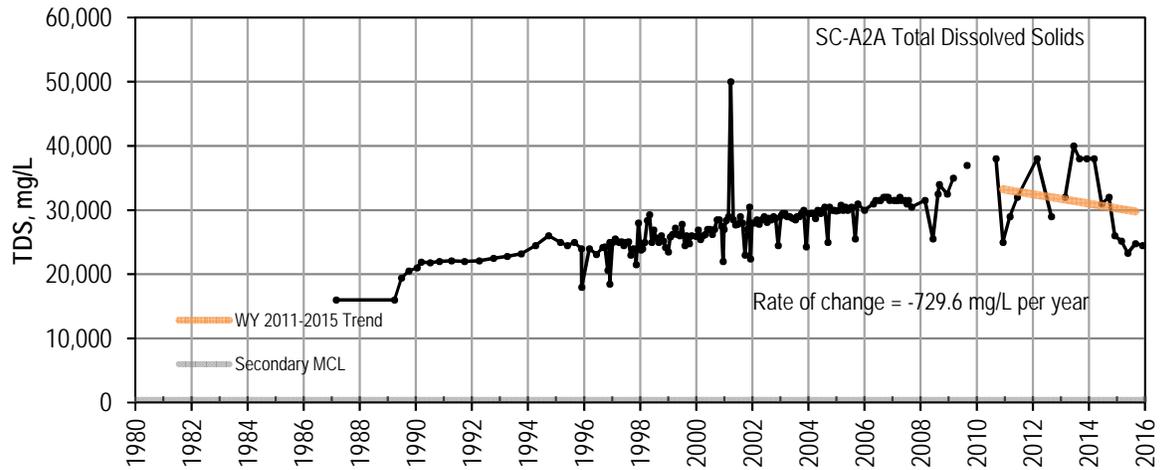
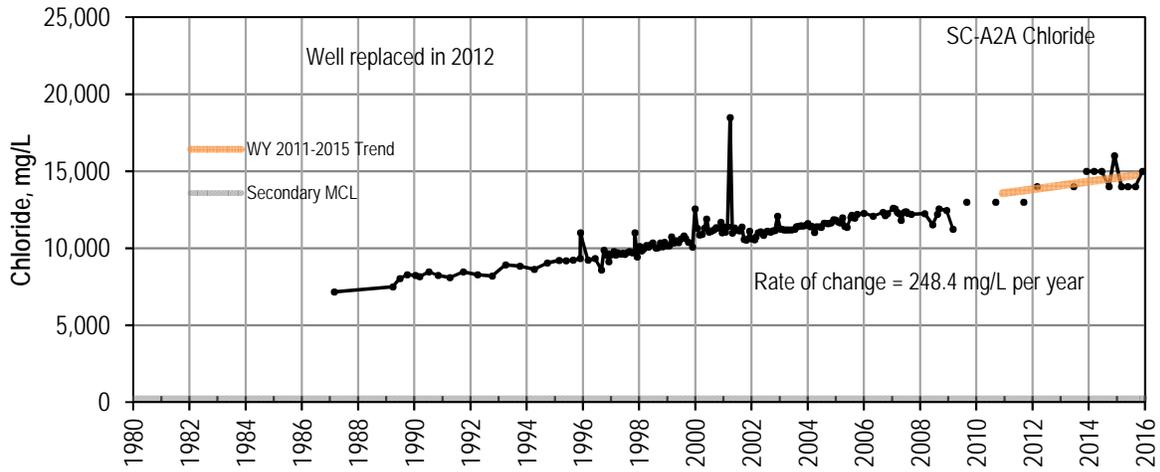


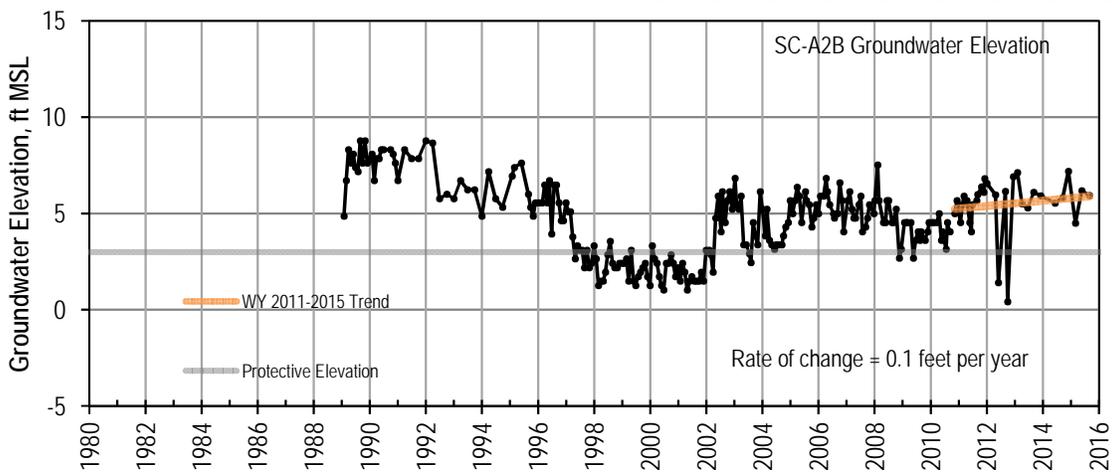
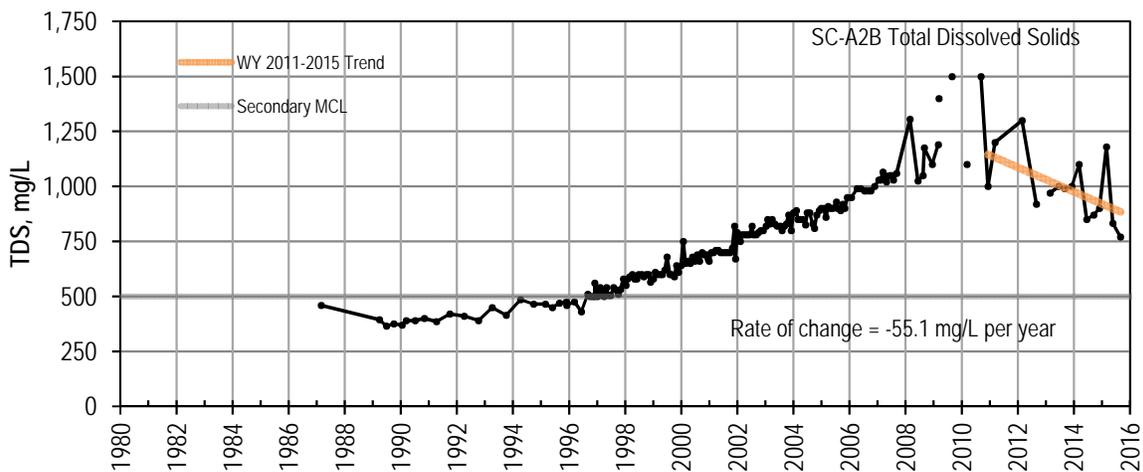
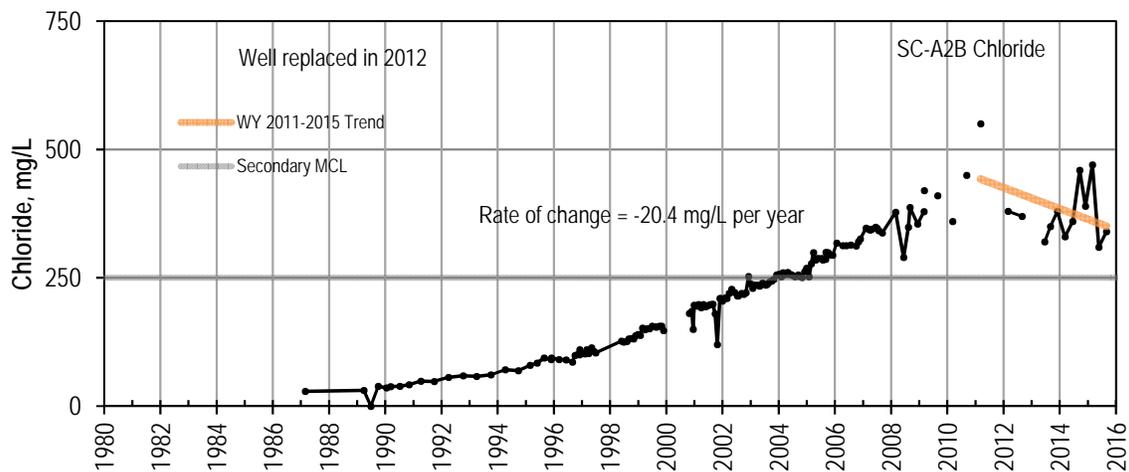


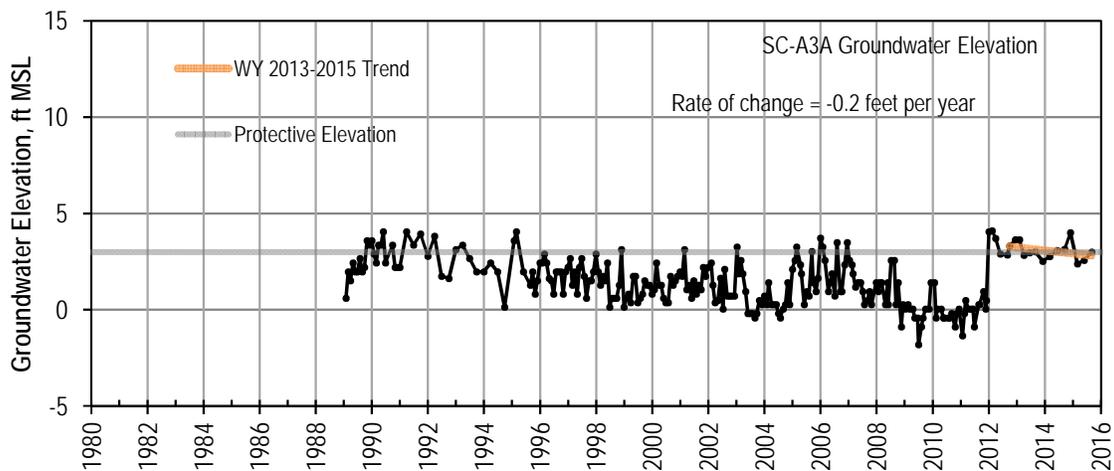
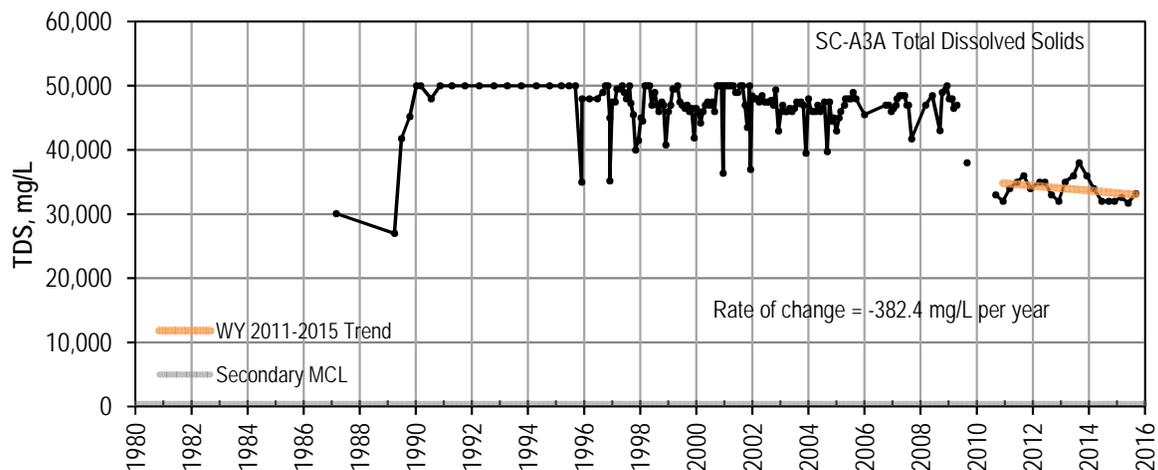
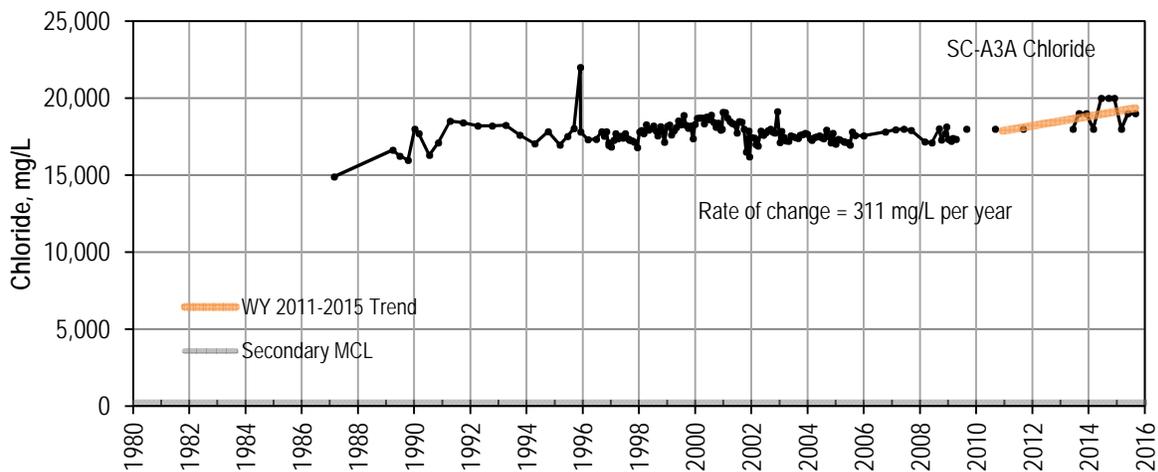


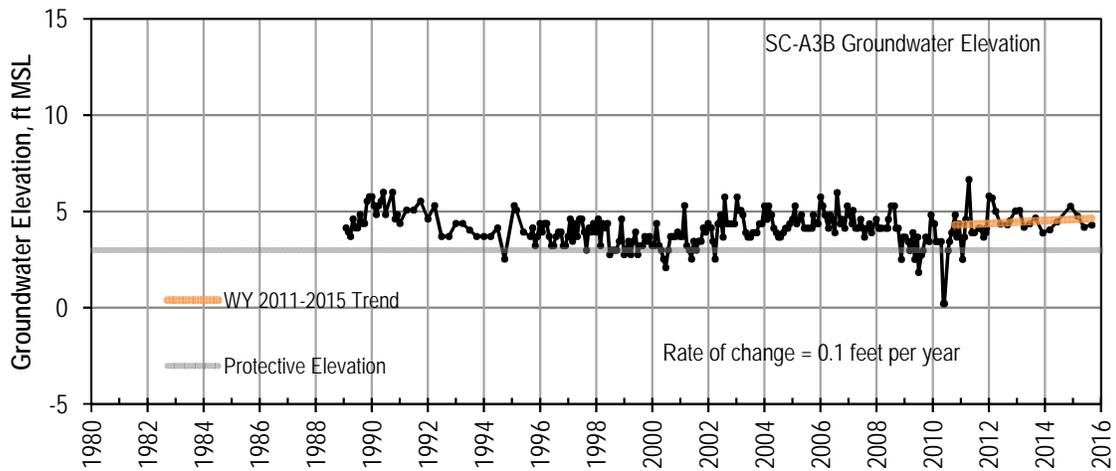
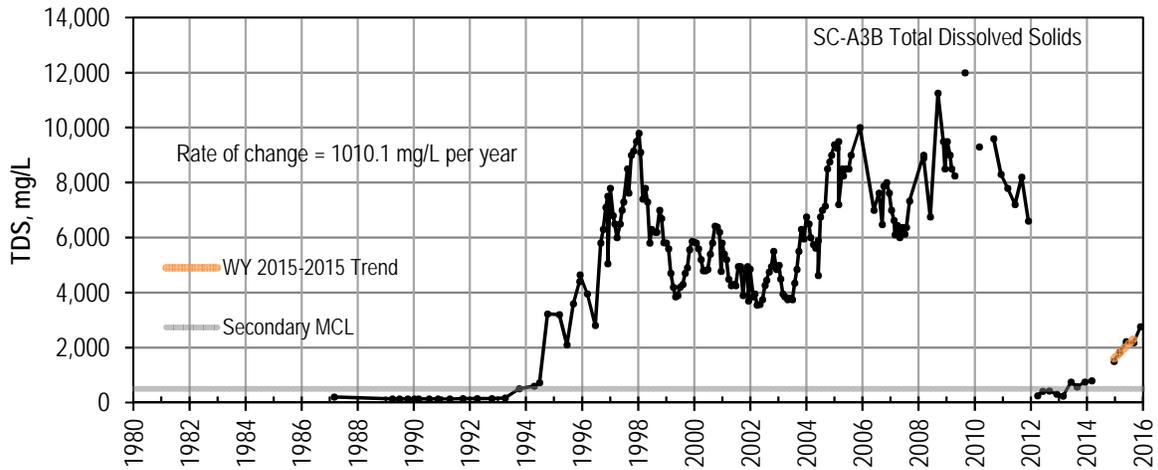
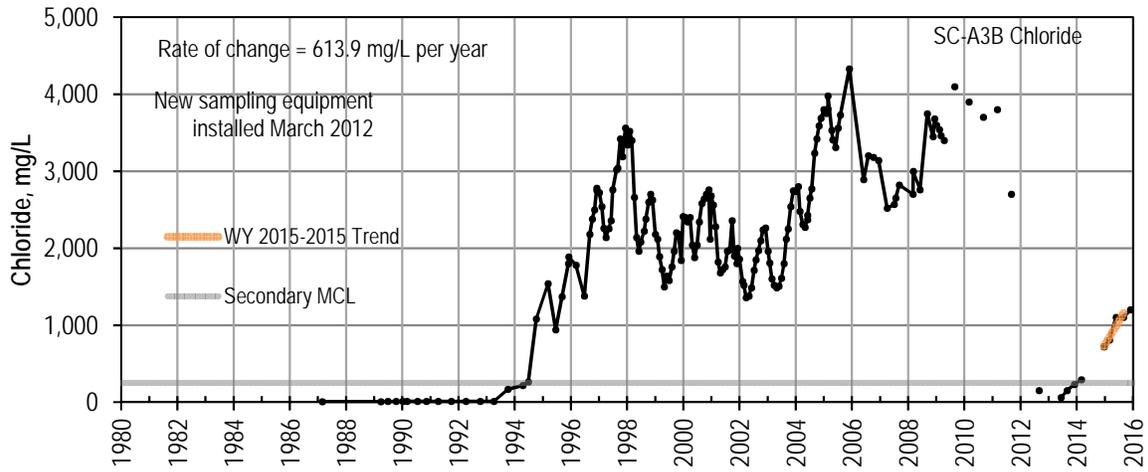


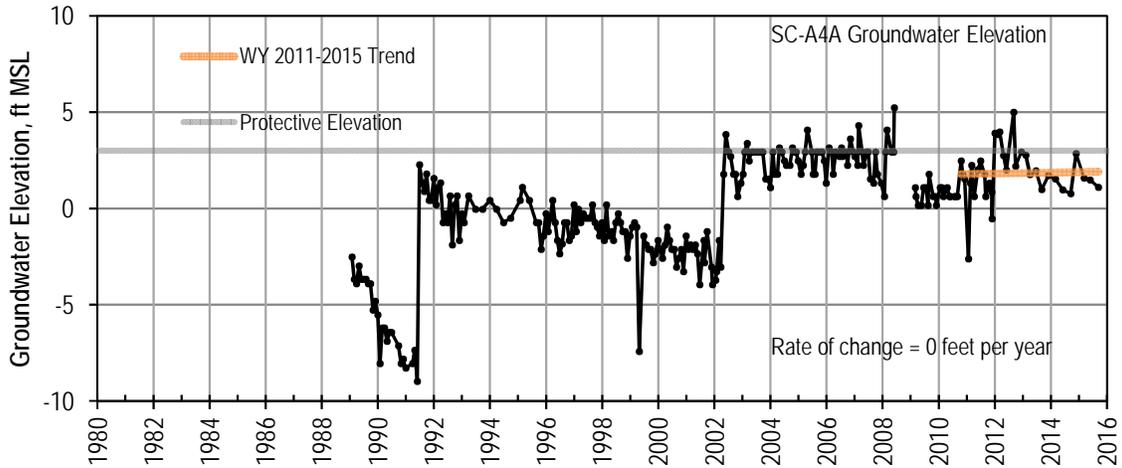
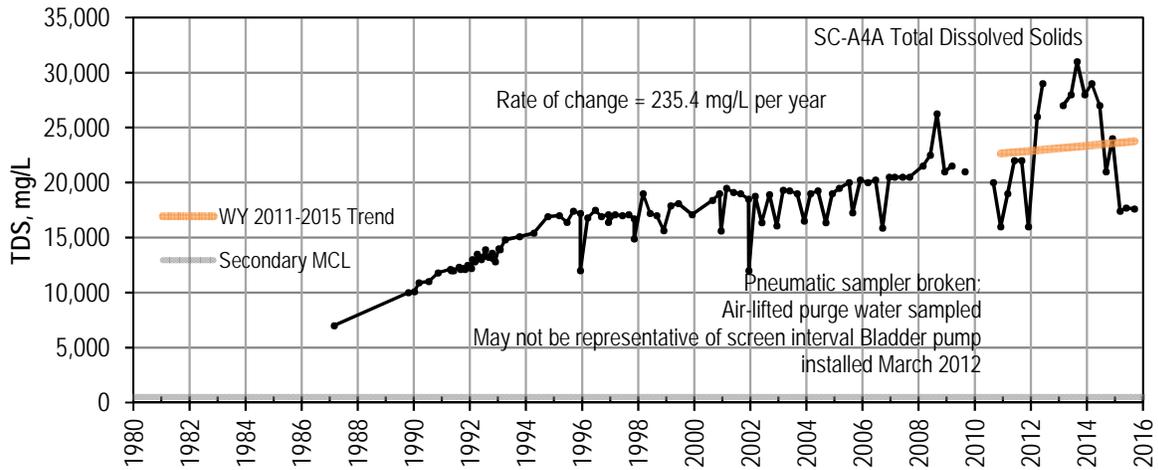
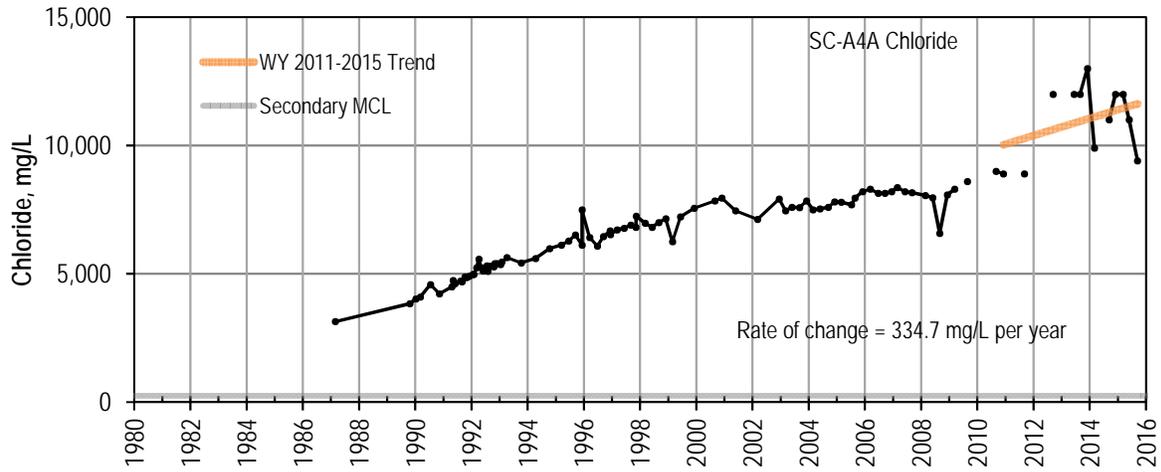


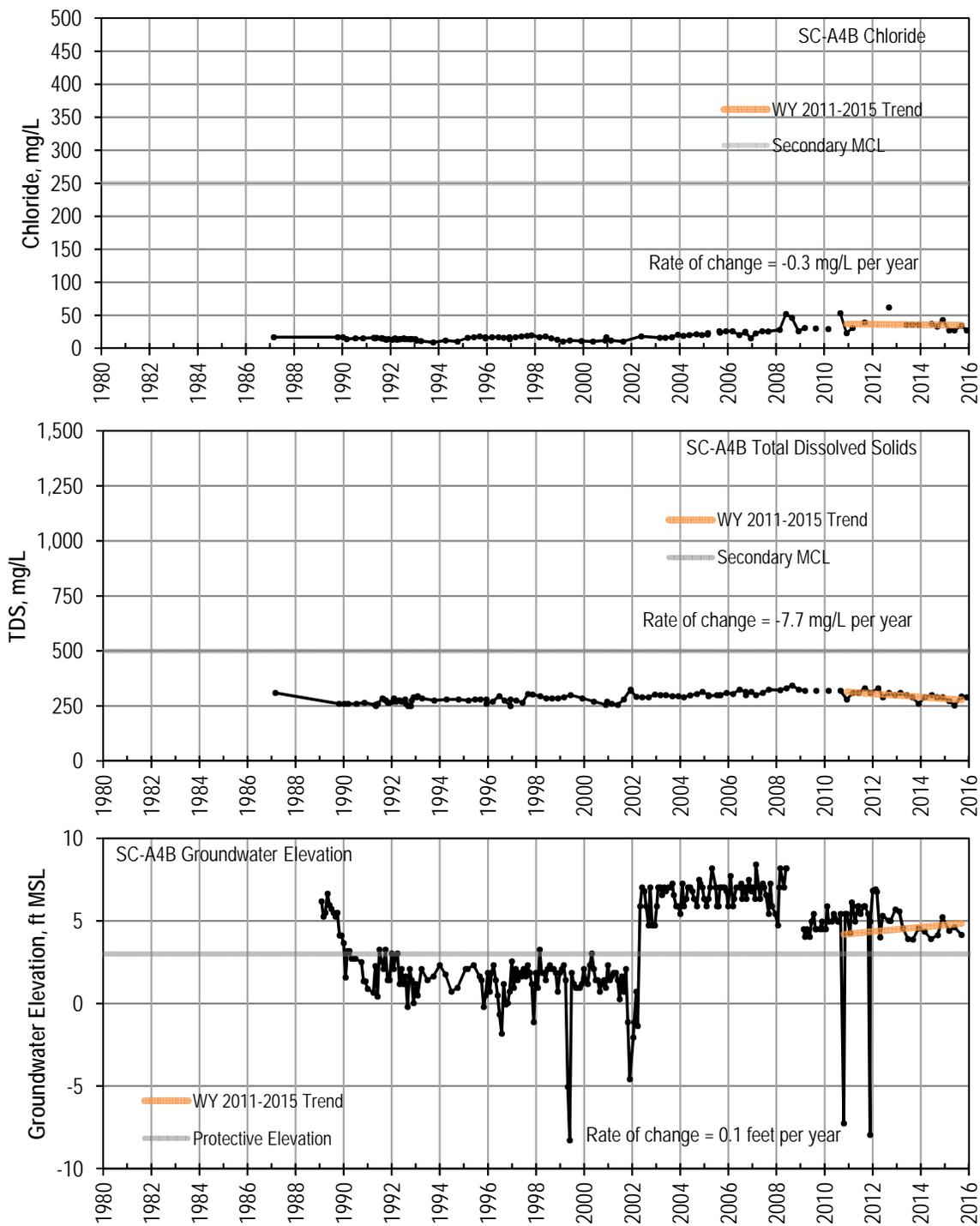


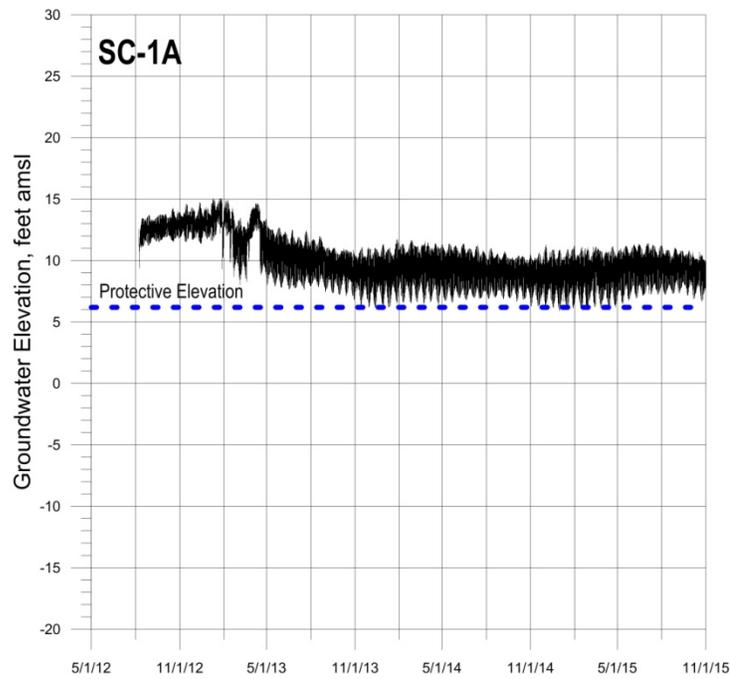
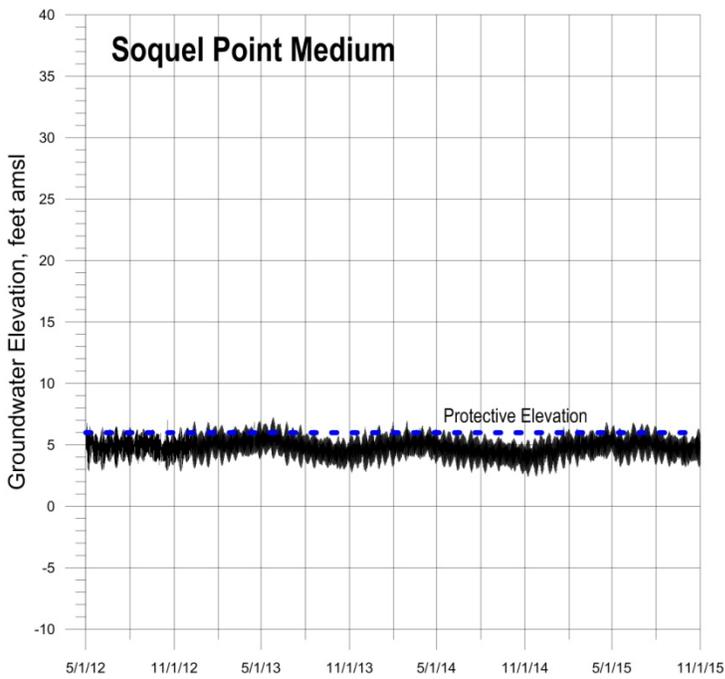
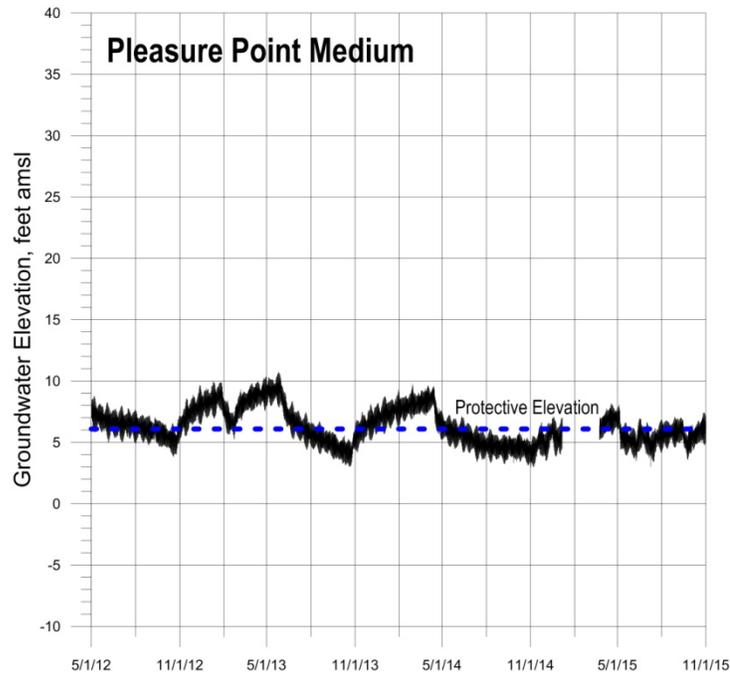
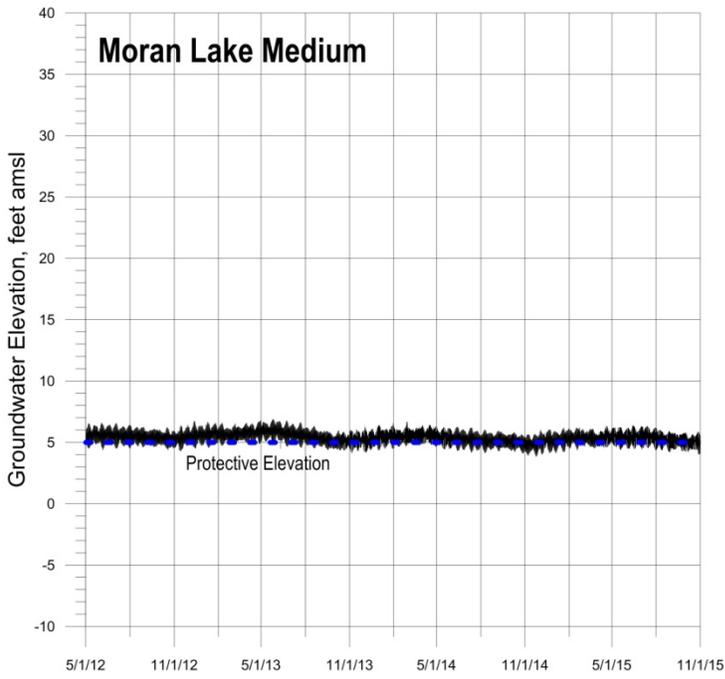


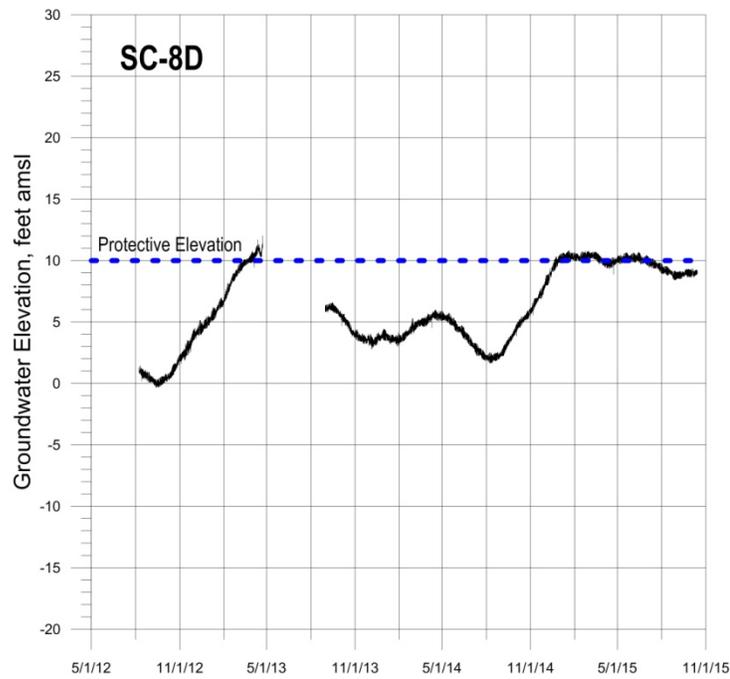
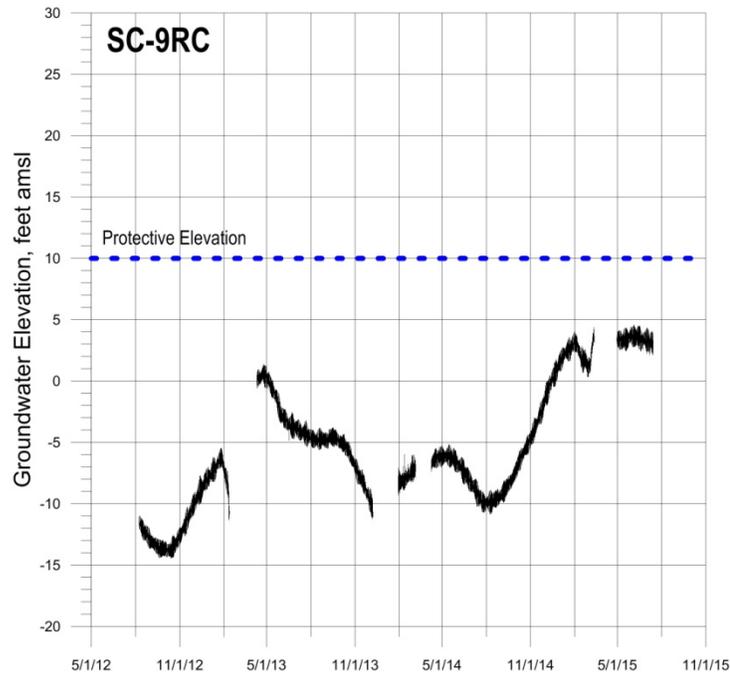
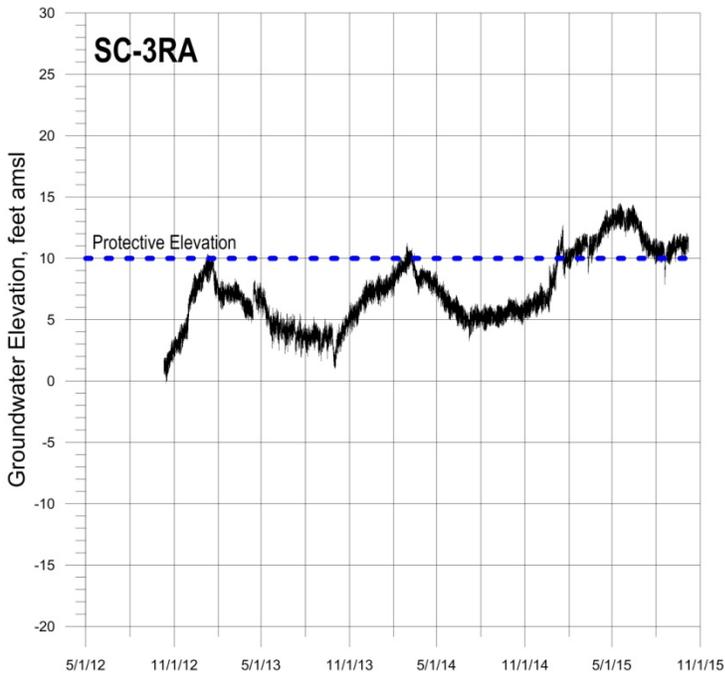


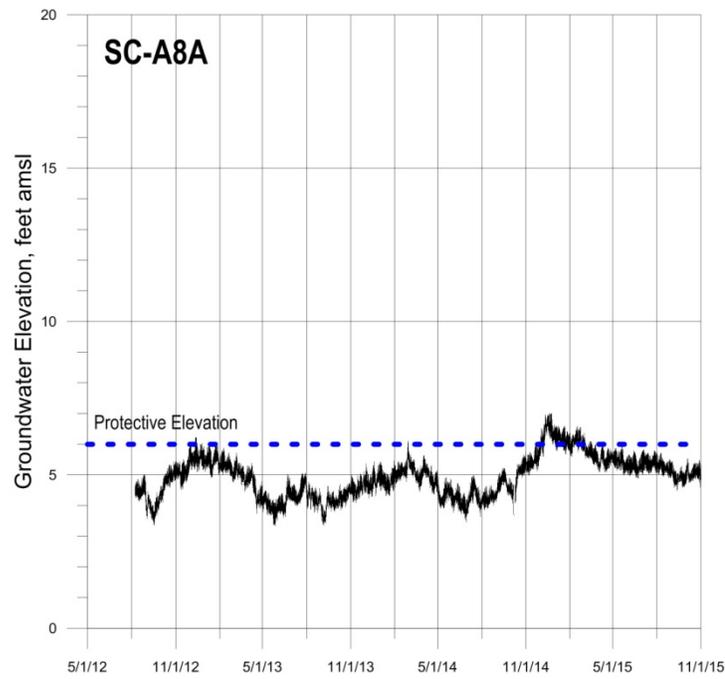
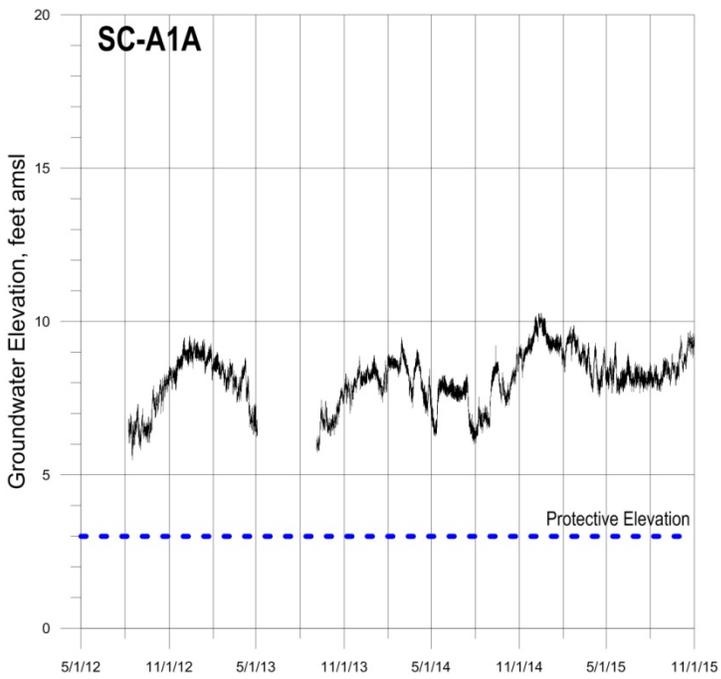
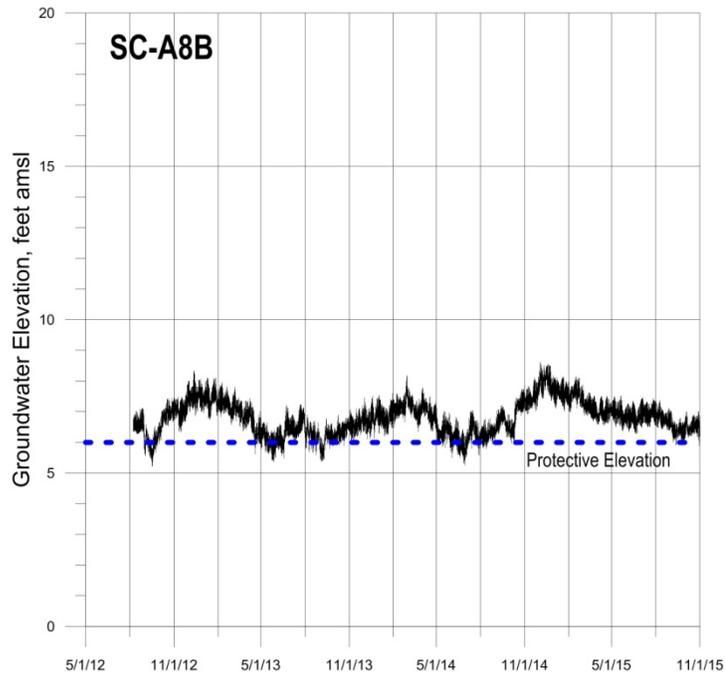
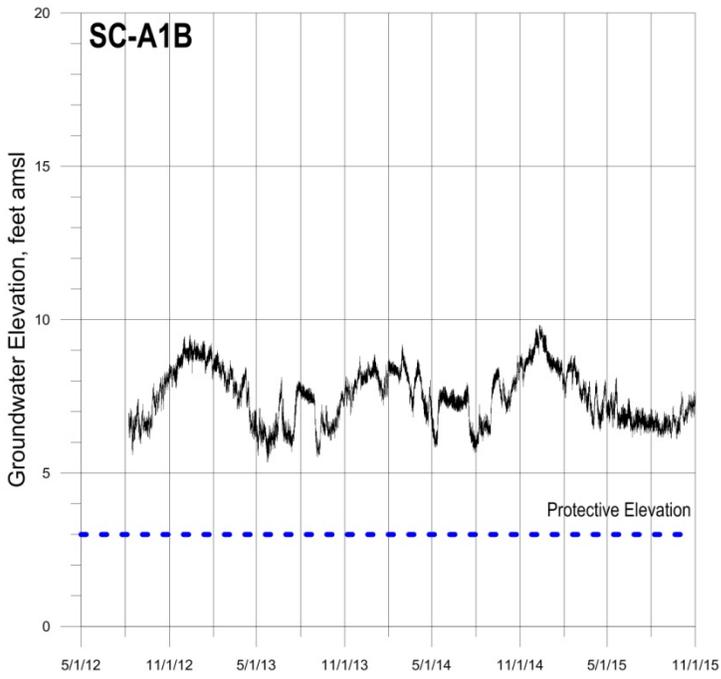


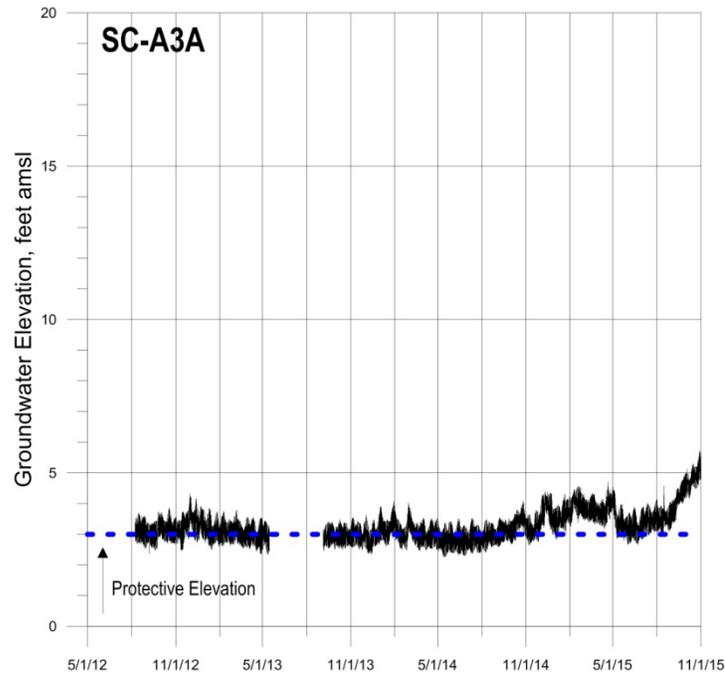
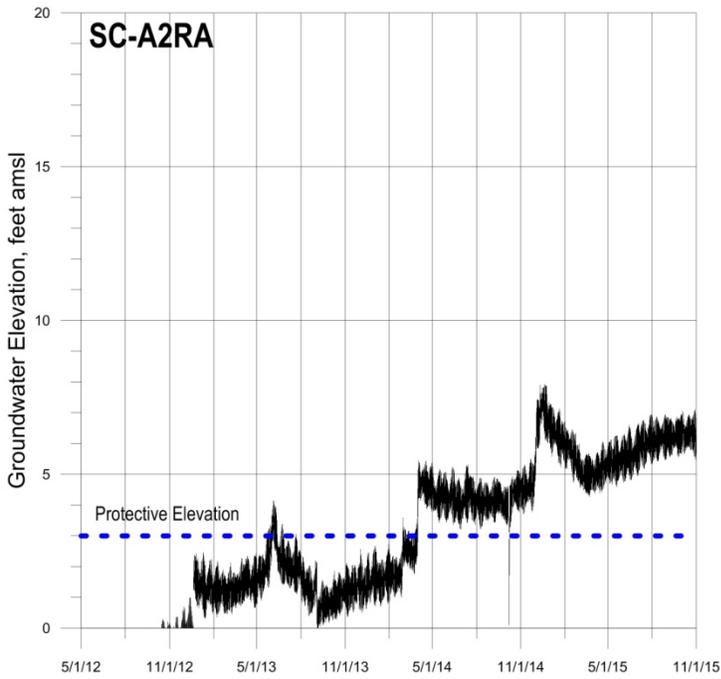
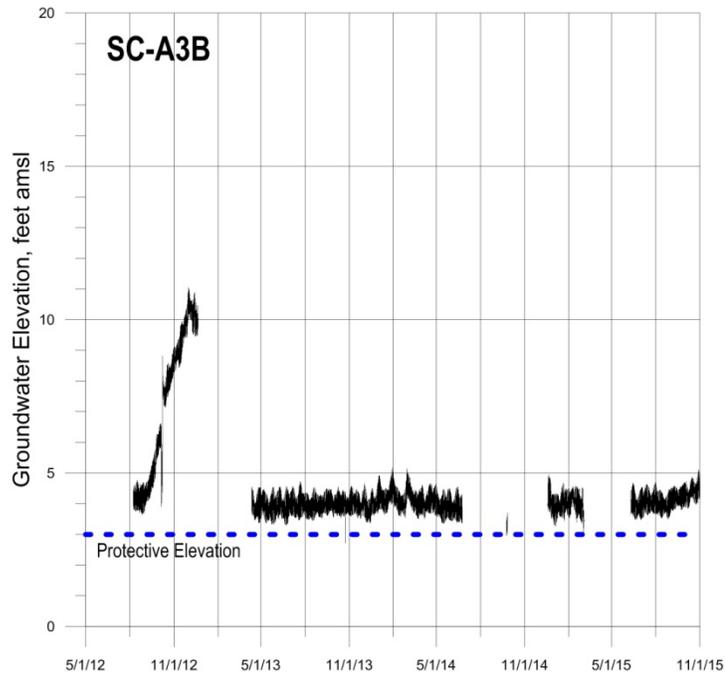
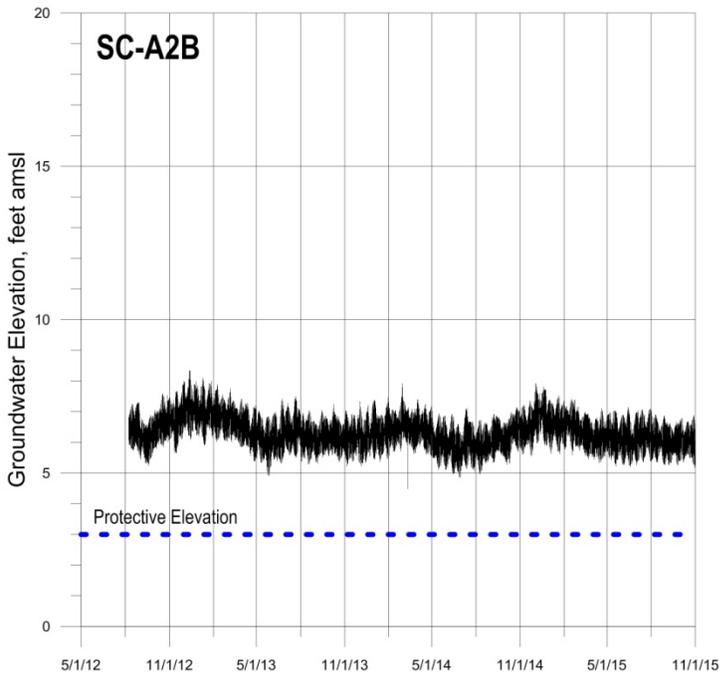


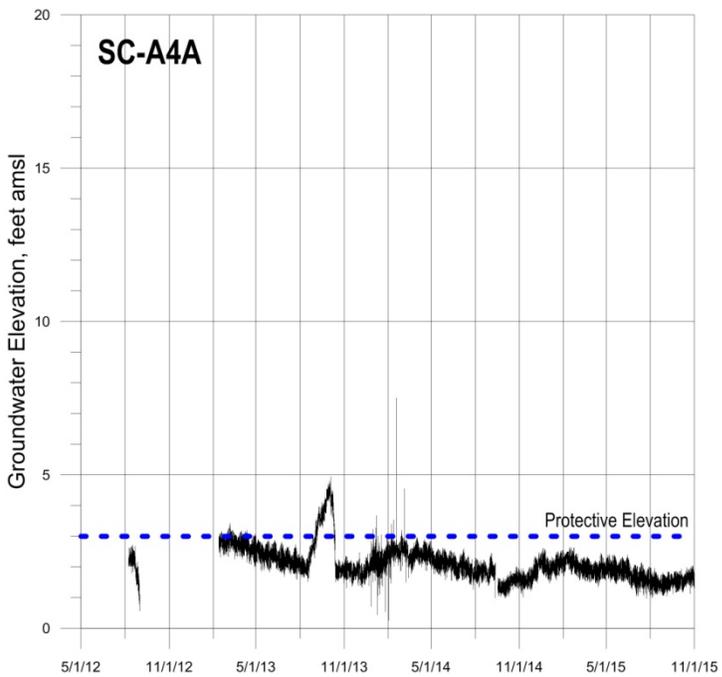
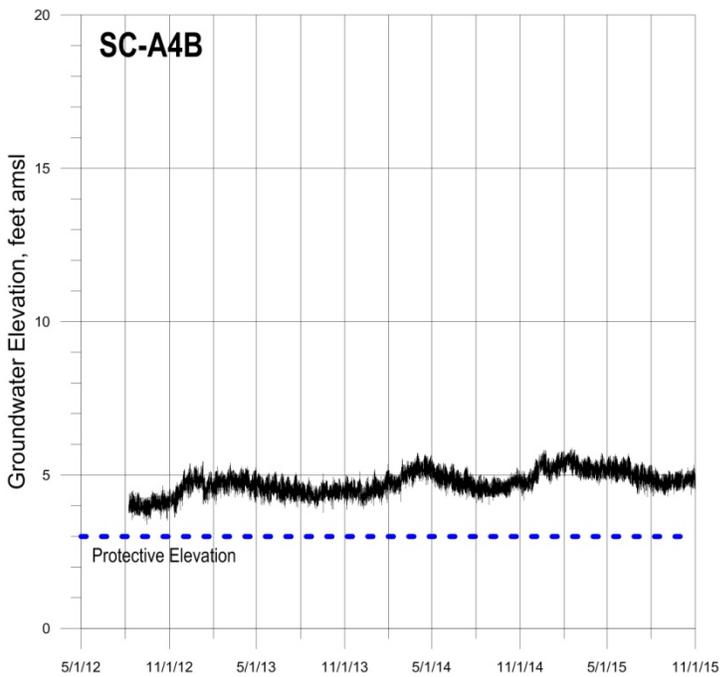












January 21, 2016

MEMO TO THE SOQUEL APTOS GROUNDWATER MANAGEMENT COMMITTEE

Subject: Agenda Item No. 5.4

Approval Request for Budget Increase
Related to Basin Boundary
Modification Effort

Attachment: Additional Scope and Cost Estimate for Preparation of Santa Cruz
Mid-County Basin Boundary Revision Request (dated January 13,
2016)

As shown in the attachment, Hydrometrics WRI submitted a request to increase the budget by \$12,790 for preparing the Mid-County Basin boundary revisions. The SAGMC approved a budget of \$40,000 for the boundary modification effort at the May 21, 2015 meeting (Item 5.4). At the August 20, 2015 SAGMC meeting (Item 5.9), Hydrometrics WRI was approved to perform the work at a cost estimated not-to-exceed \$39,940. If the request is approved the revised budget for the boundary modification work would be \$52,790.

The primary reasons for the increase request are due to unanticipated work associated with the level of technical effort for scientific boundary modifications for the western boundary and additional Department of Water Resources (DWR) regulations. Staff agrees that the boundary modification requires more effort than originally envisioned.

POSSIBLE BOARD ACTIONS

1. By MOTION, approve a budget increase of \$12,790 for the basin boundary modification effort.
2. Take no action.

By  (Ron Duncan)
on behalf of the staff executive team of
John Ricker, Ralph Bracamonte, Rosemary Menard, Ron Duncan



1814 Franklin Street, Suite 501
Oakland, CA 94612

Mr. Ron Duncan
Interim General Manager/SAGMC Exe. Team
Soquel Creek Water District
PO Box 1550
Capitola, CA 95010-1550

January 13, 2016

Subject: Additional Scope and Cost Estimate for Preparation of Santa Cruz
Mid-County Basin Boundary Revision Request

Dear Mr. Duncan:

As I informed you and other staff of Soquel-Aptos Groundwater Management Committee (SAGMC) member agencies last month, our effort for preparation of the basin boundary modification request for the Santa Cruz Mid-County Basin exceeded our purchase order amount of \$40,000 in December. More effort is required to complete the project as the basin boundary modification still needs to be submitted to the California Department of Water Resources (DWR).

The primary reason for effort exceeding the estimate in our scope approved by SAGMC August 20, 2015 was to meet the technical study requirements for scientific boundary modifications. This included meeting requirements for defining the western boundary based on a qualified map of the watershed and for compilation of technical information to define and document the boundary between the proposed Santa Cruz Mid-County and Santa Margarita Basin in coordination with Scotts Valley Water District's basin modification request.

Other contributing factors to the extra effort were additional DWR requirements added in the final regulations such as the initial notification requirement and additional support provided to SAGMC member staff related to obtaining local input.

The following summarizes the tasks that are necessary to complete the project, including tasks that were not anticipated when originally scoping the project.

- Task A1. Prepare Responses to Comments (originally part of Task 4: Support Outreach to Obtain Local Support). Five sets of comments requiring technical response have been received. This task includes attendance at the January 21 SAGMC meeting to discuss the comments and a potential revision of the modification.
- Task A2. Potentially Revise Boundary and Supporting Information in Report in Response to Comments. SAGMC and Scotts Valley Water District may decide to revise the proposed boundary between their basins to address the comments from Purisima Mutual Water Company.
- Task A3. Finalize Report and Submit Modification Request to DWR Online. After completion of the draft report, DWR introduced the online system it is requiring agencies to use to submit basin boundary modification requests. This will require submitting excerpts of our report. However, we will produce a final report as planned for SAGMC's reference.
- Task A4. Correspondence with DWR after Submittal (originally Task 5: Discussions with DWR after Submittal). Recent presentations by DWR indicate there may be limited opportunity to discuss the submittal with DWR, but this now includes the possibility that public input submitted to DWR in opposition to the proposed modification will require response.

COST ESTIMATE

The cost estimate for this additional scope by task is attached. The additional cost estimate is \$12,790.

Please let me know if you have any questions.

Sincerely,



Cameron Tana, Vice President
HydroMetrics Water Resources Inc.

Cc: Ralph Bracamonte, Central Water District
Rosemary Menard, City of Santa Cruz
John Ricker, Santa Cruz County

Table 1. Cost Estimate for Additional Scope to Complete Basin Boundary Modification Request

Tasks for Additional Scope	HydroMetrics WRI Labor							Labor Total		Other Direct Costs	TOTALS
	Derrick Williams	Cameron Tana	Georgina King	Mike Cloud	Sean Culkin	Nick Byler	Hours	(\$)			
	President	Vice President	Senior Hydrogeologist	Consulting Geologist	Senior Hydrogeologist	Geologist					
Rates	\$205	\$185	\$175	\$165	\$155	\$105			(\$)	(\$)	
Task A1											
Prepare Responses to Comments	2	6			3	2	13	\$ 2,195	\$ -	\$ 2,195	
January 21 SAGMC Meeting to Discuss Comments		5				1	6	\$ 1,030	\$ 100	\$ 1,130	
Subtotal Task A1							19	\$ 3,225	\$ 100	\$ 3,325	
Task A2											
Potentially Revise Boundary and Supporting Information	2	6		2	8	8	26	\$ 3,930	\$ -	\$ 3,930	
Subtotal Task A2							26	\$ 3,930	\$ -	\$ 3,930	
Task A3											
Finalize Report	1	2			4	2	9	\$ 1,405	\$ -	\$ 1,405	
Submit Modification Request to DWR Online		2			4	2	8	\$ 1,200	\$ -	\$ 1,200	
Subtotal Task A3							17	\$ 2,605	\$ -	\$ 2,605	
Task A4											
Correspondence with DWR after Submittal	2	8			4	4	18	\$ 2,930	\$ -	\$ 2,930	
Subtotal Task A4							18	\$ 2,930	\$ -	\$ 2,930	
TOTAL							80	\$ 12,690	\$ 100	\$ 12,790	

Item 5.5 Oral Report on Groundwater Model Update

January 12, 2016

MEMO TO THE SOQUEL APTOS GROUNDWATER MANAGEMENT COMMITTEE

Subject: Agenda Item 5.6

Results of Partner Agency Review of Draft
Joint Powers Agreement

Attachment 1: November 2015 version of JPA with comments

Attachment 2: Applicability of CEQA to formation of a Groundwater
Sustainability Agency using a JPA

Background

At the Soquel-Aptos Groundwater Management Committee (SAGMC) November 12, 2015 meeting, the Committee decided to ask SAGMC partner agencies to review the Draft Joint Powers Agreement (JPA) for the creation of the Santa Cruz Mid-County Groundwater Sustainability Agency (GSA). The purpose of this review was twofold:

1. to give partner agency elected officials an advanced opportunity to review and make comments on the provisions of the draft JPA so that any issues could be addressed and resolved at the January 21, 2016 SAGMC meeting; and
2. to facilitate a smooth and, ideally, issue free final adoption of the JPA by the partner agencies because any issues identified in this first review had been successfully addressed prior to the JPA coming to partner agency boards for final action.

Discussion

Attachment 1 is an annotated version of the JPA that includes all the input received from the multi-agency review except for any comments from the Board of the Central Water District whose review occurred after the deadline for incorporation of comments into this staff report. Staff will provide a revised version of the attachment incorporating any comments from Central at the January 21st meeting.

Staff recommends that the SAGMC members discuss the comments on the JPA and make decisions to accept, reject, or modify suggested language changes, as well as resolve any additional issues raised in the comments.

Regarding Article 10, Executive Director and Staff, as member agency executive level staff has been discussing approaches to providing administrative support and management for the new agency, some questions have been raised about whether the current version of Article 10, is adequate or appropriate. The current thinking of the executive level management staff is that some form of a collaborative staffing model for the GSA might be the right approach to use over the next few years as the focus of the GSA is on the creation

of the Groundwater Sustainability Plan. The current language of Article 10 is not aligned with this idea and while the provisions regarding using an executive director model for staffing the agency are not irrelevant, they do not provide direction allowing for the full range of options to be considered or implemented.

To provide greater flexibility and adaptability as well as greater certainty, staff would like to suggest two changes:

1. Revise Article 10 as suggested below, with a goal of keeping the direction in the JPA on administrative management of the agency relatively general and open to a range of possible approaches, and indicating that the specific direction about GSA administration and management will be incorporated into the GSA's bylaws; and
2. Work over the next several months to develop the specific details of how the administrative management of the agency would be handled (see agenda item 5.7 for the beginning of this discussion) so that these details can be incorporated into the GSA's bylaws. Using the bylaws to provide these details has the advantage of giving everyone a bit more time to sort out these important details, and also would create long term flexibility because the GSA can change its bylaws without having to go back to the member agencies for approval as would be required for changes to the JPA.

The suggested revisions to Article 10 are as follows:

ARTICLE 10

~~EXECUTIVE DIRECTOR AND STAFF~~ **AGENCY ADMINISTRATION, MANAGEMENT AND OPERATION**

10.1 The Board of Directors may select and implement an approach to Agency administration and management that is appropriate to the circumstances and adapted to the GSA's needs as they may evolve over time. Details of the Board's decision on Agency administration, management and operation shall be incorporated into the GSA's bylaws and reviewed and revised as needed using the established process for revising the GSA's bylaws.

~~Appointment. The Board of Directors may appoint an Executive Director, who may be, though need not be, an officer, employee, or representative of one of the Members. The Executive Director's compensation, if any, shall be determined by the Board of Directors.~~

~~1.1 — Duties. If appointed, the Executive Director shall serve as the chief administrative officer of the Agency, shall serve at the pleasure of the Board of Directors, and shall be responsible to the Board for the proper and efficient administration of the Agency. The Executive Director shall have the powers designated by the Board, or otherwise as set forth in the Bylaws.~~

~~1.2 — Term and Termination. The Executive Director shall serve until he/she resigns or the Board of Directors terminates his/her appointment.~~

~~1.3 — Staff and Services. The Executive Director may employ such additional full-time and/or part-time employees, assistants and independent contractors who may be necessary from time to time to accomplish the purposes of the Agency, subject to the approval of the Board of Directors. The Agency may contract with a Member or other public agency or private entity for various services, including without limitation those related to the Agency's finances, purchasing, risk management, information technology, and human resources. A written agreement shall be entered between the Agency and the Member or other public agency or private entity contracting to provide such service, and that agreement shall specify the terms on which such services shall be provided, including without limitation the compensation, if any, that shall be made for the provision of such services.~~

One other issue that staff explored and resolved related to the JPA relates to whether the action being taken by member agencies in creating the JPA is subject to CEQA. Attachment 2 is a copy of an email from Lauren Valk, of the Santa Cruz City Attorney's office, addressing the applicability of CEQA to the action of forming this JPA and concluding that it is not subject to CEQA.

POSSIBLE ACTIONS

1. Approve the JPA, as revised, based on comments from the partner agencies, and authorize it to be submitted to partner agencies for final approval of establishing the Santa Cruz Mid-County Groundwater Management Agency;
2. Direct staff to address issues and bring the JPA back to the SAGMC for review and action at the March 17th SAGMC meeting; or
3. No action.

By Rosemary Menard

on behalf of the staff executive team of

John Ricker, Ralph Bracamonte, Ron Duncan and Rosemary Menard

Agenda item 5.6
Attachment 1
Member Agency JPA Comment Draft

JOINT EXERCISE OF POWERS AGREEMENT

by and among

CENTRAL WATER DISTRICT

CITY OF SANTA CRUZ

COUNTY OF SANTA CRUZ

and

SOQUEL CREEK WATER DISTRICT

creating the

SANTA CRUZ MID-COUNTY GROUNDWATER AGENCY

[MONTH] [DAY], 2015

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**JOINT EXERCISE OF POWERS AGREEMENT
OF THE SANTA CRUZ MID-COUNTY GROUNDWATER AGENCY**

This **Joint Exercise of Powers Agreement** (“**Agreement**”) is made and entered into as of [MONTH] [DAY], [YEAR] (“Effective Date”), by and among the Central Water District, the City of Santa Cruz, the County of Santa Cruz, and the Soquel Creek Water District, sometimes referred to herein individually as a “**Member**” and collectively as the “**Members**” for purposes of forming the Santa Cruz Mid-County Groundwater Agency (“**Agency**”) and setting forth the terms pursuant to which the Agency shall operate. Capitalized defined terms used herein shall have the meanings given to them in Article 1 of this Agreement.

RECITALS

- A. Each of the Members is a local agency, as defined by the Sustainable Groundwater Management Act of 2014 (“**SGMA**”), duly organized and existing under and by virtue of the laws of the State of California, and each Member can exercise powers related to groundwater management.
- B. SGMA requires designation of a groundwater sustainability agency (“**GSA**”) by June 30, 2017, for groundwater basins designated by the California Department of Water Resources (“**DWR**”) as medium- and high-priority basins.
- C. SGMA requires adoption of a groundwater sustainability plan (“**GSP**”) by January 31, 2020, for all medium- and high-priority basins identified as being subject to critical conditions of overdraft.
- D. Each of the Members either extracts groundwater from or regulates land use activities overlying a common groundwater basin located within the mid-county coastal region of the County of Santa Cruz. This Basin includes all or part of four basins identified in DWR’s Bulletin Number 118, including the following basins (designated by the name of the basin and number assigned to it in DWR-Bulletin No. 118): Soquel Valley (3-1), West Santa Cruz Terrace (3-26), Santa Cruz Purisima Formation (3-21), and Pajaro Valley Basin (3-2). All or some of these basins have been designated as medium or high priority basins. Through the Agency, the Members intend to request provided modifications to of the Bulletin-118 boundaries as allowed by Title 23 of the California Code of Regulations to create a new consolidated basin called the “Santa Cruz Mid-County Groundwater Basin” with 3-1 as the number for the consolidated basin under DWR Bulletin No. 118 (hereafter “**Basin**”).
- E. The Members intend for the Agency to develop a GSP and manage the Basin pursuant to SGMA.
- F. Under SGMA, a combination of local agencies may form a GSA through a joint powers agreement.
- G. The Members have determined that the sustainable management of the Basin pursuant to SGMA may best be achieved through the cooperation of the Members operating through a joint powers agency.
- H. The Joint Exercise of Powers Act of 2000 (“Act”) authorizes the Members to create a joint powers authority, to jointly exercise any power common to the Members, and to exercise additional powers granted under the Act.

Comment [A1]: This has already been submitted to DWR.

Comment [RCM2]: Comment from SqCWD

I. The Act, including the Marks-Roos Local Bond Pooling Act of 1985 (Government Code sections 6584, *et seq.*), authorizes an entity created pursuant to the Act to issue bonds, and under certain circumstances, to purchase bonds issued by, or to make loans to, the Members for financing public capital improvements, working capital, liability and other insurance needs or projects whenever doing so results in significant public benefits, as determined by the Members. The Act further authorizes and empowers a joint powers authority to sell bonds so issued or purchased to public or private purchasers at public or negotiated sales.

J. Based on the foregoing legal authority, the Members desire to create a joint powers authority for the purpose of taking all actions deemed necessary by the joint powers authority to ensure sustainable management of the Basin as required by SGMA.

K. The governing board of each Member has determined it to be in the Member’s best interest and in the public interest that this Agreement be executed.

TERMS OF AGREEMENT

In consideration of the mutual promises and covenants herein contained, the Members agree as follows:

**ARTICLE 1
DEFINITIONS**

The following terms have the following meanings for purposes of this Agreement:

1.1 “Act” means the Joint Exercise of Powers Act, set forth in Chapter 5 of Division 7 of Title 1 of the Government Code, sections 6500, *et seq.*, including all laws supplemental thereto.

1.2 “Agreement” has the meaning assigned thereto in the Preamble.

1.3 “Auditor” means the auditor of the financial affairs of the Agency appointed by the Board of Directors pursuant to Section 14.3 of this Agreement.

1.4 “Agency” has the meaning assigned thereto in the Preamble.

1.5 “Basin” has the meaning assigned thereto in Recital D.

1.6 “Board of Directors” or “Board” means the governing body of the Agency as established by Article 6 of this Agreement.

1.7 “Bylaws” means the bylaws, if any, adopted by the Board of Directors pursuant to Article 11 of this Agreement to govern the day-to-day operations of the Agency.

1.8 “Director” and “Alternate Director” mean a director or alternate director appointed by a Member pursuant to Sections 6.3 and 6.4 of this Agreement. “Member Director” is a Director or Alternate Director appointed by and representing a Member agency pursuant to Section 6.1.1 of this agreement.

Comment [RCM3]: County comment

1.9 “DWR” has the meaning assigned thereto in Recital B.

1.10 “Executive Director” means the chief administrative officer of the Agency to be appointed by the Board of Directors pursuant to Article 10 of this Agreement.

1.11 “GSA” has the meaning assigned thereto in Recital B.

1.12 “GSP” has the meaning assigned thereto in Recital C.

1.13 “Member” means each party to this Agreement that satisfies the requirements of Section 5.1 of this Agreement, including any new members as may be authorized by the Board, pursuant to Section 5.2 of this Agreement.

1.14 “Officer(s)” means the Chair, Vice Chair, Secretary, or Treasurer of the Agency to be appointed by the Board of Directors pursuant to Section 7.1 of this Agreement.

1.15 “SGMA” has the meaning assigned thereto in Recital A.

1.16 “State” means the State of California.

ARTICLE 2 CREATION OF THE AGENCY

2.1 Creation of a Joint Powers Authority. There is hereby created pursuant to the Act a joint powers authority, which will be a public entity separate from the Members to this Agreement, and shall be known as the Santa Cruz Mid-County Joint Powers Agency (“Agency”). Within 30 days after the Effective Date of this Agreement and after any amendment, the Agency shall cause a notice of this Agreement or amendment to be prepared and filed with the office of the California Secretary of State containing the information required by Government Code section 6503.5. Within 10 days after the Effective Date of this Agreement, the Agency shall cause a statement of the information concerning the Agency, required by Government Code section 53051, to be filed with the office of the California Secretary of State and with the County Clerk for the County of Santa Cruz, setting forth the facts required to be stated pursuant to Government Code section 53051(a).

2.2 Purpose of the Agency. Each Member to this Agreement has in common the power to study, plan, develop, finance, acquire, construct, maintain, repair, manage, operate, control, and govern the water supply and water management within the Basin, either alone or in cooperation with other public or private non-member entities, and each is a local agency eligible to serve as a GSA within the Basin, either alone or jointly through a joint powers agreement as provided for by SGMA. 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.

**ARTICLE 3
TERM**

This Agreement shall become effective upon execution by each of the Members and shall remain in effect until terminated pursuant to the provisions of Article 17 (Withdrawal of Members) of this Agreement.

**ARTICLE 4
POWERS**

The Agency shall possess the power in its own name to exercise any and all common powers of its Members reasonably related to the purposes of the Agency, including but not limited to the following powers, together with such other powers as are expressly set forth in the Act and in SGMA. For purposes of Government Code section 6509, the powers of the Agency shall be exercised subject to the restrictions upon the manner of exercising such powers as are imposed on the County of Santa Cruz, and in the event of the withdrawal of the County of Santa Cruz as a Member under this Agreement, then the manner of exercising the Agency's powers shall be those restrictions imposed on the City of Santa Cruz.

- 4.1 To exercise all powers afforded to a GSA pursuant to and as permitted by SGMA.
- 4.2 To develop, adopt and implement the GSP pursuant to SGMA.
- 4.3 To adopt rules, regulations, policies, bylaws and procedures governing the operation of the Agency and adoption and implementation of the GSP.
- 4.4 To obtain rights, permits and other authorizations for or pertaining to implementation of the GSP.
- 4.5 To perform other ancillary tasks relating to the operation of the Agency pursuant to SGMA, including without limitation, environmental review, engineering, and design.
- 4.6 To make and enter into all contracts necessary to the full exercise of the Agency's power.
- 4.7 To employ, designate or otherwise contract for the services of agents, officers, employees, attorneys, engineers, planners, financial consultants, technical specialists, advisors, and independent contractors.
- 4.8 To exercise jointly the common powers of the Members, as directed by the Board, in developing and implementing a GSP for the Basin.
- 4.9 To investigate legislation and proposed legislation affecting the Basin and to make appearances regarding such matters.
- 4.10 To cooperate and to act in conjunction and contract with the United States, the State of California or any agency thereof, counties, municipalities, public and private corporations of any kind (including without limitation, investor-owned utilities), and individuals, or any of them, for any and all purposes necessary or convenient for the full exercise of the powers of the Agency.
- 4.11 To incur debts, liabilities or obligations, to issue bonds, notes, certificates of participation, guarantees, equipment leases, reimbursement obligations and other indebtedness, and, to the extent provided for in a duly adopted Agency to impose assessments, groundwater extraction fees or other charges, and other

means of financing the Agency ~~authorized by~~ as provided in Chapter 8 of SGMA commencing at Section 10730 of the Water Code.

Comment [RCM4]: County comment

4.12 To collect and monitor data on the extraction of groundwater from, and the quality of groundwater in, the Basin.

4.13 To establish and administer a conjunctive use program for the purposes of maintaining sustainable yields in the Basin consistent with the requirements of SGMA.

4.14 To exchange and distribute water.

4.15 To regulate groundwater extractions as permitted by SGMA.

4.16 To impose groundwater extraction fees as permitted by SGMA.

4.17 To spread, sink and inject water into the Basin.

4.18 To store, transport, recapture, recycle, purify, treat or otherwise manage and control water for beneficial use.

4.19 To apply for, accept and receive licenses, permits, water rights, approvals, agreements, grants, loans, contributions, donations or other aid from any agency of the United States, the State of California, or other public agencies or private persons or entities necessary for the Agency's purposes.

4.20 To develop and facilitate market-based solutions for the use and management of water rights.

4.21 To acquire property and other assets by grant, lease, purchase, bequest, devise, gift or eminent domain, and to hold, enjoy, lease or sell, or otherwise dispose of, property, including real property, water rights, and personal property, necessary for the full exercise of the Agency's powers.

4.22 To sue and be sued in its own name.

4.23 To provide for the prosecution of, defense of, or other participation in actions or proceedings at law or in public hearings in which the Members, pursuant to this Agreement, may have an interest and may employ counsel and other expert assistance for these purposes.

4.24 To exercise the common powers of its Members to develop, collect, provide, and disseminate information that furthers the purposes of the Agency, including but not limited to the operation of the Agency and adoption and implementation of the GSP to the Members, legislative, administrative, and judicial bodies, as well the public generally.

4.25 To accumulate operating and reserve funds for the purposes herein stated.

4.26 To invest money that is not required for the immediate necessities of the Agency, as the Agency determines is advisable, in the same manner and upon the same conditions as Members, pursuant to Government Code section 53601, as it now exists or may hereafter be amended.

4.27 To undertake any investigations, studies, and matters of general administration.

4.28 To perform all other acts necessary or proper to carry out fully the purposes of this Agreement.

**ARTICLE 5
MEMBERSHIP**

5.1 Members. The Members of the Agency shall be the Central Water District, the City of Santa Cruz, the County of Santa Cruz, and the Soquel Creek Water District, as long as they have not, pursuant to the provisions hereof, withdrawn from this Agreement.

5.2 New Members. Any public agency (as defined by the Act) that is not a Member on the Effective Date of this Agreement may become a Member upon: (a) the approval of the Board of Directors by a supermajority of at least seventy-five (75%) of the votes held among all Directors as specified in Article 9 (Member Voting); (b) payment of a pro rata share of all previously incurred costs that the Board of Directors determines have resulted in benefit to the public agency, and are appropriate for assessment on the public agency; and (c) execution of a written agreement subjecting the public agency to the terms and conditions of this Agreement.

**ARTICLE 6
BOARD OF DIRECTORS AND OFFICERS**

6.1 Formation of the Board of Directors. The Agency shall be governed by a Board of Directors (“Board”). The Board shall consist of eleven (11) Directors consisting of the following representatives who shall be appointed in the manner set forth in Section 6.3:

6.1.1 Two representatives appointed by the governing board of each of the following public agency Members: the Central Water District, the City of Santa Cruz, the County of Santa Cruz, and the Soquel Creek Water District.

6.1.2 Three representatives of private well owners within the boundaries of the Agency.

6.2 Duties of the Board of Directors. The business and affairs of the Agency, and all of its powers, including without limitation all powers set forth in Article 4 (Powers), are reserved to and shall be exercised by and through the Board of Directors, except as may be expressly delegated to the Executive Director or others pursuant to this Agreement, Bylaws, or by specific action of the Board of Directors.

6.3 Appointment of Directors. The Directors shall be appointed as follows:

6.3.1 The two representatives from the Central Water District shall be appointed by resolution of the Central Water District Board of Directors.

6.3.2 The two representatives from the City of Santa Cruz shall be appointed by resolution of the City of Santa Cruz City Council.

6.3.3 The two representatives from the County of Santa Cruz shall be appointed by resolution of the County of Santa Cruz Board of Supervisors.

6.3.4 The two representatives from the Soquel Creek Water District shall be appointed by resolution of the Soquel Creek Water District Board of Directors.

6.3.5 The three representatives of private well owners shall be appointed by majority vote of the eight public agency Member Directors. The procedures for nominating the private well owners shall be set forth in the Bylaws.

Comment [RCM5]: County comments

6.4 Alternate Directors. Each Member may have one Alternate to act as a substitute Director for either of the Member's Directors. One Alternate shall also be appointed to act as a substitute Director for any of the three Directors representing private well owners. All Alternates shall be appointed in the same manner as set forth in Section 6.3. Alternate Directors shall have no vote, and shall not participate in any discussions or deliberations of the Board unless appearing as a substitute for a Director due to absence or conflict of interest. If the Director is not present, or if the Director has a conflict of interest which precludes participation by the Director in any decision-making process of the Board, the Alternate Director appointed to act in his/her place shall assume all rights of the Director, and shall have the authority to act in his/her absence, including casting votes on matters before the Board. Each Alternate Director shall be appointed prior to the third meeting of the Board. Alternates are strongly encouraged to attend all Board meetings and stay informed on current issues before the Board.

6.5 Requirements. Each Member's Directors and Alternate Director shall be appointed by resolution of that Member's governing body to serve for a term of four years except, for the purpose of establishing staggered terms, one of the initially-appointed Directors of each Member shall, as designated by the Member, serve an initial term of two years. A Member's Director or Alternate Director may be removed during his or her term or reappointed for multiple terms at the pleasure of the Member that appointed him or her. A Director representing private well owners may be removed or reappointed in the same manner as he or she was appointed as set forth in Section 6.3. No individual Director may be removed in any other manner, including by the affirmative vote of the other Directors.

6.6 Vacancies. A vacancy on the Board of Directors shall occur when a Director resigns or at the end of the Director's term as set forth in Section 6.5. For Member Directors, a vacancy shall also occur when he or she is removed by his or her appointing Member. For Directors representing private well owners, a vacancy shall also occur when the Director is removed as set forth in Section 6.5. Upon the vacancy of a Director, the Alternate Director shall serve as Director until a new Director is appointed as set forth in Section 6.3 unless the Alternate is already serving as a substitute Director in the event of a prior vacancy, in which case, the seat shall remain vacant until a replacement Director is appointed as set forth in Section 6.3. Members shall provide notice of submit any changes in Director or Alternate Director positions to the Executive Director in writing and signed by an authorized representative of the Member.

Comment [RCM6]: County comment

ARTICLE 7 OFFICERS

7.1 Officers. Officers of the Agency shall be a Chair, Vice Chair, Secretary, and Treasurer. The Treasurer shall be appointed consistent with the provisions of Section 14.3. The Vice Chair, or in the Vice Chair's absence, the Secretary, shall exercise all powers of the Chair in the Chair's absence or inability to act.

7.2 Appointment of Officers. Officers shall be elected annually by, and serve at the pleasure of, the Board of Directors. Officers shall be elected at the first Board meeting, and thereafter at the first Board meeting following January 1st of each year, or as duly continued by the Board. An Officer may serve for multiple consecutive terms, with no term limit. Any Officer may resign at any time upon written notice to the Board, and may be removed and replaced by a simple majority vote of the Board.

Comment [RCM7]: County comment

7.3 Principal Office. The principal office of the Agency shall be established by the Board of Directors, and may thereafter be changed by a simple majority vote of the Board.

**ARTICLE 8
DIRECTOR MEETINGS**

8.1 Initial Meeting. The initial meeting of the Board of Directors shall be held in the County of Santa Cruz, California, within thirty (30) days of the Effective Date of this Agreement.

8.2 Time and Place. The Board of Directors shall meet at least quarterly, at a date, time and place set by the Board within the jurisdictional boundaries of one or more of the Members, and at such other times as may be determined by the Board.

8.3 Special Meetings. Special meetings of the Board of Directors may be called by the Chair or by a simple majority of Directors, in accordance with the provisions of Government Code section 54956.

8.4 Conduct. All meetings of the Board of Directors, including special meetings, shall be noticed, held, and conducted in accordance with the Ralph M. Brown Act (Government Code sections 54950, *et seq.*). The Board may use teleconferencing in connection with any meeting in conformance with and to the extent authorized by applicable law.

8.5 Local Conflict of Interest Code. The Board of Directors shall adopt a local conflict of interest code pursuant to the provisions of the Political Reform Act of 1974 (Government Code sections 81000, *et seq.*)

**ARTICLE 9
MEMBER VOTING**

9.1 Quorum. A quorum of any meeting of the Board of Directors shall consist of an absolute majority of Directors plus one Director. In the absence of a quorum, any meeting of the Directors may be adjourned by a vote of the simple majority of Directors present, but no other business may be transacted. For purposes of this Article, a Director shall be deemed present if the Director appears at the meeting in person or participates telephonically, provided that the telephone appearance is consistent with the requirements of the Ralph M. Brown Act.

9.2 Director Votes. Voting by the Board of Directors shall be made on the basis of one vote for each Director. A Director, or an Alternate Director when acting in the absence of his or her Director, may vote on all matters of Agency business unless disqualified because of a conflict of interest pursuant to California law or the local conflict of interest code adopted by the Board of Directors.

9.3 Affirmative Decisions of the Board of Directors. Except as otherwise specified in this Agreement, all affirmative decisions of the Board of Directors shall require the affirmative vote of a simple majority of all appointed Directors participating in voting on a matter of Agency business, provided that if a Director is disqualified from voting on a matter before the Board because of a conflict of interest, that Director shall be excluded from the calculation of the total number of Directors that constitute a majority. Notwithstanding the foregoing, a unanimous vote of all Member Directors participating in voting shall be required to approve any of the following: (i) any capital expenditure that is estimated to cost \$100,000 or more; (ii) the annual budget; (iii) the GSP for the Basin or any amendment thereto; (iv) the levying of assessments or fees; (v) issuance of indebtedness; or (vi) any stipulation to resolve litigation concerning groundwater rights within or groundwater management for the Basin.

Comment [A8]: My Board questioned if the "plus one" is correct. They would like clarification or an explanation from Russ if this is correct and if yes, why.

Comment [RCM9]: SqCWD comment

Comment [RCM10]: County comment

ARTICLE 10
EXECUTIVE DIRECTOR AND STAFF

Comment [RCM11]: Please see discussion in the staff report for this item suggesting possible changes to this Article.

10.1 Appointment. The Board of Directors may appoint an Executive Director, who may be, though need not be, an officer, employee, or representative of one of the Members. The Executive Director's compensation, if any, shall be determined by the Board of Directors.

10.2 Duties. If appointed, the Executive Director shall serve as the chief administrative officer of the Agency, shall serve at the pleasure of the Board of Directors, and shall be responsible to the Board for the proper and efficient administration of the Agency. The Executive Director shall have the powers designated by the Board, or otherwise as set forth in the Bylaws.

10.3 Term and Termination. The Executive Director shall serve until he/she resigns or the Board of Directors terminates his/her appointment.

10.4 Staff and Services. The Executive Director may employ such additional full-time and/or part-time employees, assistants and independent contractors who may be necessary from time to time to accomplish the purposes of the Agency, subject to the approval of the Board of Directors. The Agency may contract with a Member or other public agency or private entity for various services, including without limitation those related to the Agency's finances, purchasing, risk management, information technology, and human resources. A written agreement shall be entered between the Agency and the Member or other public agency or private entity contracting to provide such service, and that agreement shall specify the terms on which such services shall be provided, including without limitation the compensation, if any, that shall be made for the provision of such services.

ARTICLE 11
BYLAWS

The Board of Directors shall cause to be drafted, approve, and amend Bylaws of the Agency to govern the day-to-day operations of the Agency. The Bylaws shall be adopted at or before the first anniversary of the Board's first meeting.

ARTICLE 12
ADVISORY COMMITTEES

The Board of Directors may from time to time appoint one or more advisory committees or establish standing or ad hoc committees to assist in carrying out the purposes and objectives of the Agency. The Board shall determine the purpose and need for such committees and the necessary qualifications for individuals appointed to them.

ARTICLE 13
OPERATION OF COMMITTEES

Each committee shall include a Director as the chair thereof. Other members of each committee may be constituted by such individuals approved by the Board of Directors for participation on the committee. However, no committee or participant on such committee shall have any authority to act on behalf of the Agency **except as duly authorized by the Board.**

Comment [RCM12]: County comment

**ARTICLE 14
ACCOUNTING PRACTICES**

14.1 General. The Board of Directors shall establish and maintain such funds and accounts as may be required by generally accepted public agency accounting practices. The Agency shall maintain strict accountability of all funds and a report of all receipts and disbursements of the Agency.

14.2 Fiscal Year. Unless the Board of Directors decides otherwise, the fiscal year for the Agency shall run concurrent with the calendar year.

14.3 Appointment of Treasurer and Auditor; Duties. The Treasurer and Auditor shall be appointed in the manner, and shall perform such duties and responsibilities, specified in Sections 6505.5 and 6505.6 of the Act.

**ARTICLE 15
BUDGET AND EXPENSES**

15.1 Budget. Within [NUMBER OF DAYS] after the first meeting of the Board of Directors, and thereafter prior to the commencement of each fiscal year, the Board shall adopt a budget for the Agency for the ensuing fiscal year in [MONTH]. In the event that a budget is not so approved, the prior year's budget shall be deemed approved for the ensuing fiscal year, and any groundwater extraction fee or assessment(s) of contributions of Members, or both, approved by the Board during the prior fiscal year shall again be assessed in the same amount and terms for the ensuing fiscal year.

15.2 Agency Funding and Contributions. For the purpose of funding the expenses and ongoing operations of the Agency, the Board of Directors shall maintain a funding account in connection with the annual budget process. The Board of Directors may fund the Agency and the GSP as provided in Chapter 8 of SGMA, commencing with Section 10730 of the Water Code, and may also issue assessments for contributions by the Members in the amount and frequency determined necessary by the Board. Such Member contributions shall be paid by each Member to the Agency within 30 days of assessment by the Board.

15.3 Return of Contributions. In accordance with Government Code section 6512.1, repayment or return to the Members of all or any part of any contributions made by Members and any revenues by the Agency may be directed by the Board of Directors at such time and upon such terms as the Board of Directors may decide; provided that (1) any distributions shall be made in proportion to the contributions paid by each Member to the Agency, and (2) any capital contribution paid by a Member voluntarily, and without obligation to make such capital contribution pursuant to Section 15.2, shall be returned to the contributing Member, together with accrued interests at the annual rate published as the yield of the Local Agency Investment Fund administered by the California State Treasurer, before any other return of contributions to the Members is made. The Agency shall hold title to all funds and property acquired by the Agency during the term of this Agreement.

15.4 Issuance of Indebtedness. The Agency may issue bonds, notes or other forms of indebtedness, as permitted under Section 4.11, provided such issuance be approved at a meeting of the Board of Directors by unanimous vote of the Member Directors as specified in Article 9 (Member Voting).

**ARTICLE 16
LIABILITIES**

16.1 Liability. In accordance with Government Code section 6507, the debt, liabilities and obligations of the Agency shall be the debts, liabilities and obligations of the Agency alone, and not the Members.

16.2 Indemnity. Funds of the Agency may be used to defend, indemnify, and hold harmless the Agency, each Member, each Director, and any officers, agents and employees of the Agency for their actions taken within the course and scope of their duties while acting on behalf of the Agency. Other than for gross negligence or intentional acts, to the fullest extent permitted by law, the Agency agrees to save, indemnify, defend and hold harmless each Member from any liability, claims, suits, actions, arbitration proceedings, administrative proceedings, regulatory proceedings, losses, expenses or costs of any kind, whether actual, alleged or threatened, including attorney's fees and costs, court costs, interest, defense costs, and expert witness fees, where the same arise out of, or are in any way attributable, in whole or in part, to negligent acts or omissions of the Agency or its employees, officers or agents or the employees, officers or agents of any Member, while acting within the course and scope of a Member relationship with the Agency.

**ARTICLE 17
WITHDRAWAL OF MEMBERS**

17.1 Unilateral Withdrawal. Subject to the Dispute Resolution provisions set forth in Section 18.9, a Member may unilaterally withdraw from this Agreement without causing or requiring termination of this Agreement, effective upon 30 days written notice to the Executive Director.

17.2 Rescission or Termination of Agency. This Agreement may be rescinded and the Agency terminated by unanimous written consent of all Members, except during the outstanding term of any Agency indebtedness.

17.3 Effect of Withdrawal or Termination. Upon termination of this Agreement or unilateral withdrawal, a Member shall remain obligated to pay its share of all debts, liabilities and obligations of the Agency required of the Member pursuant to terms of this Agreement, and that were incurred or accrued prior to the effective date of such termination or withdrawal, including without limitation those debts, liabilities and obligations pursuant to Sections 4.11 and 15.4. Any Member who withdraws from the Agency shall have no right to participate in the business and affairs of the Agency or to exercise any rights of a Member under this Agreement or the Act, but shall continue to share in distributions from the Agency on the same basis as if such Member had not withdrawn, provided that a Member that has withdrawn from the Agency shall not receive distributions in excess of the contributions made to the Agency while a Member. The right to share in distributions granted under this Section 17.3 shall be in lieu of any right the withdrawn Member may have to receive a distribution or payment of the fair value of the Member's interest in the Agency.

17.4 Return of Contribution. Upon termination of this Agreement, any surplus money on-hand shall be returned to the Members in proportion to their contributions made. The Board of Directors shall first offer any property, works, rights and interests of the Agency for sale to the Members on terms and conditions determined by the Board of Directors. If no such sale to Members is consummated, the Board of Directors shall offer the property, works, rights, and interest of the Agency for sale to any non-member for good and adequate consideration. The net proceeds from any sale shall be distributed among the Members in proportion to their contributions made.

ARTICLE 18
MISCELLANEOUS PROVISIONS

18.1 No Predetermination or Irretrievable Commitment of Resources. Nothing herein shall constitute a determination by the Agency or any of its Members that any action shall be undertaken, or that any unconditional or irretrievable commitment of resources shall be made, until such time as the required compliance with all local, state, or federal laws, including without limitation the California Environmental Quality Act, National Environmental Policy Act, or permit requirements, as applicable, has been completed.

18.2 Notices. Notices to a Director or Member hereunder shall be sufficient if delivered to the clerk of the respective Director or clerk of the Member agency and addressed to the Director or clerk of the Member agency. Delivery may be accomplished by U.S. Postal Service, private mail service or electronic mail.

Comment [RCM13]: County comment

18.3 Amendments to Agreement. This Agreement may be amended or modified at any time only by subsequent written agreement approved and executed by all of the Members.

18.4 Agreement Complete. The foregoing constitutes the full and complete Agreement of the Members. This Agreement supersedes all prior agreements and understandings, whether in writing or oral, related to the subject matter of this Agreement that are not set forth in writing herein.

18.5 Severability. Should any part, term or provision of this Agreement be decided by a court of competent jurisdiction to be illegal or in conflict with any applicable federal law or any law of the State of California, or otherwise be rendered unenforceable or ineffectual, the validity of the remaining parts, terms, or provisions hereof shall not be affected thereby, provided however, that if the remaining parts, terms, or provisions do not comply with the Act, this Agreement shall terminate.

18.6 Withdrawal by Operation of Law. Should the participation of any Member to this Agreement be decided by the courts to be illegal or in excess of that Member's authority or in conflict with any law, the validity of the Agreement as to the remaining Members shall not be affected thereby.

18.7 Assignment. The rights and duties of the Members may not be assigned or delegated without the written consent of all other Members. Any attempt to assign or delegate such rights or duties in contravention of this Agreement shall be null and void.

18.8 Binding on Successors. This Agreement shall inure to the benefit of, and be binding upon, the successors and assigns of the Members.

18.9 Dispute Resolution. In the event that any dispute arises among the Members relating to (i) this Agreement, (ii) the rights and obligations arising from this Agreement, or (iii) or a Member proposing to withdraw from membership in the Agency, the aggrieved Member or Member proposing to withdraw from membership shall provide written notice to the other Members of the controversy or proposal to withdraw from membership. Within thirty (30) days thereafter, the Members shall attempt in good faith to resolve the controversy through informal means. If the Members cannot agree upon a resolution of the controversy within thirty (30) days from the providing of written notice specified above, the dispute shall be submitted to mediation prior to commencement of any legal action or prior to withdraw of a Member proposing to withdraw from membership. The mediation shall be no less than a full day (unless agreed otherwise among the Members) and the cost of mediation shall be paid in equal proportion among the Members. The mediator shall be either voluntarily agreed to or appointed by the Superior Court upon a suit and motion for appointment of a neutral mediator. Upon completion of mediation, if the controversy has not been resolved,

any Member may exercise all rights to bring a legal action relating to the controversy or (except where such controversy relates to withdrawal of a Member's obligations upon withdrawal) withdraw from membership as otherwise authorized pursuant to this Agreement.

Comment [RCM14]: County comment

Comment [RCM15]: Placement of this clause? – check with John R.

18.10 Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original.

18.11 Singular Includes Plural. Whenever used in this Agreement, the singular form of any term includes the plural form and the plural form includes the singular form.

18.12 Member Authorization. The legislative bodies of the Members have each authorized execution of this Agreement, as evidenced by their respective signatures below.

IN WITNESS WHEREOF, the Members hereto have executed this Agreement by authorized officials thereof.

CENTRAL WATER DISTRICT

APPROVED AS TO FORM:

By: _____

By: _____

Title: _____

Title: _____

Signatures continue on the following page.

CITY OF SANTA CRUZ

APPROVED AS TO FORM:

By: _____

By: _____

Title: _____

Title: _____

COUNTY OF SANTA CRUZ

APPROVED AS TO FORM:

By: _____

By: _____

Title: _____

Title: _____

SOQUEL CREEK WATER DISTRICT

APPROVED AS TO FORM:

By: _____

By: _____

Title: _____

Title: _____

Applicability of CEQA to action of forming a JPA under SGMA

January 8, 2016

Hi Rosemary –

Tony forwarded me your CEQA question. Your analysis is correct. Since this an action that involves organizational and administrative activities of government that will not result in direct or indirect physical changes in the environment, forming the JPA is not a “project” subject to CEQA. (14 Cal. Code Regs. § 15378(b)(5).) Further, the activity is exempt from CEQA as there is no possibility that it would have a significant negative effect on the environment. (14 Cal. Code Regs. §15061(b)(3)). Finally, because the activity does not commit the City to implement any specific project it is exempt from CEQA.

Let me know if you would like to discuss further.

Lauren

Lauren C. Valk

Attorney at Law

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Email: lvalk@abc-law.com

From: Rosemary Menard [<mailto:RMenard@cityofsantacruz.com>]

Sent: Wednesday, January 06, 2016 11:19 AM

To: Tony Condotti <TCondotti@abc-law.com>

Cc: Ron Duncan (rond@soquelcreekwater.org) <rond@soquelcreekwater.org>; John Ricker (John.Ricker@santacruzcounty.us) <John.Ricker@santacruzcounty.us>; Ralph Bracamonte <cenwtr@yahoo.com>; Heidi Luckenbach <hluckenbach@cityofsantacruz.com>

Subject: CEQA and GSAs

Hi Tony, As we discussed last week, I'm working on a staff report on the JPA for the Groundwater Sustainability Agency (GSA) for the Soquel-Aptos Groundwater Management Committee to consider at its January 21st meeting. In my research I came across the issue of whether CEQA is applicable to the action of forming a GSA.

This morning I spoke to David Bolland, Special Projects Manager for the Sustainable Groundwater Management Act for the Association (SGMA) of California Water Agencies. He

indicated that the SGMA is silent on the issue of whether CEQA is required for the formation of a GSA. The rationale is/was that GSAs could be formed using a number of different approaches and the thought was that it was best to leave the decision about the applicability of CEQA to the planned action to local jurisdictions.

As we discussed when we spoke last week, I gather that the key question for determining the applicability of CEQA to an action is whether the action that is being contemplated constitutes an action that could have environmental impacts (i.e., is equivalent to a project of some sort.) The GSA we're forming is an extension of an entity that already exists and has existed since 1995. The Basin Implementation Group (BIG) has, as I understand it, overseen planning and analysis but not itself done projects. To the extent projects have been undertaken as a result of the work the BIG has done, I believe they have been done by the member agencies (Soquel Creek and Central Water Districts) rather than by the BIG itself. Ron and Ralph, please weigh in with corrections or additional information or perspectives as needed.

Certainly, for the next few years, the role of the GSA we're contemplating is going to be about developing a plan for achieving groundwater sustainability (with probably a significant focus on the issue of how to fund the plan and who should pay how much rather than what the elements of the plan will be) rather than doing projects. As we know, the plan has been legislatively exempted from CEQA, so whatever CEQA will need to be done will need to be done on the additional projects.

With this context, my question to you, Tony, is what else do we need to know or do to determine the applicability of CEQA to the action we're contemplating to form the GSA using a JPA. I need to complete my staff report by 1/13, so would appreciate any follow up on this ASAP.

Thanks so much

Rosemary

Rosemary Menard
Water Director
City of Santa Cruz
rmenard@cityofsantacruz.com
Office: 831-420-5205
Cell: 831-345-6309

January 21, 2016

MEMO TO THE SOQUEL APTOS GROUNDWATER MANAGEMENT COMMITTEE

Subject: Agenda Item 5.7 Preliminary Work Plan and Staffing Strategy
for Development of the Groundwater
Sustainability Plan

Attachment 1: Table on GSP Requirements with reference to existing sections of the 2007 AB 3030 Plan or other existing or ongoing work covering that topic

Background

The purpose of this item is to provide information to the SAGMC and ask for feedback so that additional work can proceed based on the SAGMC's feedback.

After the formation of the Groundwater Sustainability Agency (GSA) through the pending Joint Powers Agreement, the next major piece of work the GSA will need to undertake is the development of a Groundwater Sustainability Plan (GSP).

A collaborative multi-agency Staff Working Group (SWG) has been meeting over the last few months to begin the development of a work plan for the GSP and to talk about how the GSP would be financially, administratively and technically supported and to develop identify the budget and other resources needed for plan development. Some of the details of the SWG's proposal and work plan on this topic are presented in Agenda Item 5.7.

Discussion

The SWG's discussions on the development of the GSP have included a thorough review of what the requirements for the GSP are, an initial assessment of an approach to developing the plan, and some discussion about the kinds of resources needed to support plan development. Each of these topics is discussed below.

What does the GSP Need to include?

As staff and elected officials from the Soquel Creek and Central water districts know very well from their many years of working together on the Basin Implementation Group (BIG), a considerable amount of the work required to create a GSP has been done over time. In particular the BIG created a groundwater management plan for the Soquel-Aptos basin in the 1990s and most recently revised it in 2007 (see <http://www.soquelcreekwater.org/our-water-groundwater/groundwater-management-plan>).

The 2007 AB 3030 Soquel-Aptos Groundwater Management Plan, and the information developed from the implementation of that plan over time, provides a strong foundation on which to develop the GSP for the Santa Cruz Mid-County Groundwater Basin. Staff's assessment is that much of the effort to create a GSP would really be focused on updating the 2007 Plan rather than starting with a blank sheet of paper.

Attachment 1 lists the required elements of the Groundwater Sustainability Plan and shows, in the column on right, the links to the existing sections of the AB 3030 plan covering that topic or to other work that is being done, such as the updates of various agency Urban Water Management Plans.

It is interesting to note that the list of required elements for the GSP does not explicitly include one of the key issues that the SAGMC has been discussing, which is the assessment of impact on the basin by various pumpers. Presumably the work that needs to be done to assess impacts and link assessed impacts to any future assessment program to support implementation of basin recovery strategies would be covered in the two elements on measurable objectives and implementation strategies needed to achieve sustainability.

Initial Assessment of Approach to Developing the GSP

In looking at the required components of the GSP as well as at the 2007 Groundwater Management Plan, it is clear that some aspects of a GSP are more likely to be of specific interest to the community, while other elements are less likely to hold the same level of interest. Examples of the latter include monitoring programs and protocols. Examples of the former include impact assessments, mitigation and management strategies, and potential funding approaches and allocations.

In creating a draft work plan for the development of the GSP, one of the goals the SWG discussed was involved identifying ways to make sure the planning process achieves what it needs to and does so in a manner that is cost-effective and efficient for everyone. Given this goal, the SWG's assessment is that it would make sense to begin the process by focusing the work and differentiating roles and responsibilities for work elements between staff and technical resources and the GSA and any GSA subcommittee.

Table 1 below describes an example of how roles might be differentiated between responsibilities for GSP elements to be developed by the Staff and reviewed as draft products by any GSA subcommittee created to work on the GSP, and those work products to be developed as work products of the GSA GSP subcommittee. The GSP would ultimately need to be signed off on by the full GSA.

Table 1

Possible Roles of Staff and GSP subcommittee for GSP Plan Elements

<p style="text-align: center;">Potential Examples of Staff Generated Work Products</p>	<p style="text-align: center;">Potential Examples of Subcommittee Generated Work Products</p>
<p>Groundwater levels, groundwater quality, subsidence and groundwater-surface water interactions</p>	<p>Measurable objectives, as well as interim milestones in increments of five years, to achieve the sustainability goal in the basin within 20 years of implementation of the plan</p>
<p>Historical and projected water demands and supplies</p>	<p>A description of how the plan helps meet each objective and how each objective is intended to achieve the sustainability goal for the basin for long-term beneficial uses of groundwater</p>
<p>Basin boundary map</p>	<p>Analysis and development of recommendation on major policy issues for example:</p> <ul style="list-style-type: none"> • requirements for metering and reporting of use; • programs for the assessment of fees and charges • etc.
<p>Existing and potential recharge area map</p>	
<p>The monitoring and management of groundwater levels within the basin</p>	
<p>The monitoring and management of groundwater quality, groundwater quality degradation, and changes in surface flow and surface water quality that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin</p>	

An approach such as the one described would focus staff and technical resources on developing data sets, translating data into information to be used by policy makers and many of the more descriptive and foundational pieces of the needed work. It would also allow the work to be done by the GSA and any subcommittee it creates to focus on policy and policy analysis issues associated with the more narrowly focused but more critical issues that the GSP will need to tackle.

What resources might be required to support the development of the GSP?

Resource requirements to complete the GSP will likely fall into three likely categories:

1. Technical consultants
2. Facilitation
3. Staffing

The SWG's preliminary assessment of the needs in each of these areas is described below:

1. Technical consultants:

As the SAGMC is aware, considerable resources are already being invested in technical analyses and the development of modeling tools. The current consultant involved in this work is Hydrometrics WRI, and the expectation is that this consultant team would continue to play a role in many of the detailed analyses and modeling work that will be done as part of the GSP development.

As the plan development process gets underway, additional technical topics are likely to be identified that will require technical support. One area that has already been identified is associated with the anticipated impact assessment work, and is likely to focus on three issues:

- a. Data collection and verification. The goal here would be to make sure that the data set to be used in any impact analysis is viewed by all the interests as being complete, accurate, and a fair representation of reality;
- b. Analysis of data to assess and potential impacts. This analysis would likely include use application of the groundwater model. Due to the importance of the analysis, the SWG recommends that we plan to spend some time during this phase getting people comfortable with the model in order to build confidence in the modeling results.
- c. Translation of impacts from a percentage or numeric value of some kind to the basis for some kind of ongoing funding program to support actions needed to put the basin on a path to sustainability. The consultant support needed for this work might require skills in public policy and financial analysis rather than or perhaps in addition to engineering, hydrogeologic, or other technical and planning skill sets.

2. Facilitation

The SAGMC has talked about creating a subcommittee of the GSA to be involved in the development of the GSP. The discussion to date has been to include a broader representation of community interests in this subcommittee and to provide high quality opportunities for community engagement in the creation of the GSP. As discussed earlier, the SWG is suggesting that the focus for this group be on policy

issues and alternatives, with a goal of creating a high level of community agreement about these elements of the GSP.

The SWG's assessment is that the subcommittee will be more likely to achieve its goal if it is professionally facilitated. A goal of the establishing a subcommittee is to provide a forum for developing community buy-in for the plan and any assessments that might be levied on private well owners. A professional facilitator maximizes the potential for achieving this goal because a professional facilitator job is to support the group in reaching agreement on the work it is doing.

3. Staffing

A preliminary assessment is that 1.5 FTE of additional staffing resources will be needed to support the GSA during the coming couple of years. The half FTE would be for administrative support for the GSA and for any subcommittee created by the GSA to work on the GSP.

The addition of a full time position would be to focus on work required to update and revise the 2007 plan to meet the requirements of the GSP. To meet this need, the SWG has been discussing a range of possible options including the following:

- a. Hire the work out to a engineering/technical firm that has the capacity to take the significant quantities of available data and work through the document section by section updating it – key skill sets needed probably include writing experience as much or more than technical skills, which would continue to be available through existing consultant contracts.
- b. Hire a staff person to be housed at one of the agencies (or possibly through the Regional Water Management Foundation) to support the GSP development process and provide routine staffing to the GSP Development Subcommittee. The new person would likely need to bring a planning, project manager or engineering type skill set, and would not substitute for the ongoing active involvement of GSA Member Agency executive level staff. Under this option, this new position would do much of the work updating the plan and would provide additional staff support to the GSA subcommittee working on the plan.
- c. Absorbing the work by making assignments to staff in the various GSA agencies. Given available resources and existing commitments, the SWG has concluded that this approach doesn't seem practical nor is it likely to result in timely performance, much less effective support for the Subcommittee.

The SWG is seeking feedback from the SAGMC on the proposed approach to developing the plan, the initial staffing assessment, the resource requirement, and potential strategies for providing the resources needed to get the job done.

POSSIBLE ACTIONS

1. Provide feedback to Member Agency staff to be used in further developing the work plan for the development of the GSP and resource support strategy for further consideration at a future SAGMC/GSA meeting; or
2. No action.

By Rosemary Menard

on behalf of the staff executive team of

John Ricker, Ralph Bracamonte, Ron Duncan and Rosemary Menard

California Water Code - Part 2.74 - Sustainable Groundwater Management			
Focus	Groundwater Sustainability Plan (GSP) Required and Related Components	Information Sources and other Notes	
Plan Components	Land Use Planning - Growth Projections	A groundwater sustainability plan shall take into account the most recent planning assumptions stated in local general plans of jurisdictions overlying the basin.	Use content from work being done to update 2015 Urban Water Management Plans as the source documents for this.
	Physical Description	A description of the physical setting and characteristics of the aquifer system underlying the basin that includes historical data to the extent available	General sources for this information are the 2007 AB 3030 Groundwater Management Plan, and annual updates (available for Water Years 2011 and 2012), additional BIG products, plus documents such as the boundary revision report
	Groundwater Conditions	Groundwater levels, groundwater quality, subsidence, and groundwater-surface water interaction.	Use historical quarterly monitoring plus anything relevant from the recent peer review related to safe groundwater levels
	Historical Supply and Demand	A general discussion of historical and projected water demands and supplies.	Information of historical usage and customer demands is available for the areas served by the public water systems. Might make sense to think about how to convey the historical trends of private well development and/or small system development over time.
	Basin Boundary Map	A map that details the area of the basin and the boundaries of the groundwater sustainability agencies that overlie the basin that have or are developing groundwater	November 2015 Basin Boundary Change Report
	Recharge Area Map	A map identifying existing and potential recharge areas for the basin. The map or maps shall identify the existing recharge areas that substantially contribute to the replenishment of the groundwater basin. The map or maps shall be provided to the appropriate local planning agencies after adoption of the groundwater sustainability plan.	For a starting point, see Figure 5-2 (page 101) of the 2007 Update of the Groundwater Management Plan, with data to be revised based on any additional work done since the preparation of the 2007 plan update plus any relevant work of Andy Fisher's Recharge Initiative (see: http://es.ucc.edu/~afisher/RechargeInitiative/Index.htm)
Objectives and Implementation	Measurable Objectives	Measurable objectives, as well as interim milestones in increments of five years, to achieve the sustainability goal in the basin within 20 years of the implementation of the plan.	As a starting point, see Section 4 of the 2007 Update of the Groundwater Management Plan plus the more recent discussions in the 2011 and 2012 annual update documents prepared to provide progress reports on the status of work on implementing the plan. I think this information is a strong foundation upon which to build a revised/updated plan.
	How to meet objectives and obtain sustainability	A description of how the plan helps meet each objective and how each objective is intended to achieve the sustainability goal for the basin for long-term beneficial uses of groundwater.	As a starting point, see Section 4 of the 2007 Update of the Groundwater Management Plan plus the more recent discussions in the 2011 and 2012 annual update documents prepared to provide progress reports on the status of work on implementing the plan. I think this information is a strong foundation upon which to build a revised/updated plan.
		<i>The plan may, but is not required to, address undesirable results that occurred before, and have not been corrected by, January 1, 2015. Notwithstanding paragraphs (1) to (3), inclusive, a groundwater sustainability agency has discretion as to whether to set measurable objectives and the timeframes for achieving any objectives for undesirable results that occurred before, and have not been corrected by, January 1, 2015.</i>	I believe we have pretty much determined that this needs to happen for this basin. The compelling reason is that the threat of seawater intrusion to this basin requires that we restore basin conditions to a sustainable level rather than just maintain the current conditions.
	Planning/Implementation Horizon	A planning and implementation horizon.	Presumably the plan would cover the 20 year window that would be the maximum available time to bring the basin to a point of being sustainable.
	Components relating to the following, as applicable to the basin:		
Plan Components	Groundwater Level Monitoring	The monitoring and management of groundwater levels within the basin.	Section 3.4 of the 2007 Groundwater Management Plan described current conditions for groundwater levels and extractions. Section 5, Element 1 of the 2007 Groundwater Management Plan focus's on Groundwater Monitoring. This information, along with the updated information in the 2011 and 2012 annual update reports and the quarterly monitoring data that has been developed and presented to the BIG and SAGMC over the years is a strong foundation for building this element of the plan. Finally Section 5 Element 8 describes approaches to Managing Pumping.
	Groundwater Quality Monitoring	The monitoring and management of groundwater quality, groundwater quality degradation, inelastic land surface subsidence, and changes in surface flow and surface water quality that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin.	Section 3.5 of the 2007 Groundwater Management Plan provides baseline information on Natural Groundwater Quality. In addition, Section 5, Element 1 of the 2007 Groundwater Management Plan focus's on Groundwater Monitoring, including monitoring water quality parameters. This information, along with the updated information in the 2011 and 2012 annual update reports and the quarterly monitoring data that has been developed and presented to the BIG and SAGMC over the years is a strong foundation for building this element of the plan.
	Mitigation	Mitigation of overdraft.	Elements 4, 5, 6, 7, 8, 9, 10, and 13 of the 2007 Plan and the additional information provided in the 2011 and 2012 annual status reports provide information on strategies being pursued to mitigate overdrafts.
	Recharge Possibilities	How recharge areas identified in the plan substantially contribute to the replenishment of the basin.	Elements 7, of the 2007 Plan and the additional information provided in the 2011 and 2012 annual status reports provide information on the role of recharge and efforts to protect and enhance basin recharge. There is also a reference in the 2012 update to a study to evaluate the relationship between precipitation levels and recharge, but I didn't see specific information on results of this work.
	Surface Supply Available for Recharge/In-Lieu	A description of surface water supply used or available for use for groundwater recharge or in-lieu use.	Probably the most relevant work here is from the analysis the City did of opportunities for in lieu and ASR, which built on work done by Kennedy Jenks on the water exchanges and water transfer study
	Monitoring Site Descriptions	A summary of the type of monitoring sites, type of measurements, and the frequency of monitoring for each location monitoring groundwater levels, groundwater quality, subsidence, streamflow, precipitation, evaporation, and tidal influence. The plan shall include a summary of monitoring information such as well depth, screened intervals, and aquifer zones monitored, and a summary of the type of well relied on for the information, including public, irrigation, domestic, industrial, and monitoring wells.	Monitoring information is available in Section 5 Element 1 of the 2007 Groundwater Management Plan plus in the regular quarterly monitoring reports that are developed and routinely provided to the SAGMC (and to its predecessor, BIG).
	Monitoring Protocols	Monitoring protocols that are designed to detect changes in groundwater levels, groundwater quality, inelastic surface subsidence for basins for which subsidence has been identified as a potential problem, and flow and quality of surface water that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin. The monitoring protocols shall be designed to generate information that promotes efficient and effective groundwater management.	
	Potential Effects of GSP on Local Water Resources-Related Land Use Planning Documents	A description of the consideration given to the applicable county and city general plans and a description of the various adopted water resources-related plans and programs within the basin and an assessment of how the groundwater sustainability plan may affect those plans.	
		In addition to the requirements of Section 10727.2, a groundwater sustainability plan shall include, where appropriate and in collaboration with the appropriate local agencies, all of the following:	Quite a bit of the remaining items are covered in Sections 4, 5, and 6 in the 2007 plan and the 2011 and 2012 annual updates. This work is a solid foundation on which to build the plan elements that have to be developed for the GSP.
	Seawater Intrusion	Control of saline water intrusion.	
	Wellhead Protection	Wellhead protection areas and recharge areas.	
	Migration of Contaminated Water	Migration of contaminated groundwater.	
	Well Abandonment	A well abandonment and well destruction program.	
	Groundwater Replenishment	Replenishment of groundwater extractions.	
	Conjunctive Use Activities and Opportunities	Activities implementing, opportunities for, and removing impediments to, conjunctive use or underground storage.	
	Well Construction	Well construction policies.	
	?	Measures addressing groundwater contamination cleanup, recharge, diversions to storage, conservation, water recycling, conveyance, and extraction projects.	
	Conservation	Efficient water management practices, as defined in Section 10902, for the delivery of water and water conservation methods to improve the efficiency of water use.	
		Efforts to develop relationships with state and federal regulatory agencies.	
	Land Use Planning Agency Coordination	Processes to review land use plans and efforts to coordinate with land use planning agencies to assess activities that potentially create risks to groundwater quality or quantity.	
	Environmental Impacts	Impacts on groundwater dependent ecosystems.	

January 21, 2016

MEMO TO THE SOQUEL APTOS GROUNDWATER MANAGEMENT COMMITTEE

Subject: Agenda Item 5.8 Preliminary Proposal for Using a Collaborative Staffing Model for the GSA, including a Working Draft of a Proposed Staff Work Plan for remainder of the current fiscal year

Attachment 1: Working Draft Calendar Year 2016 GSA Work Plan

The purpose of this item is to provide information to the Soquel-Aptos Groundwater Management Committee (SAGMC) on the collaborative work being done by Member Agency staff to plan for and support the SAGMC and ultimately the Santa Cruz Mid-County Groundwater Management Agency (GSA). Specifically, agency staff are proposing that, at least during the time the GSA is working on developing the Groundwater Sustainability Plan (GSP), GSA administration, management and operations be handled using a collaborative staffing model.

Background

Over many years the Soquel-Aptos Basin Implementation Group (BIG) has been conducting the work needed to support the ongoing planning and groundwater monitoring and management activities that have been undertaken. During this time, the majority of the administrative, management, and technical staff support for the BIG has been provided by the Soquel Creek Water District as augmented by consultant resources. The recent expansion of the BIG to include the City of Santa Cruz and Santa Cruz County and the departure of the key staff member who had been handling much of the higher level staff support from the Soquel Creek Water District, has provided an opportunity and a need to rethink how the current the SAGMC and the future GSA will be staffed.

Discussion

A collaborative, multi-agency staff working group (SWG) made up of both executive level staff from each of the SAGMC member agencies, as well as member agency staff with technical and communications expertise, has been meeting over the last few months to development a work plan to provide support for the SAGMC/GSA. The overall goal has been to develop an approach that would more equitably share the work associated with the SAGMC/GSA and to provide ongoing senior staff level leadership to support the SAGMC/GSA's effort.

The collaborative staffing model the member agency executive level staff is recommending would provide the SAGMC/GSA with access to two kinds of staff support:

1. An executive team, which would be made up of the Central and Soquel Creek water districts General Managers, the County Water Resources Director, and the City of Santa Cruz Water Director, and
2. The SWG, which would include the executive team and additional technical and outreach staff from the GSA member agencies along with any additional staff specifically hired to support GSA activities, for example the development of the Groundwater Sustainability Plan (GSP).

Under the GSA's direction to the executive team, these two groups would organize and provide the staff work needed to make the GSA function efficiently and effectively. These staff would also facilitate activities the GSA is engaged in, such as the development of a GSP, community engagement activities, community involvement in the planning process, submittal of materials to the state for review, development and management of the GSA's budget, and oversight of agency operations in compliance with all applicable rules and regulations.

The recommendation to use a collaborative staffing model for the SAGMC/GSA has several advantages over the alternative, which would be to hire independent staff for the SAGMC/GSA:

1. It actively engages key staff from each agency;
2. It maximizes the opportunity to tap into the technical and management skills and experience of member agency staffs; and
3. It builds member agency ownership of the work the GSA will be doing, which will, at a minimum, be a benefit in terms of creating consistent messages for use in communicating with the public.

Attachment 1, Working Draft Calendar Year 2016 GSA Work Plan, is an example product of the SWG and the executive team. It lays out what the SAGMC/GSA has to or wants to accomplish, for example developing and allocating to member agencies its budget, and then shows the work that the SWG would be doing between meetings to make sure that the SAGMC/GSA can move forward with its work.

As noted in the discussion for the previous item on the development of the GSP, additional resources are likely to be needed in the GSP planning process. The collaborative staffing model would be used to manage the acquisition of these additional resources and to oversee, in collaboration with the and under the direction of the GSA, the work of additional technical or policy consulting resources as well as whatever additional staff resources are needed to accomplish GSA's work plan.

If the SAGMC/GSA accepts the suggestion for revision to Article 10 of the draft JPA (see agenda item 5.5), the feedback provided to staff on this proposal would inform the development of language to include in the GSA's bylaws regarding the agency's administration, management and operation.

POSSIBLE ACTIONS

1. Provide feedback to Member Agency staff to be used in further developing the work plan for the and preparing a draft FY 2107 budget for discussion at a future SAGMC/GSA meeting; or
2. No action.

By Rosemary Menard

on behalf of the staff executive team of

John Ricker, Ralph Bracamonte, Ron Duncan and Rosemary Menard

WORKING DRAFT

Santa Cruz Mid-County Groundwater Agency

1-21-2016 Draft Work Plan for Calendar 2016 Work Plan

SAGMC Work Plan Item	Staff Working Group Work Plan/ Coordinated Agency Staff Activities
November 12, 2015	
Public meeting 12/10/15	Prep for public meeting, including logistics support and materials
Partner Agency review and input draft of JPA	Facilitate partner agency review and input on JPA for SAGMC action to finalize JPA for agency action on January 21, 2016
Review and approval of revised basin boundary for the Soquel Aptos basin (now to be called the Santa Cruz Mid-County Groundwater Basin)	
Take Action on Resolution of support for revised Basin Boundary	Facilitate partner agency action on resolutions of support for boundary revision proposal
	Begin organizing a collaborative staffing approach to supporting SAGMC, and its likely successor, the Santa Cruz Mid-County Groundwater Agency
	Begin developing a work plan, planning approach and staffing strategy for the Groundwater Sustainability Plan (GSP)
January 21, 2016	
Finalize JPA for Santa Cruz Mid-County Groundwater Agency, the planned Groundwater Sustainability Agency (GSA) for the Santa Cruz Mid-County GSA and recommend to the partner agencies for action	Facilitate partner agency action on SAGMC recommended JPA for Santa Cruz Mid-County Groundwater Agency
Provide direction to staff following a briefing on a preliminary work plan for the development of the GSP scope-schedule-budget and resource strategy for plan development and as input to the development of a FY 2017 budget and staffing strategy	Identify the requirements of and resource requirements associated with development of the GSP to provide for incorporating resource requirements into the a FY 2017 budget and work plan for the GSA and prepare draft FY 2017 budget for SAGMC review at its March 17 th meeting
March 17, 2016	
Convene as the new Santa Cruz Mid-County Groundwater Agency, and elect officers	
Take actions needed to submit to the State for formal establishment of the Mid-County Groundwater Agency as the GSA	Provide staff support for submission to State to formally establish the Mid-County Groundwater Agency as the Groundwater Sustainability Agency for the Santa Cruz Mid-County Groundwater Basin
Work Session on work plan for development of the GSP	Prepare materials for use by the GSA in its work session on the GSP work plan
Provide feedback to staff on Draft of FY 2017 budget and staffing plan for GSA	Prepare final draft FY 2017 budget and staffing plan for adoption by the GSA at its May 19 th meeting.
May 19, 2016	
Approve FY 2017 budget and work program, staffing and resource strategy, partner cost allocations and provide direction to staff	Prepare draft bylaws for the GSA for consideration at the July 21 st GSA meeting.
Finalize work plan for Groundwater Sustainability Plan and approve scope, schedule and budget for Groundwater Sustainability Plan – direction to staff	
Work Session on Community Engagement Plan for GSP development, including recommendations for scope of the proposed GSP (Policy?) Development Subcommittee, and provide direction to staff	
July 21, 2016	
Finalize Community Engagement Plan for GSP	Prepare to implement GSP work plan (contracting, staffing, administrative support for GSP Development Committee appointments)
Consider draft GSA bylaws and either adopt or provide direction to staff for revision	If needed, make revisions to the GSA's bylaws to prepare for GSA action at the September 15 th meeting
Authorize initiation of work on Groundwater Sustainability Plan as of September 1, 2015, including authorizing any initiation of contracting for specialized resources	
Appoint members of the GSP (Policy?) Development Subcommittee	Prepare to support initiation and operation of GSP (Policy?) Development Subcommittee process
September 15, 2016	
Work session on Mid-County Groundwater Model?	Initiate work on GSP
November 17, 2016	
To be determined	Implement GSP development work plan and support GSA and GSP (Policy?) Development Subcommittee as needed

January 21, 2016

MEMO TO THE SOQUEL APTOS GROUNDWATER MANAGEMENT COMMITTEE

Subject: Agenda Item 5.9

Update on Public Outreach Efforts

Attachment: SAGMC-Mid-County Stakeholder Dec 10

Background

Staff has been working on outreach activities related to different aspects of projects and programs under SAGMC and this memo provides an update.

Discussion

Website: Sierra Ryan and Matt Orbach have been working to enhance the SAGMC website (www.midcountygroundwater.org). In order to fulfill the requirements of the initial notification for a basin boundary adjustment with the Department of Water Resources, a page that provided information on the basin boundary, links to supporting documents, and instructions on how to comment was added to the website. The video footage from the full December 10 Mid-County Groundwater Stakeholder Meeting was also placed on the Mid-County Stakeholder Meetings page.

Public Outreach Workgroup: The Public Outreach Workgroup held a meeting on Thursday, January 14, 2015. Due to the fact that the meeting was held after the cutoff for including items in the agenda packet, an oral report on meeting outcomes will be provided during the discussion of this item.

Mid-County Groundwater Stakeholder Meetings: The eighth Mid-County Groundwater Stakeholder Meeting was held on December 10, 2015 from 7-9 pm at the Live Oak Grange. As part of the SWRCB grant, the CCP assisted in coordinating and facilitating this meeting. The focus of the meeting was to give an update on the status of forming a local GSA for the mid-county area, present information on the basin boundary revision request and seek public input, and discuss how private well owners and the community-at-large can stay informed and participate in the upcoming development of our local GSP. A meeting summary and list of public comments is attached.

POSSIBLE ACTIONS

1. Informational only. Provided direction, if needed.
2. No action.

By



Matt Orbach, Interim Public Outreach Specialist
Soquel Creek Water District

By



Sierra Ryan, Water Resources Planner
County of Santa Cruz Environmental Health

SUMMARY | Mid-County Groundwater Stakeholder Meeting

December 10, 2015, Santa Cruz, CA

Background and Action Items

Mid-County Groundwater Stakeholder Meetings offer opportunities for community discussions among private well owners and other community stakeholders within the Soquel-Aptos Groundwater Management Area. These meetings are sponsored by the Soquel-Aptos Groundwater Management Committee (S-AGMC) with assistance from the California Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB). S-AGMC consists of three private well owners and representatives of SqCWD, CWD, the City of Santa Cruz, the County of Santa Cruz (County), Soquel Creek Water District (SqCWD), and the Central Water District (CWD).

These meetings aim to cover a broad spectrum of issues such as groundwater studies, groundwater management, and the Sustainable Groundwater Management Act (SGMA). The objective for this particular meeting was to share and invite questions and feedback on steps being taken to establish a sustainable groundwater supply in Mid-County area.

Presenters' slides are included as Appendix A. A handout on Mid-County groundwater management can be found at Appendix B. A handout on GSA legal agreement options can be found at Appendix C. Please see <http://www.midcountygroundwater.org/node/38> for a video recording of the meeting.

1. Welcoming Remarks

John Ricker, Santa Cruz County Water Resources Division Director, welcomed attendees, explained the above meeting objectives, and provided context. He asked newcomers to raise their hands. He noted the many hands that went up, and suggested this reflected the extra outreach that preceded this particular meeting. (The County mailed about 1,700 meeting notification postcards to private well owners.)

2. Steps Being Taken to Establish Sustainable Groundwater Supply in Mid-County Area

SGMA Requirements Recap

Mr. Ricker provided a general overview of the SGMA basin management requirements. SGMA requires the Mid-County area to form a Groundwater Sustainability Agency (GSA) by June 2017 and a Groundwater Sustainability Plan (GSP) by 2020. Mr. Ricker said he believes the basin's groundwater management work is well ahead of the SGMA target dates due to proactive S-AGMC efforts.

The S-AGMC intends to form the GSA for the Santa Cruz Mid-County groundwater management area by establishing a Joint Powers Agreement between the agencies represented on the S-AGMC (SqCWD, CWD, City of Santa Cruz, and the County); private well-owners also are expected to be represented in the GSA structure. The GSA must develop and implement a GSP to prevent various undesirable effects such as water quality degradation (e.g., sea water intrusion). The overall goal is that the basin achieves sustainability 20 years after GSP adoption.

Mr. Ricker said that SGMA grants GSAs several authorities such as monitoring and managing groundwater extraction and imposing management fees. SGMA also requires stakeholder engagement and coordination with land use agencies regarding land use plans. Ultimately, if the GSA cannot manage its groundwater sustainably, the SWRCB will have to intervene and manage the groundwater until the GSA can demonstrate it can do so.

Mr. Ricker said that the S-AGMC will submit a request for a basin boundary modification to more accurately reflect the hydro-geologic morphology of the basin. He referred attendees to the County website for more detailed technical reports on the underlying geology used to develop the boundary modification request. He added that the S-AGMC is developing a comprehensive hydrologic model of the groundwater basin, which will help agencies test management approaches under various scenarios.

Questions – SGMA Requirements

Attendees asked the following clarifying questions:

- Do you define the groundwater basin by geological features?
 - Response: The proposed boundaries are a mixture of physical and jurisdictional boundaries, but they are primarily based on the geology and hydrology of the basin.
- Why is San Lorenzo Valley excluded from the basin boundaries?
 - Response: San Lorenzo Valley itself is not a groundwater basin; however, the groundwater that feeds into the San Lorenzo River is covered by the Santa Margarita basin.
- Where are you detecting sea water intrusion?
 - Response: Primarily near La Selva Beach and a little bit by Pleasure Point.
- Given the drought and threatened groundwater conditions, why has there not been a groundwater emergency declaration?
 - Response: SqCWD declared a groundwater emergency and cut back on its pumping significantly. Due to those efforts, the groundwater along the coast has somewhat recovered.

Formation of New Groundwater Agency

Jon Kennedy, Chair of the S-AGMC's GSA Formation Subcommittee (Subcommittee), provided a progress report on the S-AGMC's efforts to form a GSA for the Mid-County area. The Subcommittee consists of private well owners and representatives from the County, SqCWD, CWD, and the City of Santa Cruz. The Subcommittee has met eight times since April, developing a proposed GSA governance framework, including specific responsibilities and powers.

Members have discussed management scenarios that the GSA may have to address, and the appropriate level of management and governance structure needed to handle those scenarios. The Subcommittee recommended to the S-AGMC that the same entities that are members of the S-AGMC would be the appropriate members of the GSA. In essence, they recommended that the S-AGMC legally morph into the GSA by establishing a Joint Powers Agreement. Once the GSA is formalized, it will have additional responsibilities and authorities provided by SGMA; it will be required to manage all groundwater extraction, including that undertaken by private well owners, and it will have the ability to levy assessments to support groundwater management activities.

Mr. Kennedy emphasized that Mid-County needs proactive groundwater management. SqCWD is the largest Mid-County basin groundwater user; other groundwater users include CWD, the City of Santa Cruz, agriculture, institutions like Cabrillo College and local golf courses, and rural residential users (e.g., private well owners). Although well pumping decreased dramatically due to the community's conservation efforts, previous intense pumping (1983-2014) created a major deficit. With the additional threats of sea level rise, drought conditions, and population growth, the GSA will need to use a variety of management approaches to attain sustainability (e.g., intense conservation and alternative water supplies).

Mr. Kennedy then reviewed the anticipated timeline for SGMA implementation. S-AGMC members hope that DWR will approve the basin boundary modification by March 2016, and the new GSA by summer of 2016. Then the S-AGMC can focus its efforts on developing the GSP, which is likely to take 12-18 months. He added that the local agencies are not waiting for GSA formation/GSP development to start exploring others strategies to augment water supply.

Questions – GSA Formation

Attendees asked the following clarifying questions and comments:

- Does the groundwater usage pie chart reflect net or gross well pumping?
 - Response: Net.
- Who is funding the hydrologic model development?
 - Response: The S-AGMC is funding it. SqCWD and CWD are paying for the majority of its development.
- Will individual wells be required to have meters?
 - Response: SGMA exempts metering for de minimus users (defined as domestic use less than 2 acre feet of water per year). The GSA probably will use an estimate (e.g., 0.2-0.4 acre feet per year) to calculate the approximate groundwater impact by de minimus users. Non-de minimus users (e.g., schools, camps, small water systems, and farms) may be required to have meters on their wells.
- Who regulates the S-AGMC and under what laws?
 - Responses:
 - DWR and SWRCB are responsible for overseeing how the GSAs implement sustainable groundwater management under SGMA.

- The S-AGMC consists mostly of elected officials, so you have the option to not elect them if you are dissatisfied with their decisions.
- The GSP will guide the work of the GSA, and we invite your input to help craft that GSP.

Efforts Already Underway

Representatives from the local agencies highlighted efforts currently underway to address some of the groundwater sustainability challenges, as follows:

Soquel Creek Water District

Tom LaHue, SqCWD Board Member, said the Board's main priority is to protect the groundwater supply for future generations. To repay the deficit created by over-pumping in the last few decades, SqCWD must use supplemental supplies in addition to its conservation efforts. Mr. LaHue extended his gratitude to SqCWD customers, whose conservation efforts are allowing the groundwater levels to begin to recover. He said SqCWD intends to use several strategies to address groundwater issues:

1. Continue strong conservation efforts.
2. Continue to insist any new development has a neutral (or better) effect.
3. Continue to support collaborative efforts with other agencies and well owners.
4. Develop the groundwater model to make more informed management decisions;
5. Find reliable and safe water storage.
 - a. Best options thus far are advanced water purification and groundwater replenishment.
 - b. Other options may include purchasing water from desalination plant.

Mr. LaHue emphasized the importance of holding public meetings such as these to gain public input and share information as we move forward towards a sustainable water supply.

City of Santa Cruz

Rosemary Menard, City of Santa Cruz Water Director, summarized the recommendations of the Water Sustainability Advisory Committee (WSAC) to the City Council on how to ensure a more stable and reliable water supply. She explained that the City's major water challenge is a lack of storage options. The WSAC worked for eighteen months to evaluate supply alternatives, ultimately recommending that the City:

1. Augment conservation efforts (e.g., increased rebates and better management of peak season demand).
2. Store excess winter flows using in-lieu water exchanges and actively recharge the aquifer for future use in dry years. (This depends on whether recharged water can be reliably obtained later.)
3. Utilize an adaptive management approach to periodically evaluate water issues, and if necessary, explore back-up plans such as advanced treated recycled water. If recycled water is insufficient, consider desalination.

Central Water District

Ralph Bracamonte, CWD District Manager, explained that CWD has been working with SqCWD since 1998 under AB 3030 to better manage groundwater. With major groundwater threats such as sea level rise and prolonged drought, SGMA has provided much-needed authorities to ensure the basin is sustainable. He commended CWD customers for their conservation efforts, which have reduced pumping by 50% since 2013. He said everyone is contributing, and groundwater levels have begun to recover, but more management strategies are necessary to achieve sustainability.

Questions – Current Efforts

Attendees were invited to ask clarifying questions.

- What is University of California, Santa Cruz’s (UCSC) water demand?
 - UCSC gets its water solely from the City of Santa Cruz, and UCSC’s water usage per person has decreased due to their demand management. Therefore, the overall demand has been flat. Even though we expect population growth for UCSC and the City of Santa Cruz, we expect overall demand to be flat over the next couple of decades because per-person demand will decrease due to conservation, increased rates, etc..

3. Open Forum**Open Q/A with Panel**

Dr. Marci DuPraw, Managing Senior Facilitator and Mediator with California State University Sacramento’s Center for Collaborative Policy (CCP), invited attendees to provide their input on issues and information presented tonight. A panel of community water leaders were available to provide responses. Panelists included:

- Tom LaHue – S-AGMC, SqCWD
- Bruce Jaffe – S-AGMC Chair, SqCWD
- Micah Posner – S-AGMC, City of Santa Cruz
- Jon Kennedy – S-AGMC, GSA Formation Subcommittee Chair, private well owner
- Jim Kerr – S-AGMC, private well owner
- John Ricker – Santa Cruz County
- Rosemary Menard – City of Santa Cruz
- Ralph Bracamonte – CWD
- Ron Duncan – SqCWD

Additionally, SWRCB staff Gita Kapahi and Katheryn Landau, County Supervisor/S-AGMC member John Leopold, and Chris Coburn of the Resource Conservation District of Santa Cruz County were in the audience.

Questions – Open Forum

The issues raised by attendees during this open forum encompassed public engagement, S-AGMC governance, usage fees and metering, water quality and supply, desalination, and land use planning. The following summarizes attendees' questions, issues, and suggestions, as well as panelists' responses:

Working with the public

- Will the public have opportunities for recourse if they have concerns, such as the California Environmental Quality Act (CEQA) process?
 - Response: SGMA specifically exempts *GSP development and adoption* from the CEQA process; however, *projects* mentioned in the GSP and/or proposed by the GSA would be subject to CEQA.
- Many well owners did not receive the postcards, and several are receiving inaccurate information. S-AGMC will need to conduct more outreach and engagement to ensure all well owners are on the same page and earn the public's trust.
 - Response: We intend to have future private well owner meetings. Be sure to get on our mailing list for future meeting notices. (A sign-up sheet was available at the back of the room.)
- We appreciate that the S-AGMC held this meeting, sent postcards, and tried to ensure this meeting did not conflict with other major community meetings.

Conservation

- The public has adjusted and made compromises for many years to conserve water. Did that really make a significant difference?
 - Response: Resoundingly, yes. Conservation efforts have saved hundreds of millions of gallons of water!

S-AGMC Governance

- How will S-AGMC make decisions (e.g., equal voting rights)?
 - Response: Each member will have equal voting rights for non-financial decisions. For major financial decisions, it is proposed that decisions will have to have unanimous approval of all agency members. Private well owners will not participate in major financial voting because each well owner would not be contributing significant funding. However, private well owners are part of the groundwater management process and have the opportunity to influence the discussions.
- How were the private well owner representatives appointed to the S-AGMC, and how long is a term? Many well owners were unaware agencies offered this opportunity to participate on the S-AGMC.
 - Response: S-AGMC solicited for nominations, and any well owner could apply. Nominees underwent an extensive interview and vetting process. The term is 2 years. Originally the S-AGMC had only one well owner representative, but the S-AGMC wanted a broader representation and increased this sector's representation on the committee to three private well owner representatives.

Fees & Incentives

- Some areas offer incentives such as rebates for above-ground storage capturing systems. Would the S-AGMC offer rebates for customers within the entire JPA's jurisdiction?
 - Response: In the past the County has not offered rebates because the County does not receive funds from water users. However, the S-AGMC can certainly consider incentive programs in the future.
- How will the S-AGMC allocate funds to the member agencies, and how will that affect levy assessments on individual well owners? We should not have to pay a fee for another jurisdiction's groundwater program that does not benefit us.
 - Response: If the fee does not benefit the well owner, that person would not pay. However, if someone's groundwater use is impacting the basin, that person would benefit from reduced groundwater use and would help pay for that effort. S-AGMC would also provide the tools to help reduce that groundwater use.
- How will the S-AGMC levy assessments on wells that may not be on County record? Off-record wells could use groundwater without contributing funds and increase our fees.
 - Response: We want to make the fee schedule equitable. We are currently updating our well and water use records. If there is water use on a parcel that is not hooked up to a water system, then that parcel would be subject to water use fees.
- How does the S-AGMC intend to issue levies (e.g., fixed cost, variable cost, or dependent on property taxes), and would those levies be the same for all?
 - Response: We do not have the answers to that yet. The GSP will address those details. Any levy would need to be based on sufficient justification and undergo a Prop 218 approval process (i.e., a public vote).

Metering and De Minimus Users

- What are the parameters for well owners to be exempted from metering according to SGMA?
 - Response: SGMA exempts de minimus users (defined as domestic use of less than 2 acre feet per year) from metering. Our information indicates rural residential users typically use 0.2-0.4 acre feet per year on average depending on the actual site use. Almost all individual rural residential well owners are expected to qualify as de minimus users.
- Does property size affect the water usage assumptions?
 - Response: We found that little correlation exists between larger land and more water use. Even if you have a large property, your water use will tend to concentrate around your home. Unless it appears that you are using your land for other purposes (e.g., have an orchard or significant irrigation), you are likely to be considered a de minimus user.

- Some property owners have surface water catchment systems and/or gray water systems. Agencies should not assume people are all irrigating with groundwater.
 - Response: We do not know exactly how we will determine whether a mixed-use property should be considered de minimus or not; that discussion will occur during GSP development. However, it is likely that large groundwater users who currently pump groundwater with no management controls will be required to install meters and pay a fee.

Water Quality

- SqCWD is embracing the recycled water strategy too quickly. We still do not know enough about how recycled water and pharmaceuticals may affect our groundwater quality. Do the agencies really believe recycled water is safe?
 - Response: Yes, we believe recycled water would be safe. We want to ensure safe water, too, because our families will use the same water. Legally, we cannot put anything into the groundwater that reduces water quality.
 - Response: If conservation and water transfers do not work, the City's only remaining alternatives are recycled water and desalination. It would be too costly to connect to other major water supply opportunities such as the State Water Project. We acknowledge your concerns about water quality. We want to explore whether water re-use offers a more sustainable approach to ensuring water supply of good quality.
 - Response: Currently, industries have to properly dispose of hazardous materials as outlined in their permits. The County recently set in motion an ordinance to have pharmaceutical companies and drug stores ensure they take back unused pharmaceuticals so people do not dispose of these via trash or toilet. Outreach and education about proper disposal are the most manageable strategies for changing individuals' behavior. Many of the compounds of concern are found everywhere, so we have to focus on the levels that are dangerous to human health and act accordingly.
- The Watsonville recycling plant said it could not remove the pesticides or pharmaceuticals from the water. We should not inject our groundwater with such harmful materials. We should address the source of the problem and avoid using pesticides and pharmaceuticals.
 - Response: Watsonville treats only to a tertiary level, so that water can only be re-used for irrigation. Advanced water purification requires several additional steps such as micro-filtering, reverse osmosis, and disinfection.
- What standards exist for septic systems?
 - Response: Septic systems, when sited and used correctly, can remove most constituents by biologically treating organic compounds. The water quality issue we usually encounter with septic systems is high nitrates, especially in sandy soils.
 - Response: Many restrictions exist for siting septic systems to prevent dangerous impacts.

Other Health Concerns

- The emitted radiation from wireless metering may cause serious biological and environmental damages (see bioinitiative.org). What type of metering does the S-AGMC plan to use?
 - Response: We understand your concerns; many of the meters are far from buildings. These wireless meters help compensate for our limited staff resources.

Water Supply

- The agencies should store water in dams and reservoirs.
 - Response: We considered a water collection project about ten years ago (Soquel Creek Diversion Project), but the proposed project could not provide reliable water flows for wildlife. Currently we are exploring recharge projects.
 - Response: The City plans to store extra winter water, treat it, and store it in the aquifer.

Desalination

- The City and SqCWD spent \$17 million on desalination studies and severely underestimated the cost for a desalination project. The City developed these studies and cost estimates based on flawed information and involved people who may have major conflicts of interest. Given that history, people have trouble trusting these agencies when they recommend desalination.
 - Response: In the past, the Santa Cruz City Council pursued desalination because Council members believed that was an appropriate strategy to address our groundwater issues. However, Santa Cruz voters decided they were not confident in the desalination strategy (Measure P); therefore, the City did not move forward with that project.

Land-Use Planning and Demand Management¹

- Why do the agencies not issue an immediate moratorium on new hook-ups?
 - Response: Our groundwater problems are rooted in historical over-pumping and the resulting deficit, as opposed to projected population growth and development. We predict overall usage to be flat because water use per person continues to decrease over time. We believe that we can significantly recover the aquifer using strategies such as conservation and recharge.
- Water use would decrease even further if agencies issued a moratorium on new hook-ups.
- Is one of the underlying management strategies growth control?
 - Response: SGMA links GSPs and land-use planning by requiring both the GSA and land-use agencies to ensure the GSP and land use plans are aligned. The community decides what its population and development growth should be and
- ¹ The following question was submitted in writing, but time did not permit it to be read aloud for a response: “Why is the growth not limited on large developments given our water problems? SqCWD said that since their customers were so good at conserving water, they approved the Aptos Village Plan. How can we keep lowering our overdraft with this kind of decision-making?”

the water agencies work to provide water to meet those needs; we encourage you to contact your land use agency if you disagree with their projected growth plans. Growth really is not the major groundwater issue as the projected new demand is small compared to the current deficit; we must address the major groundwater supply deficit whether there is growth or not. No matter what we do about demand, we must enhance our supply.

- Why does the County not issue a groundwater emergency and limit development until we have better control over our groundwater issues?
 - Response: The County Well Ordinance has specific criteria before considering a groundwater emergency declaration (e.g., significant increase in water use and inadequate steps to address the situation). Since overall demand is flat and we are already pursuing these efforts to enhance supply and improve groundwater management, the County believes an emergency declaration would not significantly expedite the solution.

Technical Information

- Where can we find the original technical reports (in high quality resolution) used to reach your conclusions?
 - Response: Several of the original reports are available in .pdf format on the SqCWD website.
- How much water from a septic system actually goes into the aquifer?
 - Response: Estimates vary depending on the soil conditions (e.g., depth of leach field, clay or sandy layers, and overlying vegetation). The County assumes a general estimate that 50% of that water reaches the aquifer; we hope the groundwater model will help improve those estimates.
- How does the detected gravity anomaly in the Branciforte watershed area affect the groundwater issues?
 - Response: The gravity anomaly indicates dense rock (granitic impermeable basement material). We have used gravity contour maps and well logs to estimate the shape of that granitic ridge. The ridge slopes toward Soquel Creek, directing groundwater movement southeast. The revised basin boundaries include this whole area east of the underlying granitic ridge.
- Where can we find a more detailed map to determine whether our property is within the proposed basin boundary?
 - Response: You can find Geographic Information Systems (GIS) maps on the County GIS website. The boundaries will be based on parcels, so your property will either be within the Mid-County GSA boundaries or within the neighboring GSA (e.g., Pajaro Valley Water Management Agency).

4. Adjourn

Bruce Jaffe, S-AGMC Chair, thanked attendees for their input and encouraged them to continue to participate in the sustainable groundwater management planning process. The S-AGMC wants to support and maintain this excellent dialogue with well owners and the community

going forward. Mr. Jaffe said that Mid-County is one of the first areas to adopt a regional approach to groundwater management and embark on the SGMA effort. The next step is to form the GSA, and he encourages attendees to participate in that process. He referred attendees to the S-AGMC website (www.midcountygroundwater.org/) for more information and future updates.

Gita Kapahi, SWRCB Director of Public Participation, thanked attendees for coming to the meeting. She explained SWRCB sees the engagement and collaborative efforts in Mid-County as a great model for other groups. Ms. Kapahi said she applauds the community's efforts and feels encouraged such public participation opportunities will continue into the future.

Upcoming Meetings

S-AGMC Meetings

January 17, 7:00 PM, and March 21, 7:00 PM
City of Capitola Community Room

Working Together on Water: Connecting the Drops

Hosted by the County Water Forum
January 28, 7:00 – 9:00 PM
New Brighton Middle School Auditorium
250 Washburn Ave, Capitola

5. Appendices

- A – Presentation Slides
- B – Management of Mid-County Groundwater Basin Handout
- C – Memorandums of Agreement, Joint Powers Authorities, and Coordination Agreements Handout
- D – Comments from Private Well Owners

Mid-County Groundwater Stakeholder Meeting

Eighth Meeting
December 10, 2015

Meetings are Sponsored by:

- ▶ Soquel–Aptos Groundwater Management Committee
 - Soquel Creek Water District
 - Central Water District
 - City of Santa Cruz
 - County of Santa Cruz
- ▶ With assistance from:
 - California Department of Water Resources
 - Water Resources Control Board
- ▶ Eight Meetings since May, 2014

Purpose of Groundwater Stakeholder Meetings

- ▶ Convene Mid-County groundwater basin users in a series of discussions.
- ▶ Share information about groundwater hydrology, groundwater rights, water use efficiency, basin sustainability and management approaches.
- ▶ Develop common understanding of issues.
- ▶ Include groundwater pumpers in Sustainable Groundwater Management Process:
 - Basin Boundary Definition
 - Groundwater Sustainability Agency Formation
 - Groundwater Sustainability Plan development.

Sustainable Groundwater Management Act (SGMA)

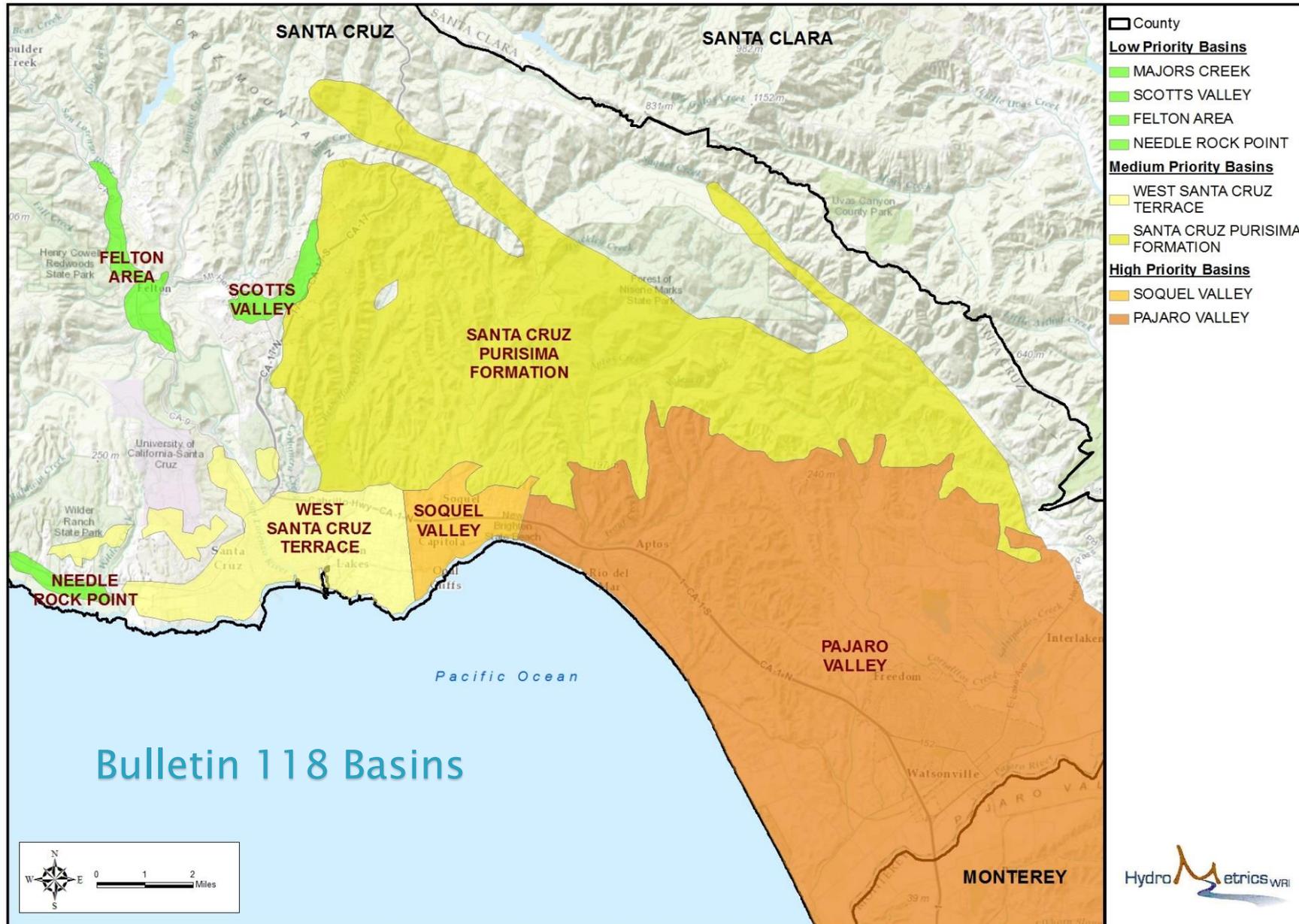
- ▶ Develop and implement a plan that will prevent undesirable results:
 - Chronic lowering of groundwater levels
 - Significant, unreasonable reductions in storage
 - Significant, unreasonable degradation of water quality, seawater intrusion
 - Significant, unreasonable depletion of surface water
- ▶ Groundwater Sustainability Agency may be a single agency or combination of agencies under a Joint Powers Agreement
- ▶ The GSA has authority and responsibility to:
 - Measure and potentially limit extraction (except for de-minimis users)
 - Levy fees to pay the cost of basin management and supplemental supply
 - Implement and enforce terms of the groundwater sustainability plan
- ▶ Requires consultation and involvement of stakeholders
- ▶ State oversight and action if locals fail to act

SGMA Status in Santa Cruz County

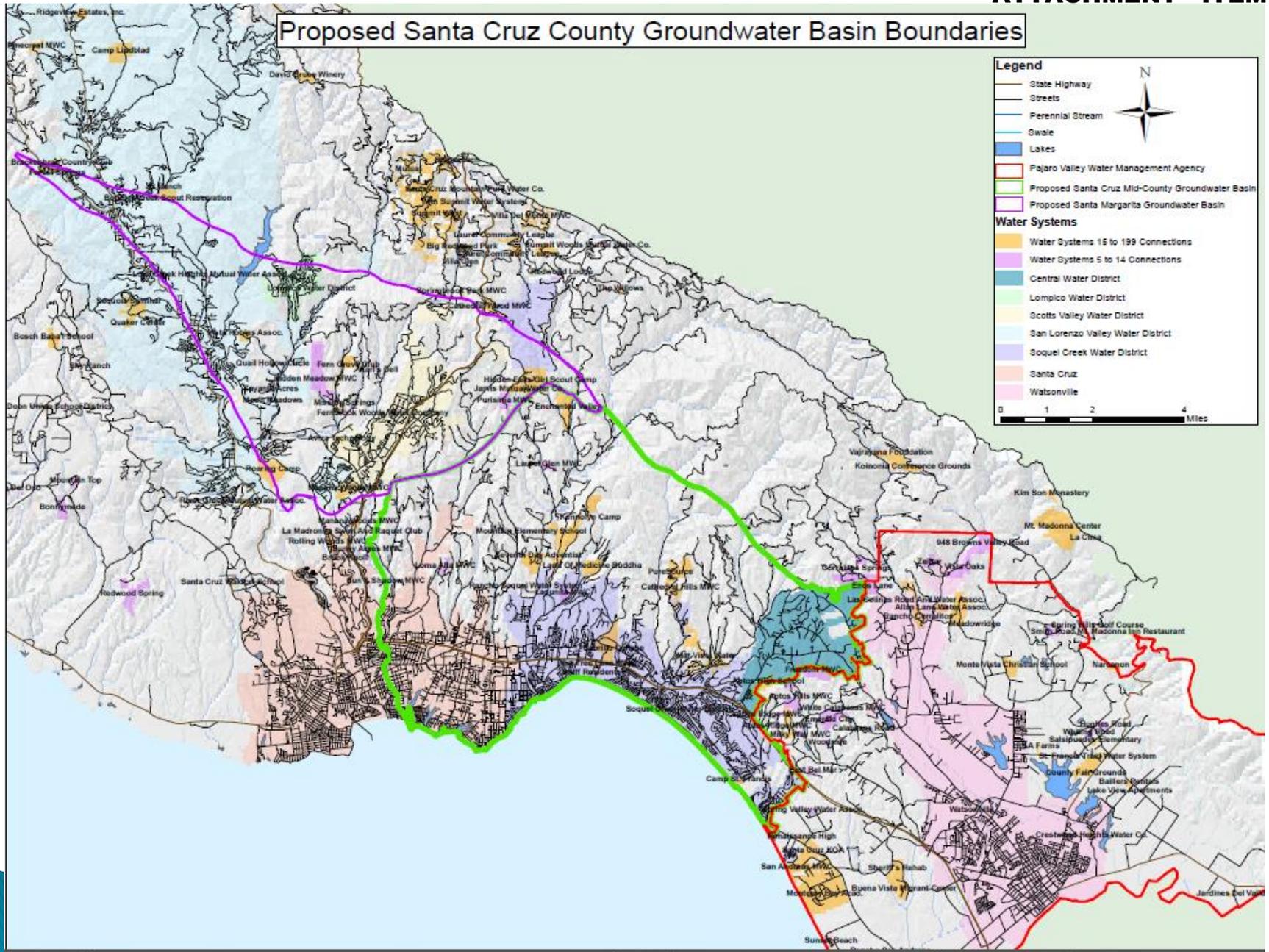
- ▶ Three Groundwater Basins of Concern in Santa Cruz County
 - Pajaro – PVWMA
 - Santa Cruz Mid-County
 - Santa Margarita
- ▶ Basin Modification Requests for Santa Margarita and Mid-County
- ▶ Management Committees already established by MOU or JPA
- ▶ Joint Powers Agreement for Santa Cruz Mid-County Groundwater Agency, March 2016
- ▶ Development of Groundwater Sustainability Plans by 2020, with Stakeholder input

SGMA Efforts in Mid-County

- ▶ Work with State on Regulations for Boundaries, GSA, and Plans
- ▶ Update Basin Boundary and Priority – January–March 2016
- ▶ Form Soquel–Aptos Groundwater Management Committee
 - SqCWD
 - CWD
 - City of Santa Cruz
 - County
- ▶ Engage with stakeholders, users
- ▶ Form Groundwater Sustainability Agency – by June 2017
- ▶ Evaluate groundwater use and model groundwater basin conditions
- ▶ Update Groundwater Plan to meet requirements of a Groundwater Sustainability Plan – 2020
- ▶ Implement Plan for Sustainability by 2040



Proposed Santa Cruz County Groundwater Basin Boundaries



GSA Formation

- Formation subcommittee work
 - April 2015 – now
 - Consider powers, scenarios, models
 - Start w similar model to existing SAGMC
- Drafted Joint Powers Agreement
- New agency by end February
- State approval by summer
- Then, Sustainability Plan development

What's Different?

- State mandate to regulate all groundwater
- Measure & report on usage
- Requirement to bring basin into sustainable condition by 2040
- Ability to levy assessments
- Coordinate with other GSAs, planning agencies

Sustainability Agency Timeline

BIG already working...

New Law: SGMA

SAGMC expands

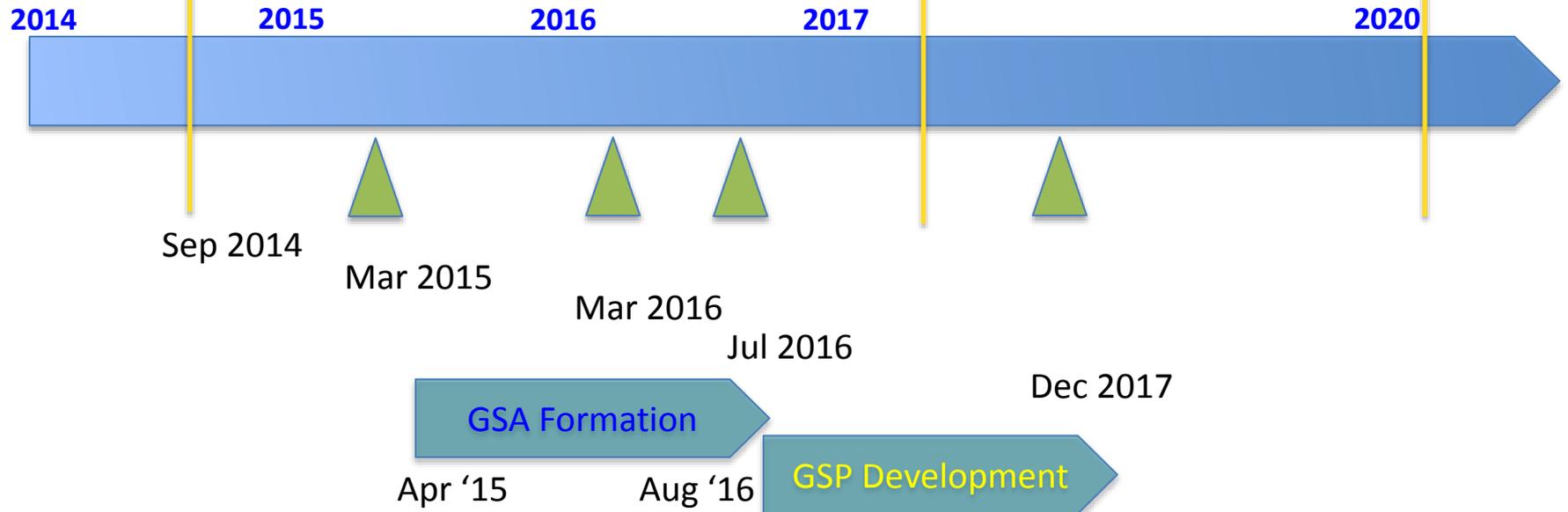
GSA notice of intent

GSP development begins

State required GSA

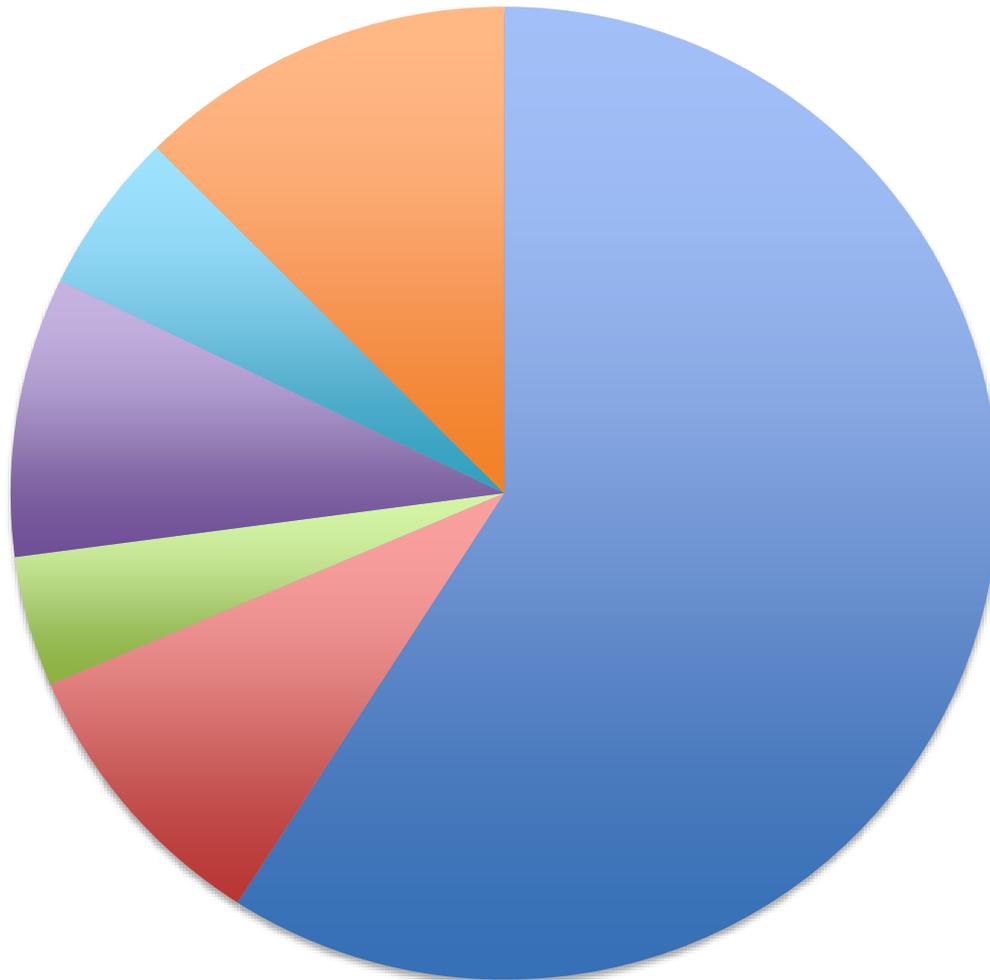
Initial GSP in place

State required GSP



Total Area 2014

After return flow



■ SqCWD

■ SCzWD Beltz

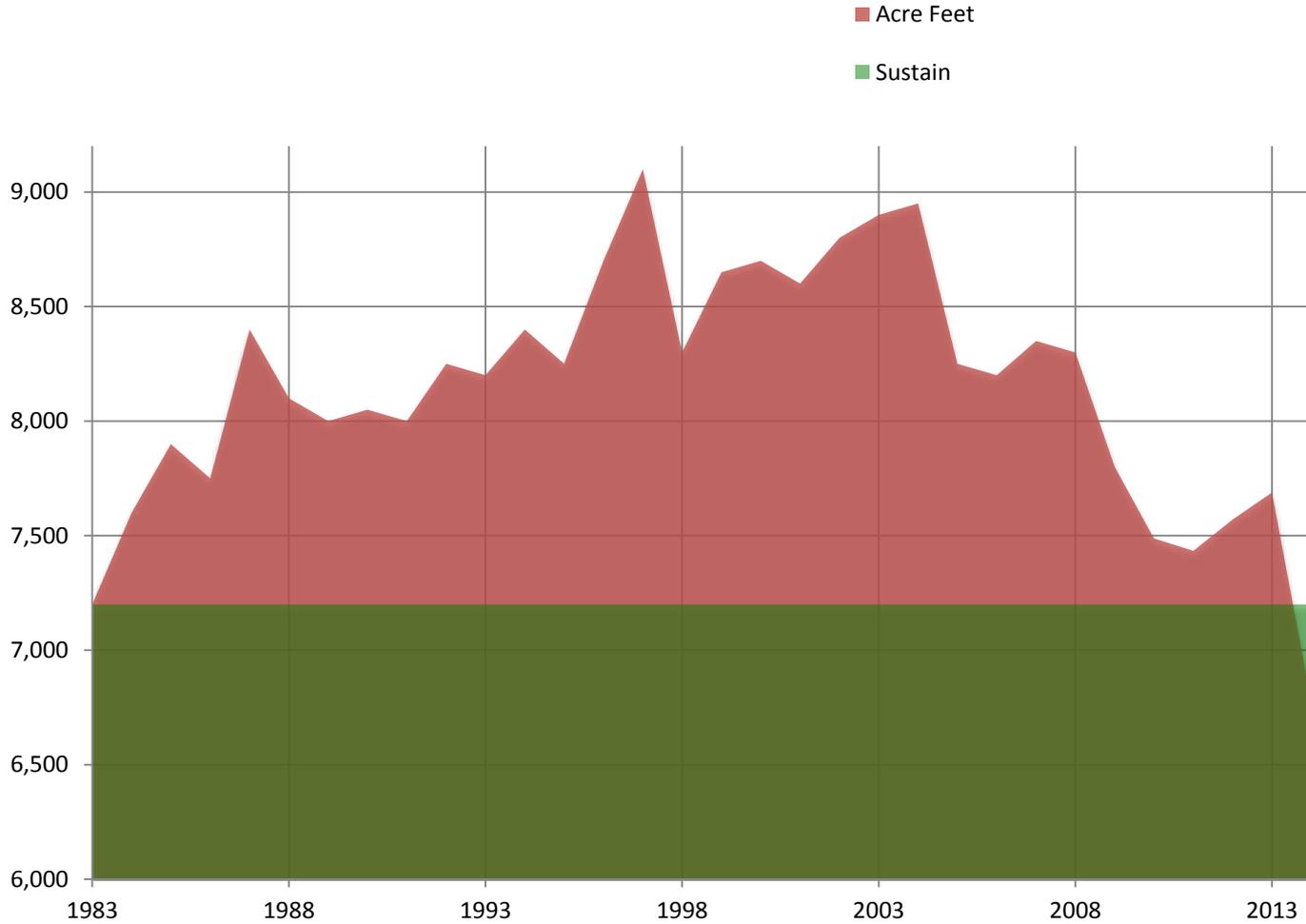
■ Central WD

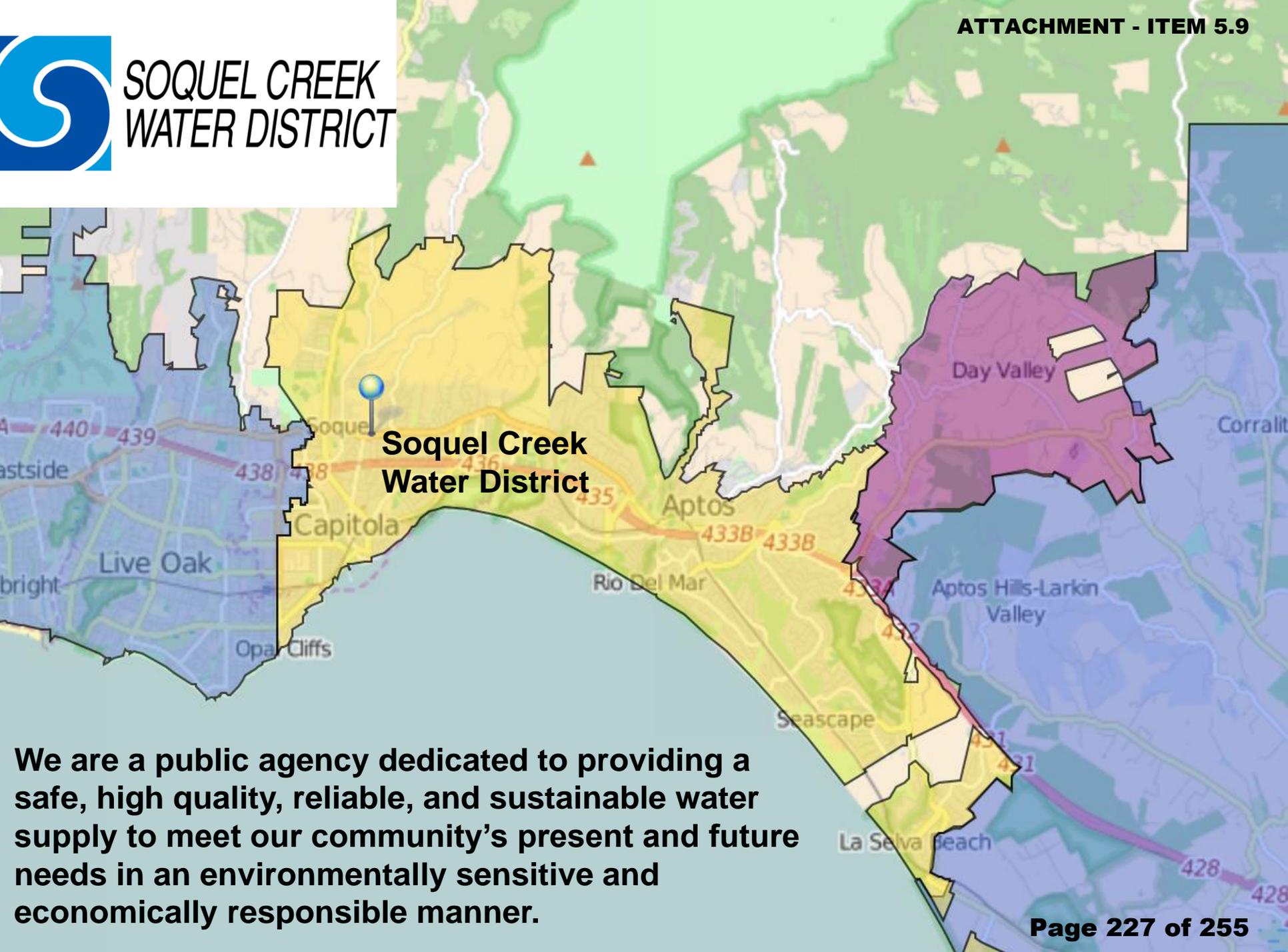
■ Agricultural

■ Institutional

■ Rural Residential

Area Pumping History





**Soquel Creek
Water District**

We are a public agency dedicated to providing a safe, high quality, reliable, and sustainable water supply to meet our community's present and future needs in an environmentally sensitive and economically responsible manner.

Who We Are



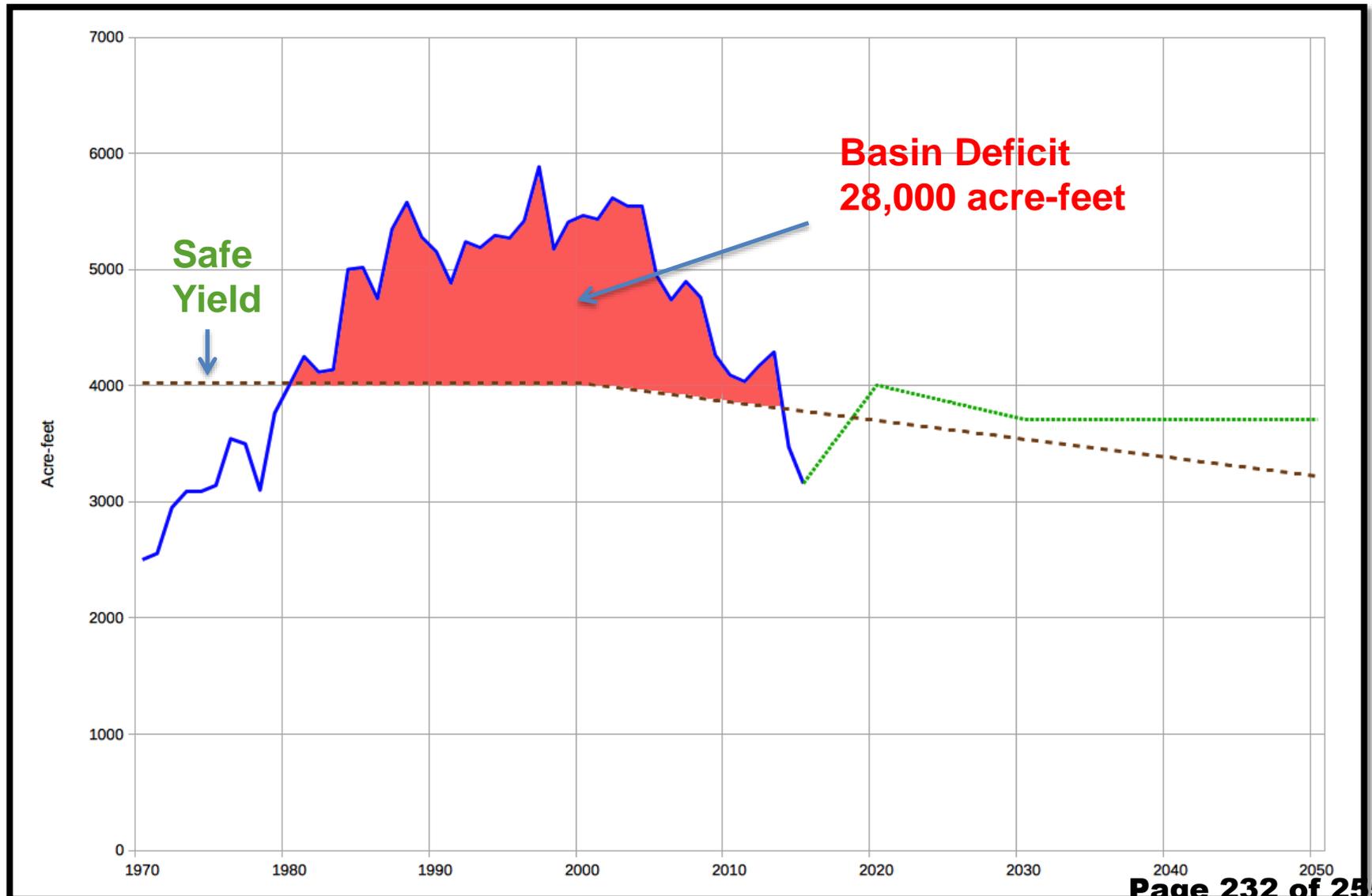


**Thank you Rick
Meyer for your
dedication to
making a positive
difference for our
water supply**

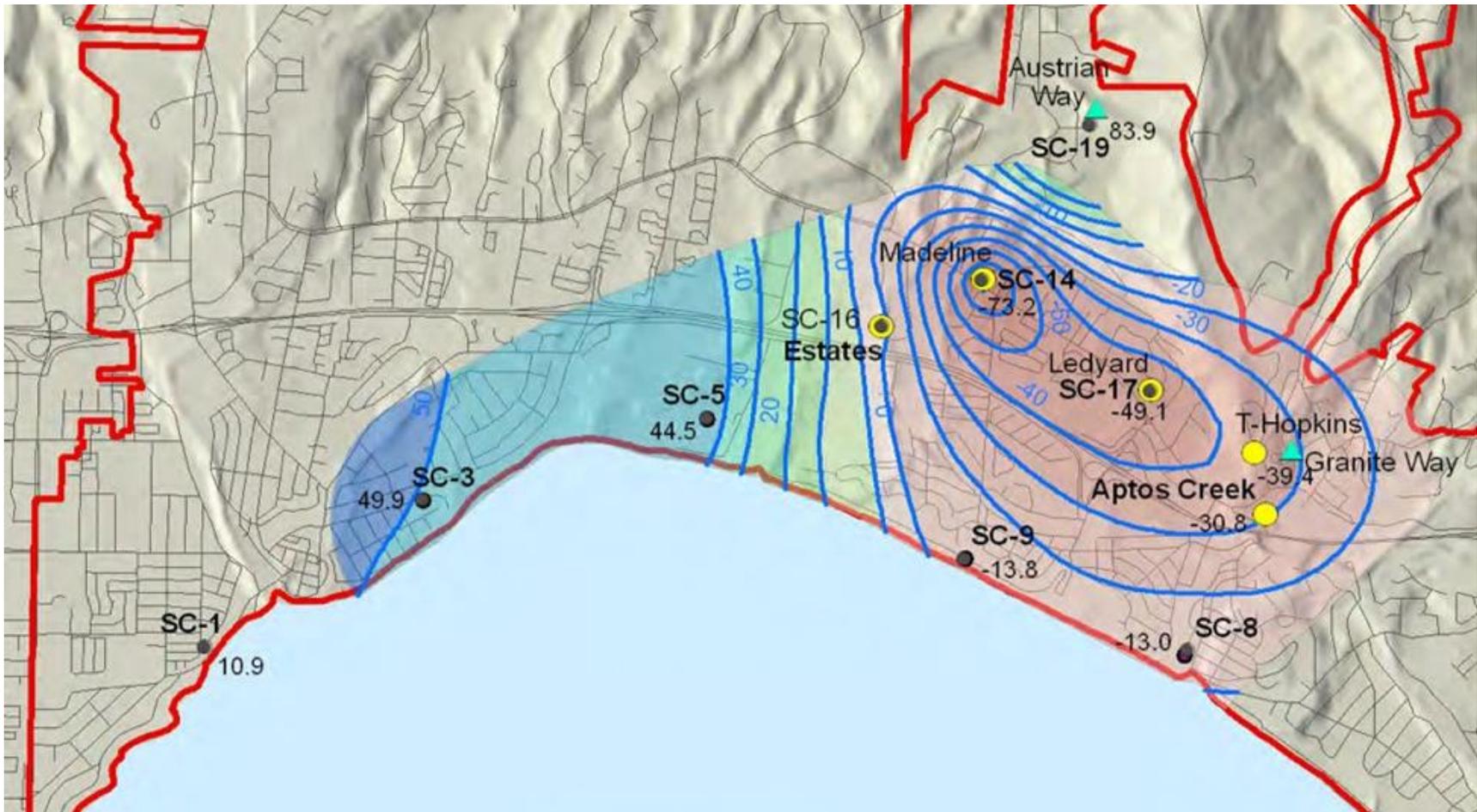
**Protecting our
groundwater for the
future (long term) is
our top priority.**

Current situation with our groundwater supply (and how we got here)

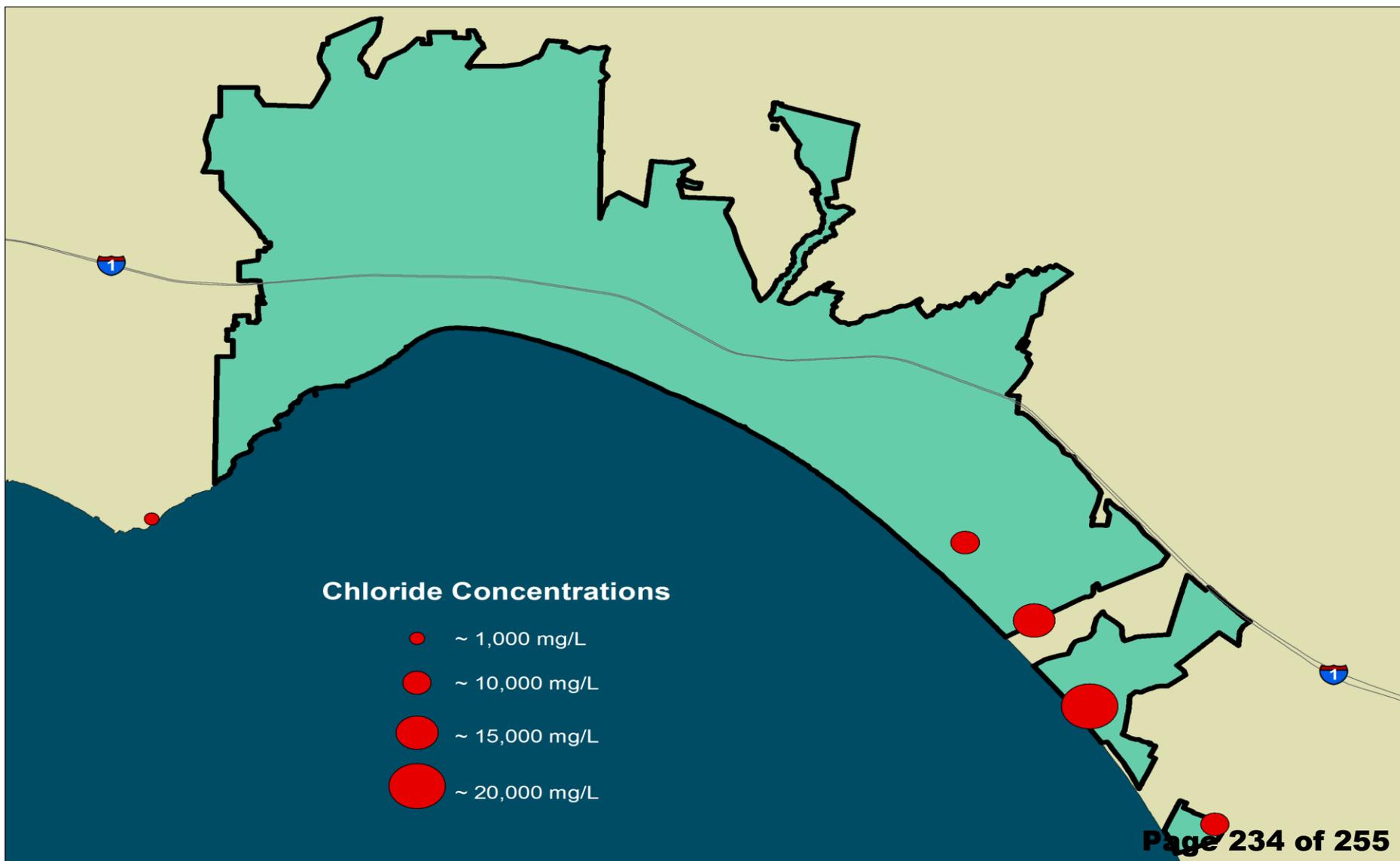
Issue: Basin Pumping Deficit



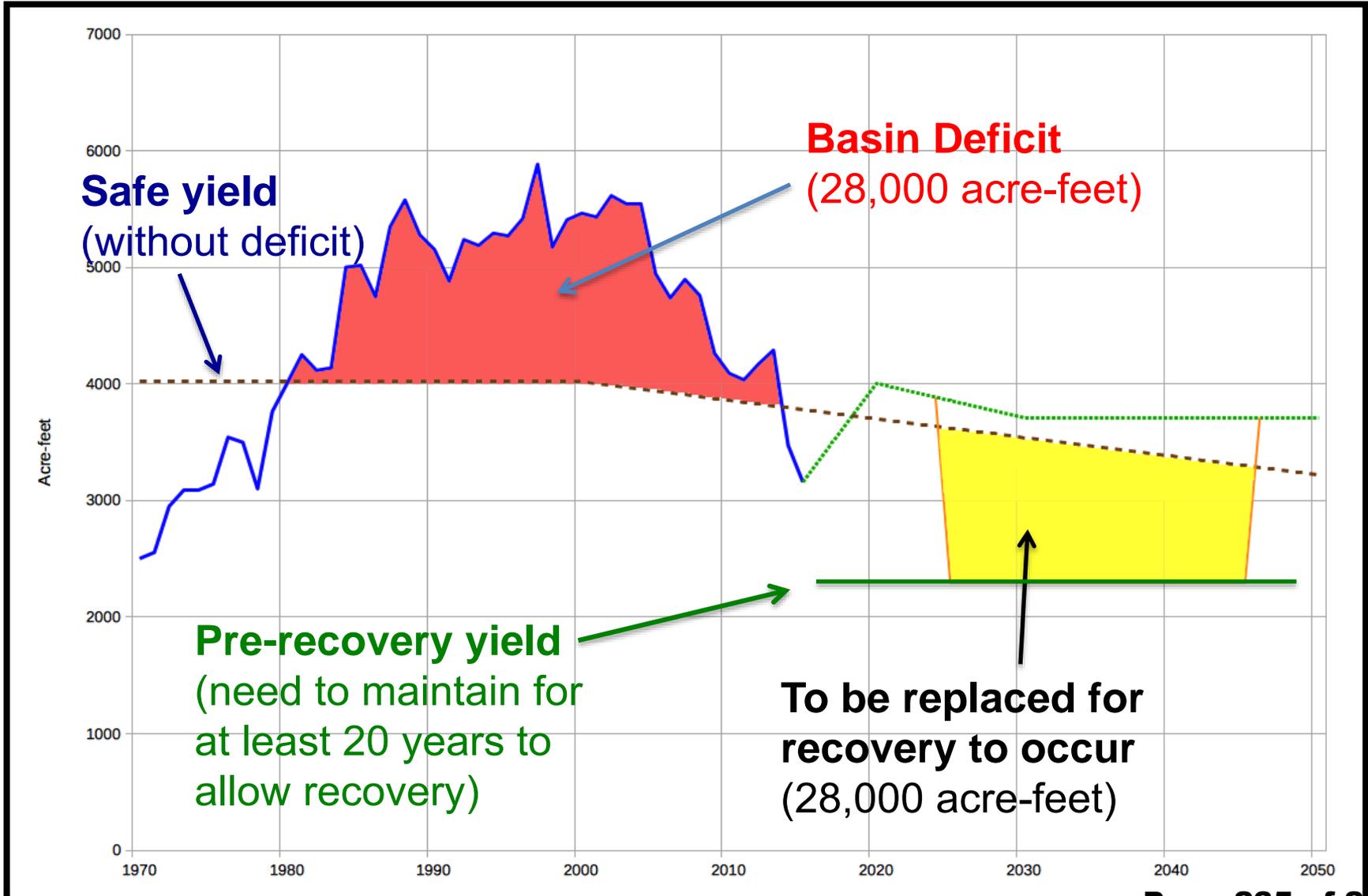
Issue: Groundwater Lost



Problem – Sea water intrusion

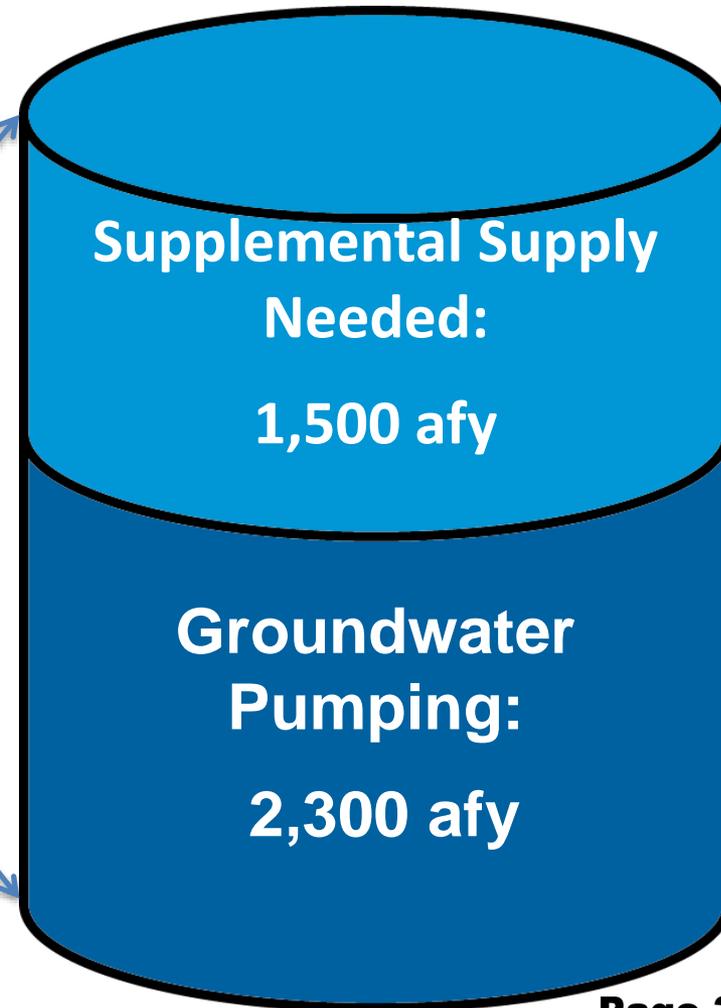


Need: Basin Recovery



Need: Supplemental Supply

Projected Water Demand
3,800 acre-feet per year



So what's the plan to achieve basin recovery?



**Continue improving
our strong
conservation efforts**

**Continue insisting on
Water Neutral
Development
(or better) – Water
Demand Offset (WDO)**

Groundwater Management

- Monitoring well program
- Collaboration
 - SAGMC & formation of Groundwater Sustainability Agency
 - Groundwater model
 - Seawater-freshwater interface

**Find a reliable, high
quality supplemental
supply for the long
term**

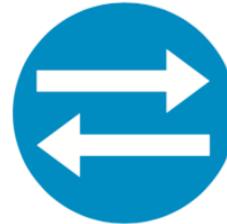


**With groundwater replenishment
Feasibility study in progress
(preferred option)**



Desalination

**Keeping this option open
with Deep Water Desal -
Memorandum of interest**



River Water Transfer/Purchase

**Pilot project to purchase a
small amount could begin
in late winter or spring.**

Public input and sharing of information (like this meeting) is extremely important as we move forward towards a sustainable water supply

Thank you

www.midcountygroundwater.org

Home Groundwater Issues News FAQs Resource Library Calendar SAGMC Agendas

Soquel-Aptos Groundwater Management Committee

GROUNDWATER IS A VITAL RESOURCE TOGETHER - LET'S PROTECT IT!

please join us

COUNTY OF SANTA CRUZ
CITY OF SOQUEL
SOQUEL CREEK WATER DISTRICT

Upcoming Events

12/10/2015 - 7:00pm to 9:00pm
Groundwater Stakeholder Meeting at Live Oak Grange

Our problem

Seawater Intrusion

We rely only on groundwater, but our aquifers have been overpumped. For more information, [click here](#).

The State Requirements

The CA Sustainable Groundwater Management Act

effective January 1, 2015

What you need to know

A new law requires basin-wide sustainable management for all water users. For more information, [click here](#).

Current activities

Upcoming public meetings and how you can get involved. For more information, [click here](#).

SIGN UP FOR OUR NEWSLETTER

Next SAGMC meetings:
Jan. 21 and
March 17,
Capitola City
Hall, 7pm

Stay
tuned for
next
public
workshop

Management of Santa Cruz Mid-County Groundwater Basin

Overview

The Mid-County (Soquel Aptos) Groundwater Basin is currently in a state of overdraft with depressed groundwater levels, seawater intrusion and diminished streamflow. Local agencies have been taking steps to address the overdraft since 1995. These efforts will be bolstered by passage of the Sustainable Groundwater Management Act of 2014 (SGMA), which provides local agencies the authority and the responsibility to eliminate groundwater overdraft by 2040. Under SGMA the local agencies will:

- Define the boundaries of our groundwater basin
- Form a Groundwater Sustainability Agency (GSA) to manage the basin
- Develop a Groundwater Sustainability Plan (GSP), which will likely involve a combination of water conservation, increased groundwater recharge and supplemental supply, with equitable allocation of costs among users based on impact on the groundwater basin.

If local agencies fail to act, the State will step in.

Basin Boundaries

A boundary modification request is being submitted to the state to define the basin boundaries of the Santa Cruz Mid-County Groundwater Basin to reflect the entire local area of concern. Public comment may be submitted until March 30, 2016. (www.midcountygroundwater.org)

About the Groundwater Sustainability Agency (GSA)

- The GSA will be responsible for developing and implementing a plan to manage use of water within the Basin.
- The GSA can be a single public agency or a Joint Powers Authority (JPA) consisting of multiple public agencies.
- Currently the Soquel-Aptos Groundwater Management Committee (SAGMC) is a JPA that is already coordinating planning efforts in the Basin.
- SAGMC includes the Soquel Creek Water District, the Central Water District, the City of Santa Cruz, the County of Santa Cruz, plus private well representatives.
- The GSA will likely look like the SAGMC, but with more powers consistent with SGMA
- The SAGMC has prepared a draft Joint Powers Agreement, which should be ready for approval by each member agency by early 2016.
- Approval of this JPA would create the new Santa Cruz Mid-County Groundwater Agency.
- The Mid-County Groundwater Agency must conduct a public hearing and solicit stakeholder comment prior to filing a notice with the state that it will be the GSA for the Mid-County Groundwater Basin.
- We anticipate that that the Mid-County Groundwater Agency will be fully established as the GSA by July 2016
- The GSA is required to monitor and report on groundwater extraction and develop and implement a groundwater sustainability plan (GSP).
- The GSA can levy assessments on water users to fund its activities, subject to the taxpayer approval process provided for in the Right to Vote on Taxes Act (Proposition 218).

About the Groundwater Sustainability Plan (GSP)

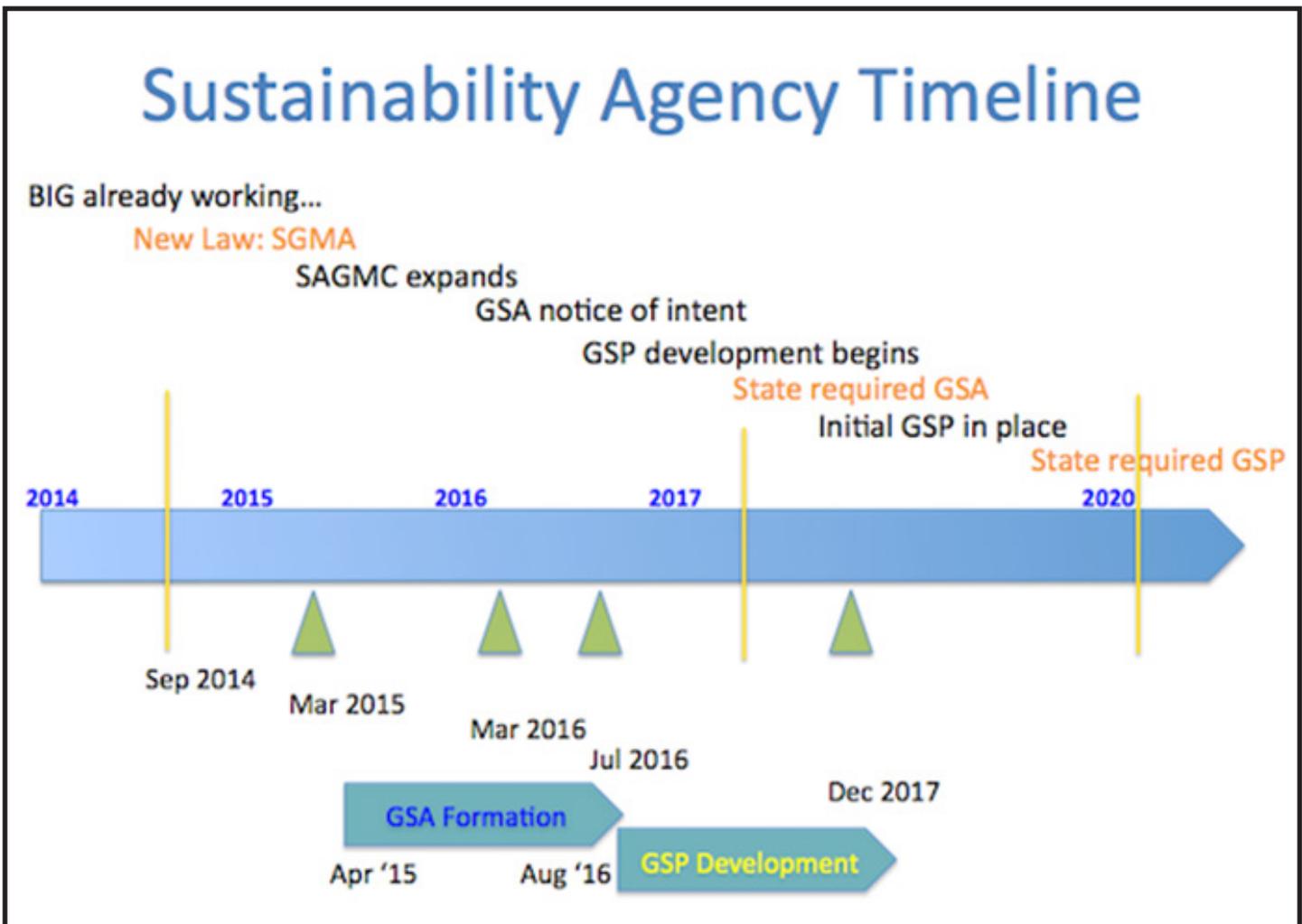
- The GSP must be developed by 2020 and must be fully implemented to eliminate adverse impacts of groundwater overdraft, including long term groundwater depletion, seawater intrusion, reduction in water quality, and reduction in streamflow by 2040.
- The GSP must also take into account projected impact of climate change, including sea level rise, increased irrigation demand and reduced groundwater recharge.
- Methods to achieve sustainability may include managing pumping, increasing water conservation, creating supplemental supplies, and increasing recharge.

- The GSP will also evaluate and recommend a funding mechanism to allocate the costs of achieving sustainability among basin water users based on their impact on the basin.
- The GSP will be developed by the GSA, based on technical information and input from all involved stakeholders and water users.
- Work will build on the existing Groundwater Management Plan for the Soquel-Aptos Area, developed in 1996 by Soquel Creek and Central Water Districts, which must be updated and strengthened to meet the requirements of SGMA.
- A detailed groundwater model is being developed to better characterize the effects of groundwater pumping and evaluate the expected benefits of potential management scenarios.
- Stakeholder involvement in GSP development will include water supply agencies, land use agencies, regulatory agencies, environmental concerns, private well users, and other water users in the basin.
- Ultimately the GSP must be approved by the GSA, including all member agencies, as well as the State.

What can individual basin users do right now to reduce overdraft?

- Reduce pumping by practicing water conservation and eliminating any unnecessary water extraction; request a water use audit.
- Volunteer to have your groundwater level measured or to install a water meter
- Stay engaged by signing up for emails, visiting the website, attending meetings, offering comments

For more information on SGMA requirements, background information on the issues, basin boundary maps, process for GSA formation, GSP development, and future public meetings, visit: www.midcountygroundwater.org



Reaching agreement on who will manage a groundwater basin is a critical step in achieving sustainable management, and there a number of ways that agencies may enter into agreements for managing groundwater. The following information may be useful for local public agencies or other groups interested in learning more about legal agreements between agencies for the Sustainable Groundwater Management Act (SGMA) compliance activities.

[Note: the information contained in this document does not indicate a preference, either in terms of content or in terms of process, for any specific legal agreement or coordination effort. The references and citations are provided strictly as informational material. The following information incorporates the 2015 legislative changes outlined in SB13.]

Forming a Groundwater Sustainability Agency

One of the most important SGMA requirements is the formation of one or more groundwater sustainability agencies (GSAs). The GSA is responsible for developing a sustainability plan for the groundwater basin. SGMA allows any local agency to become a GSA; in some cases, there may be multiple agencies that are interested in jointly managing the groundwater resources. SGMA allows multiple local agencies to act as a single GSA through a **memorandum of agreement (MOA), a joint powers agreement (JPA), or any other legal agreement** (California Water Code, Section [§] 10723.6 (a)).¹ A water corporation regulated by the PUC or a mutual water company may also participate in a GSA through a memorandum of agreement or other legal agreement (§ 10723.6 (b)). Additionally, although Tribes cannot form GSAs, they can participate in SGMA through a JPA or other agreement (§ 10720.3 (c)).

Every groundwater basin must have a GSA for all areas of the basin, by June 30, 2017. Submitting a GSA notification to the Department of Water Resources (DWR) initiates a 90-day period after which the submitting agency is presumed to be the exclusive GSA in the area covered by the notification. If local agencies submit GSA notifications for overlapping areas, no agency will become the GSA until the agencies reach agreement on sharing the authority to manage the basin (§ 10723.8 (c)). If the local agencies cannot reach agreement, the basin may be designated as a probationary basin and the state may develop an interim plan for managing the basin until the agencies can reach agreement and identify a GSA or GSAs (§ 107352.2(a)(1)).

Some local agencies have entered into a non-binding memorandum of understanding to forbear submittal of a GSA notification until all interested local agencies have an opportunity to meet and agree on which agencies will manage the groundwater basin. Taking the necessary time to negotiate and reach agreement among the local agencies prior to submitting a GSA notification may lead to a more productive and less costly process for achieving sustainable groundwater management.

Developing Coordinated Sustainability Plans

Where multiple agencies agree to act as a single GSA, the agencies will develop a single groundwater sustainability plan (§ 10727(b)(1)). Multiple GSAs may also work together to develop a single sustainability plan (§ 10727(b)(2)), or to develop multiple sustainability plans for a single basin. When there is more than one sustainability plan for a groundwater basin, the responsible GSAs must

¹ All subsequent citations are to the California Water Code.

coordinate management of the basin through a single **coordination agreement** that covers the entire basin (§ 10727(b)(3)). The coordination agreement, defined as a legal agreement between two or more GSAs for coordinating multiple agencies or sustainability plans within a basin (§ 10721 (d)), must be submitted to DWR for review with the submission of the groundwater sustainability plans. SGMA requires that each coordinated sustainability plan utilize the same data and methodologies for groundwater elevation data, extraction data, surface water supply, total water use, change in storage, water budget, and sustainable yield (§ 10727.6). DWR will adopt regulations for evaluating coordination agreements by June 1, 2016 (§ 10733.2(a)(1)).

References and Available Documents

The California Water Foundation recently published a *Guide to Forming Groundwater Sustainability Agencies* (Guide), which includes chapters on “Governance Through an MOA,” and “GSA Formation through a JPA.” The Guide includes a table comparing the differences between the two types of agreements. The Guide can be found on the California Water Foundation Website:

http://californiawaterfoundation.org/wp-content/uploads/2015/09/CF_GSA_Guide_09.30.15_web.pdf

Sample Memorandum of Agreement and Joint Powers Agreements

Several basins or groups have developed Memorandums of Agreement (MOAs) and JPAs to help guide their SGMA efforts, including GSA formation and development of sustainability plans. Several sample MOAs/JPAs establishing relationships between interested agencies are presented below. The State Water Resources Control Board and DWR do not intend this list to indicate preference, approval, or legal merit, and do not intend that a GSA should or must follow the content or intent of any of the agreements listed below.

- Ventura Basin: www.cityofventura.net/files/file/meetings/city_council/2015/03-16-15/item%2010.pdf
- Kings County: www.co.fresno.ca.us/ViewDocument.aspx?id=63946
- Monterey County: www.mpwmd.dst.ca.us/asd/board/boardpacket/2003/20030828/07/item7_exh7b.pdf
- Sacramento Central Basin Groundwater Authority JPA: <http://www.scgah2o.org/documents/Sacramento%20Central%20JPA.pdf>
- Soquel-Aptos JPA: http://sccounty01.co.santa-cruz.ca.us/BDS/Govstream2/Bdsvdata/non_legacy_2.0/agendas/2015/20150519-658/PDF/036.pdf
- Eastern San Joaquin County JPA: http://www.ci.lathrop.ca.us/agenda/pdf/18-09-2015_11-16-09-23_Report.pdf
- Madera Groundwater Authority JPA: http://www.cityofmadera.org/c/document_library/get_file?uuid=4837dba9-975e-4b53-b8a7-9ac69f4a9ee2&groupId=10128



Appendix D - Comments from Private Well Owners:

- A. Residential wells in rural areas represent a substantial capital investment in our properties compared with folks who rely on city or agency-supplied water.
- B. We have over \$10,000 invested in our well, pumps, storage and pressure tanks and control paraphernalia.
- C. Private wells require periodic maintenance or repairs that can be costly.
- D. Our water costs us a substantial amount of money to produce, so any water management scheme promulgated by public agencies might reasonably be construed as a form of condemnation, and should be subject to appropriate compensation.
- E. Rural residential-use wells are mostly located outside urban services areas, so these properties usually have septic systems for household waste disposal. These systems recharge the aquifer or nearby riparian zones at a very high proportion of total water use.
- F. I would guess that upwards of 80% of our total water consumption gets recharged, and therefore net water consumption (relative to the aquifer and riparian zone) is far less than that of urban and suburban residential households.
- G. It is important to separate the real issue (overdraft of the aquifers) from the transient, largely political issue (“The Drought”).
- H. Most folks on rural residential-use wells are already in an 80% conservation mode by default and have a relatively large stake in their water supply systems.
- I. Our community of rural residential well owners should not be subject to the same strict rationing policies as the overdeveloped lowland communities or commercial agricultural users. We have not contributed significantly to the overdraft problem compared to these other user categories, neither of who recharge much if any of their water back into the natural system.
- J. Creating more government agencies, beyond the elected water districts, is not a good idea.
- K. We have all the protection we can ever use, and putting more people in charge of our lives is a very ill advised move.
- L. Please re-think support for increased bureaucracy, especially one that might be made up of people who lack technical knowledge and understanding of the different water situations within our state and County.
- M. There is a huge difference between Soquel Creek Water and Central Water Districts, and grouping them together is very, very wrong.
- N. I really will speak against this misguided effort.
- O. Our water boards are fully capable of dealing with any water shortage issues. We do not need more layers of government or groups of activists controlling our lives.
- P. A private well owner stated he fully intends to file a legal challenge if there’s any imposition of fees or other charges. He said he’s willing to *voluntarily* do his part to achieve sustainability, but rejects being compelled to do so.

The County of Santa Cruz, Regional Water Management Foundation and the Santa Cruz Local Agency Formation Commission (LAFCO) invite you to attend:



Working Together for Water

January 28, 2016
7-9 pm event; open house at 6:30
New Brighton Middle School auditorium
www.SantaCruzIRWMP.org/DROPS

Are you concerned about water supply and water quality? Would you like to know more about what is going on at the state level to protect water resources, and how it affects what's happening in Santa Cruz County?

Join us as we “connect the drops” to learn how Santa Cruz County agencies, legislators, and the community are working together to protect and manage our water resources.

Keynote Speaker: California Natural Resources Secretary John Laird

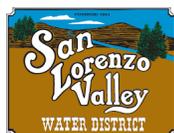
Panel Discussion: Local collaborative efforts to protect and manage water resources

Information Stations: ♦ Water recycling ♦ Groundwater recharge and stormwater management ♦ Water system interties and water exchanges ♦ The Sustainable Groundwater Management Act ♦ Water conservation ♦ Fish and watershed management



Pajaro Valley
Water Management Agency

REGIONAL WATER
MANAGEMENT FOUNDATION



SCOTTS VALLEY
WATER DISTRICT

Karen Reese

From: John Ricker <John.Ricker@santacruzcounty.us>
Sent: Thursday, December 17, 2015 3:14 PM
To: 'Douglas Deitch'; Bruce Daniels External; Zach Friend; Bruce McPherson; John Leopold; Ryan Coonerty; Greg Caput; citycouncil@cityofsantacruz.com; Karen Reese; Melanie Schumacher; cmathews@cityofsantacruz.com; mposner@cityofsantacruz.com; Ddeitch
Cc: Sierra Ryan
Subject: RE: Comments for Thursday GSA meeting December 10, 2015

Doug,

Your comments will be included with the other comments received on the proposed boundary modification and that record of comments will be made available to the members of the Soquel-Aptos Groundwater Management Committee prior to the next meeting on January 21 when they consider submitting the request to DWR.

John

John Ricker
 Water Resources Division Director
 County of Santa Cruz
 831-454-2750

-----Original Message-----

From: Douglas Deitch [mailto:ddeitch@got.net]
Sent: Wednesday, December 09, 2015 7:23 AM
To: Bruce-Daniels <Bruce.Daniels@alum.MIT.edu>; John Ricker <John.Ricker@santacruzcounty.us>; Zach Friend <Zach.Friend@santacruzcounty.us>; Bruce McPherson <Bruce.McPherson@santacruzcounty.us>; John Leopold <John.Leopold@santacruzcounty.us>; Ryan Coonerty <Ryan.Coonerty@santacruzcounty.us>; Greg Caput <Greg.Caput@santacruzcounty.us>; citycouncil@cityofsantacruz.com; karenR@soquelcreekwater.org; melanies@soquelcreekwater.org; cmathews@cityofsantacruz.com; mposner@cityofsantacruz.com; Ddeitch <ddeitch@pogonip.org>
Subject: Comments for Thursday GSA meeting December 10, 2015

Hi Micah Posner , (
https://www.facebook.com/permalink.php?story_fbid=939762522738785&id=100001151386333
)

I heard you at the city council meeting soliciting for comments for the new GSA being formed. So, here are some for you ... images at facebook link

https://www.facebook.com/permalink.php?story_fbid=939762522738785&id=100001151386333
)

Here are my first comments for your GSA meeting Thursday which I can't attend. Please present them and forward them to all members of GSA for me have the GSA please confirm with me that his has been accomplished. I appreciate this very much. (Also, please return my umbrella I lent you in that rainstorm/squall I rescued you w/ your daughter from a few months back, Kid, too? tx, dd)

1. Boundary adjustments and unrepresented PVWMA GSA stakeholders: The current boundary adjustments being proposed are inadequate and insufficient. Please review this map charting ground water degradation and salt water intrusion from 2011-13 to appreciate the interface between PVWMA and SqCWD at their boundary on San Andreas

Road (<https://www.facebook.com/MontereyBayConservancy/photos/pb.177055962316509.-2207520000.1449672857./948594631829301/?type=3&theater>

,
<https://www.facebook.com/MontereyBayConservancy/photos/pb.177055962316509.-2207520000.1449672857./948594748495956/?type=3&theater>

,
<https://www.facebook.com/MontereyBayConservancy/photos/pb.177055962316509.-2207520000.1449672857./948595021829262/?type=3&theater>

) ... (
<https://www.facebook.com/MontereyBayConservancy/photos/a.392629640759139.87659.177055962316509/951749101513854/?type=3&theater>
).

A 2013-15 map would show increased degradation since pumping has escalated substantially because of the drought. (
<https://www.facebook.com/MontereyBayConservancy/photos/pb.177055962316509.-2207520000.1449672857./948595285162569/?type=3&theater>
)

The charted salt water intrusion on this map stops at SqCWD boundary BUT THE ACTUAL SALT WATER INTRUSION DOES NOT!

This San Andreas Road area in PVWMA needs to be included in a joint jurisdictional area between all stakeholders PVWMA, SqCWD, County of Santa Cruz, City of Watsonville, which is not now the case.

Additionally, it is my understanding that NEW first time deep water supply wells are being developed in Watsonville in the deep Purisima Formation, which comprises the majority of SqCWD's water (?) .

If this is the case or not, in any event attention should be given to this new recent development in terms of proper and complete stakeholder representation in PVWMA (see article in California Water Blog, below) and Pajaro Basin with all stakeholders, County of Monterey, County of Santa Cruz, Watsonville, SqCWD, private well owners in PVWMA, PVWMA and ? must be properly and fairly represented AND now they are not.

This, as Dr. Frank mentions below, is how to address the water wolves in our water hen house.

2. Irrespective of GSA, here is what DWR Czar Mark Cowin has most recently advised us is most IMPORTANT to do ... (
<https://www.facebook.com/MontereyBayConservancy/photos/a.392629640759139.87659.177055962316509/1028178490537581/?type=3&theater>
)

DWR Czar Mark Cowin quoted from this article, 8/19/2015 :

"The most important thing that can happen is for counties to pass or strengthen ordinances that limit over-pumping," California Department of Water Resources director Mark Cowin, said at a Wednesday morning press conference releasing the new data, collected by the National Aeronautics and Space Administration. "It will take that kind of action to have any real effect.

Last year, the state created a framework to regulate groundwater — the first time in state history — but it won't be fully implemented until 2020. And then it will take a decade or two for water levels to rebound, Cowin said."

(
<http://www.santacruzsentinel.com/general-news/20150819/central-valley-locales-sinking-2-inches-a-month-as-groundwater-is-drained/1>

)

... BUT what are we and our county supervisors, water districts, city councils, etc., et al here in the Monterey Bay and Santa Cruz County "doing" (or not doing?) instead for the last 30 plus years (<https://www.facebook.com/MontereyBayConservancy/photos/a.392629640759139.87659.177055962316509/1028724980482932/?type=3&theater>)?

This ... <http://www.metrosantacruz.com/metro-santa-cruz/09.23.09/news4-0938.html> ?

The GSA must IMMEDIATELY advocate to our supervisors that they start supervising, following our local laws and LCPs, and their oaths to do precisely this ...

AND AT THE MINIMUM, conduct a Public Hearing under our County Well Ordinance to consider declaration of a county wide ground water emergency (<https://www.facebook.com/MontereyBayConservancy/photos/pb.177055962316509.-2207520000.1449672866./943194802369284/?type=3&theater>), as SqCWD has already requested that the BOS do well over a year ago.

The situation is now officially seriously degraded over this year.
Please see:

<https://www.facebook.com/MontereyBayConservancy/photos/a.215880731767365.54128.177055962316509/983979478290816/?type=3&theater>

... and even Gary Patton, who originally wrote and signed (<https://www.facebook.com/MontereyBayConservancy/photos/pb.177055962316509.-2207520000.1449672866./943204325701665/?type=3&theater>) the Well Ordinance in 1987 (www.pogonip.org/ord.htm , www.pogonip.org/alm.htm)

... seems to now agree:
<https://www.facebook.com/MontereyBayConservancy/photos/pb.177055962316509.-2207520000.1449672866./943298669025564/?type=3&theater>

TO REPEAT AGAIN ...
AS DWR CZAR HAS MOST RECENTLY TOLD US ...
DESPITE ANY GSA ...

"It will take that kind of action to have any real effect."

Respectfully submitted,
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