

Tahoe Valley South Subbasin (6-005.01) Alternative

MEETING NOTES

Wednesday, January 12, 2022; 2:00 pm - 4:00 pm

Location: MS Teams On-Line Meeting

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RECORD MEETING

SAG ATTENDEES:

John Thiel, PE; Ivo Bergsohn, PG, HG (STPUD); Kyle Ericson, PE (El Dorado Water Agency); Karen Bender, REHS (El Dorado County – EMD); Brian Grey, P.G., (Lahontan Regional Water Quality Control Board); Jason Burke (City of South Lake Tahoe); Jacob Stock (Tahoe Regional Planning Agency); Nicole Bringolf (USFS-LTBMU); Jennifer Lukins (Lukins Brothers Water Co)

Participants:15

BASIN MANAGEMENT OBJECTIVES:

1. Maintain a sustainable long-term groundwater supply.
2. Maintain and protect groundwater quality.
3. Strengthen collaborative relationships with local water purveyors, governmental agencies, businesses, private property owners and the public.
4. Integrate groundwater quality protection into local land use planning activities.
5. Assess the interaction of water supply activities with environmental conditions.
6. Convene an on-going Stakeholders Advisory Group (SAG) as a forum for future groundwater issues.
7. Conduct technical studies to assess future groundwater needs and issues.
8. Identify and obtain funding for groundwater projects.

WORKSHOP OBJECTIVES

1. Gather initial review comments for the first five-year update of the Alternative Plan for the Tahoe Valley South Subbasin (6-005.01) (Draft, 12/17/2021).

Roll Call

Jason Burke (CSLT), Jacob Stock (TRPA), Kyle Ericson (EDWA); Susan Rybarski; Gary Kvistad (General Counsel); Karen Bender (EDC-EMD); Brian Gray (LRWQCB) Nicole Bringolf (USFS-LTBMU), Jennifer Lukins (Lukins/TKWA); Ivo Bergsohn (STPUD), Mark Hausner (DRI); Susie Rybarski (DRI)

TVS Basin (6-5.01) - Open Forum (Group)

Current groundwater-related topics outside Agenda

I. Bergsohn, STPUD

- 2022 SAG Roster Changes:
 - Thanks to
 - Joey Keeley, USFS-LTBMU - Retired;
 - Michael Conger, leaving TRPA
 - Daniel Larson, TKWC, - Employment change - working for City of Fernley, NV

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- Welcome to

- Jacob Stock, Senior Long-Range Planner, TRPA (Replacing M. Conger)
- Kyle Ericson, PE, Water Resources Engineer, EDWA
- Russ Wigart, Stormwater Coordinator, EDCDOT

J. Lukins, LBWC

- Jennifer Lukins is also representing TKWC as interim Water Manager. She took over in December and reported that she is getting things up to speed in preparation for the Summer.

I. Bergsohn, STPUD

- 2021 SAG Workshop 2 Meeting Notes and Presentations (June 30, 2021) are posted on District's Groundwater Page. This would have been about the time we were all coming back from COVID. We have cranked out a lot of work since then.

Alternative Plan – SAG Comments

Handouts: Alternative Plan for TVS Subbasin (6-005.01)

- Ivo Bergsohn, STPUD (IB) introduced the working draft document and encouraged SAG participants to provide initial comments on the draft document by next Thursday, January 20th. For today the wish is to field initial comments from the SAG starting with General Comments on the draft Document and then walking-through for SAG comments on specific sections.
- Before fielding comments from the SAG, did anyone happen to read the entire document?
 - Nicole did read most of the beginning of the document. She wanted to discuss Section 2 on the Ground Water Basin. Should we use lake level at elevation? The document mentioned lake level as 6,225 feet, but in Section 2.62 it is listed as 6,22.3 feet. Should we use the 6,225 number in both places to be consistent? Ivo said we will take a look at that.
 - Karen Bender just texted Russell Wigart. He did not get the invitation that she had forwarded him for the SAG meeting but will joining momentarily.
- General (Note: Document has been paginated since release of the 12/17 draft)
- Any thoughts on the organization of content in the Document?
 - Ivo asked the group about the organization of the document. Is there anything that needs to be rearranged or changed in the sequencing in the document.
 - No comments.
- Suggested additions to the Glossary?
 - Ivo pointed out the Glossary at the beginning of the document after the Table of Contents. He would like any recommendations for improvement or comments.
 - Nicole Bringolf (USFS-LTBMU) thinks the glossary is more of an acronym list. Ivo asked if she would prefer something with greater detail in the Glossary rather than just the identifiers? Nicole said the word Glossary is fine if that is the way Ivo wants

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to go.

General suggestions for Improvement?

- No comments

Section 1 – Introduction (Regulatory Context) :

- Any Comments on Section 1?
 - Ivo reported that this section is to primarily to provide the reader with the regulatory context for the Alternative Plan. It talks about the background and evolution of the Alternative Plan. It is also to point out the changes and new additions added to the Alternate Plan.
 - It starts with the 2014 Ground Water Management Plan (GWMP) submitted to the Department of Water Resources (DWR) in 2016. It took some time for DWR to review it and approve it as the Alternative Plan for our Subbasin. There is a description of the recommended actions in the introduction from DWR as far as some of the things that they wanted to see in the alternative. Then we are required to incorporate those changes in the Alternative Plan. This is the first 5-year update that will need to be submitted to DWR. Also, of note is the changes that were made between the 2014 plan and the current draft
- Any needed corrections/clarifications?
 - No comments
- Any thoughts on the evolution of the Alternative Plan described in Section 1.2?
 - Brian Grey (LRWQCB) thought that things came across pretty clearly in Section 1.2, but in terms of looking at table 1-2 it is not quite consistent with the section headings right now. We probably want to go through and make sure that it is consistent in the final document.
 - Ivo has made some updates since the time this was released and now.
 - Brian said that is in terms of the titling of Section 1.2, it might be good to point out to the reader that the actions were recommended by DWR and not another entity. Also, on the list of projects in Section 1.2.1, is there additional work that should be included there?
 - Ivo said we talk about it more in depth in section 7.
- Any thoughts on the presentation of new content added to the Alternative Plan described in Sections 1.3 and 1.4; does it adequately alert the reader to these changes in the document?
 - Brian asked if the fact that the subjects are introduced and further discussed later in the document is consistent?
 - Ivo said that in Table 1 we were trying to set the table to let the reader know what was coming in the document in subsequent sections. He appreciates the comment that introducing it early and discussing it in later sections may be problematic to some readers, but does highlighting the new content in Sections 1.3 and 1.4 adequately alert the reader to those changes in the document? Brian said it seemed that way.
- Suggestions for improvement?
 - See above

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Section 2 – Groundwater Basin (Physical Description of Subbasin):

- This is pretty much the physical description of the Subbasin. Any comments?
- Does it adequately describe the basin boundaries and geographic sub-areas?
 - Jacob Stock (TRPA) said that speaking on behalf of other colleagues at TRPA, there was a question regarding Figure 2-14. The question is what data was used to show the TRPA delineated SEZ Zones if using land? The mapping needs to specify.
 - Ivo believes this is from the TRPA special data set. That was the layer that we used.
 - Jacob can confirm with his colleagues. She may have just meant that we need a disclaimer when dealing with specific parcels. He will follow up with her and pass it on.
 - It is thought that we all use a similar delineation for SEZ's to delineate parcels. Jason Burke (City of SLT) said he knows it is a very sensitive topic.
 - Ivo asked that if anyone in the group has comments to him as far as typos and such to submit them to him in writing before 1/20.
 - Ivo told Mark Hausner (DRI) that this would probably be a good place to mention that GDE's are one aspect of it. Mark said we can certainly refer to that and address that in that section
- Did you find any portions of Section 2 confusing/difficult to read such as the descriptions of the Geology, Basin Aquifers and/or Surface Water Features?
 - No comments
- Suggestions for improvement?
 - No other suggestions for improvement

Section 3 – Plan Area (GW Use within Subbasin):

- Focused on describing groundwater use within the Subbasin. Have kind of an odd fit section in 3.5 to talk about Wastewater management with lack of a better place to include it.
- Any thoughts comments on descriptions of population or population growth land use and groundwater use within the basin?
 - No comments
- Were there Water Demand Projections presented in a clear manner?
 - Section 3.3 is devoted to different groundwater users primarily public water systems being changed to community water systems and individual water systems. It also includes the Well Owners Surveys.
 - Brian said that there had been some discussion of clarification of public vs community. Whatever is chosen should mirror what is used in the other sections. He is not sure if it is more appropriate to break out public vs unregulated. In terms of the intro to Section 3.3 it is a little bit mixed, interchanging public vs community, and Individual being lumped with Unregulated. Are we really talking about unregulated wells or individual wells? Global comment as far as domestic vs private. We should pick one or the other.
 - Ivo has been working on that section to take care of those wrinkles. If you take a look at how the water systems are described by other agencies. STPUD is the only public water system. Section 3.3.2 goes from public to community.
 - Karen Bender (EDC EMD) said we might want to list them as small or large community systems. Less than 200 connections for a small system regulated by the County and 200 or more for large Systems regulated by the State.

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- Nicole believes that El Dorado County Environmental Health has set a term for water systems. That would be the best way to go when describing water systems for this plan.
- Ivo agrees. We did incorporate those definitions in that section. He likes the break between small and large. We can change Section 3.3.2 to large community water system and then individual water systems would be included in the small community water systems plus domestic wells.
- Jennifer Lukins (LBWC/TKWA) asked if we want to group the small community water systems with the wells?
- Ivo said that on Figure 3.5 we have the small water systems broken out which is included as part of the section describing individual water systems. In Section 3.3.1 is domestic wells. He thinks part of the confusion is that the well owner surveys were called "Private Well Owner Surveys". In hindsight maybe it was not the best thing to do, but that is how it is organized in the document.
- Ivo asked Karen to send comments on how we might improve that. She will look at it more closely and get back to him.
- Jennifer's concern is that the small water companies will get lumped in with single well motels or trailer parks or campgrounds for failing water systems. Karen agrees.
- Suggestions for improvement?
 - See above

Section 4 – Local Government Agencies (Regulatory Environment):

- This section describes regulatory agencies and descriptions.
- Any corrections/clarifications needed for the Agency descriptions?
 - Nicole said that the revised Land and Resource Management Plan is now finalized. It came out in 2016. Ivo asked that Nicole send in a comment on that. She has a bit more but thinks it is best to send in an email for this section.
 - Jason has some changes for the City including regulatory changes for the affordable housing act. He will send comments in a letter form before the deadline.
 - Brian said one notable omission was their Waste Discharge Requirement Program. Ivo asked that Brian please send in a comment on that.
 - Karen had no comment, but she has not looked at it.
 - Kyle Ericson (EDWA) did not look at it, but Rick is putting together some comments.
 - Jacob has reviewed this section and will send in comments. When talking about the thresholds, sort of change the language, to talking about them as environmental standards. Include TRPA rules and procedures under other administrative manuals? He will put his comments in writing and send them in.
- Any corrections/clarifications needed for the Regulatory Program and Policy descriptions?
 - Kyle had a colleague with comment on Section 4.1-in reference to the historic sources of groundwater contamination. There is a suggestion that we might consider referencing PCE contamination from the 70's.
 - Ivo said that is described in length in Section 6. But again, any comments are useful to us so just because it is in Section 6 does not mean that it could not be noted in another section.

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- Jason said that Section 4.3.1 should be moved to regulatory programs and policies. Ivo agrees maybe after Section 4.4.4. Jason thinks that would be better.
- Brian has a couple of minor things. Lahontan was not in love with the framing of the clean-up sites and how they closed it. Really the comment is the background for water clean-up not the drinking water standards. Also, MTBE policies and regulations that Lahontan enforces. He will do comments about the differences in the District's policies and Lahontan's regulatory obligations.
- Any thoughts comments on Section 4.5 Analysis of Limits Imposed?
 - No comments
- Suggestions for improvement?
 - Jacob was told by a colleague that Figure 4-2 is out of date. We could find updated information on Lake Tahoe. Also, the comment on page 112 Section 4.4.4 EIP project sites, we could reference the lake clarity tracker from Lake Tahoe Information. Ivo said it is a fairly recent map, Figure 4.1
 - Jason said he concurs with Jacob it is not complete. When we look at that table there are a lot of projects that are not there. He is trying to think of how to show that. Ivo asked Jason to provide any updated list that he has.
 - Scott Caroll said that Section 4-2 to him looks accurate, but it may change soon. Figure 4-1 and Table 4-2 where it lists the projects is not complete. He assumes that the County has a bunch of projects that would fall in the Subbasin
 - Jason said he sees the value of just trying to demonstrate the scope and amount of projects without making it overwhelming.
 - Ivo asked if he was looking at a more detailed level under a larger umbrella. Jason said there were many projects not on the list but kind of the purpose of the EIP Tracker is to dynamically update that as they move along . Ivo will look forward to suggestions. Jason will also put his head together with Jacob to put something together. Ivo downloaded the projects off of the EIP tracker last summer. Jason said updates are due on 1/15 so a lot of them are working on this.
 - Jacob suggested maybe having the download from EIP tracker but then adding the link so that they can go in and see current. Jason agrees that is a good idea.
 - Brian said that Sections 4.1.1 and 4.1.4 are duplicates. Ivo said that is why it is kind of grayed out it will get red lined

Section 5 – State of the Groundwater Basin (Groundwater Conditions):

- The first 4 sections outline the context of the GWMP. Whereas Sections 5, 6, 8, and 10 are really the meat of the Alternative Plan. Section 5's purpose is to describe groundwater conditions.
- Anywhere that the descriptions were lacking or could be improved? Are the terms presented in Section 5 adequately defined?
 - No comments
- Any thoughts on the descriptions of the Groundwater Model and Identification of Data Gaps in Section 5.1?
 - No comments
- Are any clarifications needed in the descriptions of Groundwater Conditions and Groundwater-Surface Water Interactions?

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o No comments

- Any thoughts/comments on the presentation of the Groundwater Budgets?
 - o Jennifer has reviewed the budgets and thought the information was clear.
 - o Ivo said that of particular note in section 5.5 the sustainable yield for the Sunbasin is calculated at 13,200 acre feet.

Suggestions for improvement?

- o Jason said that on Section 5.4.5, Changes in Groundwater Storage, from a Statewide perspective is that more of loss of groundwater stores?
- o Ivo said yes, but it is a secondary effect. They are looking at when you have major reductions in groundwater storage due to reductions in groundwater levels. It is hard to get the storage back. That is one of the main concerns as far as changes in groundwater storage.
- o Jason asked if it was worth putting in the report that there hasn't been any loss of groundwater storage as there has been in other parts of the State. Is it worth putting in here that there has not been a loss of water storage space? Ivo said it is addressed in section 8.
- o Susy will review the text and see if it can be clarified. Maybe we should put a line in there just stating that we are talking about water that is held in storage rather than storage capacity.

Section 6 –Groundwater Quality (Current Water Quality Conditions):

- This section is devoted to describing current ground quality conditions within the Subbasin.
- Any thoughts on the presentation of the water quality data using tables, maps, and plots.
 - o No comments
- Any portions of Section 6 that need clarification?
 - o Brian noticed a number of things in Section 6. Primarily site-specific summaries. For example, the 6.3.1.2 private residence site. PCE was discovered in 2007 after a resident complained and it is not really in the investigation stage it is in the verification/monitoring stage. Lahontan has conducted regular sampling of domestic wells from 2007 to 2019. They can provide and an update.
 - o Similarly, Brian does not think that Section 6.3.3.2 is discussing the South Y Feasibility Study results. It appears to be referencing data collected by Lake Tahoe Laundry Works (LTLW). Not sure of the titling of the section and subsequent discussion. Maybe point out in the discussion that the Tucker Basin has received stormwater from Big O and LTLW and there needs to be more subsequent investigation to be performed.
- Any thoughts on the presentation of Ground Water Quality Issues in Section 6.3?
 - o No comments
- Any thoughts on the presentation of the Potential Impacts of GW Pumping on Plume Migration in Section 6.3.1?
 - o Jason said in the description of work done by AE com the century well installations were not discussed and then could also include planned activities still in works i.e., soil vapor investigation and non-municipal well sampling. He will provide these comments separately to.
 - o Ivo asked for language on that. Have not seen much from last year into this year. Asked that he please share that, and we will roll it in there.

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- Any thoughts on the discussion of Stormwater Infiltration in Section 6.3.3 (Figure 6-14 – stormwater detention basins)?
 - Ivo asked Jason about the map that shows the location of the city stormwater retention basins and the dry wells with respect to the community water supply wells.
 - Jason has not had time to look at it in detail, but it seems relevant. What Brian said before in terms of threading the needle between the various parties. Approaches to the investigation and trying to synthesize all of the available information seems kind of relevant.
- Any thoughts on the Groundwater Vulnerability Assessment in Section 6.4 (also Figure 6-15 – GW Recharge; Figure 6-16 DWSAP Map)?
 - Ivo wanted to bring a couple of maps in this section to the attention of the SAG group. The mean annual recharge across the basin map and the other one DSWAP Map the source areas protection areas around the large community supply wells in the basin and the potential contaminating activity sites. Last updated in 2017 and that will be made available to all the agencies if they would like it either electronically or pdf or both.
 - No further comments
- Suggestions for improvement?
 - No comments

Section 7 –Stakeholder Involvement:

- Any Comments on Section 7
 - Summary on stakeholder involvement
- Any needed corrections/clarifications?
 - No comments
- Any thoughts on Groundwater Management Collaboration Opportunities presented in Section 7.2?
 - Ivo would like feedback on Section 7.2 and if you agree with that or if we missed some things that should be added. Would like groups input on collaboration opportunities.
 - As discussed in an earlier workshop There is some real opportunities to work with some of the stormwater managers to increase awareness of the importance of preventing illicit discharge to stormwater especially in our area.
- Any thoughts on Coordination with Land Use Planning presented in Section 7.2.2?
 - No comments
- Any thoughts on Future SAG Topics presented in Section 7.3.1?
 - No comments
- Suggestions for improvement?
 - No comments

Section 8 –Characterization of Undesirable Results:

- In terms of SIGMA compliance this is probably the key section in the document. The Alternative is somewhat of a hybrid of the between a AD-3030 GWMP and a new SIGMA groundwater sustainability plan.
- Any Comments on Section 8
 - No comments
- Any needed clarifications?

Tahoe Valley South Subbasin (6-005.01) Alternative

MEETING NOTES

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- No comments
- Any thoughts on the presentation of sustainable management criteria, such as undesirable results, sustainability indicators and minimum thresholds?
 - No comments
- Any thoughts on description of the Provisional Management area in Section 8.3.1.5.1?
 - Under the section of interconnected surface water. Ivo wanted to draw their attention to a description of a provisional management area.
 - Susie said essentially what DRI did was run a capture analysis on the steady state version of the model to see what the source of capture would be for a well that was continually pumped throughout the model domain. For every grid cell on the model, they simulated a hypothetical well pumping there to see where the water would come from (Figure 2-2). Since it is a steady state, the water would come from surface water or the lake. Delineated areas where water would come from interconnected surface water. Still provisional at this time but they are more concerned about this area than the model domain.
 - Mark said that the reason they are doing this is because a groundwater management area allows additional thresholds to be established. We are still trying to nail down where the thresholds are and how they can be managed. We will be monitoring the model over the next five years and sharing information with the SAG group.
- Any thoughts on description of the Groundwater Dependent Ecosystems (GDEs) in Section 8.3.2?
 - No comments
- Suggestions for improvement?
 - Jennifer said she was just getting through Section 7. She will have to email any comments on sections 8-10.
 - Ivo said to please let us know if additional clarifications would be helpful.

Section 9 –Groundwater Monitoring:

- This was in the original 2014 Groundwater Management Plan. There have been additions because the data and information that we have collected are a lot broader in scope and application. Any Comments on Section 9?
 - No comments
- Any needed clarifications?
 -
- Any thoughts on description of Data Gaps in Section 9.2?
 - Ivo would appreciate it if the SAG group would focus on the data gaps in S9.2 if they get to that section.
 - A far as monitoring for degraded water quality. Right now, the basin monitoring network does not collect water quality data from those wells. Doing so would probably have a big impact on the cost of our monitoring program. We try to rely on the sharing of information especially from the County and Lahontan to stay abreast of water quality issues. Last way we know about it is when it shows up in a drinking well which is too late.

Tahoe Valley South Subbasin (6-005.01) Alternative

MEETING NOTES

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- Did you recognize any other data gaps in the document that should be considered in Section 9.2?
 - Jason had a question that is somewhat related to the Section 9.2 area data gaps regarding the general data gaps. Everything that he does now he is being pushed to talk about climate change. Is that not a legal requirement or outside the scope of this document? Is this a spot to put a placeholder for that type of discussion?
 - Ivo said that is a good idea. We have looked at impacts of climate change on groundwater in the basin. It is in another part of the document. Maybe we need to consolidate, but it is not really part of what the monitoring does which is why it is handled in a different part of the report. We will think about that and see if there is some kind of middle ground to refer back to that because it is kind of a data gap.
- Suggestions for improvement?
 - No further comments

Section 10 –Implementation Plan:

- The meat of Section 10 is the projects for implementation labeled appendix N. Refer to this table as our kind of summary of projects. Focus on that.
- Also review Section 10.2. In particular Section 10.2.1 which talks about use of SIGMA fees to use for implementation of the Alternative Plan. Ivo would appreciate comments.
 - No comments at this time.

Meeting closed due to technical difficulties with the Internet and TEAMS (~3:45 PM)

TVS SUBBASIN (6-005.01)
2022 SAG Workshop 1
January 12, 2022

Alternative Plan for
Tahoe Valley South Subbasin (6-005.01)
First Five-Year Update
(Draft, 12/17/2021)

Section 1 - Introduction

- 1.1 Background
 - 1.1.1 Plan Authorization and Legal Authority
 - 1.1.2 TVS Subbasin GSA Formation
 - 1.1.3 Plan Manager and Contact Information
- 1.2 Development and Adoption Process
 - 1.2.1 2014 GWMP
 - 1.2.2 Alternative Plan and DWR Approval
- 1.3 Recommended Actions 10
- 1.4 Alternative Plan Changes 11

Section 2 - Groundwater Basin

- 2.1 TVS Subbasin Delineation
 - 2.1.1 Basin Boundaries
 - 2.1.2 Geographic Sub-Areas
 - 2.1.3 Provisional Management Areas
- 2.2 Climate
 - 2.2.1 Climatology
 - 2.2.2 Water Year Classification
 - 2.2.3 Climate Change
- 2.3 Soils
- 2.4 Geology
- 2.5 Description of Basin Aquifers
- 2.6 TVS Subbasin Surface Water Features
 - 2.6.1 Watersheds
 - 2.6.2 Lakes
 - 2.6.3 Groundwater Dependent Ecosystems (GDE)

Section 3 - TVS Subbasin Alternative Plan Area

- 3.1 Population and Economy
- 3.2 Land Use
 - 3.2.1 Land Use Designations
- 3.3 Groundwater Uses and Users
 - 3.3.1 Groundwater Uses
 - 3.3.2 Public Water Systems
 - 3.3.3 Individual Water Systems
 - 3.3.4 Well Owners Findings
 - 3.3.5 Groundwater Pumpage/Well Densities
- 3.4 Demand Projections
- 3.5 Wastewater Management

Section 4 - Local Governmental Agencies and Groundwater – Related Programs

- 4.1 History of Collaboration and Collaboration Opportunities
 - 4.1.1 Potential Collaboration on Groundwater Protection
 - 4.1.2 Potential Collaboration on Land Use Planning
 - 4.1.3 Potential Collaboration on Groundwater Quality Monitoring and Management
 - 4.1.4 Potential Collaboration on Groundwater Protection
- 4.2 Overlying Jurisdictions
- 4.3 Regulatory Agencies
 - 4.3.1 Groundwater Sustainability Agencies
 - 4.3.2 State Water Resources Control Board/ Lahontan Regional Water Quality Control Board
 - 4.3.3 El Dorado County
 - 4.3.4 El Dorado Water Agency
 - 4.3.5 South Tahoe Public Utility District
 - 4.3.6 Tahoe Regional Planning Agency (TRPA)
 - 4.3.7 City of South Lake Tahoe
 - 4.3.8 United States Forest Service
 - 4.3.9 TROA: Office of the Federal Watermaster
 - 4.3.10 Stormwater Management and Monitoring
 - 4.3.10.1 Tahoe Resource Conservation District

Section 4 - Local Governmental Agencies and Groundwater – Related Programs (continued)

- 4.4 Regulatory Programs and Policies
 - 4.4.1 Urban Water Management Plan
 - 4.4.2 County Small Water System Program
 - 4.4.3 County Well Construction and Abandonment Policies
 - 4.4.4 Lake Tahoe TMDL
 - 4.4.5 Environmental Improvement Program – Stream and Wetland Restoration
 - 4.4.6 Integrated Regional Water Management Planning
- 4.5 Analysis of Limits Imposed by Existing Water Resources Monitoring and Management Programs

Section 5 – State of the Groundwater Basin

- 5.1 Background
 - 5.1.1 South Tahoe Groundwater Model
 - 5.1.2 Identification of Data Gaps/Uncertainty
- 5.2 Groundwater Conditions
 - 5.2.1 Groundwater Level History
 - 5.2.2 Groundwater Flow Directions
 - 5.2.3 Hydraulic Parameters
 - 5.2.4 Groundwater-Storage
- 5.3 Groundwater-Surface Water Interactions
- 5.4 Groundwater Budget
 - 5.4.1 Recharge
 - 5.4.2 Groundwater Withdrawals
 - 5.4.3 Discharges to Streams and Lakes
 - 5.4.4 Increases from Streams and Lakes
 - 5.4.5 Changes in Groundwater Storage
 - 5.4.6 Historical Groundwater Budgets
 - 5.4.7 Current Groundwater Budget
 - 5.4.8 Projected Water Budget

Section 5 – State of the Groundwater Basin (continued)

- 5.5 Sustainable Yield
- 5.6 Assessment of Potential Overdraft Issues
 - 5.6.1 Assessment of Potential Overdraft
 - 5.6.2 Assessment of Land Subsidence
- 5.7 Potential Climate Change Impacts
 - 5.7.1 CCCA4 Sierra Nevada Region
 - 5.7.2 Climate Action Plans

Section 6 – Groundwater Quality

- 6.2.1 General Water Quality
 - 6.2.2 Inorganic Constituents
 - 6.2.3 Radioactive Constituents
 - 6.2.4 Regulated Chemicals
- 6.3 Groundwater Quality Issues
 - 6.3.1 Migration of Contaminated Groundwater
 - 6.3.2 Emerging Contaminants
 - 6.3.3 Stormwater Infiltration
- 6.4 Groundwater Vulnerability Assessment
 - 6.4.1 Importance of Protecting Groundwater Quality
 - 6.4.2 Groundwater Recharge Areas
 - 6.4.3 Delineation of Well Source Area Zones
 - 6.4.4 Possible Contaminating Activity (PCA) Sites
 - 6.4.5 Groundwater Vulnerability Map

Section 7 – Stakeholder Involvement

- 7.1 Stakeholder Advisory Group
 - 7.1.1 SAG Workshops
- 7.2 Groundwater Management Collaboration Opportunities
 - 7.2.1 Protect Groundwater
 - 7.2.2 Coordination with Land Use Planning Agencies
 - 7.2.3 Sharing Data and Information
 - 7.2.4 SAG Accomplishments
- 7.3 Future/Ongoing Stakeholder Involvement Opportunities
 - 7.3.1 Future SAG Topics
- 7.4 Public Participation in the Five-Year Update of the Alternative Plan
 - 7.4.1 Notice and Communication

Section 8 – Characterization of Undesirable Results

- 8.1 BMO #1: Maintain a Sustainable Long-Term Groundwater Supply
 - 8.1.1 Chronic Lowering of Groundwater Levels
 - 8.1.2 Reduction of Groundwater Storage
 - 8.1.3 Land Subsidence
- 8.2 BMO #2: Maintain and Protect Groundwater Quality
 - 8.2.1 Seawater Intrusion
 - 8.2.2 Water Quality
- 8.3 BMO #5: Assess the Interaction of Water Supply Activities on Environmental Conditions
 - 8.3.1 Interconnected Surface Waters
 - 8.3.2 Groundwater Dependent Ecosystems

Section 9 – Groundwater Monitoring

- 9.1 Groundwater Monitoring
 - 9.1.1 Monitoring Network
 - 9.1.2 Monitoring Protocols
- 9.2 Identification and Description of Data Gaps
 - 9.2.1 Monitoring for Degraded Water Quality
 - 9.2.2 Monitoring for Depletions of Interconnected Surface Water

Section 10 – Implementation Plan

- 10.1 Projects
 - 10.1.1 Circumstances for Implementation
 - 10.1.2 Permitting and regulatory process
 - 10.1.3 Expected Benefits
- 10.2 Funding the Alternative Plan
 - 10.2.1 Budget and Funding for Past Groundwater Projects
 - 10.2.2 Projected Budget and Future Funding Opportunities
- 10.3 Reporting
 - 10.3.1 Annual Report
 - 10.3.2 5-Year Assessment and Resubmittal