

NOTES from TAHOE VALLEY SOUTH BASIN
GROUNDWATER MANAGEMENT PLAN SAG WORKSHOP 1

Wednesday, April 26th, 2017

1:30 PM – 4:30 PM

South Tahoe Public Utility District Board Room,
1275 Meadow Crest Drive,
South Lake Tahoe, CA

MEETING HOST & FACILITATOR: Ivo Bergsohn (South Tahoe PUD)

ATTENDEES: Ivo Bergsohn, South Tahoe PUD (District); Gregg Werner, The Nature Conservancy; Jennifer Lukins, Lukin Bros. Water Co. (LBWC); Jason Burk, City of South Lake Tahoe (CSLT); Scott Carroll, Calif. Tahoe Conservancy (CTC); Richard Solbrig, District; Brian Grey, Lahontan Water Board (Lahontan); Lisa Dernbach, Lahontan; Dan Segan, Tahoe Regional Planning Agency (TRPA); Bob Loding, Lakeside Park Association (LPA)

BASIN MANAGEMENT OBJECTIVES (BMO)

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. Learn about Groundwater Dependent Ecosystems (GDEs) in relation to SGMA requirements.
2. Receive an update on recent activities for on-going groundwater management under SGMA.
3. Share information on the progress of on-going activities in response to the South Y Plume.
4. Learn about the planned feasibility study of remedial alternatives for the South Y Plume.
5. Consider the Well Owners Survey being planned for 2017.

Open Forum

Scott Carroll made the observation that the groundwater is high.

Groundwater Dependent Ecosystems (GDEs) Gregg Werner provided a presentation.

Ivo explained that the Groundwater Resources Association provided a Webcast regarding GDEs and The Nature Conservancy's (TNC) framework to assess GDEs for Groundwater Sustainability Plans (GSPs). Ivo got a call from Greg notifying the District about comments submitted by TNC to DWR on the District's Alternative Submittals to DWR to satisfy GSP requirements under SGMA. Ivo asked Gregg if someone from TNC would be interested in presenting the webcast info to our group.

Greg provided a powerpoint, explaining that they are in the rollout process at TNC--developing information and tools for mapping and managing GDEs. TNC is in the early stages of getting information out to help Groundwater Sustainability Agencies (GSAs) deal with GDEs in their GSPs.

TNC is a 501c3 nonprofit; science-based organization; dealing in the best available scientific data; using a non-confrontational approach, i.e., non-litigious. Their focus is people *and* nature, because if solutions won't work for people they are not likely to be effective. TNC's interest in groundwater arises due to California's Mediterranean climate; seasonal dependence of ecosystems on groundwater; and detrimental impact to GDEs should groundwater levels fall below the root zone.

Gregg explained the importance of including TNC's GDE in Groundwater Sustainability Agencies' Sustainability Plans and how and why they should be included in these plans. GDEs are defined in GSP Regulations and their beneficial uses must be considered under SGMA. TNC has completed mapping that can be used by GSAs to identify GDEs within their groundwater basins.

Santa Clara River, Ventura County example- groundwater levels declined in response to over pumping during recent drought; had a significant impact on riparian forest on TNC property bordering the Santa Clara River. Managing GDEs was critical; however little information describing GDEs was available; TNC felt developing this information was critical to help GSAs protect GDEs through SGMA. TNC wants to insure that protection of GDEs is actually implemented by GSAs through their GSPs.

GDE 101- series of animations that depict four GDE Types; wetlands; streams and rivers; seeps and springs; and terrestrial vegetation.

PGDE Mapping- Partnership with CDFW and DWR to state-wide mapping of potential GDEs; using vegcamp database; national wetland resources inventory; Calfire vegetation layer; plus a couple of other spatial data sets. Mapping will provide basic information on plant community types and probability of whether area is a GDE, based on vegetation rooting depth and inferred groundwater level. PGDEs are based on current extents to help establish 2015 baseline conditions.

Guidance Framework- How-to-guide on considering GDEs under SGMA (Fox Canyon Example); case study will be used as a guidance document to illustrate TNC process under framework. TNC is informing consultants; GSA board members and staff; and local stakeholders. Information will be available through Groundwater Resources Hub (website devoted to GDE information).

Tahoe Basin - Comparison of GDEs to SEZs; definitions appear similar; unclear whether SEZs include terrestrial vegetation that may be supported by near surface groundwater. PGDE mapping is pretty close to SEZ mapping; not exact. SEZs probably include the majority of GDEs within the Tahoe Basin.

SGMA Wheel- Step by Step Technical Guidance (adapted from Australia, New Zealand, South Africa, other countries with Mediterranean Climate). Step 1: Map and Characterize GDEs, Ground-truth mapping, GDE Characterization (Hydrologic Regime, Ecological Assets); Step 2: Determine Potential Effects on GDEs: Lowering of GW Levels, Degraded WQ; and Surface Water Depletion- What is likelihood that these potential effects impact GDEs; Biological Indicators –TNC is developing a detailed database of plant rooting depths to support groundwater management and maintain groundwater levels within root zone depths; Satellite Imagery Review; NDVI – Normalized Difference Vegetation Index; shows change in vegetative growth, can use to establish baseline; Step 3 -5: Establish Sustainability Criteria: Measurable Objectives and Interim Milestones; Step 6-7: Monitor & Manage; GW Use, levels, water quality, GDE health; Manage: to increase supply, to reduce demand, to restore.

Q&A

TNC Review - Gregg stated that he has read and provided comments on quite a few GSPs proposed by numerous agencies. He feels our GWMP was definitely one of the better ones. With respect to our 2014 Plan, he said it looked to him like we got caught in the cycle where SGMA was still being debated. Compared to many, District plan was actually a management plan.

Gregg suggestion to us for our Plan- Ideas to Consider: 1) Use SGMA Terminology to clearly define SGMA equivalents; make it evident that our proposed plan is a SGMA Plan for legitimacy; 2) Compare and review PGDE and SEZ mapping to get a better feeling for overlap, whether complete or partial (and to what extent); 3) Analyze and document health of GDE's as part of knowing how to improve; documenting 2015 GDE extent is important.

Greg suggested we could use the rooting depth tool/analysis recognizing rooting depths in Tahoe are different than in Bakersfield, as well as NDVI and Satellite Imagery. He touched on the concept of updating Alternative Plan or developing a new GSP, consolidating information from satellite photos, incorporating GDE regular monitoring via site analyses, as well as the interconnected surface waters. For example, how much water goes from the basin into Lake Tahoe?

SEZ layers are based on historical data; this would be a challenge for establishing 2015 baseline under SGMA. Has TNC established metrics for assessing GDE health? TNC is working on it.

Has TNC looked at SFEI website as a good source of example and suggested we look at the EcoAtlas link there for wetlands mapping?

Gregg Werner/TNC will provide a copy of the slide presentation to Ivo.

TNC is not as far along as they would like in their ability to upload updated survey information into their maps; the technology is moving so fast that even their 5 year old databases are having trouble communicating with the newer versions/information. TNC has been discussing the need to figure out a good integrative system. TNC does not provide transpiration information for GDEs; this is something that has been discussed. But due to limited resources they are forced to target what will get the biggest bang for their buck.

GWMP - Related Item Updates

- **Alternative Submittals:** since October 2016 Workshop. Ivo did not do formally approve minutes. Has posted them and provided as Attachment 1 to this meeting's materials. Ivo asked if the group would be okay with removing formal approvals of workshop minutes prior to posting them to the website. He would appreciate feedback on this topic.

- **Work on alternative plan submittals** – corresponds to Section 10.3 of SGMA. Also the 2016 Water Year Annual Report. Ivo posted a link to the District's website for plan documents page.

Alternative Submittals: SGMA allows, under the Groundwater Management Act for alternatives in lieu of Groundwater Sustainability Plan. Ivo identified the requirements. Reasons the District felt alternative submittal option was appropriate: due to working successfully under the existing GWMP for the past couple of years. A number of undesirable results were identified, but most do not occur within our groundwater basin; no history of declining water levels, no declines of groundwater storage; GSPs are not cheap; resources could be better used to address groundwater concerns identified in our existing GWMP to correct and/or mitigate. We/SAG discussed three types of alternatives--existing plan; adjudication action; analysis of basin conditions. District submitted two alternatives: our existing plan, and analysis of basin conditions. Ivo provided and reviewed the schedule from 12/15/2015 Board Item 8d Submission of Alt Plans (Resolution 3044-16) through 4/1/2018 (First Annual Report Submittal Deadline). We received one set of comments from The Nature Conservancy. Starting May 2016 we worked with DRI to complete

the analysis of basin conditions and submitted Alternatives Element Guide and the environmental documents needed for the analysis. These documents are on the District's website, or obtained from the Department of Water Resources website. <http://sgma.water.ca.gov/portal/alternative/all>.

There were 24 submittals from 16 different water agencies. Of that amount six agencies have more than one submittal. Depth of the comments ranged from Eel River Basin received 35 comments, to our submittal which received a single comment (from TNC). Comments on the existing plan were included in the materials package for this SAG meeting. Staff is developing responses to TNC comments to return to TNC and DWR. If any SAG members would like to review the responses, please let Ivo know. As part of our submittal we requested DWR prioritize review of our submittals, review our existing plan, if found to be substantially complete there would be no need to take the time to review the basin analysis. Their review deadline is within 2 years of submission (12/29/2018), but they will be working to complete it earlier.

- **Annual Report, 2016 WY:** We did complete the 2016 Water Year Annual Report. Ivo extended a thank-you to all those who contributed data to that report. He presented contents at a Public Hearing on March 16. The Report was finalized on March 30 and submitted to DWR on April 3, 2017 for input with respect to meeting their expectations. It has also been posted on the District's webpage.

The 2016 report almost doubled in size because of the new reporting requirements. New reporting requirements included, water year type classification, groundwater elevation contours, groundwater extractions bubble plot; description of water use type; groundwater sustainability action plan; groundwater management plan implementation costs (which was not a specific requirement but was asked for by DWR).

We identified on-going activities: South Y Pre-Evaluation Sampling, in support of the groundwater modeling effort and feasibility study regarding current distribution of PCE groundwater contamination. Two rounds of samples 4th Qtr. of 2016, and second set completed for 1st Qtr. of 2017. 2nd round completed early to mid-May. Then Fate Transport Model evaluation – for use in evaluation and optimize removal of the PCE from groundwater in our South Y Area. Modeling 15 remedial scenarios and then will narrow down to 7 to be used for feasibility study.

Results from Fourth Quarter 2016 sampling (map). Also included monitoring information from Tahoe Keys collected during that quarter. High concentrations of PCE found in Tahoe Keys Well and Lukins Brothers Well (from static samples). Lisa Dernbach suggested that Ivo to include the sampling results that have been collected from the former Lake Tahoe Laundry Works site (LTLW)—this information should be available in July. Ivo indicated that July might be too late. Ivo will keep this in mind.

For the annual report in the coming year: Ivo asked the group to please let him know if anyone had any ideas or thoughts about the direction we are headed. Things we have on our list, and are doing: 1) staying informed with new BMPs; 2) SWRCB Prop 1 – we have submitted the grant application; 3) be responsive to any questions from DWR during the Alternatives Evaluation process; 4) complete South Y On-going activities; 5) complete groundwater model work; and 6) Use groundwater models to identify potential future sites for groundwater monitoring wells for the monitoring program.

We received funding from Prop 1 and will use it for developing an RFP for engineering consulting services to conduct this analysis; expanding our outreach effort—we will be conducting a survey of small community and domestic well owners to get word out about the Groundwater Sustainability Act; continue monitoring groundwater basin conditions; continue to work with SAG; encourage participating from the public via workshops and notices of different activities.

Ivo provided slide of pie chart of expenditures for FY 2015-16. Most of the funds were spent on consultant costs pertaining to LBWC #4 Extraction Well study costs.

Ivo crunched some numbers to calculate a Cost of Non-Compliance chart showing that costs to beneficial users would be substantial. Private well owners would be \$100/year for non-compliance; and larger agencies such as South Tahoe PUD would be approximately \$300,000/year for non-compliance.

South Y Activity Updates

TKPOA Phase 1 Facilities Plan: TKPOA selected Kennedy/Jenks (via proposals submitted in response to an RFP back in February) to develop a facilities plan for their water system to help manage the PCE contamination issue in their wells. Selection was approved by their Board on April 18. The Phase 1 facilities plan schedule is to be completed in August. They are concerned about what will happen this summer with the PCE contaminations continuing to rise in their Number 1 well. Last round of testing was at 1.8 (down from last summer). Their No. 2 well is their current lead well.

LBWC Wellhead Treatment: Jen Lukins reported they would appreciate any news on potential funding sources. She has been advised that their application for SRF is in legal review right now, but has no idea how long it could be there. She is working on finishing up annual financials and getting those into the bank for interim funding. She is hoping to get their application moved into someone's box for review. Their water company will maintain last summer's conservation regulations--2x/week for 2 hours. They saw 15% savings with this.

So. Y Fate & Transport Model: DRI continues to work diligently on this (Attachment 3). There is a Power Point Presentation from DRI from early April. The Model is ready to run remedial scenarios. Trying to get feedback from PRP's. There have been some discussions regarding source models. The District and DRI are considering whether to wait-on starting to run alternatives until the results of the off-site investigation are received from the LTLW PRPs. These findings may affect the contaminant distribution as currently simulated in the F&T Model, but would not likely impact the flow field as simulated in the model.

LRWQCB Source Investigation – Phase II Update: Lisa Dernbach reported that the investigation for PCE source continues. State Water Board submitted an application for \$163,000 to continue their PCE Source investigation on the west side of the City. We have not heard back from the State Water Board (Lisa expects funding might become available after fiscal year – July). If they receive the requested funds, she expects they would be looking at a Fall investigation. Lisa reported that the additional investigative work proposed by LTLW is not being required by the State Water Board; they are pursuing other possible PCE sources on their own. SWB will still consider the LTLW be the principal PCE contributor. SWB will also not review their plan, as it is being viewed as a stall tactic that has been used by others before. They will still be the majority contributor.

So. Y Remedial Alternatives Feasibility Study: District received a notice at end of March and will be putting together a technical proposal (RFP) that will include the scope of work. The grant is 50% match. We used already-completed and paid-for efforts--Lukins Bros well investigation for PCE; and the work we are doing on the Fate and Transport model—as match. Three main components include Stakeholder outreach (3 workshops); DAC Outreach (meeting geared to Lukins Bros customers; presentation to City Council to apprise them of the problem and effort; inform District Board). Ivo asked for input on type of information the SAG thinks we should include in these workshops. The permitting requirements will be minimal since this is a planning level grant. Work involved will entail: 1) review of regulatory orders pertinent to groundwater cleanup, 2) LBWC compliance order; 3) monitoring well installation (Optional). If we moved forward with the monitoring well aspect then we would need to obtain the appropriate

encroachment, etc. permits. Other work tasks will involve 4) administration tasks; and 5) Planning/design /engineering/environmental work being done to precede facility study.

Feasibility Study: data review/kick-off (may be able to include this during a SAG); screen modeled alternatives (narrow down number of alternatives from 15 to 7 potential alternatives); define infrastructure needs (3 alternatives); Develop Life-Cycle Costs (3 alternatives); Complete CEQA IS Checklist (3 alternatives); select recommended alternative (1 alternative.). Once the recommended alternative is identified, preparation of the Implementation Plan would occur. Then the selected consultant would prepare and submit the engineering Feasibility Study Report.

Jenn Lukins suggested targeting local agencies specifically for the feasibility study workshops. Maybe include the Chamber, Lodging Association, Real Estate Agents. Richard said he thought the Chamber might be willing to host a meeting.

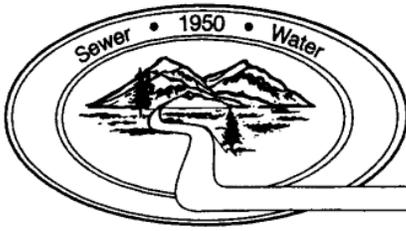
2017 Well Owners Survey: As part of the effort toward building collaborative relationships with users in the basin, we plan to conduct a well survey. Based on our records and information obtained from the County, there are between approximately 52 small community and non-community water system wells and about 600 domestic wells located within our groundwater basin. Highest incidence of these wells is located near the Stateline area and at the south end of Christmas Valley and more toward the center of the basin. We would like to survey and inform well owners of the Groundwater Sustainability Act and what it does (District's roll as GSA and the types of activities we are pursuing). We hope to accomplish a number of things through the survey—1) identify well-owners' groundwater concerns within our basin; 2) confirm for certain these wells (identified in numerous surveys) actually exist; and 3) determine if the well is actively being used. If it is discovered that the well exists but is inactive, we can hopefully abandon it. We would like to get these well owners participating in some of the groundwater management work that we are undertaking here in the basin. Approach/Outreach: public service announcements, introductory mailings, door hangers, questionnaires. Conduct Survey: will use various approaches, i.e., via electronic (Survey Monkey), face-to-face/door-to-door; online; District web site portal. Once the data is compiled, it will be used to guide future actions regarding types of approach for well management. Ivo provided a schedule for survey, which is on hold until after July 1 due to budgetary issues. We anticipate being able to conduct the survey Aug/Sept.; and report data by October 2017. Lisa Dernbach expressed that the outcome should be interesting and useful, especially for the County. El Dorado County will be very interested in what we find out and how it compares to the information they have on file. Ivo said he would like any and all input and comments.

GSA Formation/Coordination Agreement: File non-exclusive groundwater MOU with the county for managing the areas of the Tahoe Valley-South Basin located outside the service area of the District because the County is not interested in being a GSA. We were under the impression that the DWR approved of this. However during later discussions with SWRCB it was mentioned that was not the case and the thought was that this act would likely find the District non-compliant with the requirements of a Groundwater Sustainability Agency and thereby subject to significant fines (~\$300,000). Even worse than that, it would allow SWRCB to step in and manage the basin water. Back to the drawing board. We talked to the County and asked if they would be the GSA for the fringe area to avoid State Board coming in. County Water Agency agreed to take on the roll in those areas. District will adopt a Resolution and Amended MOU with the County, and then it will go to the County Water Agency Board for a public hearing, and make a submittal to the State Water Board. When the County is deemed to be the GSA, the District will notice a withdrawal of their acceptance so there will be no gap in coverage. District will continue to be GSA for portions within its service area; El Dorado County Water Agency will serve as GSA for areas outside District's service area.

There will be a single Groundwater Sustainability Plan for both District and County to adopt. This issue came about due to differing points of views. But we cannot afford to risk the State Water Board finding outside area being invalid and not covered by a GSA. Richard announced that the County would probably adopt their part of this at their May 17 meeting. Ivo reminded everyone that there are NO groundwater withdrawals in the areas outside our service area. These areas consist mostly of BLM areas, areas set aside for conservation, or state lands. Richard thought there might be a couple private parcels, but if they do develop the District would need to expand our service area and incorporate them into it. This is basically only an administrative fix.

The workshop was adjourned at 4:30 PM

DRAFT



South Tahoe Public Utility District

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July 24, 2017

Acting Director Cindy Messer
California Department of Water Resources
P.O. Box 94283
Sacramento, California 94236

Re: Response to the Nature Conservancy Comments on South Tahoe Public Utility District
Alternative Submittal (Existing Plan) for the Tahoe Valley South Subbasin (6-5.01)

Dear Director Messer:

I GENERAL COMMENTS

A. *Background and Introduction*

This letter presents the South Tahoe Public Utility District's (the "District") response to the Nature Conservancy's ("TNC") comments on the District's 2014 Groundwater Management Plan ("GWMP") for the Tahoe Valley South Subbasin of the Tahoe Valley Groundwater Basin ("TVS Basin"). The District submitted the GWMP as an alternative groundwater sustainability plan pursuant to section 10733.6 of the Sustainable Groundwater Management Plan Act ("SGMA"). TNC's comments are unpersuasive for the reasons discussed in this letter. The District maintains that the GWMP is functionally equivalent to a groundwater sustainability plan under SGMA. The District is committed to ensuring responsible and sustainable groundwater use, and the GWMP will help the District to achieve those goals.

B. *TNC Submitted its Boilerplate Comments at the Eleventh Hour without taking the time to thoroughly review the GWMP*

As an initial matter, the District notes that TNC's comments constitute nothing more than boilerplate objections to alternative sustainability plans generally. TNC submitted the exact same comment letter and questions for 19 of the 24 other alternative groundwater sustainability alternatives. TNC's questions were also unbalanced, with a clear bias against alternative submittals despite SGMA's clear directive permitting alternative plans—like the District's—which focus on ensuring that the basin operates within its sustainable yield.

Furthermore, although TNC had *three months* to submit comments on the GWMP, TNC submitted its comments at 10pm on April 1, *just two hours before the comment deadline*. This left the District without adequate time to respond to and address the concerns of TNC and shows bad faith on the part of TNC.

As you will see from the District's responses to TNC's comments, many of TNC's criticisms are inaccurate as a result of TNC not thoroughly reviewing and understanding the GWMP. TNC often claimed that information was missing in the GWMP due to their not taking adequate time to review it rather than jumping to erroneous conclusions.

C. TNC's Comments Improperly Focus on Terminology Rather Than Outcome

SGMA was not adopted to be a "one size fits all" approach to the State's groundwater challenges. The Act is not about a rigid process and strict terminology—it is about developing and implementing a plan to achieve sustainable outcomes. Specifically, the Act's key provisions focus on eliminating overdraft conditions and achieving long-term sustainability. Yet a large number of TNC's comments suggest that the District's GWMP is not adequate simply because it does not contain the exact terminology included in SGMA.

For example, TNC's first comment expresses concern that groundwater dependent ecosystems ("GDEs") are not identified for the basin. While GDEs are not identified for the basin, Section 2.5.2 of the GWMP identifies and describes Stream Environment Zones ("SEZs"). "SEZ" is an established term that has been used for more than 40 years and is defined as "an area that owes its biological and physical characteristics to the presence of surface or groundwater." These areas are identified using explicit indicators such as evidence of surface water flow, including perennial, ephemeral, and intermittent streams; riparian vegetation; near surface groundwater; lakes or ponds; beaches; and specific alluvial soil types found in the Lake Tahoe Basin. Use of SEZs in the existing plan is appropriate and functionally equivalent to the use of GDEs.

These and the other differences in terminology discussed by TNC are immaterial. The GWMP's robust technical analysis and comprehensive management regimen meet the requirements of an alternative plan under SGMA. Indeed, the GWMP has a proven track record of success. The TVS Basin has been operating within its sustainable yield—and without the occurrence of any undesirable results—for at least the past thirty years. The management structure imposed by the GWMP will ensure that the TVS Basin will continue operating sustainably into the future.

D. TNC's Comments Misinterpret SGMA's Requirements for Sustainability "Plans"

SGMA requires the adoption of groundwater sustainability *plans* or utilizing existing functionally equivalent *plans*. These plans must establish a method for achievement of the

basin's sustainability goals, with measurable objectives and interim milestones. (Wat. Code, § 10727.2(b)(1).) SGMA clearly acknowledges that obtaining sustainability is a process of adopting a plan and then implementing it.

TNC seems to believe that SGMA requires a fully developed and completed program. For Example, TNC states that the GWMP does not meet the requirements of SGMA because the plan notes the need for further evaluation of the potential effects of pumping on streamflow and indicates that further work related to interconnected surface water has been contracted. TNC is mistaken—SGMA anticipates investigations and evaluations as part of *the process* of implementing a plan to achieve sustainability goals.

II SPECIFIC COMMENTS

In its comment letter, TNC provided specific observations relating to six different questions it raised about the functional equivalency of the GWMP. The District's responses to each of these specific issues are attached as Exhibit A to this letter.

III CONCLUSION

As the Department of Water Resources ("DWR") is aware, the GWMP is a valuable resource for the South Lake Tahoe and larger California community. It is functionally equivalent to a groundwater sustainability plan and has proven effective at ensuring that the TVS Basin operates within its sustainable yield. The District looks forward to continued cooperation with DWR to guarantee the protection, management, and reasonable beneficial use of the water resources in this State. Please do not hesitate to contact me if you have any questions.

Sincerely,



Richard Solbrig,
General Manager

Attachment: Exhibit A, District Responses to TNC's Specific Comments

Exhibit A
South Tahoe Public Utility District Responses to Comments

TNC Comment 1: Are groundwater dependent ecosystems (GDEs) identified? Yes, but only in very general, alternate terms. Are GDEs and surface water dependent species included as beneficial uses? No – beneficial uses are not identified consistent with the SGMA direction.

GDEs: (§354.16(g)) GDEs are not identified for the basin. An alternate terminology, “Stream Environmental Zone” (SEZ) is utilized. It appears that SEZs is inclusive of most GDEs although the relationship between the two terms is not explained. SEZs are not, however, identified as to the type of vegetation community, which is necessary for evaluation and monitoring of the specific groundwater needs of each community.

Beneficial Uses: (§354.10(a)) Environmental beneficial uses as defined by the Water Resources Control Board and Bulletin 118 are not identified.

South Tahoe Public Utility District Response to TNC Comment 1:

The use of SEZs in the Existing Plan is functionally equivalent to the use of GDEs. Section 5.3 of the Groundwater Management Plan (GWMP or Existing Plan) discusses regional groundwater-surface water interactions and impacts on SEZs. The Existing Plan also includes further assessment of the interaction of water supply activities with environmental conditions under Section 8.5. Moreover, Section 2.5.2 of the Existing Plan identifies and describes the SEZs, and includes a SEZ map for the groundwater basin (Figure 2-10). SEZs are used by all public agencies responsible for managing natural resources within the Lake Tahoe Basin.

Specifically, SEZ (a term developed by the Tahoe Regional Planning Agency (TRPA), which is unique to the Tahoe Basin) is an established term used for more than 40 years in the Lake Tahoe Basin and is defined in Chapter 90 of the TRPA Code of Ordinances as “an area that owes its biological and physical characteristics to the presence of surface or groundwater.” These areas are identified using explicit indicators such as evidence of surface water flow, including perennial, ephemeral, and intermittent streams; riparian vegetation; near surface groundwater (levels between 20 – 40 inches); lakes or ponds; beaches; and specific alluvial soil types found in the Lake Tahoe Basin (TRPA Code of Ordinances Section 53.9.1). In terms of vegetation type(s), SEZs are characterized by “riparian or hydric (wet site) vegetation”. In contrast, GDEs is a very broad ecosystem term; not specifically defined in the SGMA; and is presently not defined for the Tahoe Valley South Groundwater Subbasin (TVS Basin). Accordingly, the use of SEZs in the existing plan is entirely appropriate as supported by TNC’s admission that SEZs are inclusive of most GDEs, which means they are functionally equivalent.

Despite TNC’s assertions to the contrary, beneficial uses for the TVS Basin are identified and discussed in Section 4.2.1 of the Existing Plan. The beneficial uses of groundwater in the basin are designated as municipal, industrial, and agricultural as defined in the Lahontan Regional Water Quality Control Board (LRWQCB) Basin Plan. As the LRWQCB Basin Plan is the primary regional water quality planning document for the California portion of Lake Tahoe, the beneficial uses as defined in the LRWQCB Basin Plan is proper for use in the Existing Plan.

Exhibit A
South Tahoe Public Utility District Responses to Comments

TNC Comment 2: Are interconnected surface waters identified and are estimates of the quantity and timing of any depletions specified? No - the subject is inadequately addressed and it is acknowledged that further work is needed to meet SGMA requirements.

Interconnected Surface Waters (§354.16(f)) Potential impacts of pumping on interconnected surface waters are discussed but they are not estimated in terms of quantity or timing. BMO#7 notes the need for further evaluation of potential effects of pumping on streamflow. Additionally, comments in the Functional Equivalency Checklist indicate that further work related to interconnected surface water has been contracted, which emphasizes that the Existing Plan as adopted in 2014 does not meet the requirements of SGMA.

Undesirable Results (§354.28(c)(6)) - Comments in the Functional Equivalency Checklist indicate that, “The minimum threshold for this impact is currently being developed pursuant to Action 1 of BMO No. 5”. Again, it is made clear that this SGMA requirement was not met by the 2014 Plan.

South Tahoe Public Utility District Response to TNC Comment 2:

The TNC misses the mark with its interpretation of a “plan.” A GSP, like the GWMP, is simply a plan to implement certain activities to achieve sustainability. As discussed below, the GWMP contains action steps to study and evaluate various items, such as the effects of pumping, in order to determine if there are any adverse effects on stream flows. As a result of that work, if adverse effects are identified, then the District can address them in order to achieve sustainability. The same type of work would be carried out under a GSP.

As an example, Section 5.3 of the Existing Plan identifies and includes an assessment of the interconnection of surface water systems (including an estimate of the effects of groundwater pumping on those systems) based on a review of lithologic, aquifer test and water chemistry data. This assessment includes evaluations considering the potential effects of groundwater withdrawals from nine Public Water System wells used for drinking water supply. For the majority of these wells, substantial pumping effects on surface waters were not found.

The District recognizes the importance of surface waters and is sensitive to the environmental issues associated with surface waters and SEZs. As such, the District includes BMO #5 Action 1 in the existing plan as an item for further evaluation. This study to assess the effects of groundwater pumping on habitats in lakes, streams and wetlands is currently being conducted by the Desert Research Institute (DRI) using numerical models and surface water capture algorithms standardized by the U.S. Geological Survey (Leake, et al., 2010). This work builds on the evaluation presented in the Existing Plan and will result in additional information such as modeled streamflow accretions and depletions for surface water bodies near large production wells operating within the basin. Model simulations may also involve computing changes in water budget components and production of capture maps to increase the understanding of groundwater withdrawals on interconnected surface water bodies (lakes, streams and wetlands).

Leake, S.A., H.W. Reeves, and J.E. Dickinson, 2010. A New Capture Fraction Method to Map How Pumpage Affects Surface Water Flow, Ground Water, vol 48(5),pp. 690-700.

Exhibit A
South Tahoe Public Utility District Responses to Comments

TNC Comment 3: Do water budgets include water needs for managed wetlands and native vegetation, as defined water use sectors? No - the Existing Plan does not include a water budget meeting the requirements of SGMA.

Water Budgets (§354.18(b)) The comments in the Functional Equivalency Checklist indicate that further work is being done to meet this SGMA requirement for a water budget. Additionally, on Page 5-10 of the Existing Plan the following statement is made, “A formal and complete groundwater budget is not available”.

South Tahoe Public Utility District Response to TNC Comment 3:

Contrary to the TNC’s comment, the South Lake Tahoe Groundwater Model (TVS Groundwater Model) in section 5.2.2 of the South Lake Tahoe Groundwater Model- Phase 1 Report, which was developed by DRI, includes a water budget through the date of publication of the Existing Plan, including surface water inflow and outflow, groundwater inflow and outflow, and changes in the annual volume of groundwater in storage, water year type, and estimated sustainable yield in the TVS Basin. The GWMP also includes a robust discussion of the TVS Basin’s current groundwater levels, groundwater production data, and groundwater storage figures. This extensive information is functionally equivalent to the SGMA requirement for a water budget.

As an example, mean annual groundwater recharge is estimated to contribute 39,470 AF. Baseflow to streams is the largest predicted loss of recharge at 28,430 AFY, groundwater pumping removes 7,770 AFY while groundwater flux to Lake Tahoe amounts to 5,240 AFY. Over the course of the simulation the average change in storage is positive at 1,980 AFY, with water tables declining slightly to balance the budget over the 31-year simulation period (Carroll, et al, February 25, 2016).

TNC Comment 4: Do undesirable results and minimum thresholds describe potential effects on beneficial uses, land uses and property interests, particularly for the chronic lowering of groundwater, degraded water quality and depletions of interconnected surface waters? No - information required by SGMA is not provided. Are these undesirable results being avoided? Unclear. Has the basin operated sustainably for at least the past 10 years? Unclear – the plan did not directly address the question.

Undesirable Results: (§354.26) As noted in the Alternative Submittal undesirable results were most closely defined by Best Management Objectives (BMOs) in the 2014 Plan. These BMOs, however, are generally objectives for future things to do, are not the functional equivalent of undesirable results and the BMOs do not meet the standards of SGMA.

Minimum Thresholds: (§354.28) As noted in the Alternative Submittal Best Management Objectives (BMOs) were the closest thing to minimum thresholds in the 2014 Plan. These BMOs, however, are generally objectives for future things to do and are not the functional equivalent of minimum thresholds under SGMA.

Exhibit A
South Tahoe Public Utility District Responses to Comments

Sustainable Ops for >10 years: (§358.2c3) This alternative submittal addressed the adequacy of the 2014 Plan rather than the Sustainable Ops for >10 years question.

South Tahoe Public Utility District Response to TNC Comment 4:

The Existing Plan satisfies the legislative requirements of AB 3030 (*see* GWMP, Table 1-1). The legislative requirements of AB3030 and the Existing Plan correspond—and are functionally equivalent—to the requirements identified in SGMA for the reasons discussed below.

For example, AB 3030 required groundwater management plans to address groundwater levels, groundwater quality, and control of saline water intrusion. Aside from the control of saline water intrusion (which is not applicable to the TVS Basin), the Existing Plan addresses all of these impacts and describes how undesirable results from these impacts could occur. Moreover, although depletions of interconnected surface water were not identified in AB 3030 as a required component, the Existing Plan includes an estimate of the effect of pumping on multiple overlying stream systems and offers a preliminary determination that pumping is not causing a detrimental effect. Action 1 of BMO No. 5 also identifies the effects of groundwater pumping on surface water systems as an additional area of study, which is currently being undertaken by DRI (*see* South Tahoe Public Utility District Response to TNC Comment 2). Potential impacts resulting from land subsidence are not discussed in detail because resulting impacts are not likely to occur.

Additionally, Section 8 of the Existing Plan describes the BMOs for the TVS Basin. Contrary to TNC’s assertion, BMOs are the functional equivalent to undesirable results and minimum thresholds. BMOs are flexible guidelines for the management of groundwater resources that describe specific actions to be taken by stakeholders to meet locally developed objectives at the basin or sub-area scale. Table 1 illustrates how BMOs presented in Section 8 of the Existing Plan align with undesirable results; and sustainability indicators and minimum thresholds used for the TVS Basin. The information in Table 1 was developed as part of the GWMP to study and achieve the BMOs which establishes that the Existing Plan is functionally equivalent to a GSP. The minimum thresholds are regarded as preliminary and may change as findings from the modeling analysis conducted for implementation of the GWMP are defined.

Table 1. Relationship between TVS Basin BMOs to SGMA Undesirable Results, Sustainability Indicators and Minimum Thresholds.

Basin Management Objective (BMO)	SGMA Undesirable Result (§ 354.26(b))	Sustainability Indicator(s)	Minimum Threshold(s)
BMO #1 – Maintain a sustainable long-term groundwater supply.	<ul style="list-style-type: none"> – Chronic lowering of groundwater levels – Reduction of groundwater storage 	<ul style="list-style-type: none"> – Groundwater elevations measured during spring from the Basin Monitoring Network; – Cumulative change 	<ul style="list-style-type: none"> – At least 50% of Spring groundwater levels shall lie within the normal range compared to base period

Exhibit A
South Tahoe Public Utility District Responses to Comments

		in groundwater storage	readings (2001-2011)
BMO #2 – Maintain and protect groundwater quality.	– Degraded Water Quality	– Total source capacity of community water system (CWS) drinking water wells	– The total source capacity of active CWS drinking water wells shall exceed 110% of the total maximum day demand (MDD).
BMO #3 – Strengthen Collaborative Relationships with Local Water Purveyors, Governmental Agencies, Businesses, Private Property Owners and the Public.	Not regarded as an undesirable result.	Not Applicable	Not Applicable
BMO #4 – Integrate Groundwater Quality Protection into Local Land Use Planning Activities.	Not regarded as an undesirable result.	Not Applicable	Not Applicable
BMO #5 – Assess the interaction of water supply activities with environmental conditions.	– Depletion of interconnected surface waters	– Reduction in baseflow to streams	– Baseflow depletions shall not exceed 10% of the average annual runoff.
BMO #6 – Convene an Ongoing Stakeholder’s Advisory Group (SAG) as a forum for future groundwater issues.	Not regarded as an undesirable result.	Not Applicable	Not Applicable

Exhibit A
South Tahoe Public Utility District Responses to Comments

BMO #7 – Conduct technical studies to assess future groundwater needs and issues.	Not regarded as an undesirable result.	Not Applicable	Not Applicable
BMO #8 - Identify and obtain funding for groundwater projects.	Not regarded as an undesirable result.	Not Applicable	Not Applicable

TNC Comment 5: Does the sustainability goal include the environment, and if so, does the plan include measurable objectives and interim milestones to achieve the environmental portion of the sustainability goal within 20 years? No- a sustainability goal was not established in the 2014 Plan.

Sustainability Goal: (§354.24) A sustainability goal consistent with the requirements of SGMA is not included in the 2014 Plan.

Measurable Objectives (§354.30) Measurable objectives as required by SGMA are not included in the 2014 Plan.

South Tahoe Public Utility District Response to TNC Comment 5:

SGMA defines “sustainability goal” as “the existence and implementation of one or more groundwater sustainability plans that achieve sustainable groundwater management by identifying and causing the implementation of measures targeted to ensure that the applicable basin is operated within its sustainable yield.” The District submitted its 2014 GWMP (along with additional reports and analyses that have been undertaken pursuant to implementation of the existing plan) as an Existing Plan Alternative because it has been successful in sustainably managing the TVS Basin’s groundwater resources. Under the District’s management, the TVS Basin has been operating within its sustainable yield—and without the occurrence of any undesirable results—for at least the past thirty years.

Under the 2014 GWMP, BMO #5 – Assess the interaction of water supply activities with environmental conditions directly considers the environment in the management objectives for the groundwater basin. Specific actions identified in the 2014 GWMP which recognizes the potential effect of water supply operations on the environment; as well as the effect changes in environmental conditions may have on groundwater supply include; BMO#5 – Action 1: assessing the effects of groundwater pumping on habitats in lakes, streams and wetlands; BMO#5 – Action 2: supporting stream restoration efforts in the basin ; and BMO#5 – Action 3: assessing the potential effects of climate change on groundwater conditions. BMO#5 Action 1 and BMO#5 – Action 3 are presently being evaluated as part of the hydrologic modeling analysis (in-progress) for implementation of the 2014 GWMP. Findings from this evaluation will be used to determine whether depletions from groundwater withdrawals are having a significant effect on the surface water system; and the impact of climate change on groundwater storage.

Exhibit A
South Tahoe Public Utility District Responses to Comments

Again, contrary to the TNC’s comment, Table 1 and section 8 of the Existing Plan establishes measureable objectives, as required by SGMA for each applicable sustainability indicator, to ensure achievement of the sustainability goal. Moreover, the TVS Basin is currently being managed sustainably and is (and has been) operating within its sustainable yield for at least the last thirty years.

TNC Comment 6: Does the monitoring network monitor impacts to beneficial uses? No – the monitoring network does not monitor all beneficial uses.

Monitoring Network: (§354.34(b)(2)) Monitoring under the 2014 Plan is not tied to measurable objectives as would be the case with a GSP developed under SGMA and it does not include initial or ongoing biological analysis of GDEs.

South Tahoe Public Utility District Response to TNC Comment 6:

Once again, contrary to the TNC’s comment, Section 9 of the Existing Plan contains a description of the Basin Monitoring Program for the TVS Basin, which is tied to measurable objectives. Specifically, the objective of the monitoring network is to provide elevation data capable of demonstrating seasonal and long-term groundwater elevation trends. Data collected through the Basin Monitoring Program and presented in the Existing Plan shows that this data is adequate to insure that BMOs described in Section 8 of the Existing Plan are being achieved. Additionally, this monitoring plan was reviewed by DWR prior to designating the District as the California Statewide Groundwater Elevation Monitoring (“CASGEM”) Entity for the TVS Basin in 2011.

The Existing Plan recognizes the importance of regional groundwater-surface water interactions and impacts on groundwater ecosystems and beneficial uses (see South Tahoe Public Utility District Response to TNC Comment 1). As previously indicated, SEZs are described in Section 2.5.2 of the Existing Plan along with a SEZ map for the groundwater basin (Figure 2-10). The use of SEZs in the Existing Plan is functionally equivalent to the use of GDEs. SEZs are used by all public agencies responsible for managing natural resources within the Lake Tahoe Basin.