



# South Tahoe Public Utility District

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## Tahoe Valley South Sub-Basin (6-5.01) Groundwater Management Plan Stakeholders Advisory Group (SAG)

**Via Electronic Mail**

### Re: SAG Workshop No. 2 Materials

Dear Members:

Thank you for participating in a compelling discussion last month about opportunities to collaborate in the context of the Tahoe Valley South Sub-Basin Groundwater Management Plan. Materials and information for our next workshop follows.

**GWMP Workshop No. 2  
South Tahoe Public Utility District Boardroom  
1275 Meadow Crest Drive, South Lake Tahoe, CA  
Wednesday, May 14  
9:00 a.m. – 12:00 p.m.**

**Lunch Invitation 12:00-1:00** The District will host an informal lunch following the meeting as an opportunity to continue discussion of topics and to facilitate the exchange of insight and information that can be mutually beneficial.

**Please RSVP** via email before noon, Tuesday, May 13<sup>th</sup> — let us know whether we can include you in the lunch count (hbaugh@stpud.dst.ca.us).

In preparation for our May 14<sup>th</sup> workshop, attached are items we believe you will find helpful:

- Agenda (Workshop No. 2, Wednesday, May 14<sup>th</sup>, 2014);
- Meeting Summary (Workshop No. 1, Wednesday, April 16<sup>th</sup>, 2014);
- Draft Outline Tahoe Valley South Groundwater Management Plan; and
- Outline of Groundwater Management Monitoring, Tahoe Valley South GWMP.

Our goal in this workshop is to generate potential draft content for the plan. Our objectives are to

1. Increase shared understanding of the current status of groundwater monitoring
2. Discuss potential approach to land use planning, education and monitoring implementation actions in the plan document

3. Identify collaboration opportunities in strategic topic areas within and outside of the Groundwater Strategic Advisory Group
4. Summarize findings of existing reports on storm water-groundwater relationship

During this process please feel free to contact Michelle ([msweeney@progresswithclarity.com](mailto:msweeney@progresswithclarity.com)) or myself at any time.

Thank you again for your participation,

Ivo Bergsohn, PG, CHG  
Hydrogeologist

Enclosures

Cc: M. Sweeney, Allegro Communications  
M. Maley, Kennedy Jenks Consultants  
R. Solbrig  
File

# AGENDA

DATE	Wednesday, May 14, 2014, 9:00-12; Networking lunch invitation 12:00-1:00
LOCATION	South Tahoe Public Utility District Offices, Board Room, 1275 Meadow Crest Drive
STRATEGIC ADVISORY GROUP CORRESPONDENCE LIST	Robert Lauritzen (El Dorado County), Jason Burke (City of South Lake Tahoe), Scott Carroll (CA Tahoe Conservancy), Greg Daum (Meyers Chevron), Brian Grey and Tom Gavigan (Lahontan Regional Water Quality Control Board), Brian Judge and Paul Nielsen (TRPA), Jennifer Lukins (Lukins Water Co), Steve Morales (LT Unified School District), Harold Singer (Community Rate Payer), Rodney Wright (Barton Health), Greg Trischler (Tahoe Keys Water), John Thiel and Ivo Bergsohn (STPUD), Mike Maley (Kennedy/Jenks), Michelle Sweeney (Allegro Communications)
MEETING HOSTS	Ivo Bergsohn, John Thiel (STPUD), Mike Maley (Kennedy/Jenks)
FACILITATOR	Michelle Sweeney (Allegro Communications)

## GROUNDWATER MANAGEMENT PLAN UPDATE GOALS

1. Update the Groundwater Management Plan to meet CA legislative requirements and DWR guidelines
2. Update the District ordinance for protecting and monitoring groundwater quality
3. Develop Groundwater Basin Management Objectives (BMOs) to provide a framework for maintaining a sustainable and reliable groundwater supply
4. Create a plan for collecting, compiling and reporting regional groundwater management data
5. Establish a stakeholder forum to host discussion about groundwater topics and facilitate collaborative action toward resolution of groundwater issues

## MAY 14 MEETING GOAL & OBJECTIVES

### GOAL

Generate potential draft content for the Groundwater Management Plan on the subjects of land use planning, education and monitoring and initiate discussion about stormwater management and the groundwater resource.

### OBJECTIVES

1. Increase shared understanding of the current status of groundwater monitoring
2. Discuss potential approach to
  - Land use planning
  - Education
  - Monitoring
 implementation actions in the plan document
3. Identify collaboration opportunities in strategic topic areas within and outside of the Groundwater Strategic Advisory Group
4. Summarize findings of existing reports on stormwater-groundwater relationship

## MAY 14 MEETING MATERIALS

- Related Agency Programs Spreadsheet\*
- Groundwater Management Monitoring Draft Outline (May 9, 2014)

- Groundwater Management Plan Draft Outline (May 9, 2014)
- Meeting Summary - SAG Workshop No. 1 (April 16, 2014)

\*Distributed with April 16 meeting materials. Please bring to this meeting for reference.

## APRIL 16 AGENDA

Time	Description	
9:00	<b>Welcome and Meeting Orientation</b> <ul style="list-style-type: none"> <li>▪ Meeting goal, objectives and agenda</li> </ul>	<b>Bergsohn Maley Sweeney</b>
9:05	<b>Draft Groundwater Management Plan Outline</b>	<b>Maley</b>
9:20	<b>Basin Management Objectives</b>	<b>Maley</b>
9:40	<b>Plan Update Roundtable</b> <ul style="list-style-type: none"> <li>▪ Public Education</li> <li>▪ Land Use Planning</li> </ul>	<b>Bergsohn Maley Sweeney</b>
10:30	<b>Groundwater Monitoring Overview</b>	<b>Maley</b>
10:40	<b>Break</b>	
10:50	<b>Sharing Information, Building Collaboration   Groundwater Monitoring</b> <ul style="list-style-type: none"> <li>▪ Pumping volumes</li> <li>▪ Groundwater elevation</li> <li>▪ Groundwater quality</li> </ul>	<b>Maley Sweeney</b>
11:30	<b>Groundwater Quality and Storm Water Management</b>	<b>Maley</b>
11:50	<b>Next Steps</b>	<b>Sweeney</b>
12:00	<b>Adjourn</b>	<b>Bergsohn Sweeney</b>
12:05	<b>Networking lunch</b> <ul style="list-style-type: none"> <li>▪ Public Education, Land Use Planning, Monitoring, Storm water (discussions continued)</li> </ul>	<b>All invited</b>

## MEETING SUMMARY

DATE	Wednesday, April 16, 2014, 9:00-12
LOCATION	South Tahoe Public Utility District Offices, Board Room, 1275 Meadow Crest Drive
STRATEGIC ADVISORY GROUP CORRESPONDENCE LIST	Karen Bender (El Dorado County), Jason Burke (City of South Lake Tahoe), Scott Carroll (CA Tahoe Conservancy), Greg Daum (Meyers Chevron), Brian Grey and Tom Gavigan (Lahontan Regional Water Quality Control Board), Brian Judge and Paul Nielsen (TRPA), Jennifer Lukins (Lukins Water Co), Steve Morales (LT Unified School District), Harold Singer (Community Rate Payer), Rodney Wright (Barton Health), Greg Trischler (Tahoe Keys Water), John Thiel and Ivo Bergsohn (STPUD), Mike Maley (Kennedy/Jenks), Michelle Sweeney (Allegro Communications)
MEETING HOSTS	Ivo Bergsohn, John Thiel (STPUD), Mike Maley (Kennedy/Jenks)
FACILITATOR	Michelle Sweney (Allegro Communications)

### GROUNDWATER MANAGEMENT PLAN UPDATE GOALS

1. Update the Groundwater Management Plan to meet CA legislative requirements and DWR guidelines
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3. Develop Groundwater Basin Management Objectives (BMOs) to provide a framework for maintaining a sustainable and reliable groundwater supply
4. Create a plan for collecting, compiling and reporting regional groundwater management data
5. Establish a stakeholder forum to host discussion about groundwater topics and facilitate collaborative action toward resolution of groundwater issues

### APRIL 16 MEETING GOAL & OBJECTIVES

#### GOAL

Identify topics and their relative emphasis in the Groundwater Management Plan update

#### OBJECTIVES

1. Gain understanding of the current status of the South Tahoe groundwater resource
2. Identify topics central to the Groundwater Management Plan update
3. Discuss factors that will inform the District's prioritization of Plan update elements
4. Identify collaboration opportunities within and outside of the Groundwater Strategic Advisory Group

### THE GROUNDWATER MANAGEMENT PLAN DOCUMENTS

#### TWO DOCUMENTS ARE BEING CREATED IN THIS 2014 PLAN UPDATE

- Groundwater Management Plan
- State of the Groundwater resource Report

These will be completed during the summer of 2014, with review by the SAG in July 2014.

#### GROUNDWATER MANAGEMENT PLAN UPDATE SEQUENCE

1. Articulate source water goals

2. Integrate CA legislative and DWR requirements
3. Update ordinances
4. Articulate basin management objectives
5. Lay the framework for a plan to collect, share and integrate data
6. Convene a forum to advise in planning and implementation

## **PROPOSED SOUTH TAHOE BASIN SOURCE WATER MANAGEMENT PLAN DOCUMENT PARAMETERS**

- 5-year update cycle
- Annual summary reports
- Semi-annual Advisory Group meetings

## **SOUTH TAHOE BASIN GROUNDWATER RESOURCE**

### **PRESENTATION | OVERVIEW OF THE SOUTH TAHOE GROUNDWATER BASIN**

Ivo Bergsohn is the South Tahoe Public Utility District Hydro-Geologist in charge of the Groundwater Management Plan. His presentation, the elements of which follow, can be found on the District website [http://www.stpud.us/plan\\_documents.html](http://www.stpud.us/plan_documents.html)

District service area = approx 32 square miles extending from Stateline to Emerald Bay and then from the South Shore all the way just upstream of the confluence and Grass Lake Creek and the Upper Truckee River

### **Presentation Elements**

1. Gravity map
2. Aquifer cross section
3. Transmissivity
4. Simplified water cycle, South Tahoe Basin
5. Distribution of recharge
6. Snowmelt and Groundwater Elevation
7. Water Distribution
8. Drinking Water
  - Groundwater users
  - Well vulnerability
  - Permeability
  - Pumping rate
9. Aquifer properties
  - What MtBE illustrates about well vulnerability
10. Surface and Groundwater Connectivity

## **TOPICS CENTRAL TO THE GROUNDWATER MANAGEMENT PLAN UPDATE**

California Department of Water Resources oversees groundwater management plans. There is flexibility in the groundwater management plan guidance in order to empower the local jurisdiction to prioritize actions according to local priorities. Richard Solbrig, District Manager emphasized the importance of keeping management of the groundwater resource in the hands of the local district(s).

## CALIFORNIA DEPARTMENT OF WATER RESOURCES

**Senate Bill 1938** | [http://www.water.ca.gov/groundwater/gwmanagement/sb\\_1938.cfm](http://www.water.ca.gov/groundwater/gwmanagement/sb_1938.cfm)

SB 1938, signed into law in 2002, requires any public agency seeking State funds administered through DWR for the construction of groundwater projects or groundwater quality projects to prepare and implement a groundwater management plan with certain specified components. Requirements include establishing basin management objectives, preparing a plan to involve other local agencies in a cooperative planning effort, and adopting monitoring protocols that promote efficient and effective groundwater management. The requirements apply to both agencies that have already adopted groundwater management plans as well as agencies that do not overlie groundwater basins identified in Bulletin 118 and its updates.

## REQUIRED AND RECOMMENDED COMPONENTS OF A GROUNDWATER MANAGEMENT PLAN

1. Invite interested parties and the public to participate
2. Include a plan by the managing entity to “involve other agencies that enables the local agency to work cooperatively with other public entities whose service area or boundary overlies the groundwater basin.
3. Provide a map showing the area of the groundwater basin
4. Establish an advisory committee of stakeholders
5. Describe the area to be managed under the plan
6. Establish Basin Management Objectives (BMOs)
7. Include components relating to the monitoring and management of groundwater levels – adopt monitoring protocols
8. Describe any current of planned actions by the District to coordinate with other land use, zoning or water management planning agencies
9. Provide for periodic reports and periodic re-evaluation of the entire plan

Source: Required and Recommended Components of Local Groundwater Management Plans

<http://www.water.ca.gov/groundwater/docs/Bulletin118update2003-appxC.pdf>

## FACTORS THAT WILL INFORM PRIORITIZATION OF PLAN UPDATE ELEMENTS

### PRELIMINARY BASIN MANAGEMENT OBJECTIVES

Basin Management Objectives (BMOs) are required under the California Water Code (CWC) § 10753.7 (a) (1). 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. Senate Bill (SB) 1938 amended existing law related to groundwater management plans (GWMP) requiring a public agency seeking State funds administered through California Department of Water Resources (DWR) to prepare and implement a GWMP that includes BMOs.



An important feature of the BMO method of groundwater management is that it is intended to provide a flexible approach that can be adapted to changing local conditions and increased understanding of the groundwater resource. The more traditional way of managing groundwater basins typically focused on often difficult to define concepts such as safe yield, replenishment and overdraft.

This GWMP update for the Tahoe Valley Groundwater Basin – Tahoe South Subbasin is a regional effort being facilitated by the South Tahoe Public Utilities District (STPUD or District). The following preliminary draft BMOs are proposed:

- BMO #1 – Maintain a sustainable long-term water supply
- BMO #2 – Maintain and protect groundwater quality
- BMO #3 – Promote public participation and coordination with local agencies
- BMO #4 – Coordinate a regional monitoring program to track groundwater conditions in the basin.
- BMO #5 – Assess and manage the interaction of water supply activities with environmental conditions
- BMO #6 – Increase the hydrogeologic understanding of the groundwater basin
- BMO #7 – Assess planned or potential future water supply needs and issues
- BMO #8 - Identify and obtain funding for groundwater projects

## COLLABORATION OPPORTUNITIES

Collaboration opportunities discussed fell broadly in the categories of interagency agreements, data and resource sharing, land use planning, stormwater and education

### INTERAGENCY AGREEMENTS

How do participants in this Advisory Group get involved in using the plan that's being developed by the District? Is there a mechanism for that? Can they individually take the plan and adopt it themselves? 1) other water purveyors 2) agencies and local jurisdictions

### DATA AND RESOURCE SHARING

DWR places a strong emphasis on monitoring protocols for groundwater levels, pumping and water quality. What is the opportunity for participants in this Advisory Group Forum to identify potential data and resource sharing (capacity building) mechanisms for the future?

Subject areas identified in which data and resource sharing could mutually benefit purveyors and agencies

1. Groundwater levels
2. Pumping volumes
3. Water quality
4. Climate – future water supply
5. Stormwater

## LAND USE PLANNING

Do well construction and abandonment policies apply to private wells? **DISCUSSION:** It is a matter of estimated risk. Perhaps this is a trigger for partner agencies that have land use authority, if the risk is significant enough could partner up and help create more protections that are mandatory – not volunteer – if the risk is significant enough.

## STORMWATER – GROUNDWATER CONNECTIVITY

While there has been research into this topic, in light of the emphasis on infiltration of stormwater from the Tahoe Basin road system it seems there is ample opportunity to increase understanding of the relationship between storm and ground water.

## EDUCATION

In the context of hosting of this Advisory Group the District could facilitate the identification of public and contractor education opportunities regarding groundwater vulnerability and protection. Especially – supply side intrusions, toxic dumping into stormwater system...

## CLIMATE CHANGE

The Lake Tahoe Basin Management Unit is undertaking climate change study in cooperation with regional and national USDA and Forest initiatives.

## CAPACITY BUILDING

- **GRANT WRITING:** As water supply is an important sociopolitical topic there is potential mutual benefit for the agencies and parties on this Advisory Group to think about the interdisciplinary nature of groundwater protection and creatively approach the grantwriting task.
- **EMERGENCY RESPONSE:** It would behoove the drinking water protection interests to participate in existing forae for emergency response planning
- **ECOSYSTEM SERVICES:** It is worth the District considering whether applying an ecosystem service lens to grant proposals and collaboration with other agencies might yield new funding opportunities.

DRAFT OUTLINE  
Tahoe Valley South Sub-Basin (6-5.01)  
Groundwater Management Plan

- 1. Introduction**
  - 1.1. Plan Requirements and Organization
  - 1.2. Needs for Groundwater Management Planning
  - 1.3. Plan Preparation and Adoption Process
- 2. Groundwater Management Area**
  - 2.1. Physical Setting
  - 2.2. Delineation of DWR Groundwater Basin
- 3. Stakeholder Involvement**
  - 3.1. Stakeholder Advisory Committee
  - 3.2. Interaction with Local Agencies
  - 3.3. Public Involvement
- 4. Groundwater Usage**
  - 4.1. Regional Water Use
  - 4.2. Historical Groundwater Pumping
- 5. State of the Groundwater Basin**
  - 5.1. Description of Aquifer
  - 5.2. Groundwater Conditions
  - 5.3. Groundwater Quality
  - 5.4. Surface Water Hydrology
  - 5.5. Stormwater Runoff
- 6. Assessment of Groundwater Conditions**
  - 6.1. Groundwater Supply Assessment
  - 6.2. Groundwater Quality Assessment
  - 6.3. DWR Definition of Recharge Areas
  - 6.4. Environmental Interactions
- 7. Monitoring Plan Summary**
  - 7.1. Groundwater Management Monitoring
  - 7.2. Water Protection Monitoring
  - 7.3. Compilation of Other Existing Data Sources
- 8. Basin Management Objectives and Strategies**
  - 8.1. Goals
  - 8.2. BMO #1 – Maintain a sustainable long-term water supply
  - 8.3. BMO #2 – Maintain and protect groundwater quality
  - 8.4. BMO #3 – Promote public participation and coordination with local agencies
  - 8.5. BMO #4 – Coordinate a regional monitoring program to track basin groundwater conditions.
  - 8.6. BMO #5 – Manage the interaction of water supply activities with environmental conditions
  - 8.7. BMO #6 – Increase the hydrogeologic understanding of the groundwater basin
  - 8.8. BMO #7 – Assess planned or potential future water supply needs and issues
  - 8.9. BMO #8 – Identify and obtain funding for groundwater projects
  - 8.10. BMO #9 – Integrate groundwater quality protection into local land use planning
- 9. Implementation Plan**
  - 9.1. Implementation Schedule
  - 9.2. Periodic Review and Update of the Plan

**Appendices**

- A. GWMP Preparation and Adoption Resolutions
- B. Stakeholder Advisory Group Meeting Documentation
- C. Monitoring Plan

**Outline of Groundwater Management Monitoring  
Tahoe Valley South Sub-Basin (6-5.01)  
Groundwater Management Plan**

- **Groundwater Management Monitoring**

- Objective
  - Monitor groundwater basin conditions
  - Documented a Groundwater Management Annual Report
  - Most of this data is already being collected and compiled by STPUD, but would like to supplement with additional data and locations to fill data gaps
- DWR Monitoring Requirements
  - Groundwater Levels
  - Groundwater Quality
  - Land Surface Subsidence
  - Surface Water Flow and Water Quality
    - Directly affect groundwater levels or quality
    - Changes caused by groundwater pumping
- Annual Groundwater Management Monitoring
  - Annual Groundwater Pumping in the Basin
    - STPUD, Large Private Water Purveyors, Larger Irrigation, Industrial or other Uses, Environmental Remediation Pumping, Small Private Well Owners
  - Recharge
    - Precipitation
    - Runoff

- **Water Quality Protection Monitoring**

- Objective
  - Provide sufficient monitoring to detect water quality issues before they affect water supply wells
- Mechanisms for Protecting Water Quality
  - STPUD Groundwater Protection Ordinance
    - EDIR Monitoring
  - Stormwater Quality Monitoring
  - Regulatory Oversight of Environmental Cleanup Activities

- **Data Sharezone to Provide Access to Existing Data Sources**

- Objective
  - Compile a listing of available data and reports that can be used to support future groundwater studies or other related activities
  - Data and reports maintained by data originator but made available to Stakeholders
- Maintain a List of Contacts for Available Data in the Basin that could be used upon gaining appropriate permission to use data
  - Groundwater levels, water quality, surface water flow, stormwater monitoring, environmental remediation
- Reports and Studies
  - Maintain a web page with links to key publically available data and reports
  - Posting of new data and reports maintained through ongoing SAG
  - Includes a wide range of potential data sources including
    - groundwater, water quality, environmental habitat, surface water, groundwater-surface water interactions, stormwater, land use, water use, geology, soils, environmental remediation etc.