

The Santa Margarita Groundwater Agency

Notes from an Introductory Presentation by Sierra Ryan

August 11, 2020

The Santa Margarita Ground Water Basin includes Scotts Valley, Felton, the east side of the San Lorenzo River, and Lompico. Its lateral boundaries are defined by the Ben Lomond Fault and the Zayante Fault. Both the geology and the hydrogeology of this basin are complex. Key elements include the Santa Margarita Sandstone, the Monterey Formation Shale, and the Lompico Sandstone. Primary pumping takes place in SLVWD, Olympia, and Quail Hollow. There are also around 1000 private wells.

Groundwater levels have been fairly consistent since recordkeeping began in the 1980s, but there was a drop in the Scotts Valley area. The associated Lompico Aquifer was depleted for a while, but nothing is being actively depleted today. Scotts Valley pumping started declining around 2005. Industrial wells related to mining were a significant draw up to around 2000; Superfund sites also caused depletion between 1985 and 2000. More recently, people have been conserving significantly, and there was no groundwater decline in the most recent drought. About $\frac{3}{4}$ of the groundwater production in the Santa Margarita Basin is due to the Scotts Valley Water District (SVWD) and the SLVWD.

In 2014, the state required each local groundwater basin to form its own agency to produce a plan by 2022 for achieving sustainability in 20 years and then maintaining this for another 30 years. The plan must ensure that the community won't negatively impact the environment or run out of water. The Santa Margarita Groundwater Agency includes SLVWD, SVWD, and the County of Santa Cruz as co-equal members, each with two Board seats. Five additional Board seats are occupied by Private Well Owners (2 seats), the City of Scotts Valley, the City of Santa Cruz, and the Mt. Hermon Association.

Sustainability is achieved by avoiding undesirable results, which are defined as "significant and unreasonable." These include: surface water depletion, reduction of storage, degraded quality, lowering of groundwater levels, seawater intrusion, and land subsidence (but the latter two are not applicable to our basin). To quantify these, there must be measurable objectives which exceed a minimum threshold.

Groundwater Dependent Ecosystems (GDEs) include open water, riverine and riparian habitats, springs, and other groundwater-dependent wetlands. The process of establishing specific criteria involves a sequence of steps: (1) identify GDEs, (2) identify interconnected surface

waters and GDEs influenced by pumping, (3) select priority species and habitats (e.g., steelhead, riparian habitats), (4) quantify depletion and impacts to GDEs from groundwater pumping, (5) define “Significant and Unreasonable” and decide if we are currently experiencing these conditions, and (6) set minimum thresholds and measurable objectives.

The fourth step in this sequence is particularly complicated because it requires sophisticated groundwater models to estimate, e.g., how much flow is being taken from Zayante Creek by pumping from a particular well. In addition to identifying the rate or volume of water no longer flowing in the stream, it must be established that this is due to groundwater use that has adverse impacts on beneficial use of the surface water and may lead to undesirable results.

Today's meetings are setting the course for the next 50 years. Climate change is part of the modeling, but there is no compensation for dry years, changes to runoff not related to implementation of the Groundwater Sustainability Plan, or changes to or impacts from surface water diversions. The agency has no control over land use or surface water diversions.

The agency has produced a draft standard for Chronic Lowering of Groundwater Levels: “Significant and unreasonable chronic lowering of groundwater levels occurs if lowered levels materially impair Groundwater Dependent Ecosystems, groundwater supply or cause undue financial burden for a significant number of the Basin’s beneficial users or uses.” A draft standard for Depletion of Interconnected Surface Water is on the agenda for August.

In addition to establishing measurable objectives, the agency is responsible for developing a detailed plan of action for addressing problems and achieving the target objectives. This includes information on permitting, implementation timelines, expected benefits, required authority, and cost. There also need to be contingency measures in case the basin does not respond as expected. These will likely include: Stormwater Recharge (this is a passive, low-impact measure), Water Transfers (whereby an agency with available surface water provides it to an agency depending on groundwater when feasible), Conjunctive Use (which is basically a more holistic, more complicated, seasonally-varying version of comingling surface water and groundwater), Aquifer Storage and Recovery (ASR) with Surface Water (in which excess water is actively redirected into underground storage), and Indirect Potable Reuse (which involves taking treated wastewater and purifying it via seven levels of further treatment).

Sierra closed with a number of suggestions for interested FSLVW members:

- Attend SMGWA meetings online (next meeting is Thursday August 27th at 5:30 PM)
- Subscribe to the SMGWA listserv (go to <https://smgwa.org/>)
- Contact your SLVWD representatives (Lew Farris and Lois Henry)
- Contact your County Supervisor (Bruce McPherson)
- Tell your friends