Sierra Valley Groundwater Basin
SGMA Public Workshop

Tuesday, December 3, 2019,4:00-6:00 PM
Location: Sierra Christian Church, 81059 Hwy 70, Beckwourth, CA

SUPPLEMENTAL INFORMATION HANDOUT

Contents:

Sustainable Groundwater Management Act (SGMA) Basics

- *What is SGMA?* SGMA is a three-bill state legislative package comprised of Assembly Bill (AB) 1739, Senate Bill (SB) 1168, and SB 1319 signed into law in 2014 and amended in 2015; includes government code sections, water code sections, and sections of the California Code of Regulations ("Emergency Regulations").
- *What does SGMA require?* The key requirements of SGMA can be summarized as:
  - Per Water Code Section 10722, California Department of Water Resources (DWR) shall designate priority levels (high, medium, low, or very low) to all of the groundwater basins in the state, determine whether they are subject to critical conditions of overdraft[1], and reprioritization basins if/when basin boundaries are modified (*see basin prioritization information on Page 2*).
  - Per Water Code Section 10720, all groundwater basins designated as high- or medium-priority basins shall be managed by a local Groundwater Sustainability Agency (GSA) or agencies under a Groundwater Sustainability Plan (GSP) by January 31, 2022 or by January 31, 2020 for those that are critically overdrafted, and shall achieve sustainable groundwater management[2] within 20 years of GSP implementation per § 354.24 of the Emergency Regulations (*see presentation slides for SGMA timeline).*
  - Per Water Code Section 10727.8, GSAs shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the groundwater basin in SGMA implementation.
  - Per Water Code Section 10735 - 10736, State Water Resources Control Board (SWRCB) shall intervene if local agencies are not willing or able to manage groundwater sustainably.

Basin Prioritization Process and Results Summary

[1] Overdraft = when the amount of groundwater pumped from a groundwater basin exceeds the amount of groundwater flowing into the groundwater basin (a.k.a. recharge) leading to a decline in groundwater elevation in the basin

[2] Sustainable Groundwater Management = the management and use of groundwater in a manner that can be maintained during the SGMA planning and implementation horizon (50 years) without causing undesirable results (*see information on undesirable results on Page 3)*

- *How are groundwater basin prioritizations determined?*
  - Per Water Code Section 10933, basin prioritization by DWR shall utilize best available data and consider the following:
    (1) The population overlying the basin or subbasin.
    (2) The rate of current and projected growth of the population overlying the basin or subbasin.
    (3) The number of public supply wells that draw from the basin or subbasin.
    (4) The total number of wells that draw from the basin or subbasin.
    (5) The irrigated acreage overlying the basin or subbasin.
    (6) The degree to which persons overlying the basin or subbasin rely on groundwater as their primary source of water.
    (7) Any documented impacts on the groundwater within the basin or subbasin, including overdraft, subsidence, saline intrusion, and other water quality degradation.
    (8) Any other information determined to be relevant by the department, including adverse impacts on local habitat and local streamflows.
  - DWR settled on a scoring system comprised of eight scoring components each with possible scores of 0 – 5 points, making the minimum possible score 0 and the maximum possible score 40; note, the evaluation process for components 6, 7, and 8 includes sub-components (*see results summary below*).
- *Sierra Valley Subbasin Basin Prioritization Results Summary (see presentation slides for figures)*
  - Total Priority Points: **17** = Medium Priority Basin, not subject to critical conditions of overdraft
  - C1: Population (2010): 2,192 — Pop / mi^2: 12 — C1 Priority Points: **1**
  - C2: Population Growth (2030): 2,210 — Pop Growth: 1% — C2 Priority Points: **0**
  - C3: Public Supply Wells: 10 — PSW / mi^2: 0.05 — C3 Priority Points: **1**
  - C4: Total Wells: 594 — Wells / mi^2: 3.24 — C4 Priority Points: **2**
  - C5: Irrigated Acres: 16,592 — Irr. Acres / mi^2: 90.53 — C5 Priority Points: **2**
  - C6: GW Use/Dependence Total Points: 4 (see below[3]) — C6 Priority Points: **2**
    - 6A: GW Use Acre-Ft: 12,480 — GW Ac-Ft /Ac: 0.1 — C6a Sub-comp. Points: 2
    - 6B: GW % Supply: 36% — C6b Sub-comp. Points: 2
  - C7: Impacts Total Points: 18.5 (see below[3]) — C7 Priority Points: **4**
    - Declining GW Levels Points: 7.5
    - Salt Intrusion Points: 0
    - Subsidence Points: 10
    - Water Quality Points: 1
  - C8: Habitat and Other Information Total Points: 5 (see below[3]) — C8 Priority Points: **5**
    - 8A: Streamflow Points: 1 — Habitat Points: 1 — C8a Sub-comp. Points: 2
    - 8B: Other Information: 3 — C8b Sub-comp. Points: 3
    - 8c&d - Statewide Other Information: None — C8c&d Sub-comp. Points: 0

<u>Sustainability Indicators and Summary of Conditions in Sierra Valley</u>

[3] See presentation slides for additional information, figures, and DWR's comments on sub-component scoring

- *What is a sustainability indicator?*
  - "Sustainability indicator" refers to any of the effects caused by groundwater conditions occurring throughout the basin that, when significant and unreasonable[4], cause undesirable results.
- *What are undesirable results?*
  - "Undesirable result" means one or more of the following effects caused by groundwater conditions occurring throughout the basin:
    - Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon. Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and groundwater recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in GW levels or storage during other periods.
    - Significant and unreasonable reduction of groundwater storage.
    - Significant and unreasonable seawater intrusion.
    - Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies.
    - Significant and unreasonable land subsidence that substantially interferes with surface land uses.
    - Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.
- *What are the conditions in the Sierra Valley for the various sustainability indicators?* Based on best available data, the conditions can be qualitatively summarized as follows (note, studies and data processing efforts are ongoing which will contribute to the understanding of current and historic conditions):
    - Majority of long-term hydrographs are relatively stable, but some show gradually declining groundwater level trends indicating that the northwest portion of the basin has been overdrafted and leading to the definition of a "restricted area" in which no new high-capacity wells are allowed.
    - Groundwater elevation monitoring data showing gradually declining groundwater level trends in some locations indicates that some groundwater storage has been lost; evidence of land subsidence (see below) indicates that some permanent reduction in water storage capacity has occurred.
    - Seawater intrusion is not considered an applicable sustainability indicator for the Sierra Valley Subbasin due to its elevation and distance from seawater sources.
    - Water quality is generally good in the Sierra Valley Subbasin; natural constituents of concern include sodium, boron, fluoride, nitrate, iron, and arsenic; the poorest quality groundwater is found in the central west side of the valley near thermal waters and some high concentrations have been observed in the area between the butte and Vinton; other concerns include contamination from wastewater and/or agricultural chemicals and migration of poor quality groundwater due to overdraft.
    - Land surface elevation data and anecdotal data indicates that some land subsidence due to groundwater overdraft has occurred and may still be occurring in the Sierra Valley.
    - The Middle Fork of the Feather River and wetlands in the valley are interconnected with the Sierra Valley Subbasin; monitoring well data showing gradually declining groundwater level trends indicates that these interconnected surface water may be impacted by groundwater overdraft.

Sustainability Management Criteria Introduction

[4] See information on defining "significant and unreasonable" effects on Page 4

- *What would be considered "significant and unreasonable" effects?*
  - It's up to us! SGMA leaves it up to GSAs to define would be considered "significant and unreasonable" effects associated with each sustainability indicator, based on public input. A GSA may decide, for example, that land subsidence near critical infrastructure and loss of domestic well pumping capacity due to lowering of groundwater levels are both significant and unreasonable conditions. These general descriptions of significant and unreasonable conditions are later translated into quantitative undesirable results through the establishment of "minimum thresholds".
- *What are "minimum thresholds[5]"?*
  - A minimum threshold is the quantitative value that represents the groundwater conditions at a representative monitoring site that, when exceeded individually or in combination with minimum thresholds at other monitoring sites, may cause undesirable results in the basin. GSAs must set minimum thresholds at representative monitoring sites for each applicable sustainability indicator after considering the interests of beneficial uses and users of groundwater, land uses, and property interests in the basin.
- *How will we achieve sustainability by 2042?*
  - There will be many paths to sustainable groundwater management based on groundwater conditions and locally-defined values. To achieve sustainability, we must understand the basin ("basin setting") including current and historic groundwater conditions then use our local knowledge and values to define significant and unreasonable effects, minimum thresholds, "measurable objectives", "interim milestones", a "sustainability goal", and projects and management actions to achieve our sustainability goal.
- *What is a "sustainability goal"?*
  - SGMA requires development of a sustainability goal which includes a goal description summarizing the overall purpose for sustainably managing groundwater resources (reflecting local economic, social, and environmental values), summarizes the measures that will be implemented and how these measures will lead to operation of the basin within its sustainable yield[6], and culminates in the absence of undesirable results within 20 years of GSP implementation.
- *What are "measurable objectives"?*
  - Measurable objectives are quantitative goals that reflect the basin's desired groundwater conditions and allow the GSA to achieve the sustainability goal within 20 years. Measurable objectives are set for each sustainability indicator at the same representative monitoring sites and using the same metrics as minimum thresholds and allow for a reasonable margin of operational flexibility.
- *What are "interim milestones"?*
  - Interim milestones are measurable objectives defined in five-year increments at each representative monitoring site; used by GSAs and DWR to track progress toward meeting the basin's sustainability goal.

For more information about the Sustainable Groundwater Management Act, visit: www.groundwaterexchange.org

For more information about local groundwater management, visit: www.sierravalleygmd.org

[5] See presentation slides for example minimum thresholds and additional information

[6] Sustainable Yield = the maximum quantity of water that can be withdrawn annually from a groundwater supply without causing an undesirable result