

Summary of the Big Valley Groundwater Sustainability Plan

April 2021

In 2014, California's Sustainable Groundwater Management Act (SGMA) was signed into law, requiring local governments and agencies in groundwater basins designated as high and medium priority to create governance structures and develop, adopt, and implement a Groundwater Sustainability Plan (GSP) for each basin. The Big Valley Groundwater Basin (BVGB) is identified as a medium-priority basin by the California Department of Water Resources (DWR) and is therefore subject to SGMA. The "high" and "medium" designations were assigned by DWR prior to the adoption of SGMA. Local agencies in the BVGB contested the medium-priority designation, which DWR denied, and are preparing a GSP to comply with the law because non-compliance may result in intervention by the State Water Board. Intervention could include metering, reporting, and fees for pumping groundwater. All formal basin-priority challenges have been denied to-date but may be revisited in the future.

Location and Boundaries

BVGB is a small basin in the north-eastern region of California. It encompasses a 144-square-mile area located in portions of Modoc and Lassen counties, including the unincorporated communities of Adin, Lookout, Bieber, and Nubieber. SGMA applies only to the areas inside the basin boundary (**Figure 1**), but GSP projects may include areas outside the boundary. The boundary lacks accurate detail in places and does not follow the DWR boundary definition, so leaders in the BVGB submitted a basin boundary modification request to DWR in 2016 that was denied. There are plans to submit another basin boundary modification request in the future.

GSP Content and Structure

Governments and agencies in basins subject to SGMA form one or more Groundwater Sustainability Agencies (GSA) to develop a GSP and oversee its implementation. The two counties, Lassen and Modoc, have designated themselves as the GSAs for the Basin and that designation has been confirmed by DWR. The counties took on this huge responsibility because no other local agencies were able to serve as the GSAs. If the counties had not agreed to be the GSAs, the State Water Board would have assumed management responsibility (e.g., "intervention"). Each GSA manages the portion of the basin in its county. In 2019, the Big Valley Groundwater Basin Advisory Committee (BVAC) was formed to advise the GSAs on preparation of a single GSP for the entire BVGB. The BVAC consists of representatives from each county's board of supervisors and two BVGB residents from each county who were appointed by the GSAs after extensive outreach was conducted to all residents of the BVGB. The BVAC holds regular meetings which are open to the public. Meeting information can be found on the Big Valley GSP website: <https://bigvalleygsp.org>.

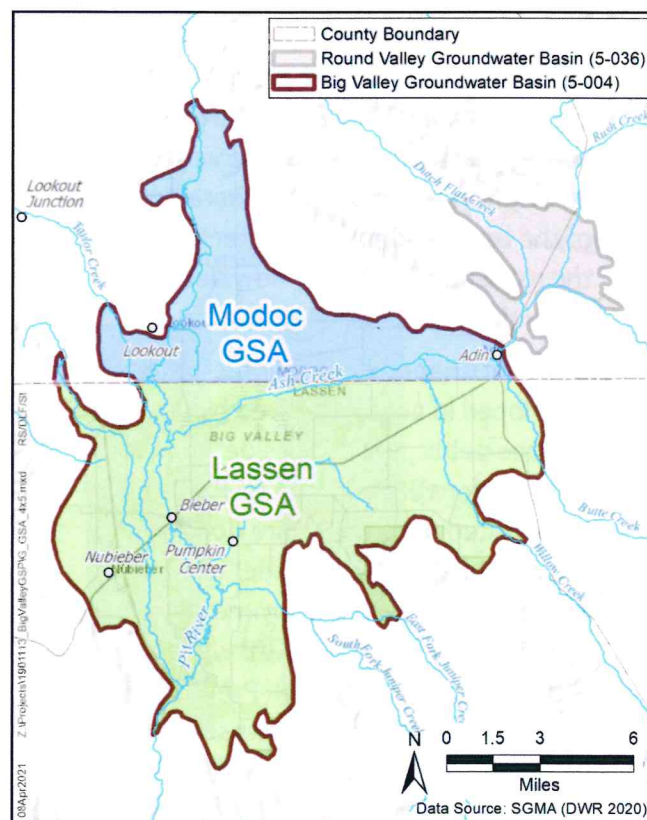


FIGURE 1: BIG VALLEY GROUNDWATER BASIN AND GSA BOUNDARIES

Physical Characteristics

The BVGB GSP follows a very specific structure because SGMA regulatory requirements dictate the information that must be contained within the document. First, the GSP must describe the general background and physical characteristics of the groundwater basin. In the BVGB GSP, this information is covered in Chapters 1 through 4 as follows:

- **Chapter 1.** Introduction to BVGB
- **Chapter 2.** Agency Information
- **Chapter 3.** Plan Area
- **Chapter 4.** Hydrogeologic Conceptual Model

Plan Area (Chapter 3) and Hydrogeologic Conceptual Model (Chapter 4) introduce important information, such as land use, geology, and hydrology, that will be used to make decisions throughout the planning process. They are based on the best available scientific data, but also include assumptions where reliable data is not available. The term 'hydrogeologic conceptual model' refers to a written description of the physical characteristics of the basin – where the water flows, the makeup of the soils, how deep the groundwater is, etc.

Drafts of Chapters 1 through 4 were developed in 2020, reviewed by the BVAC and the public, and "set aside" in order to move forward with the GSP. They will be revisited once the entire document is assembled. The "set aside" drafts are available and open for comment on the home page of the BGVB website (<https://bigvalleygsp.org>). Previous chapter versions, comments submitted, and other relevant information is available on the [documents](#) page.

Figures 2 and 3 show data highlights from Chapters 3 and 4 of the GSP.

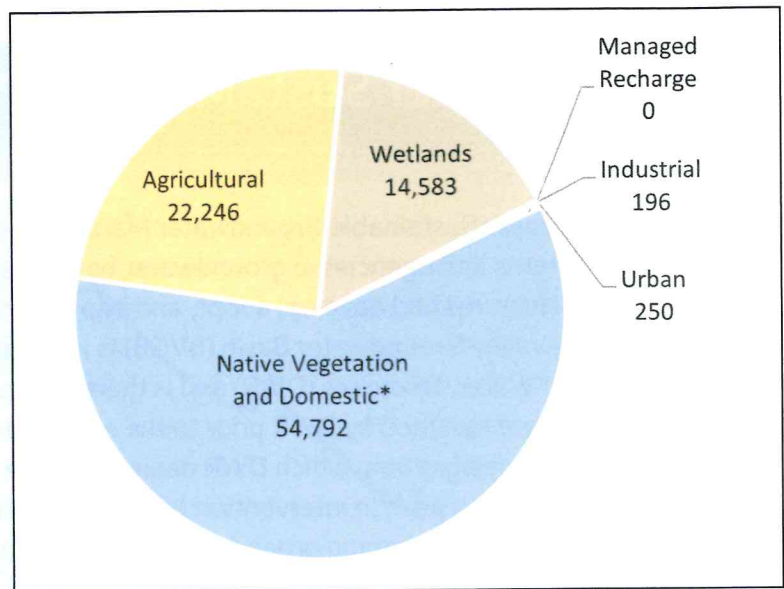


FIGURE 2: BIG VALLEY GROUNDWATER BASIN LAND USE

* Domestic use generally occurs in conjunction with agricultural and native vegetation and is best categorized with native vegetation, as most of the agricultural area is delineated by field and does not include residences.

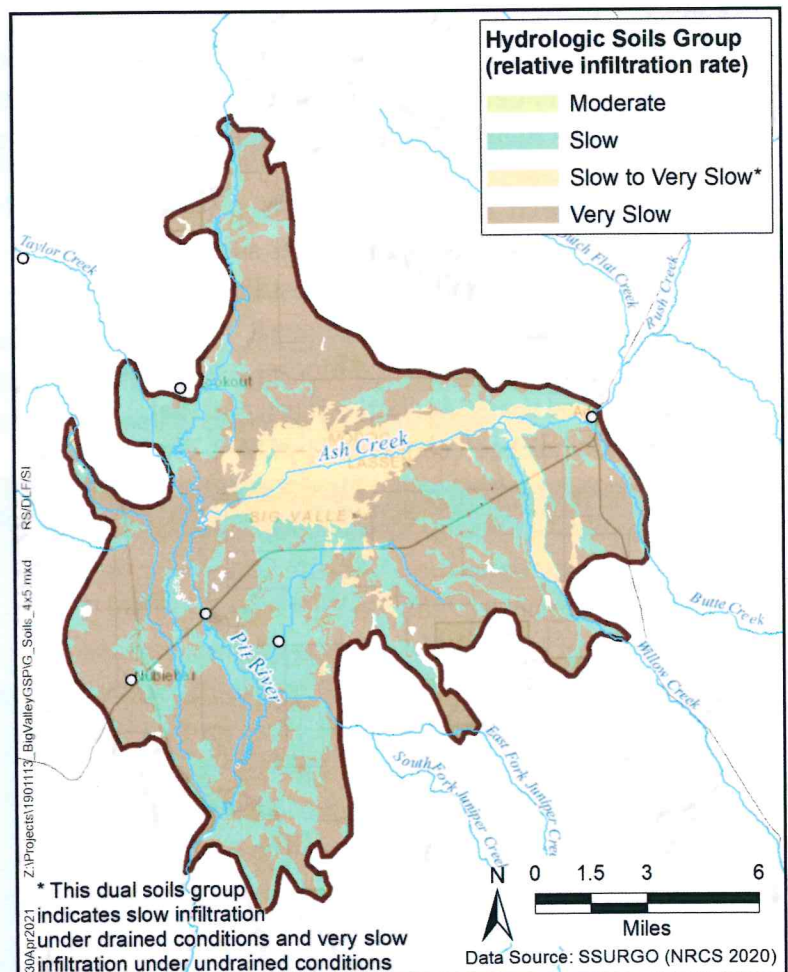


FIGURE 3: BIG VALLEY GROUNDWATER BASIN HYDROLOGIC SOILS GROUPS

Groundwater Conditions

Professional geologists and hydrogeologists examined data from wells throughout BVGB to determine groundwater conditions. They observed that most areas of the BVGB have experienced little to no change in water levels, while other areas have fluctuated more. They also found that groundwater in the BVGB is generally of excellent quality. The details of their findings are available in BVGB GSP **Chapter 5. Groundwater Conditions** (which has been temporarily “set aside” by the BVAC). Chapter 5 also includes other data required by the GSP regulations including changes in groundwater storage, water quality, land subsidence, and interconnected surface water. None of these indicators have shown undesirable results.

Figure 4 shows the estimated direction of groundwater flow in the BVGB.

An important tool to monitor groundwater sustainability is a water budget. BVGB GSP **Chapter 6. Water Budget** (“set aside”) has estimates of the volume of water flowing into and out of the basin – from causes such as rain, rivers, and evaporation. Comparing the volumes of water entering and exiting the basin indicates if the basin is in balance, is in overdraft, or has surplus water. **Figure 5** shows the draft historical water budget (1984 to 2018).

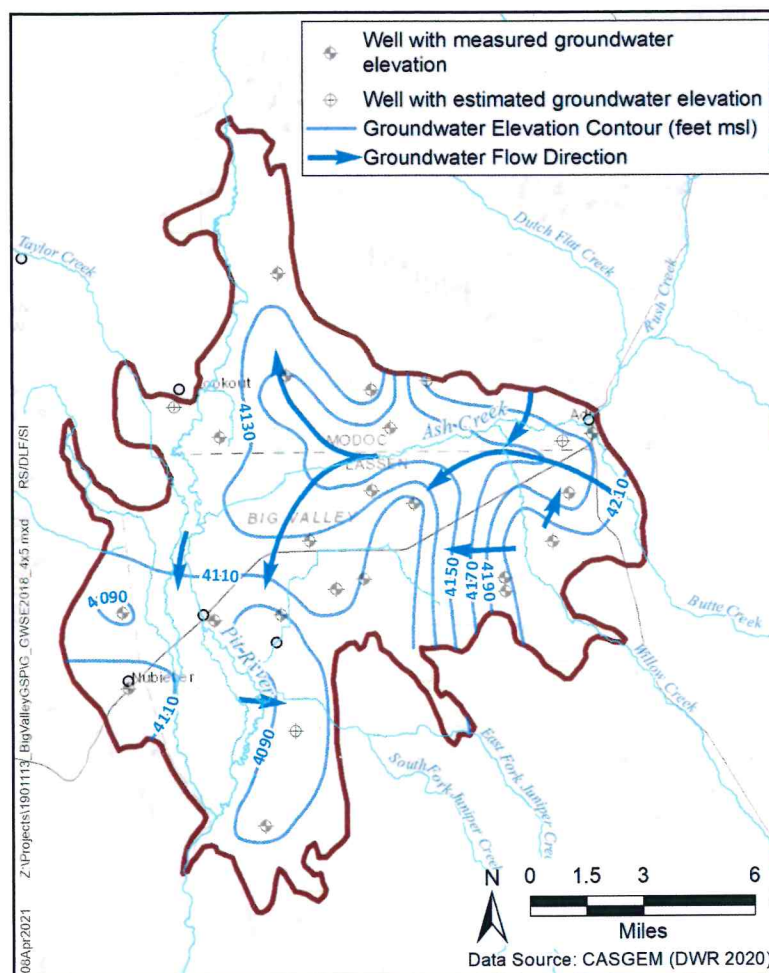


FIGURE 4: BIG VALLEY GROUNDWATER BASIN GROUNDWATER CONTOURS AND ESTIMATED FLOW DIRECTION

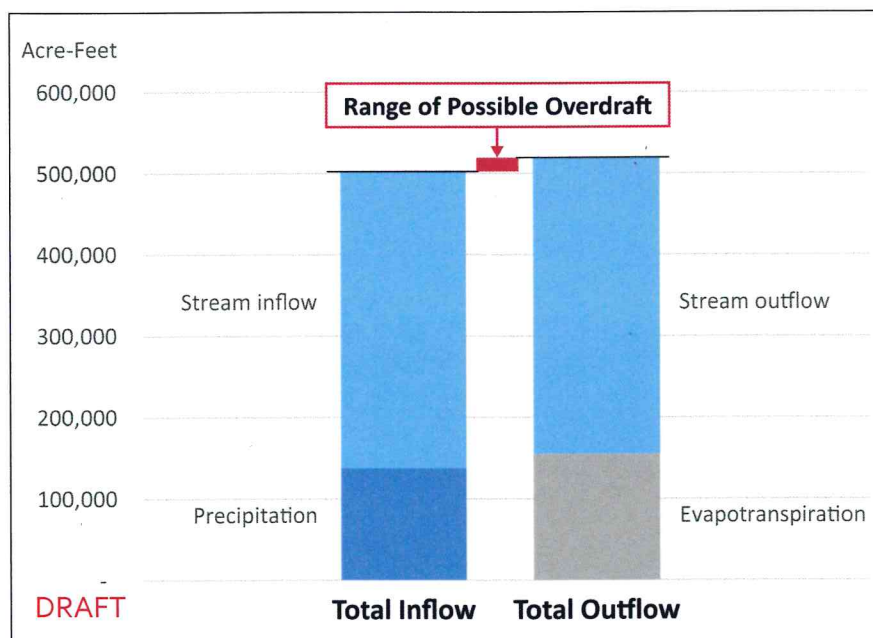


FIGURE 5: DRAFT AVERAGE ANNUAL WATER BUDGET (1984–2018)

Figure 6 shows the change in groundwater storage and indicates that most of the deficit is due to the 2000-2018 time frame being drier than it had been historically. Conversely, the extended wet periods that occurred in the late 1990s caused groundwater levels to recover.

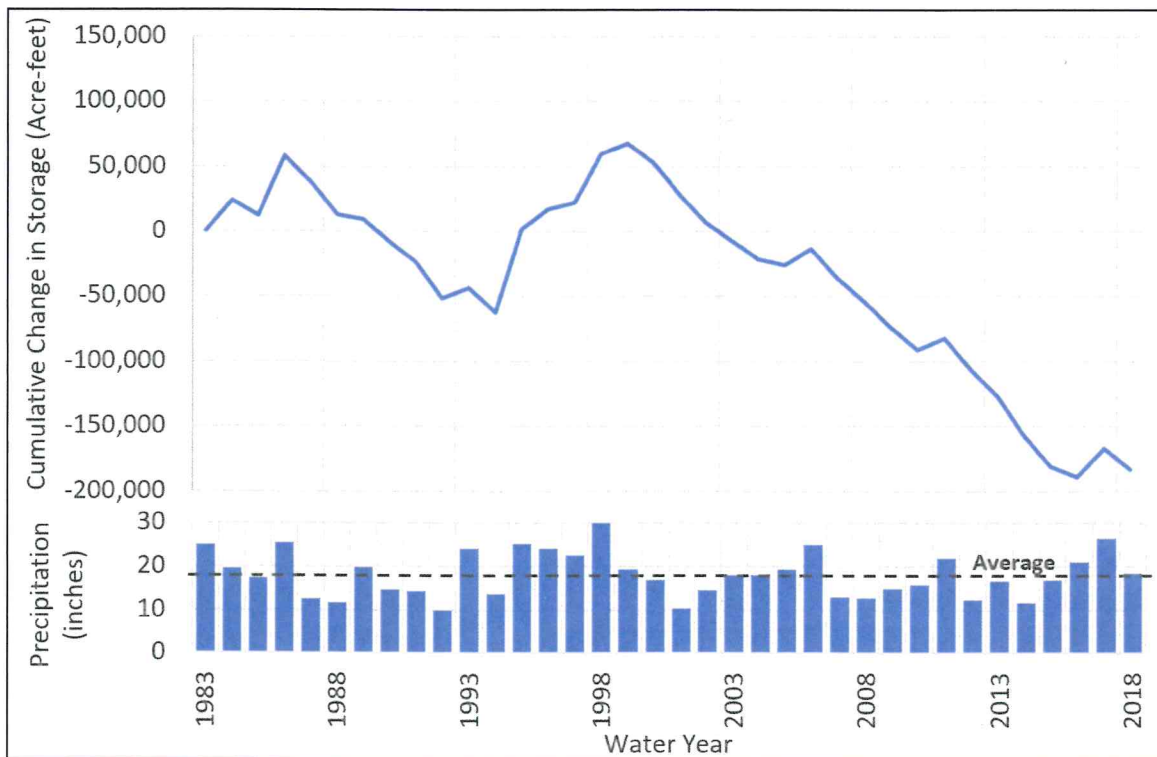


FIGURE 6: CUMULATIVE CHANGE IN STORAGE (1982-2018)

Up Next: Projects and Actions

The next steps in the GSP process are to set measurable criteria to track progress toward sustainability and to define projects and actions to help move the basin toward sustainable groundwater management. The BVAC and GSAs are currently developing these items, and **you are invited** to participate.

How to Participate

- Register as an interested party on our website: <https://bigvalleygsp.org>.
- Attend BVAC meetings, which are advertised to interested parties and viewable on the online [calendar](#).
- View draft GSP documents and offer your comments using the online [form](#).

Thank you for your interest in the Big Valley GSP.