



# Sustainable Groundwater Management Program Technical Assistance—Climate Change Analysis

## Overview

The California Department of Water Resources (DWR) is providing climate data to Groundwater Sustainability Agencies (GSAs) based on the Water Storage Investment Program's (WSIP's) climate change analysis. This data source is consistent with other State programs, and leverages WSIP-developed products. See more information at

[https://cwc.ca.gov/Documents/2016/WSIP/WSIP\\_Data\\_and\\_Model\\_Product\\_Description\\_11-1-16.pdf](https://cwc.ca.gov/Documents/2016/WSIP/WSIP_Data_and_Model_Product_Description_11-1-16.pdf)

The provided climate change data may be useful for Groundwater Sustainability Plan (GSP) development.

Data can be used for:

- Development of climate change related inputs for integrated hydrologic models
- Calculation of projected water budgets
- Establishment of sustainable management criteria
- Evaluation of projects and management actions

## Climate Change Data

Data include all related information for future projected climate conditions around 2030 and 2070 over an 82-year hydrologic period as follows:

- 2030 data may be useful to evaluate projects and actions to achieve sustainability
- 2070 data may be useful to show that sustainability will be maintained into the planning and implementation horizon
  - Two additional scenarios representing drier with extreme warming (2070DEW) and wetter with moderate warming (2070WMW) conditions are provided as bracketing scenarios for use in sensitivity analysis

Datasets include the following:

- Gridded change factors for precipitation and reference evapotranspiration
- Watershed (CalWater 2.2.1 HUC-8) change factors for unimpaired streamflow
- CalSim II impaired flow data and VIC (Variable Infiltration Capacity) model routed streamflow data

## Climate Change Analysis Tools

Analysis tools include the following:

- Online GIS-based interactive map to download relevant spatial and temporal data in accordance to user-defined region
- Desktop tools to help process relevant datasets for future water budget analysis and integrated hydrologic modeling

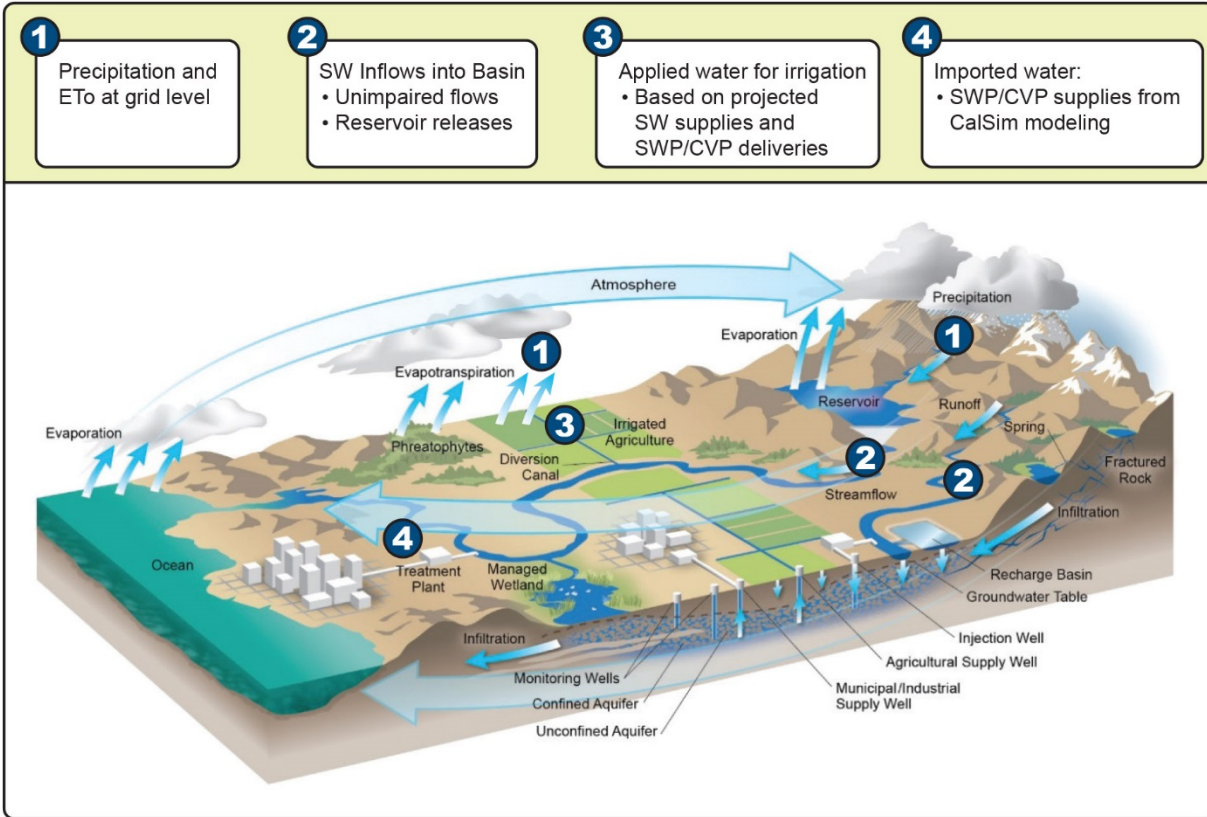
## Climate Change Analysis Guidance

Documentation is available that describes the climate change data types and how to use the data appropriately for the development of GSPs. Additional guidance will be provided in the form of user manuals, other technical documentation, factsheets, and Frequently Asked Questions (FAQs), as applicable.

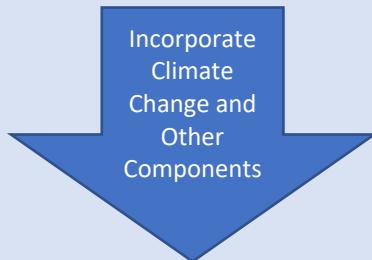


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## Application of Climate Change Data for Sustainable Groundwater Management Act (SGMA) Implementation



**Historical Water Budget:** Quantify current inflows and outflows for the basin using the most recent hydrology, water supply, water demand, and land use information



**Projected Water Budget:** Utilized to estimate future conditions of supply, demand, and aquifer response to GSP implementation while considering uncertainties associated with climate change, local agency land use planning, and sea level rise projections

### For More Information, Please Contact:

Tyler Hatch  
Tyler.Hatch@water.ca.gov