

Groundwater Sustainability Indicators



Chronic Lowering of Water Levels



Reduction of Groundwater Storage



Degradation of Water Quality



Land Subsidence Affecting Land Use



Depletion of Interconnected Surface Water Affecting Beneficial Use

*If a sustainability indicator is determined to be significant and unreasonable, then it is an **Undesirable Result**.*

How will the five sustainability indicators be considered in the Groundwater Sustainability Plan (GSP)?

- A. Sustainability Indicator Analysis
- B. Considerations for Turlock Subbasin
- C. Metrics and Minimum Thresholds to Define Undesirable Results



Chronic Lowering of Water Levels

A. Analysis

Rate of groundwater elevation decline based on historical trends, water year type, and projected water use in the basin

B. Considerations

Consider beneficial uses of wells; problems during the recent drought? Historic low levels?

C. Metrics & Minimum Threshold

Minimum water level at representative monitoring points



Reduction of Groundwater Storage

A. Analysis

Develop operational range of storage, with an emergency supply

B. Considerations

Consider beneficial uses of wells; problems during the recent drought? Historic low levels?

C. Metrics & Minimum Threshold

Volume of supply in storage; water levels as a proxy



Degradation of Water Quality

A. *Analysis*

Number of supply wells, volume of water, or location of an isocontour exceeding constituents of concern, considering state and federal standards

B. *Considerations*

Title 22, basin plan objectives, GAMA, GeoTracker, CV-Salts/ILP; also consider naturally-occurring constituents

C. *Metrics & Minimum Threshold*

Poor water quality spatially or at depth? Possible water levels as a proxy?



Land Subsidence Affecting Land Use

A. *Analysis*

Rate and extent of subsidence that interferes with surface land use supported by identification of land/property interests affected or likely to be affected

B. *Considerations*

Subsidence does not currently interfere with land uses; evaluate texture data for future susceptibility

C. *Metrics & Minimum Threshold*

Land subsidence – water levels as a proxy



Depletion of Interconnected Surface Water Affecting Land Use

A. *Analysis*

Depletion that has adverse impacts on beneficial use of surface water supported by the location, quantity, and timing of depletions; assumes use of a numerical model or equally effective method or tool

B. *Considerations*

Interconnected Surface Water and Groundwater Dependent Ecosystems (GDEs) –model gaining and losing reaches on rivers; support with other analyses (e.g., temperature data)

C. *Metrics & Minimum Threshold*

GDEs downstream? Possible water levels as a proxy?



The complexity of sustainability indicator analyses highlight the need for a robust water level monitoring network.