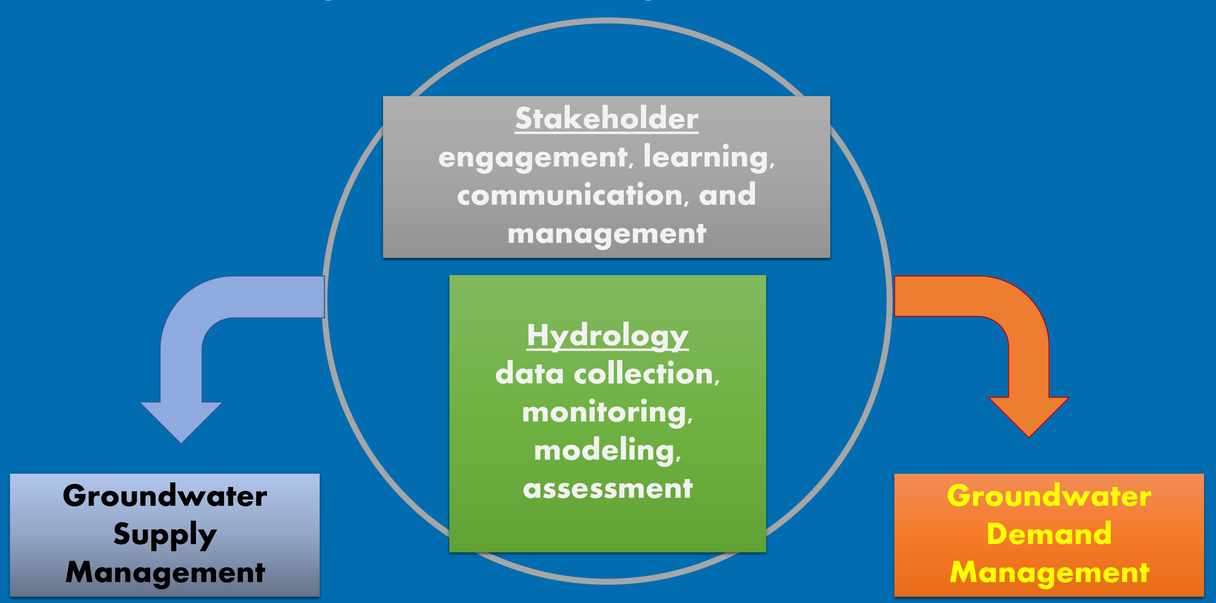
THE SUSTAINABLE GROUNDWATER MANAGEMENT ACT (SGMA) - WHAT IT MEANS FOR BUTTE VALLEY:

How can I get involved? How will it affect me? Why do we have it?

SGMA requires formation of local agencies to develop new plans, called Groundwater Sustainability Plans or GSPs, to address and prevent problems in groundwater basins in most areas of the state. Signed into law in September 2014, SGMA focuses on protecting California's groundwater for generations to come. SGMA requires medium priority basins like the Butte Valley Basin to be managed under a Groundwater Sustainability Plan (GSP) by January 31, 2022. Additionally, SGMA requires demonstrated sustainability within 20 years of GSP implementation, and continued sustainability through the 50-year planning and implementation horizon.

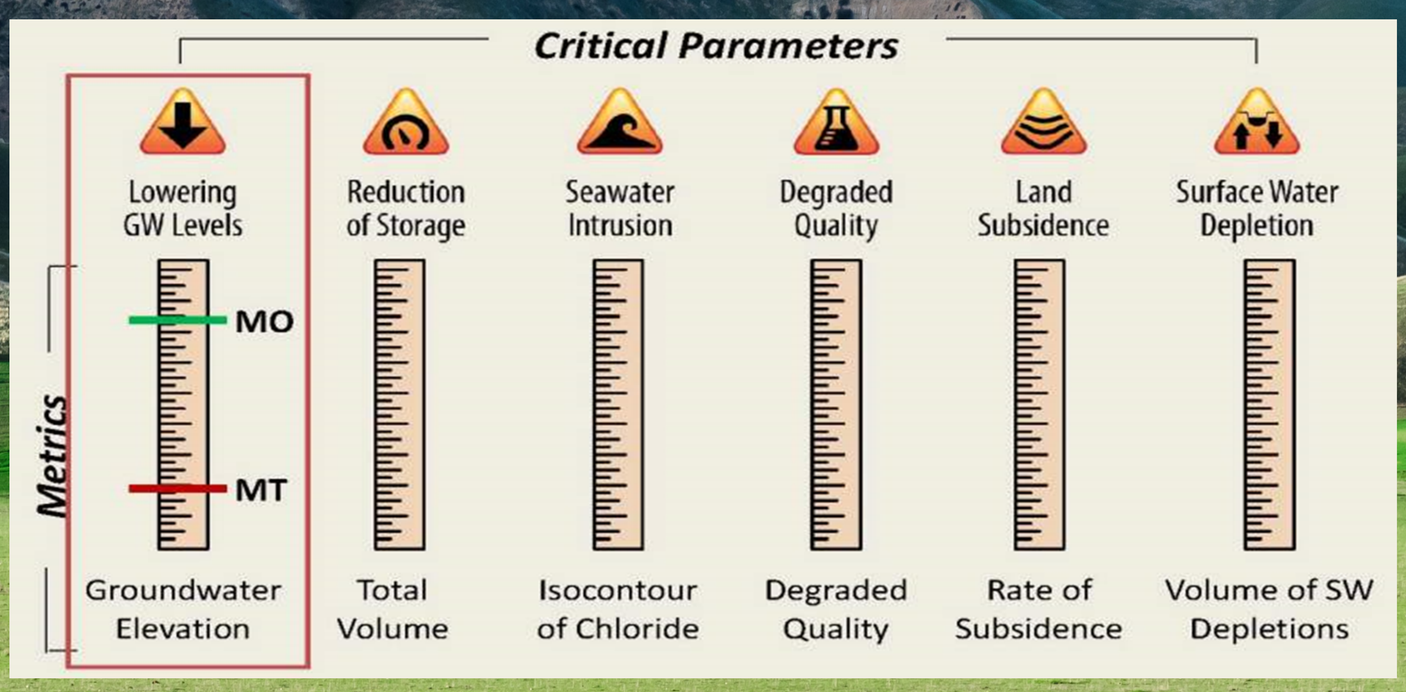
Achieving Sustainability –

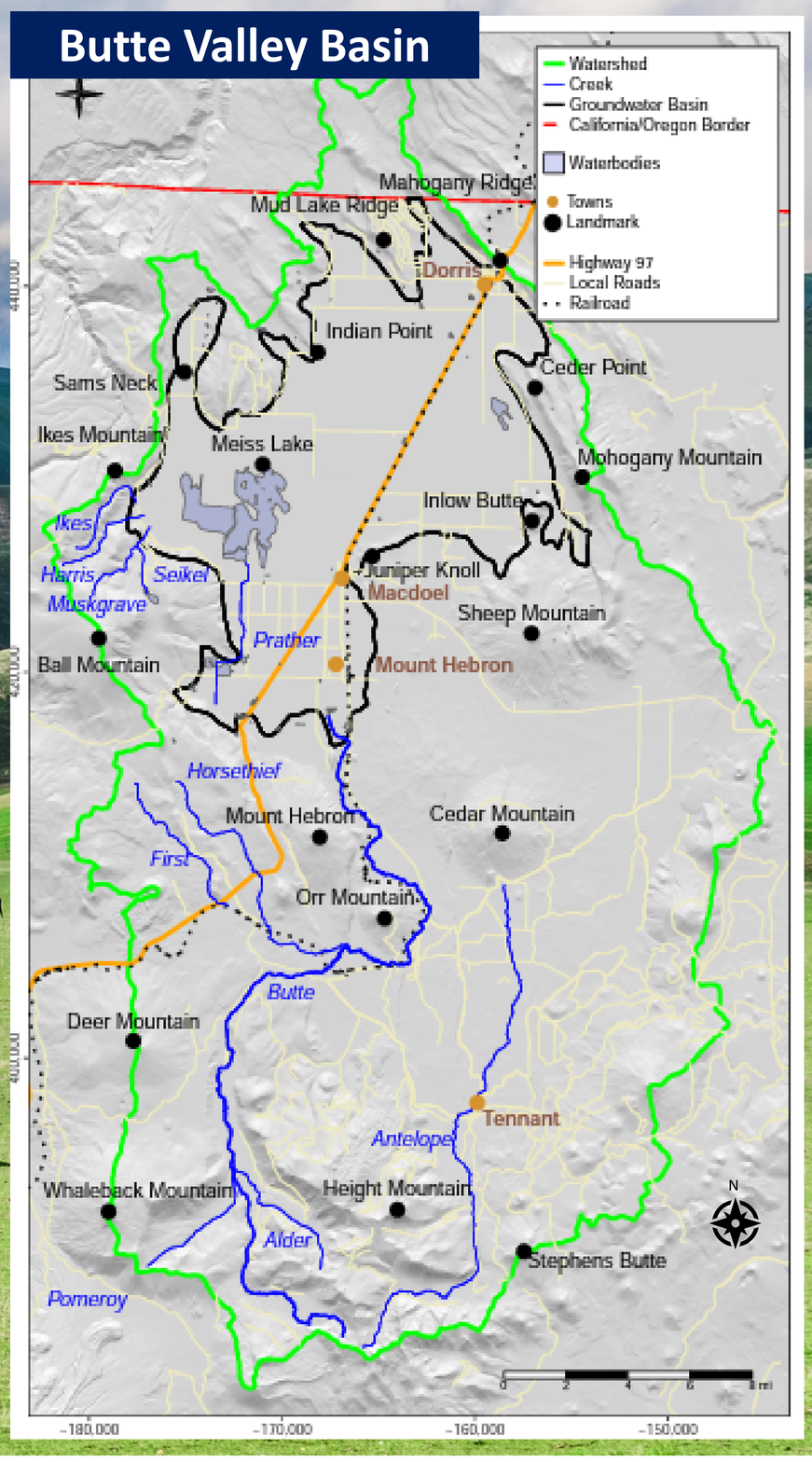
The Siskiyou County Flood Control and Water Conservation District, serving as the Basin's Groundwater Sustainability Agency or GSA, is working with the community to develop and implement the GSP. Development and implementation of the GSP requires stakeholder participation and thorough analysis of the basin's hydrology to define groundwater management actions.



SGMA's emphasis is on local control with State oversight: State intervenes if local actions are not taken and if the plan is not implemented

KEY TO SUCCESS: develop a plan approved by Department of Water Resources and accepted by local stakeholders





Which undesirable results are you most concerned about?

Do you have a well that you would be willing to have tested to help track water quality and groundwater levels? Get involved!

GROUNDWATER QUALITY AND SGMA
WHAT IT MEANS FOR YOUR COMMUNITY:

The importance of protecting groundwater quality

The quality of groundwater in the Butte Valley Basin contributes to the overall condition of groundwater in the Basin. Issues with groundwater quality may affect the supply (the quantity of usable groundwater) or beneficial uses (e.g., municipal, agricultural) of groundwater. Water quality includes the physical, biological, chemical, and radiological quality of water. Water quality can be impacted by natural conditions (for instance thermal waters or hot springs), or anthropogenic conditions (such as landfills and land use). All groundwater naturally contains some microbial matter and chemicals. Inorganic chemicals commonly found in groundwater include calcium, magnesium, sodium, potassium, chloride, bicarbonate and sulfate.

When one or multiple constituents become a concern for either ecosystem health, human consumption, industrial or commercial uses, or for agricultural uses, the constituent of concern becomes a “pollutant” or “contaminant”. If the concentration is deemed problematic or potentially problematic, the constituent is included in the sustainable management criteria defined for groundwater quality, and in the associated monitoring network.

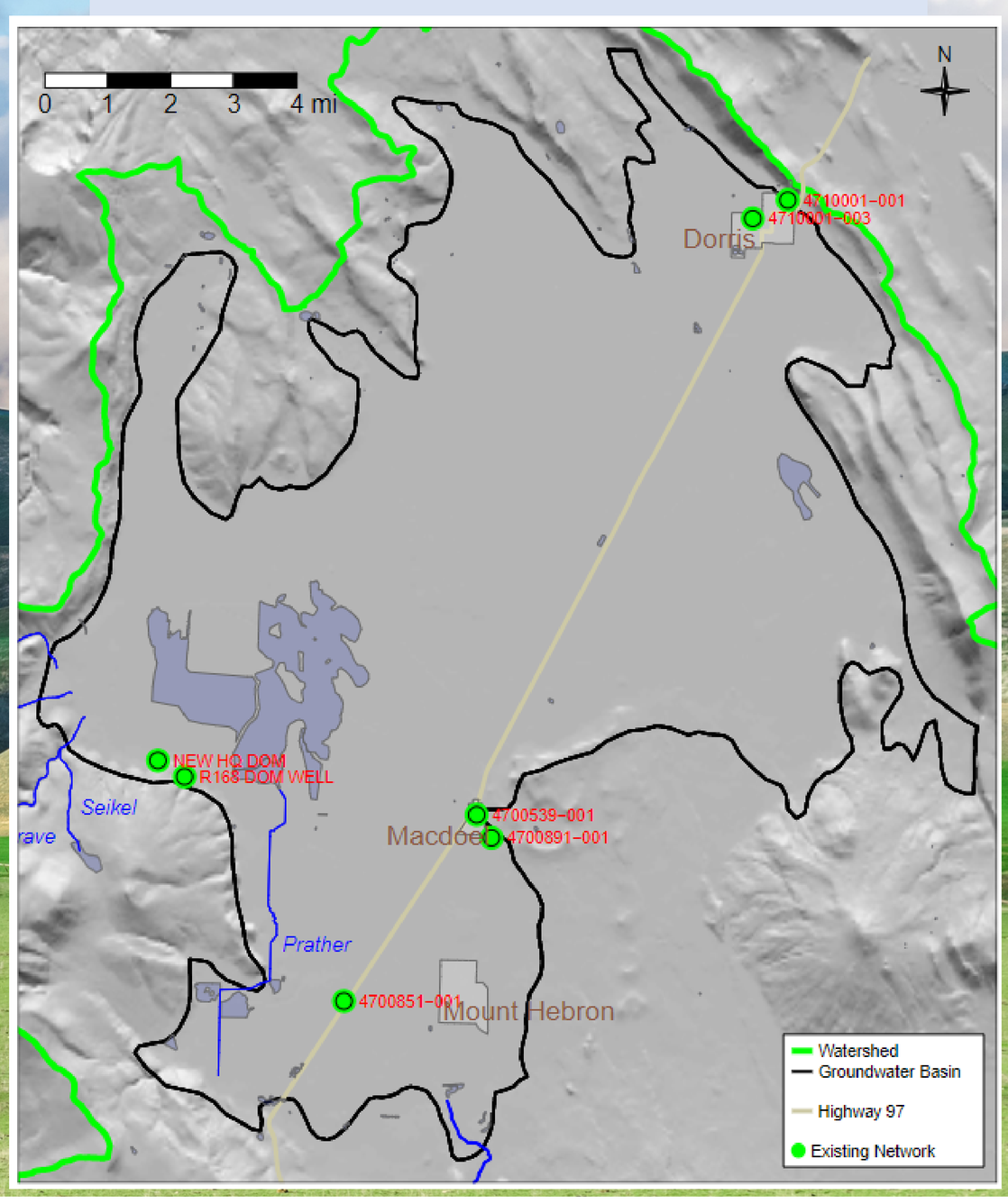
CURRENT CONDITIONS IN BUTTE VALLEY

Concentrations of constituents measured in groundwater throughout the Basin were compared to regulatory standards (the strictest of the state and federal regulatory standards was used for each constituent). To represent current conditions and increase confidence in the data collected, groundwater quality data used in the evaluation was limited to the past 30 years (1990-2020) and trends in groundwater quality were evaluated at wells with at least three data points for a particular constituents.

While many water quality parameters were included in the assessment, constituents of concern in the Butte Valley Basin for which SMCs were defined are:

- arsenic (only near Dorris)
- nitrate
- specific conductivity

Map of Water Quality Monitoring Sites for Butte Valley



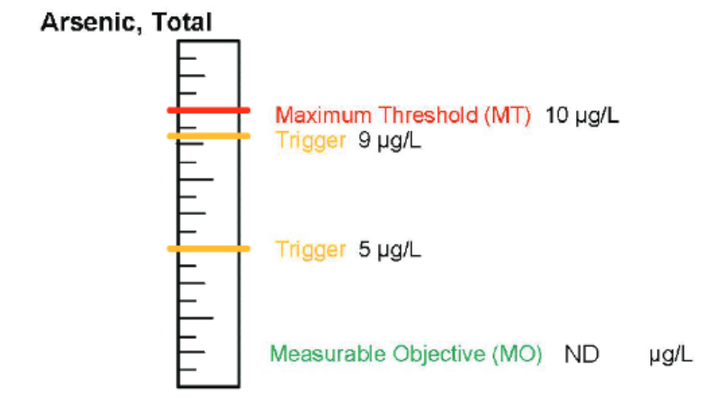
PROPOSED SUSTAINABLE MANAGEMENT CRITERIA

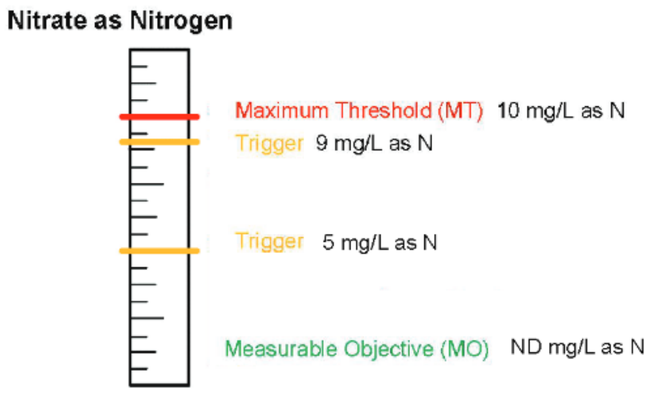
Significant and unreasonable degradation of groundwater quality is the degradation of water quality that would impair beneficial uses of groundwater or result in failure to comply with groundwater regulations.

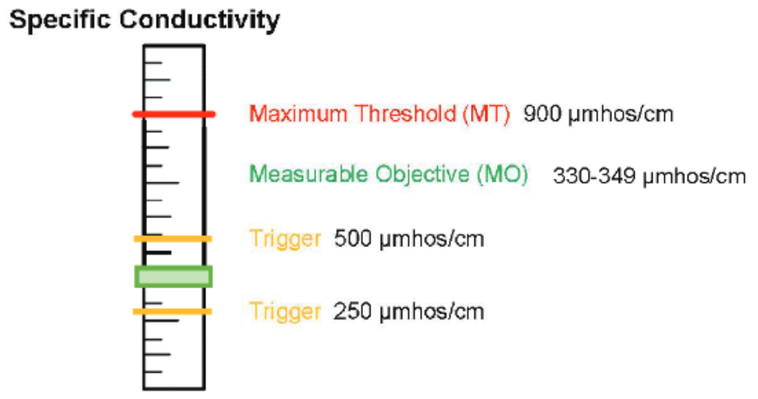
Maximum Thresholds (MTs) define the concentration at which undesirable results occur. Maximum thresholds are defined for three constituents in the basin: arsenic (only wells near Dorris), nitrate, and specific conductivity. Additionally, concentrations far below the MT are defined to proactively avoid the occurrence of undesirable results; these are known as triggers.

Measurable Objectives (MOs) for groundwater quality define desired water quality at levels that protect beneficial uses and users. The “rulers” to the right show MTs, Triggers, and MOs for nitrate and specific conductivity.

Undesirable Results (URs) occur when concentrations exceed maximum thresholds and/or with significant trends in degrading water quality.







What concerns you most about groundwater quality in the Basin?

Do you have a well you would allow to be monitored for water quality?

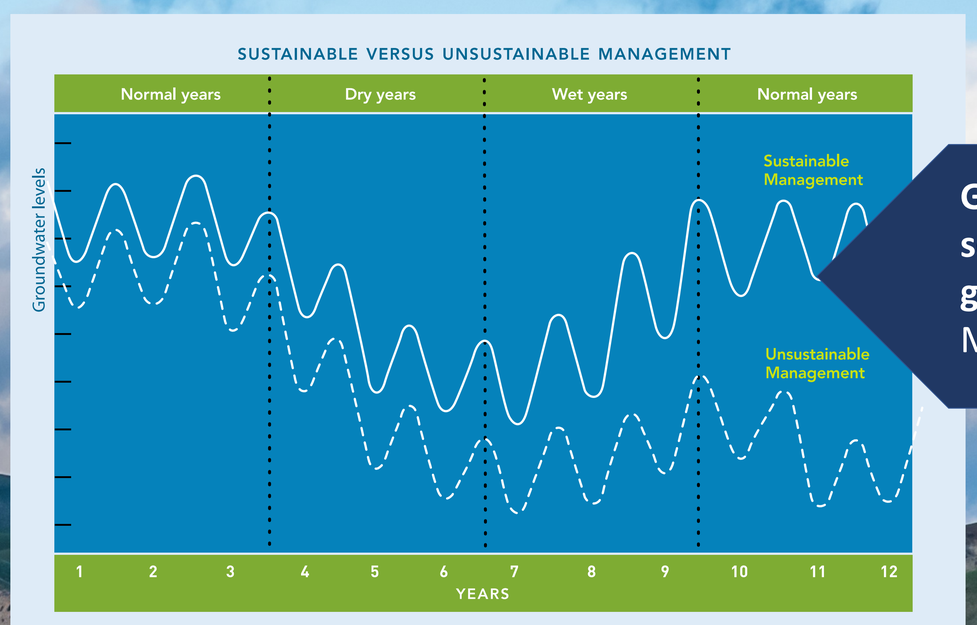
CHRONIC LOWERING OF GROUNDWATER LEVELS AND REDUCTION OF GROUNDWATER STORAGE - WHAT IT MEANS FOR YOUR COMMUNITY

The potential Undesirable Results caused by Chronic Lowering of Groundwater Levels on beneficial uses and users of groundwater in the Basin may include groundwater well dewatering and increased pumping lift. Well dewatering can be detrimental to wells as it can lead to increased maintenance costs (e.g., well rehabilitation/redevelopment and pump lowering) and reduced well lifespan due to corrosion of well casings and screens. Increased pumping lift results in more energy use necessary per unit volume of groundwater pumped and corresponding higher pumping costs, as well as increased wear and tear on well pump motors and reduced well efficiency.

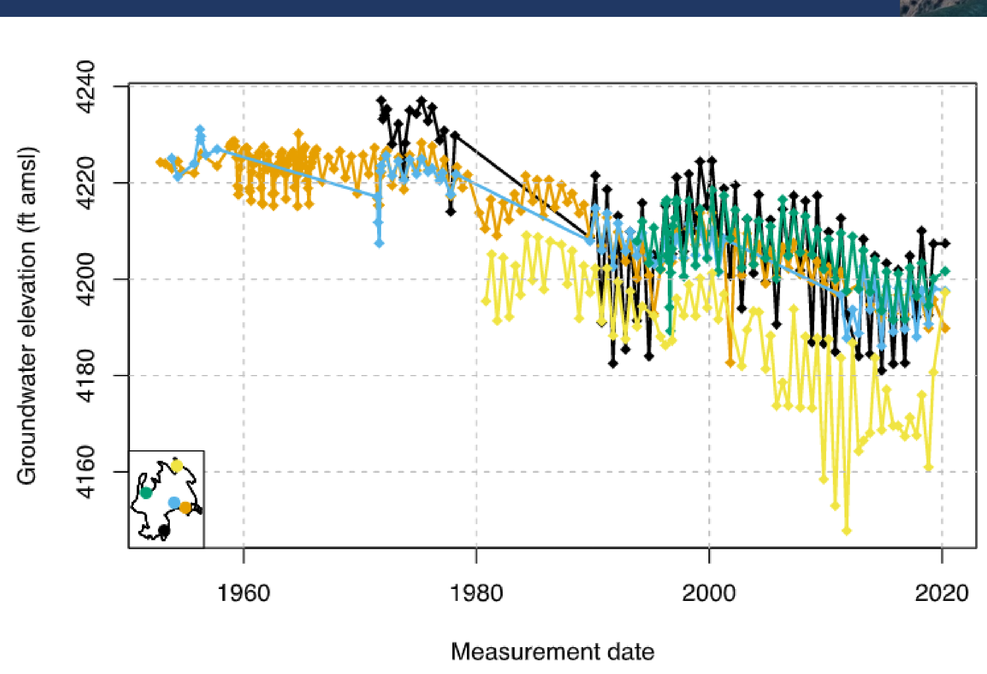
The primary potential effect of Undesirable Results caused by Reduction of Groundwater Storage on beneficial uses and users of groundwater in the Basin would be reduced groundwater supply reliability. Since groundwater supplies most users in the Basin, most beneficial users would be affected. The effect would be most significant during periods of reduced surface water supply availability due to, for example, natural drought conditions, regulatory restrictions, natural disasters, or other causes. Groundwater levels are used as a proxy for measuring Undesirable Results for Reduction of Groundwater Storage.

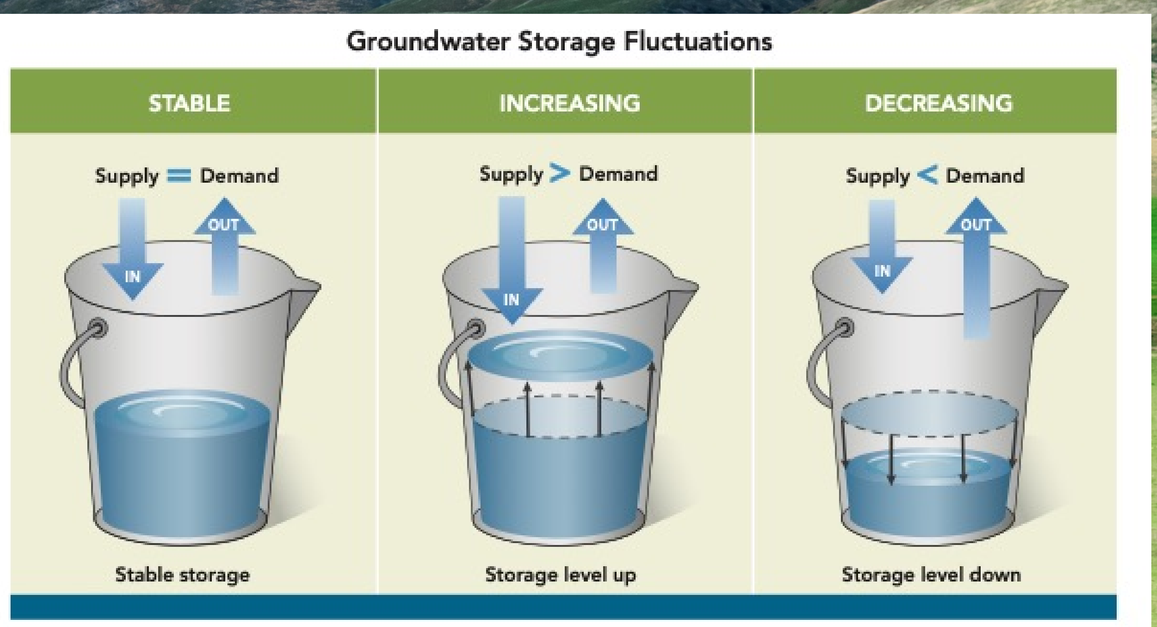
CURRENT CONDITIONS IN BUTTE VALLEY

Based on the data available, the basin has experienced a decline in groundwater elevations historically and is at risk of potential future overdraft. Groundwater recharge in the Basin depends on precipitation, which has been in decline since the 1980s. Groundwater levels have decreased around 30 ft from the spring of 1979 to the spring of 2015. The Groundwater Sustainability Plan (GSP) developed under SGMA, will help define a roadmap for how Butte Valley basin will reach long-term sustainability.



Groundwater levels can serve as an indictor for groundwater storage. Monitoring using wells is KEY.





PROPOSED SUSTAINABLE MANAGEMENT CRITERIA

Specifying the SMCs for groundwater levels and storage is an ongoing component of the GSP development.
An example SMC may be:
Undesirable Results for Chronic Lowering of Groundwater Levels would be experienced in the Basin if :

- ❑ Excessive number of domestic, public, or agricultural wells go dry.
- ❑ Excessive financial burden to local agricultural interests occurs.
- ❑ Adverse impacts to environmental uses and users occur, including interconnected surface water and groundwater-dependent ecosystems (GDEs).

Are long-term declining water levels and storage of concern to you? Were any wells dry in 2015?

Projects and Management Actions (PMAs) – How They Can Help Butte Valley Basin Achieve Sustainability Goals

Projects and Management Actions (PMAs) are important in helping achieve sustainability goals by 2042, to avoid undesirable results, and to respond to changing conditions in the Butte Valley Basin. Projects generally refer to the planning and implementation of infrastructure features and other capital investments, whereas Management Actions are typically programs or policies that do not require capital investments, but are geared toward engagement, education, outreach, adoption of land use practices, and monitoring.

In developing PMAs, priorities include minimizing impacts to the Butte Valley Basin's economy, maximizing external funding, and prioritizing voluntary and incentive-based programs over mandatory programs.

Classification of PMAs

PMAs are important tools to support GSP implementation. There are four category types and three tiers of implementation schedules. The four categories of PMAs are:

- Demand management for groundwater
- Surface water supply augmentation
- Stream habitat improvement
- Groundwater recharge

The three tiers for PMA implementation include:

Tier I – Existing PMAs that are currently being implemented and are anticipated to continue

Tier II – PMAs planned for near-term initiation and implementation (2022-2027) by individual member agencies.

Tier III – Additional PMAs that may be implemented in the future, as necessary (initiation and/or implementation 2027-2042). These PMAs may require additional feasibility studies, local support, and regional partnerships.

Identification and Screening Process

1. Project Identification

Identify impactful planned projects and brainstorm new projects with stakeholders

2. Project Categorization

Group projects into the categories:
- steam habitat improvements
- supply augmentation
- demand management
- recharge and conjunctive use

3. Project Screening

Evaluate projects from **step 1** to identify which will likely be included in GSP development. Based on the criteria:
- Projected Impact on water budget
- Cost
- Leveraging opportunity
- Ease of implementation

4. Build Modeling Scenarios

Assess ability to model list of projects, look at extreme concepts that are not necessarily related to projects identified in **step 3**:
- curtailing ag pumping
- eliminating important existing projects
- alternative climate change scenarios

5. Assess Effectiveness of Scenarios

Use modeling tool or other means to identify key "building block" projects for GSP development

6. Build Plan

Assemble building blocks into phased GSP implementation over the next 20 years

PMAs for the Butte Valley Basin

Tier I - Existing and Ongoing PMAs	Tier II – Planned PMAs	Tier III – Potential Future PMAs
• Abandonment of Sam's Neck Flood Control Facility • City of Dorris Water Conservation • Well Drilling Permits and County of Siskiyou Groundwater Use Restrictions • Kegg Meadow Enhancement and Butte Creek Chanel Restoration • Permit Requirement for Groundwater Extraction for Use Outside the Basin from which it was Extracted (Siskiyou County Code of Ordinances) • Upland Management • Watermaster Butte Creek Flow Management	• Avoiding Significant Increases of Total Net Groundwater Use from the Basin • Management of Groundwater Use and Recharge • Conservation Easements • Dorris Water Meter Installation Project • Irrigation Efficiency Improvement Project • Voluntary Managed Land Repurposing (not Including Conservation Easements) • Well Replacement	• Alternative, Lower ET Crops • Butte Creek Diversion Relocation • Butte Valley National Grassland Groundwater Recharge Project • Strategic Groundwater Pumping Reductions

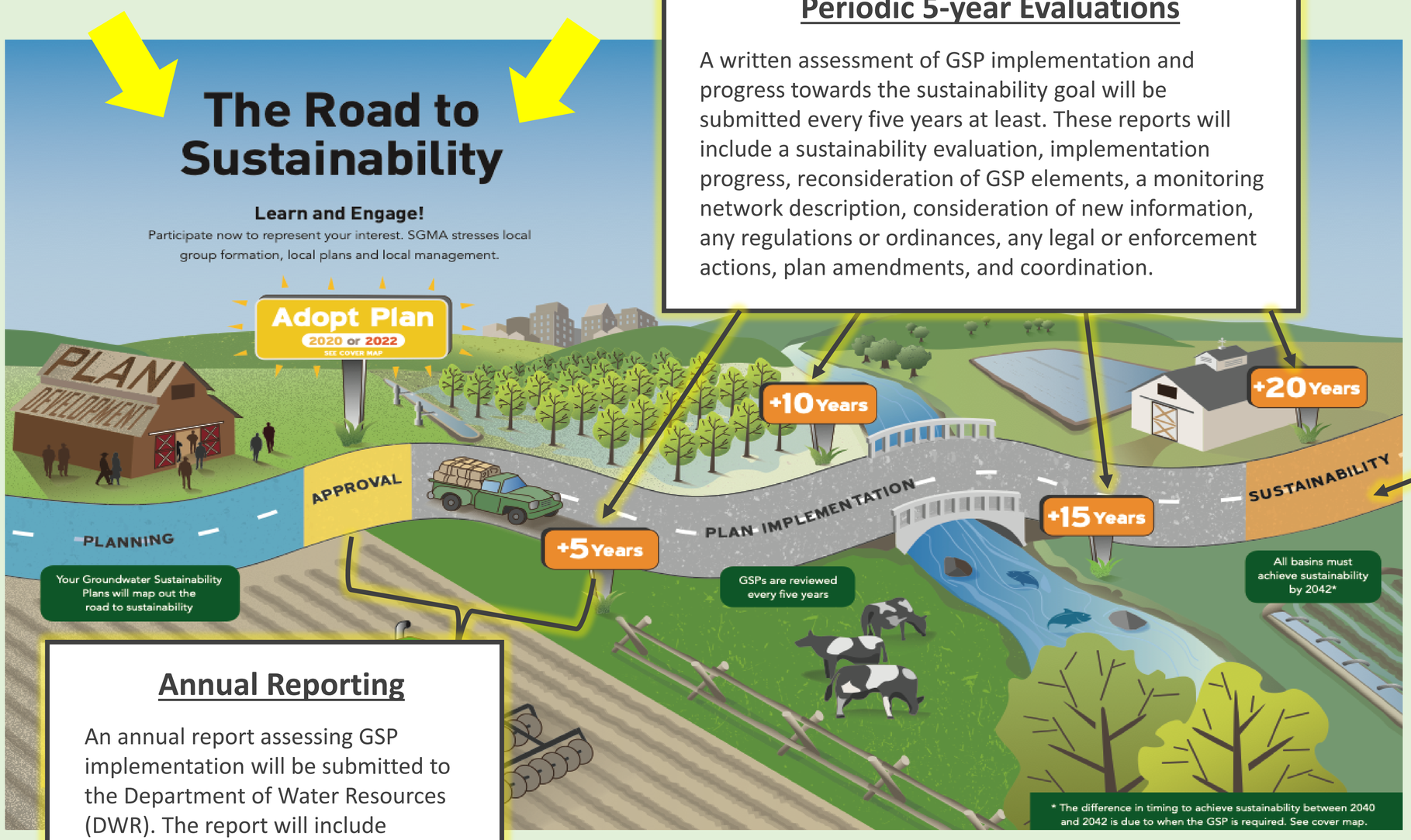
Do you have data that would be helpful in developing PMAs?
Are you willing to get involved in PMA monitoring programs?

GROUNDWATER SUSTAINABILITY PLAN IMPLEMENTATION- WHAT ARE THE NEXT STEPS

The implementation of a Groundwater Sustainability Plan (GSP) involves establishing three main systems:

1. Management and administration
2. Implementation protocols
3. Outreach and education

Responsibilities associated with management and administration include general oversight, coordination, administration of projects, and reporting evaluations on the GSPs effectiveness. Developing implementation protocols involves various monitoring and data-related activities, modeling updates, tracking of sustainable management criteria (SMC), performing projects and management actions (PMAs), and data analysis. Lastly the outreach and education component involves coordination activities with other entities and outreach to stakeholders. To support and facilitate these aspects of implementation, a detailed schedule must be developed as well as a comprehensive estimate of costs and identification of funding opportunities. A preliminary analysis of funding options has been completed and the GSA will continue to identify and pursue funding sources throughout GSP implementation.



Periodic 5-year Evaluations

A written assessment of GSP implementation and progress towards the sustainability goal will be submitted every five years at least. These reports will include a sustainability evaluation, implementation progress, reconsideration of GSP elements, a monitoring network description, consideration of new information, any regulations or ordinances, any legal or enforcement actions, plan amendments, and coordination.

Sustainability Reached

Groundwater sustainability goal attained by 2042.

Annual Reporting

An annual report assessing GSP implementation will be submitted to the Department of Water Resources (DWR). The report will include general information, basin conditions, and plan implementation progress.

GSP IMPLEMENTATION PROCESS FOR THE FIRST 5-YEARS OF IMPLEMENTATION