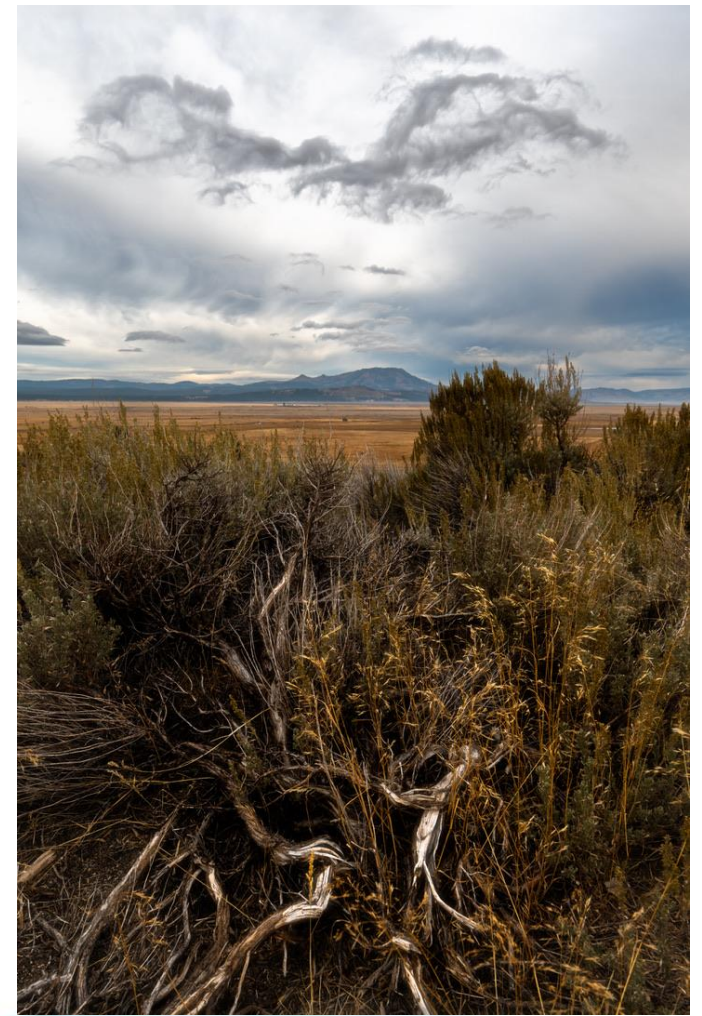


Sierra Valley Technical Advisory Committee

May 10, 2021

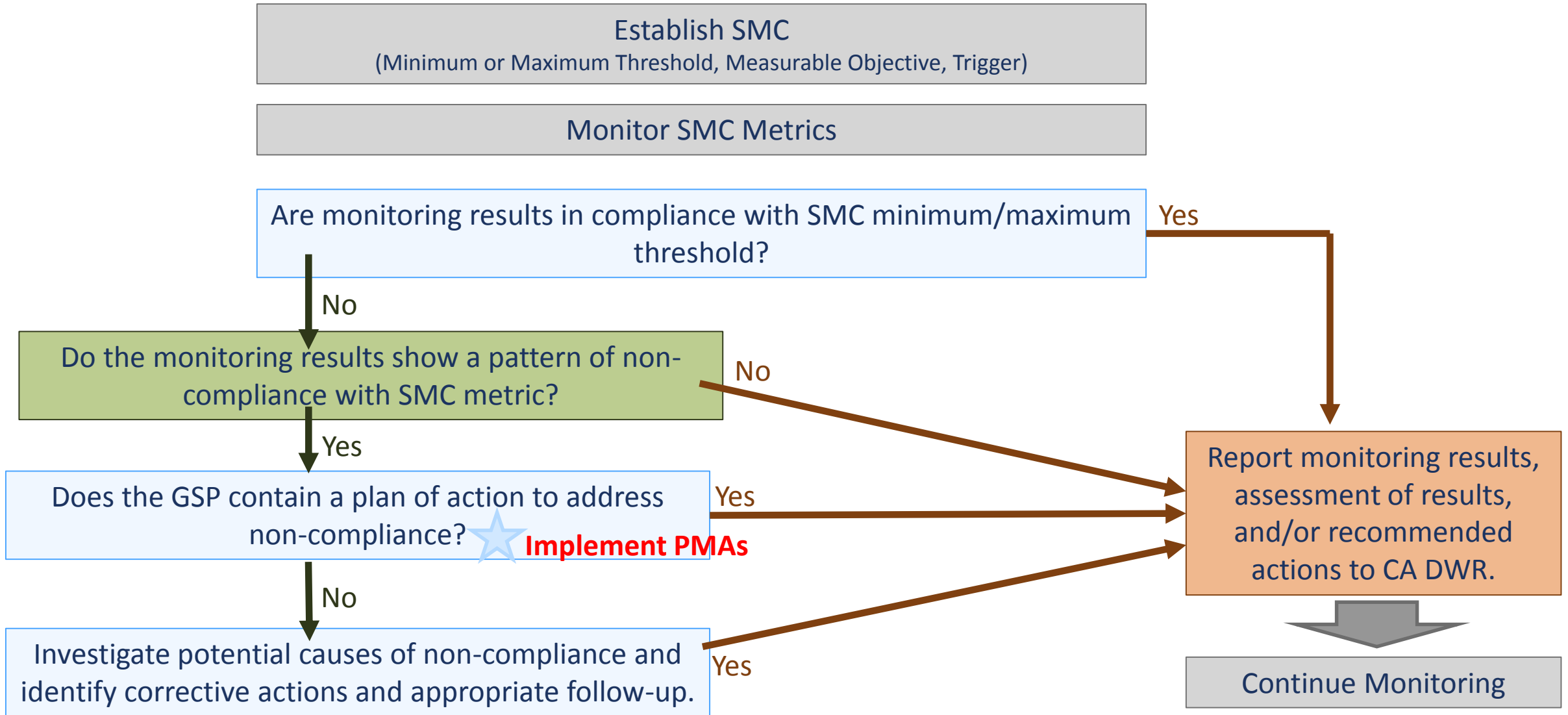


Agenda

- Review of Groundwater levels decline
- Groundwater Dependent Ecosystems
- Interconnected Surface Water
- Introduction to Project and Management Actions

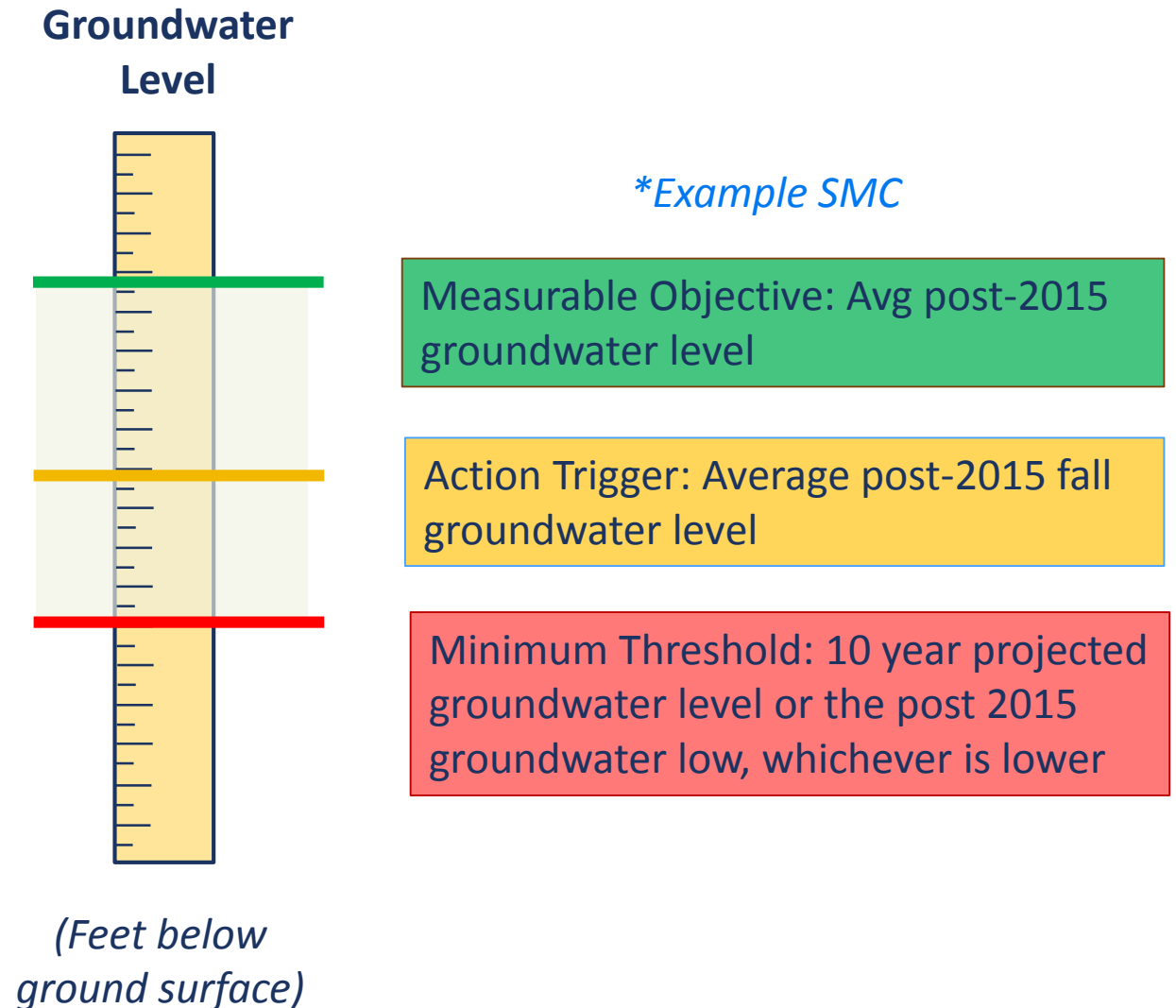


SMC Monitoring and Compliance Flow Chart

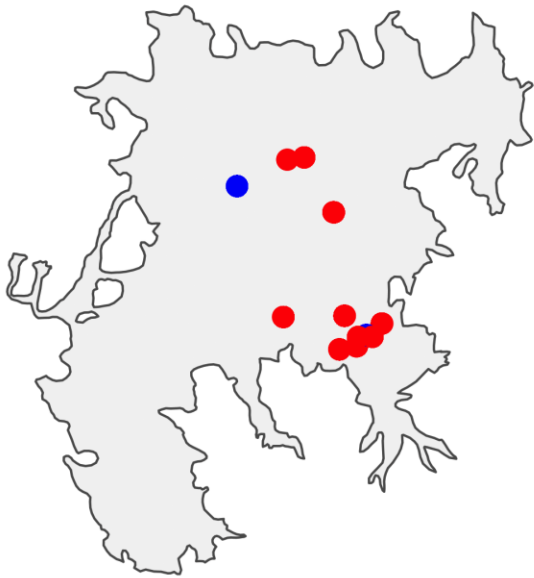


Sustainable Management Criteria (SMC) for groundwater level

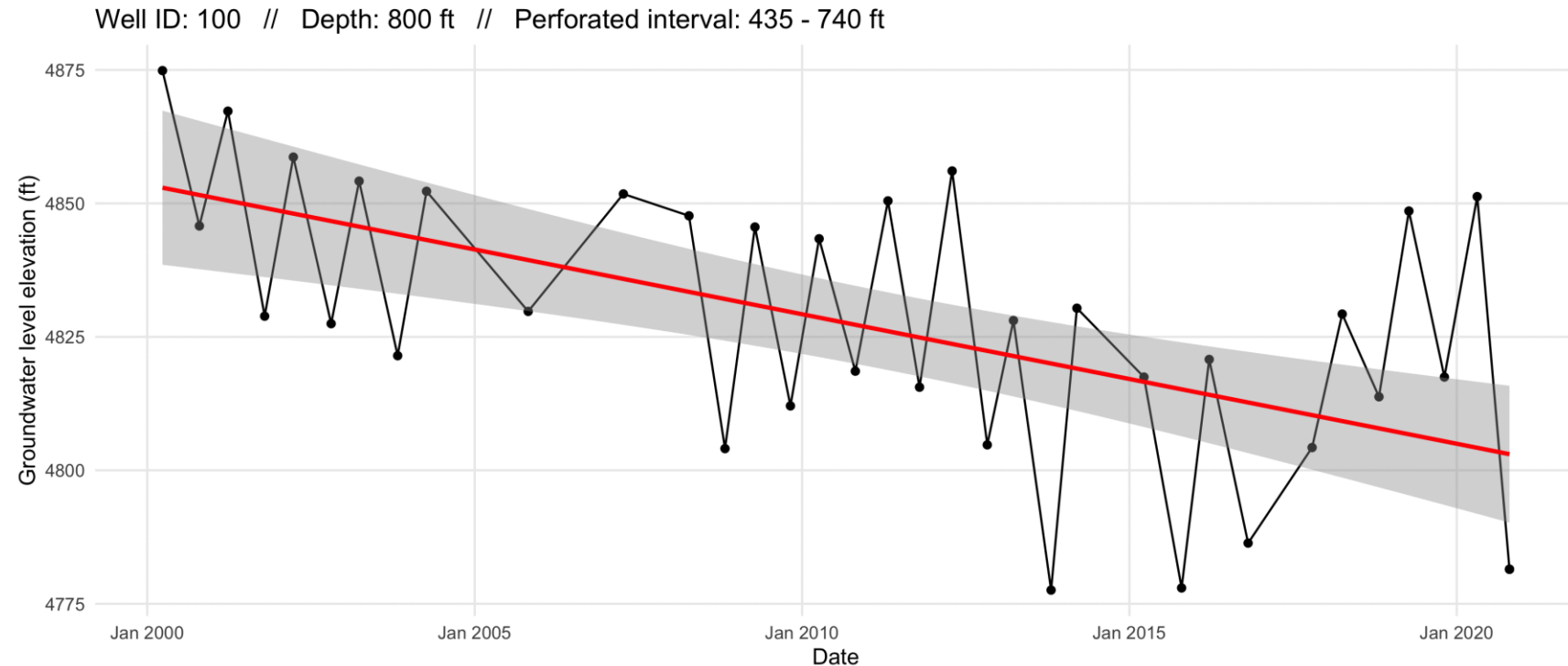
- A **ruler** to measure significant and unreasonable impacts to beneficial users/uses.
- Groundwater level SMC is perhaps the most important Sustainability Indicator because it is directly measurable and can be used as a proxy for **groundwater storage**, **interconnected surface water**, and **GDEs**.



Most groundwater elevations are decreasing (2000-2020)



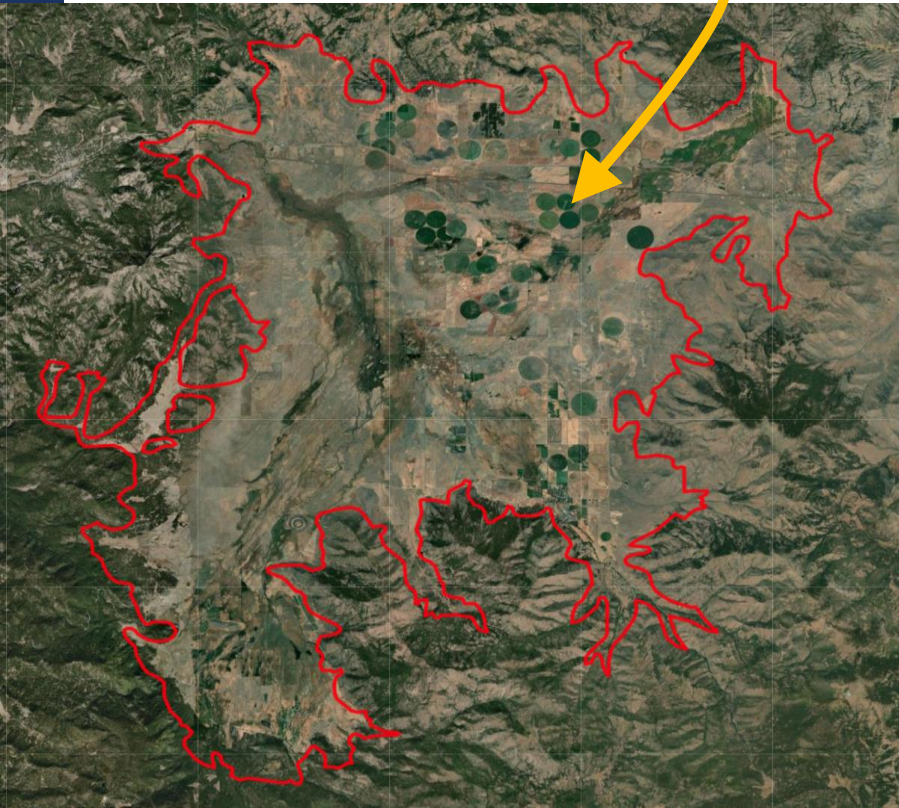
(39.7527403, -120.2566675)



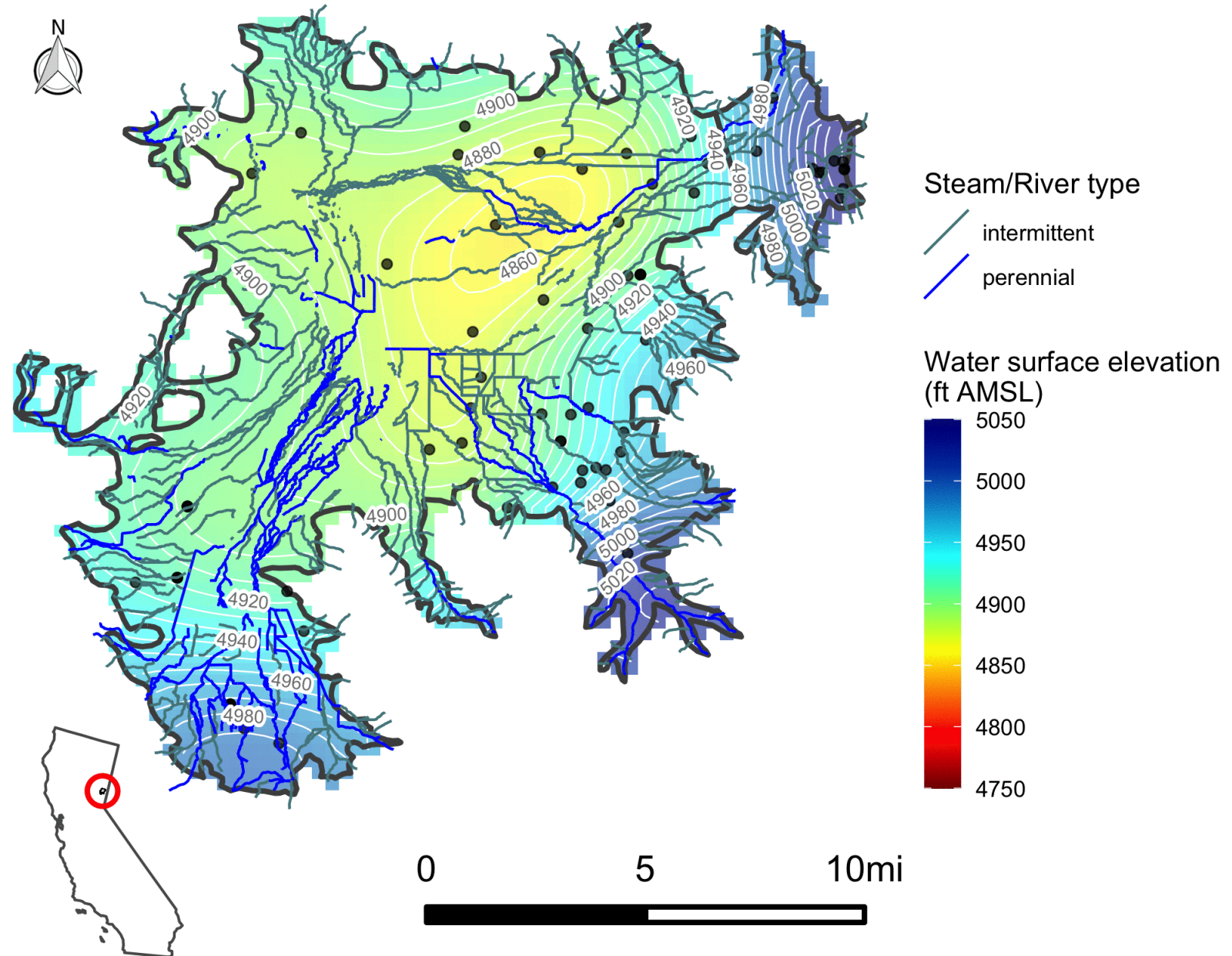
- increasing
- decreasing

All groundwater level data is available in the Data Management System.

Groundwater level declines are more pronounced in areas east of the Grizzly fault where agricultural pumping occurs.

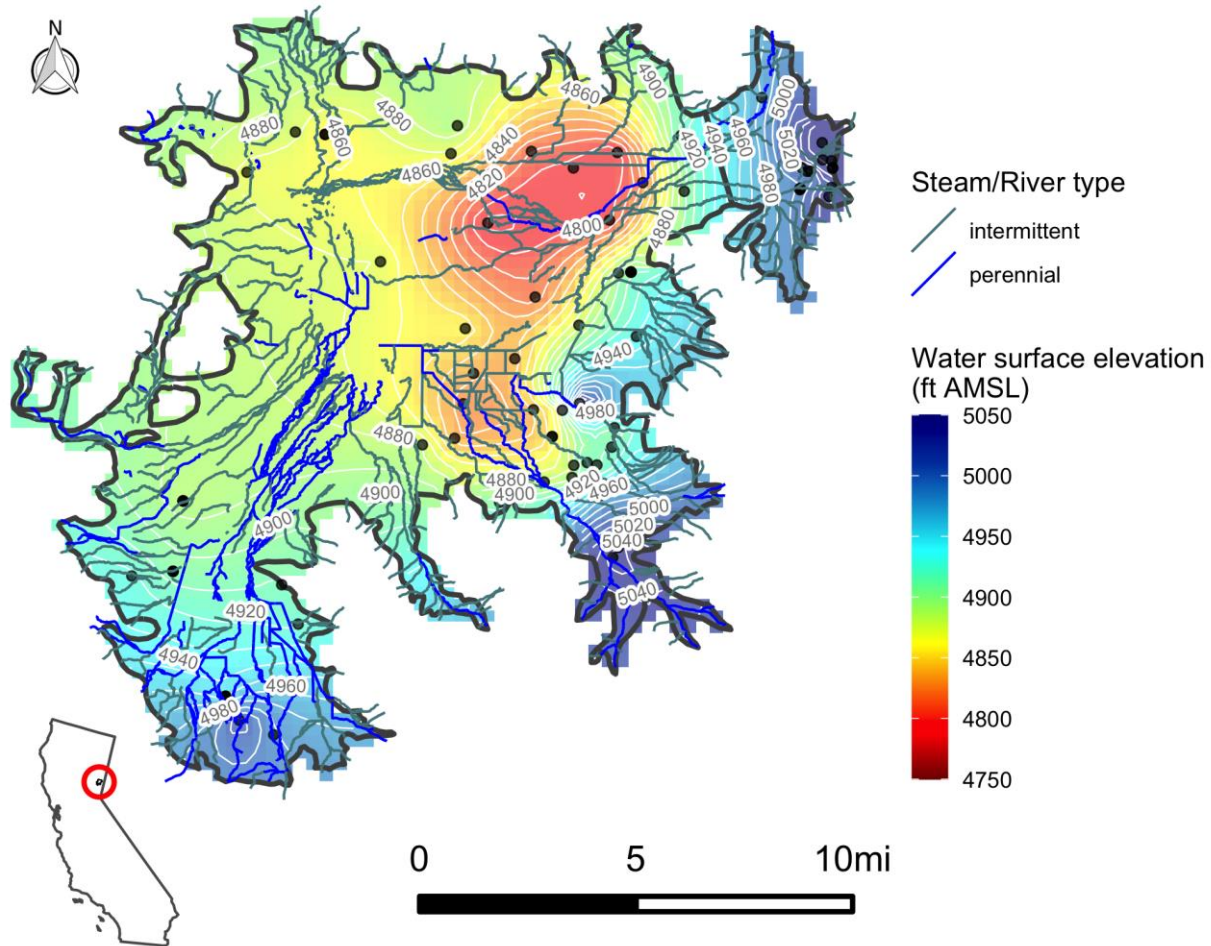


Average groundwater elevation, spring 2000 - 2003

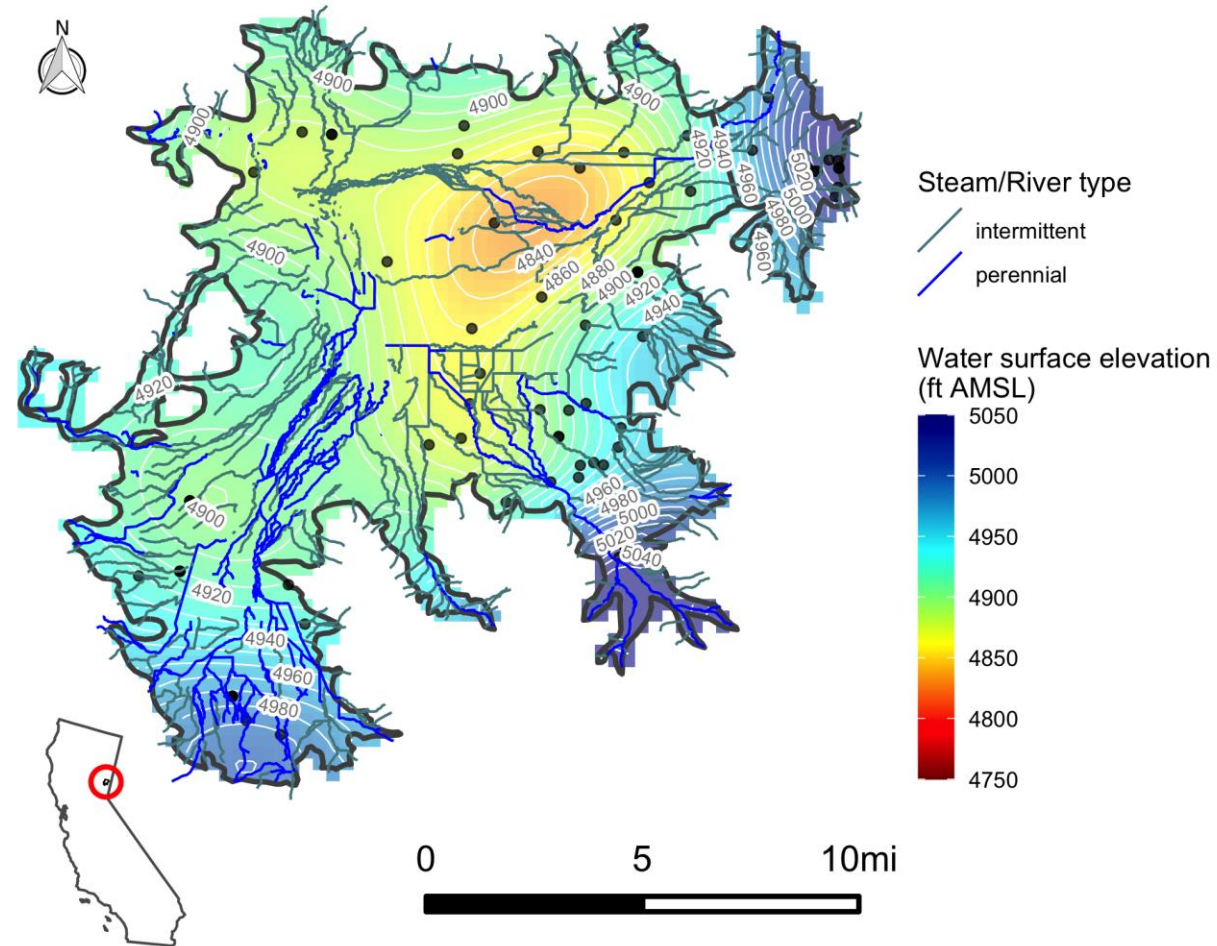


Long term data (2000 – 2019) show seasonal groundwater level oscillation...

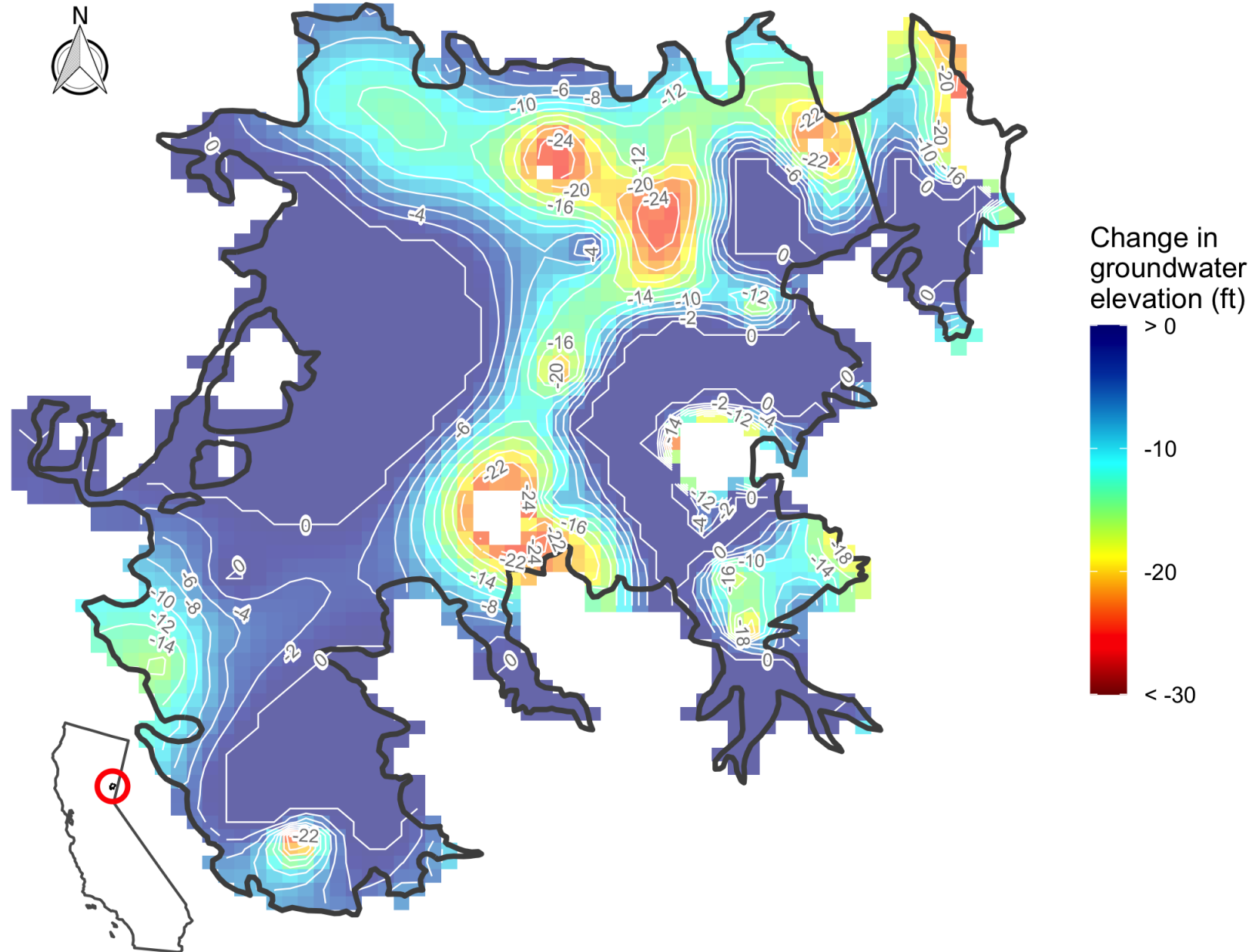
Average groundwater elevation, fall 2000 - 2019



Average groundwater elevation, spring 2000 - 2019



Difference in groundwater elevation between present day and 2000



Summary

- Analysis of the data is still ongoing, but the suggested SMC obtained with a gradual reduction of the decline results in very different outcome in the Eastern and Western part of the basin
- The Western part of the basin is expected to keep current levels, which are generally never lower than 2015
- This proposed SMC has been already compared with the domestic wells analysis
- And will be now compared with the results for the GDE and ISW SMC

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Project and Management Actions (PMAs)

■ Definition

- Project (**P**): creation or modification of a physical structure / infrastructure
- Management Action (**MA**): creation of policies, procedures, or regulations

■ Implemented over 2022-2042 to achieve basin sustainability

Project and Management Actions (PMAs)

PMAs are needed to address two over-arching goals:

- Achieve the goals of the sustainability indicators, mostly GW levels and interconnected surface water
- Prevent future degradation of currently stable water table conditions to protect wells from outages, groundwater-dependent ecosystems (those not associated with instream flow), and to avoid additional stresses to interconnected surface water

Key Drivers in the Design of PMAs

■ Legal Obligations for the GSA

- **Address habitat concerns**
- **Prevent lowering of water table** below historic conditions - protect wells, groundwater-dependent ecosystems, interconnected surface water
- **May impose fees on groundwater users**, if GSP cost cannot be recovered from grants and other external funding
- **Adopt a plan that State will accept**

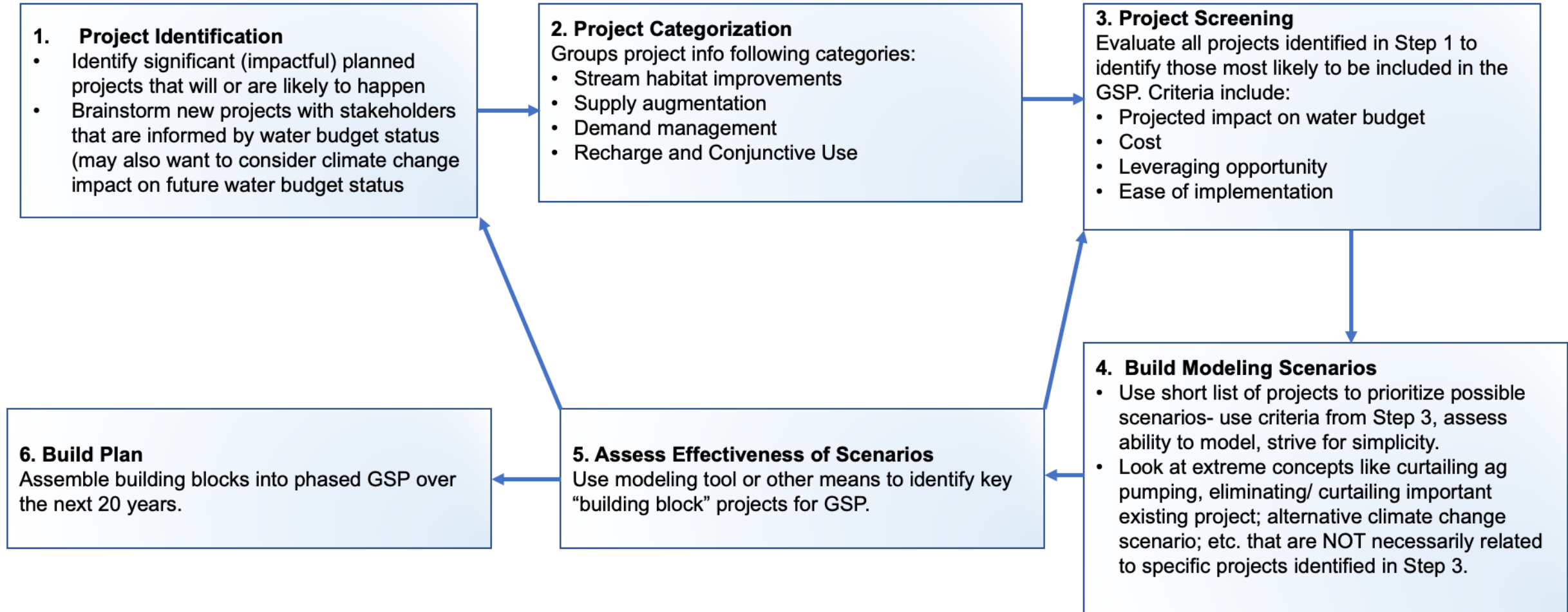
■ Priorities

- **Minimize impacts to basin economy** (predominantly agriculture)
- **Minimize cost / maximize external funding**
- Emphasize **carrot** (voluntary/incentives) over stick (mandatory)

PMA Description Required by Regulation (§354.44)

1. Description of Measurable Objective expected to benefit from implementation of PMA
2. Summary of permitting and regulatory process required for PMA
3. **PMA status and expected timetable** of implementation and accrual of benefits
4. **Explanation of how the PMA will be accomplished** including source and reliability of water source.
5. Description of legal authority required for PMA (not addressed today)
6. Estimated cost for PMA and how those costs will be met (Economic analysis in-progress)
7. **A description of the management of groundwater extractions**

PMA Development Process



PMA Categories:

- Demand management
- Supply augmentation
- Habitat improvements
- Recharge

PMAs Tier Organization

Tier 1: Existing PMAs currently being implemented.

Tier 2: PMAs planned for near-term initiation and implementation by individual agencies.

Tier 3: Additional PMAs that may be implemented in the future as needed.

Example of possible Project and Management Actions by Category:

Different PMAs may or may not be feasible in Sierra Valley, but the following examples can be used to start the discussion

Demand Management

- County Pumping Restrictions
- Irrigation Efficiency Improvements
- Conservation / Pumping Limitations in Time
 - Water-year type dependent
 - Water-year type independent

Habitat Improvements

- Habitat Restoration
- Upland management / Green Infrastructure

Supply Augmentation

- Instream flow leases

Recharge

- Managed Aquifer Recharge (MAR)
- In-Lieu Recharge (ILR)
- High mountain Reservoirs

Question?

