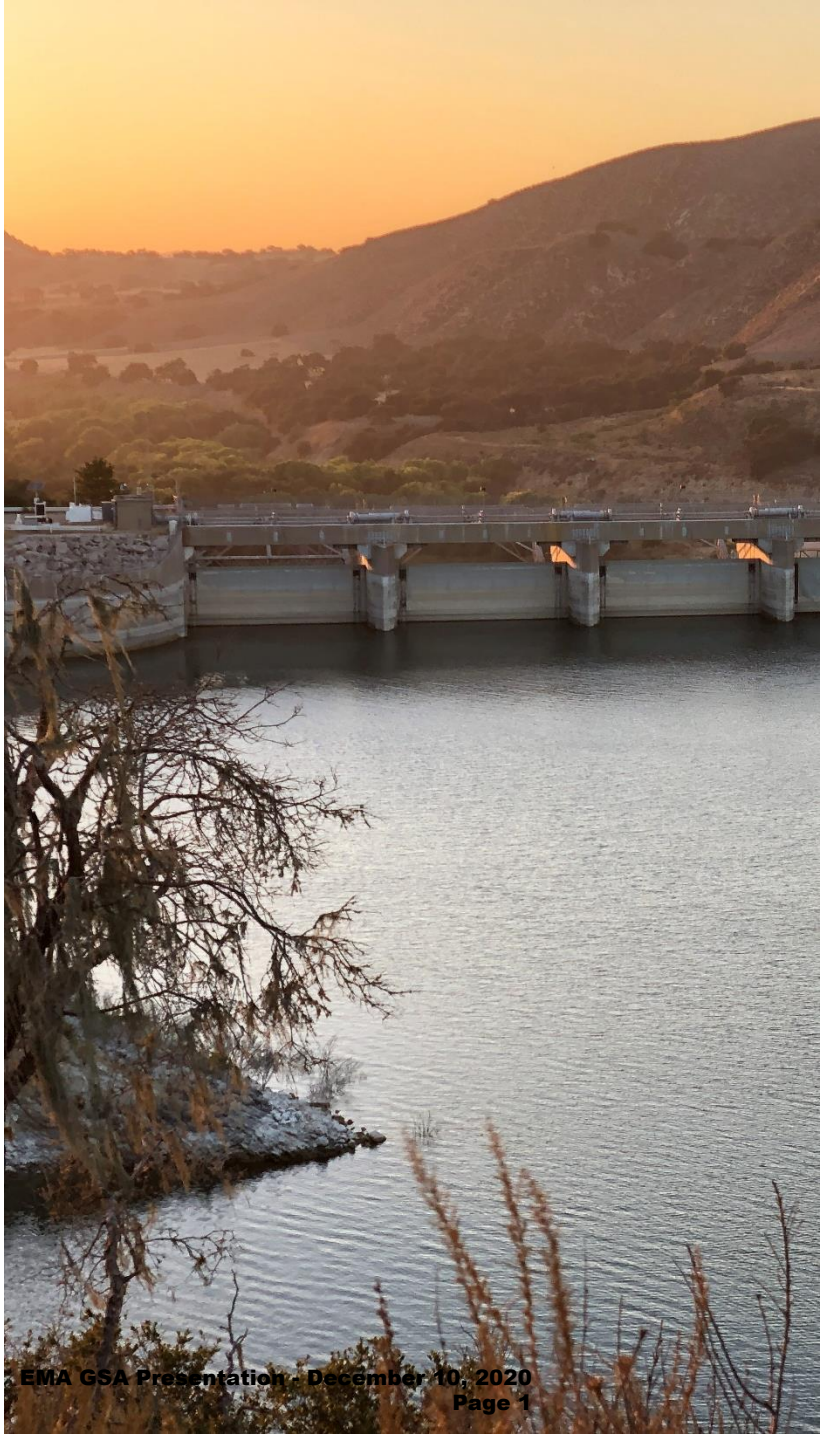
EMA

Santa Ynez River Valley Groundwater Basin
Eastern Management Area
Groundwater Sustainability Agency

Sustainable Management Criteria

December 10, 2020

GSI Water Solutions, Inc.



Sustainable Management Criteria

- Sustainable Management Criteria (SMC) development process
- Sustainability Goal
- Example Undesirable Results
- Example SMCs for Groundwater Levels
- Approach for other Sustainability Indicators

Sustainable Management Criteria (SMC) Development Steps for each Sustainability Indicator ()

1 → 2 → 3 → 4 → 5

1. Basin Conditions
Need a good understanding of basin conditions. Select representative wells.

2. Sustainability Goal
Qualitative statement that guides threshold setting process.

3. Undesirable Results
Quantitative set of conditions related to minimum thresholds that cause significant and unreasonable conditions.

4. Minimum Thresholds
Numeric values for each sustainability indicator used to define undesirable results and sustainability.

5. Measurable Objectives
Quantifiable goals for the maintenance or improvement of specified groundwater conditions over 20 years

Step 1 – Basin Conditions

- Presented in the last CAG meeting

Step 2 - Sustainability Goal

A sustainability goal for the entire basin is required by California Code 354.24. The goal for the basin will be developed collaboratively by each of the three management areas.

Step 3 – Example Undesirable Results

Conditions causing undesirable results must be *significant* and *unreasonable*

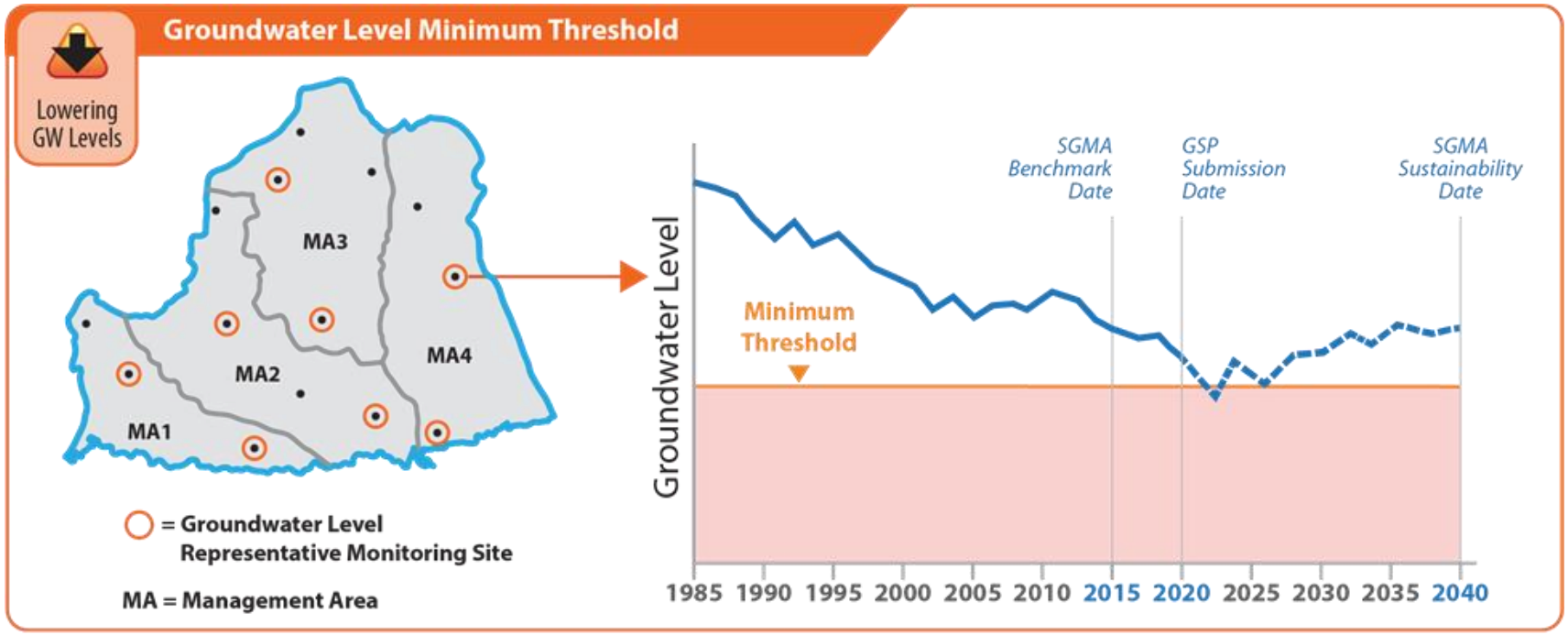
- **Chronic lowering of groundwater levels**
  - **Water levels continue to decline due to pumping rather than climatic conditions.**
- **Chronic reduction of groundwater storage**
  - **Water level declines reducing the volume of groundwater in storage such that there is insufficient supply to support pumping during drought conditions without causing undesirable results.**
- **Degraded water quality**
  - **Groundwater pumping practices that cause:**
    - **Migration of poor quality water resulting in impairment of water supplies.**
    - **Concentrations exceed regulatory levels.**

Undesirable Results (cont.)

- Land subsidence that substantially interferes with surface land uses
  - **Pumping results in land subsidence greater than thresholds set for monitoring locations.**
- Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of surface water
  - **Groundwater pumping practices causing depletion of interconnected surface water.**
- Seawater intrusion – Not Applicable
- Consider impacts to groundwater dependent ecosystems (GDEs) when evaluating undesirable results and SMCs

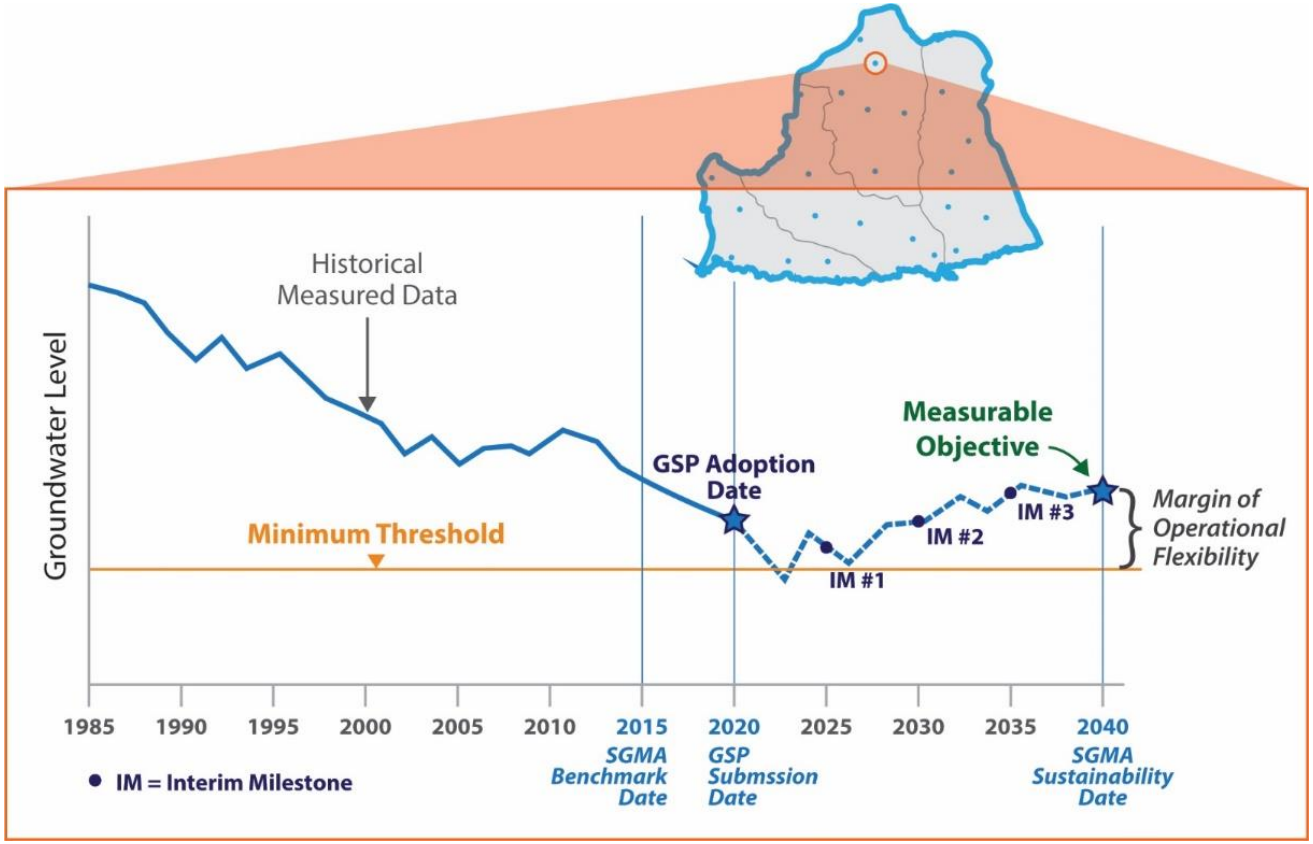
Step 4 – Establish Minimum Thresholds

What is a groundwater level minimum threshold?



Step 5 – Establish Measurable Objectives

What is a Measurable Objective?

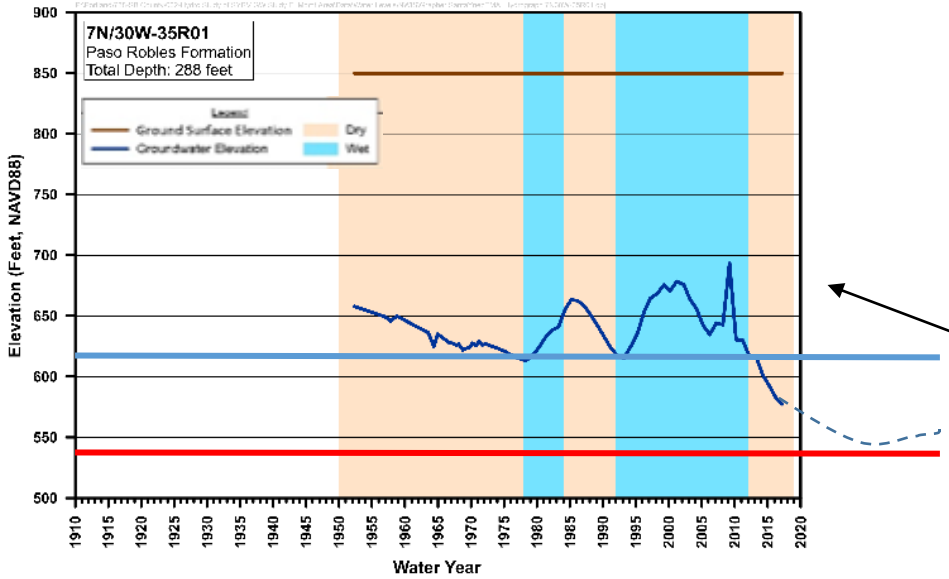


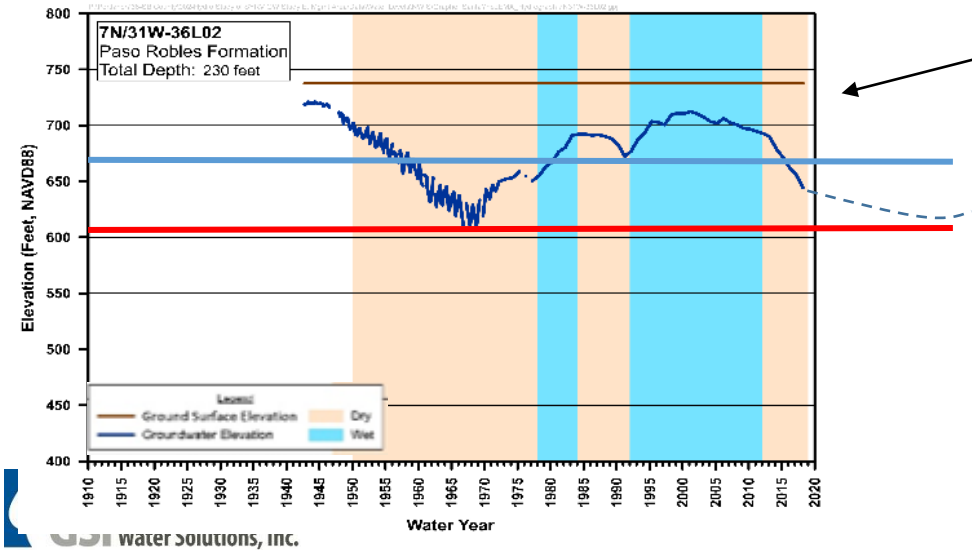
Example Minimum Thresholds and Measurable Objectives for the EMA

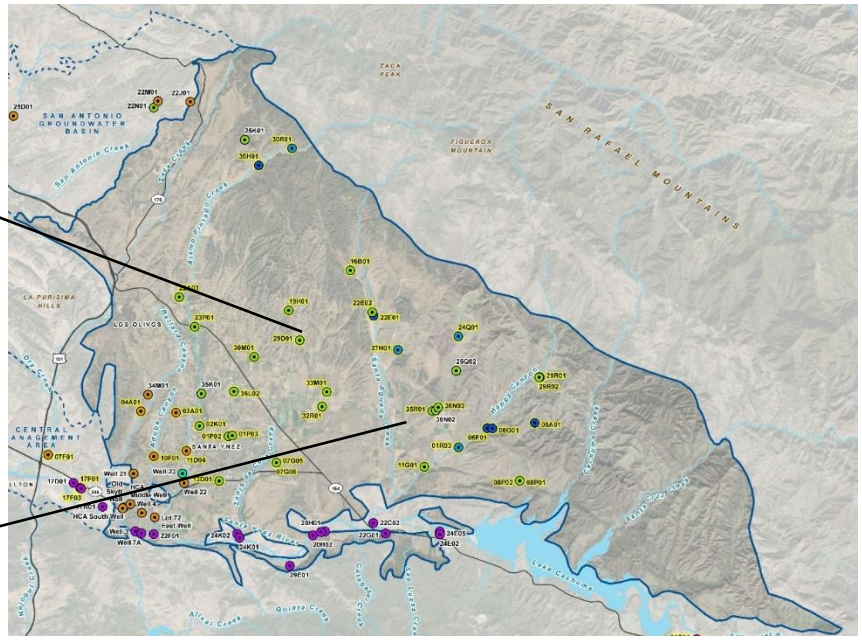
MT (lowest WL)

Hypothetical future WL

MO = 5 year drought buffer above MT)



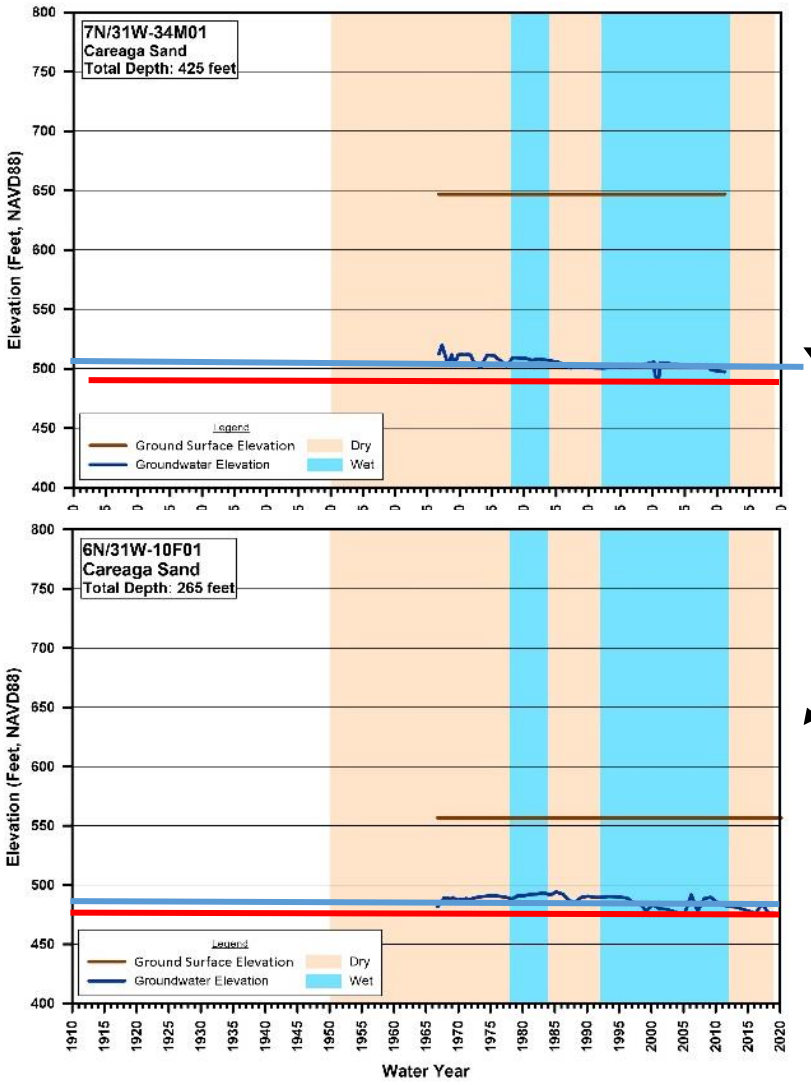


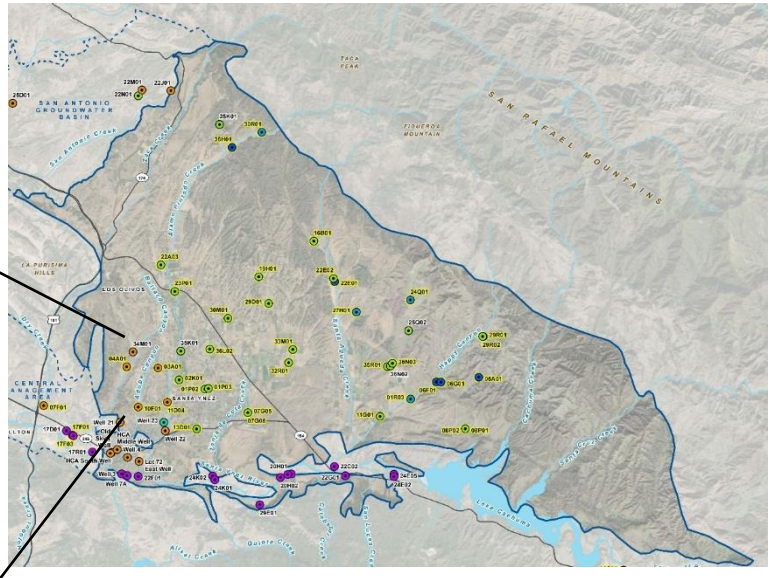


Paso Robles Formation

MO (average WL)

MT (lowest WL)

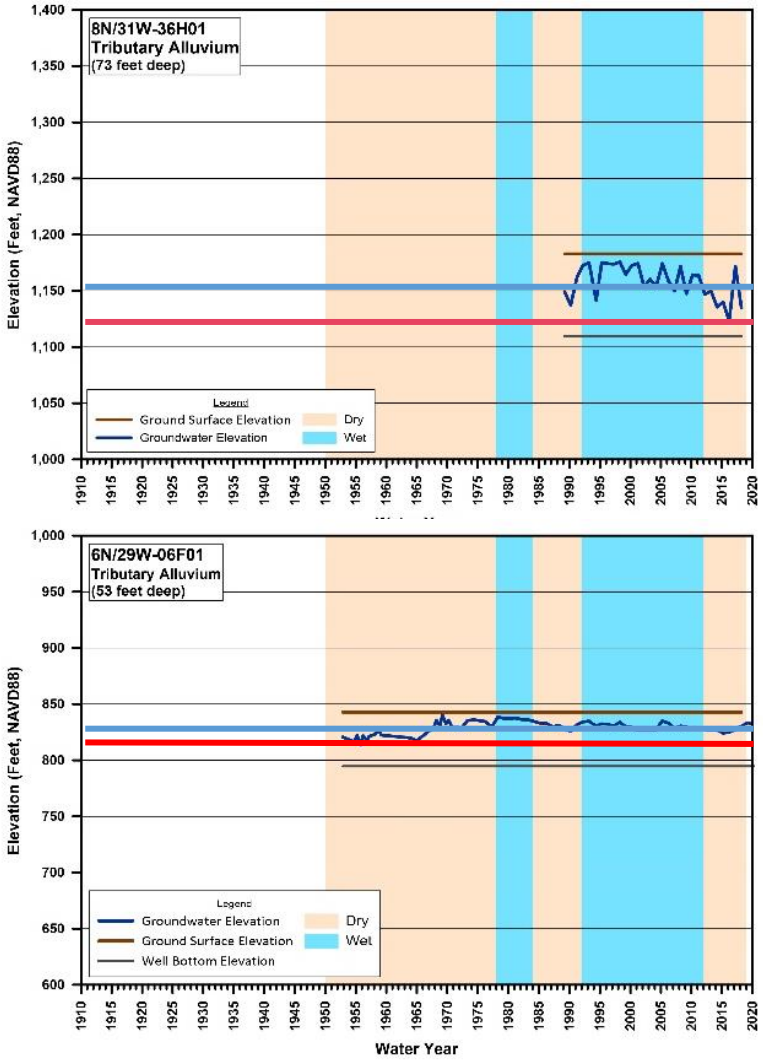


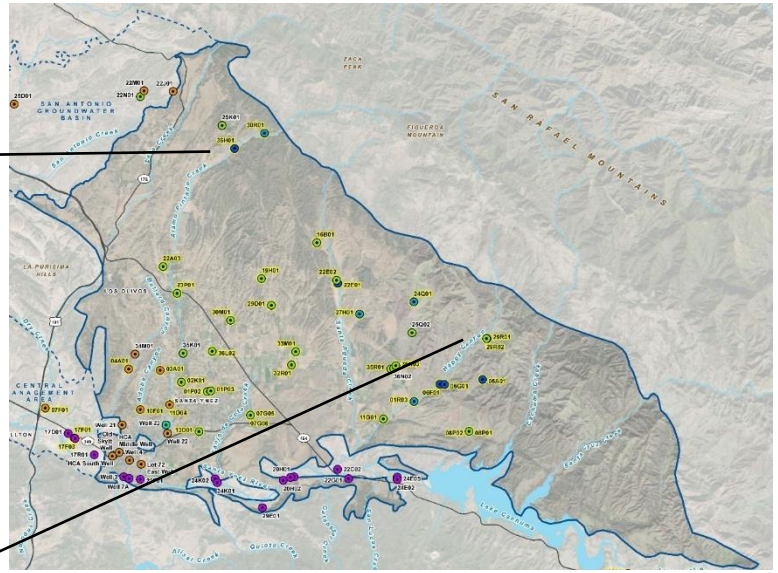


Careaga Sand Formation

MO (average WL)

MT (lowest WL)





Tributary (Young) Alluvium

Example SMCs for Other Sustainability Indicators

- Repeat Steps 4 and 5 for:
  - Reduction of groundwater in storage
    - Tied to water level MTs and MOs at representative wells
  - Water quality degradation due to pumping
    - MT = applicable water quality standards (20% wells must exceed)
    - MOs = background or non-detect
  - Surface water depletion
    - No MTs or MOs because SW is regulated by the SWRCB
  - Subsidence due to pumping
    - Established based on GeoTech evaluation of soils/geology and expected future changes in groundwater levels
    - MT = max amount of subsidence allowable at critical infrastructure without causing damage
    - MO = no long term reduction in elevation at monitoring locations
- Assess impacts to GDEs (not along the river)
- Review each MT and MO to make sure all are consistent and do not result in undesirable results

What's Next?

- Review groundwater budget and groundwater model
- Review proposed SMCs for future groundwater levels based on model results
- Develop SMCs for other indicators
- Next meeting Jan 21, 2021

Thank you!

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