

# Periodic Evaluation Update

## Santa Ynez Basin - EMA

Presented by Tim Nicely, PG, CHg  
Senior Managing Hydrogeologist

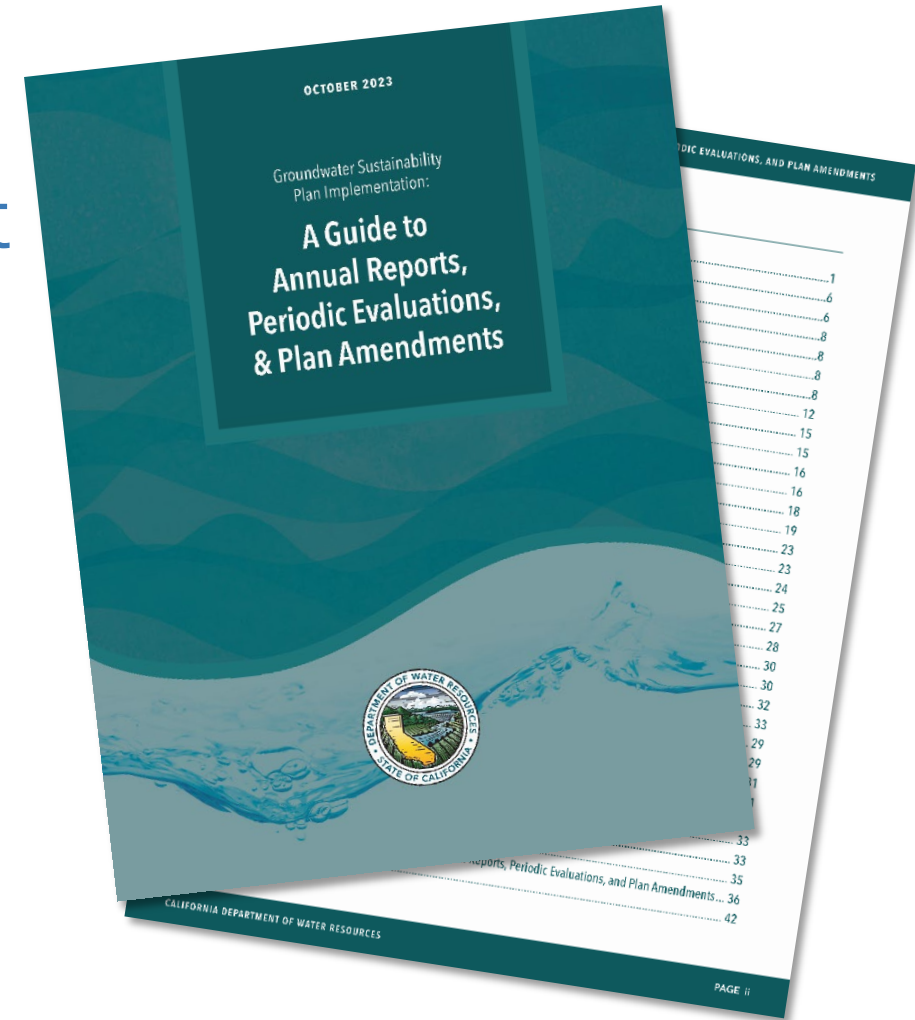
September 3, 2026



# GSP Implementation

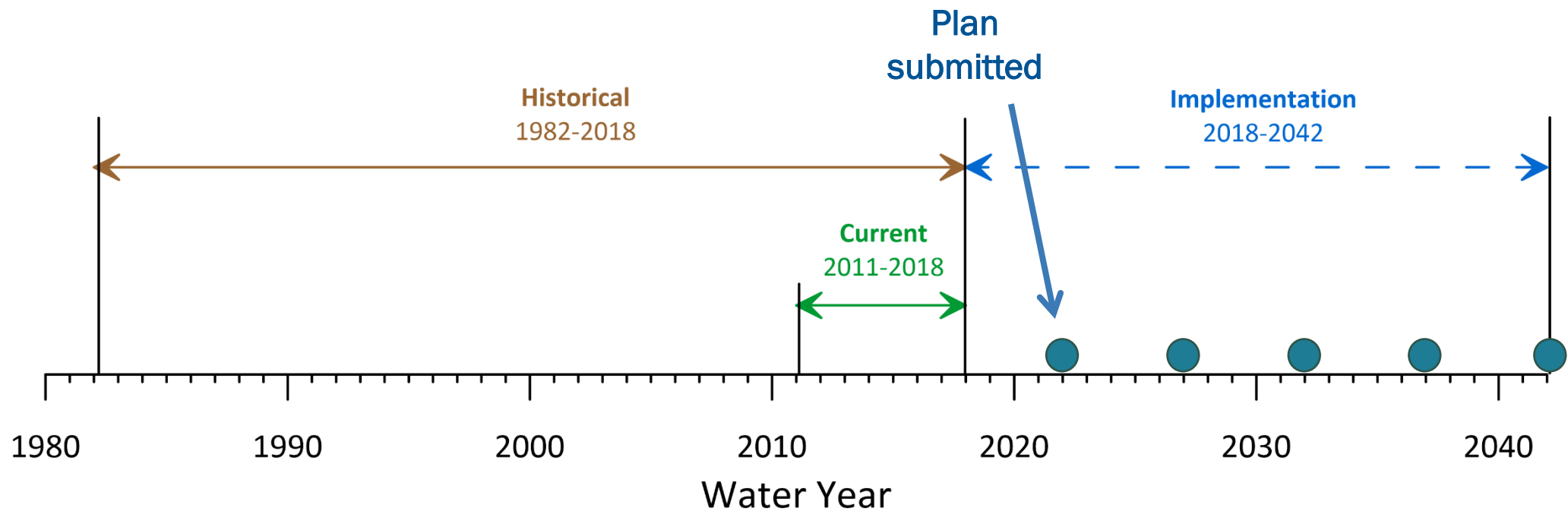
## Periodic Evaluation or Plan Amendment

1. Purpose and context
2. Contents
3. Recommended Corrective Actions  
and Suggested Responses
4. Discussion
5. Next Steps



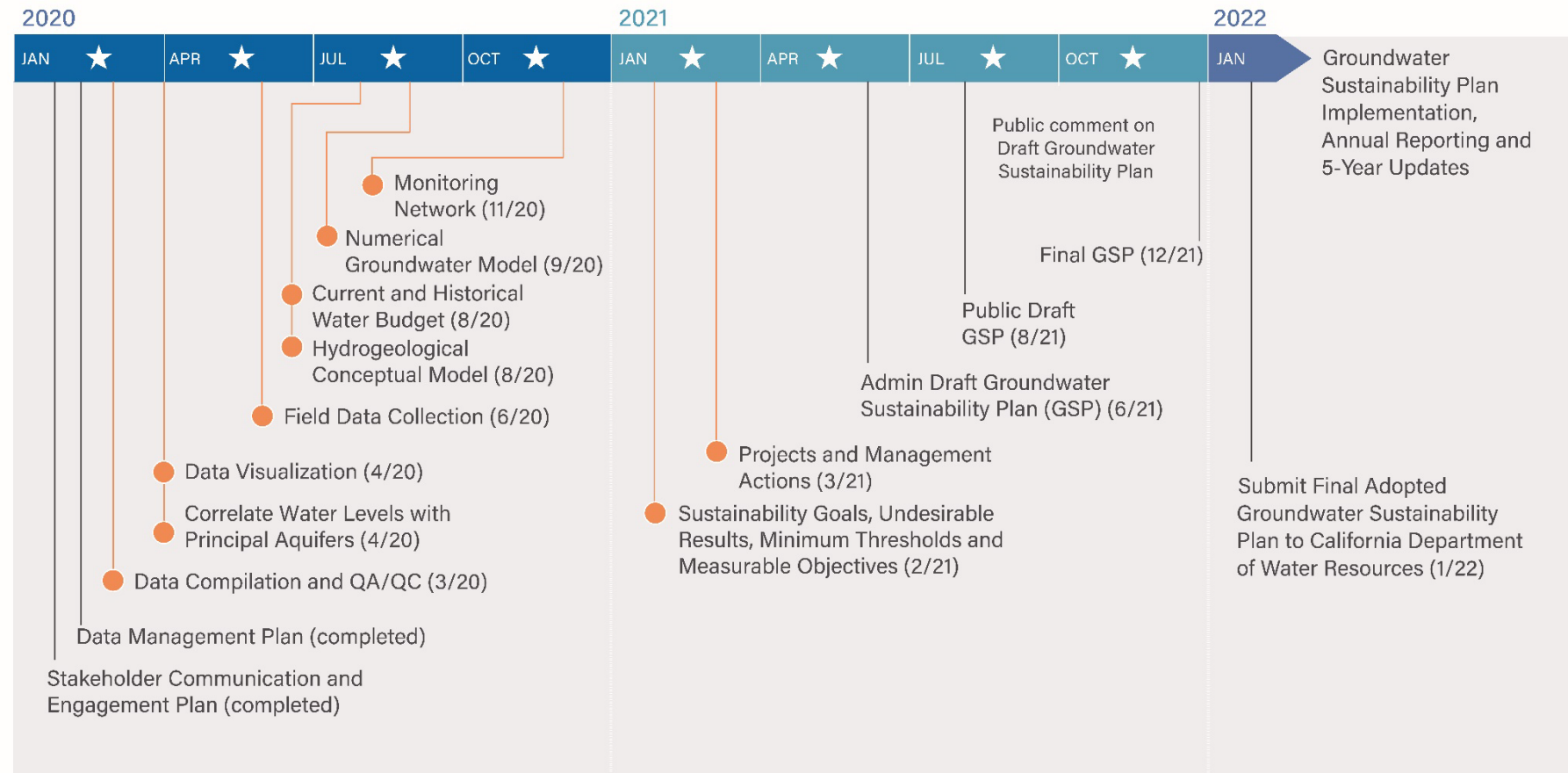
# 1. Purpose and Context

- Groundwater Sustainability Plan submitted 2022
- Presented conditions through 2018



# 1. Purpose and Context

## GROUNDWATER SUSTAINABILITY PLAN DEVELOPMENT MILESTONES

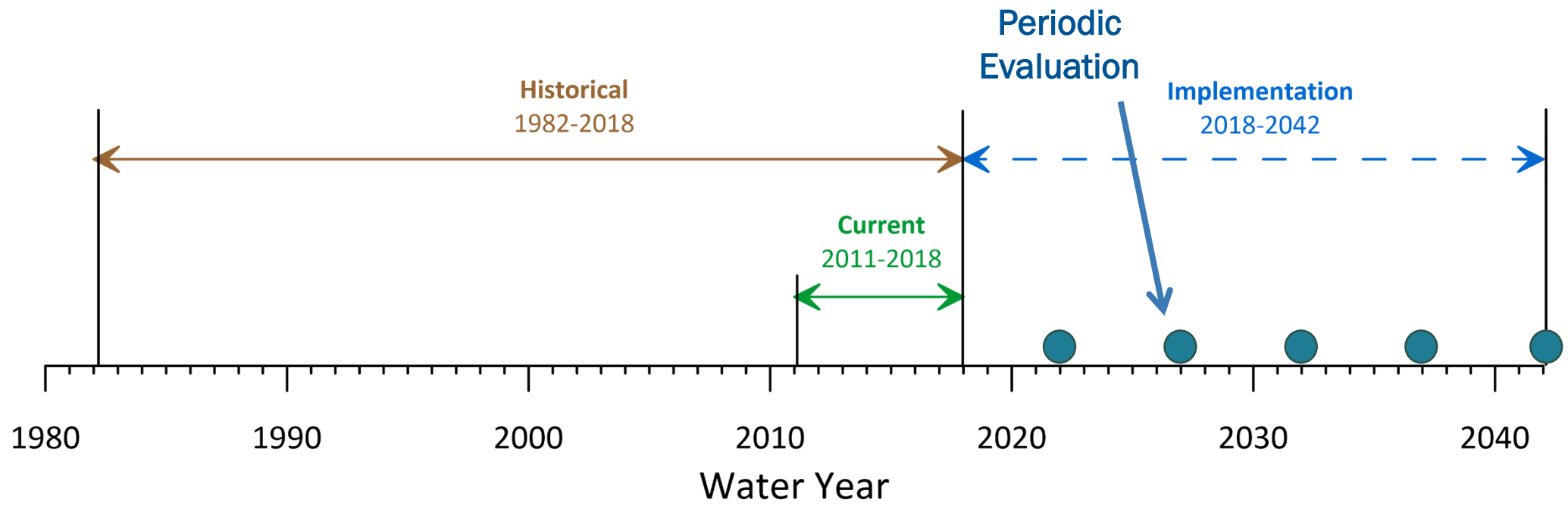


★ Groundwater Sustainability Agency Committee Public Meeting

● Technical Memorandum

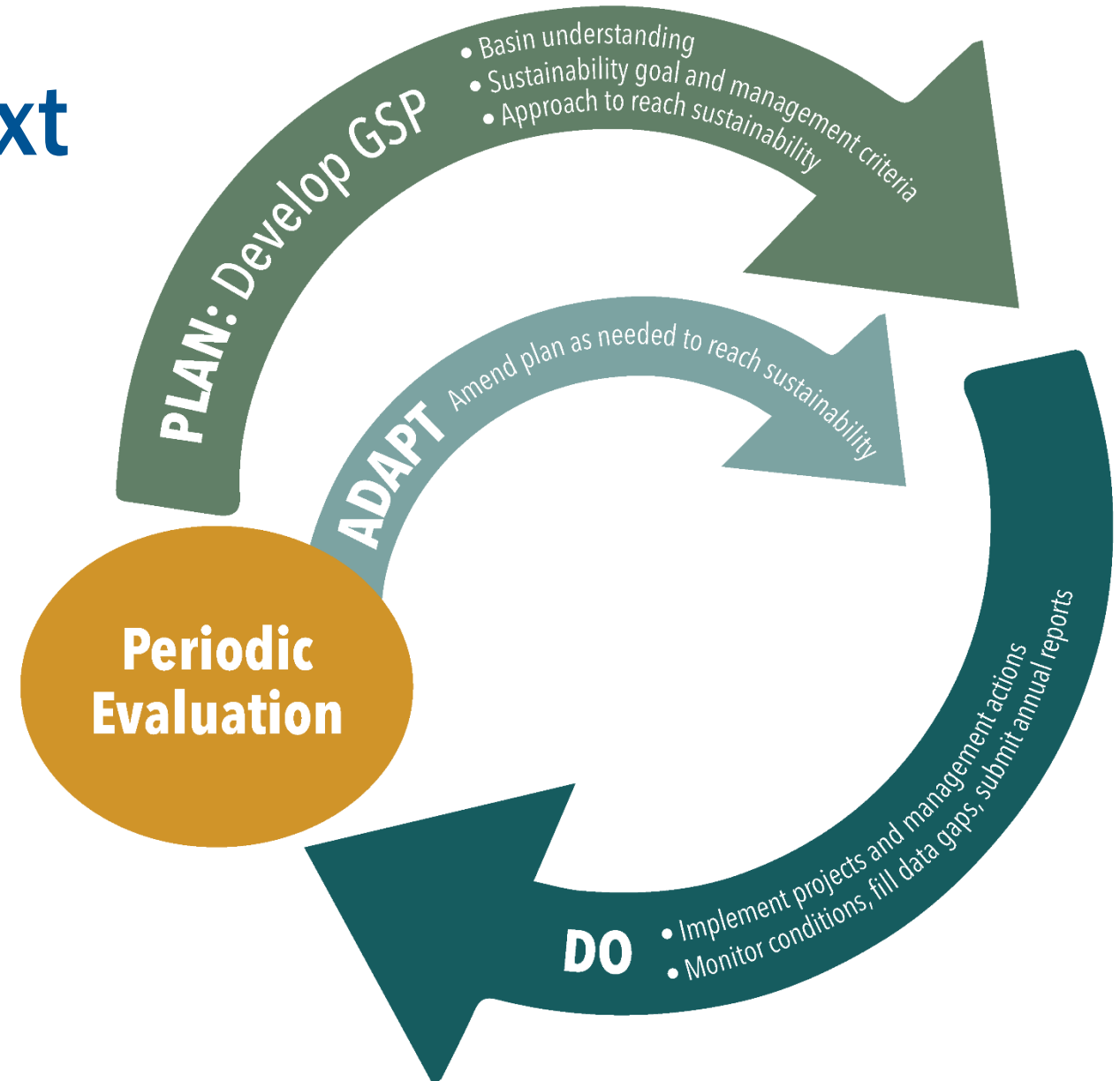
# 1. Purpose and Context

- Periodic Evaluation progress towards
- Presents conditions water years 2019 to 2024



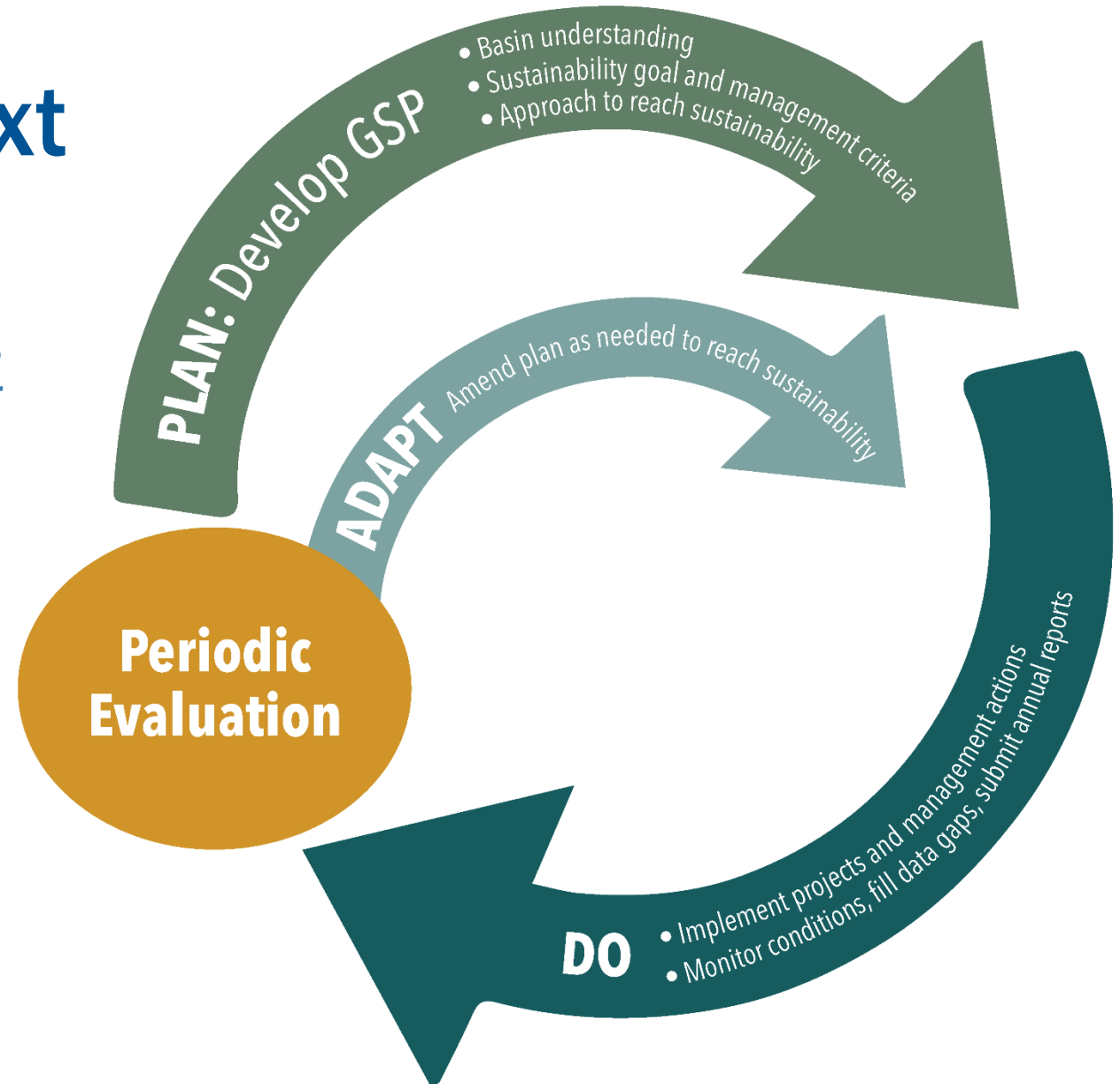
# 1. Purpose and Context

- Local control
- Adaptive management
- 20- and 50-year horizon



# 1. Purpose and Context

- Periodic Evaluation  
Evaluate Plan (GSP) at least every five years
- Plan Amendment  
Make changes to the Plan as warranted

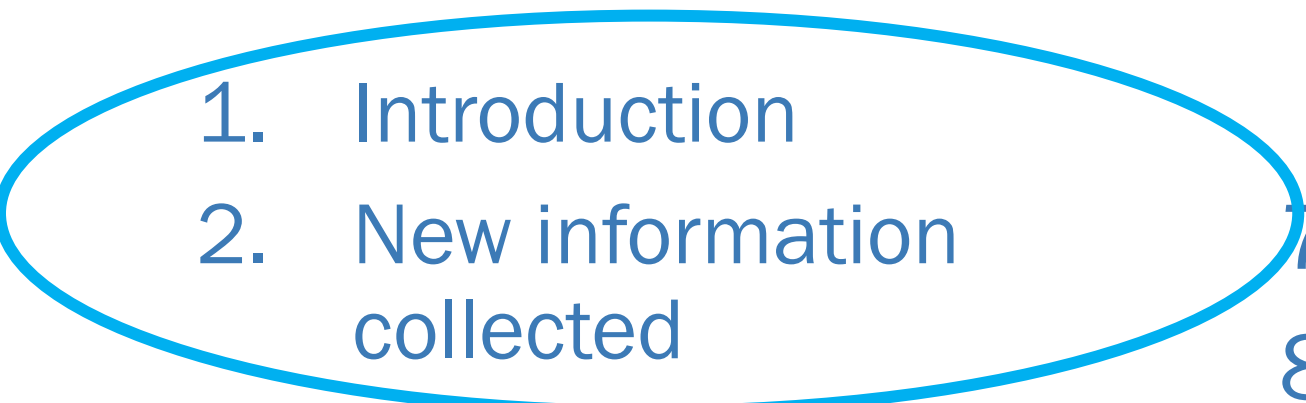


## 2. Periodic Evaluation Contents

- Focuses on how GSA has demonstrated Plan implementation to meet sustainability goal



## 2. Periodic Evaluation Contents

- 
1. Introduction
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## 2. Periodic Evaluation Contents

### 3. Groundwater conditions

Groundwater conditions in the EMA relative to sustainable management criteria (SMCs) established in the Plan during the recent period between Water Years 2019 and 2024 for the five sustainability indicators applicable to the EMA.

## 2. Periodic Evaluation Contents

### 3. Groundwater conditions

Evaluated conditions for five sustainability indicators:



1. **Chronic Lowering of Groundwater Levels** indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon



2. Significant and Unreasonable **Reduction of Groundwater Storage**



3. Significant and Unreasonable **Degraded Water Quality**



4. Significant and Unreasonable **Land Subsidence** and



5. **Depletion of Interconnected Surface Water** that have significant and unreasonable adverse impacts on beneficial uses of the surface water

## 2. Periodic Evaluation Contents

- Groundwater conditions: Groundwater Levels

No Undesirable Results

Table 3-3. Proportion of Representative Wells with Groundwater Levels  
Below the Minimum Threshold



| Water Year | Water Year Type | Period | Paso Robles<br>Formation Wells | Careaga Sand<br>Wells |
|------------|-----------------|--------|--------------------------------|-----------------------|
| 2019       | Above Normal    | Spring | 0%                             | 0%                    |
| 2020       | Above Normal    | Spring | 14%                            | 0%                    |
|            |                 | Fall   | 38%                            | NA                    |
| 2021       | Dry             | Spring | 14%                            | 11%                   |
|            |                 | Fall   | 50%                            | 22%                   |
| 2022       | Critical        | Spring | 54%                            | 11%                   |
|            |                 | Fall   | 62%                            | 33%                   |
| 2023       | Wet             | Spring | 62%                            | 0%                    |
|            |                 | Fall   | 50%                            | 22%                   |
| 2024       | Wet             | Spring | 31%                            | 11%                   |
|            |                 | Fall   | 46%                            | 11%                   |

Notes

Values represent percentage of representative wells below the minimum threshold

NA = not available

Wells 08P01 and 30M01 are not considered to be representative wells and, when not measured, are not included in calculation.

### Paso Robles Formation

- 50% of wells in Paso below MT between 2021 and 2023
- Fall 2022 elevations below average MT elevations
- Fall 2023, groundwater remained 5 feet above average MT elevations

### Careaga Sand

- Groundwater remained above MT on average

No Dry Wells reported within EMA

## 2. Periodic Evaluation Contents

- Groundwater conditions: Groundwater Storage

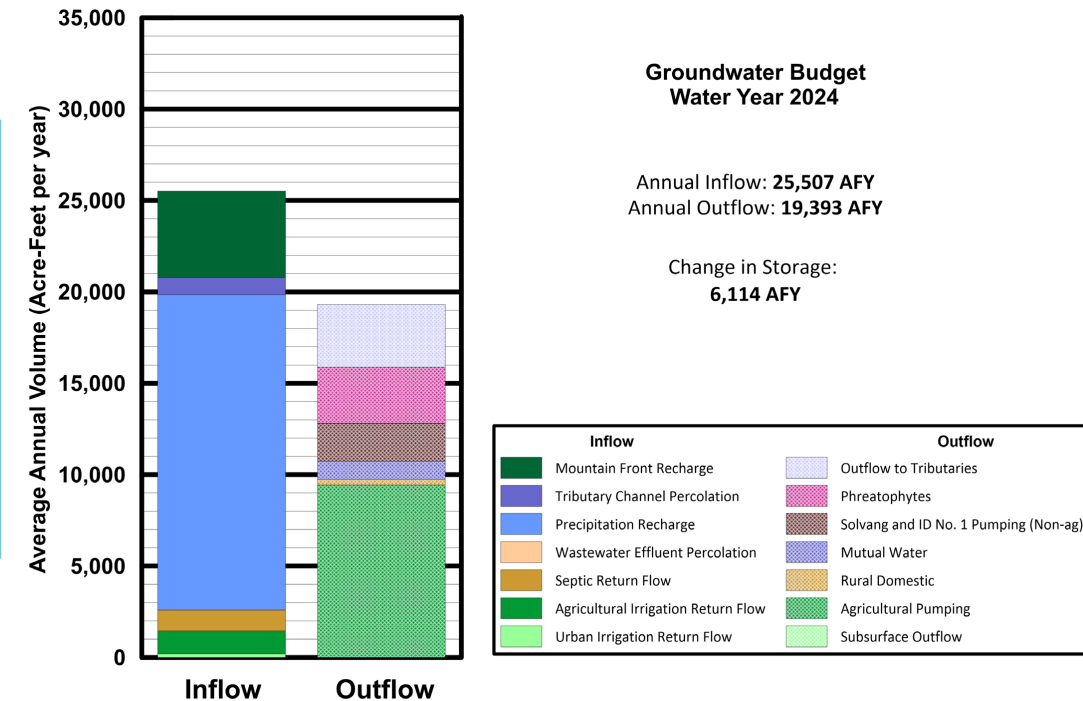
No Undesirable Results

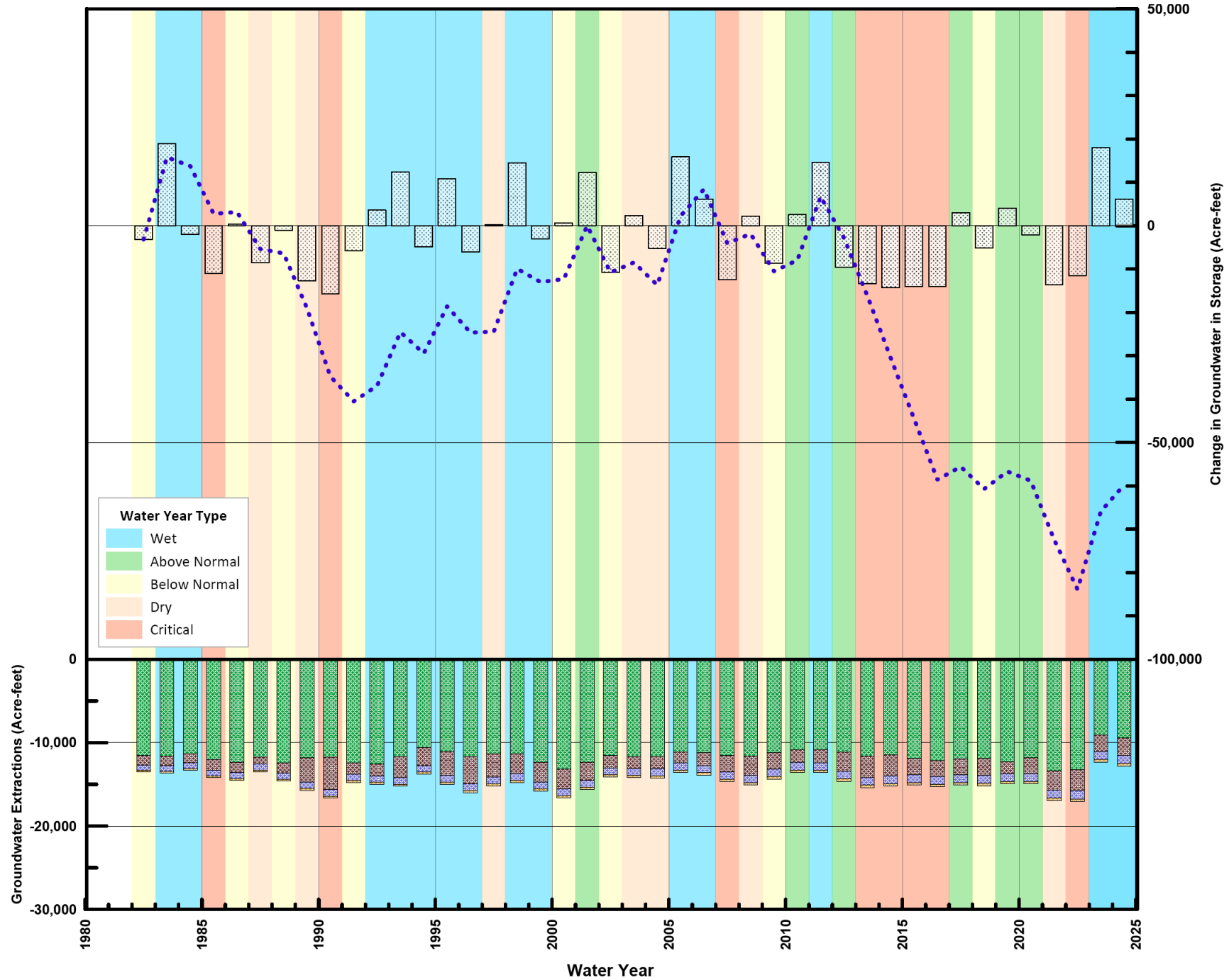


**Table 3-4. Change in Groundwater in Storage, Water Years 2015 to 2024**

(Values in acre-feet)

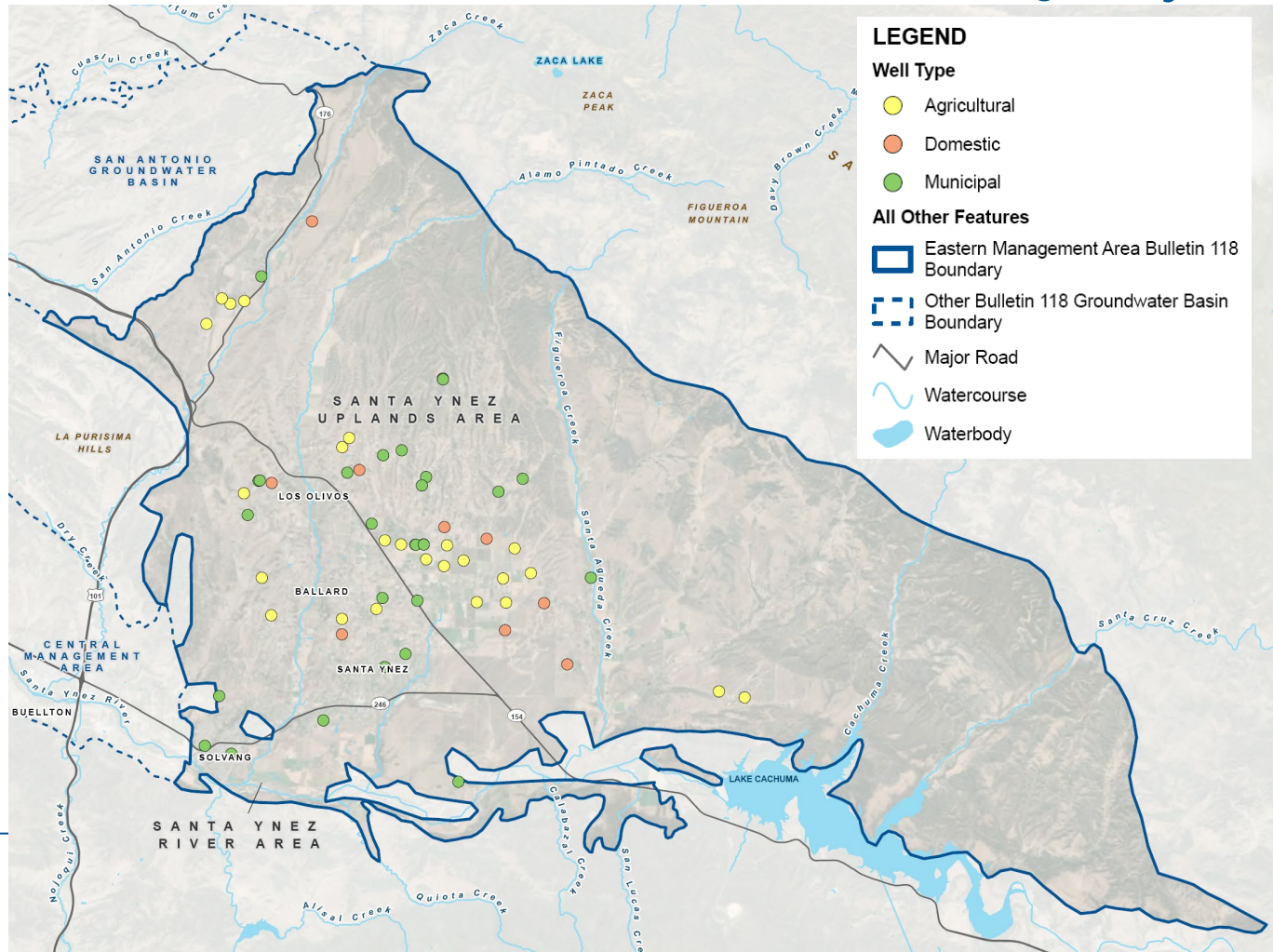
| Water Year  | Water Year Type | Change in Storage<br>(Paso Robles<br>Formation) | Change in Storage<br>(Careaga Sand) | Total Annual<br>Change in<br>Storage |
|-------------|-----------------|-------------------------------------------------|-------------------------------------|--------------------------------------|
| <b>2019</b> | Above Normal    | 3,047                                           | 996                                 | 4,043                                |
| <b>2020</b> | Above Normal    | -1,662                                          | -477                                | -2,139                               |
| <b>2021</b> | Dry             | -12,737                                         | -825                                | -13,562                              |
| <b>2022</b> | Critical        | -10,983                                         | -495                                | -11,478                              |
| <b>2023</b> | Wet             | 17,677                                          | 307                                 | 17,984                               |
| <b>2024</b> | Wet             | 6,737                                           | -623                                | 6,114                                |





## 2. Periodic Evaluation Contents

- Groundwater conditions: Groundwater Quality



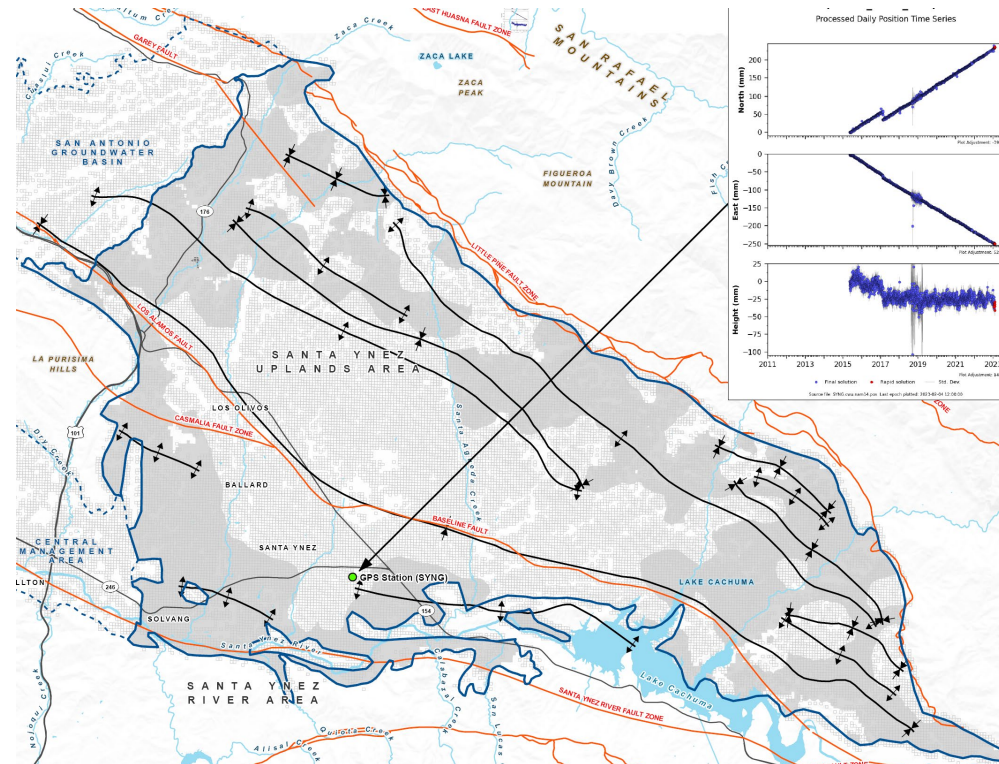
## 2. Periodic Evaluation Contents

- Groundwater conditions: Groundwater Quality
  - Salts and nutrients generally within acceptable limits, with the exception of sulfate and sodium.
  - Sulfate and sodium concentrations exceeded MTs in roughly half of wells within the monitoring network.
  - These exceedances are not attributed to groundwater management activities.

## 2. Periodic Evaluation Contents

- Groundwater conditions: Land Subsidence
- No undesirable results have been observed regarding land subsidence

No Undesirable Results



### LEGEND

Vertical Displacement Point Data Location Q4 2024

GPS Station SYNG

Interpolated InSAR Raster of Cumulative Displacement, 6/13/2015 - 10/1/2024

Vertical Displacement (InSAR)

0.0 to 0.09

0.1 to 0.11 (max)

## 2. Periodic Evaluation Contents

- Groundwater conditions: Interconnected Surface Water
- Data on the extent of potential interconnected surface water depletion in the EMA is undergoing additional analysis through the installation of new piezometers.

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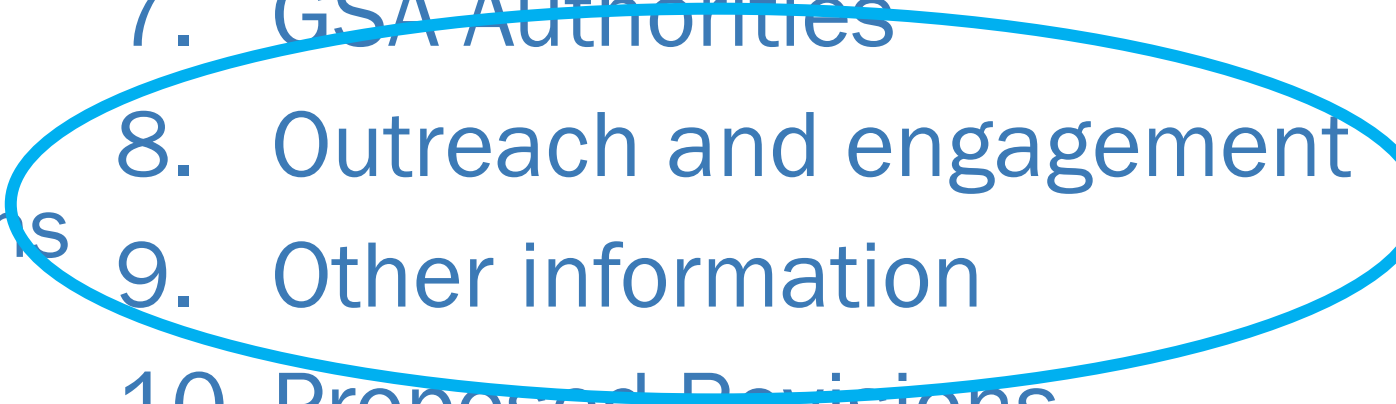
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# 3. Recommended Corrective Actions

- DWR provided seven recommended corrective actions (RCAs)

**Table ES 1. Summary of DWR Recommended Corrective Actions**

|                                                                                     | Recommended Corrective Action Number | Subject                                                                            | Relevant Sustainability Indicator         | Result in Change to Plan |
|-------------------------------------------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------|--------------------------|
|    | 1                                    | Action Plan for Management of All Well Production Along the Lower Santa Ynez River | Depletion of interconnected surface water | No                       |
|    | 2                                    | Relationship between Santa Ynez River Alluvium and principal aquifers              | Depletion of interconnected surface water | No                       |
|    | 3                                    | Re-evaluation of water budgets for consistency                                     | Reduction of groundwater in storage       | No                       |
|  | 4                                    | Re-evaluation of SMCs for chronic lowering of water levels                         | Chronic lowering of water levels          | Yes <sup>1</sup>         |
|  | 5                                    | Re-evaluation of SMCs for water quality                                            | Degraded water quality                    | Yes <sup>1</sup>         |
|  | 6                                    | Re-evaluation of SMCs for land subsidence                                          | Land subsidence                           | Yes <sup>1</sup>         |
|  | 7                                    | Estimation of location, quantity and timing of stream depletion                    | Depletion of interconnected surface water | No                       |

### 3. Recommended Corrective Actions

- Chronic Lowering of Groundwater Levels Sustainability Indicator (RCA 4)



- DWR recommendations that they would like to be addressed as part of this Periodic Evaluation, including
  - 4a. Revision of the definition of undesirable results and language pertaining to significant and unreasonable chronic lowering of groundwater levels to **remove the non-drought year condition.**
  - 4b. Revision of the sustainable management criteria to be based on **seasonal low groundwater levels**, and
  - 4c. **Completion of an updated well impact analysis**

### 3. Recommended Corrective Actions

- Chronic Lowering of Groundwater Levels Sustainability Indicator (RCA 4a)



- Consider these responses with regard to possible Plan Amendments regarding groundwater elevations RCA 4a “remove the non-drought year condition” (one of two options):
  - 1. Remove the non-drought condition and subsequently lower the MT for each well accordingly, or
  - 2. Remove the non-drought condition but delay adjusting the MT until a thorough well impact analysis could be conducted following completion of the well registration, which is in process.

### 3. Recommended Corrective Actions

- Chronic Lowering of Groundwater Levels Sustainability Indicator (RCA 4b)



- RCA 4b “revise the sustainable management criteria to be based on seasonal low groundwater levels”:
  1. Delay making any changes to the SMC based on seasonal low groundwater levels, until a full 10 years of paired spring and fall water level measurements are available for review.

### 3. Recommended Corrective Actions

- Chronic Lowering of Groundwater Levels Sustainability Indicator (RCA 4b)



- RCA 4c Conduct well impact analysis:

1. Conduct a well impact analysis at a later time after the well registration is completed and consider changes to the MTs at that time.

### 3. Recommended Corrective Actions

- Degraded Groundwater Quality Sustainability Indicator (RCA 5a and d)
  - We suggest that the EMA GSA Board consider a Plan Amendment regarding groundwater quality as follows.
    - RCA 5a “The EMA GSA should reevaluate the quantitative definition of undesirable results related to degradation of water quality, which should incorporate a combination of minimum threshold exceedances...” and
    - RCA 5d “Clearly convey the minimum threshold values for each representative monitoring well”



### 3. Recommended Corrective Actions

- Degraded Groundwater Quality Sustainability Indicator (RCA 5a and d)
  - We suggest that the minimum threshold for water quality at each representative well be redefined as:
    - The concentration of salt and nutrient constituent in each representative well equal to either 120 percent of the historic (baseline) concentration, the MCL for Nitrate as N, or the WQO for the Santa Rita subarea of the Santa Ynez River Valley Basin, whichever is greater (Table 3-8, Appendix F).



### 3. Recommended Corrective Actions

- Degraded Groundwater Quality Sustainability Indicator (RCA 5a and d)
  - We suggest that the undesirable result be revised as:
    - More than 50 percent of these minimum thresholds in each well exceeding each minimum threshold for each 5-year evaluation period (in response to RCA 5a).



# 3. Recommended Corrective Actions

- Degraded Groundwater Quality Sustainability Indicator (RCA 5b)
  - RCA 5b “Provide an assessment of when and how GSA activities may impact water quality”
  - The GSA has not conducted any project or management actions which could have impacted water quality.
  - There have also been no comments by any beneficial users in the EMA regarding degraded water quality during the evaluation period.
  - In future evaluation cycles, any degradation of water quality that can be attributed to the GSA and are distinct from “other causes of increased salts and nutrients” as sited in the Plan are proposed to be defined by the revised definition of an undesirable result.



### 3. Recommended Corrective Actions

- Degraded Groundwater Quality Sustainability Indicator (RCA 5c)
  - “GSAs should revise the definition of undesirable results and language pertaining to significant and unreasonable degradation of water quality to remove the non-drought year condition”
    - The EMA’s Plan does not include any reference to water year type with regard to the water quality degradation Sustainability Indicator.



# 3. Recommended Corrective Actions

- Land Subsidence Sustainability Indicator (RCA 6)
  - We recommend that the EMA consider a change to Plan to clarify the relationship between the MT and Undesirable Results as follows:
    - The minimum threshold for land subsidence shall be a lowering of ground surface elevations at a rate of 0.08 feet per year or greater based on measurements from both the InSAR network throughout the EMA and the single UNAVCO Continuous Global Positioning Systems (CGPS) station located in the EMA near the Santa Ynez airport.



# 3. Recommended Corrective Actions

- Land Subsidence Sustainability Indicator (RCA 6)
  - We recommend that the EMA consider a change to Plan to clarify the relationship between the MT and Undesirable Results as follows:
    - The undesirable result for subsidence shall be this rate of subsidence of 0.08 feet per year or greater observed for 3 consecutive years, or subsidence that causes significant and unreasonable damage to or substantially interferes with groundwater supply, land uses, infrastructure, and property interests.



## 4. Discussion

- RCAs 4, 5, and 6 require responses. Let's discuss.



# 5. Next Steps

## Implementation Schedule

- Today's meeting introduces the periodic evaluation, and possible Plan amendment
  - September 24 to be discussed at EMA GSA Board
  - October 14 deadline for potential plan amendment advertisement
  - October 15 CAG meeting
  - November 19 Board meeting
  - January 14, 2027 Board approval
  - January 19, 2027 Plan Submittal

# Thank you!

Tim Nicely  
GSI Water Solutions, Inc.  
[tnicely@gsiws.com](mailto:tnicely@gsiws.com)

