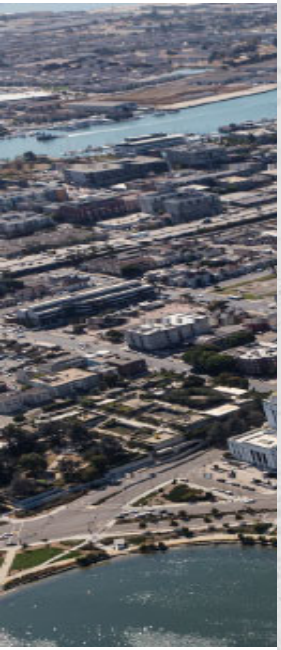


East Bay Plain Subbasin Groundwater Sustainability Plan (GSP) Periodic Evaluation and Amendment Kick-off Meeting

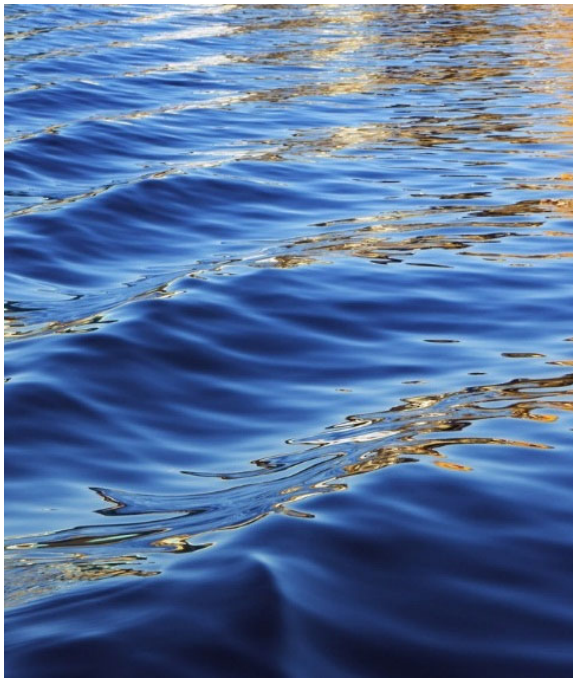
General Stakeholders Meeting

October 29, 2025

Agenda

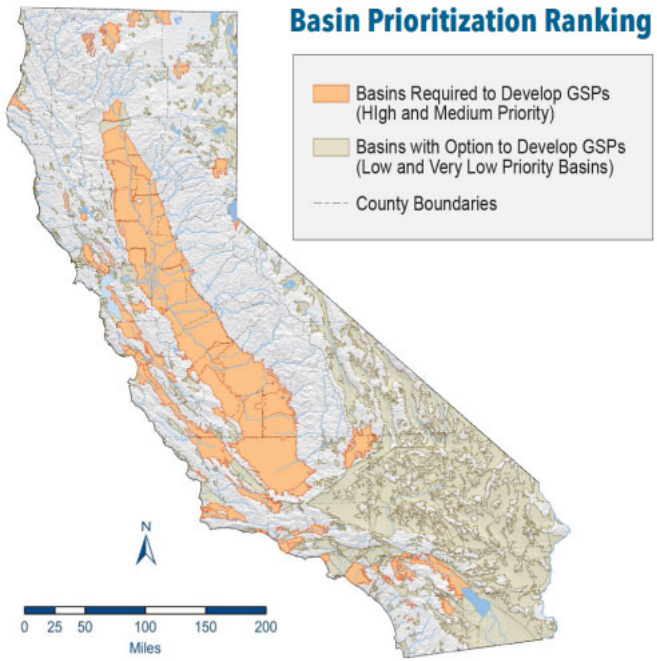
- Welcome and Introductions
- Background
- East Bay Plain Subbasin GSP
  - Overview
  - Representative Monitoring Site Wells
  - Sustainable Management Criteria
  - Implementation Updates
- Periodic Evaluation and Amendment Approach
- Next Steps
- Department of Water Resources (DWR) Updates
- Comments and Questions

Background



Sustainable Groundwater Management Act (SGMA)

- SGMA was created in 2014 to help address long-term impacts from unsustainable groundwater pumping including declining groundwater levels, land subsidence, water quality degradation, seawater intrusion, and interconnected surface water depletion
- Groundwater basins are managed by local agencies called Groundwater Sustainability Agencies (GSAs)
- GSAs in high and medium priority basins were required to prepare a Groundwater Sustainability Plan (GSP) that provides the roadmap to ensure that groundwater is used sustainably over the long term
- GSPs must be evaluated every 5 years to assess progress and may be updated with an amendment if needed

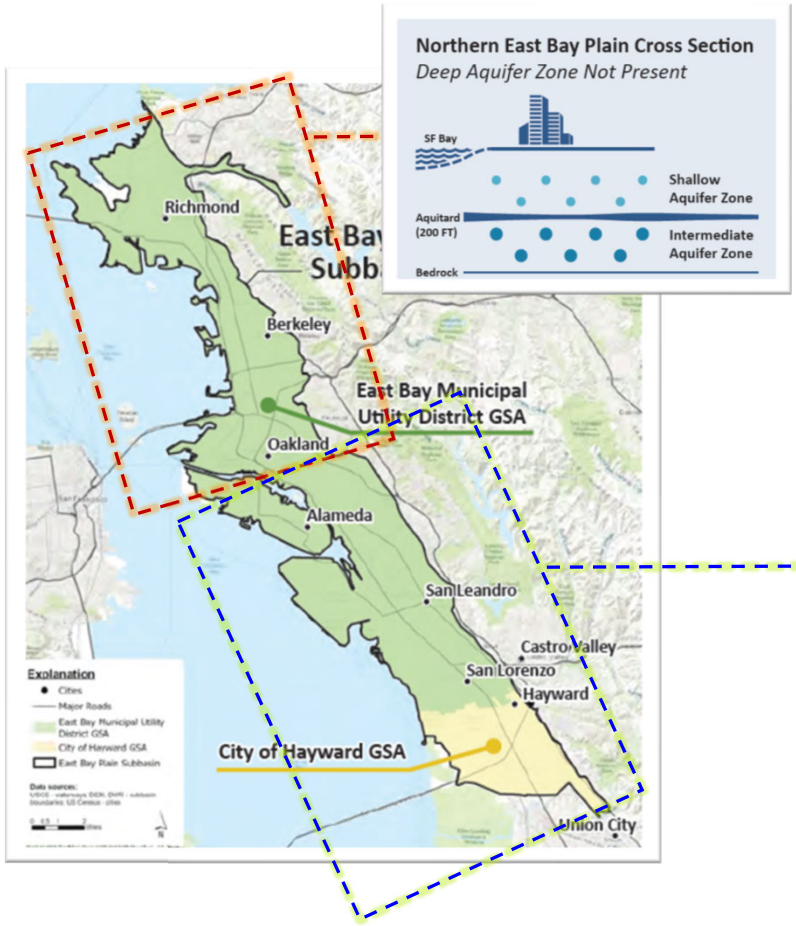


East Bay Plain Subbasin

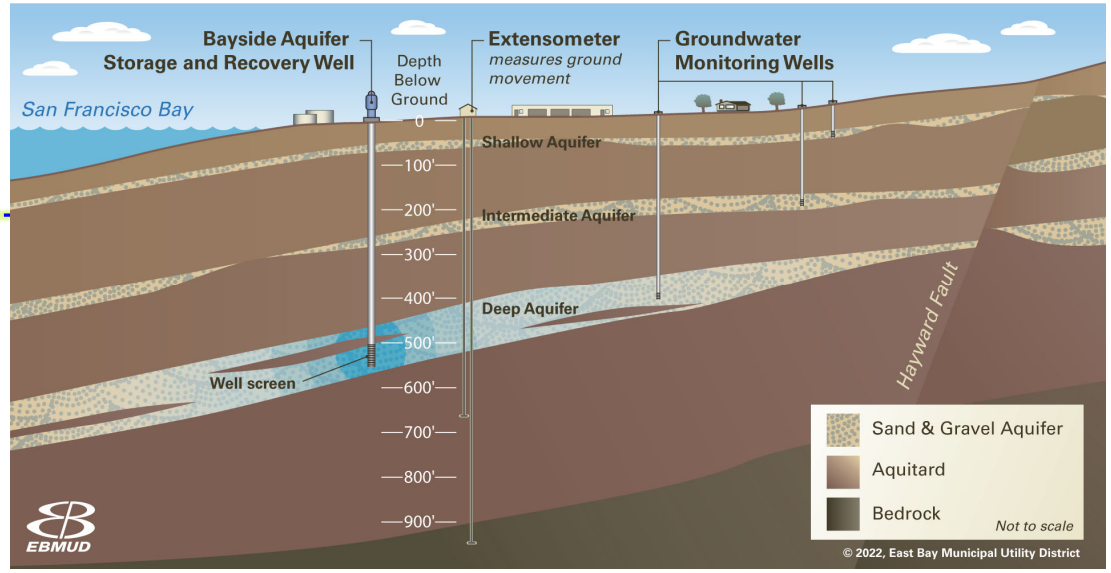
- East Bay Plain (EBP) Subbasin is managed by EBMUD GSA and the City of Hayward GSA
- Medium-priority basin
- Primarily urban (94%)
- Limited groundwater pumping of around 3600 acre-feet annually, primarily for irrigation and industrial uses
- 2022 EBP Subbasin GSP approved by DWR in July 2023 with 9 recommended corrective actions

DWR: Department of Water Resources
EBMUD: East Bay Municipal Utility District
GSA: Groundwater Sustainability Agency

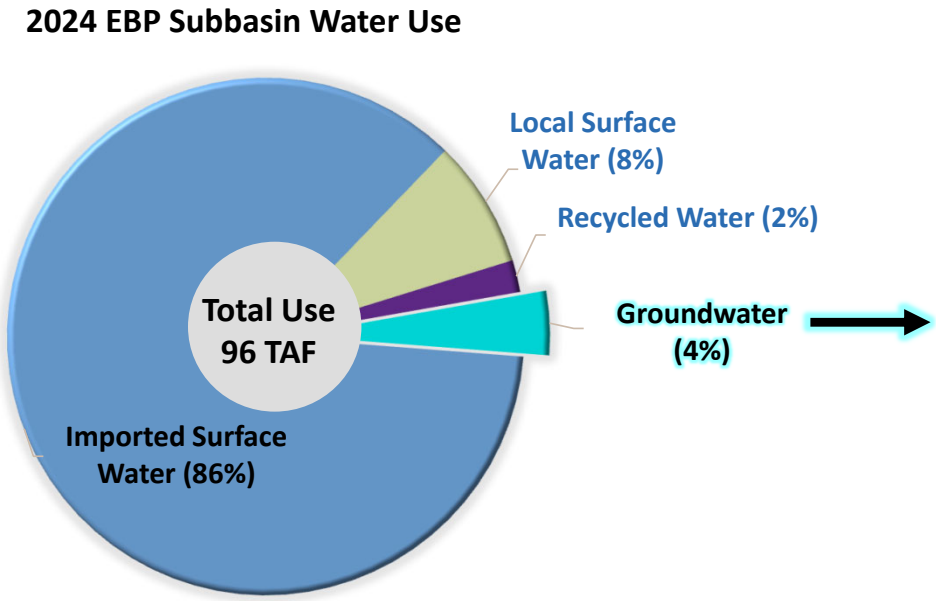
EBP Subbasin Cross-Section



- Three Principal Aquifers: Shallow, Intermediate, and Deep
- Most pumping occurs in the Intermediate and Deep Aquifers
- SF Bay only connects to upper portion of Shallow Aquifer
- Aquitards protect Intermediate and Deep Aquifers from seawater intrusion and shallow groundwater impacts



EBP Subbasin Water Use by Source



GDEs: Groundwater Dependent Ecosystems
TAF: thousand acre-feet

Primary Beneficial Uses and Users of Groundwater

- Large Irrigators (e.g., parks, golf courses)
- Domestic Irrigators
- Industrial Uses
- Environmental (GDEs)

Key Roles & Responsibilities

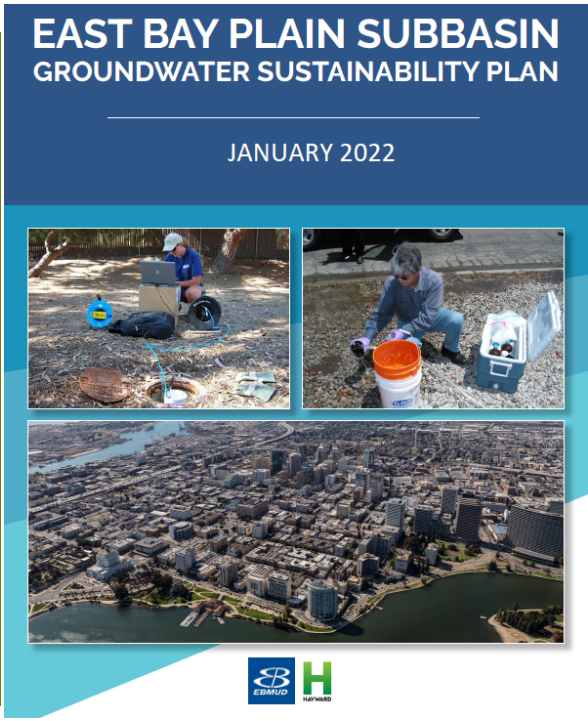
EBMUD and City of Hayward GSAs

- Develop and implement GSP
- Collect and evaluate monitoring data to ensure Subbasin meets sustainable management criteria
- Because of limited groundwater use, pumping is not currently regulated
- Coordinate with other agencies

Other Agencies

- Issue permits for well construction, modification, and destruction
- Regulate water quality in public water supply wells and issue permits to operate them
- Regulate and oversee site investigation and cleanup of pollutants in groundwater

East Bay Plain Subbasin GSP



Overview

Sustainability Goal & Sustainable Management Criteria

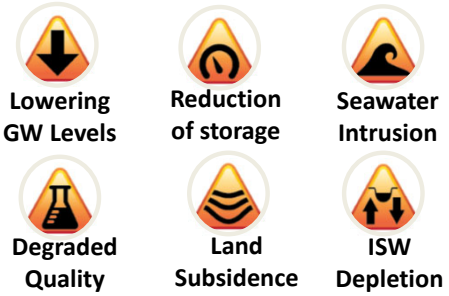
EBP Sustainability Goal: Must be achieved by 2042

- ☑ Manage & protect the East Bay Plain Subbasin
- ☑ Collect data to support science-based decisions
- ☑ Evaluate new opportunities for sustainable groundwater beneficial uses
- ☑ Maintain sustainability through sustainable management criteria that avoid undesirable results (URs)

Sustainable Management Criteria (SMC)

Metrics defining when URs occur for the six sustainability indicators and when sustainability is maintained/achieved

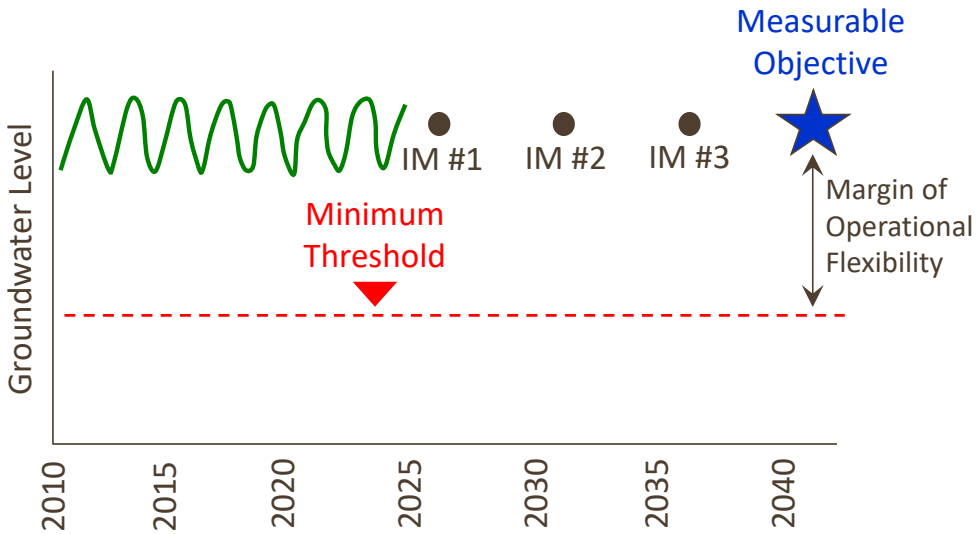
Six Sustainability Indicators



GW: Groundwater
ISW: Interconnected Surface Water

SMC for the sustainability indicators were developed with stakeholder input and using best available science & data with the caveat that major data gaps need to be addressed

SMC: Metrics Definition



Minimum threshold (MT): Value that defines when undesirable results occur

Measurable objectives (MO): Measurable target to maintain/achieve sustainability goal

Interim milestone (IM): Target value in increments of 5 years

SMC developed are considered interim because of data gaps

SMC

Indicator	MO and IM	MT	Objectives Currently Met
Lowering GW Levels	• Average of historical spring GW level data, when recent data (<10 years) is available • If no data or recent data is unavailable, GW model results used	• Shallow Aquifer: 50 feet below ground surface • Intermediate / Deep Aquifer: -50 feet mean sea level (MSL) • GDEs: 7.5 feet below baseline conditions in shallow wells	✓
Reduction of storage	• 50% of sustainable yield = 6,250 AFY	• Sustainable yield = 12,500 AFY	✓
Degraded Quality	• Average baseline concentrations where data is available	• MCLs for total dissolved solids, chloride, nitrate, and arsenic • If baseline concentration already exceeds MCL, assign 20% increase from baseline	✓

AFY: acre-feet per year
MCLs: maximum contaminant levels

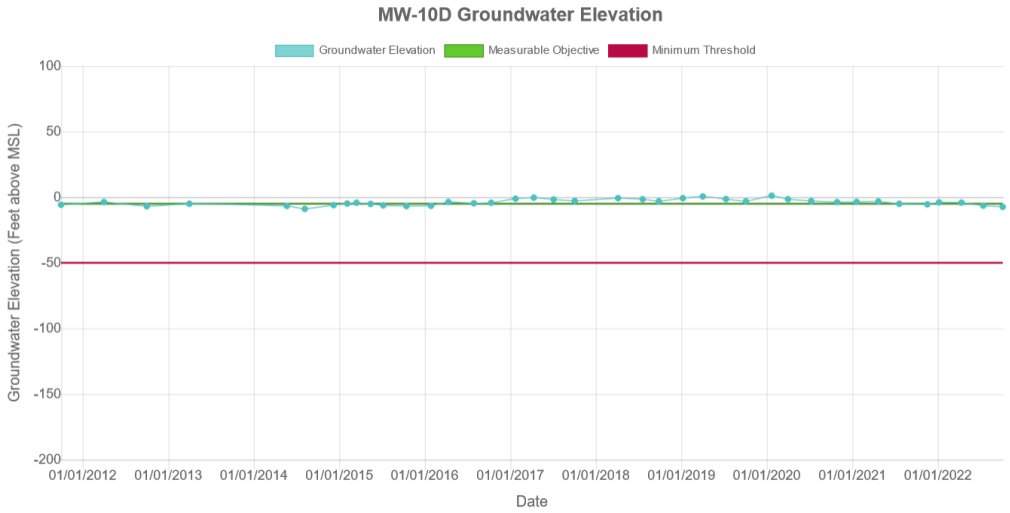
SMC

Indicator	MO and IM	MT	Objectives Currently Met
 **Seawater Intrusion**	• Position of 5-foot MSL contour line based on 2015 Spring groundwater levels	• 25% increase in onshore area between the 5 ft MSL contour line and Bay margin • 25% increase in chloride concentration in sentinel wells	✓
 **Land Subsidence**	• Average spring groundwater levels in intermediate and deep aquifers when recent data (<10 years) is available • If data is unavailable, groundwater model results are used	• South EBP: -50 feet MSL (Spring) • North EBP: -20 feet MSL (Spring)	✓
 **ISW Depletion**	• Low end of model-derived range of groundwater level fluctuations in Shallow aquifer near creeks	• 2 feet below MO	✓

SMCs for these 3 indicators to be updated in the GSP Amendment

Representative Monitoring Site (RMS) Wells

Monitoring data are available on the East Bay Plain Data Management System (DMS): eastbayplaindms.com

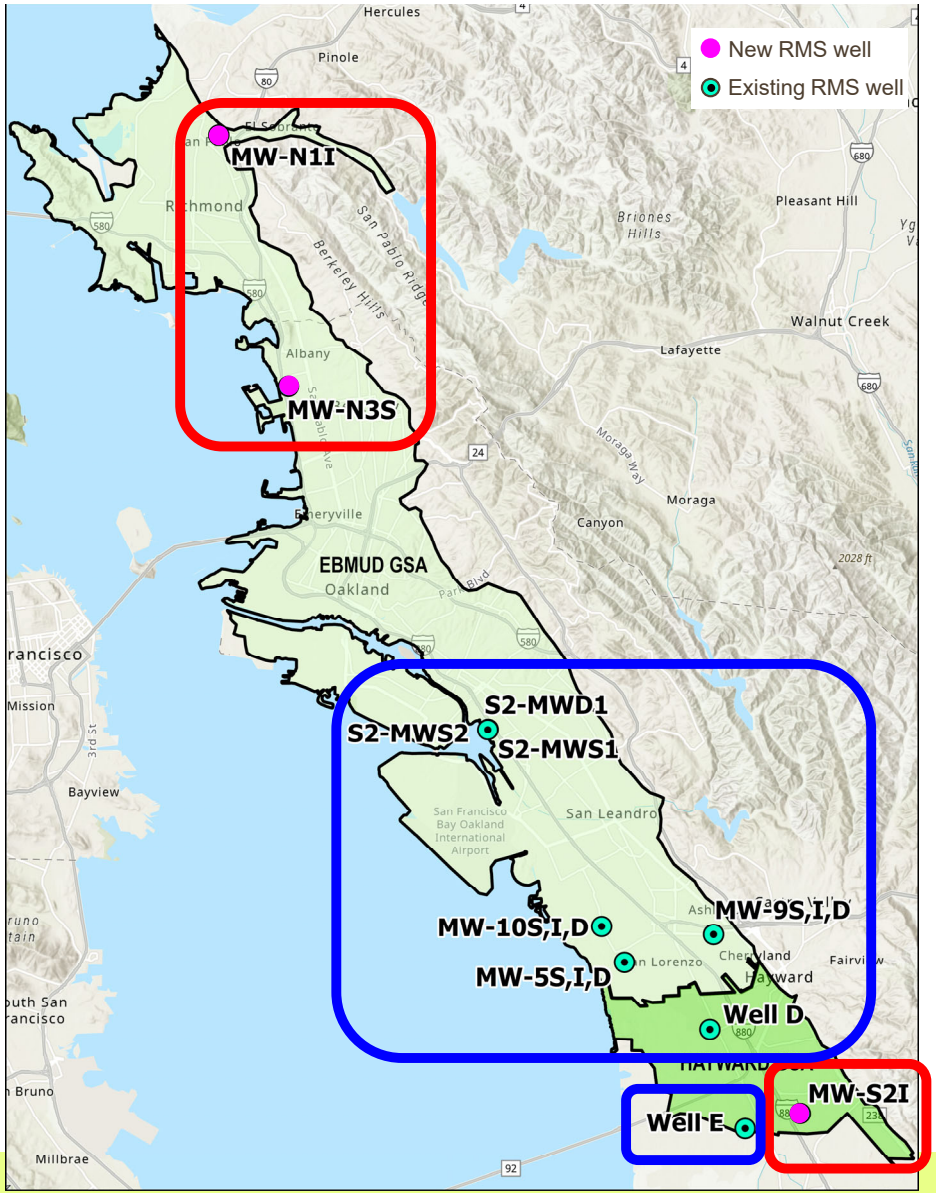


- RMS wells are used to evaluate the sustainability indicators
- Data gaps are being filled with data from 17 RMS wells over 9 sites
- EBP Subbasin is sustainable under current conditions relative to the six sustainability indicators

RMS Wells

- Existing RMS wells monitored since 2022
  - 12 EBMUD wells for water quality and groundwater levels
  - 2 Hayward wells
    - Well E monitored for GW levels only

- 3 new single completion RMS wells completed in February 2025 with DWR Prop 68 funding
  - 2 within EBMUD boundary
  - 1 within Hayward boundary



Implementation Updates

Filling Data Gaps

	Sustainability Indicators Addressed
• Groundwater levels and quality monitoring (ongoing)	
• Subsidence monitoring with extensometers (ongoing)	
• Stream isotope study (completed in 2023)	
• Updating groundwater pumping estimates (ongoing)	
• Expanding monitoring network (future)	
• Install stream gages (future)	
• Study to verify potential GDEs and prepare a comprehensive GDE map and Baseline Habitat Survey Report (completed fall 2025 and to be further evaluated in GSP Amendment)	

GDEs: Groundwater-dependent ecosystems

Implementation Updates

Basin Boundary Evaluation

Isotope study to further delineate and characterize the hydrogeologic boundary between the EBP Subbasin and Niles Cone Subbasin

- Draft report prepared and under review by Alameda County Water District

Annual Reporting

Water Year 2024 Annual GSP Report accepted by DWR in July 2025

Implementation Updates

Projects Status

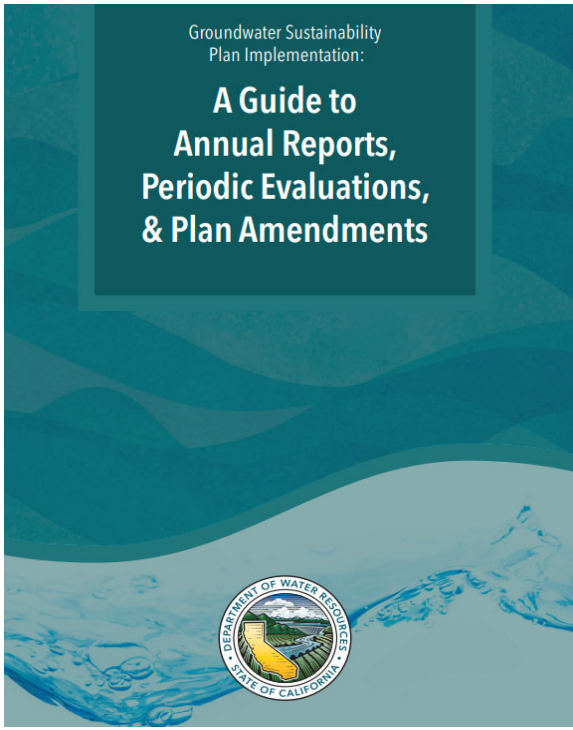
EBMUD Bayside Phase I

- Well used to store surplus treated drinking water in wet years to potentially be pumped later during severe droughts or emergencies
- Oro Loma Sanitary District decided not to renew the Bayside Facility lease with EBMUD and is in the process of demolishing the well facilities on their property
- EBMUD's supplemental water supply project priorities to be re-evaluated in 2025 Urban Water Management Plan
- More data is needed before a future phase of Bayside is considered

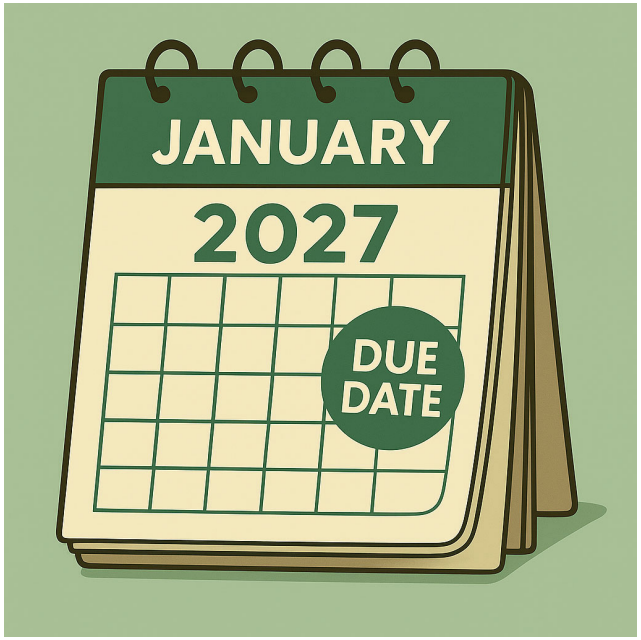
Hayward Emergency Wells

- 5 wells that can be used during emergencies
- 1 well is no longer functional and will be replaced in the future
- 3 of the 5 wells are in the EBP Subbasin

Periodic Evaluation and Amendment Approach



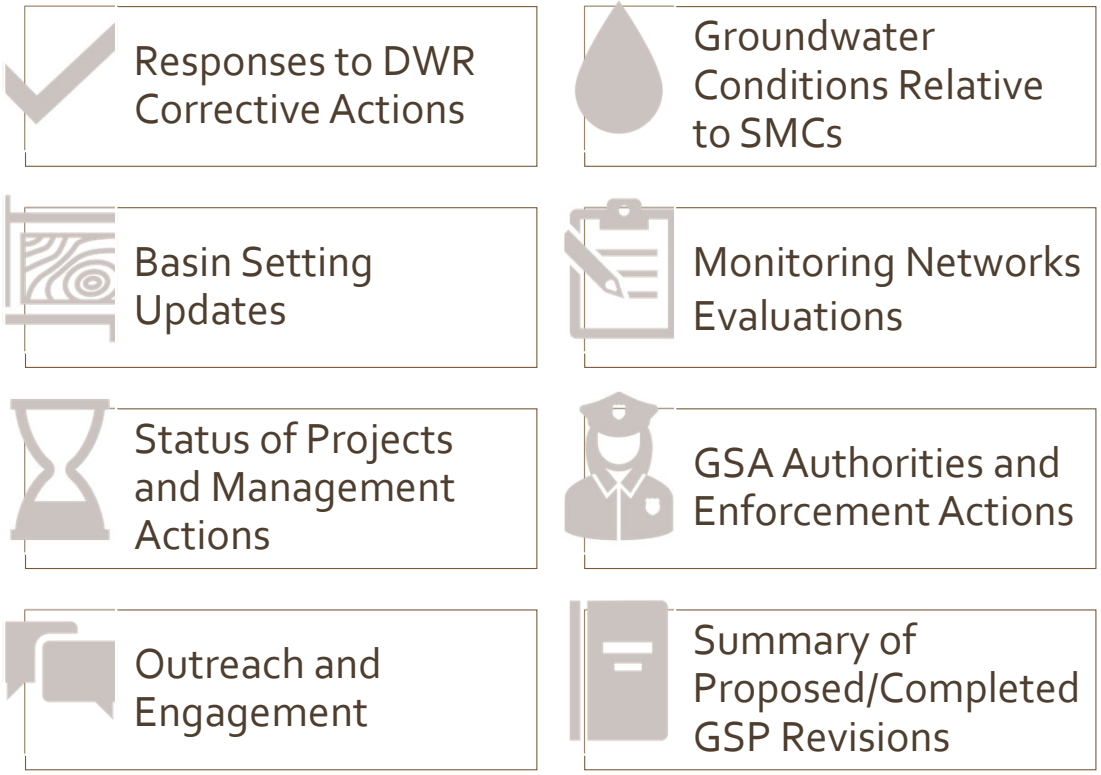
Deadline and Regulations



First Periodic Evaluation due by January 2027

"evaluate [the GSP] at least every five years, and provide a written assessment [describing] whether GSP implementation, including implementation of projects and management actions (PMAs), are meeting the sustainability goal in the Subbasin."
(23 CCR Section 356.4)

Major Components of the Periodic Evaluation



DWR Corrective Actions

- Corrective actions primarily related to:
  - Management of potential seawater intrusion into the groundwater basin and depletion of interconnected surface water
  - Refine SMC for seawater intrusion, land subsidence, and interconnected surface water

- GSAs had an initial meeting with DWR in February 2024 to discuss the more complex corrective actions

- Additional meetings with DWR will occur during the Periodic Evaluation and Amendment process

DWR Corrective Actions

1a. Provide seawater intrusion conditions in the Subbasin, including maps and cross-sections of the seawater intrusion front for each principal aquifer.

1b. Identify interconnected surface water systems within the Subbasin and an estimate of the quantity and timing of depletions of those systems.

2. Explain how the saline water from the San Francisco Bay is incorporated into the model and clarify whether the water budgets represent the Subbasin or the entire model boundary.

3. Revise the sustainable management criteria for chronic lowering of groundwater levels, land subsidence, and depletions of interconnected surface water to be based on seasonal low groundwater levels to ensure potential impacts to beneficial uses and users are considered.

DWR Corrective Actions

4. Explain how setting minimum thresholds for groundwater levels below sea level in the Shallow Aquifer Zone will avoid undesirable results for the seawater intrusion.

5. Establish sustainable management criteria and monitoring necessary for seawater intrusion using a chloride iso-contour as per the GSP Regulations.

6. Revise the definition of undesirable results for degraded groundwater quality so that exceedances of minimum thresholds caused by groundwater extraction, whether the GSA has implemented pumping regulations or not, are considered in the assessment of undesirable results in the Subbasin.

DWR Corrective Actions

7a. Provide evidence that land subsidence has not occurred and not expected to occur in the future within the Shallow Aquifer or establish sustainable management criteria as required by the GSP Regulations.

7b. Reevaluate the minimum thresholds for both chronic lowering of groundwater levels and the groundwater levels being use as a proxy for land subsidence to be assured that both sustainability indicators are protected with a single value in the effected wells.

8a. Reevaluating the minimum threshold requirement that avoids dewatering of surface water before reaching the currently established 50% of the monitoring stations.

8b. Consider utilizing the interconnected surface water guidance, as appropriate, when issued by the Department to establish quantifiable minimum thresholds, measurable objectives, and management actions.

DWR Corrective Actions

8c. Continue to fill data gaps, collect additional monitoring data, and implement the current strategy to manage depletions of interconnected surface water and define segm*ents of interconnectivity and timing.*

8d. Prioritize collaborating and coordinating with local, state, and federal regulatory agencies as well as interested parties to better understand the full suite of beneficial uses and users that may be impacted by pumping induced surface water depletion within the GSA's jurisdictional area.

9. Provide a table and labeled map of the representative, non-representative wells, and sentinel wells to be used in monitoring seawater intrusion, including their purpose (groundwater levels and/or water quality – chloride/TDS), aquifer, and monitoring frequency.

Responses to DWR Corrective Actions

Indicator	Proposed Approach to Addressing Corrective Actions
 **Lowering GW Levels**	• Evaluate the original basis for using Spring groundwater levels • Justify the use of spring groundwater levels for SMC or switch to fall groundwater levels
 **Reduction of storage**	• No DWR corrective actions
 **Degraded Quality**	• Revise the definition of undesirable results for groundwater quality to align with DWR requirements

Responses to DWR Corrective Actions

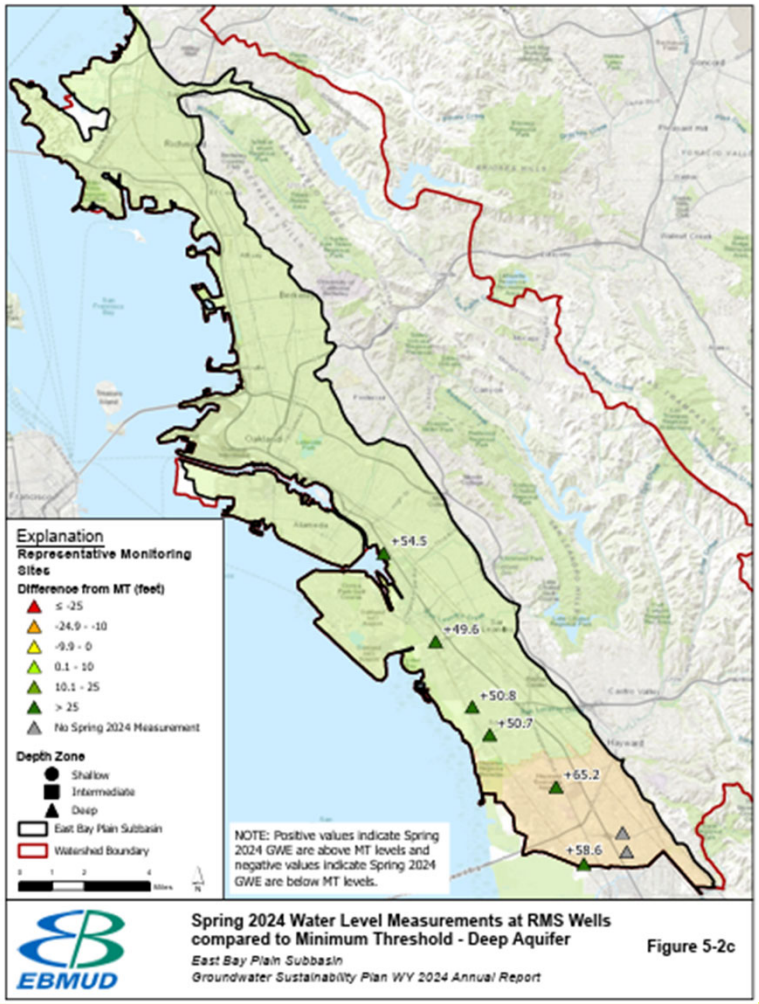
Indicator	Proposed Approach to Addressing Corrective Actions
 **Seawater Intrusion**	• Construct chloride iso-contours in the southern portion of the Subbasin • Develop focused monitoring areas and sentinel wells to address seawater intrusion concerns • Use groundwater modeling to refine seawater intrusion metrics and monitoring networks • Develop updated SMCs for seawater intrusion
 **Land Subsidence**	• Evaluate hydrogeologic conditions, potential subsidence mechanisms, and InSAR data to assess the need for subsidence SMCs in the Shallow Aquifer • Update subsidence SMCs to utilize a rate of subsidence instead of groundwater levels as a proxy
 **ISW Depletion**	• Evaluate interconnected surface water systems using existing field data and the groundwater model • Refine SMCs based on DWR guidance (updated draft guidance expected Nov. 2025) • Utilize model to assess how potential future groundwater pumping may influence the quantity and timing of surface water depletions

InSAR: Interferometric Synthetic Aperture Radar

Groundwater Conditions Relative to SMCs

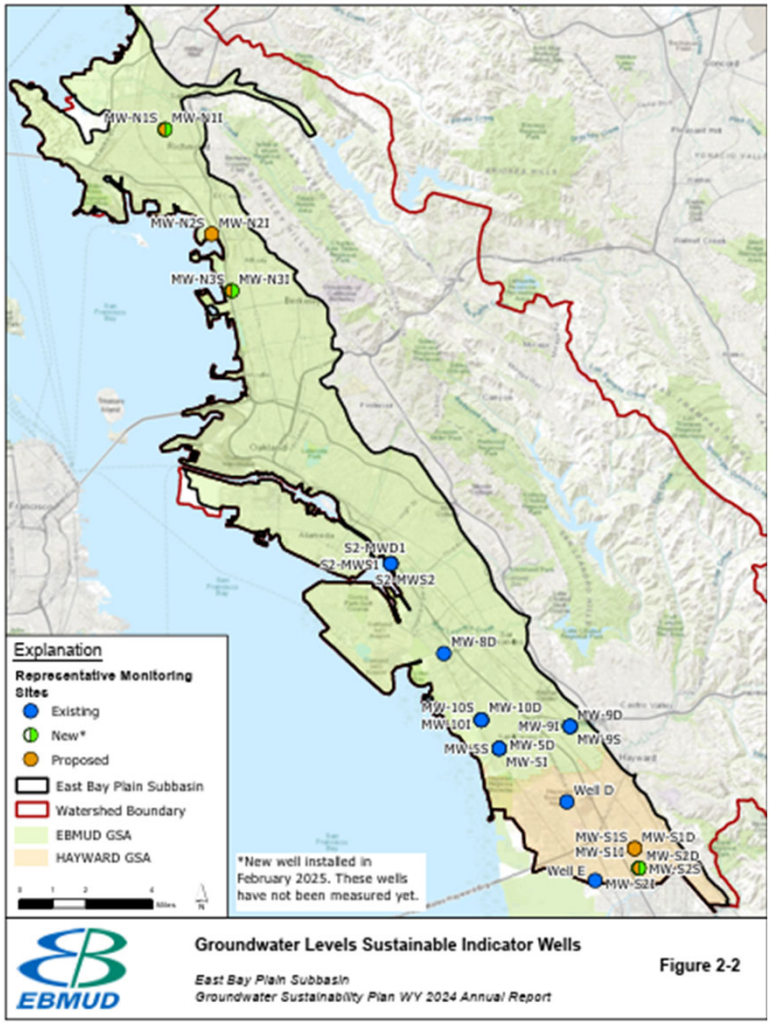
- Groundwater data collected from RMS wells will be analyzed and current conditions will be characterized

- This data will be compared to the established SMCs
  - Specifically, the data will be compared interim milestones to evaluate the Subbasin's progression towards its measurable objectives (MOs) for groundwater



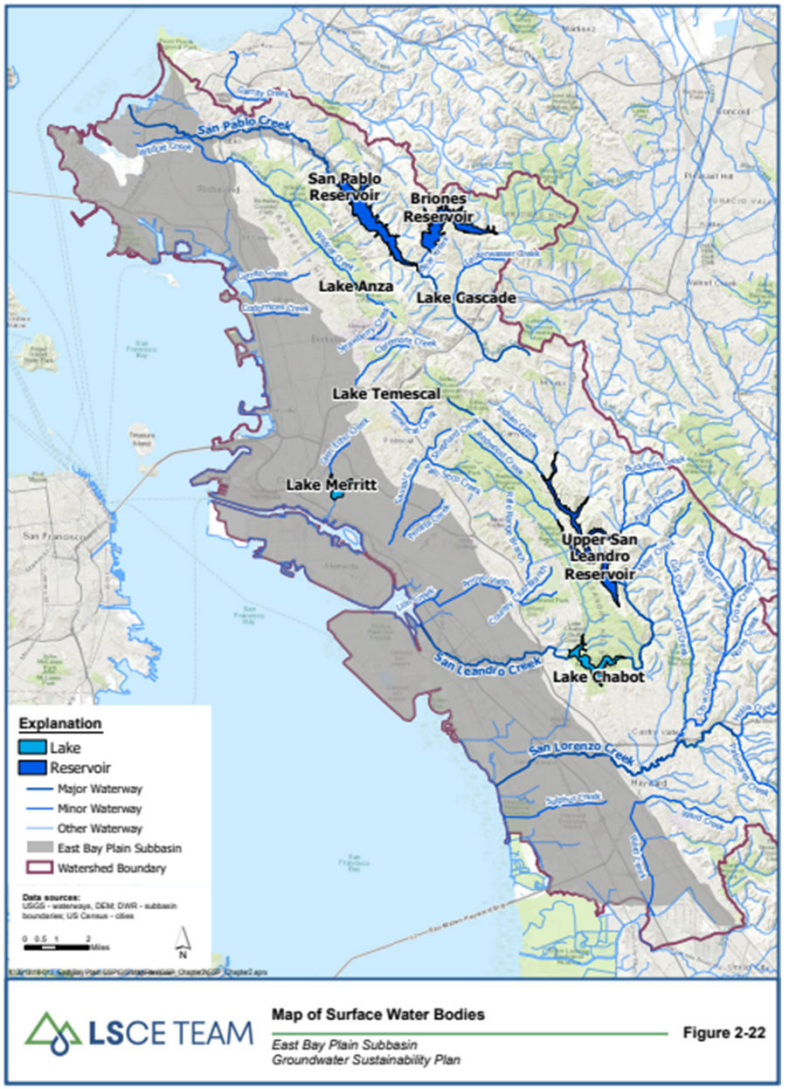
Monitoring Networks

- Groundwater Levels
  - GSP: 12 proposed monitoring wells at 5 locations (3 double completion and 2 triple completion wells)
  - Completed: 3 new wells (single completion) were drilled at 3 different locations
  - Evaluate need for all remaining wells to be installed and assess potential for smaller number of wells to be installed



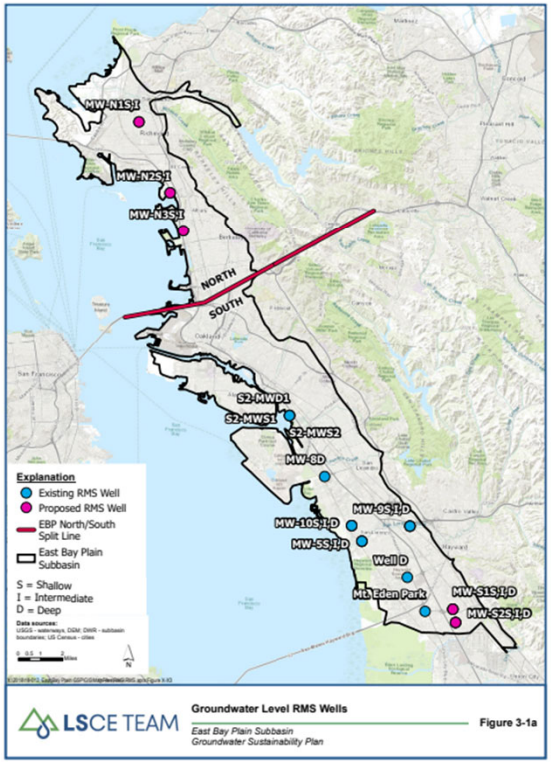
Monitoring Networks

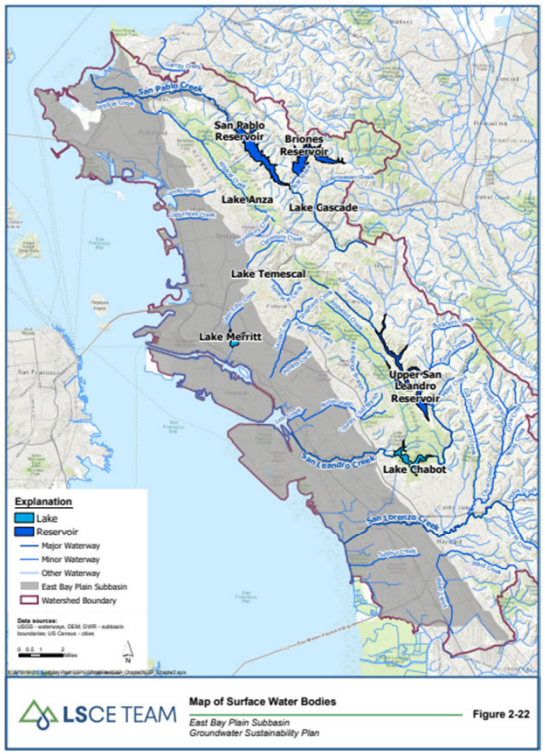
- Interconnected Surface Water
  - GSP: Up to 10 shallow monitoring wells (50 ft deep) near major creeks
  - Completed: None
  - Evaluate available data to determine locations of wells and number of wells required resulting in recommendations on how to best fill this data gap



Basin Setting Updates

- New information that has been collected will be utilized to refine the hydrogeologic conceptual model. This information includes:
  - Water level and water quality data from RMS wells
  - Three new RMS wells
  - Stream isotope study
  - Groundwater isotope study
  - GDE biological monitoring





GDE Biological Monitoring

- Review Existing Study: Reassess ESA's GDE report using updated data on estuarine and near-shore hydrogeology and habitats.
- Data Analysis: Analyze hydrologic, hydrogeologic, and biotic data to confirm groundwater dependence of potential GDEs.
- Modeling: Use the EBPGWM to simulate groundwater conditions and assess potential pumping impacts on GDEs.
- **Results:** Refine the GDE list as needed and recommend management strategies

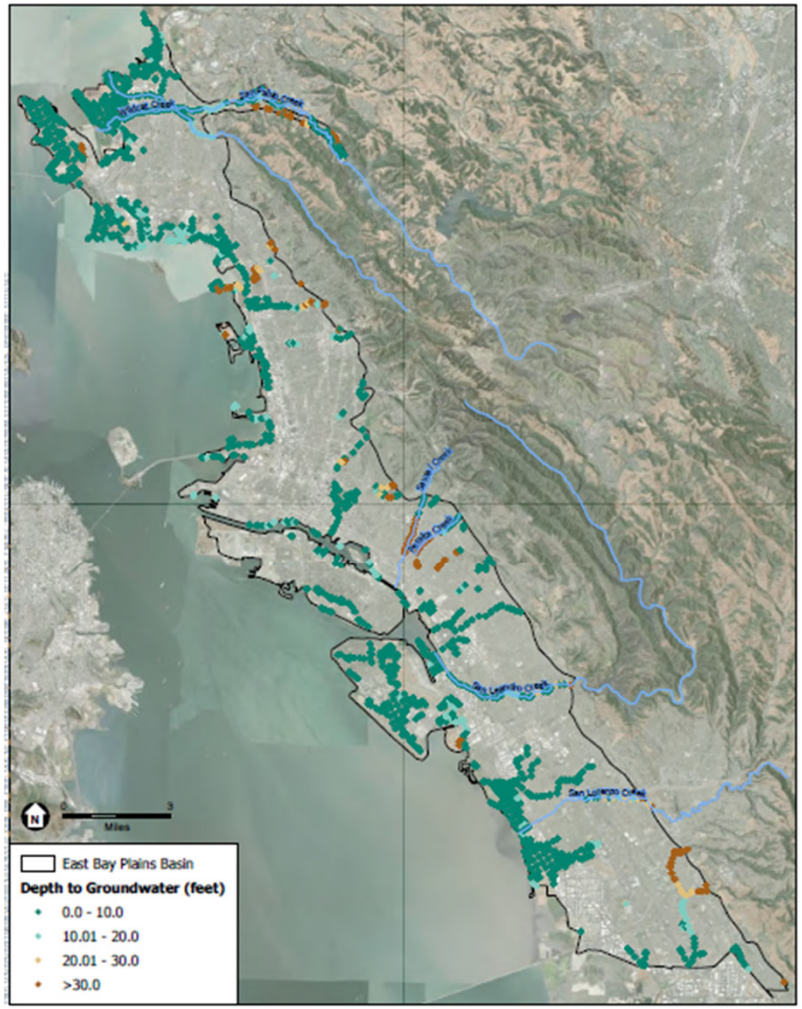


Figure 2
Map of Depth to Groundwater of Potential GDEs

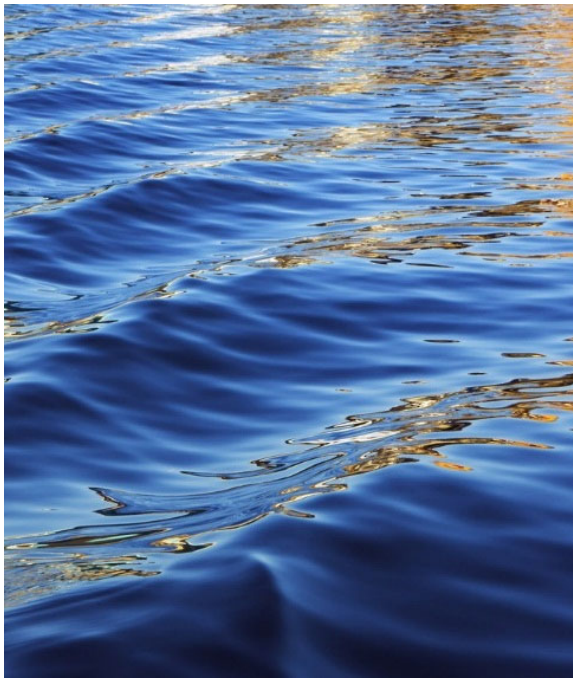
Basin Plan Amendment

- Integration of Updates
  - Revise the GSP to reflect findings from addressing DWR's corrective actions and GSP implementation activities, including updates to SMC, RMS networks, and GDE evaluations.
  - Reassess and refine Projects and Management Actions (PMAs) based on new data and priorities.

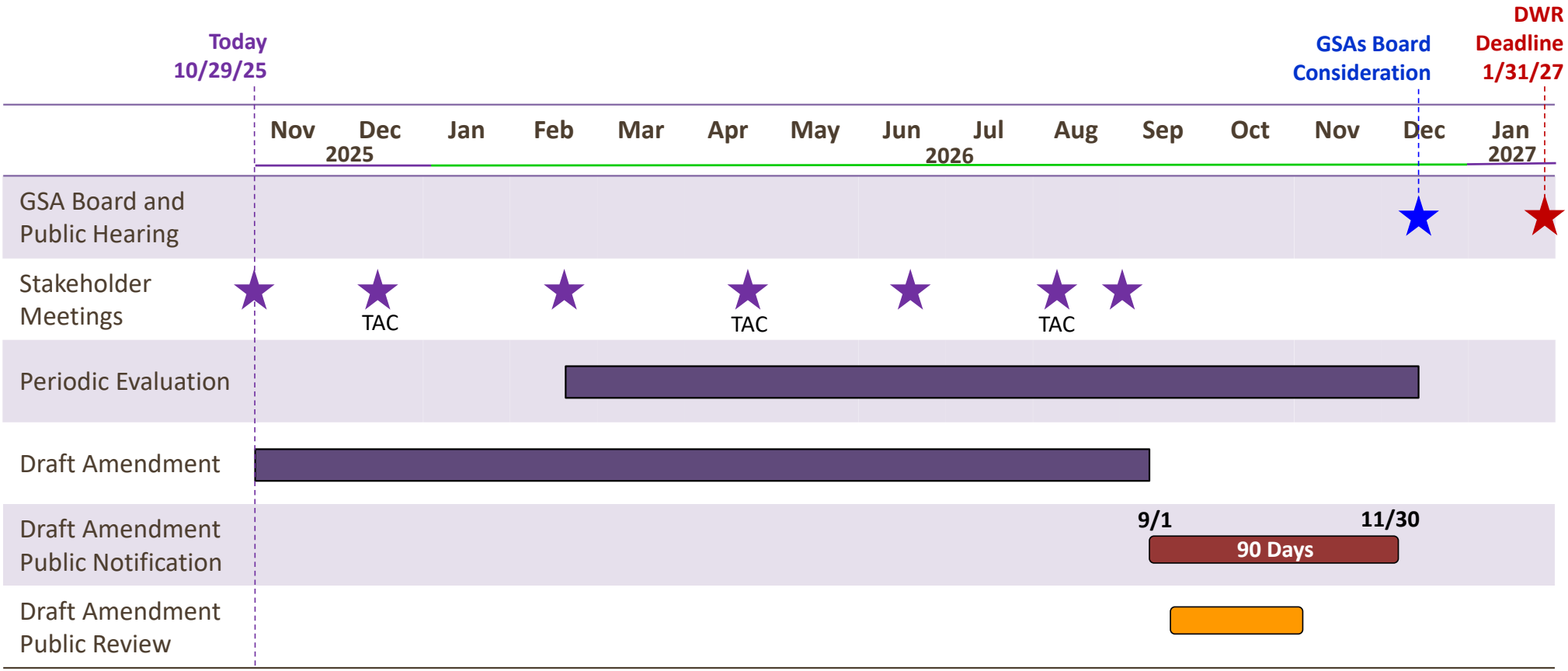
- Quality Assurance
  - Conduct a final quality assurance review to ensure data accuracy, consistency, and alignment with regulatory requirements.

- Public Review
  - Prepare a red-lined draft of the amended GSP for public review and comment.
  - Incorporate feedback from stakeholders and the public into the final document.

Next Steps

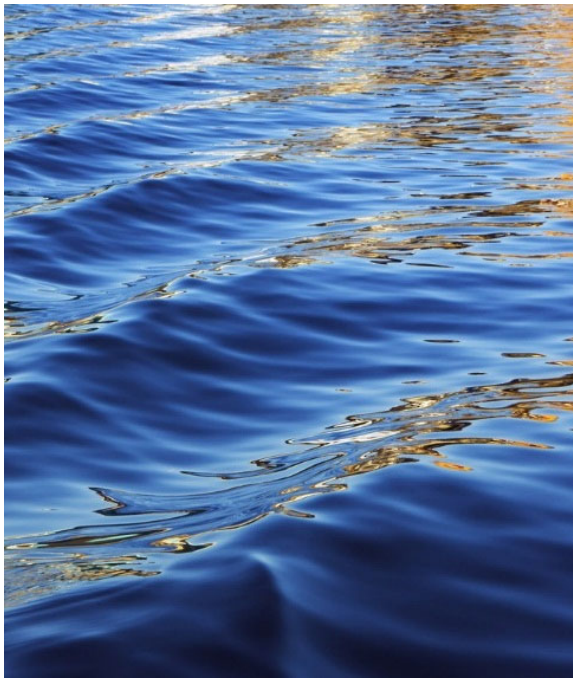


Schedule



TAC = Technical Advisory Committee

DWR Updates



Comments and Questions