

East Bay Plain Subbasin Groundwater Sustainability Plan (GSP) Periodic Evaluation and Amendment

General Stakeholders Meeting
September 14, 2026



Meeting Objectives

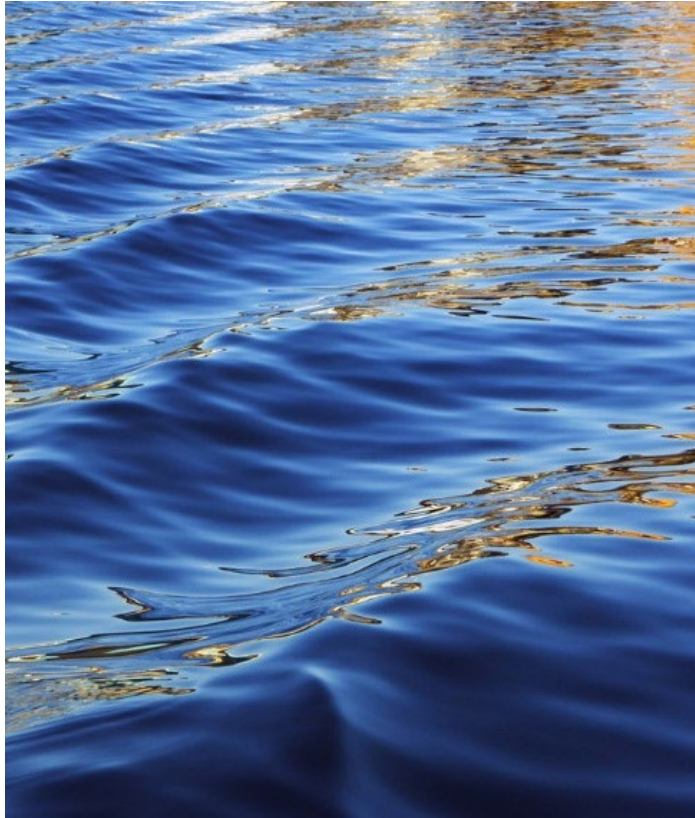
- Review and discuss key updates to the GSP Amendment for the East Bay Plain Subbasin
- Discuss upcoming release of draft GSP Amendment and the public review schedule
- Gather input from stakeholders

Agenda

- Welcome & Introductions
- East Bay Plain Subbasin GSP Background
- GSP Amendment Updates
 - DWR recommended corrective actions and proposed resolutions
 - Land subsidence sustainable management criteria updates
 - Groundwater-dependent ecosystems
 - Interconnected surface water depletions
 - Representative monitoring site network
- Comments & Questions
- Next Steps
- DWR Updates



East Bay Plain Subbasin GSP Background



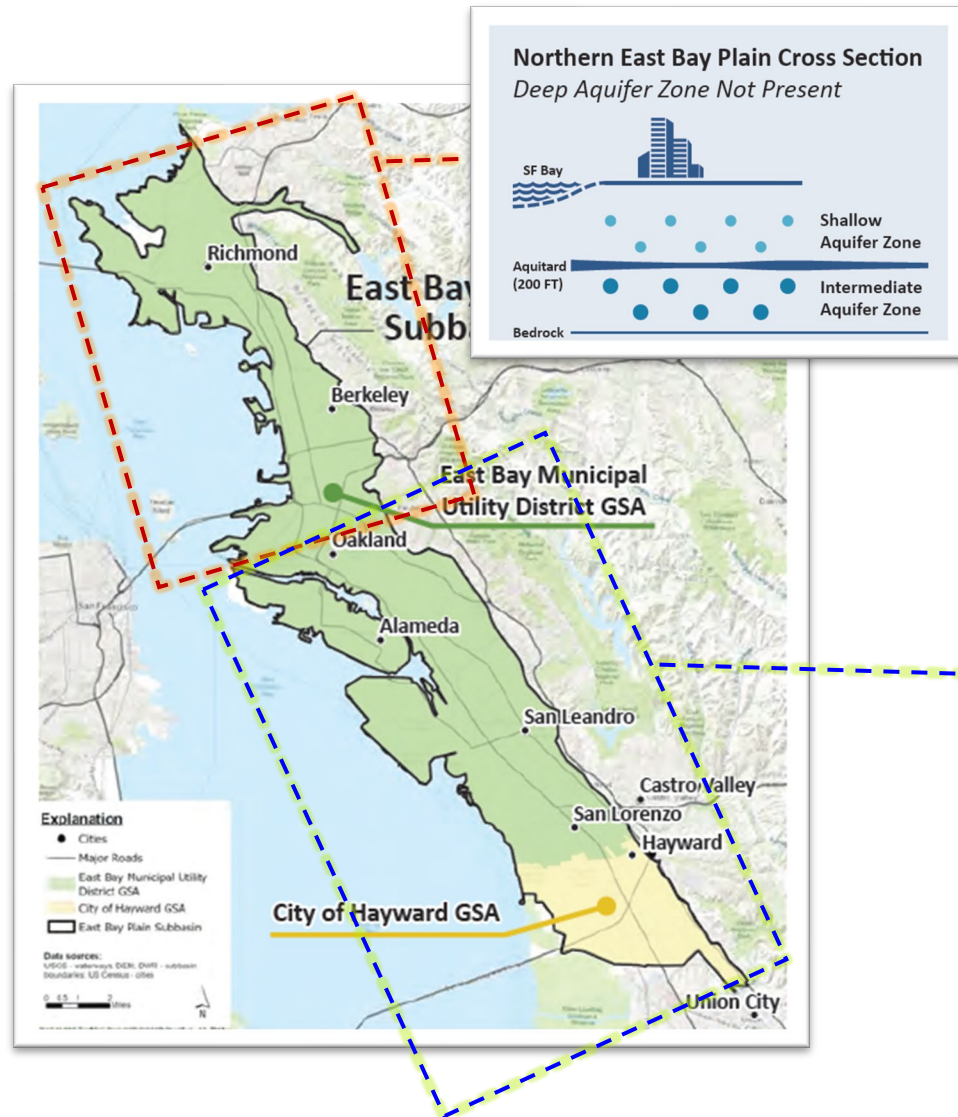
East Bay Plain Subbasin



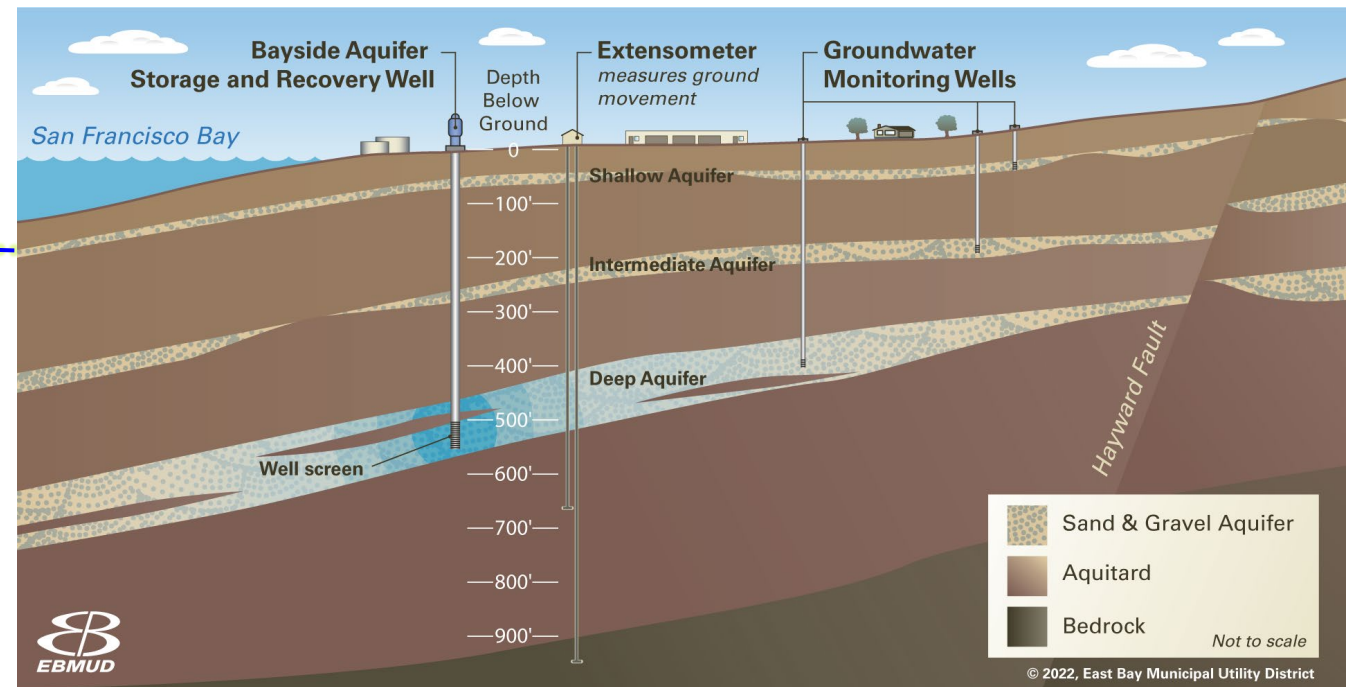
- East Bay Plain (EBP) Subbasin is managed by EBMUD GSA and the City of Hayward GSA
- Medium-priority basin
- Primarily urban (94%)
- Limited groundwater pumping of around 3,600 acre-feet annually, primarily for irrigation and industrial uses
- 2022 EBP Subbasin GSP approved by DWR in July 2023 with 9 recommended corrective actions
- Subbasin is sustainable under current conditions relative to the six sustainability indicators

*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



GSP Periodic Evaluation and Amendment

- SGMA requires a periodic evaluation of the GSP every 5-years to assess implementation, GW conditions, and progress on meeting the sustainability goal
- Evaluation indicated that the GSP needs to be amended to:
 - Address DWR's recommended corrective actions to revise select sustainable management criteria
 - Refine potential groundwater-dependent ecosystem (GDE) areas and monitoring recommendations
 - Estimate stream depletion rates
 - Re-evaluate representative monitoring network
- Both documents due to DWR by January 31, 2027

GW: Groundwater

ISW: Interconnected Surface Water

SGMA: Sustainable Groundwater Management Act

EBP Subbasin Sustainability Goal

- ✓ Manage & protect the 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



Lowering
GW Levels



Reduction
of storage



Seawater
Intrusion



Degraded
Quality

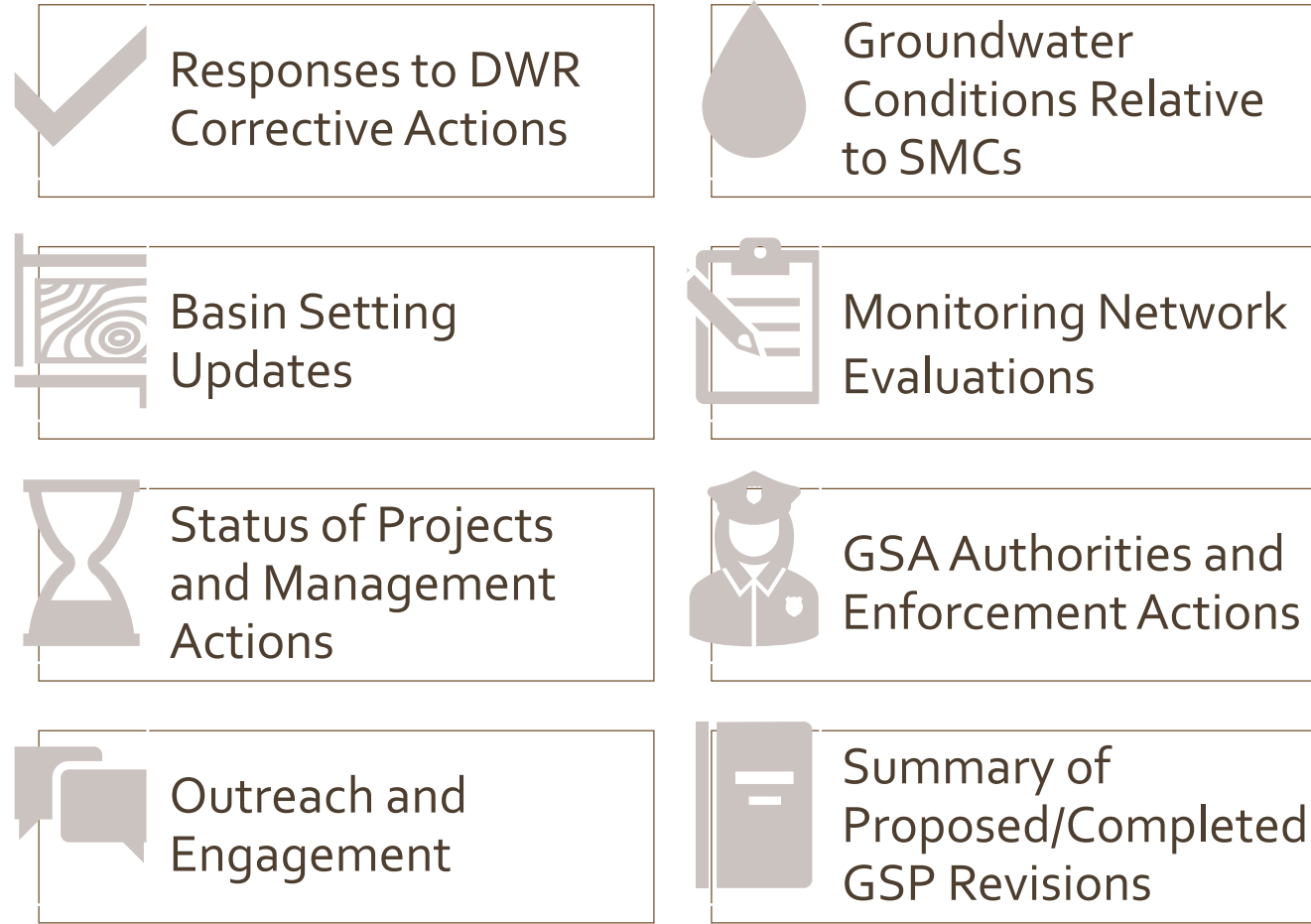


Land
Subsidence



ISW
Depletion

Major Components of the Periodic Evaluation



GSP Content and Structure

CHAPTERS

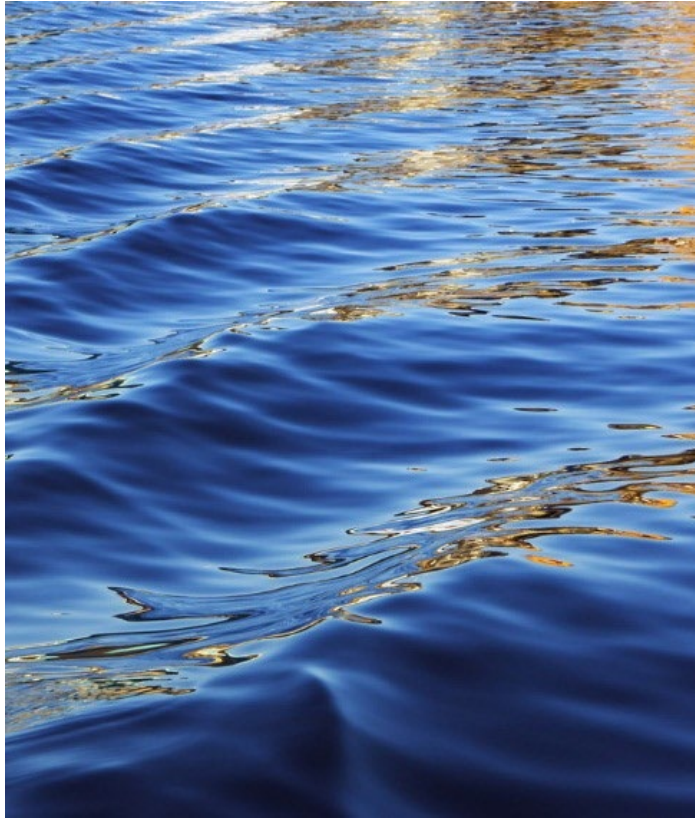
- 1. Introduction**
 - Describes EBP Subbasin GSAs and GSP development
- 2. Basin Setting**
 - Summarizes Plan area and basin setting including hydrogeologic conceptual model
- 3. Sustainable Management Criteria**
 - Defines Subbasin sustainability goal and metrics to maintain sustainability
- 4. Projects and Management Actions**
 - Describes water supply development opportunities and implementation actions instead of projects and management actions since the Subbasin is sustainable
- 5. Plan Implementation**
 - Describes the Plan's implementation strategy, costs, and schedule

APPENDICES

- 1. Introduction**
 - Includes GSAs formation notices and GSAs cooperating and implementation agreements
- 2. Basin Setting**
 - Includes technical memos and data related to basin setting along with notices and communications
- 3. Sustainable Management Criteria**
 - Includes supporting data for the SMC developed for the six sustainability indicators
- 4. Projects and Management Actions**
 - Supporting information for water supply development opportunities and implementation actions
- 5. Plan Implementation**
 - None
- 6. References and Technical Studies**
 - Includes documentation on the groundwater model and studies conducted



GSP Amendment Updates



DWR Recommended Corrective Actions & Proposed Resolutions

Corrective Action	Proposed Resolution	Where Addressed
1a. Provide seawater intrusion conditions, including maps and cross-sections.	- Chloride concentration maps have been added - Cross-sections were not developed due to lack of observed seawater intrusion	Appendix 3.C
1b. Identify interconnected surface water systems and estimate the quantity and timing of depletions.	- Modeling was conducted to identify interconnected systems and estimate depletions for a future scenario with increased pumping - Stream isotope study was completed in 2023, but more data is needed to fill gaps (see #8c).	- Groundwater Modeling Appendix 6.E - Isotope Study: Section 2.2.2.6
2. Explain how the groundwater model represents the San Francisco Bay saline water and the water budget boundary.	- Groundwater model does not simulate Bay salinity, but it can be included in future model updates - Subbasin boundary is used for the water budgets.	Section 2.2.3

DWR Recommended Corrective Actions & Proposed Resolutions

Corrective Action	Proposed Resolution	Where Addressed
3. Revise the SMC for chronic lowering of groundwater levels, land subsidence, and depletions of interconnected surface water to be based on fall groundwater levels.	• SMC for groundwater levels revised to using fall levels and subsidence updated to using satellite radar data • Surface water depletion SMC to be updated in the future after the DWR guidance document is released (before or as part of the next 5-year GSP update; see #8)	• Levels: Section 3.2.1 • Subsidence: Sections 3.2.4, 3.3.4, 3.4.4 & 3.5.1.4
4. Explain how groundwater levels thresholds below sea level will avoid undesirable results for the seawater intrusion.	• SMC for seawater intrusion has been updated from using movement of groundwater elevation contour as a proxy to monitoring chloride concentrations in sentinel wells (see #5)	• Sections 3.2.3, 3.3.3, 3.4.3 & 3.5.1.3
5. Establish SMC and monitoring necessary for seawater intrusion using a chloride iso-contour as per the GSP Regulations.	• SMC updated to monitor chloride in sentinel wells near SF Bay to provide early warning of potential seawater intrusion	• Sections 3.2.3, 3.3.3, 3.4.3 & 3.5.1.3

DWR Recommended Corrective Actions & Proposed Resolutions

Corrective Action	Proposed Resolution	Where Addressed
6. Revise the definition of degraded groundwater quality undesirable results to include all groundwater extraction rather than limited to GSA-related management activities.	• Definition revised to be inclusive of all extraction	• Section 3.2.5
7a. Provide evidence that land subsidence is absent or establish SMC as required by GSP regulations.	• Subsidence SMC updated from using groundwater levels as a proxy to using the satellite radar dataset managed by DWR	• Sections 3.2.4, 3.3.4, 3.4.4, & 3.5.1.4
7b. Reevaluate to ensure water level minimum thresholds simultaneously avoid chronic lowering of groundwater levels and land subsidence.		

DWR Recommended Corrective Actions & Proposed Resolutions

Corrective Action	Proposed Resolution	Where Addressed
8a. Reevaluate the minimum threshold requirement that avoids dewatering of surface water.	The GSAs will update the SMC in the future after the DWR guidance has been released to avoid developing another interim criteria (before or as part of the next 5-year GSP update)	Not addressed in Amendment
8b. Use upcoming DWR guidance to set SMC for interconnected surface water.	Additional data to update the SMC is also still needed (see #8c)	
8c. Continue to fill data gaps and manage interconnected surface water depletions.	- Stream isotope study was completed in 2023 - Future shallow monitoring wells near key creeks and stream gages to be installed to fill data gaps	Section 2.2.2.6
8d. Coordinate with agencies and stakeholders to assess surface water depletion.	Ongoing meetings are being held	Appendix 6.C (see list of meetings held)
9. Provide a table and labeled map of wells to monitor seawater intrusion.	Map and table have been added	Figure 3-7 and Table 3-16

Land Subsidence SMC Updates

- Updated from using groundwater levels as a proxy to using vertical displacement estimates derived from Interferometric Synthetic Aperture Radar (InSAR) data provided by DWR

Minimum Threshold	Measurable Objective	Undesirable Result
Current conditions of no long-term subsidence and set at 0.1 foot* of annual subsidence	Current conditions of no long-term subsidence and set at 0.1 foot* of annual subsidence	25% or more RMS sites below MT for two consecutive years

*0.1 foot accounts for uncertainty associated with InSAR satellite dataset

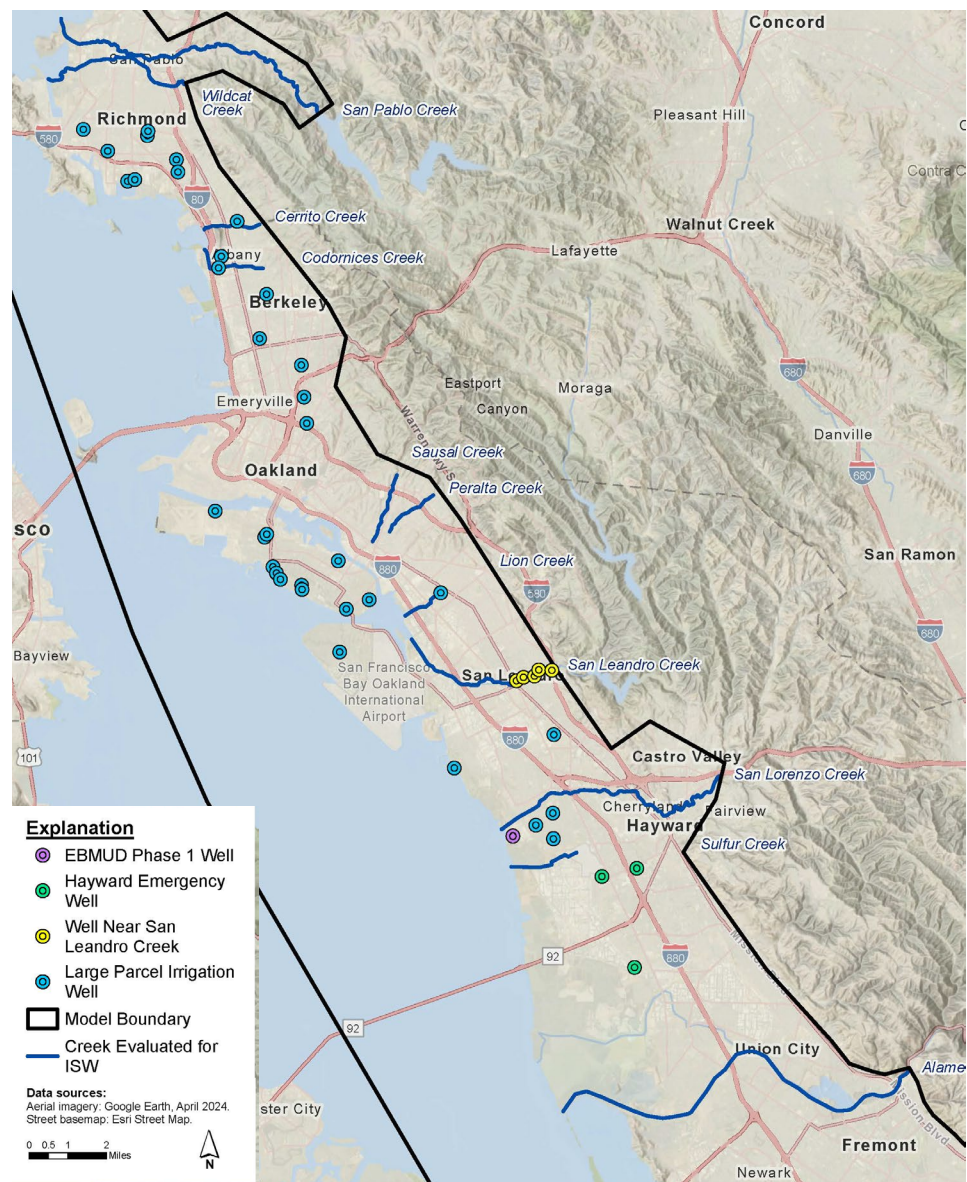
Groundwater Dependent Ecosystems (GDEs)

- Coastal GDEs Key Takeaways
 - Aquatic Park and Lake Merritt determined not to be GDEs; water bodies connected to SF Bay
 - For Aquatic Park, adjacent habitats near the shoreline are potential GDEs
 - Other coastal potential GDEs remain; however, very limited to no potential for GW pumping impact
- Monitoring recommendations
 - Use satellite-based methods (e.g., NDVI) for monitoring overall potential GDE health
 - Targeted field monitoring with focus on San Pablo and San Leandro Creeks
 - Integrate GDE field monitoring to extent possible with ISW monitoring
 - Updated seawater intrusion SMC to monitor chloride concentrations in sentinel wells near the SF Bay implicitly protects coastal GDEs

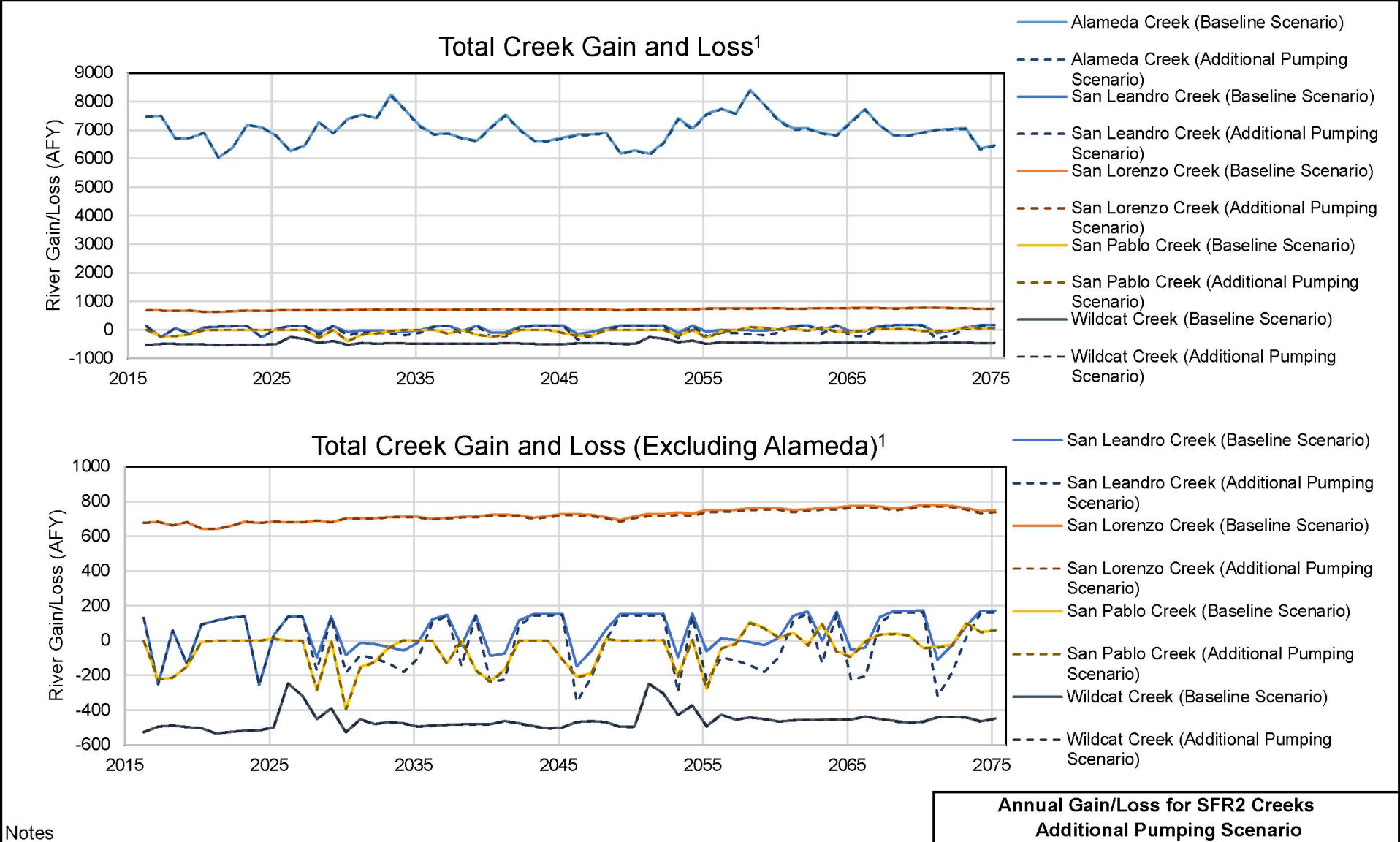
Interconnected Surface Water Depletions

- Preliminary modeling results evaluating location, timing, and amount of surface water depletion differences between future baseline and future scenario
- Focus was on San Pablo Creek and San Leandro Creek, along with simulation of Wildcat Creek and San Lorenzo Creek.
- More limited evaluation of Codornices, Lion, and Sulphur Creeks

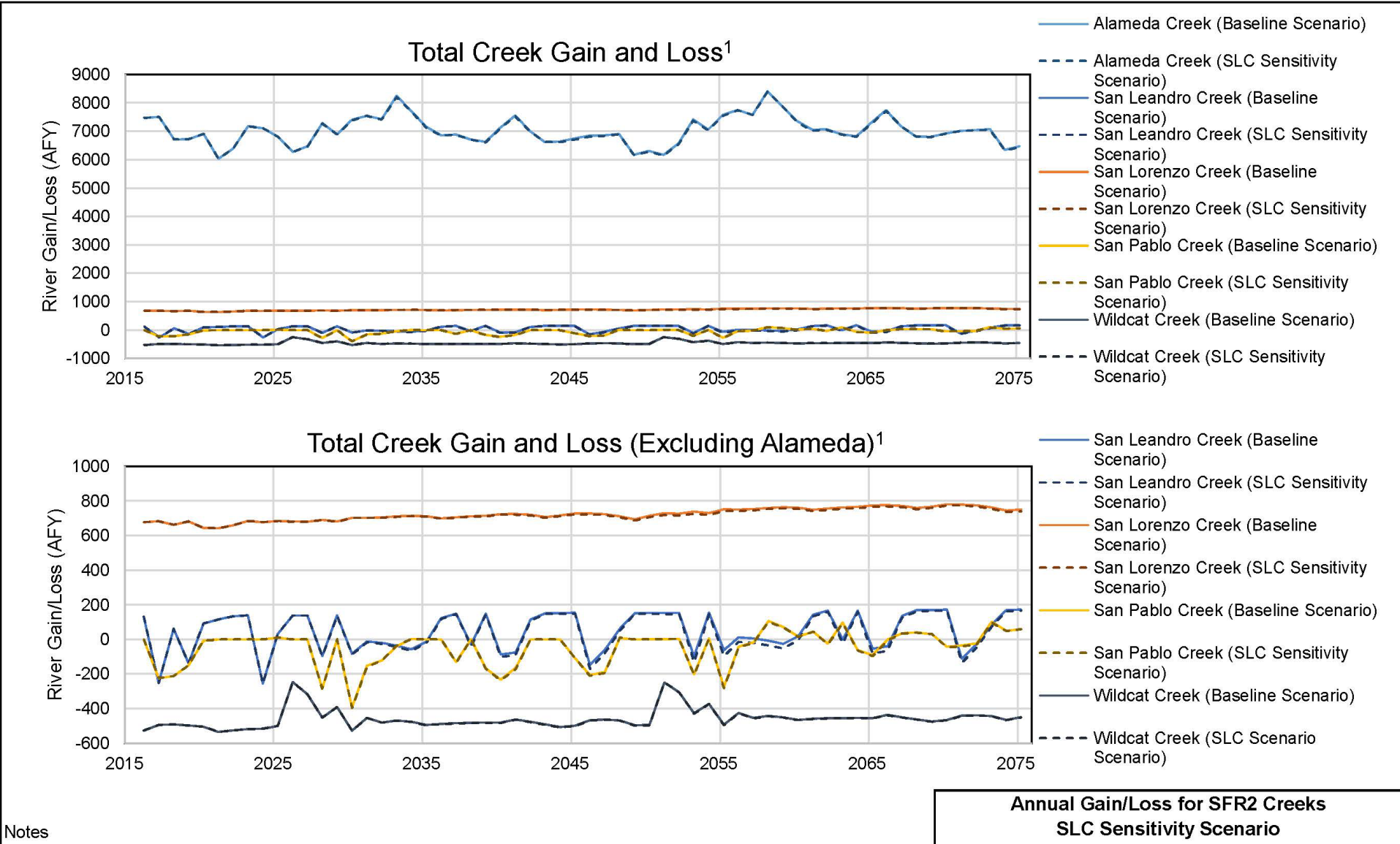
Interconnected Surface Water Depletions



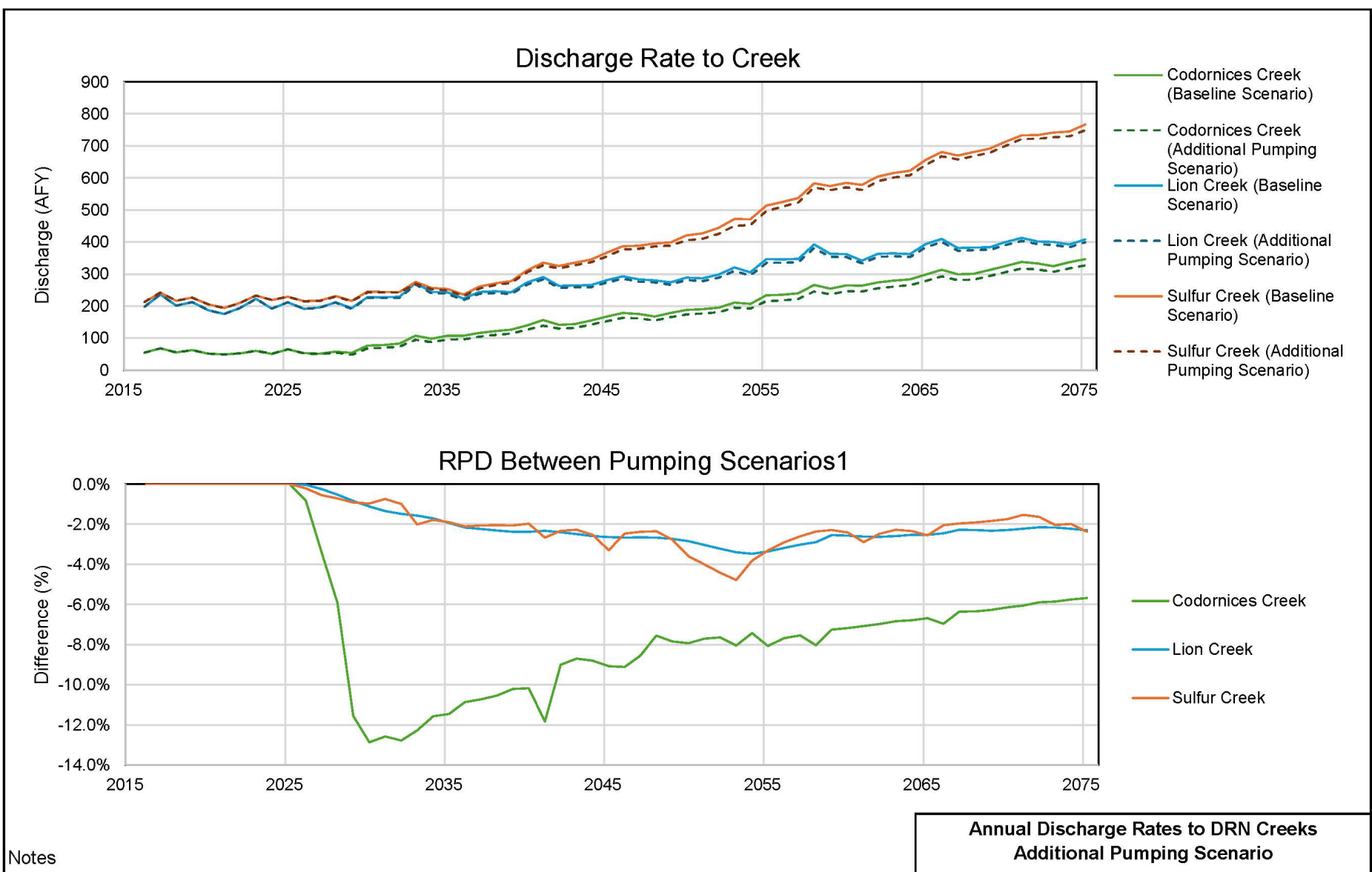
Interconnected Surface Water Depletions



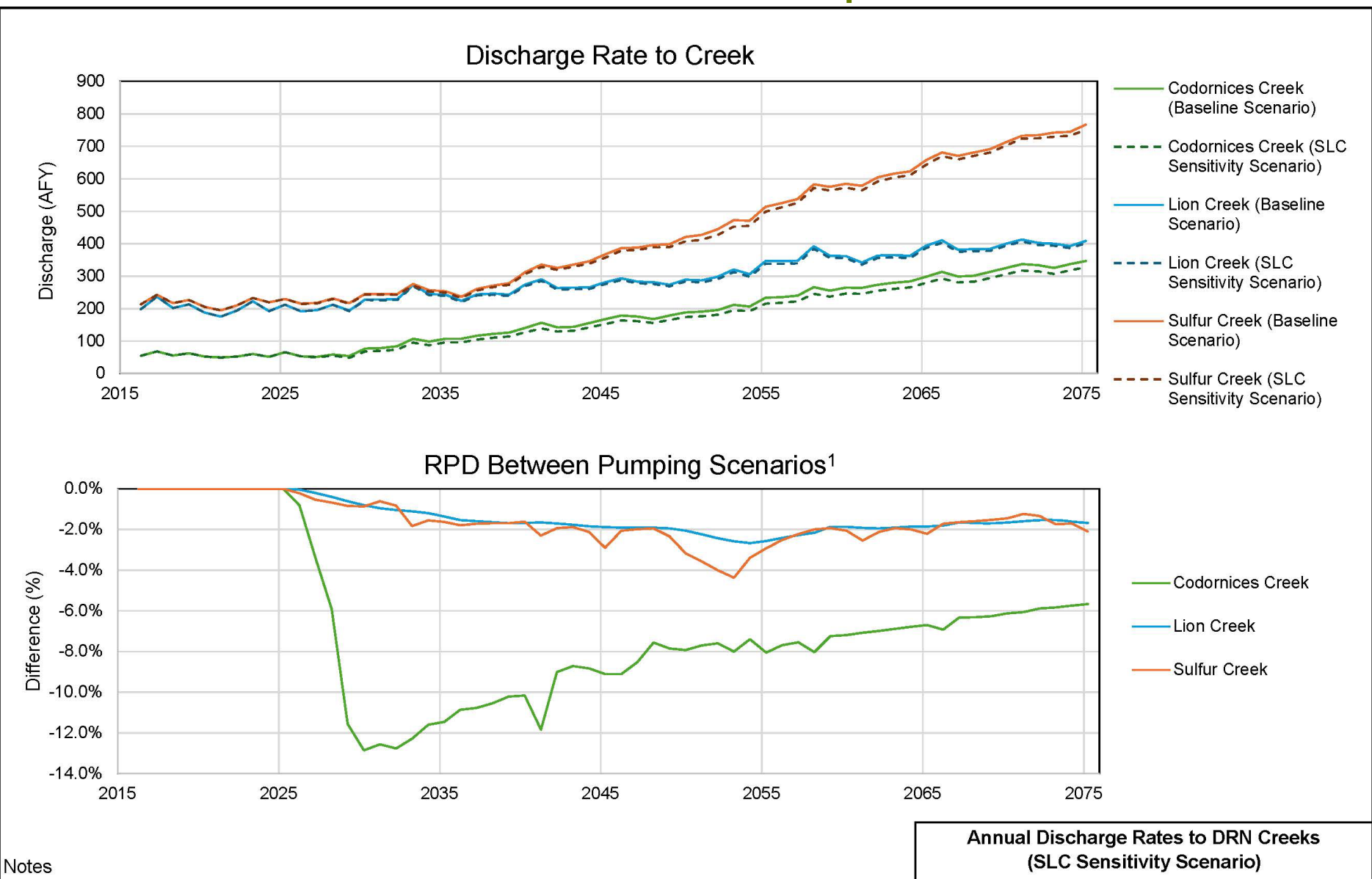
Interconnected Surface Water Depletions



Interconnected Surface Water Depletions



Interconnected Surface Water Depletions



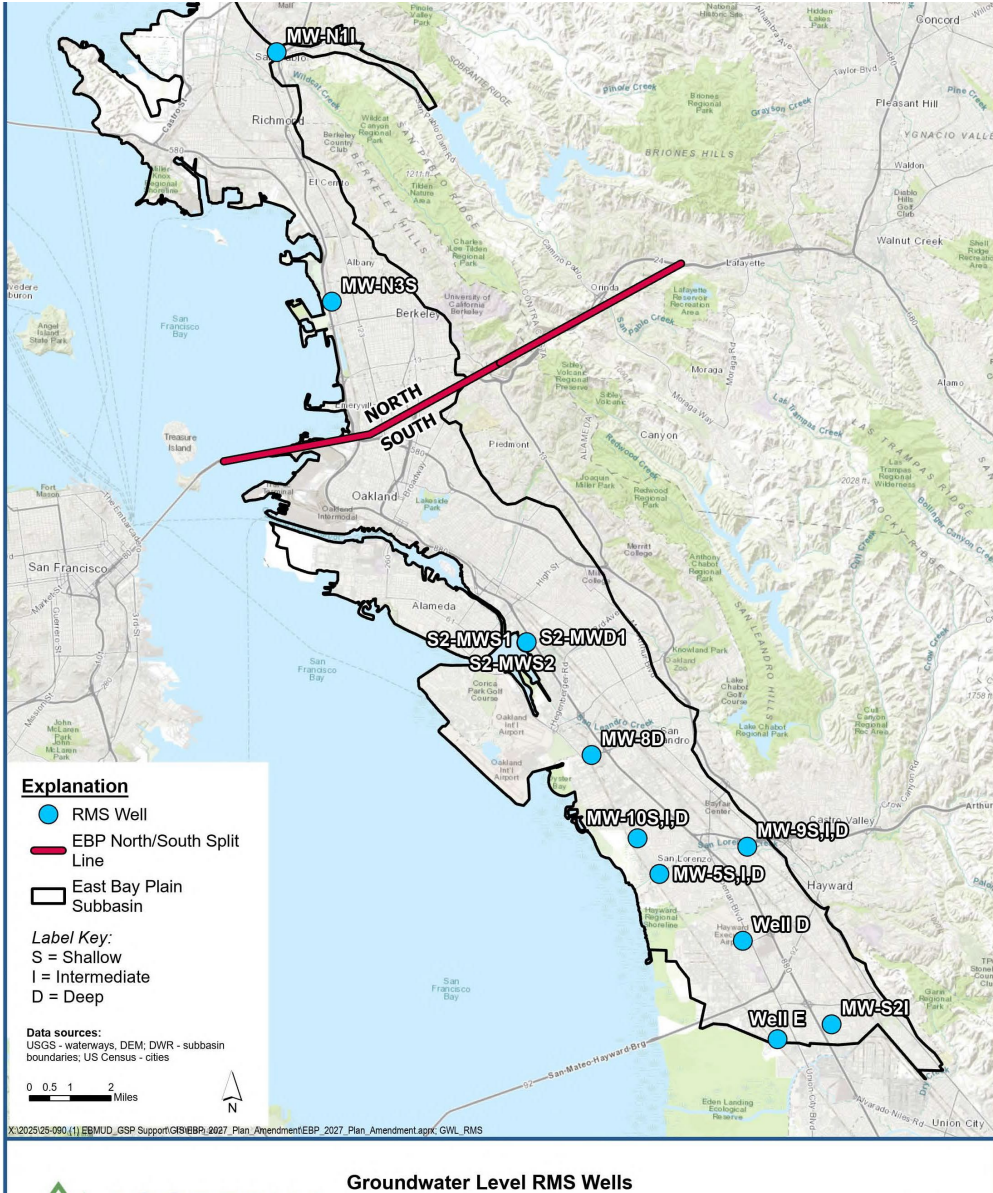
Interconnected Surface Water Depletions - Summary

- Differences in EBP Subbasin stream depletion for the Additional Pumping future scenario are minimal (less than about 10 AFY) except for along San Leandro Creek
- Differences in stream depletion for the Additional Pumping future scenario for San Leandro Creek range from 0 to approximately 200 AFY
- Differences in stream depletion for the SLC Sensitivity future scenario range from 0 to approximately 30 AFY.
- Simulated flow reductions in Lion Creek and Sulphur Creek ranged from 5 to 20 AFY.
- Simulated flow reductions in Cordonices Creek ranged from about 15 to 20 AFY

Representative Monitoring Site Network

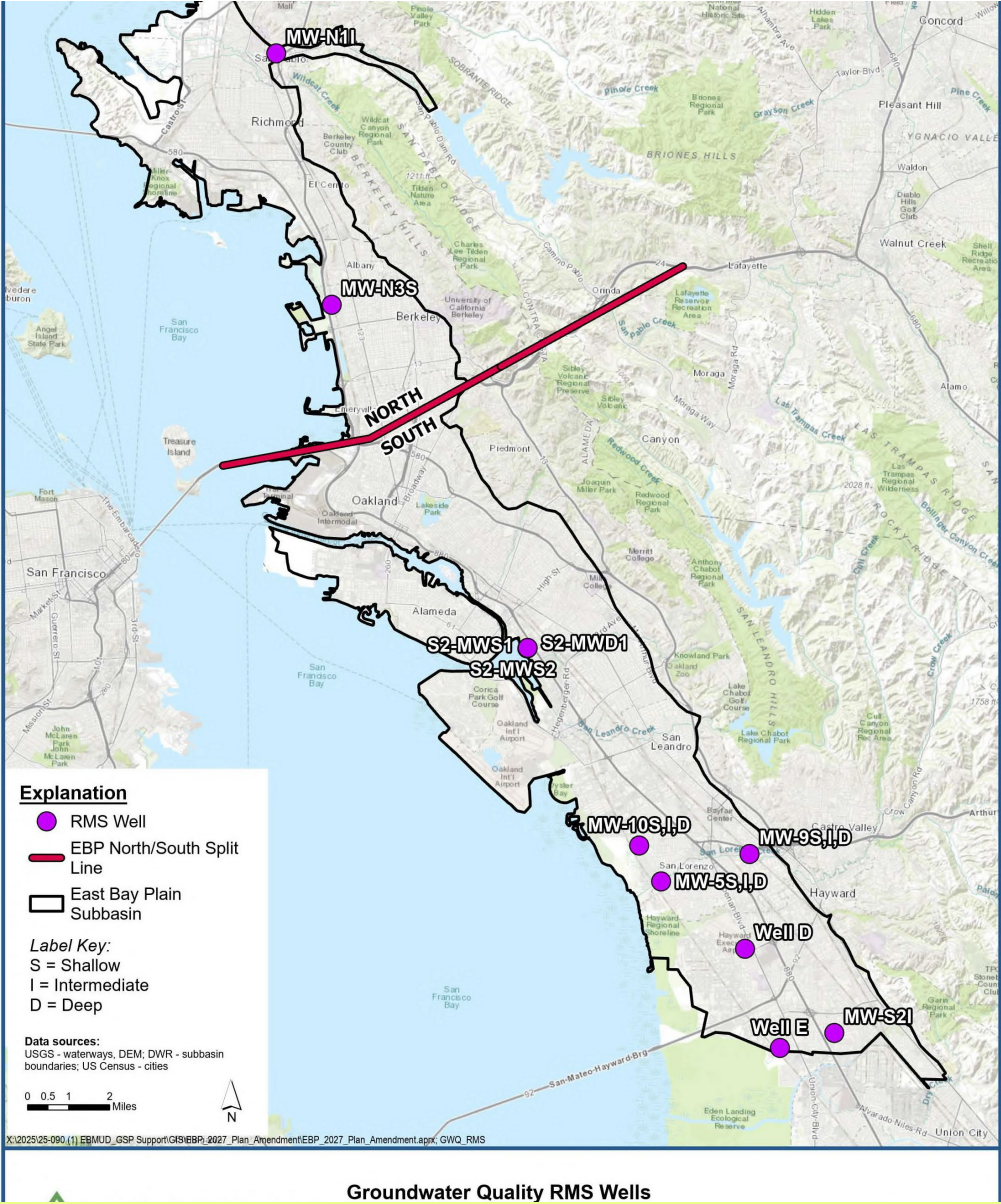
- Conducted an updated evaluation for minimum monitoring well density based on geographic size and total groundwater pumping in EBP Subbasin
- Monitoring well density analysis indicated a minimum of 1 to 2 wells are needed for each aquifer in the EBP Subbasin
- The updated RMS network for groundwater levels and quality includes 6 monitoring wells for each aquifer; a total of 18 monitoring wells for the basin overall
- A supplemental network of monitoring wells, in addition to the RMS network, has also been established

Representative Monitoring Site Network



Groundwater Level RMS Wells

Representative Monitoring Site Network

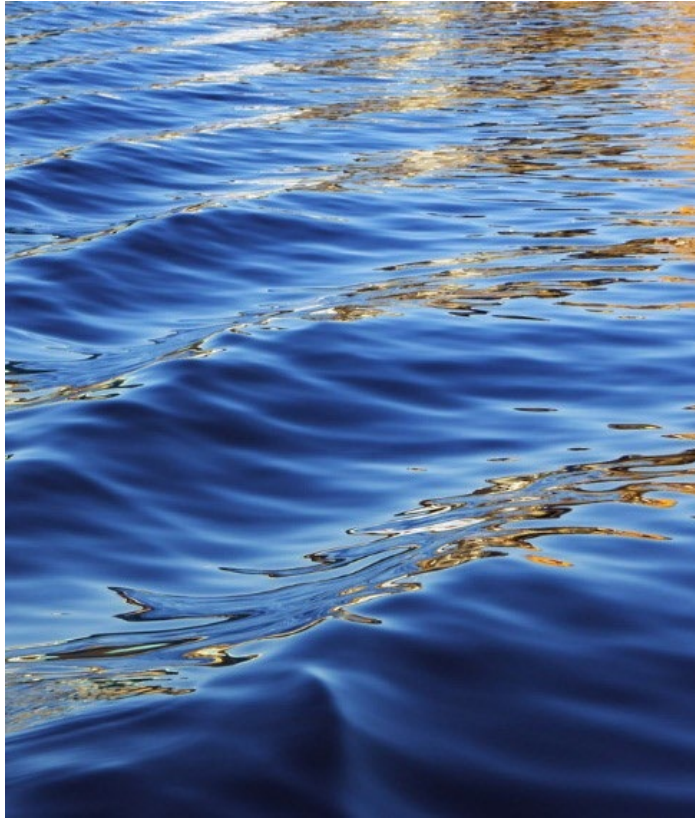




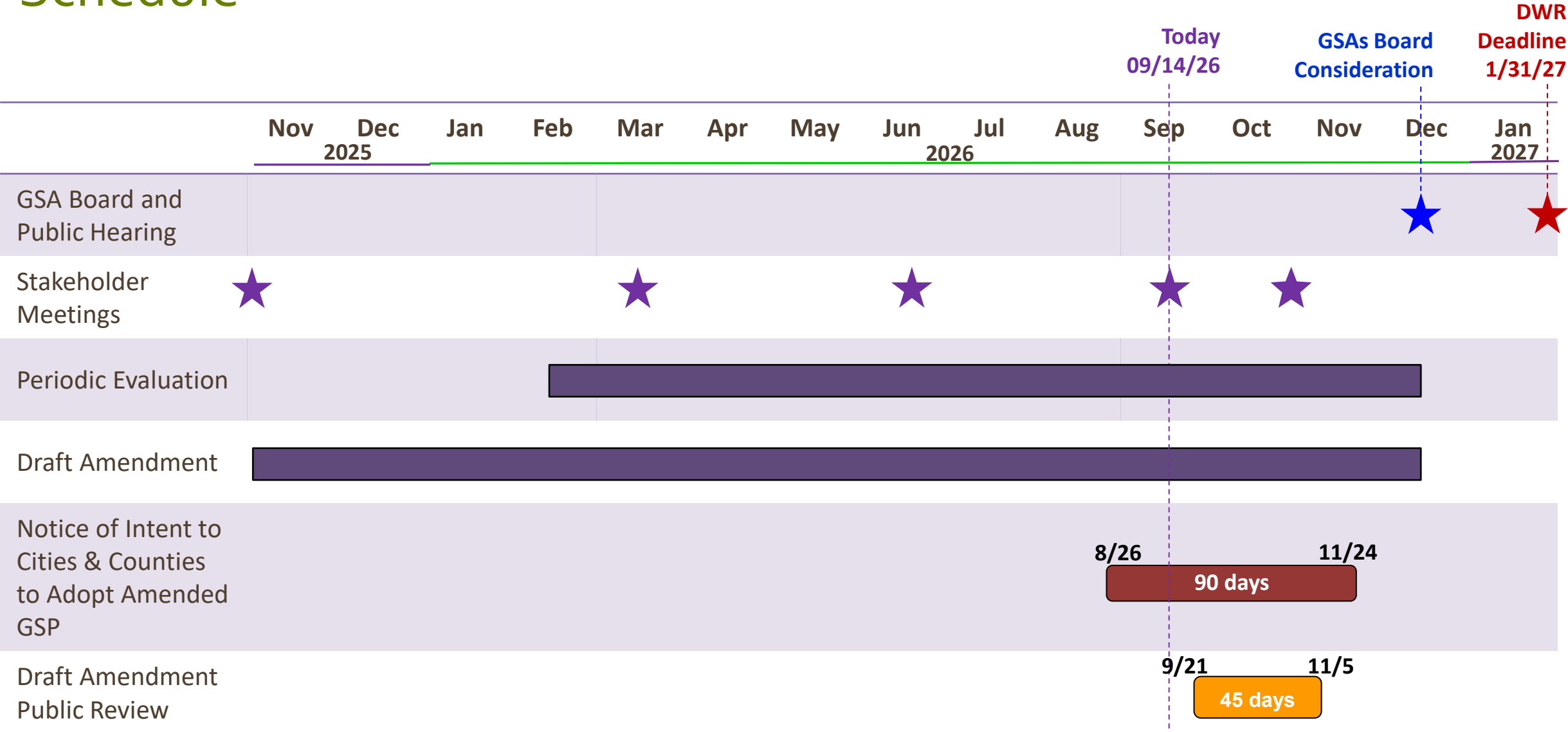
Comments and Questions



Next Steps



Schedule



Key Dates for General Stakeholders

Anticipated Upcoming Stakeholders Meetings

- Late October meeting to answer questions and gather input on draft GSP Amendment

Draft GSP Amendment for Public Review

- Released on September 21
- Comments due by November 5

EBMUD Board and Hayward City Council Public Hearings and Consideration of Adopting GSP Amendment

- December 1: Hayward City Council
- December 8: EBMUD Board of Directors

Web Resources

- EBMUD and City of Hayward SGMA Webpages
 - www.ebmud.com/sgma
 - www.hayward-ca.gov/your-government/departments/utilities/sustainable-groundwater-management
- East Bay Plain Subbasin Data Management System
 - <https://eastbayplaindms.com/>
- Sustainable Groundwater Management Act Portal
 - <https://sgma.water.ca.gov>



DWR Updates

