ZONE 7 WATER AGENCY
Delivering Quality, Reliability and Safety

SECOND PERIODIC EVALUATION

Livermore Valley Groundwater Basin

DRAFT – October 2026
EKI C20037.06

Second Periodic Evaluation

Livermore Valley Groundwater Basin

DRAFT – October 2026

Prepared for:

Zone 7 Water Agency

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Second Periodic Evaluation

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ABBREVIATIONS AND ACRONYMS

AEM	Airborne Electromagnetic (Survey)
AF	acre-feet
AFY	acre-feet per year
AWSMM	Advanced Water Supply Management Model
BARDP	Bay Area Regional Desalination Project
BMP	Best Management Practice
CCR	California Code of Regulations
CCWD	Contra Costa Water District
CEQA	California Environmental Quality Act
COC	Constituents of Concern
COLCS	Chain of Lakes Conveyance System
CrVI	Hexavalent Chromium
DCP	Delta Conveyance Project
DCR	Delivery Capability Report
DSRSD	Dublin San Ramon Services District
DWR	California Department of Water Resources
EKI	EKI Environment & Water, Inc.
e-log	borehole electric geophysical log
EPA	United States Environmental Protection Agency
ERT	Electrical Resistivity Tomography
ft bgs	feet below ground surface
ft msl	feet above mean sea level
GDE	groundwater dependent ecosystems
GPQ	Groundwater Production Quota
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GWE	groundwater elevation
GWL	groundwater level
GWT	groundwater transport
HCM	Hydrogeologic Conceptual Model
HI	Hydrologic Inventory
HRL	Health Reference Level
IDC	Integrated Water Flow Model Demand Calculator
InSAR	Interferometric Synthetic Aperture Radar
ISW	Interconnected Surface Water
JPA	Joint Powers Authority
LBGFTM	Livermore Basin Groundwater Flow and Transport Model
LLNL	Lawrence Livermore National Laboratory
MCL	Maximum Contaminant Level
mg/L	milligrams per liter
MGDP	Mocho Groundwater Demineralization Plant
MO	Measurable Objectives

MOU	Memorandum of Understanding
MT	Minimum Threshold
NDMI	Normalized Difference Moisture Index
NDVI	Normalized Difference Vegetation Index
ng/L	nanograms per liter
NMP	Nutrient Management Program
P/MAs	Projects and Management Actions
PEST	Parameter ESTimation
PFAS	Per- and Polyfluoroalkyl Substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PWS	Public Water Systems
RCA	Recommended Corrective Action
RGD	Regional Groundwater Development
RMS	Representative Monitoring Sites
RMS-ISW	Representative Monitoring Sites for Interconnected Surface Waters
RMS-WL	Representative Monitoring Sites for Water Levels
RMS-WQ	Representative Monitoring Sites for Water Quality
RWQCB	Regional Water Quality Control Board
SBA	South Bay Aqueduct
SCEP	Stakeholder Communication and Engagement Plan
SGMA	Sustainable Groundwater Management Act
SMC	Sustainable Management Criteria
sTEM	Stationary Time-domain Electromagnetic (Survey)
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAF	thousand acre-feet
TDS	total dissolved solids
TSS	Toxic Sites Surveillance
µg/L	micrograms per liter
UR	Undesirable Results
UWMP	Urban Water Management Plan
WMP	Well Master Plan
WY	Water Years
Zone 7	Zone 7 Water Agency

EXECUTIVE SUMMARY

☑ ***§ 356.4 Periodic Evaluation by Agency***

Each Agency shall evaluate its Plan at least every five years and whenever the Plan is amended, and provide a written assessment to the Department. The assessment shall describe whether the Plan implementation, including implementation of projects and management actions, are meeting the sustainability goal in the basin...

☑ ***Water Code § 10728.2***

A groundwater sustainability agency shall periodically evaluate its groundwater sustainability plan, assess changing conditions in the basin that may warrant modification of the plan or management objectives, and may adjust components in the plan. An evaluation of the plan shall focus on determining whether the actions under the plan are meeting the plan's management objectives and whether those objectives are meeting the sustainability goal in the basin.

Zone 7 Water Agency (Zone 7) is the exclusive Groundwater Sustainability Agency (GSA) for the Livermore Valley Groundwater Basin (Basin). The California Department of Water Resources (DWR) approved Zone 7's 2021 Alternative Groundwater Sustainability Plan (2021 Alternative GSP) on 27 June 2024. This Second Periodic Evaluation assesses implementation of the 2021 Alternative GSP and Basin conditions over Water Years (WY) 2021 through 2025 (evaluation period) and accompanies the 2026 Alternative GSP. It summarizes new information collected, evaluates groundwater conditions relative to Sustainable Management Criteria (SMCs), and documents progress toward the Basin's Sustainability Goal under the Sustainable Groundwater Management Act (SGMA).

New Information Collected. Significant new information collected over the evaluation period includes:

- **Monitoring wells and instrumentation.** Zone 7 added wells to its Groundwater Level and Groundwater Quality Monitoring Programs in the Main Basin, installed a per- and polyfluoroalkyl substances (PFAS) nested sentinel monitoring well in 2024, and equipped 13 additional wells with transducers and data recorders.
- **Monitoring data.** Zone 7 began preliminary PFAS sampling in 2019 and in 2021 and has continued to develop and implement its PFAS monitoring program. Hexavalent chromium (CrVI) sampling was expanded to all Representative Monitoring Site for Water Quality (RMS-WQ) wells in 2026. These data supported preliminary SMCs for perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA), and CrVI.
- **Refined hydrogeologic conceptual model (HCM) and numerical groundwater model.** Zone 7 completed a refined Leapfrog 3D HCM in 2024 and the Livermore Basin Groundwater Flow and Transport Model (LBGFTM) in 2025 (EKI, 2026). The LBGFTM was used to update storage estimates, evaluate Interconnected Surface Water (ISW) conditions as well as establish preliminary ISW SMCs, and will be used to evaluate water budget components moving forward.

Groundwater Conditions and Progress Toward Sustainability. No Undesirable Results (URs) occurred for any Sustainability Indicator during the evaluation period, and the Basin continues to meet its Sustainability Goal. Conditions for each indicator are summarized below:

- **Chronic Lowering of Groundwater Levels.** Groundwater levels declined in dry years and recovered in wet years, with no long-term negative trend. No Minimum Threshold (MT) exceedances occurred at the 12 Representative Monitoring Sites for Water Levels (RMS-WLs), and no dry wells were reported. The SMCs are unchanged in the 2026 Alternative GSP.

- **Reduction of Groundwater Storage.** Sustainable storage (i.e., Main Basin storage above water level MTs) declined from approximately 81 thousand acre-feet (TAF) at the end of WY 2020 to approximately 66 TAF at the end of WY 2022, following two consecutive critically dry years. Storage recovered to approximately 95 TAF by the end of WY 2024 and remained above 94 TAF at the end of WY 2025, near the full Basin volume. Water levels remained above the MTs at RMS-WLs used as a proxy for storage.
- **Seawater Intrusion.** This indicator is not applicable to the Basin.
- **Degraded Water Quality.** Concentrations of constituents of concern (COCs) remained stable and consistent with historical conditions. The only MT exceedances were for total dissolved solids at one RMS-WQ; site 3S2E08H003) in WY 2021, 2022, and 2025. The 2026 Alternative GSP revises the preliminary CrVI SMCs to reflect the 10 micrograms per Liter (µg/L) Primary Maximum Contaminant Level (MCL) reinstated in October 2024 and establishes preliminary SMCs for PFOS and PFOA.
- **Land Subsidence.** No inelastic subsidence was observed in the Basin. Groundwater levels remain a protective proxy, with the additional land elevation change monitoring and 0.4-foot inelastic land subsidence criterion.
- **Depletions of ISW.** Groundwater levels remained above MTs at 12 of the 14 Representative Monitoring Sites for Interconnected Surface Waters (RMS-ISW) established in the 2021 Alternative GSP, with temporary exceedances of 0.06 to 1.03 feet at the other two. Consistent with DWR guidance, the 2026 Alternative GSP replaces the groundwater level SMCs with preliminary depletion rate SMCs at nine stream reaches, estimated using the LBGFTM. Remote sensing analysis indicates that the health of groundwater dependent ecosystems (GDEs) was stable or improved.

Status of Projects and Management Actions. Zone 7's Projects and Management Actions (P/MAs) include supplemental water supply, demand reduction, groundwater quality improvement, and data gap filling efforts. Conjunctive use remains the primary mechanism for maintaining groundwater sustainability: since WY 1974, Zone 7 has recharged approximately 33 TAF more than it has pumped. No Retailer exceeded its Groundwater Production Quota (GPQ) during the evaluation period. Zone 7 completed the refined HCM, the LBGFTM, and Phase I of a Decision Support Tool; completed a feasibility study and approved the Regional Groundwater Development (RGD) Project with the City of Pleasanton; and advanced planning for the Chain of Lakes Conveyance System (COLCS). Zone 7 developed a comprehensive PFAS Management Strategy and is developing a Basin Water Quality Management Plan in addition to its other ongoing water quality programs. Zone 7 continues to participate in the Delta Conveyance Project (DCP) and Sites Reservoir. While Zone 7 no longer considers potable reuse or the Bay Area Regional Desalination Project (BARDP) as planned future supply sources, these projects remain in exploratory planning. The Los Vaqueros Reservoir Expansion Project has been discontinued, and the reliability intertie is no longer in the ten-year water capital improvement program but may be reconsidered if a viable option becomes available. Water conservation remains ongoing, and Zone 7 is actively supporting the Retailers to achieve compliance with new “Making Conservation a California Water of Life” regulations.

Basin Setting, Water Use, and Water Budget. New geophysical surveys and borehole data supported an update to the HCM and largely confirmed the hydrologic boundary delineations identified in the 2021 Alternative GSP, except that the Livermore Thrust is now interpreted as an erosional feature rather than a fault. The LBGFTM replaces the prior numerical model developed using MODFLOW-NWT and extends coverage to the entire Basin. Land use is relatively unchanged. Groundwater pumping averaged

14,559 acre-feet per year (AFY) over WY 2021 through 2025, compared to 14,751 AFY over WY 2004 through 2020. Imported surface water contributed approximately 70% of water demand in WY 2025, consistent with historical operations. Expected State Water Project Table A reliability declined to between 54% under existing conditions to 48% under future modeled climate conditions (Draft 2025 Delivery Capability Report). The Basin is not in overdraft and continues to operate within its estimated Sustainable Yield of approximately 18,700 AFY.

Monitoring Network Assessment. The 12 RMS-WLs and 12 RMS-WQs are unchanged and provide sufficient spatial and temporal coverage. Transducers were installed in the eight Main Basin RMS-WLs, and five other monitoring wells. All Main Basin RMS-WLs now have transducers. Land Subsidence continues to be monitored through the RMS-WL network and annual Interferometric Synthetic Aperture Radar (InSAR) data. For Depletions of ISW, nine simulated stream segments from the LBGFTM now serve as RMS-ISW. Some of the former RMS-ISW shallow monitoring wells are retained as early warning wells to augment ISW monitoring, along with Zone 7's stream gauge network.

Plan Revisions. This Periodic Evaluation accompanies the 2026 Alternative GSP, which incorporates the following revisions:

- Establish preliminary SMCs for PFOA and PFOS.
- Revise the CrVI SMCs to reflect the reinstated 10 µg/L Primary MCL.
- Replace groundwater level SMCs for Depletions of ISW with depletion rate SMCs at nine simulated stream segments and revise the ISW monitoring network accordingly.
- Use the LBGFTM to estimate change in groundwater storage, replacing the less precise Groundwater Elevation Nodal and Hydrologic Inventory (HI) Methods. The HI remains in use for water budget evaluations.
- Update the HCM, groundwater conditions, and water budget using new data collected during the evaluation period.
- Remove two groups of previously identified GDEs from the list of likely GDEs, which are located in developed areas with depth to water greater than 30 feet.
- Update the status of P/MAs.

The SMCs for Chronic Lowering of Groundwater Levels and Land Subsidence are unchanged other than minor editorial revision to clarify their definitions.

Outreach and Engagement. Zone 7 engages beneficial users through monthly public Board meetings, stakeholder workshops, direct outreach, and its website, consistent with its Stakeholder Communication and Engagement Plan. Each Annual Report was presented at a public Board meeting. Zone 7 coordinates with its Retailers, Alameda and Contra Costa Counties, the cities overlying the Basin, DWR, and the San Francisco Bay Regional Water Quality Control Board. Zone 7 renewed contracts with all Retailers during the evaluation period and entered into an agreement with the City of Pleasanton to pump their GPQ volume on behalf of the City, as part of the Regional Groundwater Development project. The adjacent San Ramon Valley and Sunol Valley groundwater basins are not subject to SGMA, and no significant groundwater flow exchange occurs with either basin.

Conclusion. Zone 7 continues to operate the Basin within its Sustainable Yield and to meet its Sustainability Goal. No URs occurred during the evaluation period, and groundwater storage recovered to near full following the critically dry WYs 2021 and 2022. The revisions in the 2026 Alternative GSP reflect

new regulatory standards, new DWR guidance, and improved technical tools, and position the Basin to continue to meet its Sustainability Goal through the next evaluation cycle.

1 NEW INFORMATION COLLECTED

☑ *§ 356.4 (f)*

Each Agency shall evaluate its Plan at least every five years and whenever the Plan is amended, and provide a written assessment to the Department. The assessment shall describe whether the Plan implementation, including implementation of projects and management actions, are meeting the sustainability goal in the basin, and shall include the following:

(f) A description of significant new information that has been made available since Plan adoption or amendment, or the last five-year assessment. The description shall also include whether new information warrants changes to any aspect of the Plan, including the evaluation of the basin setting, measurable objectives, minimum thresholds, or the criteria defining undesirable results.

Since submittal of the 2021 Alternative Groundwater Sustainability Plan (GSP), Zone 7 Water Agency (Zone 7) has collected new data and developed new tools that refine the understanding of the Livermore Valley Groundwater Basin (Basin; Zone 7, 2022-2026a). **Table 1** summarizes the significant new data and information, which are further described in the sections below.

Table 1. Summary of New Information Since Last Periodic Evaluation

Significant New Information	Description	Aspects of Plan Affected
Expanded monitoring networks	Wells added to the Groundwater Level and Groundwater Quality Monitoring Programs; new PFAS nested sentinel monitoring well.	Monitoring Network
New monitoring instrumentation and data	Higher-frequency groundwater level data; additional transducers and data recorders; PFAS sampling at Groundwater Quality Monitoring Program wells; CrVI sampling; DWR-provided InSAR data; new metered well extraction data.	Basin Setting, Sustainable Management Criteria, Monitoring Network
Refined HCM	New Leapfrog 3D HCM provides a refined understanding of hydrogeologic setting.	Basin Setting, Monitoring Network, P/MAs
New numerical groundwater model	New nine-layer LBGFTM simulates historical groundwater flow and transport conditions at a monthly stress period over the 20-year historical period.	Groundwater Conditions, Sustainable Management Criteria, P/MAs

Abbreviations:

CrVI = Hexavalent Chromium
DWR = Department of Water Resources
HCM = Hydrogeologic Conceptual Model
InSAR = Interferometric Synthetic Aperture Radar
LBGFTM = Livermore Basin Groundwater Flow and Transport Model
PFAS = Per- and polyfluoroalkyl substances
P/MAs = Projects and Management Actions

Since the submittal of the 2021 Alternative GSP, the California Department of Water Resources (DWR) has published new guidance documents and Best Management Practices (BMPs) for development and implementation of GSPs, including guidance for estimating Interconnected Surface Water (ISW) depletion and a Land Subsidence BMP. Zone 7 developed the 2026 Alternative GSP consistent with the analyses and practices outlined in DWR's guidance documents and BMPs.

1.1 Expanded Monitoring Networks

Since the 2021 Alternative GSP, Zone 7 added wells to its Groundwater Level and Groundwater Quality Monitoring Programs (2026 Alternative GSP Section 14.5), including the 2024 construction of a nested sentinel monitoring well between the Mocho and Hopyard wellfields to track potential westward migration of per- and polyfluoroalkyl substances (PFAS) in the Lower Aquifer.

1.2 New Monitoring Instrumentation and Data

Data were collected on an ongoing basis for all applicable Sustainability Indicators. Notable additions include:

- An increase in the number of Groundwater Quality Monitoring Program wells sampled for PFAS since Water Year (WY) 2021.
- The addition of hexavalent chromium (CrVI) to the Groundwater Monitoring Program list of analytes sampled at select wells in WY 2026 since the 10 micrograms per Liter (µg/L) Primary Maximum Contaminant Level (MCL) was reinstated in October 2024.
- Interferometric Synthetic Aperture Radar (InSAR) data obtained from DWR since 2021, rather than through a direct contract with TRE Altamira.

The PFAS and CrVI data supported the development of preliminary Sustainable Management Criteria (SMCs) for perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA), and CrVI in the 2026 Alternative GSP (Section 13.4).

Zone 7 also equipped 13 additional wells with transducers and data recorders, bringing the total to 15 instrumented wells, including all eight Main Basin Representative Monitoring Sites for Water Levels (RMS-WL).

1.3 Refined Hydrogeologic Conceptual Model

Since adoption of the 2021 Alternative GSP, Zone 7 has completed multiple data gap filling efforts to update and refine the Basin hydrogeologic conceptual model (HCM), including geophysical surveys, borehole data, new data from public datasets, and additional geologic analyses (2026 Alternative GSP Section 7; **Section 4.1**). The geophysical surveys were primarily focused on refining the locations and extents of some of the key groundwater flow boundaries and observed or inferred faults that had been previously delineated in the Basin. Using the 3D visualization and modeling capabilities of the Leapfrog software, the contact surfaces and extents of the aquifer units were refined with the new geologic and geophysical data, improving Zone 7's ability to understand and manage the Basin.

1.4 New Groundwater Model

The refined HCM completed in 2024 was used to inform the Livermore Basin Groundwater Flow and Transport Model (LBGFTM), completed in 2025 (2026 Alternative GSP Section 8.2.2, Appendix D).

The LBGFTM is a nine-layer MODFLOW 6 flow and transport model with 500-foot grid spacing covering the entire Basin. It simulates hydrologic conditions from WY 2004 through WY 2023 at a monthly stress period and is calibrated to more than 28,000 groundwater level, streamflow, and total dissolved solids observations (EKI, 2026).

The LBGFTM was used in the 2026 Alternative GSP to:

- Update groundwater storage estimates, replacing Zone 7's historical methods with the LBGFTM Method (2026 Alternative GSP Section 8.4).
- Update the evaluation of ISW occurrence and conditions (2026 Alternative GSP Section 8.9).
- Revise the discussion of the refined storage estimates related to the sufficiency of SMCs for Reduction of Groundwater Storage (2026 Alternative GSP Section 13.2).
- Establish simulated depletion-based SMCs for ISW (2026 Alternative GSP Section 13.6).
- Update the representative monitoring network for ISW (2026 Alternative GSP Section 14.2.6).

Phase I of a web-based Decision Support Tool coupled to the LBGFTM was completed in early 2026 and is anticipated to be expanded in the future.

2 GROUNDWATER CONDITIONS RELATIVE TO SUSTAINABLE MANAGEMENT CRITERIA

☑ *§ 356.4 (a)*

Each Agency shall evaluate its Plan at least every five years and whenever the Plan is amended, and provide a written assessment to the Department. The assessment shall describe whether the Plan implementation, including implementation of projects and management actions, are meeting the sustainability goal in the basin, and shall include the following:

(a) A description of current groundwater conditions for each applicable Sustainability Indicator relative to measurable objectives, interim milestones and minimum thresholds.

The following sections present an evaluation of current groundwater conditions for each applicable Sustainability Indicator relative to the sustainable management criteria (SMCs) established in the 2021 Alternative Groundwater Sustainability Plan (GSP), including Measurable Objectives (MOs), Minimum Thresholds (MTs), and Undesirable Results (URs). Interim Milestones were not defined for any Sustainability Indicators because the Livermore Valley Groundwater Basin (Basin) is already being managed sustainably. For each applicable Sustainability Indicator, this section also assesses the effectiveness of Alternative GSP implementation to date. Basin conditions continue to comply with the Sustainability Goal, and Zone 7 Water Agency (Zone 7) expects this progress to continue through the next Periodic Evaluation cycle.

There were no URs triggered for any Sustainability Indicators during the evaluation period. There were three MT exceedances for the Degraded Water Quality Sustainability Indicator for Total Dissolved Solids (TDS) and four MT exceedances for the Depletions of Interconnected Surface Waters (ISW) Sustainability Indicator, but both exceedances were temporary and did not constitute a UR. One temporary MO exceedance occurred for the Chronic Lowering of Groundwater Levels Sustainability Indicator, but groundwater levels quickly recovered. Several slight MO exceedances occurred for Depletions of ISW Sustainability Indicator as a result of drought, but the exceedances did not adversely impact beneficial users in the Basin and water levels have since recovered. Some MO exceedances for the Degraded Water Quality Sustainability Indicator occurred but were successfully mitigated with water treatment measures. Undesirable results have not occurred, and Zone 7 continues to manage the Basin sustainably. The MT and MO exceedances are compiled in **Table 2** and **Table 3**, respectively.

There were no Recommended Corrective Actions from the California Department of Water Resources (DWR) for the 2021 Alternative GSP related to groundwater conditions in the Basin or SMCs.

Table 2. MT Exceedances for the Evaluation Period

Sustainability Indicator	Year	RMS	Subarea	Aquifer	MT	Measurement	Exceedance
Chronic Lowering of Groundwater Levels	No MT exceedances during the evaluation period.						
Reduction of Groundwater Storage	No MT exceedances during the evaluation period.						
Seawater Intrusion	Not applicable.						
Degraded Water Quality (TDS)	2021	3S2E08H003	Mocho II	Lower	718 mg/L	737 mg/L	19 mg/L
	2022	3S2E08H003	Mocho II	Lower	718 mg/L	742 mg/L	24 mg/L
	2025	3S2E08H003	Mocho II	Lower	718 mg/L	746 mg/L	28 mg/L
Land Subsidence	No MT exceedances during the evaluation period.						
Depletions of Interconnected Surface Water	2021	3S1E16P005	Amador	Upper	285.20 ft msl	284.89 ft msl	0.31 ft
	2021	3S2E23E001	Mocho II	Upper	595.40 ft msl	594.37 ft msl	1.03 ft
	2022	3S2E23E001	Mocho II	Upper	595.40 ft msl	594.37 ft msl	1.03 ft
	2025	3S2E23E001	Mocho II	Upper	595.40 ft msl	595.34 ft msl	0.06 ft

Abbreviations:

ft = feet
ft msl = feet above mean sea level
MT = Minimum Threshold
mg/L = milligrams per Liter
RMS = Representative Monitoring Site
TDS = Total Dissolved Solids

Notes:

1. There were no Undesirable Results triggered for any Sustainability Indicator over the evaluation period.
2. TDS is the only constituent with any MT exceedances for the Degraded Water Quality Sustainability Indicator during the evaluation period.
3. Exceedances for the Depletions of Interconnected Surface Water indicate water levels dropping below the MT at the relevant Representative Monitoring Sites for Interconnected Surface Waters (RMS-ISW).
4. Seawater Intrusion is not an applicable Sustainability Indicator for the Basin.

Table 3. MO Exceedances for the Evaluation Period

Sustainability Indicator	RMS	Subarea	Aquifer	Constituent	Units	Water Year	Measurement	MO
Chronic Lowering of GWLs	3S1E12K003	Amador East	Lower	GWL	ft msl	2022	194.6	219.9
Degraded WQ	3S1E20C008	Bernal	Lower	TDS	mg/L	2021	569	500
Degraded WQ	3S1E20C008	Bernal	Lower	TDS	mg/L	2022	578	500
Degraded WQ	3S1E20C008	Bernal	Lower	TDS	mg/L	2023	540	500
Degraded WQ	3S1E20C008	Bernal	Lower	TDS	mg/L	2024	539	500
Degraded WQ	3S1E20C008	Bernal	Lower	TDS	mg/L	2025	505	500
Degraded WQ	3S1E09P010	Amador West	Lower	TDS	mg/L	2021	529	500
Degraded WQ	3S1E11G001	Amador East	Upper	TDS	mg/L	2021	713	500
Degraded WQ	3S1E11G001	Amador East	Upper	TDS	mg/L	2022	711	500
Degraded WQ	3S1E11G001	Amador East	Upper	TDS	mg/L	2023	690	500
Degraded WQ	3S1E11G001	Amador East	Upper	TDS	mg/L	2024	736	500
Degraded WQ	3S1E11G001	Amador East	Upper	TDS	mg/L	2025	746	500
Degraded WQ	3S2E08K002	Mocho II	Upper	TDS	mg/L	2021	645	500
Degraded WQ	3S2E08K002	Mocho II	Upper	TDS	mg/L	2022	638	500
Degraded WQ	3S2E08K002	Mocho II	Upper	TDS	mg/L	2023	628	500
Degraded WQ	3S2E08K002	Mocho II	Upper	TDS	mg/L	2024	641	500
Degraded WQ	3S2E08K002	Mocho II	Upper	TDS	mg/L	2025	642	500
Degraded WQ	3S2E08H003	Mocho II	Lower	TDS	mg/L	2021	737	500
Degraded WQ	3S2E08H003	Mocho II	Lower	TDS	mg/L	2022	742	500
Degraded WQ	3S2E08H003	Mocho II	Lower	TDS	mg/L	2023	714	500
Degraded WQ	3S2E08H003	Mocho II	Lower	TDS	mg/L	2024	666	500
Degraded WQ	3S2E08H003	Mocho II	Lower	TDS	mg/L	2025	746	500
Degraded WQ	3S1E06F003	Northwest	Upper	TDS	mg/L	2021	2,929	2,845
Degraded WQ	3S1E06F003	Northwest	Upper	TDS	mg/L	2024	2,929	2,845
Degraded WQ	3S2E24A001	East	Upper	TDS	mg/L	2022	1,033	1,024
Degraded WQ	3S2E24A001	East	Upper	TDS	mg/L	2023	1,047	1,024
Degraded WQ	3S1E11G001	Amador East	Upper	Nitrate (as N)	mg/L	2021	10.9	10
Degraded WQ	3S1E11G001	Amador East	Upper	Nitrate (as N)	mg/L	2024	10.8	10
Degraded WQ	3S1E11G001	Amador East	Upper	Nitrate (as N)	mg/L	2025	10.8	10
Degraded WQ	3S2E08H003	Mocho II	Lower	Nitrate (as N)	mg/L	2021	10.8	10
Degraded WQ	3S2E08H003	Mocho II	Lower	Nitrate (as N)	mg/L	2022	10.3	10

Sustainability Indicator	RMS	Subarea	Aquifer	Constituent	Units	Water Year	Measurement	MO
Degraded WQ	3S2E08H003	Mocho II	Lower	Nitrate (as N)	mg/L	2023	11.1	10
Degraded WQ	3S2E08H003	Mocho II	Lower	Nitrate (as N)	mg/L	2025	11.1	10
Degraded WQ	3S2E24A001	East	Upper	Nitrate (as N)	mg/L	2022	26.1	10
Degraded WQ	3S2E24A001	East	Upper	Nitrate (as N)	mg/L	2023	32.8	10
Degraded WQ	3S2E24A001	East	Upper	Nitrate (as N)	mg/L	2024	28.5	10
Degraded WQ	3S2E24A001	East	Upper	Nitrate (as N)	mg/L	2025	24.3	10
Degraded WQ	3S1E06F003	Northwest	Upper	Boron	µg/L	2021	2,640	1,400
Degraded WQ	3S1E06F003	Northwest	Upper	Boron	µg/L	2022	2,500	1,400
Degraded WQ	3S1E06F003	Northwest	Upper	Boron	µg/L	2023	3,330	1,400
Degraded WQ	3S1E06F003	Northwest	Upper	Boron	µg/L	2024	3,030	1,400
Degraded WQ	3S1E06F003	Northwest	Upper	Boron	µg/L	2025	2,900	1,400
Degraded WQ	2S2E34E001	Northeast	Upper	Boron	µg/L	2021	2,300	1,400
Degraded WQ	2S2E34E001	Northeast	Upper	Boron	µg/L	2023	3,110	1,400
Depletion of ISW	3S2E30D002	Amador	Upper	GWL	ft msl	2021	405.6	406.5
Depletion of ISW	3S2E30D002	Amador	Upper	GWL	ft msl	2022	403.8	406.5
Depletion of ISW	3S1E16P005	Amador	Upper	GWL	ft msl	2021	284.9	285.2
Depletion of ISW	3S2E29F004	Amador	Upper	GWL	ft msl	2021	444.6	444.6
Depletion of ISW	3S2E29F004	Amador	Upper	GWL	ft msl	2022	444.6	444.6
Depletion of ISW	3S2E33C001	Amador	Upper	GWL	ft msl	2021	485.3	486.2
Depletion of ISW	3S2E33C001	Amador	Upper	GWL	ft msl	2022	485.3	486.2
Depletion of ISW	3S2E33C001	Amador	Upper	GWL	ft msl	2023	484.8	486.2
Depletion of ISW	3S2E16E004	Mocho II	Upper	GWL	ft msl	2022	466.9	467.0
Depletion of ISW	3S2E23E001	Mocho II	Upper	GWL	ft msl	2021	594.4	595.4
Depletion of ISW	3S2E23E001	Mocho II	Upper	GWL	ft msl	2022	594.4	595.4
Depletion of ISW	3S2E23E001	Mocho II	Upper	GWL	ft msl	2025	595.3	595.4

Abbreviations:

ft msl = feet above mean sea level
GWL = groundwater level
ISW = Interconnected Surface Water
mg/L = milligrams per Liter
MO = Measurable Objective
RMS = Representative Monitoring Site
µg/L = micrograms per Liter
WQ = water quality

Notes:

1. There were no Undesirable Results triggered for any Sustainability Indicator over the evaluation period.
2. Exceedances for the Chronic Lowering of GWLs and Depletion of ISW indicate water levels dropping below the MO at the relevant RMS; Exceedances for Degraded Water Quality indicate tested concentrations above the MO.
3. Depletion of ISW exceedances reported with same value for MO and measurement value had observed exceedances < 0.05 ft.

2.1 Chronic Lowering of Groundwater Levels

The 2021 Alternative GSP established SMCs, including MOs, MTs, and URs for the Chronic Lowering of Groundwater Levels Sustainability Indicator at Representative Monitoring Sites for Water Levels (RMS-WLs) for each Principal Aquifer in the Basin (Upper Aquifer and Lower Aquifer within the Main Basin, the Fringe Aquifer within the Fringe Management Area, and the Upland Aquifer within the Upland Management Area). The SMCs were established based on considerations of historical groundwater conditions and beneficial uses of groundwater in the Basin:

- The MTs were defined as the historic low water level minus the maximum annual groundwater level fluctuation for each RMS-WL, or the historic low if annual groundwater level fluctuation data are unavailable.
- The MOs were defined as the historic low water level for each RMS-WL.
- Criteria for URs were defined as water levels in greater than 25% of the RMS-WLs declining below the respective MTs for two consecutive years.

Specific SMCs and SMC methodologies for the Chronic Lowering of Groundwater Levels are provided in the 2026 Alternative GSP Section 13.1. No MTs, MOs, or URs changed between the 2021 Alternative GSP and the 2026 Alternative GSP.

2.1.1 Current Conditions and Progress Towards Sustainability Goal

Recent groundwater conditions in the Basin are described further in Section 8.3 of the 2026 Alternative GSP. Figure 8-8 in the 2026 Alternative GSP shows the RMS-WL hydrographs for the Basin. Groundwater levels in the Basin generally respond to climatic conditions (wet vs. dry years) and the availability of surface water for recharge and delivery for use in lieu of groundwater. Water levels have historically declined in dry years and recovered in wet years, with no negative long-term trends. **Table 4** lists the MOs and MTs at the Basin's 12 RMS-WLs. Based on the Basin's relatively stable and increasing recent groundwater levels that demonstrate trends consistently above MTs and generally at or above MOs, and the ongoing implementation of supply augmentation projects, the Basin continues to achieve its sustainability goal.

Table 4. RMS for the Chronic Lowering of Groundwater Levels

RMS-WL	Area	Aquifer	MT (ft msl)	MO (ft msl)	Fall Groundwater Elevations (ft msl)		Spring Groundwater Elevations (ft msl)	
					Fall 2025	Change from Fall 2020	Spring 2025	Change from Spring 2020
3S1E20C007	Main	Upper	144.8	179.5	301.0	10.9	308.3	11.5
3S1E09P005	Main	Upper	179.8	206.7	306.4	11.9	311.0	8.8
3S1E11G001	Main	Upper	190.7	229.6	322.1	15.7	326.9	12.0
3S2E08K002	Main	Upper	255.1	293.1	418.1	-5.4	430.7	-2.6
3S1E20C008	Main	Lower	144.8	179.5	292.7	6.2	304.7	8.6
3S1E09P010	Main	Lower	179.8	206.7	302.1	31.4	308.1	16.1
3S1E12K003	Main	Lower	181.0	219.9	286.5	32.1	296.6	28.9
3S2E08H003	Main	Lower	255.1	293.1	407.4	-13.8	424.3	-7.2
3S1E06F003	Fringe	Upper	305.0	314.6	324.4	-0.2	325.3	-0.1
2S2E34E001	Fringe	Upper	488.2	491.2	494.4	-4.3	496.7	-2.3
3S2E24A001	Fringe	Upper	675.5	678.3	696.3	-3.1	697.6	-0.6
3S2E21K009	Upland	Upper	470.1	470.1	480.5	No Data	483.3	No Data

Abbreviations:

MO = Measurable Objective
MT = Minimum Threshold
RMS-WL = Representative Monitoring Site for Water Levels

2.1.2 Undesirable Results Observed

The Undesirable Result for Chronic Lowering of Groundwater Levels did not change between the 2021 and 2026 Alternative GSPs and is as follows:

> *Undesirable Results would be experienced if and when a chronic decline in groundwater levels over the course of the planning and implementation horizon significantly and unreasonably impairs the reasonable and beneficial use of, and access to, groundwater for beneficial uses and users within the Basin.*
>
> *Undesirable Results for Chronic Lowering of Groundwater Levels would be experienced in the Basin if water levels in greater than 25% of the RMS-WLs decline below their respective MTs for two consecutive years.*

Since no MT exceedances have occurred at any RMS-WLs, no URs associated with the Chronic Lowering of Groundwater Levels have occurred.

2.1.3 Impact on Beneficial Users

As discussed in Section 13.1.1.3 of the 2026 Alternative GSP, the primary potential effect of URs caused by Chronic Lowering of Groundwater Levels on beneficial uses and users of groundwater in the Basin is groundwater well dewatering. No wells were reported dry to the DWR Dry Well Reporting System nor to

Zone 7 during the evaluation period. Thus, beneficial users were not impacted by Chronic Lowering of Groundwater Levels.

2.1.4 Impact on Other Sustainability Indicators

No impacts to other Sustainability Indicators, including groundwater storage, water quality, land subsidence, or ISW were identified as a result of groundwater levels during the evaluation period.

2.1.5 Evaluation of SMCs

The MTs for Chronic Lowering of Groundwater levels were set in the 2021 Alternative GSP based on historical lows and observed annual water level variability. For well 3S2E21K009, which does not have long-term water level records, the MT was set at the historic low in the 2021 Alternative GSP. Since regional historical lows have not occurred in the Basin during the 2021 – 2025 Water Year (WY) period, the SMCs for other RMS-WLs in the Basin are still representative of sustainable local conditions. A new historic low briefly occurred at well 3S1E12K003 in fall 2022 (**Table 2**), but water levels quickly recovered. The temporary water level decline was likely due to nearby mining operations and did not occur elsewhere in the Main Basin, nor is representative of groundwater management under the purview of the SGMA.

2.2 Reduction of Groundwater Storage

Reduction of Groundwater Storage is directly correlated to Chronic Lowering of Groundwater Levels. Therefore, the MTs and MOs for Chronic Lowering of Groundwater Levels (**Section 2.1**) are used as a proxy for Reduction of Groundwater Storage.

Changes in groundwater storage were estimated using the Livermore Basin Groundwater Flow and Transport Model (LBGFTM), a numerical groundwater flow model developed using United States Geological Survey MODFLOW 6 code (Langevin et al., 2017).

It is estimated that if Basin groundwater levels reached the MTs in all the Main Basin and Fringe Area RMS-WLs, the total storage in the Basin would be reduced by approximately 27%. Considering the UR for Reduction of Groundwater Storage requires a 50% reduction of storage to trigger significant and unreasonable effects (**Section 2.2.2**), the criteria set for Chronic Lowering of Groundwater Levels remain sufficiently protective proxy for Reduction of Groundwater Storage.

2.2.1 Current Conditions and Progress Towards Sustainability Goal

Groundwater storage in the Basin generally responds to climatic conditions (wet vs. dry years) and the availability of surface water for recharge and delivery for use in lieu of groundwater. Even with severe drought conditions in WY 2020-2022, Zone 7 continued to manage groundwater storage above MTs during the evaluation period, as it has for at least ten years (2026 Alternative GSP Section 13.2). Sustainable Storage (i.e., Main Basin storage above water level MTs) increased from 69.1 thousand acre-feet (TAF) in fall 2015 to 81.0 TAF in fall 2020 and 94.1 TAF in fall 2025.

Figure 8-12 of the 2026 Alternative GSP shows the spatial distribution of storage change during the evaluation period and Figure 8-15 of the 2026 Alternative GSP shows a time series of Sustainable Storage volumes over the past twenty years.

Based on the long-term stability of Basin groundwater levels, the increase in storage during the evaluation period, groundwater level trends remaining above MTs in the RMS-WLs, and the ongoing implementation of supply augmentation projects, the Basin continues to meet its Sustainability Goal.

2.2.2 Undesirable Results Observed

The Undesirable Result for Reduction of Groundwater Storage did not change between the 2021 and 2026 Alternative GSPs and is as follows:

> *Undesirable Results would be experienced if and when a reduction in storage in the Principal Aquifers of the Basin negatively affects the long-term viable access to groundwater for the beneficial uses and users within the Basin. Specifically, significant and unreasonable effects would include an aggregate reduction in usable groundwater storage of more than 50% within the Basin relative to the SGMA Baseline Storage volume for two consecutive years.*
>
> *Undesirable Results for Chronic Lowering of Groundwater Levels would be experienced in the Basin if water levels in greater than 25% of the RMS-WLs decline below their respective MTs for two consecutive years.*

Since no MT exceedances have occurred at RMS-WLs, no URs associated with the Reduction of Groundwater Storage have occurred.

2.2.3 Impact on Beneficial Users

As discussed in Section 13.2.1.3 of the 2026 Alternative GSP, the primary potential effect of URs caused by Reduction of Groundwater Storage on beneficial uses and users of groundwater in the Basin (i.e., groundwater pumpers) would be a reduction in groundwater supply reliability. No wells were reported dry to the DWR Dry Well Reporting System during the evaluation period, and groundwater storage increased during the evaluation period. Therefore, beneficial users were not impacted by Reduction of Groundwater Storage.

2.2.4 Impact on Other Sustainability Indicators

As discussed in **Section 2.1.4**, there were no impacts on other Sustainability Indicators due to Chronic Lowering of Groundwater Levels or Reduction of Groundwater Storage.

2.2.5 Evaluation of SMCs

The SMCs for Reduction of Groundwater Storage use 11 of the 12 RMS-WL[1] from the Chronic Lowering of Groundwater Levels monitoring network as a proxy. Due to stable storage conditions at the water levels measured over the last five years, these SMCs remain protective to prevent URs for Reduction of Groundwater Storage (2026 Alternative GSP Section 13.2.4).

2.3 Seawater Intrusion

As discussed in Section 13.3 of the 2026 Alternative GSP, the Basin is not located near any saline water bodies; therefore, seawater intrusion is not a relevant Sustainability Indicator and is not discussed herein.

2.4 Degraded Water Quality

The 2021 Alternative GSP established SMCs, including MOs, MTs, and URs for the Degraded Water Quality Sustainability Indicator at 12 Representative Monitoring Sites for Water Quality (RMS-WQs) across the Basin for four constituents of concern (COCs); TDS, nitrate (as N), boron, and hexavalent chromium (CrVI).

[1] The RMS-WL in the Upland Management Area is not applicable for Reduction of Groundwater Storage.

The SMCs were established based on considerations of historical groundwater conditions, beneficial uses of groundwater in the Basin, and applicable health-based screening standards:

- The MTs were defined as the greater of the applicable health-based screening standard or the Sustainable Groundwater Management Act (SGMA) Baseline concentration (i.e., fall 2015 concentration) plus maximum historical annual range.[2]
- The MOs were defined individually for each Basin area and COC:
    - **Total Dissolved Solids (TDS):** In the Main Basin, the MO for TDS was defined as the Recommended Secondary Maximum Contaminant Level (MCL) of 500 milligrams per liter (mg/L). In the Fringe and Upland Areas, MOs for TDS were defined as greater of either the Upper Secondary MCL of 1,000 mg/L or WY 2015 concentrations in individual RMS-WQs.
    - **Nitrate (as N):** The MO for nitrate was established at the Federal and State Primary MCL, 10 mg/L nitrate (as N), throughout the Basin.
    - **Boron:** The MO for boron was established at the Health Reference Level (HRL), 1,400 micrograms per Liter (µg/L), throughout the Basin.
    - **Hexavalent Chromium (CrVI):** The MO for CrVI was established at the State Primary MCL, 50 µg/L, throughout the Basin. Note that the 2026 Alternative GSP revised the MO for CrVI to 10 µg/L, in accordance with the October 2024 revision to the State Primary MCL for CrVI.
- Criteria for URs were defined as MT exceedances in greater than 25% of the RMS-WQs for at least two consecutive years as a result of groundwater recharge or extraction, such that groundwater cannot be managed to provide drinking water supply for beneficial use.

Additional preliminary SMCs were established for the 2026 Alternative GSP, including MOs and MTs for per- and polyfluoroalkyl substances (PFAS) compounds, specifically perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA), based on their presence in the Basin and current regulatory requirements. The 2026 Alternative GSP also revised preliminary SMCs for CrVI in accordance with the October 2024 update to the State Primary MCL.

PFAS concentrations in the Basin are dependent on highly localized, site-specific conditions and are being actively monitored and managed via Zone 7's PFAS Management Strategy. Figures 8-34 through 8-37 in the 2026 Alternative GSP show observed PFOA and PFOS concentrations in the Basin. In the Upper Aquifer, PFOS concentrations above the MCL are present throughout the northern Amador Subarea, and parts of the Mocho II, and Bernal Subareas in the Main Basin. There is also PFOS presence in the east of the Northern Fringe Area along the border with the Main Basin. In the Lower Aquifer, PFOS concentrations above the MCL are present throughout the northern Amador Subarea and in parts of the northeastern portion of the Mocho II Subarea. There were also two MCL exceedances recorded in the Bernal Subarea. In the Upper Aquifer, PFOA concentrations above the MCL are present in the northwestern portion of the Amador Subarea, the northwestern portion of the Mocho II Subarea, and the section of the Northern

[2] Under the 2021 Alternative GSP, SMCs were established for CrVI, but the Groundwater Quality Monitoring Program sampled Total Chromium and conservatively assumed that the concentration of CrVI was equal to the concentration of Total Chromium. Under the 2026 Alternative GSP, SMCs and the Groundwater Quality Monitoring Program now directly consider the concentration of CrVI. The lack of samples of CrVI at the SGMA Baseline timeframe contributed to the revision of MTs for CrVI to depend on the historical average concentration plus the historical range, rather than the SGMA Baseline concentration plus the maximum historical annual range.

Fringe Area that borders the Main Basin. In the Lower Aquifer, PFOA concentrations above the MCL are present in the Amador Subarea and northeastern portion of the Mocho II Subarea. PFOA concentrations are generally much lower than PFOS concentrations in the Basin. PFOS and PFOA concentrations and trends are discussed in more detail in Section 8.6.6 of the 2026 Alternative GSP. The 2026 Alternative GSP discusses Zone 7's comprehensive PFAS Management Strategy, consisting of PFAS monitoring, source water blending and treating, and diversifying groundwater resources (see also 2026 Alternative GSP Section 15.2.3). Groundwater is treated to comply with all applicable state and federal drinking water standards.

The preliminary SMCs for PFAS were established based on considerations of historical groundwater conditions, beneficial uses of groundwater in the Basin, and applicable health-based screening standards. Sampling for several PFAS compounds were fully incorporated into the water quality sampling program in WY 2021.

- Preliminary MTs for PFOA and PFOS were defined for each RMS-WQ as the greater of either the applicable health-based screening standard (i.e., MCL) or the historical average concentration plus the maximum historical fluctuation at each RMS.
- Preliminary MOs for PFOA and PFOS were defined as the applicable health-based screening standard (i.e., MCL).
- Criteria for URs were defined as MT exceedances in greater than 25% of the RMS-WQs for at least two consecutive years as a result of groundwater recharge or extraction, such that groundwater cannot be managed to provide supply for beneficial use.

2.4.1 Current Conditions and Progress Towards Sustainability Goal

The 2021 Alternative GSP identifies municipal and industrial use and agricultural irrigation as beneficial uses of groundwater in the Basin and assesses groundwater quality relative to standards intended to protect these uses. Applicable standards include:

- Primary MCLs, which are drinking water standards set by the United States Environmental Protection Agency (EPA) and the State Water Resources Control Board (SWRCB) based on human health considerations.
- Secondary MCLs, which are non-health related standards set by the SWRCB based on aesthetic characteristics of drinking water such as taste, odor, and color.
- HRLs, which are set by the EPA for public water systems (PWS).

Groundwater quality constituents were identified as COCs in the 2021 Alternative GSP based on historical water quality sampling in the Basin. The 2021 Alternative GSP identified and established SMCs for four COCs: TDS, nitrate (as N), Boron, and CrVI. Zone 7 also monitors constituents which were not identified as COCs including minerals common in groundwater. As part of the 2026 Alternative GSP, Zone 7 established preliminary SMCs for two additional COCs: PFOA and PFOS.

The 2021 Alternative GSP established 12 RMS-WQs. These RMS-WQs are representative of the sources of groundwater available to beneficial users, and compliance with water quality SMCs is evaluated annually, at a minimum, at each RMS-WQ. Since WY 2021, concentrations of the COCs have remained relatively stable and below their respective MTs in all RMS-WQs (except for TDS in well 3S2E08H003 on three occasions), suggesting little overall change to groundwater quality in the Basin. Since WY 2021, concentrations of TDS, nitrate, and boron have exceeded MOs in several RMS-WQs (**Table 5**).

For the 2026 Alternative GSP, Zone 7 updated the characterization of groundwater quality in the Basin based on data collected over the evaluation period. For each COC, the number of RMS-WQs with at least one sampled concentration exceeding the applicable MT or MO was identified (**Table 5**). This screening was used to evaluate the prevalence of potentially degraded groundwater quality in the Basin. Results, as shown in **Table 5**, reflect stable conditions similar to those observed during development of the 2021 Alternative GSP.

Table 5. Screening Threshold Exceedances at RMS-WQ by Constituent, WY 2021 - 2025

Constituent of Concern	Water Year	RMS-WQ Exceeding MTs	RMS-WQ Exceeding MOs
TDS	2021	1 (3S2E08H003)	6
TDS	2022	1 (3S2E08H003)	5
TDS	2023	0	5
TDS	2024	0	5
TDS	2025	1 (3S2E08H003)	4
Nitrate (as N)	2021	0	2
Nitrate (as N)	2022	0	2
Nitrate (as N)	2023	0	2
Nitrate (as N)	2024	0	2
Nitrate (as N)	2025	0	3
Boron	2021	0	2
Boron	2022	0	1
Boron	2023	0	2
Boron	2024	0	1
Boron	2025	0	1
CrVI	2021	0	0
CrVI	2022	0	0
CrVI	2023	0	0
CrVI	2024	0	0
CrVI	2025	0	0

Abbreviations:
RMS-WQ = Representative Monitoring Site for Water Quality
MT = Minimum Threshold

Notes:
1. RMS-WQs were sampled annually during the WY 2021 – 2025 period. WY 2022 samples from RMS-WQ 3S2E21K009 are from nearby proxy well 3S1E21N001.
2. Counts of MO exceedances at RMS-WQ include MT exceedances.
3. Since preliminary SMCs for PFOS and PFOA were not established until the 2026 Alternative GSP, PFOS and PFOA are not reflected in the WY 2021-2025 results but will be reported in future Annual Reports and updates to the Alternative GSP.

2.4.2 Undesirable Results Observed

The Undesirable Result for Degraded Water Quality did not change between the 2021 and 2026 Alternative GSP and is as follows:

> *An Undesirable Result for degraded water quality within the Basin is experienced if groundwater recharge or extraction causes significant and unreasonable degradation of water quality in the Basin, such that these changes impact the long-term viability of domestic, agricultural, municipal, environmental, or other beneficial uses over the planning and implementation horizon of this Alternative GSP.*
>
> *Significant and unreasonable changes to water quality associated with Undesirable Results would include a significant increase, on a regional basis, in concentrations of identified COCs above applicable state and federal regulatory thresholds, as a result of groundwater recharge or extraction.*
>
> *Undesirable Results for Degraded Water Quality are defined to occur within the Basin if and when MTs are exceeded for any of the identified COCs in greater than 25% of the RMS-WQs for at least two consecutive years as a result of groundwater recharge or extraction, such that groundwater cannot be managed to provide supply for beneficial use.*

As discussed in **Section 2.4.1**, an MT exceedance only occurred in one RMS-WQ: 3S2E08H003. Therefore, according to the established criteria, there were no URs for Degraded Water Quality. Furthermore, Basin-wide screening results indicate that the prevalence and distribution of water quality constituents have remained relatively stable across the Basin, with few trends in any direction observed. While recent investigations have found PFAS concentrations in groundwater above respective MCLs in various parts of the Basin, Zone 7's proactive PFAS Management Strategy, wellhead treatment, and Projects and Management Actions (P/MAs) continue to provide drinking water that meets all applicable drinking water regulations and are sufficient to protect Basin beneficial users from URs. Thus, there has not been "a significant increase, on a regional basis, in concentrations of identified COCs above applicable state and federal regulatory thresholds, as a result of groundwater recharge or extraction." Based on these findings, no URs associated with Degraded Water Quality have occurred.

2.4.3 Impact on Beneficial Users

The potential effects of URs caused by Degraded Water Quality on beneficial uses and users of groundwater may include increased costs to treat or blend groundwater to drinking water standards, increased costs to purchase bottled water or water softeners, and/or potential reduction in the usable volume of groundwater in the Basin if large areas are impaired to the point that they cannot be used to support beneficial uses and users.

Groundwater quality conditions observed during the evaluation period do not indicate significant or unreasonable impacts to beneficial users of groundwater within the Basin. As discussed in the 2021 Alternative GSP, the most sensitive beneficial use of water is its use as a drinking water supply. All Zone 7 drinking water supplied during the evaluation period met state and federal regulatory standards and, in most cases, delivered potable water with water quality significantly better than required.[3] All WY 2021-2025 RMS-WQ samples were within the range of historical samples. Therefore, water quality

[3] Zone 7's Annual Water Quality Reports are available from https://www.zone7waterca.gov/post/annual-water-quality-reports.

between WYs 2021 and 2025 has not caused adverse impacts to beneficial users of groundwater within the Basin.

2.4.4 Impact on Other Sustainability Indicators

No impacts on other Sustainability Indicators were identified as a result of groundwater quality during the evaluation period.

2.4.5 Evaluation of SMCs

The 2021 Alternative GSP established Degraded Water Quality SMCs for four COCs to be evaluated at 12 RMS-WQs (see **Section 2.4**). The SMCs for Degraded Water Quality established in the 2021 Alternative GSP considered the applicable federal, state, and local health-based screening standards and local groundwater conditions, in accordance with 23 California Code of Regulations (CCR) §354.28 (c)(4). The process to establish SMCs remains appropriate because SMCs are tied to regulatory standards and historical conditions in the Basin, and evolving regulatory standards support the revision of preliminary SMCs for CrVI and the creation of preliminary SMCs for PFOA and PFOS.

Over the evaluation period, an MT exceedance for water quality occurred at one RMS-WQ. However, since there were no MT exceedances at any other RMS-WQs, no URs were triggered. While several MO exceedances occurred, concentrations of COCs at RMS-WQs have generally been consistent with historical levels. The MOs represent long term goals for the Basin and were defined at concentrations lower than historical concentrations at many RMS-WQs, and therefore, MO exceedances may be expected at those RMS-WQs. The general lack of increasing COC concentrations in the Basin indicates that water quality has not been degraded as a result of groundwater recharge or extraction.

The continuity of current COC concentrations with historical conditions supports the continued use of the existing MOs and MTs for Degraded Water Quality for TDS, nitrate, and boron. Revised regulatory standards support the revisions of preliminary SMCs for CrVI and the addition of preliminary SMCs for PFOS and PFOA.

2.4.5.1 Revision of SMCs for Hexavalent Chromium

The 2016 Alternative GSP established the MT for CrVI at the contemporaneous MCL of 10 µg/L. In August 2017, under orders of the Superior Court, the SWRCB withdrew the CrVI regulation from the CCR, and reverted the MCL to 50 µg/L. Since all MTs were set based on the State's drinking water standards, Zone 7 adjusted the MT and MO for CrVI in the 2021 Alternative GSP to match the State's then-current MCL of 50 µg/L. In October 2024, the SWRCB re-instated the MCL for CrVI at 10 µg/L. Therefore, the 2026 Alternative GSP has revised the preliminary MTs and MOs for CrVI in the Basin.

As with other COCs, preliminary MTs were set at each RMS-WQ in consideration of site conditions, historical water quality, and the applicable health-based screening standard (i.e., MCL). The preliminary MT at each RMS-WQ was established at the maximum of the MCL and the historical average concentration plus the maximum historical fluctuation of CrVI concentrations at the site. The 2026 Alternative GSP considers the historical average concentration rather than the SGMA Baseline concentration because CrVI was not sampled separately from total chromium during the SGMA Baseline period.

$$MT = max\begin{cases} MCL \\ historical\ average + maximum\ historical\ fluctuation \end{cases}$$

Preliminary MTs and MOs were set at the MCL for all 12 RMS-WQ due to the lack of historical sampling for CrVI; the sum of the historical average and the maximum historical fluctuation did not exceed the MCL

at any RMS-WQ. The SMC exceedances for CrVI through the evaluation period, as reported in **Table 2**, **Table 3**, and **Section 2.4**, consider the SMCs established in the 2021 Alternative GSP rather than as updated for the 2026 Alternative GSP. Future Annual Reports and SMC evaluations will consider the revised preliminary SMCs for CrVI established in the 2026 Alternative GSP.

2.4.5.2 Addition of Preliminary SMCs for PFOA and PFOS

On 10 April 2024, the EPA announced the finalized MCLs for six PFAS compounds, as shown in Table 8-I of the 2026 Alternative GSP. On 14 May 2025, the EPA announced its intention to revise the final rule of the National Primary Drinking Water Regulation by extending the compliance deadlines for PFOS and PFOA to 2031 and rescinding the regulations in order to reconsider regulatory determinations for the other four PFAS compounds.

As with other COCs, preliminary MTs were set at each RMS-WQ in consideration of site conditions, historical water quality, and the applicable health-based screening standard (i.e., MCL). The preliminary MT at each RMS-WQ was established at the maximum of the MCL and the historical average concentration plus the maximum historical fluctuation of PFOA or PFOS concentrations at the site.

$$MT = max\begin{cases} MCL \\ historical\ average + maximum\ historical\ fluctuation \end{cases}$$

Preliminary MTs were set at the MCL for four of 12 RMS-WQ for PFOS and five of 12 RMS-WQ for PFOA. Preliminary MTs were set at the historical average plus the maximum historical fluctuation of PFOS or PFOA concentrations at the remaining RMS-WQ (2026 Alternative GSP Table 13-D). Preliminary MOs were set at the MCL for all RMS-WQ. Future Annual Reports and SMC evaluations will consider the preliminary SMCs for PFOS and PFOA established in the 2026 Alternative GSP.

Although preliminary MTs are set above the MCLs for PFAS at some RMS-WQ, Zone 7 is committed via the PFAS Management Strategy to continue to treat extracted groundwater to all applicable drinking water standards. As stated in Section 13.4.1.2 of the 2026 Alternative GSP, URs for Degraded Water Quality will only occur if "groundwater cannot be managed to provide supply for beneficial use."

2.5 Land Subsidence

The 2026 Alternative GSP does not include significant new information on Land Subsidence. Substantial inelastic (permanent) subsidence has not occurred in the Basin, and the Chronic Lowering of Groundwater Levels Sustainability Indicator continues to provide a strong proxy for land subsidence in the Basin (2026 Alternative GSP Figure 8-B and Section 13.5).

Since Land Subsidence and Chronic Lowering of Groundwater Levels are directly correlated, unique MOs and MTs for Land Subsidence were not developed for the Basin RMS. However, the UR for Land Subsidence includes a criterion that RMS-WL declines "result in a confirmed 0.4 feet of inelastic land subsidence in any year," in order to connect the UR for Land Subsidence directly to an impact on beneficial users.

2.5.1 Current Conditions and Progress Towards Sustainability Goal

Land surface elevations have been monitored in the Basin since 1947 (2026 Alternative GSP Section 8.7), and no inelastic (permanent) subsidence has been observed since the beginning of the benchmark land surveys in 2002.

Since groundwater levels are used as a proxy for subsidence MTs, current conditions are addressed in **Section 2.1.1** and represented by the discussion of water levels and land subsidence in Sections 8.3 and 8.7 of the 2026 Alternative GSP, respectively.

Based on the long-term stability of Basin water levels, groundwater level trends generally at or above MTs and MOs in the RMS-WLs, ongoing implementation of supply augmentation projects, and no indication of inelastic subsidence, the Basin continues to meet its Sustainability Goal.

2.5.2 Undesirable Results Observed

The UR for Land Subsidence did not change between the 2021 and 2026 Alternative GSPs and is as follows:

> *An Undesirable Result for land subsidence would be experienced if the occurrence of land subsidence substantially interferes with beneficial uses of groundwater and infrastructure within the Basin during the planning and implementation horizon of this Alternative GSP.*
>
> *Undesirable Results for Land Subsidence would be experienced in the Basin if water levels in greater than 25% of the RMS-WLs decline below their respective MTs for two consecutive years, that result in a confirmed 0.4 feet of inelastic land subsidence in any year with a goal of experiencing no inelastic subsidence spatially and temporally.*

Since no MT exceedances have occurred at RMS-WLs and inelastic (permanent) subsidence exceeding 0.4 ft has not occurred, no URs associated with the Chronic Lowering of Groundwater Levels or Land Subsidence have occurred.

2.5.3 Impact on Beneficial Users

As documented in Section 8.7 of the 2026 Alternative GSP, no inelastic land subsidence was observed in the Basin. However, because alluvial aquifers are present under the urban area of the Basin, potential effects of inelastic subsidence could include:

- Differential subsidence affecting the gradient of surface drainage channels;
- Differential subsidence affecting the grade of other infrastructure such as transportation facilities;
- Differential subsidence affecting State Water Project (SWP) South Bay Aqueduct (SBA) and other conveyance facilities, such that conveyance capacities are impacted;
- Subsidence around a pumping well, disrupting wellhead facilities or resulting in casing failure; or
- Non-recoverable loss of groundwater storage as fine-grained strata collapse.

None of these potential effects were observed in the Basin during the evaluation period and there were no URs related to land subsidence.

2.5.4 Impact on Other Sustainability Indicators

No impacts on other Sustainability Indicators were identified as a result of land subsidence during the evaluation period.

2.5.5 Evaluation of SMCs

The 2021 Alternative GSP defined URs for Land Subsidence, as described in **Section 2.5.2**. The Chronic Lowering of Groundwater Levels was established as a proxy for Land Subsidence, and an additional

threshold of 0.4 ft of observed subsidence was established. The 2021 Alternative GSP also committed to monitoring subsidence via 11 RMS-WLs[4] and Interferometric Synthetic Aperture Radar (InSAR) elevation surveys. Given the lack of recorded instances of land subsidence in the Basin, groundwater level SMCs based on historical low groundwater levels and annual fluctuations continue to be protective against subsidence-related impacts. The SMCs established in the 2021 Alternative GSP were evaluated against new guidance from the DWR's Land Subsidence Best Management Practices document and align with the practices therein (DWR, 2026) and remain unchanged for the 2026 Alternative GSP.

2.6 Depletions of Interconnected Surface Water

The 2021 Alternative GSP established SMCs, including MOs and MTs, for the Depletions of ISW Sustainability Indicator at 14 Representative Monitoring Sites for Interconnected Surface Waters (RMS-ISWs), consisting of shallow monitoring wells. The SMCs were established based on considerations of historical streamflow conditions and beneficial uses of ISW in the Basin:

- MTs were defined as the historic low water level for each RMS-ISW, or the modeled historic low if water level data were unavailable.
- MOs were defined as the minimum water levels measured between 2014 and 2020 at each RMS-ISW, which represent the recent groundwater conditions that sustained ISW and groundwater dependent ecosystems (GDEs) following the adoption of SGMA.
- Criteria for URs were defined as water levels in greater than 40% of the RMS-ISWs declining below the respective MTs for two consecutive years.

The 2026 Alternative GSP includes substantial updates to the SMCs for the Depletions of ISW Sustainability Indicator, and established volumetric depletion rate SMCs, including MOs and MTs, at nine individual stream segments in the Basin. In accordance with the DWR Guidance for ISW (DWR, 2024a, 2024b, 2024c), Depletions of ISW caused by groundwater extraction within the Basin were estimated by comparing the results of the historical LBGFTM baseline scenario with a "no pumping" scenario (2026 Alternative GSP Section 13.6.2.1). Section 13.6 of the 2026 Alternative GSP quantifies historical depletions of ISW in the Basin, establishes volumetric SMCs for ISW segments in the Basin, and evaluates the effect of SMCs for the Sustainability Indicator on beneficial users in the Basin.

2.6.1 Current Conditions and Progress Towards Sustainability Goal

The evaluation presented herein is based on the monitoring network and SMCs from the 2021 Alternative GSP. Future annual reports and periodic evaluations will consider the preliminary SMCs established in the 2026 Alternative GSP and will continue to monitor shallow groundwater levels as part of an 'early warning' system.

The condition of ISWs in the Basin was monitored over the evaluation period with 10 RMS-ISW streamflow gauge or flow meter stations, 14 RMS-ISW wells from the Groundwater Level Monitoring Program, and a remote sensing analysis. Water levels near ISWs have historically declined in dry years and recovered in

[4] RMS-WL 3S2E21K009 in the Upland Management Area is not used in the monitoring network for Land Subsidence because it is not near supply wells or compressible sediments. The Upland Area consists primarily of the Livermore Formation and older bedrock units that are typically consolidated, more resistant to erosion, and provide little water for supply.

wet years, and no negative long-term trends have occurred (2026 Alternative GSP Sections 8.8, 8.9). **Table 6** lists MOs and MTs, at the Basin's RMS-ISWs.

Table 6. RMS for the Depletions of Interconnected Surface Waters (2021 Alternative GSP)

RMS-ISW Well	Area	Subarea	MT (ft msl)	MO (ft msl)	Fall Groundwater Elevations (ft msl)		Spring Groundwater Elevations (ft msl)	
					Fall 2025	Change from Fall 2020	Spring 2025	Change from Spring 2020
3S2E30D002	Main	Amador	401.0	406.5	406.5	-2.7	408.5	-1.6
3S1E16P005	Main	Amador	285.2	285.2	319.1	21.6	321.3	5.8
3S2E33G001	Main	Amador	501.0	501.3	502.5	0.8	502.3	-0.2
3S2E29F004	Main	Amador	437.8	444.6	449.2	2.6	449.1	-0.2
3S2E33C001	Main	Amador	482.1	486.2	489.0	3.7	489.1	2.9
2S2E34E001	Main	Mocho II	491.2	493.0	494.4	0.5	496.7	1.1
3S2E16E004	Main	Mocho II	466.9	467.0	473.6	6.6	489.4	16.9
3S2E23E001	Main	Mocho II	595.4	595.4	594.4	0.0	596.7	0.9
4S2E01A001	Main	Mocho II	781.2	781.2	784.1	-12.0	801.3	3.5
3S1E02N006	Main	Camp	331.5	333.9	337.6	0.9	339.3	1.2
3S1E05K006	Fringe	Camp	326.0	328.2	333.3	32.1	334.1	26.3
3S1E02R001	Fringe	Camp	345.3	353.6	359.3	5.3	363.3	7.4
2S2E27P002	Fringe	Spring	501.0	501.0	502.2	0.6	504.1	0.8
3S2E32E007	Upland	Upland	591.4	591.4	592.7	0.2	598.9	6.0

Abbreviations:
ft msl = feet above mean sea level
MO = Measurable Objective
MT = Minimum Threshold
RMS-ISW = Representative Monitoring Sites for Interconnected Surface Water

Notes:
(a) The comparison to WY 2020 measurements for RMS-ISW 3S2E33C001 uses groundwater elevations from WY 2021 as proxy values.

Shallow groundwater levels in 12 of 14 RMS-ISWs have remained above their MTs over the evaluation period. There were temporary MT exceedances in RMS-ISW well 3S2E23E001 (WYs 2021, 2022, 2025) and RMS-ISW well 3S1E16P005 (WY 2021), but water levels subsequently recovered, and no URs were observed.

Several small (i.e., less than three feet) MO exceedances occurred in the Amador Subarea during the WY 2020–2022 drought, including at well 3S2E30D002 (0.9 to 2.7 ft below MO), well 3S2E29F004 (0.05 ft below MO), and well 3S2E33C001 (0.9 to 1.4 ft below the MO for three consecutive WYs). The only MT exceedance in the Amador Subarea was in well 3S1E16P005 in WY 2021 (0.31 ft below the MT/MO) before rebounding more than 30 ft above the MT/MO. Water levels in all five Amador RMS-ISWs recovered to above MOs by WY 2024 and have remained stable through WY 2025.

In the Mocho II Subarea, water levels in well 3S2E23E001 exceeded its MT by 1.03 ft in WYs 2021 and 2022 and then by 0.06 ft in WY 2025. Water levels in well 3S2E16E004 were near the MT/MO in WYs 2021

and 2022 before rebounding to significantly (6–20 ft) above the MT/MO, and water levels in well 4S2E01A001 remained well above the MO throughout the evaluation period.

Water level elevations at the RMS-ISWs in the Camp Subarea, Fringe Area, and Upland Areas were above the MO throughout the reporting period.

Overall, groundwater levels near ISWs throughout the Basin demonstrate trends consistently above MTs and generally at or above MOs.

2.6.2 Undesirable Results Observed

The 2021 Alternative GSP defined an Undesirable Result for Depletions of ISW as follows:

> *The URs for Depletions of ISW would be experienced in the Basin when groundwater extractions in the Basin cause significant and unreasonable depletions of hydrologically connected surface water, such that beneficial uses and users of the surface water (including the likely GDEs and protected species) are significantly and unreasonably harmed. Specifically, a significant and unreasonable negative effect would be experienced if the health of the GDE areas in the Basin are adversely impacted by mechanisms that can be directly attributed to pumping-related lowering of groundwater levels over time, rather than effects of natural or climatic processes and/or unfavorable hydrologic conditions or land use changes.*

Based on the significant and unreasonable effects described above, which remain unchanged between the 2021 and 2026 Alternative GSPs, and the revised representative monitoring network for Depletions of ISW in the 2026 Alternative GSP to reflect simulated volumetric depletion estimates, the revised criteria for URs for Depletions of ISW are as follows:

> *Based on application of the MTs at the Representative Monitoring Sites for Interconnected Surface Water (RMS-ISW) and the significant and unreasonable negative effect discussed above, URs will be experienced if and when Depletions of Interconnected Surface Water occur as a result of unsustainable groundwater extraction such that streamflow depletion rates exceed their MTs in greater than 40% of the RMS-ISW for two consecutive years, and corresponding GDE health metrics decline.*

As discussed in **Section 2.6.1**, MT exceedances occurred at only two RMS-ISWs during the evaluation period when evaluated against the SMCs established in the 2021 Alternative GSP. As discussed in **Section 2.6.3.2**, GDE health increased during the evaluation period. Furthermore, Basin-wide analysis results indicate that water levels have remained relatively stable or increased across the Basin. Based on these findings, no URs associated with the Depletion of ISWs have occurred.

2.6.3 Impact on Beneficial Users

The main beneficial users of ISW in the Basin are GDEs that depend on access to shallow groundwater for survival and continued vitality. As part of the Periodic Evaluation process, Zone 7 conducted a remote sensing assessment of GDE health in the Basin and evaluated the GDEs included in the 2021 Alternative GSP. GDE health has generally improved since WY 2021. Most potential GDEs in the Basin respond rapidly to precipitation patterns, suggesting a coupled climate-vegetation signal. Normalized Difference Vegetation Index (NDVI), which is an indicator of vegetative health, tends to rise and fall with precipitation; and a lack of significant negative trends in NDVI suggest stable GDE health.

2.6.3.1 Evaluation of Likely GDEs

Sections 8.8, 8.9, and Appendix F of the 2021 Alternative GSP included a summary of GDE identification efforts in the Basin, including an in-depth review of likely GDEs within the Basin, field studies, species identification, vegetation mapping, and remote sensing analysis. The 2026 Alternative GSP reviewed the 2021 analyses and extended the analyses through the evaluation period.

Likely GDEs retained by the 2021 Alternative GSP were compared to local groundwater levels over the evaluation period. Several GDEs retained by the 2021 Alternative GSP for further analysis appear disconnected from the Upper Aquifer, with a depth to water greater than 30 feet below ground surface (ft bgs). The GDEs that appear disconnected from the Upper Aquifer based on contoured groundwater levels in the Basin include upper reaches of the Tassajara Creek corridor in the Fringe Area, subsections of the likely GDEs in the upper reaches of the Arroyo Mocho and Arroyo Valle, parts of the Sycamore Grove adjacent to the Arroyo Valle in the Main Basin, parts of the Riparian Mixed Hardwood and Sycamore Grove in the Lower Reaches of the Arroyo Mocho, and a miscellaneous mixed GDE in the Northern Fringe Area (2026 Alternative GSP Figure 8-42).

While groundwater levels suggest several potential GDEs are disconnected from the Upper Aquifer, contoured groundwater levels contain inherent uncertainty. Therefore, the majority of GDEs flagged for potential exclusion because of depth to water exceeding The Nature Conservancy's 30 ft bgs guideline were retained as likely GDEs. This preservation is a conservative measure designed to protect potential GDEs as beneficial users of groundwater in the Basin.

Two identified GDEs were removed from the list of likely GDEs in the Basin after closer examination (2026 Alternative GSP Figure 8-46). The identified GDEs are located where both depth to water exceed 30 ft bgs and developed areas are present.

- The first previously identified GDE removed from the set of likely GDEs identified in the 2026 Alternative GSP is in the Northern Fringe Area, northwest of the junction of Highway 580 and San Ramon/Foothill Road. This GDE (GDE Pulse ID 69666) covers a substantially developed area, including a parking lot and other paved areas, and the depth to water in Fall 2025 was estimated to be between 40 and 70 ft bgs.
- The second previously identified GDE removed from the set of likely GDEs is near the intersection of North Murieta Boulevard and Olivina Avenue, within the outcropping of the Lower Livermore Formation between the Mocho II and Amador Subareas. The GDE was previously identified by United States Forest Service CalVeg datasets as potential GDE containing riparian hardwood alliance trees but were not identified in the GDE Pulse dataset. The GDE polygons cover a developed area (i.e., paved streets, residential units, etc.) where the depth to water is estimated between 40 and 50 ft bgs.

All other likely GDEs from the 2021 Alternative GSP were conservatively retained to protect environmental users of groundwater in the Basin.

2.6.3.2 GDE Correlation Analyses

The 2021 Alternative GSP compared the NDVI and Normalized Difference Moisture Index (NDMI) of GDE polygons identified by the GDE Pulse tool to nearby water levels for the WY 2015-2020 period (2026 Alternative GSP Section 8.8.1). The 2026 Alternative GSP extended this analysis through WY 2025 and examined the correlation between nearby water levels and GDE health with a modified Chelton correlation analysis. Only 13% (10 of 79) GDEs have a statistically significant negative correlation between

NDVI and groundwater elevations (i.e., only 13% of GDEs have a Modified Chelton correlation suggesting that declining groundwater elevations may negatively impact GDE health at a significance level of p=0.05). Many GDEs within the Basin are significantly more sensitive to climatic variation and precipitation patterns than groundwater elevations. Most GDEs were not negatively impacted by water level fluctuations within the evaluation period and are therefore protected by established SMCs.

The 2026 Alternative GSP also evaluated GDE health via changes in NDVI over the evaluation period. Approximately 90% of GDEs with data had positive slopes, indicating increasing GDE health, while 10% had negative slopes. If small changes in GDE health (change of <0.1 NDVI over 5 years) are considered stable rather than increasing or decreasing, 63% of GDEs are stable, 33% are increasing in health, and only 4% are decreasing in health.

When NDVI trends were filtered with a Pearson correlation test at p=0.05, 28% of GDEs had significant positive slopes and no GDEs had significant negative slopes. When applying the stability threshold above and Pearson correlation tests, 13% of GDEs had significant stable trends, 15% had significant increasing trends, and no GDEs had significant decreasing trends. In conclusion, GDE health in the Basin has remained stable or has increased over the evaluation period.

2.6.4 Impact on Other Sustainability Indicators

No impacts on other Sustainability Indicators were identified as a result of Depletions of ISW during the evaluation period.

2.6.5 Evaluation of SMCs

The 2021 Alternative GSP established SMCs for the Depletions of ISW MTs in consideration of historical streamflow conditions and beneficial uses of ISW in the Basin. While these SMCs were tied to regulatory guidance, represented historical conditions in the Basin, and adequately protected beneficial users, new DWR guidance documents for the Depletion of ISW recommend that groundwater and surface water models be used to quantify ISW depletion (DWR, 2024a, 2024b, 2024c). Therefore, the SMCs for the Depletion of ISW were updated in the 2026 Alternative GSP to reflect current DWR guidance.

The new preliminary SMCs for the Depletions of ISW are outlined in Section 13.6 of the 2026 Alternative GSP. The revised MTs for the Depletions of ISW (2026 Alternative GSP Table 13-G) were defined as the maximum annual rate of streamflow depletion since the SGMA Baseline[5] (i.e., start of WY 2015) plus the historical range in depletion as estimated by the LBGFTM. The revised MOs for the Depletions of ISW (2026 Alternative GSP Table 13-G) were defined as the maximum annual rate of streamflow depletion due to groundwater pumping since the SGMA Baseline, which represents the recent groundwater management and hydrologic conditions that have sustained ISW and GDEs following the adoption of SGMA. By definition, no RMS-ISWs have exceeded the preliminary MTs at this time. Delayed depletion due to temporal lag in the manifestation of impacts of pumping may contribute to SMC effects in the future independent of current or future pumping (2026 Alternative GSP Section 13.6.2.2). Current estimated depletion rates due to groundwater pumping are at or below the MOs for all ISW segments. Streamflow depletion was estimated by comparing simulated stream leakage between the historical baseline and no-pumping scenarios using the LBGFTM.

[5] California Water Code §10727.2(b)(4) specifies that GSPs are not required to address URs that occurred before and have not been corrected by 01 January 2015.

3 STATUS OF PROJECTS AND MANAGEMENT ACTIONS

☑ ***§ 356.4 (b)***

Each Agency shall evaluate its Plan at least every five years and whenever the Plan is amended, and provide a written assessment to the Department. The assessment shall describe whether the Plan implementation, including implementation of projects and management actions, are meeting the sustainability goal in the basin, and shall include the following:

(b) A description of the implementation of any projects or management actions, and the effect on groundwater conditions resulting from those projects or management actions.

Zone 7 Water Agency (Zone 7) recently evaluated planned and ongoing Projects and Management Actions (P/MAs) as part of both the 2025 Urban Water Management Plan (UWMP) and 2026 Alternative Groundwater Sustainability Plan (GSP) development process. Descriptions of the P/MAs, goals and objectives of the P/MA implementation program, circumstances for implementation, public noticing, regulatory processes, expected benefits, etc., are detailed in Section 15 of the 2026 Alternative GSP. Additionally, the 2025 UWMP includes further description of several P/MAs that relate to Zone 7's water supply and demand planning and is included as Appendix K of the 2026 Alternative GSP. The status, expected schedule, and current or anticipated benefits for individual projects are listed below.

Zone 7's P/MAs include supplemental water supply, water demand reduction, improvement of drinking water quality, and data-gap filling activities. Many P/MAs are already in place or in active development, but other P/MAs will be implemented incrementally on an as-needed basis to avoid Undesirable Results (URs) or meet Measurable Objectives (MOs) in the Livermore Valley Groundwater Basin (Basin). While each P/MA has a unique public noticing and stakeholder process, Zone 7 involves the public, stakeholders and local agencies in its planning and programs through meetings, data sharing, and online media (2026 Alternative GSP Section 15.4). The permitting and regulatory requirements vary across P/MAs, but general permitting requirements are listed in 2026 Alternative GSP Section 15.6. Funding mechanisms for P/MA implementation will be formulated and planned in Zone 7's upcoming two-year budget cycles in accordance with current priorities and implementation schedules.

3.1 Supplemental Water Supply Projects

Supplemental water supply projects include diversifying sources of water supplies, increasing water storage capacity, increasing production and operational flexibility of groundwater supplies, and evaluating alternative water supplies including desalination and potable reuse.

Imported Water Supplies

Description: Zone 7 ensures that local water supplies (e.g., groundwater) are not depleted by importing the majority of the Basin's water supply from the State Water Project (SWP) through the South Bay Aqueduct. This imported supply is delivered to Zone 7's Retailers and agricultural customers, and allows for recharging the Main Basin when surplus surface water is available. In addition, Zone 7 has access to surface water from Arroyo Valle, which flows into Lake Del Valle; storage rights in the Kern County Subbasin (through water banking contracts with Semitropic Water Storage District and Cawelo Storage District); and water transfers through the Yuba Accord, Dry Year Transfer Program (administered by the SWP contractors), and other transfer opportunities.

Targeted Sustainability Indicator(s): Chronic Lowering of Groundwater Levels, Reduction of Groundwater Storage.

Project Status: Ongoing.

Benefits Observed to Date or Anticipated Benefits: Since 1998, Zone 7 has maintained an annual maximum SWP contract amount of 80,619 acre-feet per year (AFY). Based on the California Department of Water Resources (DWR) most recent SWP Delivery Capability Report (DCR), the long-term average yield of the SWP under existing conditions is 54% of the Table A Contract Amount (43,500 AFY), or 48% of the Table A Contract Amount (38,700 AFY) under future modeled climate conditions (DWR, 2025). Between Water Years (WYs) 2021 and 2025, Zone 7 imported an average of 90% of the Basin's water supply, with annual imports ranging from 82% to 97%. This imported water is used to meet Retailer demand and to recharge the Basin during years when surplus supplies are available. Zone 7's water banking contracts provide additional flexibility in managing annual fluctuations in water supplies. Between WYs 2021 and 2025, Zone 7 stored approximately 14,000 acre-feet (AF) after losses and withdrew approximately 28,100 AF from Kern County water banks (Zone 7, 2026b). Zone 7 also supplements existing supplies with water transfers when needed and intends to secure additional transfer water, which includes a recent five-year agreement in 2025 with the Feather River Watershed), over the coming decade until future water supply augmentation projects (e.g., Delta Conveyance Project [DCP] and Sites Reservoir) come online.

Regional Groundwater Development Project (RGD)

Description: Since 2023, the City of Pleasanton ceased production from its supply wells due to per- and polyfluoroalkyl substances (PFAS) detections and has been unable to access its allotted Groundwater Production Quota (GPQ), instead relying solely on water purchased from Zone 7. Zone 7 and the City of Pleasanton plan to construct additional municipal supply wells in the Bernal Subarea of the Livermore Valley Groundwater Basin. This Regional Groundwater Development project would serve both Zone 7 and Pleasanton by allowing the City to access their annual GPQ of 3,500 AFY and provide Zone 7 with additional supply to meet future demand by expanding the existing Hopyard wellfield in the Bernal Subarea, which is currently outside of the PFAS footprint.

Targeted Sustainability Indicator(s): Degraded Water Quality.

Project Status: The Zone 7 Board of Directors and the Pleasanton City Council have entered an agreement to move forward with the construction of two wells and for Zone 7 to pump the City of Pleasanton's GPQ.

Expected Schedule: Projected in service by 2030.

Benefits Observed to Date or Anticipated Benefits: The project will increase groundwater production capacity, enhance drought resiliency, and provide greater operational flexibility in managing groundwater sustainability during extended droughts or surface water supply constraints.

Chain of Lakes Conveyance System (COLCS)

Description: Zone 7 continues to work closely with the mining companies and Alameda County Community Development Agency during the implementation of the Livermore Amador Valley Quarry Area Reclamation (LAVQQAR) Site Specific Plan (Alameda County Planning, 1981) whereby ownership of ten quarry lakes (Lakes A through I and Cope Lake) will be transferred to Zone 7 for water resources management purposes. Two of the lakes have already been transferred to Zone 7 (Lake I and Cope Lake). The COLCS will interconnect reclaimed gravel quarries with existing water supplies for local surface water storage. The current phase of the project involves building a two-way pipeline between the gravel quarries (Lake I and Cope Lake) and the Del Valle Water Treatment Plant. This pipeline will allow Zone 7 to store local and SWP water that would otherwise be lost or stored remotely during wet years and then use that

water as additional supply during dry years. Over the past five years, Zone 7 has completed multiple planning studies, including identification of a preferred pipeline alignment, and has conducted public workshops to develop and promote the project.

Targeted Sustainability Indicator(s): Chronic Lowering of Groundwater Levels, Reduction of Groundwater Storage.

Project Status: In 2026, Zone 7's Board of Directors directed staff to continue project planning efforts which include preliminary engineering design, permitting, and obtaining right-of-way easements.

Expected Schedule: Projected online by 2035.

Sites Reservoir

Description: Sites Reservoir is a proposed 1.5 million AF off-stream storage reservoir near Maxwell, California. The Reservoir is expected to provide water supply, environmental, flood and recreational benefits. Sites Reservoir has undergone significant environmental and engineering planning and is expected to provide approximately 190,000 AFY of additional deliveries on average to participating agencies (Sites Project Authority & United States Bureau of Reclamation, 2023). Zone 7 participates in Sites Reservoir Planning as a member of the Reservoir Committee.

Targeted Sustainability Indicator(s): Chronic Lowering of Groundwater Levels, Reduction of Groundwater Storage.

Project Status: Design and permitting.

Benefits Observed to Date or Anticipated Benefits: Hydrologic modeling suggests that Zone 7 could receive more than 10,000 AFY from Sites Reservoir in dry years, with the average annual supply estimated to be 3,500 AFY.
Benefits Observed to Date or Anticipated Benefits: This project is anticipated to add between 8,700 AFY and 15,700 AFY to annual storage supplies, with potential for additional supply during second and third years of drought.

Delta Conveyance Project

Description: DWR's proposed DCP would install a new tunnel to convey freshwater from north of the Delta to a point south of the Delta. The DCP is expected to increase SWP reliability and improve water quality. It would also serve to protect the reliability of SWP supplies from the effects of climate change and seismic events, among other risks, restoring an estimated 6,500 AFY of Zone 7's Table A Allocation, on average. Zone 7 has approved participation in pre-construction work of the DCP through 2027. Additional work beyond 2027 and participation in construction work will require approval from Zone 7's board.

Targeted Sustainability Indicator(s): Chronic Lowering of Groundwater Levels, Reduction of Groundwater Storage, Degraded Water Quality.

Project Status: Planning, design and permitting. Estimated operation by 2045.

Benefits Observed to Date or Anticipated Benefits: Anticipated improvement to water quality of SWP imports. May also increase reliability of SWP imports, by reducing the risks associated with ecosystem impacts, seismic risk, and climate change/sea-level rise. Increased reliability of imported water supply will decrease groundwater demand, and increase groundwater levels and groundwater storage. In the interest

of conservative operational planning, Zone 7 currently does not assume DCP-related supply augmentation will be available in any given year.

Conjunctive Use

Description: Since the 1960s, Zone 7 has integrated the management of local and imported surface water supplies with the management of local conveyance, storage, and groundwater recharge features. This allows Zone 7 to artificially recharge the Basin during times of surplus imported water availability.

Targeted Sustainability Indicator(s): Chronic Lowering of Groundwater Levels, Reduction of Groundwater Storage.

Project Status: Ongoing.

Benefits Observed to Date or Anticipated Benefits: Conjunctive use allows Zone 7 to increase its water supply reliability in dry years while also sustainably managing the groundwater basin. Since WY 1974, Zone 7's conjunctive use strategy has successfully recharged approximately 33,000 AF more than it has pumped from the Basin.

Well Master Plan (WMP)

Description: The WMP provides a road map to guide construction of new Zone 7 wells and the rehabilitation/replacement of existing wells in the Basin. Originally developed in 2003, the WMP estimated that Zone 7 would need to install seven to nine wells over 30 years in order to maintain its potable water supply reliability. Zone 7 is currently in the process of reevaluating its water supply well needs and recently initiated an update to the WMP. Site specific evaluation, renewal, replacement, and future well construction will depend on the outcome of water supply needs, PFAS investigations, and future regulatory requirements.

Targeted Sustainability Indicator(s): Chronic Lowering of Groundwater Levels, Degraded Water Quality.

Project Status: Ongoing. Zone 7 began the WMP update in 2026, and recommended projects will likely start after 2030.

Benefits Observed to Date or Anticipated Benefits: Zone 7's 2003 WMP led to installation of three municipal wells in the Chain of Lakes Wellfield, which have helped Zone 7 improve groundwater production while maintaining groundwater levels above localized historic lows. The WMP update will include recommendations for new and existing wells to support continued water supply reliability, water quality, and regulatory compliance.

3.2 Water Demand Reduction Actions

Water demand reduction actions include expanded non-potable recycled water use, administering and promoting water conservation programs and measures, and administering Retailer groundwater extractions by GPQs.

Existing and Future Non-Potable Recycled Water Use

Description: The City of Livermore, City of Pleasanton, and Dublin San Ramon Services District (DSRSD) all use tertiary-treated recycled water for non-potable applications within the Basin. In WY 2025, approximately 12% of total water use in the Basin was supplied by recycled water (Zone 7, 2026a). Recycled water is primarily used for landscape irrigation, with a small amount used for dust suppression,

grading projects, and crop irrigation. Zone 7 collaborates with Livermore, DSRSD, and Pleasanton to mitigate potential impacts to groundwater quality from the future planned recycled water use.

Targeted Sustainability Indicator(s): Chronic Lowering of Groundwater Levels, Reduction of Groundwater Storage.

Project Status: Ongoing.

Benefits Observed to Date or Anticipated Benefits: The use of non-potable recycled water reduces demand for potable surface water and groundwater supplies. A small portion of the applied recycled water also percolates below the root zone and provides minor groundwater recharge. Approximately 12% of total water use in the Basin is served with non-potable water.

Water Conservation

Description: Zone 7 coordinates and promotes conservation programs with its Retailers. The demand management measures include metering, public outreach, rebate programs, and more. The Zone 7 2025 UWMP and Water Shortage Contingency Plan provide response to drought and other shortages (Zone 7, 2026b). In addition, Zone 7 is actively supporting its Retailers to achieve compliance with new "Making Conservation a California Water of Life" regulations (California Code of Regulations, Title 23, Section 965 et seq.), which establish an annual Urban Water Use Objective that urban retail water suppliers must comply with annually starting in 2027.

Targeted Sustainability Indicator(s): Chronic Lowering of Groundwater Levels, Reduction of Groundwater Storage.

Project Status: Ongoing.

Benefits Observed to Date or Anticipated Benefits: Demand management measures help to reduce long-term demand for potable groundwater supplies. The Water Shortage Contingency Plan outlines plans to reduce demand during temporary water shortages and therefore mitigates the stress on groundwater supplies during dry periods. Between WYs 2020 and 2025, potable water demand per capita in Zone 7's service area decreased by approximately 13%. Efficiency gains are attributed in part to Zone 7 and its retailer's ongoing water conservation efforts.

GPQ Program

Description: Zone 7 manages a GPQ program to limit groundwater pumping from the four Retailers (Cal Water, DSRSD, Livermore, and Pleasanton) to the "natural sustainable yield" of the Basin. Averages are maintained with a process of carry-overs (limited to 20% of the GPQ) and recharge fees for all groundwater pumping exceeding the GPQ and carry-over credit.

Targeted Sustainability Indicator(s): Chronic Lowering of Groundwater Levels, Reduction of Groundwater Storage.

Project Status: Ongoing.

Benefits Observed to Date or Anticipated Benefits: By allocating groundwater to its Retailers based on the natural sustainable yield of the basin and applying a recharge fee for additional pumping, Zone 7 limits overextraction of groundwater due to retail groundwater production.

3.3 Projects to Improve Drinking Water Quality in Zone 7 Service Area

Zone 7's portfolio for the improvement of groundwater quality includes monitoring and permitting programs designed to identify, track, and limit potential sources of groundwater contamination; management programs and plans targeting specific constituents of concern including Total Dissolved Solids (TDS), nitrate, hexavalent chromium (CrVI), and PFAS; operational strategies including artificial recharge of higher quality surface water; and development and periodic updates to a comprehensive Basin Water Quality Management Plan.

Well Ordinance Program

Description: Zone 7 administers the Well Ordinance Program within its service area and the three incorporated cities (Dublin, Livermore, and Pleasanton) pursuant to a Memorandum of Understanding with Alameda County. As a result, any planned new well construction, soil-boring construction, or well destruction must be permitted by Zone 7 before the work is started.

Targeted Sustainability Indicator(s): Degraded Water Quality.

Project Status: Ongoing.

Benefits Observed to Date or Anticipated Benefits: Implementation of the Well Ordinance Program helps protect the Basin by ensuring wells are properly constructed to safeguard groundwater quality and by maintaining an inventory of all wells, including supply wells, monitoring wells, and inactive wells. This supports groundwater monitoring and provides information to improve management of groundwater levels, storage, and subsidence. Over the past five years, Zone 7 has issued an average of 125 well and borehole permits per year.

Toxic Sites Surveillance (TSS) Program

Description: Zone 7 documents and tracks polluted sites that pose a potential threat to drinking water through its TSS Program. Zone 7 maintains a database for all the toxic sites (typically contaminated with petroleum-based fuel products or industrial chemical contaminants) and tracks the case status, priority, and which regulatory agency is responsible for providing oversight.

Targeted Sustainability Indicator(s): Degraded Water Quality.

Project Status: Ongoing.

Benefits Observed to Date or Anticipated Benefits: The TSS Program helps protect the Basin by identifying and tracking contaminated sites that could threaten groundwater quality and drinking water resources.

Salt Management

Description: Zone 7's long-term salt management strategy includes monitoring and increasing municipal supply pumping, increasing operation of the Mocho Groundwater Demineralization Plant (MGDP), and conducting artificial groundwater recharge with low TDS water. A new PFAS treatment facility will be added to the MGDP during WYs 2026 - 2028. Zone 7 will continue implementing the Salt Management Plan by pumping groundwater with high TDS concentrations and releasing low-TDS water into the Arroyos for groundwater recharge.

Targeted Sustainability Indicator(s): Degraded Water Quality.

Project Status: Ongoing.

Benefits Observed to Date or Anticipated Benefits: Since its construction in 2009, the MGDP has extracted more than 20,000 tons of salt from groundwater pumped from the Basin. Over the past five years, Zone 7 has removed an estimated 1,768 tons of salt from the basin through operation of the MGDP. Zone 7 has managed to keep the theoretical average TDS concentration of the Main Basin stable around 720 milligrams per liter (mg/L).

Nutrient Management Program (NMP)

Description: The NMP monitors groundwater nutrient conditions, evaluates nutrient loading, and implements best management practices and targeted measures to address nitrate concerns. One of the NMP measures is the implementation of the Onsite Wastewater Treatment System Management Program, which reviews and regulates certain onsite wastewater treatment systems (e.g., septic systems), implements wastewater management policies, and coordinates with Alameda County Department of Environmental Health on system permitting and performance measures.

Targeted Sustainability Indicator(s): Degraded Water Quality.

Project Status: Ongoing.

Benefits Observed to Date or Anticipated Benefits: By limiting nutrient loading through the implementation of the NMP, Zone 7 kept nitrate concentrations relatively stable across the Basin and in many of the zones highlighted as areas of concern, nitrate concentrations have substantially decreased. There have also been zero Minimum Threshold (MT) exceedances at any of the Representative Monitoring Sites for Water Quality.

PFAS Management Strategy

Description: Zone 7 has developed a PFAS Management Strategy consisting of PFAS monitoring, blending and treating, managing water quality, and diversifying groundwater resources. Zone 7 continues to expand and refine its PFAS monitoring network. Zone 7 also continues to track regulatory requirements.

Targeted Sustainability Indicator(s): Degraded Water Quality.

Project Status: Ongoing.

Benefits Observed to Date or Anticipated Benefits: Since the adoption of the 2021 Alternative GSP, Zone 7 has installed new PFAS treatment systems at its Chain of Lakes and Stoneridge wellfields and has initiated the construction of a third system at its Mocho wellfield. Zone 7 has also installed a nested sentinel PFAS monitoring well between the Mocho and Hopyard wellfields to monitor the migration of the plume from east to west. Zone 7 is proactively meeting both state and federal PFAS drinking water standards ahead of enforcement deadlines.

Basin Water Quality Management Plan

Description: Zone 7 is developing a Basin Water Quality Management Plan to serve as an integrated water quality management plan for both surface and groundwater quality.

Targeted Sustainability Indicator(s): Degraded Water Quality.

Project Status: Under Development. Estimated Zone 7 Board adoption by 2029.

Benefits Observed to Date or Anticipated Benefits: The plan will provide a comprehensive and coordinated strategy for water quality management across the entire basin, and update and supersede

the existing Salt and Nutrient Management Plans while expanding its scope to include other constituents of concern. This will help protect water quality and improve Zone 7's water supply reliability.

3.4 Data Gap-Filling and Other Alternative GSP Implementation Projects

Zone 7's data gap-filling projects involve the expansion of its monitoring programs, including increasing the number of monitoring wells and frequency of data collection, sampling for additional water quality constituents, and adding a new Interconnected Surface Water (ISW) monitoring network; expansion of groundwater extraction monitoring, including for irrigation and domestic wells; ongoing extension, updates, and re-calibration of the Basin numerical groundwater model and ongoing refinement of the water supply risk model; investigation of groundwater contaminant mobilization sources, pathways, and characteristics; and analysis of relationship of Sustainability Indicators trends with Zone 7 groundwater management activities to assess if URs are occurring (e.g., for ISWs and groundwater dependent ecosystems, groundwater quality, etc.).

Hydrogeologic Investigations and Groundwater Model Update

Description: Zone 7 completed its refined hydrogeologic conceptual model in 2024 and updated numerical groundwater flow and transport model (the Livermore Basin Groundwater Flow and Transport Model [LBGFTM]) in 2025. Zone 7 also has developed a Decision Support Tool to support adaptive planning and operational decision making.

Targeted Sustainability Indicator(s): Chronic Lowering of Groundwater Levels, Reduction of Groundwater Storage, Degraded Water Quality, Depletion of Interconnected Surface Waters

Project Status: Ongoing.

Benefits Observed to Date or Anticipated Benefits: The LBGFTM enhances Zone 7's long-term planning ability and helps inform ongoing refinement and implementation of the Alternative GSP.

Expansion of Monitoring Programs

Description: Zone 7 operates robust monitoring programs for groundwater conditions throughout the Basin. However, Zone 7 recognizes data gaps and uncertainties particularly in the Fringe and Upland areas. Zone 7 continues to expand and refine its monitoring programs to address the data gaps.

Targeted Sustainability Indicator(s): Chronic Lowering of Groundwater Levels, Reduction of Groundwater Storage, Degraded Water Quality.

Project Status: Ongoing.

Benefits Observed to Date or Anticipated Benefits: Since WY 2021, Zone 7 has expanded and revised its monitoring programs across the Main Basin, Fringe Area, and Upland Area. Zone 7 also added telemetric monitoring devices to 13 wells in the Main Basin and Fringe Areas, providing real-time groundwater level monitoring, including for all Representative Monitoring Sites for Water Levels (RMS-WL). In WY 2024, Zone 7 added a nested sentinel monitoring well to improve tracking of PFAS migration.

Groundwater Contaminant Mobilization Studies

Description: Zone 7 completed two desktop groundwater contaminant mobilization studies during the evaluation period. In WY 2022, Zone 7 used its MODFLOW-NWT groundwater model to develop water quality fate and transport simulations to evaluate the impact of constituents (including PFAS) on existing and future groundwater operations. In WY 2023, Zone 7 completed the second phase of the study, which

focused on potential groundwater quality impacts from groundwater recharge of purified water. The study involved simulating the fate and transport of existing constituents such as nitrate, chloride, boron, arsenic, and hexavalent chromium.

Zone 7 also collaborated with research scientists at Lawrence Livermore National Laboratory (LLNL) to delineate where local and imported water recharges along arroyos and throughout the basin. LLNL researchers tracked stable water isotopes and naturally occurring radioactive isotopic tracers to track seepage along the arroyos (Lerback et al., 2026a). Zone 7 and LLNL collaborated on a follow-up study using the isotopic tracers to model recharge transit times of six wells in the Livermore Groundwater Basin (Lerback et al., 2026b). In 2026, Zone 7 began collaborating on a new isotopic study to evaluate hydrogeologic communication between the Amador and Bernal subareas.

Targeted Sustainability Indicator(s): Chronic Lowering of Groundwater Levels, Reduction of Groundwater Storage, and Degraded Water Quality.

Project Status: Complete / Ongoing

Benefits Observed to Date or Anticipated Benefits: The Groundwater Contaminant Mobilization Study provided important information about the fate and impact of contaminants, including PFAS, in the groundwater system. It also provided a focused study on the impact of recharged surface water on groundwater quality. The isotopic recharge studies showed what proportion of the water in each studied wellfield comes from natural and artificial recharge, and the transport time from surficial recharge to wellfield extraction. These studies can inform recharge and management practices in the future.

Evaluate and Compare Water Budget Methodologies

Description: During development of the 2026 Alternative GSP, Zone 7 established a new method for estimating groundwater storage using the LBGFTM and measured or simulated groundwater elevations. As reported in Section 8.4 of the 2026 Alternative GSP, the LBGFTM method uses the 3D representation of aquifer extents, thicknesses, and calibrated storage coefficients from the LBGFTM to convert measured water levels to storage values in each Principal Aquifer and subarea. The LBGFTM method can also be used to estimate storage using theoretical water level surfaces (e.g., water levels at MTs), enabling the evaluation of storage under future or potential water level conditions.

Targeted Sustainability Indicator(s): Reduction of Groundwater Storage.

Project Status: Complete.

Benefits Observed to Date or Anticipated Benefits: Refined estimates of groundwater in storage enhance Zone 7's planning capabilities and inform ongoing refinement and implementation of the Alternative GSP.

Advanced Water Supply Management Model

Description: Zone 7's Advanced Water Supply Management Model (AWSMM; formerly "Water Supply Risk Model") runs on a monthly time step and simulates the seasonal availability of supplies including local runoff, imported surface water, and water recovered from groundwater banks outside of the Basin and local groundwater. Zone 7 continues to make improvements to its AWSMM.

Targeted Sustainability Indicator(s): Chronic Lowering of Groundwater Levels, Reduction of Groundwater Storage.

Project Status: Model completed, improvements will be implemented on an ongoing, as-needed basis.

Benefits Observed to Date or Anticipated Benefits: Zone 7 uses the AWSMM to analyze the impacts of variable conjunctive use operations on groundwater and sustainable management of the Basin, as well as refine elements of the projected water budget. In the future, the combination of the water supply risk model and the LBGFTM will enhance analyses of conjunctive use operations and other P/MAs on groundwater conditions and sustainable management of the Basin. The AWSMM can be used to conduct various long-term planning water availability investigations, as well as to inform short-term planning and operational decision-making. An updated Water Supply Reliability Assessment using the AWSMM is expected to be completed in 2027.

3.5 Deprioritized and Discontinued Projects

Since the last periodic evaluation, Zone 7 has determined that some previously listed projects are either no longer necessary or not currently feasible. Some of these projects remain in the exploratory planning stage and may be considered for implementation in the future, while others have been discontinued entirely.

3.5.1 Exploratory Planning Projects

Zone 7 continues to explore potable reuse opportunities, reliability interties, and participation in the Bay Area Regional Desalination Project (BARDP), but does not currently have plans for implementation or include these in future water supply projections.

Potable Reuse

Description: Potable reuse is the use of purified water derived from wastewater effluent to supplement potable water supplies. Studies completed by the Tri-Valley Water Agencies and Zone 7 in 2018 and 2019, respectively, evaluated the feasibility and water supply benefit of potable reuse in the Zone 7 service area (Carollo Engineers, 2018; Zone 7, 2019). While Zone 7 does not currently have a potable reuse project planned, an upcoming study will re-evaluate potable reuse as a source of supply in light of changed climate conditions, supply and demand projections, and the State's adoption of direct potable reuse regulations. Initiating potable reuse in the Tri-Valley would involve a partnership between Zone 7 and its Retailers to manage the wastewater collection and treatment, and purified water production and distribution/storage.

Targeted Sustainability Indicator(s): Chronic Lowering of Groundwater Levels, Reduction of Groundwater Storage.

Project Status: Exploratory planning; awaiting further study.

Benefits Observed to Date or Anticipated Benefits: Potable reuse would introduce a new potable supply to Zone 7's portfolio and it would have the benefits of local production and control, drought resilient supply, and use of an existing water resource (i.e., wastewater). Zone 7's 2019 Water Supply Evaluation estimated 4,000 AFY of benefit starting in WY 2027 and 7,000 AFY after WY 2035. Zone 7 does not consider supply volumes from potable reuse for planning purposes.

Future Water Supplies: Reliability Intertie

Description: Zone 7 has explored early concepts for a reliability intertie with another major water agency (e.g., East Bay Municipal Utilities District or San Francisco Public Utilities Commission) to help mitigate risk during a major water supply interruption from the Delta and to create opportunities for transfers/exchanges. While the current ten-year capital improvement program does not include an

intertie project, Zone 7 may explore interties with neighboring agencies if a viable option becomes available.

Project Status: Removed from ten-year Capital Improvement Program; Zone 7 may explore if a viable option becomes available.

Bay Area Regional Desalination Project (BARDP)

Description: The BARDP is a regional effort through the Bay Area Regional Reliability partnership that would involve constructing a regional brackish water treatment plant in Contra Costa County. Previous studies suggested that Zone 7 could gain access to up to an additional 5,000 AFY through the BARDP. Although Zone 7 is still exploring participation in the BARDP, Zone 7 does not consider it a planned future supply source.

Project Status: Exploratory planning, not considered in quantitative supply planning.

3.5.2 Discontinued Projects

Zone 7 is no longer pursuing the Los Vaqueros Reservoir Expansion project due to the dissolution of the Los Vaqueros Joint Powers Authority (JPA).

Los Vaqueros Reservoir Expansion

Description: The Los Vaqueros Reservoir Expansion was a planned project to expand Contra Costa Water District's (CCWD) Los Vaqueros Reservoir and construct a new Transfer-Bethany Pipeline to connect the reservoir to the South Bay Aqueduct and the California Aqueduct. Zone 7 became a member of the Los Vaqueros JPA in 2021. The JPA dissolved in 2025 following CCWD's decision to withdraw from the project.

Project Status: Cancelled after CCWD withdrew due to cost increases and schedule delays.

4 BASIN SETTING BASED ON NEW INFORMATION OR CHANGES IN WATER USE

☑ *§ 356.4 (c)*

☑ *§ 356.4 (d)*

Each Agency shall evaluate its Plan at least every five years and whenever the Plan is amended, and provide a written assessment to the Department. The assessment shall describe whether the Plan implementation, including implementation of projects and management actions, are meeting the sustainability goal in the basin, and shall include the following:

(c) Elements of the Plan, including the basin setting, management areas, or the identification of undesirable results and the setting of minimum thresholds and measurable objectives, shall be reconsidered and revisions proposed, if necessary.

(d) An evaluation of the basin setting in light of significant new information or changes in water use, and an explanation of any significant changes. If the Agency's evaluation shows that the basin is experiencing overdraft conditions, the Agency shall include an assessment of measures to mitigate that overdraft.

This section provides an evaluation of the Basin Setting, including new information collected and identification of changes in water use since development of the 2021 Alternative Groundwater Sustainability Plan (GSP).

4.1 Hydrogeologic Conceptual Model

Since adoption of the 2021 Alternative GSP, Zone 7 Water Agency (Zone 7) has undergone multiple data gap filling efforts and utilized new publicly available data to update and refine its Hydrogeologic Conceptual Model (HCM). Zone 7 performed Electrical Resistivity Tomography (ERT) surveys, seismic refraction surveys, and Stationary Time-domain Electromagnetic (sTEM) surveys to address specific data gaps, largely focused on the Main Basin management area. Zone 7 also integrated new data from the Department of Water Resources' (DWR's) statewide Airborne Electromagnetic (AEM) surveys, aquifer pumping tests, lithologic observations, and borehole electric geophysical log (e-log) data from newly drilled borings. These new data were used to update the HCM using the Leapfrog geologic modeling and visualization software. New data and analysis contributed to minor adjustments to the HCM description, which are included in the 2026 Alternative GSP and summarized below.

The geophysical surveys were primarily focused on refining the locations and extents of key groundwater flow boundaries and observed or inferred faults that had been previously delineated in the Livermore Valley Groundwater Basin (Basin). The ERT and Seismic surveys were focused in three areas: the Parks Boundary and Pleasanton Fault along the northwest boundary of the Main Basin, the Livermore Thrust and Oak Knoll outcrop, and "The Gap", the narrow boundary between the Main Basin, and the northeastern Fringe Area. The sTEM surveys were aligned along the Arroyo Mocho and Arroyo Valle stream channels. Each of the streams represent important recharge mechanisms for groundwater in the Basin and therefore the sTEM surveys were targeted to provide improved understanding of the stratigraphy and aquifer properties underlying the Arroyos to inform the updated Basin groundwater flow model (i.e., the Livermore Basin Groundwater Flow and Transport Model [LBGFTM]) used to support Sustainable Groundwater Management Act (SGMA) reporting and implementation, and water supply operational planning.

The results of the surveys support the existence of all the boundary delineations included in the 2021 Alternative GSP except the Livermore Thrust, which is now inferred as an erosional feature rather than a fault. Additional discussion of the updated interpretation of the Livermore area and its impact to hydraulic flow in that area is presented in Section 7.6.1 of the 2026 Alternative GSP. The locations, extents, and natures of other structural features and hydraulic flow boundaries that influence groundwater flow were confirmed by the geophysical surveys, with some minor refinements of stratigraphic extents and elevations.

The Arroyo Valle crosses the Concannon Boundary which coincides with a rapid uplift of the bottom of the Basin along the southern boundary of the Main Basin. The survey confirmed the existence of the Concannon Boundary but suggested it is present further south than previously mapped. Along the Arroyo Mocho, the sTEM survey showed coarse-grained sediments progressively thickening from the narrow southern upstream end of the valley toward the northwest into the rest of the Main Basin.

The Oak Knoll Outcrop location was confirmed as a body of steeply rising high-resistivity deposits, consistent with the previous interpretation as a flow barrier. The geophysical surveys and ongoing groundwater elevation monitoring did not explicitly confirm the presence of the inferred Pleasanton Fault extension of the regional fault system. However, the existence of the Pleasanton Fault cannot be ruled out, and further exploration may be warranted in this area, as the geophysical surveys were limited in their resolution and depth of investigation.

Using the 3D visualization and modeling capabilities of the Leapfrog software, the contact surfaces and extents of the existing HCM units were refined with the new geologic and geophysical data. This includes the fine-grained surficial deposit referred to as the Overburden, which was refined to extend further southeast than previously identified. The Overburden, where present, acts as a significant impediment to groundwater recharge. Zone 7 captured the results of these HCM updates by producing new cross-sections with the Leapfrog software program, which are included as Figures 7-9 through 7-11 in the 2026 Alternative GSP. The updated HCM was also used to define the stratigraphy for the LBGFTM.

The new geologic, geophysical and pumping test data collected since adoption of the 2021 Alternative GSP have contributed to reduced data gaps throughout the Main Basin and have improved Zone 7's ability to understand and manage the Basin. However, the geophysical surveys had a limited depth of investigation and were largely focused in the Main Basin, so some data gaps and limitations remain, particularly related to the delineation of the bottom of the usable groundwater basin, and where borehole data are sparse, such as in the Fringe and Upland areas. Future gap-filling exercises will be focused on investigations to support the ongoing refinement of the HCM.

4.2 Groundwater Conditions

4.2.1 Groundwater Levels

Zone 7 continues to monitor groundwater levels within the Basin. Groundwater levels generally increased within the evaluation period and as discussed in **Section 2.1**, there were no Minimum Threshold (MT) exceedances for the Chronic Lowering of Groundwater Levels during the evaluation period.

Groundwater elevations, gradients, and flow directions remain similar to those discussed in the 2021 Alternative GSP, and within their historical ranges. Neither groundwater elevations nor Zone 7's understanding of historical groundwater level trends have significantly changed since the development of the 2021 Alternative GSP (2026 Alternative GSP Section 8.3).

4.2.2 Groundwater Storage

Groundwater storage in the Basin is estimated using the LBGFTM, as detailed in 2026 Alternative GSP Section 8.4. The LBGFTM Method was established during development of the 2026 Alternative GSP and replaces the historical methods for estimating groundwater storage. Zone 7 will continue to use the Hydrologic Inventory (HI) Method (i.e., Water Budget) in conjunction with the LBGFTM to report historical storage since the beginning of Zone 7's long term monitoring in 1974.

Groundwater storage in the Basin has increased over the evaluation period since the end of Water Year (WY) 2020. Main Basin storage has increased by approximately 13,100 acre-feet (AF) since WY 2020, estimated by the LBGFTM Method.

4.2.3 Seawater Intrusion

The Basin is not located near any saline water bodies; therefore, seawater intrusion is not present and not likely to occur. Observations made during the evaluation period have not suggested any changes to this understanding.

4.2.4 Degraded Water Quality

As discussed in **Section 2.4**, water quality in the Basin has remained relatively stable; however, changes to per- and polyfluoroalkyl substances (PFAS) and hexavalent chromium (CrVI) regulatory screening levels have occurred during the evaluation period, necessitating establishment of preliminary Sustainable Management Criteria (SMCs) for PFAS and revision of preliminary SMCs for CrVI. The United States Environmental Protection Agency (EPA) established Federal Maximum Contaminant Levels (MCLs) of 4 nanograms per liter (ng/L) for perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) in 2024. These chemicals previously did not have state or federal MCLs. Both PFOA and PFOS were designated Constituents of Concern (COCs) in the Basin. In October 2024, California reinstated the primary MCL for CrVI at 10 micrograms per liter (µg/L).

As discussed in 2026 Alternative GSP Section 8.6.6, Zone 7 has sampled for PFAS since 2019 and officially added them to the Water Quality Sampling Program in 2021, which initiated more widespread sampling. Both PFOA and PFOS are present in the Main Basin. The PFOA and PFOS concentrations in WY 2025 are shown in 2026 Alternative GSP Figures 8-34 through 8-37. PFOS concentrations above the MCL are present throughout the northern Amador Subarea, as well as parts of the Mocho II and Bernal Subareas in the Main Basin. PFOS concentrations are also present above the MCL in the eastern part of the Northern Fringe Area along the border with the Main Basin. The highest observed concentration of PFOS was 1,200 ng/L in the northern part of the Amador Subarea. PFOS was detected in fewer samples and at lower concentrations in the Lower Aquifer. PFOA concentrations above the MCL are present in the northwestern portion of the Amador Subarea, the northwestern portion of the Mocho II Subarea, and the section of the Northern Fringe Area that borders the Main Basin. PFOA concentrations were significantly lower than PFOS concentrations (2026 Alternative GSP 8.6.6).

Boron concentrations in the Lower Aquifer have increased since WY 2020. Boron concentrations in several areas of the Basin, including the Bernal Subarea, Amador Subarea, and Northeast Fringe Area, are greater than 1,000 µg/L. The source of boron is unconfirmed but may originate from localized natural alkali/marine sediments or from vertical migration from the Upper Aquifer.

The maximum concentrations of total chromium sampled in the Lower Aquifer have decreased between WYs 2020 and 2025. Because the locations of the slightly elevated total chromium concentrations in the Lower Aquifer do not coincide with those in the Upper Aquifer, it is likely that the chromium in the Lower

Aquifer is not a result of vertical migration from the Upper Aquifer. It may be the result of localized leaching of naturally occurring chromium-rich minerals from sediments in those portions of the Lower Aquifer.

4.2.5 Land Subsidence

Since WY 2019, Zone 7 has used Interferometric Synthetic Aperture Radar (InSAR) data to monitor land subsidence within the Basin, replacing the previous land survey program. Subsidence within the evaluation period has remained very low and within the range of elastic deformation and historical land surface elevations, and has tended to rebound in association with groundwater level recovery (2026 Alternative GSP Section 8.7). No inelastic subsidence was observed since the beginning of the land surveys in 2002, but Zone 7 will continue to monitor land subsidence using InSAR data.

4.2.6 Interconnected Surface Water

Interconnected Surface Water (ISW) is defined in 23 California Code of Regulations (CCR) §351(o) as "surface water that is hydraulically connected at any point by a continuous saturated zone to the underlying aquifer and the overlying surface water is not completely depleted." Zone 7 has continued to sustainably manage ISW depletion in the Basin to avoid Undesirable Results (URs) for decades, including over three major droughts. As part of this periodic evaluation, Zone 7 has performed statistical and geospatial analyses to identify stream reaches that are likely interconnected to shallow groundwater (2026 Alternative GSP Section 8.9).

In addition to the analyses presented in 2026 Alternative GSP Section 8.9, Zone 7 has completed an analysis in line with new DWR Guidance for ISW (DWR, 2024a, 2024b, 2024c). The three guidance documents recommend the use of a numerical groundwater model to estimate the effects of pumping on the Depletion of ISWs. The documents recommend the following:

1. Completion of hypothetical no-pumping scenarios of the Basin numerical model over the Historical and Projected periods to estimate changes in surface water depletions as a result of Basin pumping.
2. Characterization of the location, timing, quantity, and trends of ISW depletion, as indicated by the differences between no-pumping and baseline scenarios.

First, Zone 7 completed a preliminary screening of potential ISW locations, considering the locations of surface water bodies, daily streamflow data, groundwater elevation data, and geologic cross-sections. This screening excluded surface streams that overlay the Overburden, exist in lined channels, and are located within the Chain of Lakes; (2026 Alternative GSP Section 8.9.1.2).

Then, the potential ISWs were compared to historical depth to water measurements along the stream paths. Streams that had a depth to water less than the maximum streambed depth in the Basin (i.e., streams with groundwater within 30 ft of ground surface between WYs 2015 and 2025), were retained as potential ISW segments.

Potential ISWs were also evaluated for stream-aquifer exchange with the LBGFTM. In most cases there is strong agreement between the ISW reaches identified by the numerical modeling, analytical approaches, and the synoptic surveys conducted by Zone 7. Most of the areas where potential ISW segments occur coincide with locations identified as likely groundwater dependent ecosystems (GDEs). Figure 8-47 of the 2026 Alternative GSP shows mapped ISW segments in the Basin, and Figure 13-1 of the 2026 Alternative

GSP shows historical depletion, preliminary MTs, and preliminary Measurable Objectives for the mapped ISW segments with established preliminary SMCs.

In accordance with DWR Guidance for ISW, streamflow depletion due to groundwater pumping estimates for the nine potential ISW reaches identified in the Basin are provided in 2026 Alternative GSP Section 13.6.2. These estimates inform the preliminary SMCs established at each of the nine ISW segments, described in 2026 Alternative GSP Section 13.6.2 and as **Section 2.6.5** of this Periodic Evaluation.

4.2.6.1 Updated GDE Analysis

Sections 8.8 and 8.9 of the 2026 Alternative GSP were updated to reflect the GDEs currently identified within the Basin. The 2021 Alternative GSP conducted an in-depth review of likely GDEs within the Basin, field studies, species identification, vegetation mapping, and remote sensing analysis. The 2026 Alternative GSP reviewed the 2021 analyses and extended the analyses over the evaluation period (see **Section 2.6.3.1**). Two GDEs were removed from the list of potential GDEs within the Basin (see **Section 2.6.3.1**).

The discussion of correlations between water levels and GDE health has changed between the 2021 and 2026 Alternative GSPs. The 2026 Alternative GSP utilizes Modified Chelton correlations, which remove autocorrelation artifacts from time-series data. Correlations reported in the 2026 Alternative GSP are lower than those in the 2021 Alternative GSP because the 2026 Alternative GSP reports Modified Chelton correlation coefficients, rather than the Pearson correlations reported in the 2021 Alternative GSP. The values reported do not represent a major shift in Basin conditions, but rather a refined statistical method.

4.3 Water Use Changes and Associated Water Budget

The Basin water budget provides an accounting of the total annual volume of water entering and leaving the Basin, as calculated using the analytical HI Method. The 2026 Alternative GSP presents updated water budgets for the following periods:

- Historical: WYs 1974 - 2025
- Current: WY 2025
- Projected: WYs 2026 - 2050

The subsequent sections discuss how conditions in the Basin have changed since previous water budgets were developed, compare observations over the evaluation period with previous projections for the corresponding years, and present revised future projections. Detailed water budget methodologies and findings are documented in Section 9 of the 2026 Alternative GSP.

4.3.1 Changes in Land and Water Use

Land use remained relatively unchanged from the land use presented in the 2021 and 2016 Alternative GSPs and remains similar to the land use of the mid-2000s (2026 Alternative GSP Section 5.1.4). Land use planning and water resource management are regularly and closely coordinated across the Basin, which helps ensure that land use plans include collaboration with water agencies. As documented in Section 5.3 of the 2026 Alternative GSP, the cities overlying the Basin have developed General Plans and urban growth boundaries that address water supply issues.

Water use within the Basin has remained relatively consistent over the evaluation period. As reported in the 2025 Urban Water Management Plan, potable water use in the Zone 7 service area was between 33,100 and 35,700 acre-feet per year (AFY) from WY 2021 - 2025. Groundwater pumping in the Basin (since the start of HI Method accounting in 1974) peaked at 23,600 AFY in WY 2021 and reached its lowest value since WY 1996 in WY 2024: 7,130 AFY. Average pumping during the evaluation period (14,559 AFY) was slightly lower than average pumping from WY 2001-2020 (15,272 AFY).

4.3.2 Surface Water Reliability

At the time of the 2021 Alternative GSP, the most recent Delivery Capability Report (DCR) for the State Water Project (SWP) was the Final 2019 DCR. Now, the Draft 2025 DCR includes an additional 18 years of historical inflows (1922-2021 compared to 1922-2003 timeframe used by the Final 2019 DCR). The extended timeframe includes major droughts from WY 2012-2016 and WY 2020-2022, lowering the average expected delivery. Currently, the long-term reliable yield of the SWP is approximately 54% of the Table A amount (43,500 AFY) under existing conditions and 48% of the Table A Contract Amount (38,700 AFY) under future modeled climate conditions (DWR, 2025).

Several changes to Basin Projects and Management Actions (P/MAs) will affect the volume and reliability of surface water in the Basin. Based on Zone 7's modeling, average water supply yield from Sites Reservoir is lower than previously assumed, and the expected implementation date has shifted from 2030 to 2034. Furthermore, Zone 7 is no longer actively pursuing the Bay Area Regional Desalination Project (BARDP). Table 9-4 of the 2021 Alternative GSP projected an average of 10,000 AFY of surface water from the Sites Reservoir and 5,000 AFY of imported water from the BARDP starting in 2030. Now, the Sites Reservoir is expected to provide 2,190 AFY in normal years (based on the median modeled value), and up to 10,500 AFY in dry years (see 2026 Alternative GSP Table 9-4). BARDP supplies are no longer included in the Projected Water Budget. See **Section 3** for further discussion of P/MA status.

4.3.3 Water Budget Revisions

Current Water Budget (WY 2025)

The 2026 Alternative GSP updates the current water budget to reflect WY 2025 (2026 Alternative GSP Section 9.3). The Current Water Budget reflects the same methodological changes as the Historical Water Budget.

Hydrologic and supply conditions differed substantially between WY 2020 and WY 2025. WY 2020 was critical, with a 20% SWP allocation (16,124 AF). WY 2025 was below normal, with a 50% SWP allocation (40,300 AF; 2026 Alternative GSPs Section 9.3.1). The differences in supply conditions impact the current water budget tabulated in Section 9.3 of the 2026 Alternative GSP. The below-normal single-year WY 2025 water budget was closer to balance (approximately 400 AF deficit) than prior critically dry and wet years throughout the evaluation period. Zone 7 continues to operate the Basin sustainably due to net recharge in normal and wet years. Zone 7 operates the Basin by prioritizing water imports so that groundwater storage remains well above MTs.

Historical Water Budget

The 2026 Alternative GSP extends the historical water budget from WY 1974 – 2020 to WY 1974 – 2025 (2026 Alternative GSP Section 9.3). The water budget is based on the HI Method, which includes an update to HI recharge and runoff input methodology. Since WY 2021, the Zone 7's Integrated Water Flow Model Demand Calculator (IDC) model has been used to estimate rainfall recharge, applied water recharge and agricultural pumping across the full Basin extent. IDC estimates replaced the prior spreadsheet-based

Areal Recharge Model estimates of the same inflow components (2026 Alternative GSP Section 9.1.1.2). The IDC estimates represent a minor quantitative change in rainfall recharge, artificial recharge, and agricultural pumping estimates. IDC runs faster, is simpler to maintain and calibrate, offers better integration with the Basin numerical groundwater model, and is widely used by DWR and water management agencies throughout the state.

There are two minor changes in presentation of water budget quantities. Mining area evaporation is now reported with other mining losses as a single Mining Use component in 2026 Alternative GSP Table 9-D, and domestic pumping is listed as its own outflow component in 2026 Alternative GSP Table 9-A. The aggregation of mining loss terms and disaggregation of domestic pumping does not represent a quantitative change to these values, only a semantic change to their classification.

With the addition of the past five years to the historical water budget, Zone 7 has recharged approximately 32,600 AF more than it has pumped (see 2026 Alternative GSP Section 9.3.6.3). Without the recharge by Zone 7, demands would have outpaced the natural sustainable yield of the Basin. However, since WY 1974, Zone 7 has imported and recharged approximately 272.6 thousand acre-feet (TAF) to ensure Basin demands are managed sustainably. Since WY 1974, a cumulative gain in storage of approximately 46.5 TAF has occurred in the Main Basin.

Projected Water Budget

The projected water budget reflects the same methodological changes as the historical water budget. In addition, the projected water budget in the 2026 Alternative GSP uses updated projections from Zone 7's Advanced Water Supply Management Model (**Section 3.4**) to update several components: artificial recharge in the Arroyo Valle and Arroyo Mocho; recharge from the Chain of Lakes; municipal and retailer groundwater extractions; mining extractions in the Chain of Lakes, and Basin overflow.

The 2021 Alternative GSP projected that Main Basin storage would decline until Sites Reservoir and potable reuse supplies came online in 2030 (2021 Alternative GSP Section 9.4.3). Observed storage declined during the critical WYs 2021 and 2022, then recovered to near-full conditions by WY 2024, after wet and above normal years. Differences between projected conditions and actual conditions over the evaluation period are expected because of uncertainty in climatological variation. Zone 7 pumped 5,755 AF in WY 2025, less than the 9,200 AFY normal-year Main Basin groundwater supply assumed for 2025 in the 2021 Alternative GSP (2026 Alternative GSP Table 9-4).

The 2026 GSP similarly projects that Main Basin storage will decline until WY 2030, when increased artificial recharge and storage capacity begins to outpace demand due to Zone 7's planned supply and storage augmentation P/MAs. Artificial recharge is expected to further increase as Sites Reservoir and the Chain of Lakes Conveyance System come online (expected in 2034 and 2035, respectively), and the Main Basin is projected to approach full capacity by 2037.

The 2026 Alternative GSP projects higher normal-year supplies than the 2021 Alternative GSP after 2040 due to increased supplies from the Chain of Lakes Conveyance System and Regional Groundwater Development Project. The 2026 Alternative GSP includes lower estimates of SWP Table A reliability, a lower supply benefit from the Sites Reservoir, and removed the BARDP as a supply source.

4.3.4 Assessment and Mitigation of Overdraft

Overdraft conditions are not occurring in the Basin. Long-term overdraft, as defined in California Water Code §10735, has not occurred in the Basin at any time since Zone 7 assumed groundwater management

responsibility in the early 1970s (see 2021 and 2026 Alternative GSPs Section 9.3.4; 2021-2025 WY Annual Reports Section 7).

The WY 2021-2025 evaluation period included two consecutive critically dry WYs (2021 and 2022), followed by a wet year (WY 2023), an above-normal year (WY 2024), and a below-normal year (WY 2025). Sustainable storage declined from approximately 81 TAF at the end of WY 2020 to approximately 66 TAF at the end of 2022, a cumulative reduction of approximately 15 TAF, or about 16% of the approximately 95-TAF sustainable storage capacity.[6] During this period, groundwater supplies fell to 40% and 74% of the sustainable average[7] of groundwater extraction in WY 2021 and WY 2022, respectively, while demands reached 149% and 138% of sustainable average due to increased Zone 7 pumping to offset reduced imported surface water availability.

During the favorable hydrologic period of WYs 2023-2024, total Basin storage increased by approximately 12 TAF in WY 2023 and 17 TAF in WY 2024, resulting in sustainable storage reaching approximately 95 TAF at the end of WY 2024, effectively the historic full Basin volume. Storage remained near full through the end of WY 2025 at approximately 94 TAF, with sustainable storage at approximately 99% of capacity.[8] Over the full evaluation period, total Basin storage exhibited a net increase of approximately 13 TAF. No URs for Reduction of Groundwater Storage were triggered, and the UR criteria (i.e., water levels in greater than 25% of Representative Monitoring Sites for Water Levels below their respective MTs for two consecutive years) did not occur. This pattern of drought-related drawdown followed by managed recovery is consistent with the long-term (WY 1974–2025) storage record and confirms that the Basin continues to operate within its estimated Sustainable Yield.

Zone 7's portfolio of P/MAs (2026 Alternative GSP Section 15) is designed to limit overdraft conditions from developing and to maintain compliance with the Sustainability Goal throughout the 50-year planning and implementation horizon (2026 Alternative GSP Section 15.5). The conjunctive use program remains the primary mechanism for maintaining Basin sustainability. Since 1974, Zone 7 has artificially recharged approximately 33 TAF more than it has pumped on a cumulative basis. The rapid storage recovery observed in WY 2023–2024 demonstrates the continued effectiveness of this approach. The planned expansion of recharge capacity within the Chain of Lakes will further enhance conjunctive use operations as former quarry lakes become available through phased reclamation. The Groundwater Pumping Quota program continues to limit Retailer groundwater extractions to contracted quotas allocated as a portion of the Basin's natural sustainable yield; no retailer exceeded its respective Groundwater Pumping Quota during the evaluation period. Additional active P/MAs include expanded recycled water use, water conservation programs, and the Well Ordinance Program. Zone 7's hydrogeologic investigations and updated LBGFTM improved the accuracy of storage estimates and informed revisions to the storage calculation methods as part of this Periodic Evaluation (**Section 3.4**).

[6] **Section 4.3.4** references the "Sustainable Storage" term defined in the 2026 Alternative GSP to allow for nomenclatural and numeric consistency. The "Sustainable Storage" quantity, equal to the volume of groundwater in storage above MTs for the Chronic Lowering of Groundwater Levels, replaced "Operational Storage" from the 2021 GSP. Operational Storage will not be considered in future annual reports or periodic evaluations.

[7] The "sustainable average" is the groundwater extraction that results in no long-term change in groundwater in storage, as calculated by Zone 7's HI Method (2026 Alternative GSP Tables 9-1, 9-2).

[8] Storage calculations throughout this section use the LBGFTM Method for WYs 2004-2025. The 2026 Alternative GSP Section 9 presents a comparison of storage estimates using different methodologies. The LBGFTM method will replace the groundwater elevation Nodal method in future annual reports and periodic evaluations.

In summary, the Basin is not in a condition of overdraft, and Zone 7's existing and planned P/MAs are sufficient to mitigate overdraft throughout the planning and implementation horizon.

4.4 Model Updates

4.4.1 2021 Alternative GSP Modeling Summary

Section 9 of the 2021 Alternative GSP described the analytical tools and methods used to develop the current, historical, and projected water budgets for the 2021 Alternative GSP pursuant to 23 CCR §354.18. The primary method used for water budget accounting was the HI, which Zone 7 has maintained on a WY basis since 1974.

As part of the 2021 Alternative GSP update, Zone 7 migrated its in-house Areal Recharge Model, a soil-balance root-zone spreadsheet model developed circa 1994, to the DWR IDC platform (2021 Alternative GSP Section 9.1.1.2 and Appendix D). The IDC model calculates rainfall recharge, rainfall runoff, applied water recharge, and agricultural pumping for the Basin (2021 Alternative GSP Section 9.1.2).

For the 61-year projected water budget (WYs 2021 - 2081), the 2021 Alternative GSP used Zone 7's Water Supply Risk Model, consistent with the Zone 7 2020 Urban Water Management Plan. The Water Supply Risk Model is a dynamic Monte Carlo simulation tool that evaluates water system operations under a range of future supply conditions, random Delta outage scenarios, and uncertain climate impacts.

4.4.2 2026 Alternative GSP Modeling Summary

During the evaluation period, Zone 7 developed the LBGFTM to inform evaluations of Basin groundwater flow, level, storage, and water quality conditions under existing and future hydrologic, land use, and water supply and demand assumptions (EKI, 2026; 2026 Alternative GSP Section 9). The LBGFTM represents a substantial advancement over the modeling tools described in Section 9 of the 2021 Alternative GSP and replaces the prior MODFLOW-NWT numerical groundwater model maintained by Zone 7, which was limited in spatial coverage to the Main Basin and northwestern Fringe Area subareas, was not informed by the most recent HCM developments, and did not include groundwater transport simulation capabilities.

The LBGFTM utilizes the United States Geological Survey MODFLOW 6 platform and is spatially discretized into a structured grid of 148 rows, 213 columns, and nine layers at 500-ft-by-500-ft resolution, encompassing the entire Basin including the Main Basin, Fringe, and Upland Management Areas. LBGFTM layer geometry and stratigraphy are derived directly from Zone 7's updated HCM developed using the Leapfrog 3D geologic modeling software, which incorporates data from borehole lithology and e-log databases, local and regional geophysical field surveys (including seismic refraction, ERT, sTEM, and DWR's AEM survey), aquifer pumping tests, and previously published hydrogeologic investigations. The nine LBGFTM layers align with the Principal Aquifers and aquitards defined in the HCM, including the Overburden (Layer 1), Upper Aquifer (Layer 2), Aquitard (Layer 3), the interbedded Quaternary deposits comprising zones of the Lower Aquifer (Layers 4 and 6) and intervening confining units (Layers 5 and 7), the Plio-Pleistocene deposits of the deepest zone of the Lower Aquifer and the Fringe Aquifer (Layer 8), and the Lower Livermore/Tassajara Formation representing the bottom of the usable groundwater in the Main Basin and Fringe Areas and the Upland Aquifer in the Upland Areas (Layer 9). The LBGFTM is temporally discretized into 240 monthly stress periods representing WYs 2004 through 2023.

The LBGFTM includes both a groundwater flow model component and a coupled groundwater transport model component, which provides additional capabilities compared to the prior numerical model. The groundwater flow model simulates boundary conditions including inter-basin flows with the adjacent San Ramon Valley and Sunol Valley basins, interaction between groundwater and the Chain of Lakes mining ponds, and streamflow routing for 11 streams within the Basin. Hydrologic stresses include areal recharge derived from Zone 7's IDC model, consistent with the methodology established in the 2021 Alternative GSP and used in the HI, and groundwater pumping from municipal, agricultural, and domestic wells. The groundwater transport (GWT) model simulates Total Dissolved Solids (TDS) mass transport using solute source and sink concentrations informed by Zone 7's water quality monitoring and salt management programs. The LBGFTM additionally includes a local grid refinement capability that enables simulation of groundwater flow and transport at 100-ft resolution within the Main Basin production center.

The LBGFTM was calibrated to more than 28,000 historical observations of groundwater elevations, streamflow rates, and TDS concentrations collected over the 20-year simulation period using a combination of manual adjustment and Parameter ESTimation (PEST)-assisted parameter estimation. Model uncertainties and data gaps were identified and may inform future data collection efforts and model refinements.

5 MONITORING NETWORKS

☑ *§ 356.4 (e)*

Each Agency shall evaluate its Plan at least every five years and whenever the Plan is amended, and provide a written assessment to the Department. The assessment shall describe whether the Plan implementation, including implementation of projects and management actions, are meeting the sustainability goal in the basin, and shall include the following:

(e) A description of the monitoring network within the basin, including whether data gaps exist, or any areas within the basin are represented by data that does not satisfy the requirements of Sections 352.4 and 354.34(c). The description shall include the following:

(1) An assessment of monitoring network function with an analysis of data collected to date, identification of data gaps, and the actions necessary to improve the monitoring network, consistent with the requirements of Section 354.38.

(2) If the Agency identifies data gaps, the Plan shall describe a program for the acquisition of additional data sources, including an estimate of the timing of that acquisition, and for incorporation of newly obtained information into the Plan.

(3) The Plan shall prioritize the installation of new data collection facilities and analysis of new data based on the needs of the basin.

☑ *§ 354.38*

(a) Each Agency shall review the monitoring network and include an evaluation in the Plan and each five-year assessment, including a determination of uncertainty and whether there are data gaps that could affect the ability of the Plan to achieve the sustainability goal for the basin.

(b) Each Agency shall identify data gaps wherever the basin does not contain a sufficient number of monitoring sites, does not monitor sites at a sufficient frequency, or utilizes monitoring sites that are unreliable, including those that do not satisfy minimum standards of the monitoring network adopted by the Agency.

(c) If the monitoring network contains data gaps, the Plan shall include a description of the following:

(1) The location and reason for data gaps in the monitoring network.

(2) Local issues and circumstances that limit or prevent monitoring.

(d) Each Agency shall describe steps that will be taken to fill data gaps before the next fiveyear assessment, including the location and purpose of newly added or installed monitoring sites.

(e) Each Agency shall adjust the monitoring frequency and density of monitoring sites to provide an adequate level of detail about site-specific surface water and groundwater conditions and to assess the effectiveness of management actions under circumstances that include the following:

(1) Minimum threshold exceedances.

(2) Highly variable spatial or temporal conditions.

(3) Adverse impacts to beneficial uses and users of groundwater.

(4) The potential to adversely affect the ability of an adjacent basin to implement its Plan or impede achievement of sustainability goals in an adjacent basin.

☑ *§ 352.2 (c)*

(c) Monitoring protocols shall be reviewed at least every five years as part of the periodic evaluation of the Plan, and modified as necessary.

Since submitting the 2021 Alternative Groundwater Sustainability Plan (GSP), Zone 7 Water Agency (Zone 7) has focused on filling data gaps and expanding the monitoring networks to provide a more accurate, reliable, and representative assessment of groundwater conditions across the Livermore Valley Groundwater Basin (Basin). This section assesses each applicable Sustainability Indicator's monitoring network.

The only Recommended Corrective Action (RCA) from the California Department of Water Resources (DWR) on the 2021 Alternative GSP was to, "Ensure the monitoring network details included in the Alternative are consistent with the information contained in the Department's SGMA Portal Monitoring Network Module" (DWR, 2024d). This RCA was addressed by coordinating with DWR and confirming that the monitoring well network, including construction details, is accurately included in the Monitoring Network Module upon submittal of the 2026 Alternative GSP.

5.1 Monitoring Network for Chronic Lowering of Groundwater Levels

Zone 7 maintains a network of 12 Representative Monitoring Sites for Water Levels (RMS-WL), as described in 2026 Alternative GSP Figure 14-1, Table 14-1, and Table 14-2. Zone 7 also monitors water levels in approximately 250 wells as part of Zone 7's Groundwater Elevation Monitoring Program.

The only data gaps in the existing RMS-WL network for the Water Year (WY) 2021-2025 evaluation period were the seasonal high measurements at well 3S2E21K009 during spring 2022 and spring 2023, when well 3S2E21K009 could not be accessed. The seasonal low measurements at well 3S2E21K009 stayed above the relevant Measurable Objective (MO) throughout the evaluation period.

5.1.1 Assessment of Monitoring Network Function

The Representative Monitoring Network for Groundwater Levels contains 12 RMS-WLs and is supplemented by Zone 7's Groundwater Elevation Monitoring Program. The RMS-WLs are located in all Management Areas and within the Upper and Lower Aquifers.

According to DWR's Best Management Practice (BMP) #2, basins with more than 10,000 acre-feet per year of pumping per 100 square miles should have at least four monitoring wells per 100 square miles (DWR, 2016). Accordingly, for the 109-square-mile Basin, the recommended number of wells is at least four. The Basin's 12 RMS-WLs provide more than the minimum recommended number of monitoring sites and therefore offer sufficient monitoring density.

Groundwater levels are monitored at minimum semiannually in the spring and fall, which provides sufficient temporal resolution to assess seasonal trends and determine if an Undesirable Result (UR) has occurred (a UR would occur if Minimum Thresholds [MTs] were exceeded in greater than 25% of RMS-WLs for two consecutive years). Between 2022 and 2024, transducers were installed in the eight RMS-WLs in the Main Basin, which allows for the collection and analysis of real-time, high-resolution data in the majority of the network. All RMS-WLs in the Main Basin are now instrumented. Zone 7 has regularly monitored the status of the transducers and data loggers to facilitate prompt maintenance and minimize down time.

If an MT exceedance were to occur in the Fringe or Upland Management Area, Zone 7 may consider increased monitoring or installation of transducers at specific additional RMS-WLs.

The monitoring network for the Chronic Lowering of Groundwater Levels provides adequate spatial and temporal data quality for the Basin, and no further improvements are planned at this time.

5.2 Monitoring Network for Reduction of Groundwater Storage

The monitoring network for the Reduction of Groundwater Storage includes 11 monitoring wells from the RMS-WL network (see **Section 5.1**). The monitoring network for storage does not include the RMS-WL from the Upland Area. The use of groundwater levels as a proxy is discussed in Section 13.2.2.1 of the 2026 Alternative GSP. Groundwater storage is calculated with the Livermore Basin Groundwater Flow and Transport Model (LBGFTM), as described in 2026 Alternative GSP Section 8.4.

5.3 Monitoring Network for Seawater Intrusion

As discussed in Sections 8.5 and 13.3 of the 2026 Alternative GSP, the Basin is not located near any saline water bodies; therefore, seawater intrusion is not present and not likely to occur. Observations made during the evaluation period have not suggested any changes to this understanding.

5.4 Monitoring Network for Degraded Water Quality

Zone 7 maintains a network of 12 Representative Monitoring Sites for Water Quality (RMS-WQ), as described in 2026 Alternative GSP Section 14.2.4. The RMS-WQs are included in the approximately 250 wells Zone 7 monitors as part of its greater Groundwater Quality Monitoring Program. The monitoring network is shown in 2026 Alternative GSP Figure 14-2 and listed in 2026 Alternative GSP Table 14-3. The network supports various monitoring functions, as listed in 2026 Alternative GSP Section 14.2.4. The number and identity of the RMS-WQ have not changed.

5.4.1 Assessment of Monitoring Network Function

Zone 7 maintains a robust monitoring network that is sampled at least annually for water quality Constituents of Concern (COCs) and other analytes. According to DWR's BMP #2, monitoring networks for groundwater quality should be large and distributed enough to include data from each Principal Aquifer, map known contaminants, assess groundwater quality impacts to beneficial users, and evaluate whether management activities are contributing to water quality degradation. The RMS-WQs and the monitoring network are all situated in Principal Aquifers, are distributed throughout the Basin to provide sufficient spatial coverage, and include monitoring in the Main Basin, the Fringe, and the Upland Management Areas. The Basin's monitoring network offers sufficient density, lateral, and vertical distribution to actively characterize potential degradation of water quality in the Basin.

Under the UR definition established in the 2021 Alternative GSP, a UR may occur if MTs "are exceeded for any of the identified Constituents of Concern in greater than 25% of the RMS-WQs for at least two consecutive years as a result of groundwater recharge or extraction." Therefore, the annual samples would be sufficient to determine if a UR were occurring. Additionally, any MT exceedances may trigger increased monitoring frequency.

The monitoring network for Degraded Water Quality is considered to provide adequate spatial and temporal data quality for the Basin, and no additional changes are planned at this time.

5.5 Monitoring Network for Land Subsidence

The monitoring network for Land Subsidence includes 11 monitoring wells from the RMS-WL network (see **Section 5.1**) and annual Interferometric Synthetic Aperture Radar (InSAR) surveys in the Basin. The monitoring network does not include the RMS-WL in the Upland Management Area. The use of

groundwater levels as a proxy for Land Subsidence MTs is discussed in Section 13.5.2 of the 2026 Alternative GSP.

Historical inelastic subsidence has not occurred in the Basin and Zone 7 manages groundwater levels above historical lows, so DWR's Land Subsidence BMP recommends InSAR data as the preferred method to monitor subsidence in the Basin and suggests using MTs for the Chronic Lowering of Groundwater Levels as a proxy for Land Subsidence MTs (DWR, 2026).

Zone 7 has continued to sustainably manage land subsidence in the Basin to avoid URs and inelastic subsidence (as defined in 2026 Alternative GSP Section 13.5.1) for decades, including over multiple major droughts. Land surface elevations were monitored in the Basin for over 70 years, with no evidence of inelastic land subsidence occurring (2026 Alternative GSP Sections 8.7, 14.2.5).

5.6 Monitoring Network for Depletion of Interconnected Surface Water

Zone 7 maintains a network of nine simulated stream segments from the Livermore Basin Groundwater Flow and Transport Model (LBGFTM) as Representative Monitoring Sites for Interconnected Surface Waters (RMS-ISW), as established by and described in 2026 Alternative GSP Sections 13.6.2 and 14.2.6, Figure 14-4, and Table 14-4. Additionally, 15 shallow monitoring wells from the Groundwater Level Monitoring Program (2026 Alternative GSP Section 14.2.1) and 13 streamflow gauging or flow meter stations that coincide with the likely ISW segments are included as supplemental components of the monitoring network.

5.6.1 Summary of Changes

The monitoring network for ISW was updated significantly during development of the 2026 Alternative GSP. Previously, the Monitoring Network for the Depletions of ISW included 34 streamflow gauges or meter stations (10 of which were RMS-ISW gauge sites) and 14 RMS-ISW wells for measuring shallow groundwater near likely ISW segments. The Sustainable Management Criteria (SMC) were established in the 2021 Alternative GSP for the 14 RMS-ISW wells because water levels were the best available criteria to monitor instream flows at the time of the 2021 Alternative GSP.

As discussed in Section 14.2.6 of the 2026 Alternative GSP, the monitoring network was expanded to include direct estimates of streamflow depletion due to groundwater pumping using the LBGFTM. Simulated streamflow depletion rates at the nine potential RMS-ISW segments are currently available at monthly intervals over the historical simulation period (WY 2004 – 2023), and will be periodically updated with each subsequent LBGFTM extension.

After the creation of the LBGFTM and the associated simulated streamflow depletion rates, the 14 RMS-ISW wells from the 2021 Alternative GSP are no longer the best available method for estimated streamflow depletion due to groundwater pumping. Instead, 15 wells (12 of which were included in the RMS-ISW in the 2021 Alternative GSP) are now utilized as an "early warning" system for monitoring ISW depletion. The RMS-ISWs listed in the 2021 Alternative GSP will no longer have SMCs or be evaluated for MT/MO exceedances. Instead, SMCs will be evaluated at the nine simulated ISW segments. However, as stated in Section 13.6.4 of the 2026 Alternative GSP, if water levels fall below the historic lows in 40% of ISW 'early warning' monitoring wells in any given year, an expedited LBGFTM extension and evaluation will be initiated to determine if simulated streamflow depletion rates exceeded their MTs at any RMS-ISWs.

5.6.2 Assessment of Monitoring Network Function

As discussed in 2026 Alternative GSP Sections 8.8 and 8.9**,** the locations of likely groundwater dependent ecosystems (GDEs) within the Basin are coincident with the presence of ISW reaches for which SMCs are established. The monitoring network for ISWs is designed to be protective of the GDE beneficial users of ISW in the Basin.

As discussed in Section 14.2.6 of the 2026 Alternative GSP, the network of modeled RMS-ISW stream segments, "early warning" monitoring wells, and stream gauges that comprise the monitoring network for ISWs are designed to provide three levels of monitoring data to reinforce protection of ISW and associated GDEs: (1) direct estimates of streamflow depletion using the LBGFTM; (2) observation of shallow groundwater conditions that may influence ISW conditions and GDE health trends; and (3) assessment of ongoing surface water - groundwater connectivity within ISW segments. The combination of these three levels of monitoring data are sufficient to monitor and protect ISWs in the Basin from streamflow depletions due to groundwater pumping.

6 GROUNDWATER SUSTAINABILITY AGENCY AUTHORITIES AND ENFORCEMENT ACTIONS

☑ *§ 356.4 (g)*

☑ *§ 356.4 (h)*

Each Agency shall evaluate its Plan at least every five years and whenever the Plan is amended, and provide a written assessment to the Department. The assessment shall describe whether the Plan implementation, including implementation of projects and management actions, are meeting the sustainability goal in the basin, and shall include the following:

(g) A description of relevant actions taken by the Agency, including a summary of regulations or ordinances related to the Plan.

(h) Information describing any enforcement or legal actions taken by the Agency in furtherance of the sustainability goal for the basin.

Zone 7 Water Agency (Zone 7) has not gained, established, or exercised any new authorities since the 2021 Alternative Groundwater Sustainability Plan (GSP). Zone 7 continues to implement metering and reporting requirements in the Livermore Valley Groundwater Basin. Through its assigned authority to administer the Alameda County Water Wells Ordinance within the Zone 7 service area, Zone 7 can require, at its discretion, that a permit application be accompanied by a certified California Environmental Quality Act (CEQA) analysis supporting that the new well and its use would not significantly impact the local water levels. A list of Projects and Management Actions undertaken by Zone 7 are in Section 15 of the 2026 Alternative GSP.

7 OUTREACH, ENGAGEMENT, AND COORDINATION WITH OTHER AGENCIES

☑ *§ 356.4 (j)*

Each Agency shall evaluate its Plan at least every five years and whenever the Plan is amended, and provide a written assessment to the Department. The assessment shall describe whether the Plan implementation, including implementation of projects and management actions, are meeting the sustainability goal in the basin, and shall include the following:

(j) Where appropriate, a summary of coordination that occurred between multiple Agencies in a single basin, Agencies in hydrologically connected basins, and land use agencies.

This section summarizes outreach, engagement, and inter-agency coordination conducted by Zone 7 Water Agency (Zone 7), the exclusive Groundwater Sustainability Agency (GSA) for the Livermore Valley Groundwater Basin (Basin), since submittal of the 2021 Alternative Groundwater Sustainability Plan (GSP). These activities follow the Stakeholder Communication and Engagement Plan (SCEP) adopted in August 2020 and updated as part of the 2026 Alternative GSP (2026 Alternative GSP Appendix H).

7.1 Outreach and Engagement

Zone 7 engages beneficial users through public Board meetings, stakeholder workshops, direct outreach (open houses, e-newsletters, and notification letters), and its website, which hosts meeting materials, public notices, Annual Reports, and the Alternative GSP. Each Annual Report is presented at a public Board meeting. Comments received on the draft 2026 Alternative GSP and this Periodic Evaluation will be compiled with responses in 2026 Alternative GSP Appendix H.

7.1.1 Stakeholder Engagement

Engagement during the evaluation period supported the following Projects and Management Actions (P/MAs; 2026 Alternative GSP Section 15.2):

- **Chain of Lakes Conveyance System:** Zone 7 held public workshops to develop and promote the project alongside planning studies, including identification of a preferred pipeline alignment.
- **Regional Groundwater Development Project:** Zone 7 and the City of Pleasanton jointly evaluated new supply wells in the Bernal Subarea. The Zone 7 Board and the Pleasanton City Council have approved negotiation of terms for construction of two wells.
- **Water conservation:** Zone 7 and its Retailers coordinate public education through the Tri-Valley Water Conservation Task Force, which meets approximately six to eight times per year. Zone 7 launched a new conservation outreach campaign in 2025.
- **Monitoring programs:** Private well owners continue to participate in Zone 7 groundwater monitoring programs, and Zone 7 and the mining companies collaborate on groundwater and surface water monitoring.

Other stakeholder engagement activities are listed in 2026 Alternative GSP Section 5.5.

7.1.2 Additional Information or Accomplishments

Zone 7 and the Retailers adopted the 2025 Urban Water Management Plans in 2026, following agency outreach and public noticing. Board meetings are broadcast and streamed live, and recordings are publicly available.

7.2 Responsibilities of GSA Boards

The Zone 7 Board of Directors makes key decisions related to Alternative GSP development and implementation. The Board meets in public on the third Wednesday of each month. Agendas and packets are posted to the Zone 7 website, and email notice is provided to the list of interested parties. More information on the Zone 7 Board of Directors public engagements, including lists of past meetings, is in Section 5.5.2.1 of the 2026 Alternative GSP.

7.3 Coordination with Other Agencies

Zone 7 is the exclusive GSA for the Basin and a single Alternative GSP covers the Basin; therefore, no intra-Basin coordination agreement applies. Ongoing coordination is summarized below and in 2026 Alternative GSP Section 5.5; cooperative programs are listed in 2026 Alternative GSP Table 5-F.

Under a 2016 Memorandum of Understanding (MOU) with East Bay Municipal Utility District, the City of San Ramon, and Dublin San Ramon Services District, Zone 7 serves as GSA for the Contra Costa County portion of the Basin. Zone 7 shares water quality and groundwater elevation data with the Retailers (City of Pleasanton, City of Livermore, Dublin San Ramon Services District, and California Water Service) and Lawrence Livermore National Laboratory.

The adjacent San Ramon Valley and Sunol Valley groundwater basins are very low priority, are not subject to the Sustainable Groundwater Management Act, and have no GSA. No significant groundwater flow exchange occurs between the Basin and either basin (2026 Alternative GSP Section 7.2.6).

Zone 7 renewed contracts with all water Retailers in the Basin during the evaluation period and entered into an agreement with the City of Pleasanton to pump their Groundwater Production Quota (GPQ) volume on behalf of the City, as part of the Regional Groundwater Development project. Zone 7 also continues to pump the GPQ for Dublin San Ramon Services District.

Zone 7 administers the well permit program within its service area under an MOU with Alameda County; Contra Costa County retains well permitting authority in its portion of the Basin. Zone 7 reviews development and California Environmental Quality Act (CEQA) referrals from the cities of Dublin, Livermore, and Pleasanton and Alameda County, reviews onsite wastewater treatment system permit applications with Alameda County Environmental Health, and reviews surface mining permit changes with the Alameda County Community Development Agency.

Zone 7 submits Annual Reports and monitoring data to the Department of Water Resources (Zone 7, 2022-2026a). Zone 7 partners with the San Francisco Bay Regional Water Quality Control Board (RWQCB) on an expanding number of per- and polyfluoroalkyl substances (PFAS) source investigations and tracks contaminated sites with the RWQCB and Alameda County Department of Environmental Health through the Toxic Sites Surveillance Program. Zone 7 also coordinates with the State Water Resources Control Board Division of Drinking Water on blending of water from supply wells impacted by regulated Constituents of Concern and maintains working relationships with the California Department of Fish and Wildlife, United States Fish and Wildlife Service, National Marine Fisheries Service, and United States Army Corps of Engineers.

Zone 7 chairs the Alameda Creek Fisheries Restoration Workgroup, facilitates the Arroyo de la Laguna Agency Collaborative, and partners in the Living Arroyos program (2026 Alternative GSP Table 5-F). Zone 7 continues to work with the mining companies and Alameda County Community Development Agency on

implementation of the Chain of Lakes reclamation plan. No California Native American tribal lands are identified within the Basin.

8 OTHER INFORMATION

☑ *§ 356.4 (k)*

Each Agency shall evaluate its Plan at least every five years and whenever the Plan is amended, and provide a written assessment to the Department. The assessment shall describe whether the Plan implementation, including implementation of projects and management actions, are meeting the sustainability goal in the basin, and shall include the following:

(k) Other information the Agency deems appropriate, along with any information required by the Department to conduct a periodic review as required by Water Code Section 10733.

As described in Section 7.2.6 of the 2026 Alternative Groundwater Sustainability Plan (GSP), the Livermore Valley Groundwater Basin (Basin) is bounded at the northwestern edge by the neighboring San Ramon Valley Groundwater Basin and at the southwestern edge by the neighboring Sunol Valley Groundwater Basin. Both groundwater basins are designated by the California Department of Water Resources (DWR) as very low-priority basins and are thus not subject to the Sustainable Groundwater Management Act (SGMA). No significant groundwater flow exchange occurs between the Basin and either of the neighboring subbasins. As such, groundwater management within the Basin does not affect the neighboring subbasins.

Zone 7 Water Agency does not recognize significant SGMA-related technical or financial challenges beyond those discussed in this Periodic Evaluation or the 2026 Alternative GSP. Implementation of the 2026 Alternative GSP is not expected to be affected by legal challenge or adjudication.

9 SUMMARY OF PROPOSED OR COMPLETED REVISIONS TO PLAN ELEMENTS

☑ *§ 356.4 (c)*

☑ *§ 356.4 (i)*

Each Agency shall evaluate its Plan at least every five years and whenever the Plan is amended, and provide a written assessment to the Department. The assessment shall describe whether the Plan implementation, including implementation of projects and management actions, are meeting the sustainability goal in the basin, and shall include the following:

(c) Elements of the Plan, including the basin setting, management areas, or the identification of undesirable results and the setting of minimum thresholds and measurable objectives, shall be reconsidered and revisions proposed, if necessary.

…

(i) A description of completed or proposed Plan amendments.

This Periodic Evaluation found that the Livermore Valley Groundwater Basin (Basin) continued to operate within its Sustainable Yield, that no Undesirable Results (URs) occurred, and that groundwater storage recovered to near the full Basin volume following the Water Year 2020 to 2022 drought. The 2026 Alternative Groundwater Sustainability Plan (GSP) therefore retains the same Sustainability Goal and the Sustainable Management Criteria (SMCs) for Chronic Lowering of Groundwater Levels, Reduction of Groundwater Storage, and Land Subsidence.

Major revisions are limited to those needed to reflect three developments since the 2021 Alternative GSP:

- New regulatory standards for and additional data collected to inform understanding of conditions of for hexavalent chromium (CrVI) and per- and polyfluoroalkyl substances (PFAS);
- New Department of Water Resources guidance on evaluation of Depletions of Interconnected Surface Waters; and
- Development of the refined Hydrogeologic Conceptual Model and the Livermore Basin Groundwater Flow and Transport Model (LBGFTM).

Table 7 summarizes each major revision and its effect on Plan implementation. Public engagement on the revisions is discussed in **Section 7**.

Zone 7 Water Agency (Zone 7) will continue Sustainable Groundwater Management Act reporting and implementation under the 2026 Alternative GSP through the next evaluation cycle. Future Annual Reports will evaluate conditions relative to the revised or newly established SMCs. The SMCs for CrVI, perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA), and Depletions of Interconnected Surface Waters are preliminary; Zone 7 will refine them as additional monitoring data are collected and analyzed, and as the LBGFTM is extended and recalibrated ahead of the next Alternative GSP update.

Table 7. Summary of Alternative Groundwater Sustainability Plan Revisions

Revision	Reason for Revision	Effect on Plan Implementation	2026 Alternative GSP Section(s)	Periodic Evaluation Section(s)
HCM refined, including refined extents and thicknesses of the Overburden, Principal Aquifer zones, and Concannon Boundary, and reinterpretation of the Livermore Thrust as an erosional feature.	New geophysical surveys, aquifer pumping tests, and borehole data.	The refined HCM defines the LBGFTM layering and improves understanding of basin hydrology. Remaining data gaps guide future investigations.	7	4.1
GWE Nodal and HI Methods for estimating groundwater storage replaced with the LBGFTM Method. Storage at SGMA Baseline and at MT water levels calculated with the LBGFTM Method.	The LBGFTM presents an improved hydrogeologic representation of the Basin, enabling a refined evaluation of storage in the Basin compared to the nodal properties used for the GWE Nodal Method. The new storage estimation method allows application of the LBGFTM layer geometry and calibrated storage properties to Zone 7's contoured groundwater levels to provide storage estimates for any time period.	Storage estimates are updated annually after the fall groundwater level monitoring event without extending the LBGFTM. The Reduction of Groundwater Storage SMCs using groundwater levels as a proxy are unchanged.	8.4, 13.2	2.2, 4.2
Preliminary CrVI SMCs revised at the 12 RMS-WQs, with MOs set at 10 µg/L and MTs set at the greater of 10 µg/L or the sum of historical average and maximum historical fluctuation at each RMS-WQ. CrVI now tested directly rather than using total chromium concentrations as a proxy.	SWRCB reinstated the 10 µg/L Primary MCL in October 2024. The 2021 Alternative GSP used the prior 50 µg/L regulatory limit.	Annual Reports to evaluate CrVI against the revised preliminary SMCs. CrVI is sampled at select Groundwater Quality Monitoring Program wells as of 2026 in addition to total chromium.	8.6.5, 13.4	2.4.5

Revision	Reason for Revision	Effect on Plan Implementation	2026 Alternative GSP Section(s)	Periodic Evaluation Section(s)
Preliminary MTs and MOs for PFOS and PFOA established at the 12 RMS-WQs.	EPA finalized MCLs of 4 ng/L for PFOS and PFOA in 2024, with a compliance deadline of 2031. Both substances have been detected in the Main Basin.	Annual Reports to evaluate PFOS and PFOA against the preliminary SMCs. PFOS and PFOA are monitored in select wells in the Groundwater Quality Monitoring Program and evaluated against SMCs in Annual Reports. Results inform Zone 7's PFAS management strategy.	8.6.6, 13.4	2.4, 4.2
Two small groups of previously identified likely GDEs removed from the list of likely GDEs.	Both GDE areas are located in developed areas where depth to water exceeds 30 feet.	All other likely GDEs are retained and remain protected by the ISW SMCs and will continue to be monitored and evaluated.	8.8	2.6.3
Groundwater level SMCs for Depletions of ISW replaced with preliminary depletion rate MTs and MOs at nine LBGFTM stream segments. Shallow groundwater levels will continue to be included in monitoring as 'early indicator'. URs defined by MT exceedances at more than 40% of segments for two consecutive years resulting in declining GDE health metrics.	DWR guidance recommends estimating depletion resulting from groundwater pumping with a numerical model by comparing baseline and no-pumping scenarios. The recently developed LBGFTM allows the Basin to adopt this revision.	Shallow groundwater levels in 'early warning' monitoring wells are evaluated against historic low water levels each year. Water levels lower than historic lows in greater than 40% of "early indicator" monitoring wells prompt an accelerated extension of the LBGFTM to evaluate simulated depletion rates against SMCs.	13.6	2.6, 4.2
ISW monitoring network revised using nine simulated stream segments from the LBGFTM as the RMS-ISW. Fifteen shallow monitoring wells (including 12 of the 14 former RMS-ISW) and Zone 7's streamflow station network provide additional monitoring of ISW.	Consistency with the revised SMCs and DWR guidance. Groundwater levels are no longer the best available measure of depletion; LBGFTM now directly provides simulated streamflow depletion estimates.	Shallow groundwater levels and streamflow continue to be monitored but are not evaluated directly for MT or MO exceedances.	14.2.6	5.6

Revision	Reason for Revision	Effect on Plan Implementation	2026 Alternative GSP Section(s)	Periodic Evaluation Section(s)
Descriptions and status were updated for existing and planned P/MAs, including updated SWP reliability forecasts, and updated expected availability of benefits from the COLCS (2035) and Sites Reservoir (2034).	Changes in project status since the 2021 Alternative GSP and alignment with the 2025 UWMP.	Supply planning reflects the current project portfolio.	15	3, 4.3

Abbreviations:

COLCS	=	Chain of Lakes Conveyance System	ng/L	=	Nanograms per Liter
CrVI	=	hexavalent chromium	P/MAs	=	Projects and Management Actions
DWR	=	Department of Water Resources	PFAS	=	per- and polyfluoroalkyl substances
EPA	=	United States Environmental Protection Agency	PFOA	=	perfluorooctanoic acid
GDE	=	groundwater dependent ecosystems	PFOS	=	perfluorooctane sulfonate
GSP	=	Groundwater Sustainability Plan	RMS-ISW	=	Representative Monitoring Site for Interconnected Surface Water
GWE	=	Groundwater Elevation	RMS-WQ	=	Representative Monitoring Site for Water Quality
HCM	=	Hydrogeologic Conceptual Model	SGMA	=	Sustainable Groundwater Management Act
HI	=	Hydrologic Inventory	SMC	=	Sustainable Management Criteria
ISW	=	Interconnected Surface Water	SWP	=	State Water Project
LBGFTM	=	Livermore Basin Groundwater Flow and Transport Model	SWRCB	=	State Water Resources Control Board
MCL	=	Maximum Contaminant Level	µg/L	=	Micrograms per Liter
MO	=	Measurable Objective	UR	=	Undesirable Result
MT	=	Minimum Threshold	UWMP	=	Urban Water Management Plan

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