INTRODUCTION

(SUBTITLE PAGE)

1. PURPOSE OF THE ALTERNATIVE GROUNDWATER SUSTAINABILITY PLAN

§ 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, 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.

(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.

(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.

(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.

(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.

(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.

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

(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.

(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.

In compliance with California Code of Regulations (CCR) § 356.4, the purpose of this Alternative Groundwater Sustainability Plan (Alt GSP or Plan) update is to provide assessment of the plan implementation and meet the regulatory requirements set forth in the three-bill legislative package consisting of Assembly Bill (AB) 1739 (Dickinson), Senate Bill (SB) 1168 (Pavley), and SB 1319 (Pavley), collectively known as the Sustainable Groundwater Management Act (SGMA) (California Water Code

[CWC] Sections [10720 - 10737.8]). SGMA defines sustainable groundwater management as the "management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results". Undesirable Results (URs) are defined by SGMA as any of the following effects caused by groundwater conditions occurring throughout a basin:

- Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply;
- Significant and unreasonable reduction of groundwater storage;
- Significant and unreasonable seawater intrusion;
- Significant and unreasonable degraded water quality;
- Significant and unreasonable land subsidence; and/or
- Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

Per the requirements of SGMA, each Groundwater Sustainability Agency (GSA) shall evaluate its Groundwater Sustainability Plan (GSP) or Alt GSP at least every five years provide a written assessment to the California Department of Water Resources (DWR). This 2021 Alt GSP confirms that Alameda County Flood Control and Water Conservation District, Zone 7's (Zone 7 Water Agency or Zone 7) Plan implementation, including implementation of projects and management actions, is meeting the sustainability goal in the Livermore Valley Groundwater Basin (Basin). Specifically, this Plan demonstrates that Zone 7 has operated the Basin within its sustainable yield over a period of at least 10 years.

1.1. Background

Zone 7 provides water management in the Livermore Valley Groundwater Basin (DWR Basin No. 2-10) as part of its mission to "*Deliver safe, reliable, efficient, and sustainable water and flood protection services." (Zone 7, 2020b),* and more specifically to address the following Strategic Plan initiatives:

- #7 - Manage as the GSA and implement the groundwater management plan; and
- #8 - Study and refine knowledge of the groundwater basins.

Zone 7 manages imported surface water as the local wholesale agency. Although the Basin is not adjudicated, by agreements with the local Retailers, Zone 7 manages regional water supplies through the interrelated programs described above where previously agreed groundwater extraction quotas are tracked and annual water management accounting is conducted. Zone 7 also manages recharge operations to augment instream and mining pond aquifer recharge. Zone 7's groundwater extraction is managed as to not exceed the previously recharged amounts. In addition, Zone 7 has managed local surface and groundwater resources for beneficial uses for more than 50 years.

In 2014, the State of California passed SGMA to empower local agencies to adopt groundwater management plans that are tailored to the resources and needs of their communities. SGMA also empowers local agencies to form GSAs for managing groundwater resources in a sustainable manner. Recognizing Zone 7's legal authority to implement SGMA for its service area, SGMA specifically designates Zone 7 as the exclusive GSA within its statutory boundaries (CWC §10723). As shown on **Table 14-5,** the Zone 7 Service Area includes almost all of the Basin, all of the Sunol Valley Groundwater Basin, and a small section of the Tracy Subbasin in the adjacent San Joaquin Valley Groundwater Basin.

As a requirement of SGMA, DWR ranked all of California's groundwater basins as having a high-, medium-, low-, or very low-priority based on groundwater use, population, and other factors. DWR designated the Basin and the Tracy Subbasin as medium-priority basins and the Sunol Groundwater Basin as a very low-priority basin. Under SGMA, high- and medium-priority groundwater basins are required to be managed under a GSP by January 31, 2022. The regulations also allow a GSA to submit an Alternative GSP instead of a GSP if the entire basin has been operating within its sustainable yield[2] for at least 10 years. Such an Alternative GSP must cover the entire groundwater basin and be functionally equivalent to a GSP.

Since the 2005 Water Year (WY), even prior to assuming the role of the GSA for the Basin, Zone 7 generated annual groundwater reports for public review and submission to the DWR. In 2005, Zone 7 adopted a Groundwater Management Plan (GWMP) for the Basin, which documented ongoing policies and programs for managing groundwater to support existing and future beneficial uses in the Basin (*Zone 7, 2005a*). The GWMP was amended in June 2015 with the adoption of the Nutrient Management Plan (*Zone 7, 2015c*), which added to both the GWMP and the 2004 Salt Management Plan (*Zone 7, 2004*). Given the ongoing sustainable management of the Basin, Zone 7 Water Agency submitted an Alternative Plan for compliance with SGMA and GSP regulations in December 2016 (*Zone 7, 2016e*). The 2016 Alternative GSP (2016 Alt GSP) was approved by DWR in July of 2019[3]. Per the requirements of 23 CCR § 356.4, this document is the first Five-Year Update to the Alt GSP (2021 Alt GSP).

With regard to the Tracy Subbasin, Zone 7 has executed a memorandum of understanding (MOU) with the San Luis & Delta-Mendota Water Authority to support SGMA compliance. Accordingly, this Alt GSP does not cover the Tracy Subbasin. As mentioned above, the Sunol Groundwater Basin does not require a GSP, given its current very-low priority status.

1.2. Summary of Major Plan Updates

In its July 2019 Alternative Assessment Staff Report, DWR included several recommended actions that Zone 7 "may wish to include in the first five-year update of the Alternative to facilitate the Department's

[2] SGMA defines Sustainable Yield as the maximum quantity of water (calculated over a base period representative of long-term conditions in the basin and including any temporary surplus) that can be withdrawn annually from a groundwater supply without causing an undesirable result.
[3] https://sgma.water.ca.gov/portal/alternative/all

ongoing evaluation and assessment of the Alternative as well as recommendations for improvements to the Alternative." The DWR recommendations are included in **Appendix A** and summarized below:

1. Identify those groundwater levels, taken at representative monitoring sites, that are used to define the minimum threshold for the Basin, to facilitate DWR evaluation.
2. Develop quantitative Minimum Thresholds (MTs) for Chronic Lowering of Groundwater Levels for the Fringe and Upland Management Areas (Fringe and Upland Areas) to better align with requirements for Management Areas and definition of MTs.
3. Develop quantitative MTs for Reduction of Groundwater Storage for the Fringe and Upland Areas to better align with the requirements for Management Areas and definition of MTs.
4. Include monitoring groundwater levels at additional locations in the Upland Area to monitor changes and manage groundwater resources to prevent undesirable results; identify the monitoring frequency and timing at new stations, and other relevant monitoring well construction information.

In addition, Zone 7 received two comment letters on its 2016 Alt GSP, which recommended inclusion of information regarding beneficial use of water for managed wetlands and native vegetation water use sectors. At the time of 2016 Alt GSP preparation, limited information was available on wetlands and vegetation associated with groundwater. Since then, DWR has provided the Natural Communities Commonly Associated with Groundwater (NCCAG) mapping, which is a useful tool to help in identifying potential Groundwater Dependent Ecosystems (GDEs).

In planning for this Five-Year Update (i.e., the 2021 Alt GSP), Zone 7 applied for and was awarded a DWR Proposition 68 (Prop 68) planning grant to assist with funding of tasks to reduce data gaps and to better evaluate the effectiveness of specific management actions. The tasks and subtasks for the grant project and the 2021 Alt GSP update (described below) were designed to address the above recommendations, especially those related to the Fringe and Upland Areas and to build on, extend, and improve other components of the 2016 Alt GSP. Specifically, Zone 7 identified the following issues, data gaps, and needs (organized by the relevant Sustainability Indictaors) relevant to the Basin and addressed them as part of this 2021 Alt GSP. Compliance with the GSP Regulations is documented in **Appendix B**.

1.2.1. Groundwater Level Program Updates

A Groundwater Level Program Update was needed to enhance groundwater level management of the Upland and Fringe Areas and to more fully integrate management of those areas with management of the Main Basin Management Area (Main Basin). Also, per DWR Recommendations 1 and 2, specific groundwater levels at representative monitoring sites (RMS) needed to be clearly identified as they relate to Sustainable Management Criteria (SMCs), including within the Upland and Fringe Areas, to better align with GSP Regulations §354.20(b)(2) and 354.28(b)(6).

Task 1: Zone 7 initiated efforts to address water level data gaps in the Basin, with an emphasis on addressing gaps in the Fringe and Upland Areas. Zone 7 reviewed existing data and data gaps, identified existing wells that could fill those data gaps, contacted well owners to obtain permission to monitor those wells, selected appropriate wells to be added to Zone 7's Water Level Monitoring Program, and began collecting water level measurements from those wells.

Deliverables: Map (**Figure 1-2**) and Table (**Table 1-1**) of wells to be added to the Groundwater Level Monitoring Program, and Water Level Monitoring Network section (**Section 14.2.1**).

Task 2: Zone 7 revised the depth-to-water map for the Basin and extended the historic low map layer to the Fringe Area and, to the extent possible, to the Upland Area.

Deliverables: New Minimum Depth-to-Water (**Figure 8-3**); Historic Low Groundwater Maps (**Figure 8-9** and **Figure 8-10**).

Task 3: Zone 7 reviewed and updated the existing Measurable Objectives (MOs) and MTs for Chronic Lowering of Groundwater Levels for the Main Basin and developed quantitative SMCs in the Fringe and Upland Areas, as appropriate. The new MOs and MTs are defined with specific reference to groundwater levels at specific RMS, and to ensure that operation of certain management areas will not cause URs in other management areas.

Deliverables: Updated Groundwater Levels Sections (**Section 8.3**, **Section 13.1**).

Task 4: Zone 7 updated the Groundwater Level Monitoring Program maps and tables. The Groundwater Level Monitoring Program includes specific RMS that are used to track conditions relative to the MOs and MTs, and information is provided relative to monitoring frequency and timing at the specific RMS and applicable monitoring well construction information.

Deliverables: Updated Table (**Table 14-1**) and Map of Monitoring Wells in Groundwater Level Monitoring Program (**Figure 14-1**) and **Section 14.2.1**.

1.2.2. Groundwater Storage Program Updates

A Groundwater Storage Program Update was needed to enhance management of groundwater storage in the Upland and Fringe Areas and to better integrate management of those areas with management of the Main Basin. An improved hydrogeologic conceptual model (HCM) for the Fringe and Upland Areas was developed by extending geologic cross sections across the Main Basin and into the Fringe and Upland Areas. For the integrated management of Main Basin, Fringe, and Upland Areas, Zone 7's existing Areal Recharge Spreadsheet Model (ARM) was migrated to DWR's Integrated Water Flow Model Demand Calculator (IDC) platform and extended to include the entire Basin. In response to DWR Recommendation 3, SMCs were developed for Reduction of Groundwater Storage across the Upland and Fringe Areas that are better aligned with the GSP Regulations §354.20(b)(2) and 354.28(b)(6).

Task 1: Zone 7 extended the e-log database and network to cover the Fringe and Upland Areas using Rockworks, a new software program, and prepared three new cross sections that trace through the major groundwater production areas of the Basin.

Deliverables: Cross Sections (**Appendix C** and **Figure 7-7 to Figure 7-11**)

Task 2: Zone 7 migrated the existing ARM to an IDC model that covers the entire Basin and revised the groundwater recharge and storage change calculations within the water budget as appropriate.

Deliverables: ARM Upgrade Technical Memorandum (**Appendix D**, **Section 8.4,** and **Section 9**)

Task 3: Zone 7 developed updated MOs and MTs for Reduction of Groundwater Storage based on the SMCs defined for Chronic Lowering of Groundwater Levels. In addition, an updated geographic information system (GIS) layer was developed that represents the Basin bottom based on the updated HCM.

Deliverables: Updated Groundwater Storage Section (**Section 13.2** and **Appendix E**); Map of Elevation of Bottom of Basin (**Figure 7-5**)

1.2.3. Groundwater Quality Program Update

A Groundwater Quality Program Update was needed to continue and improve management of groundwater quality and address new issues, such as per and polyflouroalkyl substances (PFAS). Improved definition was developed for the Degraded Water Quality SMCs, particularly in the Upland and Fringe Areas.

Task 1: Zone 7 updated its Total Dissolved Solids (TDS) and Nitrate Projections and addressed applicable Salt and Nutrient Management Plan updates to include recent TDS and Nitrate datasets, possible climate change effects, revised mining completion date estimates, and recent Delta Fix projections.

Deliverables: Summary of TDS and Nitrate Projects (**Section 8.6**)

Task 2: Zone 7 evaluated the effect of onsite wastewater treatment systems (OWTS) restrictions as per the 2015 Nutrient Management Plan recommended, and limits in "Areas of Concern" to minimize Nitrate loading to the Basin and created Nitrate concentration graphs. Zone 7 also updated representative groundwater concentration maps for other constituents of concern (COCs), as appropriate.

Deliverables: Descriptions (**Section 8.6.3.7**), maps (**Figure 8-26** and **Figure 8-27**) and/or tables (**Table 8-5**) on effectiveness of OWTS restrictions on high nitrate areas-of-concern. Description (**Sections 8.6.2, 8.6.4, 8.6.5,** and **8.6.6**), maps (**Figure 8-16** to **Figure 8-21** and **Figure 8-29** to **Figure 8-36**) and/or tables (**Table 8-2**) on COCs for the Basin.

Task 3: Zone 7 refined the MOs and MTs for Degraded Water Quality, including for the Fringe and Upland Areas, based on the data collected in previous tasks, as appropriate.

Deliverables: Updated Water Quality Sections (**Section 8.6, Section 13.4**)

1.2.4. Land Subsidence Program Update

While no known land subsidence has occurred, it remains as a potential UR in the Basin. With a goal of no inelastic subsidence, accurate monitoring and careful consideration of Land Subsidence SMCs is needed. The Land Subsidence Program Update provides a re-evaluation of how MOs and MTs are defined in the Basin and includes new data protocols and procedures.

Task 1: Zone 7 evaluated the use of Interferometric Synthetic Aperture Radar (InSAR) on an annual basis, in lieu of the spirit-level land surveys, to evaluate land subsidence over the entire Basin. Zone 7 utilized the results from the 2019 Zone 7 InSAR annual monitoring pilot program to develop a monitoring routine that analyzes subsidence and displays results graphically and supports development of MOs and MTs for Land Subsidence.

Deliverables: Updated Land Subsidence Sections (**Section 8.7, Section 0**).

1.2.5. Surface Water-Groundwater Interaction/Groundwater Dependent Ecosystems Program Update

At the time of 2016 Alt GSP preparation, guidance was not available to identify interconnected surface water (ICSW) bodies and GDEs. Since then, DWR has provided the NCCAG mapping and relevant guidance became available. Consistent with its own practices and applying best available science, Zone 7 reviewed available information (e.g., NCCAG and other datasets) to identify ICSW areas, evaluate GDEs, refine MOs and MTs for Depletions of Interconnected Surface Water, and identify new monitoring locations and protocols.

Task 1: Zone 7 identified potential ICSW/GDE areas that were not recognized in the 2016 Alt GSP, field-verified their existence, and added appropriate GDEs to the GDE inventory list, including revising and updating existing maps and tables of potential GDEs.

Deliverables: Updated GDE inventory table (**Table 8-J**) and location map (**Figure 8-46**)

Task 2: Zone 7 evaluated the seasonal range of depth-to-groundwater measurements in the vicinity of each potential ICSW/GDE area using data collected from Zone 7's Water Level Monitoring Program and compared the seasonal range of depth-to-groundwater with each GDE's general groundwater requirements (e.g., rooting zone depth) to refine the identification of GDEs and to provide a preliminary evaluation for defining SMCs.

Deliverables: Preliminary Evaluation for Defining Minimum Thresholds Technical Memorandum (**Appendix F**)

Task 3: Zone 7 developed preliminary MOs and MTs for Depletions of ICSW.

Deliverables: Updated ICSW/GDEs Sections (**Section 8.8, Section 8.9, Section 13.6**).

Task 4: Zone 7 evaluated the need for additional monitoring locations and protocols, if appropriate, to adequately monitor groundwater elevations in the vicinity of the ICSW/GDE areas relative to the SMCs.

Deliverables: ICSW/GDE monitoring point locations map (**Section 14.2.6** and **Figure 14-4**). Monitoring Protocol in the Alternative GSP Update (**Section 14.3** and **Appendix G**).

TABLE 1-1
WELLS INVESTIGATED FOR ADDITION TO 2021 GROUNDWATER PROGRAM
LIVERMORE VALLEY GROUNDWATER BASIN

Well	Map Name	Added?	Reason	Completed Date	Depth To Top Screen (ft)	Depth to Bottom Screen (ft)	Well Depth (ft)	Well Diameter (in)
2S2E21L001	21L1	Yes	May School Nitrate	5/1/1973	49	168	168	10
2S2E27K001	27K1	Yes	Springtown Alkali Sink	4/28/1954	49	88	96	8
2S2E27M002	27M2	Yes	Springtown Alkali Sink	7/16/1975	NA	NA	112	6
3S1E09H013	9H13	Yes	Lake I monitoring	NA	NA	NA	145	8
3S2E21K008	21K8	No	Similar to existing program well (K9)	NA	NA	NA	220	6
3S2E22E002	22E2	No	Similar to existing program well (R2)	NA	NA	NA	105	6
3S1E18M002	18M2	No	Too deep.	NA	NA	NA	550	6
3S1E28M002	28M2	Yes	Happy Valley	2/8/1962	80	141	141	5
3S3E18Q001	18Q1	No	Difficult to access	NA	NA	NA	NA	NA
3S1E33G005	33G5	Yes	Happy Valley and Upland	7/21/2006	11	35	35	2
3S2E15G011	15G11	No	No response from owner	7/29/2020	80	300	300	5
3S2E15L002	15L2	Yes	Data from Owner	1/14/2015	40	70	70.5	2
3S2E15M003	15M3	Yes	Data from Owner	1/13/2015	45.3	75.3	75.8	2
3S2E15Q008	15Q8	Yes	Data from Owner	1/14/2015	10.5	40.5	41	2
3S2E15R020	15R20	Yes	Data from Owner	1/14/2015	20.5	50.5	51	2
3S2E19K001	19K1	Yes	Mining, Fills Data Gap	NA	NA	NA	160	2
3S2E22E001	220	No	Similar to R002	12/8/1947	50	450	450	10
3S3E18Q004	18Q4	No	Difficult to access	NA	NA	NA	NA	NA
3S2E20R002	20R2	Yes	Upland	5/1/1985	107	252	257	9
3S2E21K009	21K9	Yes	Upland	NA	NA	NA	NA	6
3S2E21N001	21N1	No	Similar to R002	5/14/1987	110	310	320	8
3S2E28P002	28P2	No	Similar to 29L001, 33C001	1/18/1977	52	200	208	10
3S2E29J001	29J1	No	Similar to 29L001, 33C001	11/29/2001	5	20	20	2
3S2E29L001	29L1	Yes	Sycamore Grove	11/29/2001	8	23	23	2
3S2E29L002	29L2	No	Similar to 29L001, 33C001	12/1/2003	3	18	20	2
3S2E32A001	32A1	No	Similar to 29L001, 33C001	12/1/2003	2	17	17.5	2
3S2E33C001	33C1	Yes	Sycamore Grove	11/29/2001	5	20	20	2
3S1E33G004	33G4	No	Similar to G005	NA	NA	NA	35	NA
3S3E19C002	19C2	Quality Only	Fringe, NO3, GW Quality Only	NA	NA	66	66	8
3S3E20L004	20L4	Yes	Fringe, NO3	8/15/2005	NA	NA	340	5
3S3E20R004	20R4	Yes	Fringe, NO3	NA	NA	NA	NA	6
3S3E21C001	21C1	Yes	Upland, NO3	1/1/1977	60	124	128	12
4S2E01A001	1A1	Yes	Arroyo Valle	2/6/2015	45	130	130	6
4S3E06E004	6E4	Yes	Arroyo Valle	5/28/1976	184	212	220	10
	Added for levels:	**20**						
	Added for quality:	**21**						

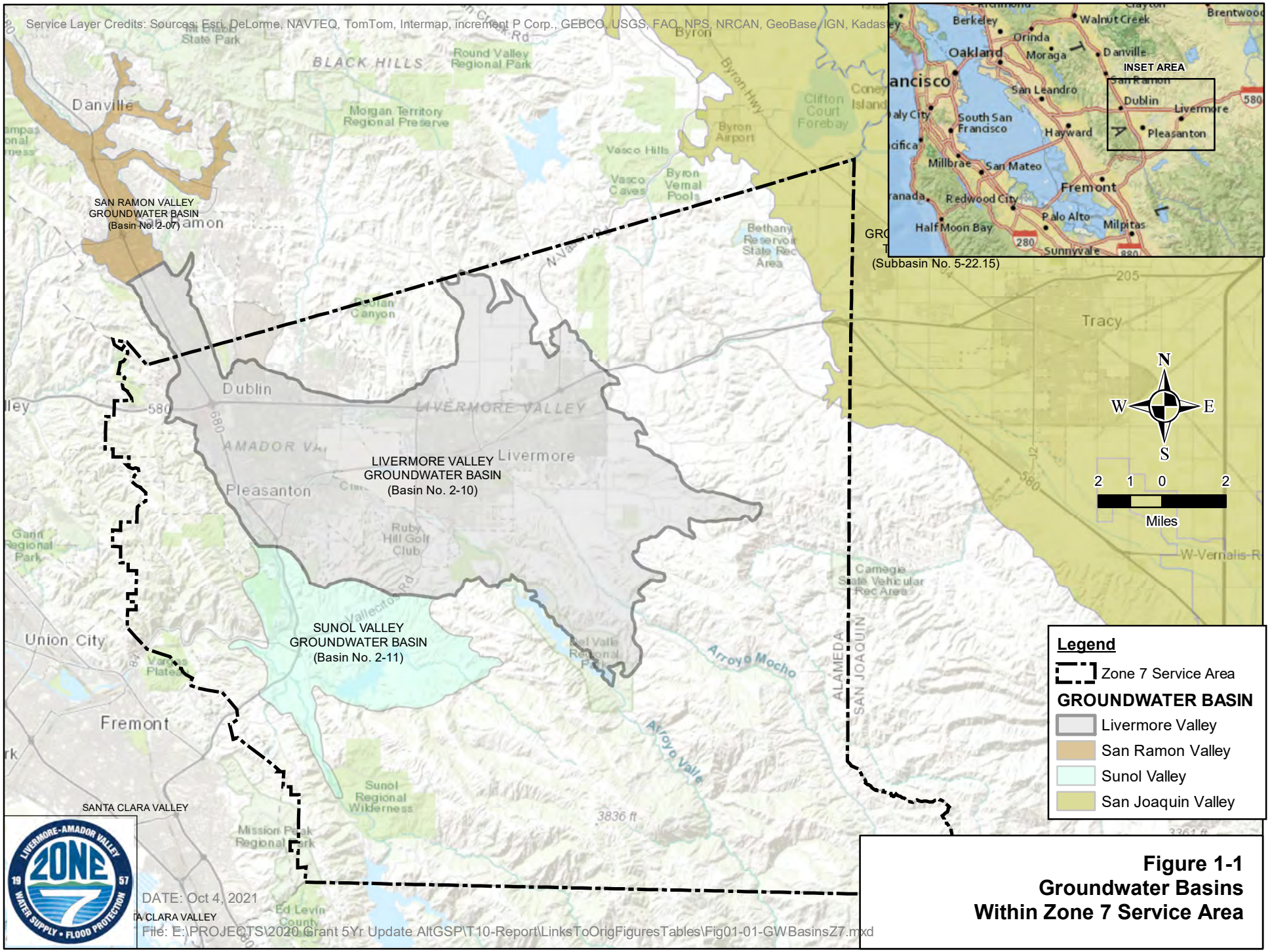

Figure 1-1
Groundwater Basins
Within Zone 7 Service Area

LEGEND

Wells Evaluated
- Added in 2021
- GW Quality Only
- Not needed or viable

Existing Wells in Program
- Supply, Lower
- Supply, Upper
- Monitoring, Deep
- Monitoring, Lower
- Monitoring, Upper
- Municipal, Lower
- Nested, Deep
- Nested, Lower
- Nested, Upper
- Main Basin
- Fringe Management Area
- Upland Management Area
- Mining Pond
- Streams
- Township-Range Line

21L1
27M2
27K1
9H13
18M2
15G11
15L2
15M3
15Q8
15R20
18Q1
19C2
18Q4
21C1
20L4
20R4
19K1
22E2
21K9
22E1
21N1
21K8
20R2
28M2
29L1
29L2
29J1
28P2
32A1
33C1
33G5
33G4
1A1
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DATE: Oct 14, 2021
FILE: E:\PROJECTS\2020 Grant.5Yr Update AltGSP\T5-GWLevels\FiguresTables\Fig01-02-MapNewWells.mxd

Figure 1-2
Map of New Wells for the
2021 Groundwater Program
Livermore Valley Groundwater Basin

2. SUSTAINABILITY GOAL

§ 354. 24 Sustainability Goal
Each Agency shall establish in its Plan a sustainability goal for the basin that culminates in the absence of undesirable results within 20 years of the applicable statutory deadline. The Plan shall include a description of the sustainability goal, including information from the basin setting used to establish the sustainability goal, a discussion of the measures that will be implemented to ensure that the basin will be operated within its sustainable yield, and an explanation of how the sustainability goal is likely to be achieved within 20 years of Plan implementation and is likely to be maintained through the planning and implementation horizon.

☑ 23 CCR § 354.24

The Sustainable Groundwater Management Act (SGMA) requires that a Sustainability Goal be defined for each medium- or high-priority basin (California Water Code [CWC] § 10727(a)). The California Code of Regulations Title 23 (23 CCR) Division 2 Chapter 1.5 Subchapter 2 further clarifies that the Sustainability Goal should culminate "in the absence of undesirable results within 20 years of the applicable statutory deadline" (23 CCR § 354.24).

The Alameda County Flood Control and Water Conservation District, Zone 7's (Zone 7 Water Agency or Zone 7) strategic planning (*Zone 7, 2020b*) focuses on seven goal areas that provide direction for achieving the vision and mission. Of these seven goals, "GOAL C - Groundwater Management" is to manage and protect the groundwater basin as the State designated Groundwater Sustainability Agency (GSA).

As the GSA, Zone 7 has adopted and met the following Sustainability Goal for the Livermore Valley Groundwater Basin (Basin):

Continue to operate the Livermore Valley Groundwater Basin within its Sustainable Yield[4] and to manage the groundwater resources for the prevention of significant and unreasonable: (1) chronic lowering of groundwater levels, (2) reduction of groundwater storage, (3) degradation of groundwater quality, (4) inelastic land subsidence, and (5) depletion of interconnected surface water supplies such that beneficial uses aren't adversely impacted.[5]

Consistent with this Sustainability Goal and its long-term sustainable management of the Basin, Zone 7 has developed and/or adopted a series of policies, ordinances, and basin management objectives (BMOs) that have expanded over time to adapt management actions to groundwater conditions in the Basin. The primary objectives of the Zone 7 groundwater management program are to provide for:

[4] Sustainable Yield is defined by SGMA as "the maximum quantity of water, calculated over a base period representative of long-term conditions in the basin and including any temporary surplus, that can be withdrawn annually from a groundwater supply without causing an undesirable result" (CWC §10721).
[5] The significant and unreasonable seawater intrusion is not applicable for the Basin as it is situated inland and does not interface with seawater.

- control and conservation of waters for beneficial future uses,
- conjunctive use of groundwater and surface water,
- importation of additional surface water, and
- use of the groundwater basin to store imported surface water for subsequent recovery during drought periods.

In Zone 7's 2005 Groundwater Management Plan (GWMP), a series of BMOs were identified as the guiding principles for Basin management decisions. Those BMOs addressed five Sustainability Indicators and remain relevant to this Alternative Groundwater Sustainability Plan (Alt GSP). Because seawater intrusion is not a relevant issue for this inland basin, no BMOs or Sustainable Management Criteria (SMCs) are needed for this Sustainability Indicator. The primary BMOs implemented by Zone 7 in the GWMP are listed below, along with the Sustainability Indicator that relates to each of the BMOs:

- Monitoring and maintenance of groundwater levels through conjunctive use and management of regional water supplies (This BMO is equivalent to the Sustainability Indicators for Chronic Lowering of Groundwater Levels and Reduction of Groundwater Storage):
  - maintain the balance between the combination of natural and artificial recharge and withdrawal,
  - maintain water levels high enough to provide emergency reserves adequate for worst credible drought and unplanned import outages,
  - store surface water supplies in the groundwater basin for use during emergencies and drought-related shortages,
  - allow for gravel mining by optimizing groundwater levels while maintaining adequate reserves for municipal supply, and
  - prevent overdraft that would otherwise occur from too much pumping (maintain total pumping at or below sustainable/safe yields);
- Groundwater quality monitoring and management, including tracking and addressing any water quality degradation (This BMO is equivalent to the Sustainability Indicator for Degraded Water Quality):
  - protect and enhance the quality of the groundwater,
  - halt degradation from salt buildup (offset current and future salt loading),
  - reduce flow of poor-quality shallow groundwater into deep aquifers,
  - offset impacts of water recycling and wastewater disposal through integrated Salt Management Plan (SMP),

  - recharge with relatively low total dissolved solids (TDS)/hardness imported or storm/local surface water,
  - manage quality on a regional basis as measured at municipal wells (such as those operated by both the retail water agencies and Zone 7), protecting and improving groundwater quality within the Main Basin Management Area (Main Basin) (as protecting and improving groundwater quality within the Main Basin (as described in Chapter 3), and
  - minimize threats of groundwater pollution through groundwater protection;
- Monitor and prevent inelastic land surface subsidence from occurring as a result of groundwater withdrawals (This BMO is equivalent to the Sustainability Indicator for Land Subsidence):
  - protect the storage capacity of Basin aquifers,
  - maintain water levels above historic lows,
  - monitor and minimize any identified impacts of gravel mining on the Upper Aquifer by encouraging the implementation of mitigation measures by mining companies, and
  - monitor benchmark elevations and shift pumping to other wells if inelastic subsidence is detected;
- Monitor and manage changes in surface water flow and quality, especially as they affect groundwater levels or quality, or are caused by groundwater pumping in the basin (This BMO is equivalent to the Sustainability Indicator for Depletions of Interconnected Surface Water):
  - augment stream flow through artificial recharge releases to improve groundwater supply and quality, and
  - monitor and protect recharge capacity of local arroyos.

Consistent with these GWMP BMOs, the Zone 7 Board of Directors has also adopted the 2004 SMP, the 2015 Nutrient Management Plan (NMP) and specific policy resolutions related to the protection of the Basin through wastewater management including:

- Water Quality Policy (Resolution 03-2494)
- Wastewater Management Policy (Resolution 1037)
- Prohibition against use of septic tanks for new development zoned for commercial or industrial use (Resolution 1165).

Finally, Zone 7 Board of Directors has also adopted the Reliability Policy for Municipal and Industrial (M&I) Water Supplies (Resolution 04-2662). In November 2012, the Zone 7 Board of Directors updated the reliability goals, which affect the quantity and urgency of new supply wells needed by Zone 7 as development occurs in the Basin. These refined goals are summarized below:

- ***Goal 1.*** Zone 7 will meet its treated water customers' water supply needs, in accordance with Zone 7's most current Contracts for M&I Water Supply, including existing and projected demands as specified in Zone 7's most recent Urban Water Management Plan (UWMP), during normal, average, and drought conditions, as follows:
  - At least 85% of M&I water demands 99% of the time
  - 100% of M&I water demands 90% of the time.
- ***Goal 2:*** Provide sufficient treated water production capacity and infrastructure to meet at least 80% of the maximum month M&I contractual demands should any one of Zone 7's major supply, production, or transmission facilities experience an extended unplanned outage of at least one week.

To support groundwater management activities, Zone 7 has developed and implemented an extensive series of Basin-wide monitoring networks and programs that have expanded and improved over time (see **Section 5.2** and **Section 14**). The overall objective of the monitoring networks is to provide sufficient information to allow for the tracking of groundwater conditions to meet the Sustainability Goal of the Basin, including the prevention of Undesirable Results. In addition to this overall objective, specific objectives for Basin-wide monitoring networks and programs have been identified for each of the Sustainability Indicators to accomplish the following requirements relative to SGMA:

- Demonstrate ongoing sustainability in the Basin,
- Monitor impacts to groundwater users and beneficial uses of groundwater,
- Monitor changes in groundwater conditions relative to Measurable Objectives (MOs) and Minimum Thresholds (MTs), and
- Quantify annual changes in water budget components.

Through the combination of the above policies and programs, this Alt GSP demonstrates that Zone 7 has operated the Basin within its sustainable yield over a period of at least 10 years.

3. AGENCY INFORMATION

§ 354.6. When submitting an adopted Plan to the Department, the Agency shall include a copy of the information provided pursuant to Water Code Section 10723.8, with any updates, if necessary, along with the following information:
(a) The name and mailing address of the Agency.
(b) The organization and management structure of the Agency, identifying persons with management authority for implementation of the Plan.
(c) The name and contact information, including the phone number, mailing address and electronic mail address, of the plan manager.
(d) The legal authority of the Agency, with specific reference to citations setting forth the duties, powers, and responsibilities of the Agency, demonstrating that the Agency has the legal authority to implement the Plan.
(e) An estimate of the cost of implementing the Plan and a general description of how the Agency plans to meet those costs.

3.1. Name and Mailing Address of the Agency

☑ 23 CCR § 354.6(a)

The Alameda County Flood Control and Water Conservation District, Zone 7 (Zone 7 Water Agency or Zone 7) is the exclusive Groundwater Sustainability Agency (GSA) for the Livermore Valley Groundwater Basin (Department of Water Resources [DWR] Basin No. 2-10, referred to herein as the "Basin").

The mailing address for the GSA is:

Zone 7 Water Agency
Attention: Groundwater Manager
100 North Canyons Parkway
Livermore, CA 94551

3.2. Organization and Management Structure of the Agency

☑ 23 CCR § 354.6(b)

Zone 7 is one of ten active zones of the Alameda County Flood Control and Water Conservation District (District). Zone 7 is the only zone in the District that provides water services in addition to flood protection, and has a long history of managing imported and local surface and groundwater resources for beneficial uses and users in the Basin.

The Zone 7 water service area (**Figure 3-1**) is located about 40 miles southeast of San Francisco and encompasses an area of approximately 425 square miles of the eastern portion of Alameda County, including the Livermore-Amador Valley, Sunol Valley, and portions of the Diablo Range. Zone 7 also serves a portion of Contra Costa County (Dougherty Valley in San Ramon) through an out-of-service-area

agreement with Dublin San Ramon Services District (DSRSD). As the water wholesaler, Zone 7 supplies treated State Water Project (SWP) water to four local retail water supply agencies (**Figure 3-1**).

- California Water Service —Livermore District (CWS)
- DSRSD
- City of Livermore (Livermore)
- City of Pleasanton (Pleasanton)

Zone 7 also provides imported, untreated surface water directly to 82 water customers. These direct connections largely supply local agricultural uses.

The history of Zone 7 Water Agency, including its statutory responsibilities and its ongoing coordination with other local agencies in the Basin, is described briefly below.

The Alameda County Flood Control and Water Conservation District was created in 1949 with authority to provide control of flood and stormwater and to conserve and manage local water for beneficial uses. The District comprises 10 active zones, of which Zone 7 covers the eastern portion of Alameda County (**Figure 3-1**). Pursuant to Section 36 of the District Act, Zone 7 Water Agency was established in 1957 to address regional and water supply issues. Zone 7 is governed by a seven-member Board of Directors (Zone 7 Board). Each director is elected at-large by residents within Zone 7's service area to a four-year term. The Zone 7 Board have full authority and autonomy to govern matters solely affecting Zone 7, independent of the Alameda County Board of Supervisors who govern the other nine zones of the District. The Zone 7 Board has played an active role in groundwater management and has adopted numerous policies and programs for sustainable management of local groundwater resources.

The Zone 7 Board also provides direction to Zone 7 management and staff through the Zone 7 General Manager and general counsel. Zone 7's organizational chart is included in **Figure 3-2.** The General Manager is assisted by an Assistant General Manager responsible for Finance and Human Resources. Three other Core Managers oversee the core functions of the Zone 7 Water Agency: Engineering, Production, and Integrated Water Resources. Groundwater management falls under the Integrated Water Resources function and coordinates within the group to also achieve stream management and flood protection, long-term planning, watershed and water quality protection, environmental planning, Asset Management and Capital Improvement Program planning.

Because the local streams are used for both flood protection and artificial recharge, Zone 7's climatology and stream monitoring programs are coordinated between the Flood Control and Groundwater sections. Zone 7 serves as the area's flood control agency and owns and/or maintains 37 miles of flood protection stream/channel corridors within a 425 square mile area. Zone 7 manages flood protection program through its Stream Management Master Plan.

Regarding water operations and long-term planning, Zone 7 became an early importer of water (in 1962) for artificial groundwater recharge as one of the 29 contractors for the SWP. As the water wholesaler for the Tri-Valley Area (Valley, i.e, Dublin, Pleasanton, and Livermore), Zone 7 imports surface water from the

SWP through the South Bay Aqueduct (SBA) for treatment, storage, and groundwater recharge. Zone 7 supplies treated drinking water to the four Retailers (see **Figure 3-1**), which deliver water to customers in their specific service areas. Zone 7 also supplies untreated water for local industry and agriculture. Thus, through its Retailers, Zone 7 serves water to an area with a population of approximately 266,000 (*Zone 7, 2021*).

Although the Basin is not adjudicated, by agreements with the local Retailers, Zone 7 manages regional water supplies through the interrelated programs described above where previously agreed groundwater extraction quotas are tracked and annual water management accounting is conducted. Zone 7 also manages recharge operations to augment instream and mining pond aquifer recharge. Zone 7's groundwater extraction is managed as to not exceed the previously recharged amounts. Water quality is also closely monitored and environmental cleanup sites are tracked. In addition, Zone 7 works closely with DWR, which manages Lake Del Valle and dam, to augment imported water supplies with local surface water runoff.

In summary, Zone 7 Water Agency conducts the followings:

- imports surface water via the SWP's SBA,
- stores local runoff in Lake Del Valle,
- manage recharge operations in the area,
- manages local and imported surface water and recovered supplies from groundwater banks to maximize conjunctive use of the supplies,
- treats and wholesales potable water to local retail water supply agencies (who in turn retail it to residents and other customers),
- delivers imported untreated water for irrigation to its agricultural customers, and
- provides protection of groundwater quality through the implementation of its Groundwater Management Plan, Salt and Nutrient Management Plan, and operation of its Mocho Groundwater Demineralization Facility.

Consistent with its management responsibilities, duties, and powers, Zone 7 Water Agency is designated as the exclusive GSA within its boundaries for the Sustainable Groundwater Management Act (SGMA) purposes. Since electing to be a GSA, the Agency has exercised its groundwater management authority consistent with its principal act and with SGMA. Continuing almost 60 years of active water resource management and over 50 years of active groundwater basin management, this Alternative Groundwater Sustainability Plan (Alt GSP) will be implemented by the Zone 7 General Manager, assisted specifically by staff of the Agency's Integrated Water Resources Division.

3.3. Plan Manager

☑ 23 CCR § 354.6(c)

The Plan Manager is Ken Minn, Mr. Minn can be reached at:

Ken Minn, P.E.
Groundwater Resources Manager
Zone 7 Water Agency
100 North Canyons Parkway
Livermore, CA 94551
kminn@zone7water.com
(925) 454-5071

3.4. Legal Authority of the GSA

☑ 23 CCR § 354.6(d)

Recognizing Zone 7's legal authority to implement SGMA within its service area, SGMA specifically designates Zone 7 as the exclusive GSA within its statutory boundaries (Water Code §10723).

3.5. Estimated Cost of Implementing the Alt GSP and the Agency's Approach to Meet Costs

☑ 23 CCR § 354.6(e)

Within Zone 7's Integrated Water Resources Division, the Groundwater Section is primarily responsible for the implementation of Zone 7's groundwater management practices. The Groundwater Section employs a staff of seven including a professional engineer, two hydrogeologists and four water resource technicians. One of the water resources technician positions is funded, in part, through fees collected under the Alameda County Well Ordinance program. Section budgets are set every two years or adjusted as needed to address emergencies and critical need. The annual Groundwater Section budgets for the 2020-21 and 2021-22 fiscal years are approximately $2M and $1.7M respectively. About 98% of the funding for these budgets will come from water sales and well permit revenues. The balance of the Section's funding will be from new water connection fees and property taxes. In addition, Zone 7 will seek state and federal grant funding to finance projects and studies. **Table 3-1** shows the estimated cost of implementing the Alt GSP and associated special projects.

TABLE 3-1
LIVERMORE BASIN ALTERNATIVE GROUNDWATER SUSTAINABILITY PLAN IMPLEMENTATION COSTS

Account	*Fiscal Year 2021 Actual Amount*	*Fiscal Year 2022 Amended Budget*	*Fiscal Year 2023 Projected Budget*	*Fiscal Year 2024 Projected Budget*	*Fiscal Year 2025 Projected Budget*	*Fiscal Year 2026 Projected Budget*	*Funding Sources*
Labor	982,208.78	1,344,565.00	1,384,901.95	1,426,449.01	1,469,242.48	1,513,319.75	Water Rates
Professional Services	304,247.69	308,200.00	317,446.00	326,969.38	336,778.46	346,881.82	Water Rates
Communications	3,255.76	5,850.00	6,025.50	6,206.27	6,392.45	6,584.23	Water Rates
Repairs and Maintenance	3,560.62	8,600.00	8,858.00	9,123.74	9,397.45	9,679.38	Water Rates
Rental Services	-	500.00	515.00	530.45	546.36	562.75	Water Rates
General Office Services/ Supplies	15,677.07	34,450.00	35,483.50	36,548.01	37,644.45	38,773.78	Water Rates
Organizational Membership/ Participation	1,850.00	1,900.00	1,957.00	2,015.71	2,076.18	2,138.47	Water Rates
Other Services/ Supplies	2,010.20	6,250.00	6,437.50	6,630.63	6,829.54	7,034.43	Water Rates
Training and Travel	757.50	3,650.00	3,759.50	3,872.29	3,988.45	4,108.11	Water Rates
Other Planning Efforts and Capital Projects							
Well Master Plan update			180,000.00	180,000.00			Water Rates, Connection Fees, and grants
Groundwater Model Upgrade		90,000.00	90,000.00				Grant Funds
Salts and Nutrients Management Plan update					330,000.00		Grant Funds
PFAs Management Program		60,000.00	60,000.00	60,000.00	60,000.00	60,000.00	Grant Funds
Total Other Planning Efforts and Capital Projects	-	150,000.00	330,000.00	240,000.00	390,000.00	60,000.00	
EXPENSES Total	**1,313,567.62**	**1,863,965.00**	**2,095,383.95**	**2,058,345.47**	**2,262,895.83**	**1,989,082.71**	

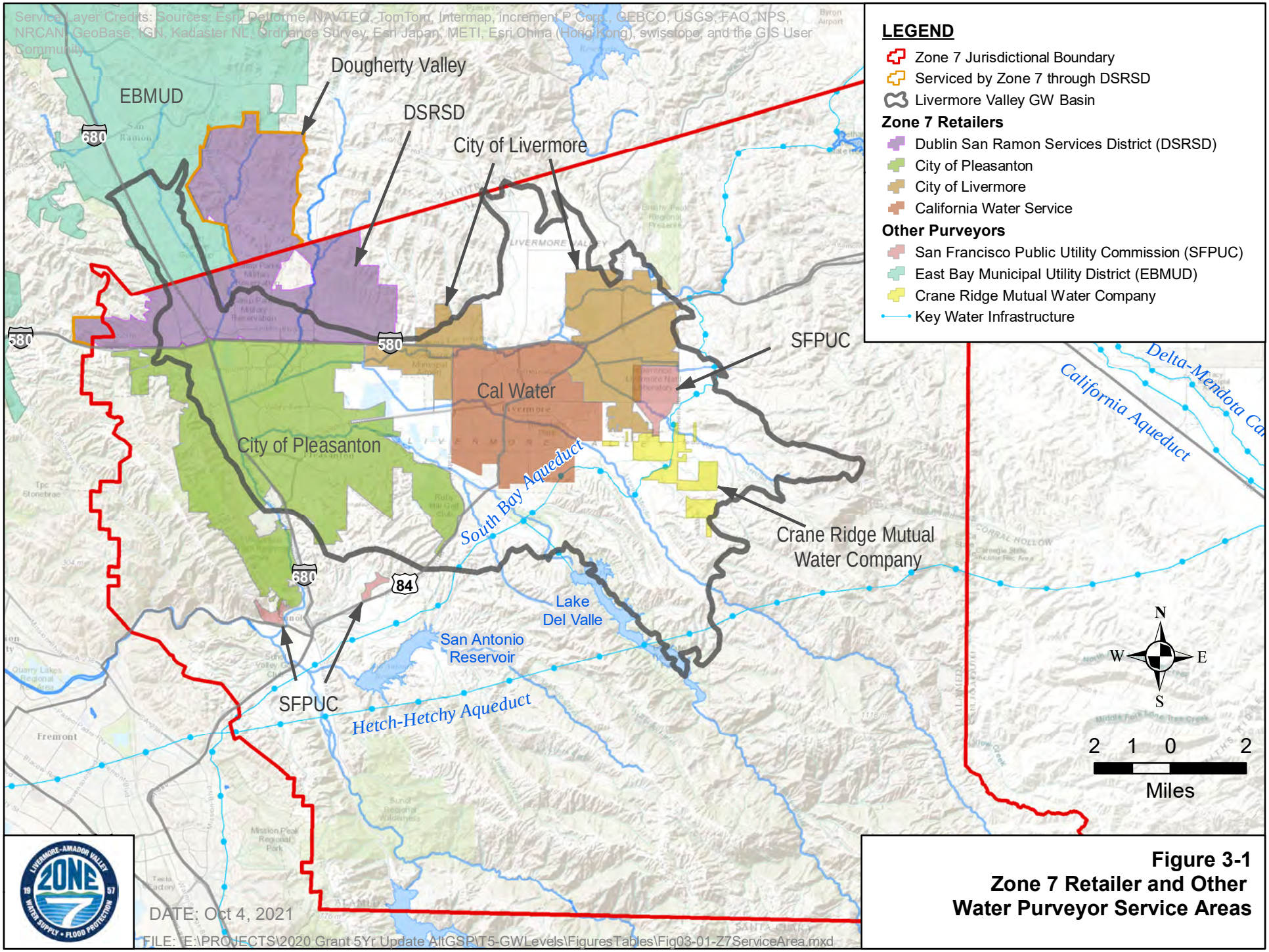
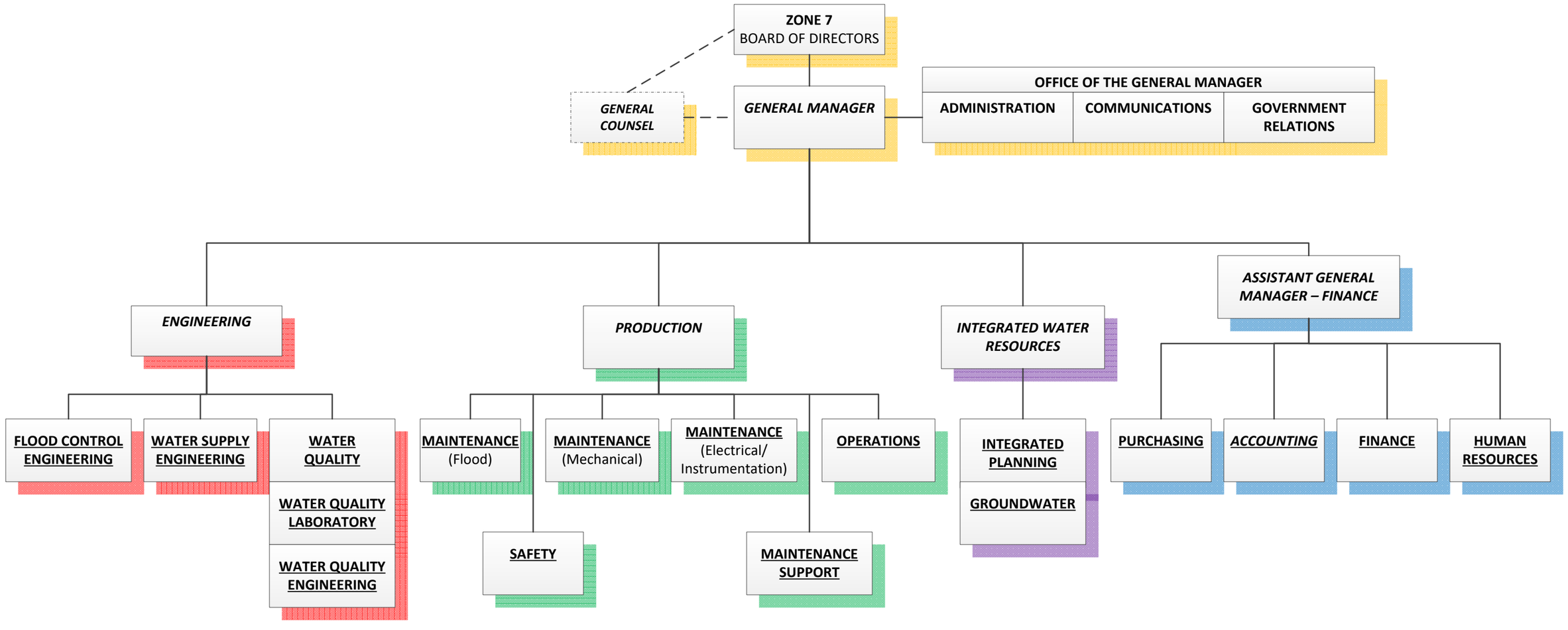


Figure 3-1
Zone 7 Retailer and Other Water Purveyor Service Areas

FIGURE 3-2
ZONE 7 WATER AGENCY
ORGANIZATIONAL STRUCTURE



Oct 21, 2021
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4. ALTERNATIVE GSP ORGANIZATION

This 2021 Alternative Groundwater Sustainability Plan (Alt GSP) is organized as follows and documentation of compliance with the GSP Regulations is documented in **Appendix B**:

- **Section ES** provides an **Executive Summary**, or overview, of the Alt GSP.
- **Sections 1 through 4** comprise the **Introduction**, including the following sections:
    - **Section 1**. Purpose of the GSP
    - **Section 2**. Sustainability Goal
    - **Section 3**. Agency Information
    - **Section 4**. Alt GSP Organization
- **Section 5** provides a **Description of the Plan Area**.
- **Sections 6 through 10** present the **Basin Setting**, including the following sections:
    - **Section 6.** Introduction to Basin Setting
    - **Section 7.** Hydrogeologic Conceptual Model
    - **Section 8**. Current and Historical Groundwater Conditions
    - **Section 9**. Water Budget Information
    - **Section 10.** Management Areas
- **Sections 11 through 13** present the **Sustainable Management Criteria**, including the following sections:
    - **Section 11**. Introduction to Sustainable Management Criteria
    - **Section 12**. Sustainability Goal
    - **Section 13**. Sustainability Indicators
- **Section 14** presents the **Monitoring Network**.
- **Section 15** presents the **Projects and Management Actions**.
- **References and Technical Studies** are included at the end of this document.
- Supporting information is provided in **Appendices**.