PLAN AREA

5 DESCRIPTION OF THE PLAN AREA

§ 354.8. Each Plan shall include a description of the geographic areas covered, including the following information:
(a) One or more maps of the basin that depict the following, as applicable:
(1) The area covered by the Plan, delineating areas managed by the Agency as an exclusive Agency and any areas for which the Agency is not an exclusive Agency, and the name and location of any adjacent basins.
(2) Adjudicated areas, other Agencies within the basin, and areas covered by an Alternative.
(3) Jurisdictional boundaries of federal or state land (including the identity of the agency with jurisdiction over that land), tribal land, cities, counties, agencies with water management responsibilities, and areas covered by relevant general plans.
(4) Existing land use designations and the identification of water use sector and water source type.
(5) The density of wells per square mile, by dasymetric or similar mapping techniques, showing the general distribution of agricultural, industrial, and domestic water supply wells in the basin, including de minimis extractors, and the location and extent of communities dependent upon groundwater, utilizing data provided by the Department, as specified in Section 353.2, or the best available information.
(b) A written description of the Plan area, including a summary of the jurisdictional areas and other features depicted on the map.

☑ **23 CCR § 354.8**

This section presents a description of the Plan Area and a summary of the relevant jurisdictional boundaries and other key land use features potentially relevant to the sustainable management of groundwater in the Delta-Mendota Subbasin (Basin; California Department of Water Resources [DWR] Basin No. 5-022.07). This section also describes the monitoring programs, water management programs, and general plans relevant to the Basin and their influence on the development and execution of this Groundwater Sustainability Plan (GSP or Plan).

5.1 Summary of Jurisdictional Areas and Other Features

5.1.1 Adjudicated Areas

☑ **23 CCR § 354.8(a)(2)**
☑ **23 CCR § 354.8(b)**

The Basin is not adjudicated, and no portion is being managed pursuant to an alternative plan.

5.1.2 Area Covered by the Plan

☑ **23 CCR § 354.8(a)(1)**
☑ **23 CCR § 354.8(b)**

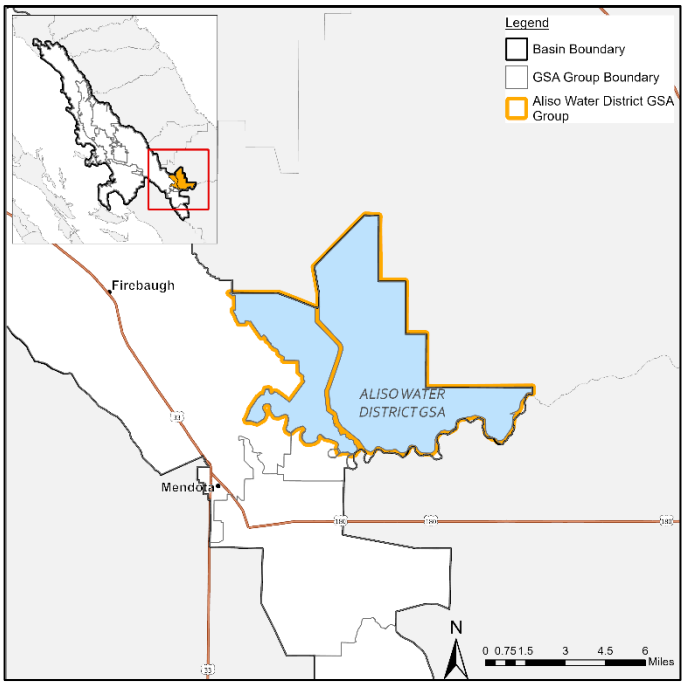
The Basin encompasses approximately 765,000 acres at the northwestern end of the San Joaquin Valley Groundwater Basin within San Joaquin, Stanislaus, Merced, Fresno, Madera and San Benito Counties. As shown in **Figure PA-1**, the Basin shares boundaries with nine adjacent groundwater basins. To the north are the medium priority Tracy Subbasin (DWR Basin No. 5-021.15) and the critically overdrafted Eastern

San Joaquin Subbasin (DWR Basin No. 5-021.01); to the east are the high priority Modesto and Turlock Subbasins (DWR Basin No. 5-021.02 and No. 5-021.03) and critically overdrafted Merced (DWR Basin No. 5-022.04), Chowchilla (5-022.05), and Madera (5-022.06) Subbasins; and to the south are the critically overdrafted Kings (DWR Basin No. 5-021.08) and Westside (DWR Basin No. 5-021.09) Subbasins.

The Basin is bounded on the west by the Tertiary and older marine sediments of the Coast Ranges, on the north by San Joaquin-Stanislaus County line (except where Del Puerto Water District and West Stanislaus Irrigation District service areas extend into San Joaquin County), on the east generally by the San Joaquin River and Fresno Slough, and on the south by the Tranquillity Irrigation District and Westlands Water District boundaries and including the San Luis Water District service area until reaching the Coast Range (DWR, 2006). The Basin boundaries are further described in **Section 7.1.2** and are shown in relation to each of the six counties on **Figure PA-1**.

The Basin is entirely covered by 23 exclusive Groundwater Sustainability Agencies (GSAs), which are grouped into seven GSA Groups as listed in **Table Intro-2** and shown in **Figure PA-1**. Collectively, these GSAs have worked together to develop this GSP and entered into a Memorandum of Agreement (MOA), effective as of the date of adoption of this GSP, to comply with Sustainable Groundwater Management Act (SGMA) requirements (**Appendix D**). Further description of each GSA Group is provided below.

5.1.2.1 Aliso Water District GSA Group



The Aliso Water District GSA Group is exclusively composed of the Aliso Water District GSA. The Aliso Water District GSA boundaries coincide with the Aliso Water District service area, which covers approximately 26,000 acres in western Madera County. There are no other entities that are a part of the GSA; however, the Lower San Joaquin Levee District overlies portions of the Aliso Water District GSA Group area.

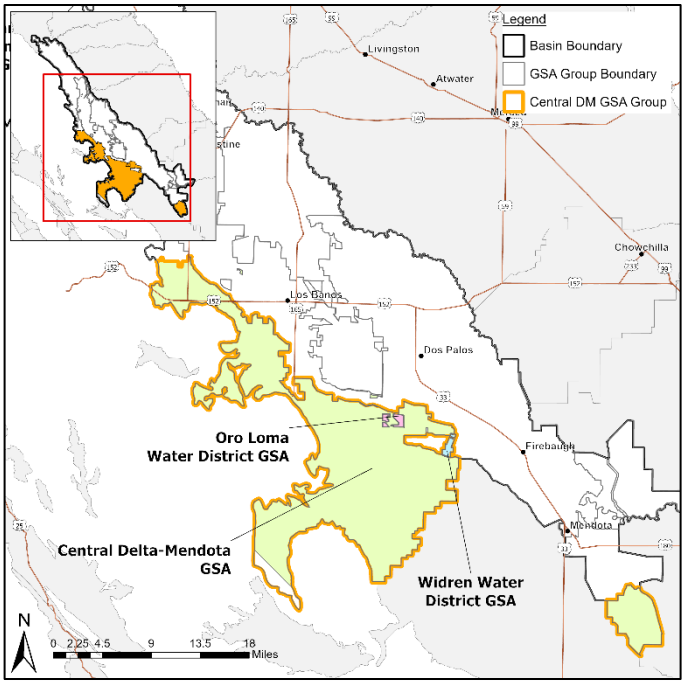
The Aliso Water District and Aliso Water District GSA Board meet regularly every quarter, with additional special GSA meetings as needed to discuss additional SGMA-related topics.

Land use within Aliso Water District is predominantly agricultural and includes less than 20 permanent residents and no cities or unincorporated communities. In addition to agricultural lands, there is a nut processing plant and an underground natural gas storage facility. There are no state or federal lands within the GSA's jurisdiction except the Chowchilla Bypass, which is owned by the State of California and maintained by the Lower San Joaquin Levee District (Aliso Water District GSA, 2022). The Aliso Water District GSA is adjacent to the San Joaquin River.

The Aliso Water District GSA's landowners' main source of water is groundwater, but in Water Year (WY) 2022, the District acquired a Temporary Water Right permit from the State Water Resources Control Board (SWRCB) to appropriate available San Joaquin River flood water from the Chowchilla Bypass (Delta-Mendota GSAs, 2023). The District continues to pursue a permanent appropriative water right permit (see **Section 15.3**, Project AWD-2). Individual landowners within the GSA's jurisdiction also use surface water from the San Joaquin River and Chowchilla Bypass (Aliso Water District GSA, 2022). The primary water use sector is agriculture, but other water use sectors include native vegetation, managed recharge and a few rural domestic well users.

5.1.2.2 Central Delta-Mendota GSA Group

The Central Delta-Mendota GSA group contains three GSAs, the Central Delta-Mendota GSA, the Oro Loma Water District GSA, and the Widren Water District GSA, located in Fresno, Merced, and San Benito Counties. The Central Delta-Mendota GSA is a Joint Powers Authority (JPA) that includes 10 entities (see **Table Intro-2**). The Central Delta-Mendota GSA includes a small portion of San Benito County. The Central Delta-Mendota GSA group covers approximately 168,966 acres in the southwest portion of the Basin.



The Central Delta-Mendota GSA Group meets monthly as the Central Delta-Mendota Region Management Committee. Additionally, the three GSAs and individual member agencies hold regular Board meetings that include items related to SGMA.

Agriculture is the predominant land use within the Central Delta-Mendota GSA Group boundaries. Areas of urban land use include the unincorporated communities of Santa Nella, Tranquillity, and Volta. Non-irrigated land use includes native grasslands and rangeland, as well as wildlife areas, wildlife refuges, and state parks controlled by California Department of Fish and Wildlife (CDFW), California Department of Parks and Recreation (CDPR), the United States Bureau of Reclamation (USBR), and the United States Bureau of Land Management (BLM; see **Figure PA-2**). State or federally owned water-related infrastructure that runs through the Central Delta-Mendota GSA Group area includes the federally-owned Delta-Mendota Canal (DMC), which is a part of USBR's Central Valley Project (CVP), and the California Aqueduct, which is part of the State Water Project (SWP) (Northern and Central Delta-Mendota GSAs, 2022). Other major facilities are further discussed in **Section 7.3.6**.

Water sources within the Central Delta-Mendota GSA Group include groundwater and imported surface water from the CVP. Communities within and neighboring the Central Delta-Mendota GSA Group that are

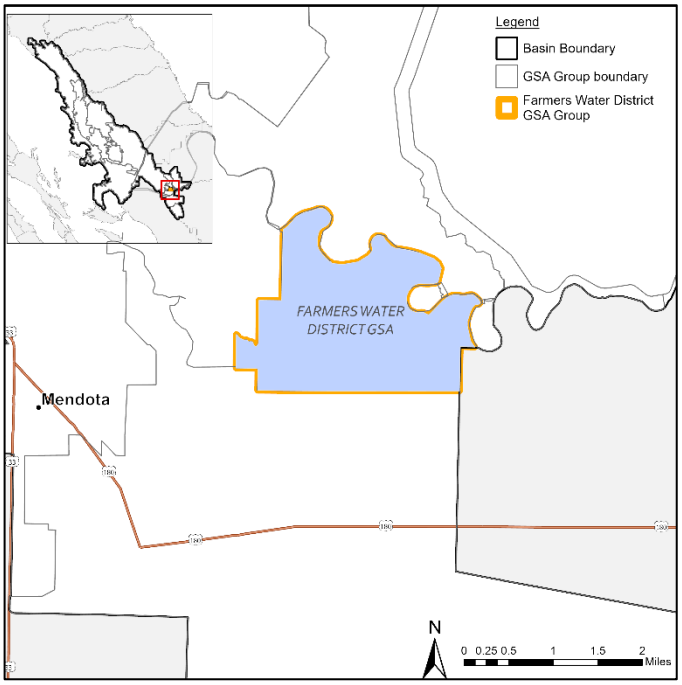
reliant on groundwater for municipal and domestic water supplies include Santa Nella, Volta[5], and Tranquillity, as well as unincorporated communities within Oro Loma Water District's service area. There are several areas of *de minimis* groundwater extractors in the western portions of the GSA Group. The following entities in the Central Delta-Mendota GSA Group receive water from the CVP: Eagle Field Water District, Fresno Slough Water District, Mercy Springs Water District, Oro Loma Water District, Pacheco Water District, Panoche Water District, San Luis Water District, Santa Nella County Water District, and Tranquillity Irrigation District (Northern and Central Delta-Mendota GSAs, 2022). Water use sectors include agriculture, domestic, industrial, managed wetlands, managed recharge, and native vegetation.

5.1.2.3 Farmers Water District GSA Group

The Farmers Water District GSA Group is exclusively composed of the Farmers Water District GSA. The Farmers Water District GSA boundaries coincide with the Farmers Water District service area, which covers approximately 2,300 acres in northern Fresno County.

The Farmers Water District Board meets regularly every month, with special GSA meetings as needed to discuss additional SGMA-related topics.

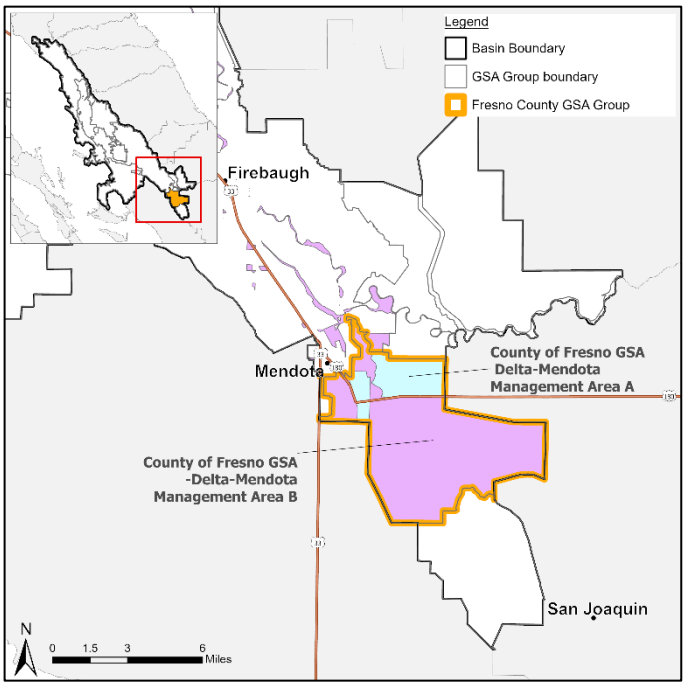
All land within Farmers Water District is privately owned and consists of agricultural land uses and four private residences; there are no cities or unincorporated communities. There is no state or federally owned land or water-related infrastructure within the GSA's jurisdiction (Farmers Water District, 2022). The Farmers Water District GSA is adjacent to the San Joaquin River.



Farmers Water District lands within the Basin rely primarily on groundwater to meet agricultural demands and *de minimis* domestic use. Farmers Water District also participates in an exchange program with the USBR. Groundwater from Farmers Water District is pumped into the Mendota Pool to be utilized by surrounding entities for local irrigation in exchange for surface water at other locations (Farmers Water District, 2022). Water use sectors include agriculture, domestic, and native vegetation.

[5] The Community of Volta (previously served by the Volta Community Services District) was consolidated with the Santa Nella County Water District in 2023.

5.1.2.4 Fresno County GSA Group



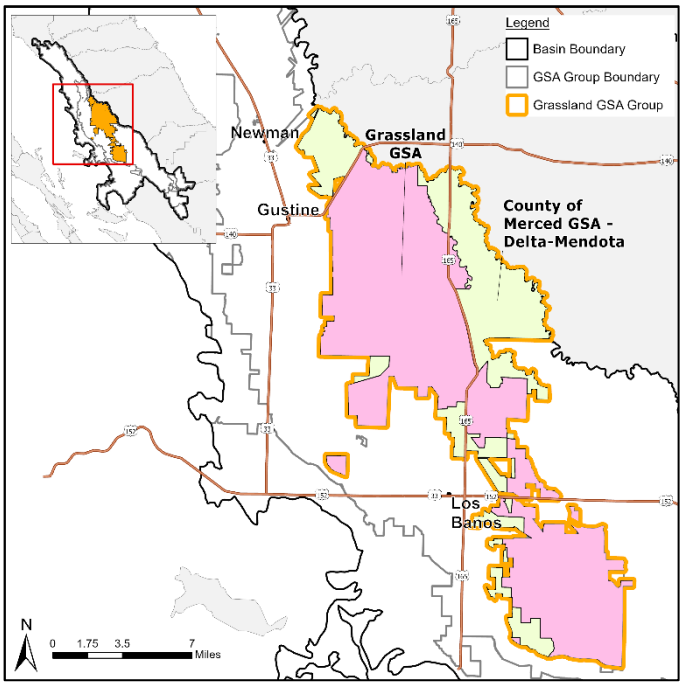
The Fresno County GSA Group contains two GSAs, the County of Fresno GSA – Delta-Mendota Management Area A (MAA) and the County of Fresno GSA – Delta-Mendota Management Area B (MAB), located within the southern portion of the Basin. The Fresno County GSA Group covers approximately 22,500 acres in unincorporated Fresno County that are not otherwise covered by other Basin GSAs. Small areas of the County of Fresno GSA – MAB that are located north of the Farmers Water District GSA (referred to as "County Islands") are managed by the San Joaquin River Exchange Contractors (SJREC) GSA Group as part of a Memorandum of Understanding (MOU) agreement between Fresno County and the SJREC.

The Fresno County Board of Supervisors generally meets bi-monthly and includes SGMA-related topics.

State lands covered by the Fresno County GSA Group include the Mendota Wildlife Area (MWA), which includes approximately 11,800 acres controlled by CDFW. All other lands are privately owned and used primarily for agriculture. State or federally owned water-related infrastructure that runs through the Fresno County GSA group area includes the DMC and the San Luis Drain, which are both part of the CVP (County of Fresno GSA, 2022). Other major facilities are further discussed in **Section 7.3.6**.

Additionally, there are currently two groundwater recharge projects in the Fresno County GSA Group area, the Meyers Water Bank and the Terra Linda Recharge Ponds. The Meyers Water Bank receives CVP water along with other surface water supplies, and the Terra Linda Recharge Ponds receive flood flows from the Kings River. The MWA is primarily supplied through surface water deliveries (County of Fresno GSA, 2022). Water use sectors include agriculture, domestic, native vegetation, and managed recharge.

5.1.2.5 Grassland GSA Group



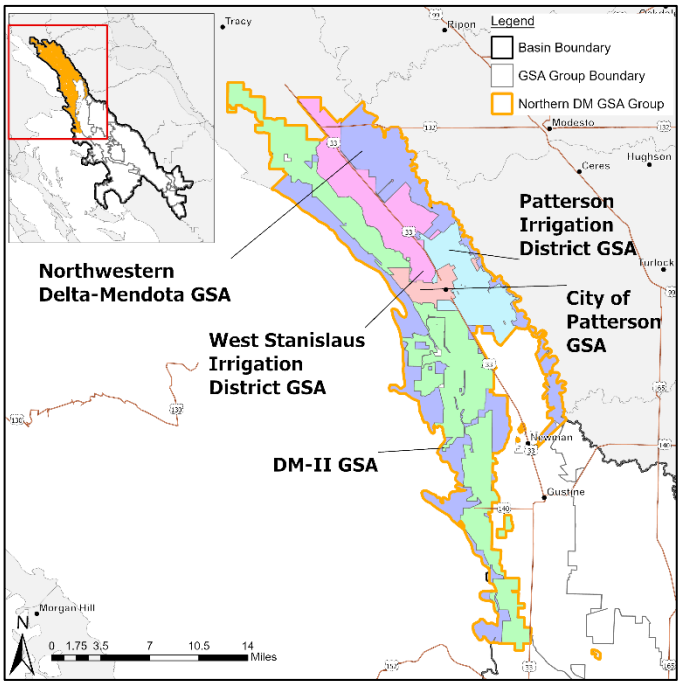
The Grassland GSA group contains two GSAs, the Grassland GSA and the County of Merced GSA – Delta-Mendota, located in Merced County. The Grassland GSA covers the Grassland Resource Conservation District (GRCD) and the Grassland Water District service areas, which encompass approximately 105,000 acres in the eastern portion of the Basin. The rest of the area covered by the Grassland GSA Group consists of private and public lands under Merced County's jurisdiction, which include Grassland Ecological Area (GEA) lands and agricultural lands adjacent to Grassland Water District conveyance channels.

The Grassland Water District meets monthly, with special GSA meetings as-needed to discuss additional SGMA-related topics. The County of Merced GSA – Delta-Mendota does not have regularly scheduled meetings but holds meetings as necessary.

Land use in the Grassland GSA Group area is predominantly made up of the GEA, which consists of a combination of privately managed wetland habitat, state wildlife areas, state parks, and national wildlife refuges. The Grassland GSA Group area includes a limited amount of agricultural lands; there are no cities or unincorporated communities and very few permanent residents. State or federally owned water-related infrastructure that runs through the Grassland GSA Group area includes the San Luis Drain (Grassland GSA and Merced County, 2022). Other major facilities are further discussed in **Section 7.3.6**.

The primary water source for the Grassland GSA Group area is CVP supplies used for managed wetlands, much of which is wheeled through the SJREC, as the SJREC own and operate various canals that have historically been used to make deliveries to Grassland Water District (SJREC GSA, 2022). Additionally, groundwater is pumped from privately owned wells within the GSA Group area for limited agricultural use and is delivered to wetlands under groundwater acquisition and monitoring agreements. In addition to groundwater and CVP supplies, the low-lying Grassland GSA Group area also receives and manages agricultural operational spill and storm water from neighboring lands and flood waters from Los Banos and Garzas Creek (Grassland GSA and Merced County, 2022). Water use sectors include managed wetlands, native vegetation, agriculture, and a few rural domestic well users.

5.1.2.6 Northern Delta-Mendota GSA Group



The Northern Delta-Mendota GSA group contains five GSAs: the City of Patterson GSA, the DM-II GSA, the Northwestern Delta-Mendota GSA, the Patterson Irrigation District GSA, and the West Stanislaus Irrigation District GSA, located in three counties: San Joaquin, Stanislaus, and Merced. The Northern Delta-Mendota GSA group covers approximately 146,973 acres in the northwestern portion of the Basin.

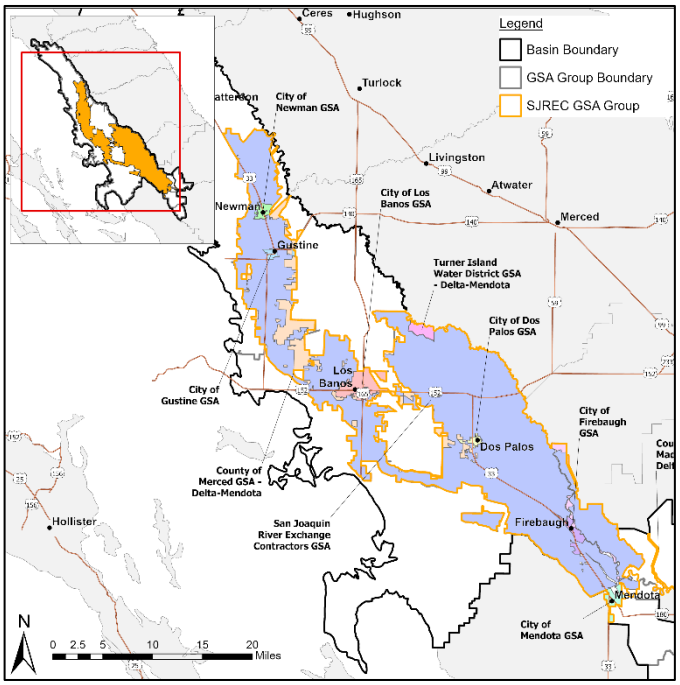
The Northern Delta-Mendota GSA Group meets monthly as the Northern Delta-Mendota Region Management Committee. Additionally, the five GSAs and individual member agencies hold regular Board meetings that include items related to SGMA.

Land use in the Northern Delta-Mendota GSA Group area is primarily agricultural and rangeland and includes the San Joaquin River National Wildlife Refuge, controlled by the United States Fish and Wildlife Service (USFWS, see **Figure PA-2**). Additionally, the Northern Delta-Mendota GSA Group includes the City of Patterson and the unincorporated communities of Crows Landing, Grayson, and Westley. State or federally owned water-related infrastructure that runs through the Northern Delta-Mendota GSA Group area includes the DMC and the California Aqueduct (Northern and Central Delta-Mendota GSAs, 2022). Other major facilities are further discussed in **Section 7.3.6**.

Water sources within the Northern Delta-Mendota GSA Group include groundwater, surface supplies, and imported surface water from the CVP and SWP. Del Puerto Water District, Patterson Irrigation District, and West Stanislaus Irrigation District receive water from the CVP, and Oak Flat Water District receives water from the SWP (Northern and Central Delta-Mendota GSAs, 2022). West Stanislaus Irrigation District, Patterson Irrigation District, Twin Oaks Irrigation District, and El Solyo Water District are the primary surface water rights holders in the Northern Delta-Mendota GSA Group (Northern and Central Delta-Mendota GSAs, 2022). Water use sectors within the Northern Delta-Mendota GSA Group include agriculture, urban/domestic, industrial, managed wetlands, managed recharge, and native vegetation. The City of Patterson and the communities of Grayson, Crows Landing, and Westley rely solely on groundwater for their water supplies.

5.1.2.7 San Joaquin River Exchange Contractors GSA Group

The SJREC GSA Group contains eleven GSAs: the City of Dos Palos GSA, the City of Firebaugh GSA, the County of Fresno GSA – Delta-Mendota MAB, the City of Gustine GSA, the City of Los Banos GSA, the City of Mendota GSA, the City of Newman GSA, the County of Madera GSA – Delta-Mendota, the County of Merced GSA – Delta-Mendota, the SJREC GSA, and the Turner Island Water District GSA, located in four counties: Fresno, Madera, Merced, and Stanislaus. Two of these GSAs, the County of Merced GSA – Delta-Mendota GSA and the County of Fresno GSA – Delta-Mendota MAB, are shared with the Grassland GSA Group and SJREC GSA Group, respectively. The SJREC GSA group area includes approximately 293,000 acres in the central portion of the Basin.



The SJREC GSA meets monthly to update the public on SGMA developments. Additionally, individual member agencies hold regular Board meetings that include items related to SGMA.

Land use in the SJREC GSA group area is primarily agricultural but includes wildlife areas and refuges controlled by USFWS and CDFW, as well as the Cities of Dos Palos, Firebaugh, Gustine, Los Banos, Mendota, and Newman and the unincorporated communities of Crows Landing, Dos Palos Y, and South Dos Palos. The SJREC has had a long-standing partnership with Grassland Water District to meet wetland management needs in the state and federal refuges, and SJREC member agencies own and operate several canals that convey water to Grassland Water District. State or federally owned water-related infrastructure that runs through the SJREC GSA group area includes the DMC and the California Aqueduct (SJREC GSA, 2022). Other major facilities are further discussed in **Section 7.3.6**.

Water sources within the SJREC GSA Group include groundwater and imported surface water from the CVP.[6] However, "the [SJREC] hold senior water rights on the San Joaquin River. In 1939, the predecessors to the Central California Irrigation District (CCID), San Luis Canal Company, Firebaugh Canal Water District and Columbia Canal Company, collectively referred to as the SJREC, entered into an agreement with the federal government to not exercise their water rights on the San Joaquin River in exchange for a substitute water supply currently delivered via the DMC. The contract is commonly referred to as the 'Exchange Contract'" (SJREC GSA, 2022). If the USBR is not able to make its contracted deliveries of substitute water, the SJREC have reserved the right to return to the San Joaquin River to satisfy their historic rights. A small portion of SJREC's surface water deliveries go to the City of Dos Palos due to naturally occurring poor quality groundwater surrounding the city. Additionally, CCID has partnered with local disadvantaged communities (DACs) to jointly study and manage groundwater to ensure reliability for the communities

[6] The SJREC member agencies and the City of Dos Palos both have CVP contracts.

that are completely dependent on groundwater. Those communities include: the cities of Newman, Gustine, Los Banos, Firebaugh, and Mendota (SJREC GSA, 2022). Water use sectors within the SJREC GSA Group area include agriculture, urban/domestic, industrial, managed wetlands, managed recharge, and native vegetation.

5.1.3 Jurisdictional Boundaries

☑ 23 CCR § 354.8(a)(3)
☑ 23 CCR § 354.8(b)

The SGMA regulations require that the GSP identify jurisdictional boundaries within the Basin. These boundaries include cities, counties, federal and state lands, state protected areas, tribal lands, DACs and severely disadvantaged communities (SDACs), economically distressed areas (EDAs) and entities with water management responsibilities. This section summarizes jurisdictional boundaries both at a Basin level and in more detail by GSA Group.

Cities and Counties

The Basin falls within portions of San Joaquin, Stanislaus, Merced, Madera, Fresno, and San Benito Counties. Fifteen census designated places within the Basin include the cities of Patterson, Newman, Dos Palos, Gustine, Los Banos, Firebaugh, and Mendota, and the communities of Grayson, Westley, Crows Landing, Santa Nella, Volta, Dos Palos Y, South Dos Palos, and Tranquillity.

California Protected Areas, California Conservation Easement Areas, and Local, State, and Federal Lands

As shown on **Figure PA-2,** there are 170,292 acres of state, federal, or locally owned public lands within the Basin, as described below. Further detail on specific federal, state, and locally owned lands, including wildlife areas, can be found in **Section 5.1.2**.

- Approximately 139,390 acres of federally owned lands exist within the Basin. This includes: 75,500 acres owned by BLM; 33,530 acres owned by the USFWS; 30,020 acres owned by the USBR; and 332 acres owned by the United States Department of Defense. The USBR owns the CVP facilities in the Basin, including the DMC and San Luis Drain, which are managed and operated by the San Luis & Delta-Mendota Water Authority (SLDMWA).
- Approximately 30,199 acres of state-owned lands exist within the Basin. This includes: 27,491 acres managed by CDFW (primarily wildlife areas) and 2,708 acres managed by the CDPR. DWR manages the SWP facilities in the Basin, including the California Aqueduct, and through the Lower San Joaquin Levee District, DWR also manages the Chowchilla Bypass. The California Department of Transportation (Caltrans) is responsible for managing the State and Interstate highways in the Basin, including Interstate- (I-) 5, and State Highways 132, 33, 140, 152, and 165.
- Approximately 704 acres of locally owned lands exist within the Basin. This includes land owned by cities, counties, and special districts.

Approximately 1,885 acres of California Protected Areas are located within the Basin and are managed by federal, state, city, county or special district agencies. These lands are protected for open space and natural resource purposes (GreenInfo Network, 2023b).

Additionally, approximately 35,352 acres of California Conservation Easement areas are located within the Basin, as shown in **Figure PA-2** and listed below. These areas are defined as easement and deed-based restrictions on private land that limit land uses to maintain open spaces (e.g., farmed, grazed, forested, nature reserves, and wetlands) (GreenInfo Network, 2023a).

- Approximately 20,844 acres of easements managed by USFWS.
- Approximately 4,890 acres of easements managed by the United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS).
- Approximately 2,885 acres of easements managed by California State Coastal Conservancy.
- Approximately 2,170 acres of easements managed by CDFW.
- Approximately 1,627 acres of easements managed by Center for Natural Lands Management.
- Approximately 1,599 acres of easements managed by Sequoia Riverlands Trust.
- Approximately 1,338 acres of easements managed by California Farmland Trust.

Native American Tribal Communities and Lands

There are no federal or state recognized tribal lands within the Basin.

Williamson Act Areas

The California Land Conservation Act of 1965, known as the Williamson Act, allows local governments to enter into contracts with landowners to restrict specific parcels of land to agricultural or related open space use to prevent development. In return, landowners receive relief on property taxes because they are based upon farming and open space uses instead of the full market value. As shown in **Figure PA-3**, approximately 41 percent of the Basin (314,000 acres) is covered by Williamson Act contract areas. Most of these lands are designated as Mixed Enrollment Agriculture Land and Prime Agriculture Land (47 percent and 46 percent, respectively). The remaining lands designated as Nonprime Agricultural Land (4 percent), Farmland Security Zone (two percent), and Nonrenewal land (less than 1 percent).

Disadvantaged Communities

DWR presents information regarding United States Census Blocks, Tracts and Places that are defined as DACs or SDACs based on the median household income (MHI) of an area compared to the statewide MHI (DWR, 2023c). The DACs are those with a MHI of less than 80 percent of the statewide MHI and the SDAC communities are those with a MHI of less than 60 percent of the statewide MHI (California Code, Public Resources Code § 75005(g)). Additionally, DWR defines EDAs as communities with an MHI of less than 85 percent of the statewide MHI and either: (1) have a population of less than 20,000, (2) are a designated rural county, or (3) are reasonably isolated and divisible segment of a larger municipality where the segment of the population is less than 20,000, and can demonstrate one of the following conditions: (1) financial hardship, (2) unemployment rate at least 2 percent higher than the statewide average, or (3) low population density (DWR, 2022).

Figure PA-4 shows underrepresented communities within the Basin, including DACs, SDACs, and EDAs. DAC/SDAC designations within the Basin based on the 2020 MHI from the 2016-2020 American Community Survey Five-Year Estimates. Approximately 66 percent of the Basin (507,000 acres) is covered by DWR-designated DACs or SDACs, including approximately 250,000 residents of the cities of Mendota, Firebaugh, Dos Palos, Gustine and the communities of Crows Landing, Dos Palos Y, Grayson, Westley,

Volta, South Dos Palos, Santa Nella, and Tranquillity (see **Table PA-1**). Additionally, approximately 24 percent of the Basin (185,000 acres) are covered by DWR-designated EDAs.

Table PA-1. DAC and SDAC Census Designated Places

DAC Census Designated Places (2020)[1]	GSA Group	SDAC	Population (2020)
City of Mendota	Fresno County, SJREC	Yes	12,173
City of Gustine	SJREC	No	5,748
Volta	CDM, SJREC	Yes	133
Crows Landing	NDM, SJREC	Yes	346
Grayson	NDM	No	1,582
City of Firebaugh	SJREC	Yes	7,772
City of Dos Palos	SJREC	No	5,266
South Dos Palos	SJREC	Yes	1,167
Santa Nella	CDM	No	2,210
Tranquillity	CDM	No	807
Westley	NDM	Yes	689
Dos Palos Y	SJREC	Yes	206

Abbreviations:
ACS = American Community Survey
CDM = Central Delta-Mendota
DAC = disadvantaged community
GSA = Groundwater Sustainability Agency
MHI = median household income
NDM = Northern Delta-Mendota
SDAC = severely disadvantaged community
SJREC = San Joaquin River Exchange Contractors

Notes:
1. 2021 MHI used for Tranquillity and Westley, as there was no data available for MHI (2020).

Sources:
1. Disadvantaged Communities (ACS: 2016-2020) (https://gis.water.ca.gov/app/dacs/)

Entities with Water Management Responsibilities

Entities and agencies with water management responsibilities within the Basin include the 23 GSAs, as well as cities, counties, water districts, irrigation districts, and mutual water companies. All municipal water districts, irrigation districts, and counties within the Basin are participating in GSP development either as a separate GSA or members of a GSA. Specific entities and agencies operating within each GSA group are discussed in more detail below.

5.1.4 Existing Land Use and Water Use

☑ 23 CCR § 354.8(a)(4)
☑ 23 CCR § 354.8(b)

Figure PA-5 and **Table PA-2** summarize the WY 2021 land use designations within the Basin based on statewide crop mapping data provided by DWR (DWR, 2023f). Undeveloped lands are not represented in the land use data, but primarily include native vegetation and wetlands. Undeveloped lands cover

approximately 283,610 acres within the Basin, while all other designations are considered developed lands and cover the remaining area within the Basin. Of the developed lands, agriculture is currently the primary land use. Approximately 415,749 acres within the Basin are irrigated agriculture. As discussed above, approximately 170,293 acres of public land, 1,885 acres of other California Protected Areas, and 35,352 acres of California Conservation Easement Areas are located within the Basin. These lands are owned by governments, non-profits, or private entities and are protected for open space and natural resource purposes. **Figure PA-** shows the distribution of land use designations in the Basin, which include large areas of undeveloped lands in the central Basin and a prevalence of field crop and deciduous fruit and nut agriculture throughout the Basin.

Table PA-2. Land Use Designations within the Basin

Land Use Category	Total Area (acres)	Percent of Basin Area
Undeveloped[1, 2]	**283,619**	**37.1 percent**
Developed	**481,381**	**62.9 percent**
Urban	*14,618*	*1.9 percent*
Deciduous Fruits and Nuts	*195,295*	*25.5 percent*
Field Crops	*73,912*	*9.7 percent*
Truck Nursery and Berry Crops	*52,360*	*6.8 percent*
Pasture	*49,031*	*6.4 percent*
Idle	*30,820*	*4.0 percent*
Grain and Hay Crops	*23,020*	*3.0 percent*
Unclassified / Other Irrigated	*20,194*	*2.6 percent*
Vineyards	*11,552*	*1.5 percent*
Young Perennial	*5,167*	*0.7 percent*
Citrus & Subtropical	*3,116*	*0.4 percent*
Rice	*2,296*	*0.3 percent*
TOTAL	**765,000**	**100 percent**

Notes:

1. Undeveloped land area was calculated by subtracting the developed land area from the total Basin acreage, as undeveloped land uses were not included in the 2021 DWR Crop Mapping Dataset.
2. Managed wetlands are included in undeveloped land use.
3. Totals may not sum due to rounding.

Surface water is the primary water supply for agriculture and managed wetlands within the Basin. Surface water supplies are brought into the Basin using an extensive series of water systems relied upon by multiple water agencies and cities, and private users. Major water-related infrastructure within the Basin includes the facilities required to bring CVP supplies to CVP water contractors, including refuge supplies to managed wetlands and exchange contract supplies to the SJREC. In addition, infrastructure of the SWP is utilized to deliver water to SWP water supply contractors. Several locally controlled surface water diversions (i.e., intakes) are used to divert and distribute water from the San Joaquin and Kings Rivers systems.

The SLDMWA operates and maintains portions of the CVP, including the Delta Cross Channel, the C.W. "Bill" Jones Pumping Plant, the DMC, O'Neill Pumping-Generating Plant, and the San Luis Drain, and provides emergency assistance when requested on the Tracy Fish Collection Facility. Other major CVP facilities include DMC/California Aqueduct Intertie, Mendota Pool, and Sack Dam. SLDMWA and the USBR also jointly operated the Grassland Bypass Project. DWR operates and maintains SWP facilities, and joint federal-state facilities include the California Aqueduct, Harvey O. Banks Pumping Plant, O'Neill Dam and Forebay, Sisk Dam and San Luis Reservoir, Los Banos Detention Dam and Reservoir, Little Panoche Detention Dam and Reservoir, and Dos Amigos Pumping Plant. Surface water diversion facilities are owned and operated by individual water and irrigation districts. Major facilities are further discussed in **Section 7.3.6**.

Groundwater is a key component of water supplies in the Basin. During drought periods, there is increased reliance on groundwater for agricultural and managed wetland irrigation as surface water deliveries are significantly reduced for many water users. There are many communities that are also partially or completely reliant on groundwater (see **Table PA-4**). Additionally, many unincorporated and urban areas in the Basin rely on groundwater as the sole water source. There are several "de minimis" groundwater extractors in the Basin, which is defined as "a person who extracts, for domestic purposes, two acre-feet or less per year" (California Water Code [CWC] § 10721(e)).

The water sources and water use sectors by GSA are listed in **Table PA-3** below.

Table PA-3. Water Sources and Water Use Sectors

GSA Group	GSA	Water Source	Water Use Sector(s)
Aliso Water District	Aliso Water District GSA	• Groundwater • San Joaquin River flood flows (temporary water right permit) • San Joaquin River and Chowchilla Bypass flood flows (landowner water rights)	• Agriculture • Domestic • Native Vegetation • Managed Recharge
Farmers Water District	Farmers Water District GSA	• Groundwater • Kings River flood releases	• Agriculture • Domestic • Native Vegetation
Fresno County	County of Fresno GSA – Delta-Mendota MAA	• Groundwater • CVP supplies • Kings River flood releases • Local surface supplies	• Agriculture • Domestic • Native Vegetation • Managed Recharge
	County of Fresno GSA - Delta-Mendota MAB	• Groundwater • CVP Supplies • Kings River flood releases • Local surface supplies	• Agriculture • Native Vegetation • Managed Recharge • Managed Wetlands

GSA Group	GSA	Water Source	Water Use Sector(s)
Grassland	County of Merced GSA - Delta-Mendota	• Groundwater • CVP supplies • Local surface supplies	• Managed Wetlands • Agriculture • Native Vegetation • Domestic
	Grassland GSA	• Groundwater • CVP supplies • Local surface supplies	• Managed Wetlands • Native Vegetation • Agriculture • Domestic
Central Delta-Mendota	Central Delta-Mendota GSA	• Groundwater • CVP supplies • San Joaquin River (senior water rights) • Kings River water	• Agriculture • Urban / Municipal / Domestic • Industrial • Managed Wetlands • Managed Recharge • Native Vegetation
	Oro Loma Water District GSA	• Groundwater • CVP supplies	• Agriculture • Domestic
	Widren Water District GSA	• Groundwater	• Agriculture
Northern Delta-Mendota	City of Patterson GSA	• Groundwater	• Urban/ Municipal/ Domestic • Industrial
	DM-II GSA	• Groundwater • CVP supplies • SWP supplies	• Agriculture • Domestic • Industrial • Managed Recharge • Native Vegetation
	Northwestern Delta-Mendota GSA	• Groundwater	• Agriculture • Domestic • Industrial • Managed Wetlands • Native Vegetation
	Patterson Irrigation District GSA	• Groundwater • CVP supplies • San Joaquin River water rights	• Agriculture • Domestic
Northern Delta-Mendota	West Stanislaus Irrigation District GSA	• Groundwater • CVP supplies • San Joaquin and Tuolumne River water rights	• Agriculture • Domestic • Native Vegetation
San Joaquin River	City of Dos Palos GSA	• Surface supplies delivered through the SJREC	• Urban/ Municipal/ Domestic • Industrial

GSA Group	GSA	Water Source	Water Use Sector(s)
Exchange Contractors	City of Firebaugh GSA	• Groundwater	• Urban/ Municipal/ Domestic • Industrial
	County of Fresno GSA - Delta-Mendota MAB	• Groundwater	• Agriculture
	City of Gustine GSA	• Groundwater	• Urban/ Municipal/ Domestic • Industrial
	City of Los Banos GSA	• Groundwater	• Urban/ Municipal/ Domestic • Industrial
	City of Mendota GSA	• Groundwater	• Urban/ Municipal/ Domestic • Industrial
	City of Newman GSA	• Groundwater	• Urban/ Municipal/ Domestic • Industrial
	County of Madera GSA - Delta-Mendota	• Groundwater	• Agriculture
	County of Merced GSA - Delta-Mendota	• Groundwater	• Agriculture • Industrial
	San Joaquin River Exchange Contractors GSA	• Groundwater • CVP supplies • San Joaquin River (senior water rights)	• Agriculture • Managed Wetlands • Managed Recharge • Native Vegetation
	Turner Island Water District GSA - Delta-Mendota	• Groundwater • Drain water delivered through the San Luis Canal Company (SJREC member)	• Agriculture

Abbreviations:
CVP = Central Valley Project
GSA = Groundwater Sustainability Agency
MAA = Management Area A
MAB = Management Area B
SJREC = San Joaquin River Exchange Contractor
SWP = State Water Project

The potable consumption of groundwater in the Basin includes use by domestic well owners and public water systems (PWS). There are 51 PWS within the Basin serving populations ranging from 25 to 46,639 people, as identified in **Table PA-4** and **Figure PA-6** (SWRCB, 2023a). The largest PWS within the Basin are the City of Los Banos, which has 13 active wells serving 46,639 people, and the City of Patterson, which has five active wells and two standby wells serving 23,304 people (SWRCB, 2023a).

Table PA-4. PWS Identified in the Delta-Mendota Subbasin

PWS #	PWS Name	Population Served	Water Source
CA5000313	Buehner Water System	150	Groundwater
CA5000586	California Transplants LLC	25	Groundwater
CA5000076	Catfish Camp	36	Groundwater
CA5000590	Cebro Frozen Foods (EH)	25	Groundwater
CA2400091	Charleston School	325	Groundwater
CA2410002	City of Dos Palos	7,452	Surface Water
CA2410003	City of Gustine	5945	Groundwater
CA2410005	City of Los Banos	46,639	Groundwater
CA5010033	City of Modesto - Grayson	914	Groundwater
CA5010013	City of Newman-Water Department	12,351	Groundwater
CA5000427	Covanta Stanislaus Waste Energy Facility	25	Groundwater
CA5000005	Crows Landing CSD	500	Groundwater
CA2400332	Dash Dream Plant	34	Groundwater
CA5000134	Department of Transportation	8,750	Groundwater
CA2400058	Dos Palos Y Auction Yard	52	Groundwater
CA2000512	East Acres Mutual Water Company	250	Groundwater
CA5000574	Eastin	26	Groundwater
CA5000158	Filbin Land & Cattle Co	26	Groundwater
CA1010005	Firebaugh City	7,619	Groundwater
CA2400085	Firebaugh Travel Plaza (SW)	250	Surface Water
CA5000058	Fisherman's Bend MHP	120	Groundwater
CA5000213	Hamlet Motel	26	Groundwater
CA5010007	Hillsview Homes	887	Groundwater
CA2400229	Hillview Packing-Gustine	27	Groundwater
CA1000177	I-5 And Panoche Development	85	Surface Water
CA2400154	Ingomar Packing	890	Groundwater
CA5000202	Joe's Travel Plaza (EH)	5,026	Groundwater
CA2400231	John B. Sanfilippo & Son, Inc.	112	Groundwater
CA1000641	Larry A Shehadey Dairy	95	Groundwater
CA1000054	Las Deltas Mutual Water System	375	Purchased Groundwater
CA2000800	Marquez Rental	50	Groundwater
CA5000061	Martin's Mobile Home Court	60	Groundwater
CA1010021	Mendota, City Of	11,404	Groundwater
CA2400208	Mercey Springs Shell	45	Surface Water
CA5000480	New Hope Church of The Nazarene	70	Groundwater
CA1009091	Olam Spices and Vegetables, Inc.	325	Groundwater
CA1000345	Panoche Water District	146	Surface Water

PWS #	PWS Name	Population Served	Water Source
CA2400338	Parreira Almond Processing Company, LLC	74	Groundwater
CA5010017	Patterson, City Of	23,304	Groundwater
CA5000593	RBVON	50	Groundwater
CA2400200	San Joaquin Valley National Cemetery	30	Surface Water
CA2400209	San Luis Hills	300	Surface Water
CA2410018	Santa Nella County Water District	2,617	Surface Water & Groundwater
CA2400055	Saputo Dairy Foods USA, LLC	332	Groundwater
CA5000478	The Morning Star Company	200	Groundwater
CA1010030	Tranquillity Irrigation District	807	Groundwater
CA5000443	Triangle Truck Stop (Water)	25	Groundwater
CA2410021	USFWA San Luis NWR Complex	50	Groundwater
CA5000408	Westley CSD	70	Purchased Groundwater
CA5000577	Westley Property LLC	25	Groundwater

Abbreviations:
CSD = Community Services District
PWS = Public Water System
SDWIS = Safe Drinking Water Information System

Sources:
1. State Water Resources Control Board, SDWIS Drinking Water Watch, available online: https://sdwis.waterboards.ca.gov/PDWW/
2. United States Environmental Protective Agency (USEPA), SDWIS Federal Reports Search, available online: https://ordspub.epa.gov/ords/sfdw/f?p=108:200:::NO:::

5.1.5 Well Density per Square Mile

☑ 23 CCR § 354.8(a)(5)
☑ 23 CCR § 354.8(b)

Figure PA-7 shows the density of wells per square mile within the Basin based on DWR's Online System of Well Completion Reports (OSWCR) (DWR, 2023h). According to these records, 2,295 domestic, 1,514 production, and 81 public supply wells have been installed within the Public Land Survey System (PLSS) sections[7] that fall within the Basin. The highest density of production wells can be found in the southern portion of the Basin near the City of Mendota, and the highest density of domestic wells can be found in the northern portion of the Basin near the City of Patterson.

The OSWCR dataset is known to have limitations but is accepted to be the most complete dataset currently available, and it represents a conservative estimate of the total well count in the Basin. However, it is likely that older wells included in the dataset may no longer be in use, well locations may not always be

[7] Each PLSS section represents approximately 1 square mile of area (i.e., 640 acres).

accurate[8], and well construction information may not always be accurate or complete. For example, the well density per PLSS section only considers wells that are specifically classified as having domestic, production, and public supply uses. There are other well uses within the Basin (e.g., monitoring, vapor extraction, etc.), wells with unknown uses, and wells with no use classification.

In consideration of these limitations, the following screening process was employed on the OSWCR database to estimate the count of likely active production wells and exclude records for wells in the OSWCR database that are likely to have been destroyed, replaced, or are not used for groundwater extraction:

- Remove wells not used for groundwater production (i.e., monitoring, remediation, injection, test, vapor extraction, and cathodic wells) – *removed 951 wells*
- Remove wells with unknown use that are less than 50 ft bgs[9] – *removed 146 additional wells*
- Remove wells constructed before 1970[10] – *removed 367 additional wells*

After conducting this screening process, there are estimated to be approximately 2,177 domestic wells, 68 public supply wells, 1,292 other production wells, and 1,449 wells with unknown use (4,986 total wells) that fall within the Basin based on the OSWCR dataset (see **Table PA-5)**.

In 2020, the Basin received funding in Round 3 of the Proposition 68 Sustainable Groundwater Management Planning (SGWP) Grant Program to conduct a well census and inventory project (Provost & Pritchard, 2022). The purpose of this project was to develop a dataset that located and classified groundwater wells in the Basin, creating an initial well inventory within GSA boundaries. The initial well inventory is intended to serve as a framework for a living dataset of groundwater wells that the GSAs will maintain and update over time, as described in **Section 16.1.1.1**. The GSAs will continue efforts to field-verify active wells, install meters on wells, and register new wells, as discussed in **Section 7.1.5** and **Section 15.3.** The initial GSA well census and inventory project identified 42 domestic wells, 36 public supply wells, 717 other production wells, and 67 wells with unknown use type (862 existing wells) that fall within the Basin (see **Figure PA-8** and **Figure PA-9**). Descriptions of these figures can be found in **Section 7.1.4.6**.

As demonstrated in **Table PA-5**, there are significant disparities between the production well counts in the Basin as indicated by the OSWCR dataset and the GSA well inventory. This discrepancy highlights a notable level of uncertainty in the total number of wells actively extracting groundwater from the Basin. DWR's OSWCR database provides a conservative or upper-bound estimate of historically recorded production wells in the Basin. Alternatively, the GSA well inventory presents an estimate of operational production wells that is much lower. Estimates from both sources are presented in the Plan Area so as to

[8] In 2019, DWR released a shapefile of the well locations with the guidance that the well location information should be used for informational purposes only and that all attributes should be verified by reviewing the original Well Completion Reports.
[9] Domestic wells are the shallowest production well type in the Basin. However, 97.5 percent of known domestic wells in the Basin are deeper than 50 ft bgs. Therefore, it is not expected that wells removed by this screening criteria include a high percentage of shallow domestic wells or wells used for production.
[10] Wells constructed before 1970 are considered likely to have been abandoned or replaced by the adoption date of this GSP. Use of 1970 as the threshold for a typical well lifespan is consistent with screening conducted as part of the Community Water Center's Drinking Water Tool: https://drinkingwatertool.communitywatercenter.org/.

consider all available data; however, the screened OSWCR dataset is conservatively taken to be the most complete data source and is used for analyses in other sections of this GSP (e.g., **Section 13**).

5.2 Water Resources Monitoring and Management Programs

§ 354.8. Each Plan shall include a description of the geographic areas covered, including the following information:
(c) Identification of existing water resource monitoring and management programs, and description of any such programs the Agency plans to incorporate in its monitoring network or in development of its Plan. The Agency may coordinate with existing water resource monitoring and management programs to incorporate and adopt that program as part of the Plan.
(d) A description of how existing water resource monitoring or management programs may limit operational flexibility in the basin, and how the Plan has been developed to adapt to those limits.
(e) A description of conjunctive use programs in the basin.

5.2.1 Existing Monitoring and Management Programs

☑ **23 CCR § 354.8(c)**

5.2.1.1 Existing Monitoring Programs

The Basin has a variety of existing monitoring and management programs. Data, where available, were utilized to support characterization of the Basin Setting (e.g., groundwater conditions, hydrogeologic conceptual model [HCM], and water budget). Many of the existing programs and data sources discussed herein are also compiled/reported in the DWR SGMA Data Viewer[11].

Existing groundwater elevation and water quality monitoring programs within the Basin include the following:

- GSAs within the Basin conduct regular groundwater level monitoring and groundwater quality sampling in Representative Monitoring Sites (RMS) throughout the Basin as part of their on-going SGMA-related management efforts. The SGMA monitoring networks and measurement frequency are further discussed in **Section 14**.
- DWR's California Statewide Groundwater Elevation Monitoring program (CASGEM)[12], which tracks seasonal and long-term groundwater elevation trends in basins throughout the State, continues to exist as a tool to help achieve the goals set out under SGMA with mandatory annual water elevation monitoring and reporting. The program's mission is to establish a permanent, locally managed program of regular and systematic monitoring in all of California's alluvial groundwater basins. In some cases, the former CASGEM wells have been transferred to the SGMA GSP monitoring program for this Basin and the data are available on the SGMA Data Viewer.
- United States Geological Survey (USGS) Groundwater Ambient Monitoring and Assessment Program (GAMA) is a statewide, comprehensive assessment of groundwater quality used to understand and identify risks to groundwater resources. The GAMA data can be viewed on the

[11] SGMA Data Viewer https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer
[12] CASGEM website: https://water.ca.gov/Programs/Groundwater-Management/Groundwater-Elevation-Monitoring--CASGEM

SGMA Groundwater Quality Visualization Tool, which was developed to help GSAs and other interested parties identify constituents exceeding water quality criteria. GAMA includes datasets from the following entities or programs that have wells within the Basin:

- SWRCB Division of Drinking Water monitors groundwater quality from PWS wells. The program requires sampling and reporting of PWS wells, which are defined as water conveyances systems that have 15 or more service connections or serve at least 25 individuals daily for at least 60 days out of the year (USEPA, 2023).
- SWRCB Site Monitoring Program, also known as GeoTracker, tracks and archives water quality and groundwater elevation data from Leaking Underground Storage Tanks (LUST) cleanup sites, permitted underground storage tank (UST) facilities, cleanup program sites, military sites, land disposal sites (Landfills), waste discharge requirement (WDR) sites, and water quality results for nitrate from growers subject to the Central Valley Regional Water Quality Control Board (CVRWQCB)'s Irrigated Lands Regulatory Program [ILRP]) program. Under the ILRP program, growers are generally required to monitor annually for nitrate in domestic wells that are located on agricultural parcels enrolled in the ILRP.
- Water quality sampling through the California Department of Pesticides Regulation Groundwater Protection Program evaluates and samples for pesticides to identify if these compounds contaminate groundwater, identifies areas sensitive to pesticide contamination, and develops mitigation measures to prevent that movement.
- DWR datasets include groundwater quality and groundwater level elevation data provided from the DWR Water Data Library (WDL). Samples are collected from various types of wells including irrigation, stock, domestic or public supply.
- The GAMA-Priority Basin Project provides an assessment of statewide groundwater quality that helps identify and understand the risks to California's groundwater resources. Priority groundwater basins account for 90 percent of all groundwater used in the State and include 116 of the DWR defined groundwater basins in the State. The Basin is classified as Priority 2 (K. Belitz et al., 2003). Data are collected by the USGS and a majority of wells sampled are PWS wells. The GAMA-Priority Basin Project helps reach the main GAMA Program goals by providing an assessment of current groundwater quality, identifying the natural and human factors affecting groundwater quality, detecting changes in groundwater quality over time, and providing the data to be included in the GeoTracker and GAMA groundwater information systems.
- National Water Information System (NWIS) is a dataset that includes water samples from supply wells that are collected and analyzed for chemical, physical and biological properties. The data are part of the Water Quality Portal (WQP) which is a service managed by the USGS, the United States Environmental Protection Agency (USEPA), and the National Water Quality Monitoring Council (NWQMC). The WQP includes data from over 400 state, federal, tribal and local agencies.

- Data from the Comprehensive Groundwater Quality Management Plan (CGQMP), as part of the CVRWQCB long-term ILRP. The ILRP regulates discharges of waste from commercially irrigated lands that discharge into surface and groundwater. The goal of the ILRP is to protect surface water and groundwater quality and to reduce impacts of irrigated agricultural discharges to waters of the State. Implementation of the ILRP in the Delta-Mendota Subbasin is managed primarily by the Westside San Joaquin River Watershed Coalition under the San Joaquin Valley Drainage Authority, a California JPA, as well as the Grassland Drainage Area Coalition, and Eastern San Joaquin River Watershed Coalition. These Coalitions specifically emphasize nitrogen, sediment, and erosion control. The Coalitions, on behalf of their grower members, implement a Groundwater Quality Trend Monitoring Program, which is a regional shallow groundwater quality monitoring program intended to track trends in groundwater quality.
- Central Valley-Salinity Alternatives for Long-term Sustainability (CV-SALTS), a collaborative stakeholder driven and managed program to develop sustainable salinity and nitrate management planning for the Central Valley. Developed by a group of stakeholders (federal, state, and local agencies, dischargers and growers, and environmental groups) called the CV-SALTS Executive Committee, the Central Valley Salt and Nitrate Management Plan (SNMP) was released in 2017. The Central Valley SNMP recommends revised and flexible regulations for existing Basin Plans and includes recommended interim solutions for salt and nutrient management in high priority basins in addition to long-term salt management strategies. As recommended by the SNMP, a Salt Control Program and a Nitrate Control Program were developed through the collaborative CV-SALTS program and were adopted into the Basin Plans to address salt accumulation and nitrate discharges. Under the Nitrate Control Program, dischargers of nitrate are provided two compliance pathways: (1) traditional permitting as an individual discharger, or (2) groundwater management zone permitting. Management zone permitting allows dischargers to work as a collective in collaboration with the CVRWQCB to meet the goals of the Nitrate Control Program, which are to: (1) provide safe drinking water; (2) no longer cause or contribute to nitrate exceedances in a time frame that is as short as practicable but not longer than 35 years; and, (3) restore groundwater aquifers through management restoration. Similarly, under the Salt Control Program, dischargers are provided two compliance pathways: (1) traditional permitting as an individual discharger, or (2) participation in region-wide Prioritization & Optimization (P&O) study, which constitutes compliance as an alternative to more stringent requirements under option (1) during Phase 1 of the Salt Control Program. The Basin is currently serving as an archetype in the P&O study, in which CV-SALTS seeks to analyze and model salt concentrations in the Basin's groundwater before expanding the analysis to other portions of the Central Valley. The goal of the study is to eventually inform the development of salinity targets and potential methods of managing salinity sometime after 2029.
- The DMC Warren Act Pump-in Program (PIP) is an agreement between the USBR and SLDMWA and its member agencies to convey up to 50,000 acre-feet (AF) of groundwater into the DMC. The program monitors conditions of private wells participating in the program in addition to in-stream measurements. Specifically, groundwater reporting includes depth to groundwater and water quality analysis for heavy metals, nitrate, Total Dissolved Solids (TDS), radioactivity, organic

chemicals, and pH. If groundwater depth exceeds a specified depth and/or water quality reaches maximum limits, then PIP pumping is mandated to stop.

- Grassland Water District maintains a groundwater level monitoring program that includes pre- and post-pumping seasonal water level measurements. Monitoring began in 2008 under a Monitoring Plan approved by USBR and the data are reviewed annually. Depth to groundwater measurements are made at multiple wells, approximately four times a year.
- Grassland Water District collects water quality samples from all wells being utilized for Incremental Level 4 refuge water supply and analyzes samples for electrical conductivity (EC), TDS, selenium, and boron. Results are evaluated in relation to refuge water quality requirements and compared to historic data to identify and track trends.

The CASGEM groundwater elevations and groundwater elevations collected from wells in the Basin's SGMA monitoring networks have been used to characterize groundwater level conditions (see **Section 8.2**). Water quality data from the above sources have been used to identify groundwater quality conditions (see **Section 8.5**).

Various surface water monitoring programs are also active within the Basin. Existing surface water monitoring includes the following:

- GSAs within the Basin conduct regular groundwater level monitoring in Upper Aquifer RMS throughout the Basin as part of their on-going water resources management efforts to determine groundwater and surface water related conditions and potential impacts to the interconnected surface waters. Monitoring network and measurement frequency are further discussed in **Section 14**.
- Surface water monitoring by the USGS NWIS, which includes yearly time-series data of stream levels, streamflow (discharge), reservoir and lake levels, surface water quality, and rainfall measurements. These data are collected by automatic recorders and manual field measurements at data collection installations (i.e., monitoring sites).
- Surface water and precipitation monitoring from the DWR California Data Exchange Center (CDEC) and/or the Water Data Library. The CDEC provides a centralized database which contains an extensive hydrologic data collection network, including automatic snow reporting gauges for the Cooperative Snow Surveys Program, precipitation, and river stage sensors for flood forecasting.
- Surface water diversion data are provided by the SWRCB Electronic Water Rights Information Management System (eWRIMS), which facilitates SWRCB ability to track water rights information and contains data from Statements of Water Diversion and Use that are uploaded by water diverters.
- Precipitation data from the active California Irrigation Management Information System (CIMIS) station. CIMIS is a program unit in the Water Use and Efficiency Branch, Division of Regional Assistance, DWR that manages a network of over 145 automated weather stations in California.

CIMIS was developed in 1982 by DWR and the University of California, Davis. It was designed to assist irrigators in managing their water resources more efficiently.

- The Mendota Pool Group (MPG) is a group of landowners that includes farming interests located within the Farmers Water District GSA Group and the Fresno County GSA Group who are involved in an exchange program with the USBR. The exchange program involves the discharge of groundwater into the Mendota Pool for use by USBR in exchange for CVP water deliveries to MPG farmlands in Westlands Water District via the San Luis Water District. Annual reports are produced in compliance with Agreement No. 3 for Mendota Pool Transfer Pumping Project and the Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) entitled Mendota Pool 20-Year Exchange Program (USBR & Westlands Water District, 2019). The purpose of the monitoring program and annual reporting is to identify the effects of transfer pumping on local water supplies in the vicinity of the Mendota Pool and adjacent areas. The MPG Monitoring Program was established in 1999, and over the past two decades of annual reporting has created an extensive record of groundwater, surface water, and geologic data.
- The SLDMWA monitors the amount of water pumped into and out of the Mendota Pool and surface water inflows into the Mendota Pool on a daily and monthly basis.
- San Joaquin River Restoration Program (SJRRP) monitors surface water flow in the San Joaquin River and shallow groundwater levels adjacent to the river, which is further discussed in **Section 5.2.1.2** below.
- Grassland Water District's Real Time Water Quality Monitoring Network (RTWQMN) currently consists of approximately 30 real-time monitoring stations located at key inflow, delivery, and drainage points that continuously measure surface water flow, EC, temperature, and pH. Real-time surface water monitoring is required under the CVRWQCB's Salt and Boron Total Maximum Daily Load (TMDL) requirement for the lower San Joaquin River, which took effect in 2006. Grassland Water District cooperates with the USBR, the San Luis Drainage Authority, and the Grassland Basin Drainers group to implement the program. Grassland Water District recently updated its RTWQMN stations with new sensors, modems, and loggers with funding from the USBR and DWR.

Land subsidence data within and in the vicinity of the Basin are available through the following sources:

- GSAs within the Basin conduct regular land subsidence monitoring at the RMS selected as the most representative locations for which to monitor ground surface elevation within the Basin. Monitoring network and measurement frequency are further discussed in **Section 14**.
- Continuous Global Positioning System (CGPS) subsidence monitoring through University Navstar Consortium (UNAVCO), which handles data management tasks for Global Positioning System (GPS)/Global Navigation Satellite System (GNSS) data, thousands of globally distributed permanent stations, and tens of thousands of globally distributed campaign sites. These data have temporal coverage that varies by location (typically 2005-2021), with some locations beginning data

collection as early as 1999 (GSI Environmental Inc., 2022). Data are typically reported in daily intervals.

- DWR provided time-series information for five extensometers, one of which is within the Basin. Extensometer depths range between 250 and 2,315 feet below the ground surface (ft bgs) and are located both below and above Corcoran Clay. The data ranges from 1961 through present, with measurements typically reported monthly as cumulative displacement elevations (GSI Environmental Inc., 2022).
- Central Valley extensometers provided by the USGS. There are 18 extensometers within the Basin. The data records begin as early as the late 1950s at some locations. Subsidence is reported as relative compaction, where positive values indicate that subsidence is occurring, and negative values are indicative of rebound. Measurement frequency differs by site, with some extensometers reporting daily results, and others only reporting data at frequencies of a year or more (GSI Environmental Inc., 2022).
- Vertical displacement estimates derived from Interferometric Synthetic Aperture Radar (InSAR) data that are collected by the European Space Agency (ESA) Sentinel-1A satellite and processed by TRE ALTAMIRA Inc. (TRE). TRE is under contract with DWR as part of DWR's SGMA technical assistance to provide GSAs with relevant data for GSP development and implementation. DWR currently provides quarterly updates of InSAR data but may provide updates as often as monthly in the future.
- Remote sensing studies by the National Aeronautics and Space Administration (NASA) Jet Propulsion Laboratory (JPL).
- USBR documents subsidence benchmarks along the San Joaquin River and Eastside Bypass as part of the SJRRP and measures them semiannually. USBR also provided historical benchmark survey data along the DMC and measures the DMC subsidence benchmarks every two years. Aliso Water District GSA Group has elected to install benchmarks to monitor localized subsidence and are measured to coincide with collection efforts by the USBR. Additionally, Tranquillity Irrigation District (part of the Central Delta-Mendota GSA) is monitoring subsidence benchmarks semiannually as part of a study regarding the correlation between pumping volumes and depth to water.
- Subsidence information retrieved from the SJRRP, which has 78 GPS stations (SJRRP, 2023). The database has land elevation data records starting from December 2011 to December 2023 and the GPS stations are measured twice each year, in July and December (SJRRP, 2023). The GPS locations extend to the eastern side of the DMC, and several are located next to some of the Basin's critical infrastructure.
- Light detection and ranging (LIDAR) data provided by DWR and the USGS. LIDAR data can be used to create high-resolution models of ground elevation with a vertical accuracy of 4 inches. LIDAR data can provide bare earth digital elevation models with structures and vegetation stripped away.

- California Aqueduct Subsidence Program (CASP) conducted by DWR (DWR, 2024a). The purpose of CASP is to research and study past and present subsidence reports and data, and to understand and summarize the magnitude, location, and effects on the California Aqueduct (DWR, 2017b). Historic and new survey data were collected from DWR's Precise Surveys Unit. Additional data were reviewed from the DWR contract with the NASA JPL, where satellite-based InSAR and Unmanned Aerial Vehicle Synthetic Aperture Radar (UAVSAR) measured relative changes in land surface elevation.

Data from the above networks have been used to characterize the conditions of the Basin. Existing monitoring sites from the above programs have been considered and incorporated into the Representative Monitoring Network as appropriate (see **Section 14**). Ongoing coordination with the responsible agencies remains a critical part of GSP implementation, and data from these existing monitoring programs will continue to inform GSP implementation.

5.2.1.2 Existing Management Plans

The Basin is located within overlapping areas of various management plans. Although this GSP supersedes the existing groundwater management plans, brief summaries of these other programs are included below for completeness. The GSP development has considered each of the following plans and incorporated them directly or by reference into this GSP. Ongoing coordination with the responsible agencies will be a critical part of GSP implementation.

- The SJRRP (SJRRP, 2012) is a comprehensive, long-term effort to restore flows to the San Joaquin River from Friant Dam to the confluence of Merced River and restore a self-sustaining Chinook salmon fishery in the river while reducing or avoiding adverse water supply impacts from Restoration Flows. The program has two general goals resulting from the San Joaquin River Restoration Settlement reached in 2006:
    - Restoration: To restore and maintain fish populations in "good condition" in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish.
    - Water Management: To reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows provided for in the Settlement.

  The program includes the implementation of projects, reintroduction activities and associated monitoring to assess progress towards achieving the Settlement goals.

- Integrated Regional Water Management (IRWM) is a collaborative effort to identify and implement water management solutions on a regional scale that increase regional self-reliance, reduce conflict, and manage water to concurrently achieve social, environmental, and economic objectives. Developed by Regional Water Management Groups, the IRWM Plans (IRWMP) seek to deliver higher value for investments in water resources and management by considering all interests, providing multiple benefits, and working across jurisdictional boundaries. Examples of multiple benefits include improved water quality, better flood management, restored and enhanced ecosystems, and more reliable surface and groundwater supplies. Three IRWMPs overlie

the Basin. The Westside-San Joaquin IRWMP, which was last updated in 2019, covers most of the Basin, while smaller portions of the Basin are covered by the East Stanislaus and Madera IRWMPs, which were last updated in 2018 and 2019, respectively.

- Groundwater Management Plans (GMPs) were required through the Groundwater Management Act (Assembly Bill [AB] 3030) enacted by the California Legislature in 1992. GMPs provided for a planned and coordinated monitoring, operation, and administration of groundwater basins with the long-term goal of groundwater resource sustainability. The GSP's required through the SGMA, once adopted, superseded the GMPs. Six pre-SGMA GMPs overlie the Basin. The GMP for the Northern Agencies in the DMC Service Area, the GMP for Grassland Water District, and the GMP for the Southern Agencies in the DMC Service Area, which were last updated in 2011, cover most of the Northern and Central Delta-Mendota GSA Groups and the Grassland GSA Group. The GMP for the SJREC, which was last updated in 2014, covers most of the SJREC GSA Group. The majority of the Aliso Water District GSA group is covered by the Aliso Water District Groundwater Management Plan, with the rest covered by the Madera Regional GMP, both of which were last updated in 2014.
- Urban Water Management Plans (UWMPs) are required for urban water suppliers that provide over 3,000 acre-feet of water annually or serves more than 3,000 urban connections, as defined under through the Urban Water Management Planning Act enacted in 1983. UWMP's are prepared by urban water suppliers every five years. The primary purpose of an UWMP is to provide urban water suppliers with a long-term plan to ensure that adequate water supplies are available to meet existing and future water needs. Within the Basin, the cities of Modesto (which supplies water to the community of Grayson), Patterson, Los Banos, and Newman have adopted 2020 UWMPs. Some urban water suppliers (e.g. Santa Nella) have adopted ordinances to require certain types of large development projects to provide their own water supply sources and comply with the GSP.
- Water Shortage Contingency Plans (WSCP) are required for urban water suppliers pursuant to CWC § 10632. The WSCP includes stages of response to a water shortage caused by drought or by supply interruptions caused by infrastructure failure, regulatory mandate, or catastrophic human-caused or natural events. The primary objective of the WSCP is to ensure that the water suppliers have in place the necessary resources and management responses needed to protect health and human safety, minimize economic disruption, and preserve environmental and community assets during water supply shortages and interruptions. The requirements for WSCPs also reinforce the "Making Conservation a California Way of Life" initiative.
- Agricultural Water Management Plans (AWMPs) are required through the state-enacted Water Conservation Act of 2009 (Senate Bill X7-7). Several GSAs member agencies have adopted AWMPs, and SJREC adopted a 2017 AWMP on behalf of its member agencies. Data reported in the AWMPs will be used to supplement other data sets to successfully manage groundwater through the SGMA.
- The CVP Drought Contingency Plan (DCP) was developed by the USBR and DWR in 2016 to address mounting environmental and economic issues resulting from multiple years of drought conditions. The DCP considered the supply needs of all users and the best approaches for balancing all needs

without creating undue hardships. The DCP defines allocations to CVP water users when faced with what is known as a Shasta Critical Year. Needs are ranked with municipal health and safety first, preservation of Sacramento-San Joaquin Delta water quality second, and finally the protection of threatened and endangered habitats. The remainder of water contractors, including agricultural users, are considered last. Under the CVP refuge water supply contracts that provide surface water to wetland habitat areas in the Plan Area, Level 2 surface water deliveries are cut back by up to 25 percent in a Shasta Critical Year. In practice, Incremental Level 4 supplies are also cut back significantly, as there is little water available for voluntary acquisitions or transfers in a critically dry year.

- The GSAs within the Basin actively support the neighboring Chowchilla Subbasin's approach to subsidence through the Subsidence Control Measures Agreement and the Red Top Subsidence Mitigation Project. The Subsidence Control Measure Agreement provides surface water delivered by CCID through a specially constructed pipeline to landowners in exchange for Lower Aquifer pumping restrictions. The Red Top Subsidence Mitigation Project provides surface water from CCID to Triangle T Water District for recharge and recovery in the Upper Aquifer in exchange for mandatory ramp-down in Lower Aquifer pumping.
- The Grassland Bypass Project was developed to shift agricultural drainage away from discharging into wetland areas and improve the quality of water delivered to wetland habitats. The project is operated by the San Luis Drainage Authority, the Grassland Basin Drainers group, USBR, and the SLDMWA. Due to CVRWQCB prohibitions on discharges of agricultural drainage water, effective 2020, the project has been repurposed as a stormwater bypass. As part of the repurposed Grassland Bypass Project, five new monitoring wells were recently installed to monitor subsurface conditions (Grassland GSA and Merced County, 2022; SLDMWA, 2019).
- The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan), adopted by the Central Valley Regional Water Quality Control Board in compliance with CWC § 13240, establishes beneficial uses of surface and groundwater in the Basin and defines water quality objectives (CVRWQCB, 2019). The Basin Plan incorporates the Nitrate Control Program and the Salt Control Program to address salt accumulation and nitrate discharges. The Basin is currently participating as an archetype study area in the P&O study being carried out under the Salt Control Program. In the future, this study will inform the development of salinity targets and management strategies (CV-SALTS, 2024).

5.2.2 Operational Flexibility Limitations

☑ 23 CCR § 354.8(d)

Many of the above water resource monitoring programs are not expected to limit operational flexibility in the Basin. In fact, the CASGEM monitoring network, now integrated into the SGMA Data Viewer portal, and SWRCB's Division of Drinking Water PWS water quality sampling and reporting will be integral to the ongoing monitoring and reporting that will be conducted pursuant to this GSP (see **Section 14**).

The IRWMP and GSP development are complementary management processes. To the extent that the issues identified for the greater IRWMP regions affect the Basin, these issues are discussed in the

appropriate sections of this GSP. The implementation of this GSP will contribute to the sustainable use of water supplies within the IRWMP regions, and the IRWMPs are not expected to limit operational flexibility in the Basin.

Information from cities' UWMPs regarding future demands has been integrated into water budget and model development within the Basin (see **Section 9**) and has provided key information for the buildout of potential Projects and Management Actions. The use of information from these relevant UWMPs is consistent with the goal of maintaining a long-term sustainable groundwater supply.

Most of the groundwater management objectives in the prior GMPs are consistent with the issues and objectives identified in the following sections of this GSP. The implementation of this GSP will contribute to sustainable groundwater use within the former GMP areas. Therefore, this GSP compliments and supersedes the GMPs.

The GSAs have identified the following two programs that may cause uncertainty and impact water operations for Basin GSAs and member agencies.

The San Joaquin River Restoration Act requires the release of water from Friant Dam to the confluence of the Merced River (referred to as Restoration Flows). Restoration Flows vary by hydrologic year type and through the year in support of fish life-stage requirements. Estimated water supply reductions to all Friant Division contractors (located outside the Basin) resulting from the Restoration Flows under the SJRRP are about 200,000 acre-feet per year (AFY). The stipulated Restoration Flows for each year type represents the total release from Friant Dam required to satisfy SJRRP Restoration Flows (riparian diversions between Friant Dam and Gravelly Ford) and to maintain a minimum 5.0 cubic feet per second (cfs) of flow at the Gravelly Ford gage station during critical years. Additionally, buffer flows of up to 10 percent of the Restoration Flows could be made for releases to the river to address unexpected seepage losses, as flushing flows to enhance gravel conditions for spawning during wet and normal-wet years, and for riparian recruitment flows (Aliso Water District GSA, 2022). The SJRRP is currently behind schedule, and this uncertainty may impact water operations and increase dependency on groundwater for users of San Joaquin River surface water.

Per the CVP DCP, during Shasta Critical years, federal water contractors that supply water to agricultural, municipal, and wetland habitat areas are subject to water supply reductions. As a result, water users may rely more on groundwater to supplement their supply during these years. As discussed in **Section 5.2.3** below, GSA Groups with federal water supply contracts are implementing conjunctive use programs that allows contractors to increase groundwater pumping when surface supplies are reduced in critically dry years.

The CV-SALTS P&O study may identify activities that contribute to or are capable of mitigating salinity in the Basin's groundwater and may eventually result in the establishment of salinity objectives. The GSAs will adapt their Projects and Management Actions (P/MAs) as needed in accordance with these potential outcomes.

5.2.3 Conjunctive Use

☑ 23 CCR § 354.8(e)

Maximizing the beneficial use of surface water, groundwater, and recycled water resources is of critical concern to water managers throughout the Basin with the goal of using all these water sources more efficiently to avoid overdraft and to sustainably manage groundwater resources. Conjunctive use programs in the Basin are currently implemented or planned by both single GSAs and multi-GSA partnerships. These efforts may include projects such as groundwater recharge and conveyance facilities, new wells, improved monitoring systems, improved delivery efficiency, water recycling, and water quality improvements and treatment.

Recharge occurs throughout the Basin through applied water, stormwater, and managed wetland recharge. Recharge from agricultural and wetland water conveyance, irrigation, and land-applied treated wastewater percolates into the ground and eventually into aquifers where it can be pumped again for use. Stormwater collects both naturally and artificially and eventually percolates through the ground and into aquifers for beneficial use for both urban and agriculture users. This natural and unmanaged recharge creates future opportunities for conjunctive use programs; however, this recharge may decline as farmers move toward more precise and water efficient irrigation methods.

GSA Group-specific conjunctive use projects and programs that are currently operational or actively being implemented are described below. Additional potential future conjunctive use projects and programs are described in **Section 15.3**, **Table PMA-1** and **Table PMA-2**.

5.2.3.1 Aliso Water District GSA Group

The landowners within the Aliso Water District use groundwater to satisfy most demands. Individual landowners adjacent to the San Joaquin River and the Chowchilla Bypass have riparian water rights and water rights to high-flow surface water, and some operate recharge basins. During high-flow events when the Chowchilla Canal Bypass and Cottonwood Creek are flowing, and the San Joaquin River flows are high enough to allow water into the Aliso Canal Turnout (a private facility) from the San Joaquin River, growers in Aliso Water District have historically used the surface water for irrigation and recharge, thereby reducing groundwater pumping and allowing the groundwater levels to rise (Aliso Water District GSA, 2022).

In WY 2022, the Aliso Water District GSA continued progress on pursuing water rights on the Chowchilla Bypass flood control structure (Delta-Mendota GSAs, 2023) (see Project AWD-2 in **Section 15.3**, **Table PMA-1** and **Table PMA-2**). The SWRCB authorized and approved a Temporary Water Right Permit for Aliso Water District to appropriate water by temporary permit pursuant to Water Code, Section 1425 et seq. This permit allows the diversion of about 10,000 acre-feet of available San Joaquin River flood water from the Chowchilla Bypass to underground storage and ultimately use for irrigation purposes (Delta-Mendota GSAs, 2023). The Aliso Water District continues to pursue a permanent appropriative water right permit for this surface water supply.

5.2.3.2 Central Delta-Mendota GSA Group

Pacheco Water District and San Luis Water District have historically maintained Warren Act contracts to allow pumping of groundwater that meets applicable water quality standards into the DMC when surface water supplies are insufficient to meet demand. These contracts, if necessary based on WY type, are approved annually by the USBR. Pacheco Water District, San Luis Water District, and some landowners own deep wells that are tied into the Districts' and private surface water distribution systems. When surface waters are insufficient to meet demand, groundwater is conjunctively used with surface water supplies. San Luis Water District also has planned projects that conjunctively use surface water and groundwater, including the Los Banos Creek Recharge and Recovery Project (**Section 5.2.3.7**; Project CDM-4 in **Section 15.3**, **Table PMA-1** and **Table PMA-2**), which received funding as part of the SGWP Grant Program SGMA Implementation – Round 1 grant application in April 2021, and the Ortigalita Creek Groundwater Recharge and Recovery Project (Project CDM-5 in **Section 15.3**, and **Table PMA-1** and **Table PMA-2**)(Delta-Mendota GSAs, 2023).

Santa Nella County Water District recently obtained a contract for CVP supplies. The District plans to use CVP surface supplies conjunctively with groundwater to provide potable drinking water to the communities of Santa Nella and Volta.

San Benito County includes two policies that encourage the support of future conjunctive use programs in their 2035 General Plan (**Section 5.3.1.4**) as an important component in reaching their sustainable water supply goals.

5.2.3.3 Farmers Water District GSA Group

The Farmers Water District GSA is conducting a pilot recharge project in the southwest portion of the GSA's jurisdictional area. Under the Fresno County General Plan (**Section 5.3.1.1**), it is the County's policy to encourage groundwater recharge when economically, environmentally, and technically feasible. The addition of a water bank in the Farmers Water District GSA will improve groundwater availability and supply flexibility during extended dry periods for the District's groundwater users.

5.2.3.4 Fresno County GSA Group

Surface water deliveries are used in the County of Fresno GSA – Delta-Mendota MAA for recharge to the Meyers Water Bank (MWB). The MWB has been operational since 2001, and as of 2023, has banked a total of 99,200 AF. Of this amount, 51,700 AF has been extracted for use. The MWB is required to leave a total of 5 percent (4,960 AF) of supply behind, meaning 42,600 AF of available water is stored in the MWB. The cumulative total amount of banked water allowed in the MWB is 60,000 AF (County of Fresno GSA, 2022).

The MWB utilizes several sources of water during wet years when surface water supplies are abundant. The MWB is under contract with the USBR until 2032, and in any year is able to bank 10,000 AF from CVP and non-CVP water. Sources of water for the MWB include CVP supplies, Kings River flood releases, Section 215 temporary supplies from the Friant Division, and pre-1914 non-CVP water (County of Fresno GSA, 2022).

Surface water is also used for recharge in County of Fresno GSA – Delta-Mendota MAB. The Terra Linda Recharge Facility, which has been operational since 2011, utilizes Kings River Flood water. In 2011, a total of 1,500 AF was recharged (County of Fresno GSA, 2022). In 2023, the recharge operation was expanded from the approximately 6-acre canal to include two recharge ponds adding 106 acres of recharge area. The estimated recharge in 2023 utilizing Kings River flood flows was 8,800 AF.

5.2.3.5 Grassland GSA Group

The primary source of water for the Grassland GSA Group is from the CVP. Wetland managers within the Grassland GSA Group practice conjunctive use, relying on a limited volume of groundwater to meet ecosystem demands, particularly in drought years. A valuable management tool employed by Grassland Water District is the installation of water recirculation systems that increase water use efficiency.

The Grassland GSA plans to participate in the "Basins and Storm Water Capture Project" (Project GWD-5 in **Section 15.3**, **Table PMA-1** and **Table PMA-2**). The project will explore options to expand and improve storm water capture from local rivers and streams, as well as flood protection, groundwater recharge, and wildlife refuge supply flexibility. A 150-acre site owned by the City of Los Banos has been identified for infiltration basin, and site investigations, California Environmental Quality Act (CEQA) documentation and preliminary plans for turnouts and basin cells are being prepared. The project is anticipated to be operational in 2025.

The Grassland GSA is also partnering with SJREC and San Luis Water District on the Los Banos Creek Storage Project, as discussed in **Sections 5.2.3.7** and **15.3** (Project GWD-2 in **Table PMA-1** and **Table PMA-2**).

5.2.3.6 Northern Delta-Mendota GSA Group

Del Puerto Water District is partnering with CCID on a 80-acre project to develop the Orestimba Creek Groundwater Recharge and Recovery Project, located in western Stanislaus County near the community of Newman (Project NDM-4 in **Section 15.3**, **Table PMA-1** and **Table PMA-2**). The proposed groundwater recharge facility near Orestimba Creek will divert water from various sources depending on availability and water year type and will allow for storage of up to 15,000 AFY of surface water to the Basin for recovery in dry periods via a new production well. Existing connections to the DMC will be used to deliver water to the groundwater recharge facility and to serve as a conveyance facility for deliveries during dry periods. The proposed project will help provide a long-term solution to Basin overdraft conditions by banking excess water during wet periods, accelerating the rate of groundwater recharge to the local aquifer system. Monitoring or observation wells have been installed at key locations to monitor the rate of groundwater recharge. Data from these wells will be used to determine the volume of water allowed to be extracted so that the rate of recharge would always exceed extraction. DWR has awarded CCID $809,264 through the IRWM Grant Program for the project in addition to about $5,600,000 in funds from the Stormwater Grant Program awarded by the SWRCB. In March 2024, the Department of Interior awarded $1.3 million for the project through the from the Bipartisan Infrastructure Law. The project started construction in July 2023 and is expected to be substantially complete by August 2024 (Delta-Mendota GSAs, 2023).

Del Puerto Water District is leading the Del Puerto Canyon Reservoir Project that will construct a 270-foot tall earthen dam at the mouth of Del Puerto Canyon, providing 82,000 AF of storage for Del Puerto Water

District and the member agencies of the SJREC (Project NDM-11 in **Section 15.3**, **Table PMA-1** and **Table PMA-2**). Seasonal storm flows through Del Puerto Canyon will be captured by the reservoir and discharged perennially to Del Puerto Creek for downstream use, and project beneficiaries will divert their CVP supplies from the DMC and convey those to the reservoir from their annual entitlements when excess to their immediate needs. Stored water will be conveyed back to the DMC for use as needed. Thus, this project will benefit the region by allowing the districts to store water south of the Delta when excess water is available to them and utilize that water during dry periods when supplies may be limited. On average, 2,756 AFY from Del Puerto Creek can be captured and stored in the reservoir. During Wet WYs (San Joaquin River WY Index), up to 35,570 AFY of creek flows can be stored for later use in the reservoir. Project partners anticipate that they will utilize up to 20,000 AFY of their portion of the reservoir during dry years. 30 percent design and environmental documentation were complete in 2023. Permitting and final design are anticipated to be complete in 2024. The project is anticipated to be operational in 2035.

Patterson Irrigation District primarily receives surface water deliveries and pumps groundwater on an as-needed basis. Patterson Irrigation District has focused its efforts on improving surface water deliveries and pumping efficiencies by recycling surface drainage, as opposed to limiting canal seepage. Deep percolation of irrigation water and distribution system losses recharge the groundwater basin within the Patterson Irrigation District's service area and are available to Patterson Irrigation District and others during drought conditions, and are thus an important component of Patterson Irrigation District's water management strategy. Patterson Irrigation District plans to implement Groundwater Bank and/or Flood-Managed Aquifer Recharge types of projects (Project NDM-7 in **Section 15.3**, **Table PMA-1** and **Table PMA-2**). To date, the District has conducted a feasibility study for groundwater recharge, purchased potential property for a small recharge project, and retained a consultant in 2023 to conduct a pilot study.

The North Valley Regional Recycled Water Program (NVRRWP) is a large-scale conjunctive use project located primarily within San Joaquin, Stanislaus, and Merced Counties (Project NDM-3 in **Section 15.3**, **Table PMA-1** and **Table PMA-2**). Partnerships between Del Puerto Water District and the Cities of Ceres, Modesto, and Turlock have been formed to implement the NVRRWP. Tertiary-treated recycled water from the Cities of Ceres, Modesto and Turlock are conveyed via the DMC to provide deliveries to farms within Del Puerto Water District's service area in San Joaquin, Stanislaus, and Merced Counties as well as south of the Delta Central Valley Project Improvement Act-designated refuges, including managed wetlands located within the Grassland GSA Group and Fresno County GSA Group areas (Northern and Central Delta-Mendota GSAs, 2022). The NVRRWP meets two critical objectives: the opportunity for the Cities of Ceres, Modesto and Turlock to permanently remove their wastewater discharges to the San Joaquin River, reducing exposure to increasingly stringent regulatory requirements and putting recycled water to beneficial use; and a regional solution to address water supply shortages within Del Puerto Water District's service area and San Joaquin Valley wildlife refuges (Northern and Central Delta-Mendota GSAs, 2022). The NVRRWP is currently providing 27,000 AFY of treated wastewater to irrigators and will be expanded to provide up to 59,000 AFY of treated wastewater by 2040.

Stanislaus County is implementing the Little Salado Creek Groundwater Recharge and Flood Control Basin project, which consists of a stormwater detention basin to divert, retain, and percolate up to 270 cfs of flow from Little Salado Creek (Project NDM-9 in **Section 15.3**, **Table PMA-1** and **Table PMA-2**). Little Salado Creek has a drainage of 874 AFY; it was assumed the detention basin would recharge 489 AFY in wet years.

The basin will be located in the future Crows Landing Industrial Business Park and will have a capacity of 380 AF. The project will provide flood relief to the downstream City of Patterson, and the Upper Aquifer recharge will offset groundwater pumping required to supply the new development, thereby limiting impacts on Upper Aquifer groundwater elevations and storage due to this project's development. A drainage study was completed in November 2016 to define preliminary storm drain system infrastructure improvements necessary to accommodate the development of the Crows Landing Industrial Business Park. A Draft EIR was completed in January 2018 and was released for public review. Stanislaus County is ready to proceed with design once funding is secured, with 2032 as the estimated date of full buildout.

The City of Patterson is presently designing percolation ponds and a diversion structure for the Del Puerto Creek Recharge and Recovery project. The project consists of facilities to divert and infiltrate stormwater discharges from Del Puerto Creek and stormwater runoff captured as part of the yet-to-be constructed Zacharias Development (Project NDM-10 in **Section 15.3**, **Table PMA-1** and **Table PMA-2**). The ponds will cover roughly 14 acres, but sizing of the percolation ponds is based on existing infiltration rate data and will be updated when field investigations are completed. Implementation of this project may be phased such that the ponds are constructed over a number of years. The project is anticipated to result in 1,700 AFY of direct groundwater recharge to both the Upper and Lower Aquifers using stormwater runoff captured within the City and conveyed to recharge locations and stormwater flows diverted from Del Puerto Creek.

5.2.3.7 San Joaquin River Exchange Contractors GSA Group

The primary source of water for the SJREC GSA Group is from the CVP. The member GSAs are conjunctive use districts and rely on groundwater to provide operational flexibility and to meet peak demand.

The SJREC actively manage their surface water, groundwater and conserved water resources conjunctively, and manage water application within their service area to minimize drainage discharges from their service area in accordance with existing laws and regulations.

The SJREC adopted an updated AB 3030 Groundwater Management Plan in 2014. A valuable management tool employed by each entity is installing conservation projects that increase water use efficiency. While the SJREC primarily use surface water to meet consumptive use, groundwater extractions are vital to meet demand during drought years. Groundwater pumping in the SJREC area is also necessary to control the water levels from rising too high and saturating the effective rooting depths (SJREC GSA, 2022).

CCID has partnered with Del Puerto Water District to expand the Orestimba Creek Recharge and Recovery project to reduce impacts to lands in their respective districts which are subject to multiple hazards, including flooding and drought as discussed in **Sections 5.2.3.6** and **15.3** (Project SJREC-7 in **Table PMA-1** and **Table PMA-2**). DWR has awarded CCID $809,264 through the IRWM Grant Program for the project. The project was additionally awarded about $5,600,000 in funds from the Stormwater Grant Program administered by the SWRCB. The project started construction in July 2023 and is expected to be substantially complete by May 2024 (Delta-Mendota GSAs, 2023). This project will improve groundwater storage and water quality and will reduce inelastic land subsidence in the region.

The SJREC have partnered with Grassland Water District and San Luis Water District on the Los Banos Creek Storage Project (Project SJREC-6 in **Section 15.3**, **Table PMA-1** and **Table PMA-2**). The project

proposes to operate the Los Banos Creek Detention Dam (LBCDD) in the Spring to route natural Los Banos Creek flows to riparian lands downstream of the facility, making space for storage and thereby increasing the overall benefit of the Los Banos Creek Diversion Facility. This project will allow the SJREC to maximize flood control and downstream benefits while maintaining recreational use of the Los Banos Creek Detention Reservoir. Starting in the Spring, the project participants will pump their conserved water or groundwater into available LBCDD space for temporary storage and return to one or all participants to meet peak irrigation or wildlife water management demands. A pilot project was completed in Fall 2020 and construction is scheduled for 2024.

The SJREC is also implementing the Los Banos Recharge and Recovery project (Project SJREC-9 in **Section 15.3**, **Table PMA-1** and **Table PMA-2**). This project will use an existing abandoned gravel pit and an adjacent field as a recharge facility. Flood water and/or surface water from the SJREC entities will be delivered to the site from the CCID Outside Canal and/or down the Los Banos Creek from the Los Banos Creek Diversion Facility. The approximately 60-acre site can recharge upwards of 4,500 AFY. During a Critical Year, the individual entities comprising the SJREC can extract up to 7,000 AF of stored groundwater (SJREC GSA, 2022). This facility will be managed to recharge and store more water than will be extracted. SJREC was awarded $1,000,000 in Sustainable Groundwater Management (SGM) Program SGMA Implementation – Round 1 grant funding from DWR in April 2022 for this project. Construction of the recharge facility is scheduled for 2024.

The SJREC is implementing the BB Limited Recharge and Recovery project (Project SJREC-11 in **Section 15.3**, **Table PMA-1** and **Table PMA-2**). The project is located east of the City of Mendota, along the eastside of the Fresno Slough and south of the San Joaquin River. This project is on an existing 13-acre recharge site. Surface water from the SJREC and flood waters from the Kings River and/or San Joaquin River will be diverted to the site and is expected to recharge approximately 1,000 acre-feet in a given year. During a Critical Year, the member agencies of the SJREC can extract up to 4,000 AF of stored groundwater. The environmental review for this project is in progress; however, further design and construction activities will be put on hold pending funding availability.

Several GSAs within the Basin participate in the San Joaquin River Quality Improvement Project (SJRIP), which is designed to reduce the amount of salt and selenium discharged from the Grassland Drainage Area into the San Luis Drain and Mud Slough. Shallow groundwater that would be extracted via tile drains is diverted to the SJRIP for reuse rather than discharged to the San Luis Drain and Mud Slough. As of 2023, approximately 5,500 acres of the project site have been planted with salt-tolerant crops (i.e. barley, beets) and irrigated with agricultural drainwater. Most of the salt-tolerant crops (3,863 acres) are located on areas commonly referred to as the eastern project area, situated east of Russell Avenue, near the city of Firebaugh, in Fresno County, California. An additional 1,861 acres, acquired in 2008 and referred as the western project area, were planted with 1,478 acres of salt-tolerant crops.

5.3 Land Use Elements or Topic Categories of Applicable General Plans

§ 354.8. Each Plan shall include a description of the geographic areas covered, including the following information:
(f) A plain language description of the land use elements or topic categories of applicable general plans that includes the following:
(1) A summary of general plans and other land use plans governing the basin.
(2) A general description of how implementation of existing land use plans may change water demands within the basin or affect the ability of the Agency to achieve sustainable groundwater management over the planning and implementation horizon, and how the Plan addresses those potential effects.
(3) A general description of how implementation of the Plan may affect the water supply assumptions of relevant land use plans over the planning and implementation horizon.
(4) A summary of the process for permitting new or replacement wells in the basin, including adopted standards in local well ordinances, zoning codes, and policies contained in adopted land use plans.
(5) To the extent known, the Agency may include information regarding the implementation of land use plans outside the basin that could affect the ability of the Agency to achieve sustainable groundwater management.

☑ **23 CCR § 354.8(f)**

California Government Code requires that every county and city develop and adopt a General Plan. The General Plan is a comprehensive, long-term framework for the protection of agricultural, natural, and cultural resources and for development in the county or city. There are 17 agencies within the Plan Area that have adopted a General Plan. The following sections describe topic categories of general plans and other planning documents with specific relevance to this GSP.

5.3.1 General Plans and Other Land Use Plans

☑ **23 CCR § 354.8(f)(1)**

5.3.1.1 Fresno County General Plan

The Farmers Water District GSA Group and the Fresno County GSA Group, as well as portions of the Central Delta-Mendota GSA Group and SJREC GSA Group, are located within the Fresno County General Plan area. The Fresno County General Plan was originally adopted in 2000 and was designed to accommodate growth through the year 2020 (Fresno County, 2000). Since adoption in 2000, several updates and amendments have been added. The most recent update of the Fresno County General Plan was approved in 2016 (Housing Element). Additionally, a multi-jurisdictional housing element which includes Fresno County went through public review in 2023 (Fresno Council of Governments, 2023).

The General Plan land use designations are primarily agricultural for the unincorporated Fresno County portion of the Basin, with a small area of open space at the Mendota Wildlife Area. The Land Use Element, the Public Facilities and Services Element, and the Open Space and Conservation Element of the Fresno County General Plan contain several objectives, policies, and implementation measures that are related to groundwater or land use management. The General Plan states that the County is to develop a water budget to determine long term needs and to determine whether existing planned water resource enhancements will meet the County's needs through 2020. The 2021 General Plan Progress Report indicates that water budget development and maintenance, as well as other water supply assumptions, will be required as a part of SGMA in areas overlying critically overdrafted aquifers (Fresno County, 2022).

The County also produces annual water conservation reports in compliance with County Ordinance No. 14-019. Other policies include those to reduce overall groundwater demand and protect existing groundwater supply and quality as new development occurs.

5.3.1.2 Madera County General Plan

The Aliso Water District GSA Group and a portion of the SJREC GSA Group are located within the Madera County General Plan area, which was adopted in 1995 and has since undergone several updates and amendments (Madera County, 1995). The most recent update of the Madera County General Plan was approved in 2015 (Background Report and Circulation Element).

The General Plan land use designations are primarily agricultural for the Madera County portion of the Basin, with a small agricultural-residential area near the City of Firebaugh. The Land Use Element, the Public Facilities and Services Element, and the Agricultural and Natural Resource Element of the Madera County General Plan contain several objectives, policies, and implementation measures that are related to groundwater or land use management. Policies include those to promote surface water use and reduce the County's groundwater use, preserve areas with groundwater recharge capabilities, and protect groundwater quality from contamination.

5.3.1.3 Merced County General Plan

The Grassland GSA Group and portions of the Northern Delta-Mendota GSA Group, Central Delta-Mendota GSA Group, and SJREC GSA Group are located within the Merced County General Plan area. The most recent version of the Merced County General Plan was adopted in 2013 and uses a planning horizon through 2030 (Merced County, 2013). Since adoption, several updates and amendments have been added. The most recent update of the General Plan was approved in 2022 (Hazard Mitigation Amendment).

The General Plan land use designations are primarily agricultural in the portion of the Basin within unincorporated Merced County, with areas of low- and medium-density residential, commercial, and open space in the Community of Santa Nella and surrounding the City of Dos Palos. The General Plan contains a Water Element that states the county "…depends heavily on groundwater for its water needs". Both the Water Element and the Land Use Element of the Merced County General Plan include several objectives, policies, and implementation programs that are related to groundwater or land use management. Policies include those to support groundwater recharge projects, utilize existing surface water sources, and promote water conservation practices.

5.3.1.4 San Benito County General Plan

A small portion of the Central Delta-Mendota GSA Group is located within the San Benito County General Plan area. The current version of the San Benito County General Plan was adopted in 2015 and uses a planning horizon through 2035 (San Benito County, 2015). The San Benito County General Plan was most recently updated in 2016 (Housing Element).

The General Plan land use designation is rangeland for the San Benito County portion of the Basin. The Land Use Element of the San Benito County General Plan includes several objectives, policies, and implementation measures that are related to groundwater or land use management; however, given that

that only a small portion of the Basin overlaps the San Benito County General Plan area, it not anticipated that these policies and implementation measures will have significant impacts on this GSP.

5.3.1.5 San Joaquin County General Plan

The northernmost portion of the Northern Delta-Mendota GSA Group is located within the San Joaquin County General Plan area. The current version of the San Joaquin County General Plan was adopted in 2016 and uses a planning horizon through 2035 (San Joaquin County, 2016). The General Plan addresses all geographic areas in the unincorporated county.

The General Plan land use designations are primarily agricultural in the San Joaquin County portion of the Basin. The Land Use and Natural and Cultural Resource Elements of the San Joaquin County General Plan includes several objectives, policies, and implementation measures that are related to groundwater or land use management. Particularly, the General Plan includes several policies related to preserving groundwater recharge areas in open space and promoting groundwater recharge projects within the County to increase groundwater supplies.

5.3.1.6 Stanislaus County General Plan

Portions of the Northern Delta-Mendota GSA Group and the SJREC GSA Group are located within the Stanislaus County General Plan area. The most recent version of the Stanislaus County General Plan was adopted in 2016 and uses a planning horizon through 2035 (Stanislaus County, 2016). The General Plan provides a land-use framework responsive to the needs and conditions of the unincorporated area of the county.

The General Plan land use designations for the portion of the Basin within unincorporated Stanislaus County are agricultural, low-density residential, medium-density residential, medium high-density residential, urban transition, industrial transition, industrial, commercial, and planned development. The Land Use and Conservation and Open Space Elements of the General Plan include several objectives, policies, and implementation measures that are related to groundwater or land use management. Namely, the General Plan contains policies related to the protection of Stanislaus County water resources that prevent adverse impacts to water quality and quantity for ecological value as well as direct beneficial uses to people and maintain groundwater recharge areas essential to the replenishment of reservoirs and aquifers.

5.3.1.7 City of Patterson General Plan

The City of Patterson lies within Stanislaus County and is covered by the Northern Delta-Mendota GSA Group. The City of Patterson's General Plan serves as the community's "constitution" for development and the use of land within its planning area. The City's General Plan was adopted in 2010 and covers two timeframes: 20 years and 40 years into the future (i.e., through 2030 and 2050) (City of Patterson, 2010). Since the City of Patterson is located within Stanislaus County, only the policies that are unique to the City of Patterson and do not overlap with the policies listed in the Stanislaus County General Plan (see **Section 5.3.1.6**) are discussed below.

By area, the top three planned land use designations in the City are low-density residential, light industrial, and estate residential. The General Plan includes several objectives, policies, and implementation measures that are related to groundwater or land use management. In the Land Use Element, the General

Plan outlines a policy to encourage Stanislaus County to require development on unincorporated lands within the Patterson Planning Area to be developed consistent with City standards. The Natural Resource Element includes a policy to preserve groundwater recharge areas in the City's design of new development.

5.3.1.8 City of Newman General Plan

The City of Newman lies within Stanislaus County and is covered by the SJREC GSA Group. The City of Newman's General Plan serves as a fundamental basis for the City's land use and development policy. The City's General Plan was adopted in 2007 and covers a planning horizon through 2030 (City of Newman, 2007), although there have been recent updates and amendments added since General Plan adoption (e.g., Housing Element [2016]). Since the City of Newman is located within Stanislaus County, only the policies that are unique to the City of Newman and do not overlap with the policies listed in the Stanislaus County General Plan (see **Section 5.3.1.6**) are discussed below.

By area, the top three planned land use designations in the City are planned mixed residential, low density residential, and light industrial. The General Plan includes several objectives, policies, and implementation measures that are related to groundwater or land use management. The General Plan states that 100 percent of the City's potable demand is met by groundwater. The Public Facilities and Services Element outlines an action to investigate other sources of supply and decrease the City's dependence on groundwater, and the Natural Resources Element includes policies to prevent degradation of groundwater quality.

5.3.1.9 City of Gustine General Plan

The City of Gustine lies within Merced County and is covered by the SJREC GSA Group. The City's General Plan was adopted in 2002 and covers a planning horizon through 2030 (City of Gustine, 2002), although there have been recent updates and amendments added since General Plan adoption (e.g., Housing Element [2020]). Since the City of Gustine is located within Merced County, only the policies that are unique to the City of Gustine and do not overlap with the policies listed in the Merced County General Plan (see **Section 5.3.1.3**) are discussed below.

By area, the top three planned land use designations in the City are agricultural commercial, planned development, and low density residential. The General Plan does not include specific objectives, policies, and implementation measures related to groundwater management; however, the Land Use, Public Facilities, and Urban Expansion elements contain policies related to the City's continued ability to provide sufficient supply of potable water for all existing and planned development.

5.3.1.10 City of Los Banos General Plan

The City of Los Banos lies within Merced County and is covered by the SJREC GSA Group. The City's General Plan was adopted in 2022 and covers a planning horizon through 2042 (City of Los Banos, 2022). Since the City of Los Banos is located within Merced County, only the policies that are unique to the City of Los Banos and do not overlap with the policies listed in the Merced County General Plan (see **Section 5.3.1.3**) are discussed below.

By area, the top three planned land use designations in the City are agricultural, single family residential, and civic/institutional. The Land Use Circulation, Parks, Open Space, and Conservation, Safety and Noise,

Public Facilities and Services, Implementation and Monitoring Elements of the General Plan include several objectives, policies, and implementation measures related to groundwater and land use management. The General Plan outlines policies for the development of infrastructure to promote groundwater recharge and to protect and monitor groundwater quality and quantity.

5.3.1.11 City of Dos Palos General Plan

The City of Dos Palos lies within Merced County and is covered by the SJREC GSA Group. The City's General Plan was adopted in 1991 and covers a planning horizon through 2010 (City of Dos Palos, 1991), although there have been recent updates and amendments added since General Plan adoption (e.g., Housing Element [2019]). Since the City of Dos Palos is located within Merced County, only the policies that are unique to the City of Dos Palos and do not overlap with the policies listed in the Merced County General Plan (see **Section 5.3.1.3**) are discussed below.

By area, the top three planned land use designations in the City are low density residential, greenbelt/agriculture, and commercial general service. The General Plan does not include specific objectives, policies, and implementation measures related to groundwater management; however, the Land Use Element, Circulation Element, and Open Space, Recreation, and Conservation Element contain policies related to water conservation and the City's continued ability to provide sufficient supply of potable water for all existing and planned development.

5.3.1.12 City of Firebaugh General Plan

The City of Firebaugh lies within Fresno County and is covered by the SJREC GSA Group. The City's General Plan was adopted in 2006 and serves to guide growth and development of the City through the year 2030 (City of Firebaugh, 2006). Additionally, a multi-jurisdictional housing element that includes the City of Firebaugh is under public review as of 2023 (Fresno Council of Governments, 2023). Since the City of Firebaugh is located within Fresno County, only the policies that are unique to the City of Firebaugh and do not overlap with the policies listed in the Fresno County General Plan (see **Section 5.3.1.1**) are discussed below.

By area, the top three planned land use designations in the City are light industrial, heavy industrial, and medium density residential. The General Plan does not include specific objectives, policies, and implementation measures related to groundwater management; however, the Land Use Element and Conservation, Open Space, Parks and Recreation Element contain policies related to the City's continued ability to provide sufficient supply of potable water for all existing and planned development.

5.3.1.13 City of Mendota General Plan

The City of Mendota lies within Fresno County and is covered by the SJREC GSA Group. The City's General Plan was adopted in 2009 and serves as a long-range policy document that comprises the official statement of the City regarding growth and development within the planning area through the year 2025 (City of Mendota, 2009). Additionally, a multi-jurisdictional housing element that includes the City of Mendota is under public review as of 2023 (Fresno Council of Governments, 2023). Since the City of Mendota is located within Fresno County, only the policies that are unique to the City of Mendota and do not overlap with the policies listed in the Fresno County General Plan (see **Section 5.3.1.1**) are discussed below.

By area, the top three planned land use designations in the City are public facility, light industrial, and medium density residential. The Land Use Element and Open Space and Conservation Element of the General Plan include several objectives, policies, and implementation measures related to groundwater and land use management. Namely, the General Plan includes policies for the protection of and monitoring of groundwater quality and supply in new development, as well as preserving areas recognized as having significant groundwater recharge potential.

5.3.1.14 City of Modesto Urban Area General Plan (incorporating the Grayson Area)

The community of Grayson lies within Stanislaus County and is covered by the Northern Delta-Mendota GSA Group, with water service provided locally by the City of Modesto. Development in Grayson is captured under the City of Modesto Urban Area General Plan, which was updated in 2008 (City of Modesto, 2008). Both the City of Modesto Urban Area General Plan and the Stanislaus County General Plan outline policies and implementation measures that affect the development of Grayson.

In addition to policies and implementation measures specified in the Stanislaus County General Plan (see **Section 5.3.1.6)** the City of Modesto Urban Area General Plan includes specific policies to stabilize groundwater levels and eliminate groundwater overdraft as part of a conjunctive groundwater-surface water management program within the urban area that encompasses Grayson.

5.3.1.15 Santa Nella Community Specific Plan

The community of Santa Nella lies within Merced County and is covered by the Central Delta-Mendota GSA Group, with water service provided locally by the Santa Nella County Water District. The Santa Nella Community Specific Plan was updated in 2000 (Merced County, 2000) with the primary objectives of establishing land use designations and zoning and providing development standards and infrastructure concepts. Both the Specific Plan and the Merced County General Plan outline policies and implementation measures that affect the development of Santa Nella.

In addition to policies and implementation measures specified in the Merced County General Plan (see **Section 5.3.1.3**), the Santa Nella Community Specific Plan includes specific policies to prevent depletion of groundwater resources and connect all new development to existing or new public water systems in Santa Nella.

5.3.1.16 Crows Landing Community Plan

The community of Crows Landing lies within Stanislaus County and is covered by the Northern Delta-Mendota GSA Group, with water service provided locally by the Crows Landing Community Services District. The Crows Landing Community Plan was adopted in 1987 and is included as an appendix to the 2016 Stanislaus County General Plan (Stanislaus County, 2016) (see **Section 5.3.1.6**). The Crows Landing Community Plan describes the community and available services, while the Stanislaus County General Plan provides policies relating to the larger region.

While there are no specific policies related to water resources management in the Crows Landing Community Plan, it is noted that the Crows Landing Community Services District provides water via two groundwater wells and that the existing water system is at capacity, limiting the ability to expand.

5.3.1.17 Westley Community Plan

The community of Westley lies within Stanislaus County and is covered by the Northern Delta-Mendota GSA Group, with water service provided locally by the Westley Community Services District. The Westley Community Plan was adopted in 1987 and is included as an appendix to the 2016 Stanislaus County General Plan (Stanislaus County, 2016) (see **Section 5.3.1.6**). The Westley Community Plan describes the community and available services, while the Stanislaus County General Plan provides policies relating to the larger region.

There are no specific policies related to water resources management in the Westley Community Plan; however, it is noted that the Westley Community Services District is at capacity and struggles with aging infrastructure.

5.3.2 Implementation of Existing Land Use Plans

☑ 23 CCR § 354.8(f)(2)

The above goals, policies, and implementation measures established by the General and Specific Plans are complementary to the sustainable groundwater management of the Basin relative to future land use development and conservation. The General and Specific Plans encourage responsible development of the Basin groundwater supplies to ensure that existing users have access to high quality water. Implementation of the policies outlined in these plans to the extent that existing resources allow is not expected to interfere with the Basin's ability to achieve groundwater sustainability.

In general, the General and Specific Plans promote sustainable development and growth of their jurisdictional area by outlining specific policies that aim to preserve natural resources, such as surface and groundwater, while still meeting their projected development goals. Additionally, given that General and Specific Plans are generally updated regularly, plan updates and amendments must consider this GSP and incorporate water supply assumptions consistent with this GSP over the 2040 planning horizon.

General and Specific Plans within the Basin have policies that focus on ensuring that an adequate, safe, and reliable water supply is available for existing and planned urban and agriculture development, as well as protecting and enhancing the qualities of surface water and groundwater features. In addition, the General and Specific Plans promote water conservation, educational programs that inform the public about natural resources, increased efficiency of existing water systems, and the protection of aquifer systems against overdraft. The GSAs within the Basin will coordinate with the respective land use authorities to ensure that the GSP is considered in land use decisions.

5.3.3 Implementation of the GSP

☑ 23 CCR § 354.8(f)(3)

Successful implementation of this GSP will help to ensure that the Basin's groundwater supply is managed sustainably. As this GSP includes clear timelines and flexible strategies for implementation and compliance, the effect of GSP implementation on current water supply assumptions or land use plans within the General and Specific Plans is anticipated to be less than the effect of groundwater shortages that could occur if the plan were not in place. As mentioned above, it is anticipated that future updates of

the General and Specific Plans would consider this GSP and utilize consistent water supply assumptions over the 2040 planning horizon. The Basin GSAs will coordinate with and provide the necessary information to land use planning agencies that are adopting or amending their General and Specific Plans.

5.3.4 Drinking Water Source Assessment and Protection (DWSAP) Well Permitting Process

☑ 23 CCR § 354.8(f)(4)

Since the Basin extends over six counties, a well construction, alteration or destruction permit must be obtained from the appropriate agency, depending on the location of the well. Well permitting procedures for each county within the Basin is provided below:

- **Fresno County:** The Fresno County Department of Public Health, Environmental Health Division is the permitting and enforcement agency for the construction and destruction of water wells in the portions of the Central Delta-Mendota, Farmers Water District, Fresno County, and SJREC GSA Groups within Fresno County. Permits are required to drill exploratory holes, construct new wells, reconstruct, repair, or deepen existing wells, and to destroy abandoned wells. The well permit application involves completion of an online form in the Fresno County Citizen Portal.[13]

  Information regarding the permitting of wells within unincorporated Fresno County can be found in Title 14 (Water and Sewage) of the Fresno County Ordinance Code in Chapter 14.04 (Well Regulations – General Provisions) and Chapter 14.08 (Well Construction, Pump Installation, and Well Destruction Standards). In response to Executive Order (EO) N-3-23 (see **Section 5.3.4.1** below), Fresno County updated its well permitting process[14] to have the County forward well permit applications submitted to the relevant GSA for review. The County encourages drillers to contact the GSAs prior to submitting an application to the County to determine if there are limitations regarding the use of the well or any additional requirements. The County hosted public workshops on 20 August 2020 and 18 March 2021 to discuss the role of GSAs in the well permitting process, with recordings available on the County website.

- **Madera County:** The Madera County Environmental Health Division is the permitting and enforcement agency for the construction and destruction of water wells in the portions of the Aliso Water District and SJREC GSA Groups within Madera County. Permits are required to drill exploratory holes, construct new wells, reconstruct, repair, or deepen existing wells, and to destroy abandoned wells. The well permit application includes a three-page form and one-page addendum and is found on the Madera County website.[15]

[13] Fresno County Citizen Portal serving Environmental Health and Public Works: https://permitportal.fresnocountyca.gov/citizenportal/app/landing

[14] Additional information on the Fresno County well permitting process can be found on the Fresno County Well Permitting Program website: https://www.fresnocountyca.gov/Departments/Public-Health/Environmental-Health/Water-Surveillance-Program/Well-Permitting-Program#:~:text=In%20order%20to%20obtain%20a,permit%20fees%2C%20to%20this%20office.

[15] Madera County Well Construction/Destruction Permitting documents: https://www.maderacounty.com/government/community-economic-development-department/divisions/environmental-health-division/env-health-documents-and-forms/-folder-141

Information regarding the permitting of wells within unincorporated Madera County can be found in Title 13 (Water and Sewers) of the Madera County Municipal Code in Chapter 13.09 (Authorization – fees) and Chapter 13.52 (Well Standards). In response to the Governor's EO N-3-23 (see **Section 5.3.4.1** below), Madera County updated its well permitting process[16] to require applicants to submit the well permit application and a "GSA Verification Form" to the relevant GSA for review. Once the applicant obtains a signature from the GSA, the well permit application can be submitted to the County for approval.

- **Merced County:** The Merced County Department of Public Health, Environmental Health Division is the permitting and enforcement agency for the construction and destruction of water wells in the portions of the Central Delta-Mendota, Grassland, Northern Delta-Mendota, and SJREC GSA Groups within Merced County. Permits are required for "construction, reconstruction, deepening, modification, abandonment, or destruction of any well within the unincorporated areas of Merced County". The well permit application includes a three- to six-page permit form (depending on well type) and is found on the Merced County website.[17]

  Information regarding the permitting of wells within unincorporated Merced County can be found in Title 9 (General Health and Safety) of the Merced County Code in Chapter 9.27 (Groundwater Mining and Export) and Chapter 9.28 (Wells). The export of groundwater from inside Merced County outside of the respective groundwater basin in which it originates is prohibited under County Code Chapter 9.27.040; however, the code will likely be amended to grant control of groundwater transfers to the relevant GSAs in early 2025 or when all of the GSPs in Merced County are complete.

  In response to EO N-3-23 (see **Section 5.3.4.1** below), Merced County updated its well permitting process to include a "GSA GSP Consistency Determination Form"[18] as part of the well permit application that requires the applicant to obtain a signature from the relevant GSA to verify that the proposed well is consistent with the relevant GSP.

- **San Benito County:** The San Benito County Water District is the permitting agency for the construction and destruction of water wells in the portion of the Central Delta-Mendota GSA Group within San Benito County. If a well is part of a "local small water system," a small water system permit must also be obtained from the San Benito County Department of Environmental Health, Public Health Division. A permit must be obtained to "dig, bore, drill, deepen, modify, repair or destroy a water well, cathodic protection well, observation well, monitoring well or any other excavation that may intersect groundwater" (San Benito County Code of Ordinances Chapter

[16] Additional information on the Madera County well permitting process can be found on the Madera County Water Well Program website: https://www.maderacounty.com/home/showpublisheddocument/30391/637860459399830000.
[17] Merced County Well Permitting Documents and Resources: https://www.countyofmerced.com/2247/Well-Systems.
[18] Merced County "GSA GSP Consistency Determination Form": https://www.countyofmerced.com/DocumentCenter/View/29653/Groundwater-Sustainability-Agency-GSP-Consistency-Determination-Form

15.05.075). The well permit application for the San Benito County Water District includes a two-page permit form and is found on the San Benito County Water District website.[19]

Information regarding the permitting of wells within San Benito County can be found in Title 15 (Public Works) of the San Benito County Code of Ordinances in Chapter 15.05 (Water). In unincorporated areas, an applicant must get a permit to extract groundwater for sale or for use off parcel, given that the safe yield of the Basin is not exceeded. Mining of groundwater on private property to be transported outside of county lines is prohibited.

- **San Joaquin County:** The San Joaquin County Environmental Health Department is the permitting and enforcement agency for the construction and destruction of water wells in the portion of the Northern Delta-Mendota GSA Group within San Joaquin County. Permits are required for "digging, drilling, boring, driving, repairing, or destroying any well; or repairing, replacing, installing, or sealing a pump for use on any well" (San Joaquin County Code Chapter 9-115.3). The well permit application includes a two-page Well/Pump Permit form and a supplemental Well Information Form found on the San Joaquin County website.[20]

  Information regarding the permitting of wells within unincorporated San Joaquin County can be found in Title 9 Division 11 (Infrastructure Standards and Requirements) of the San Joaquin County Code in Chapter 9-1115 (Water Well and Well Drilling Regulations). An applicant must get a permit to extract groundwater for sale or for use outside of the County (San Joaquin County Code Chapter 5-8100).

  In response to EO N-3-23 (see **Section 5.3.4.1** below), San Joaquin County updated its well permitting process to require applicants to fill out either a Well Exemption Statement[21] (for exempt wells) or a New Well Information Form (for non-exempt wells).[22] For non-exempt wells, the New Well Information Form is forwarded with the rest of the application to the applicable GSA for review and approval.

- **Stanislaus County:** The Stanislaus County Department of Environmental Resources is the permitting and enforcement agency for the construction and destruction of water wells in the portions of the Northen Delta-Mendota and SJREC GSA Groups within Stanislaus County. Permits are required to "construct, repair or destroy any well or well seal" (Stanislaus County Code Chapter 9.36.030). The well permit application includes a two-page permit form and a supplemental Well Information Form found on the Stanislaus County website.[23]

[19] San Benito County Water District Well Permit Application: https://www.sbcwd.com/wp-content/uploads/2018/08/Well-Permit-Procedure-and-Application-1.pdf
[20] Well and Pump Permit Application and New Well Information form: https://www.sjgov.org/department/envhealth/programs/well-permits
[21] Well Exemption Statement: https://www.sjgov.org/docs/default-source/environmental-health-documents/well-permits/new-well-information-exemption-statement.pdf?sfvrsn=b658873d_3
[22] New Well Information Form: https://www.sjgov.org/docs/default-source/environmental-health-documents/well-permits/new-well-information.pdf?sfvrsn=45f94c1a_3
[23] Well Construction or Destruction form: https://www.stancounty.com/er/pdf/water-well-construction-and-destruction-application.pdf

Information regarding the permitting of wells within unincorporated Stanislaus County can be found in Title 9 (Health and Safety) of the Stanislaus County Code in Chapter 9.36 (Water Wells). Stanislaus County adopted a Groundwater Ordinance in November 2014 (Chapter 9.37 of the Stanislaus County Code) that codified the requirements, prohibitions, and exemptions intended to help promote sustainable groundwater management. The Groundwater Ordinance prohibits the unsustainable extraction of groundwater and makes issuing permits for non-exempt wells discretionary[24]. If a well is non-exempt, the applicant must submit a Supplemental Application for Non-Exempt Wells with information to demonstrate that the groundwater pumping will not contribute to Undesirable Results. Additionally, the Groundwater Ordinance requires that for non-exempt wells, an applicant must obtain a permit to extract groundwater for sale or for use outside of the County.

In response to EO N-3-23 (see **Section 5.3.4.1**), Stanislaus County updated its well permitting process to refer applicable well permits the GSAs for approval. If a GSA finds that a well permit application is not consistent with requirements in its GSP to prevent Undesirable Results, the applicant must provide substantial evidence that the proposed extraction is will not cause or contribute to their occurrence in accordance with Stanislaus County's Discretionary Well Permitting Implementation Guidelines.

5.3.4.1 Executive Orders N-7-22 and N-3-23

On 28 March 2022, Governor Newsom signed EO N-7-22 to amend prior proclamations of states of emergency due to California's ongoing drought conditions. EO N-7-22 required that additional steps be taken by well permitting agencies to approve a permit for the construction of a new well or alternation of an existing well located in a medium- or high- priority basin subject to SGMA. For applicable wells[25], permitting agencies must obtain written verification from the GSA managing the area of the basin where the proposed well is to be located that the well would not conflict with the GSP or decrease the likelihood of the basin reaching its Sustainability Goal. EO N-7-22 was subsequently rescinded once the drought-related state of emergency was lifted.

On 13 February 2023, Governor Newsom signed EO N-3-23 to keep in place some of the provisions originally contained EO N-7-22 (as EO N-7-22 was rescinded once the state of emergency had ended). One of the provisions retained by EO N-3-23 is the requirement that well permitting agencies not approve a permit for a new well or alteration of an existing well without first obtaining written verification of GSA approval that groundwater extraction by the proposed well would not be inconsistent with the GSP and the programs it contains. The EO exempts *de minimis* new wells and new wells that replace existing, actively permitted wells with wells that will produce an equivalent quantity of water when the existing well is being replaced because it has been acquired by eminent domain or while under threat of condemnation.

The Basin GSAs are working with the above-listed permitting agencies (i.e., counties) to review and provide written verifications for permit applications within their jurisdictions as required under the EO. As

[24] Similar to the exemptions outlined in EO N-7-22, exemptions in the Stanislaus County Groundwater Ordinance (adopted in 2014) include wells pumping less than 2 AFY and wells property served by a public agency in compliance with a GSP.
[25] The EO is not applicable to wells that provide less than 2 AFY or to public water systems.

described above, several counties have already amended their well permitting processes to incorporate GSA verification.

5.3.5 Implementation of Land Use Plans Outside the Basin

☑ 23 CCR § 354.8(f)(5)

This GSP assumes that no land use plans being implemented outside of the Basin will impact GSP implementation or prevent the Basin from achieving its Sustainability Goal.

5.4 Additional GSP Elements

§ 354.8. Each Plan shall include a description of the geographic areas covered, including the following information:
(g) A description of any of the additional Plan elements included in Water Code Section 10727.4 that the Agency determines to be appropriate.

☑ 23 CCR § 354.8(g)

5.4.1 Control of Saline Water Intrusion

The Basin is located far from coastal areas and seawater intrusion is not considered to be an issue. Waste discharges containing saline water are a concern, but they are regulated by the CVRWQCB. Under present-day conditions, the Basin is at little to no risk of seawater intrusion.

TDS is identified as a Constituent of Concern within the Basin from migration of groundwater with high salinity due to processing operations and the natural occurrence of saline water in some portions of the Basin west of the Mendota Pool. Water quality impacts are further discussed in **Section 8.5**.

5.4.2 Wellhead Protection

As discussed in **Section 5.3.4**, six counties govern wellhead protection, depending on location. The GSAs within the Basin actively assist local landowners to comply with counties' wellhead protection and well destruction policies.

5.4.3 Migration of Contaminated Groundwater

The mitigation, remediation, and management of groundwater contamination plumes is regulated by the California Department of Toxic Substances Control (DTSC). Further discussion of groundwater contamination within the Basin is in **Section 8.5.3**.

5.4.4 Well Abandonment and Well Destruction Program

As discussed in **Section 5.3.4**, the counties are responsible for governing well abandonment and well destruction.

5.4.5 Replenishment of Groundwater Extractions

The GSAs within the Basin actively manage the Basin through conjunctive use and groundwater banking and recovery, as discussed in **Section 5.2.3**. Additionally, the groundwater system underlying the Basin is recharged from rainfall infiltration, stream leakage, return flows from the application of surface water or groundwater to land, water added to the Basin as runoff from adjacent lands, and subsurface inflow from

adjacent basins (see **Section 7.3.4**). Additionally, groundwater extractions will be replenished by the proposed Projects and Management Actions (see **Section 15**).

5.4.6 Conjunctive Use and Underground Storage

The GSAs within the Basin actively manage the Basin through conjunctive use and groundwater banking and recovery, as discussed in **Section 5.2.3**.

5.4.7 Well Construction Policies

As discussed in **Section 5.3.4**, the counties are responsible for governing well construction, with written verification from the managing GSA per EO N-3-23.

5.4.8 Groundwater Contamination Cleanup, Recharge, Diversions to Storage, Conservation, water Recycling, Conveyance, and Extraction Projects

Active point-source contamination sites that may potentially influence groundwater quality within the Basin are described further in **Section 8.5.3**.

Groundwater recharge and diversions to storage are discussed further in **Section 7.3.4**. Additionally, proposed groundwater recharge projects are discussed in **Section 15**.

Water conveyance/extraction projects are in development as planned Projects and Management Actions; see **Section 15**.

Water conservation practices and recycled water uses are described in **Section 5.2**.

5.4.9 Efficient Water Management Practices

Groundwater within the Basin is primarily used for agricultural irrigation, urban and domestic water supply, industrial processing, and managed wetlands. Efficient irrigation and water management practices to reduce water use are described in the plans summarized in **Section 5.2.1**.

5.4.10 Relationships with State and Federal Regulatory Agencies

Groundwater monitoring and management will be closely coordinated with state and federal regulatory agencies. The GSP Representative Monitoring Networks include sites that are currently monitored as part of the following programs: DWR's CASGEM, SWRCB Division of Drinking Water, USGS NWIS, and DWR's CDEC (see **Section 5.2.1**). The GSAs within the Basin will continue to coordinate with state and federal regulatory agencies throughout the GSP implementation.

The SWRCB and CVRWQCB manage groundwater quality through Waste Discharge Requirements, Abatement Orders, and the Central Valley Basin Plan including associated programs such as ILRP and CV-SALTS. Groundwater management will be closely coordinated with these agencies through coordination with permitees and regulated landowners in the Basin.

5.4.11 Land Use Plans and Efforts to Coordinate with Land Use Planning Agencies to Assess Activities that Potentially Create Risks to Groundwater Quality or Quantity

Applicable land use planning documents and processes are discussed in **Section 5.3**. The GSAs within the Basin plan to continue cooperating with those planning agencies as part of GSP implementation.

5.4.12 Impacts on Groundwater Dependent Ecosystems

As discussed in further detail below in **Section 8.8**, potential Groundwater Dependent Ecosystems (GDEs) have been identified and evaluated within the Basin.

5.5 Notice and Communication

§ 354.10. Each Plan shall include a summary of information relating to notification and communication by the Agency with other agencies and interested parties including the following:

(a) A description of the beneficial uses and users of groundwater in the basin, including the land uses and property interests potentially affected by the use of groundwater in the basin, the types of parties representing those interests, and the nature of consultation with those parties.

(b) A list of public meetings at which the Plan was discussed or considered by the Agency.

(c) Comments regarding the Plan received by the Agency and a summary of any responses by the Agency.

(d) A communication section of the Plan that includes the following:

(1) An explanation of the Agency's decision-making process.

(2) Identification of opportunities for public engagement and a discussion of how public input and response will be used.

(3) A description of how the Agency encourages the active involvement of diverse social, cultural, and economic elements of the population within the basin.

(4) The method the Agency shall follow to inform the public about progress implementing the Plan, including the status of projects and actions.

☑ **23 CCR § 354.10**

This section presents information related to the Basin's public noticing and outreach efforts that occurred after the submittal of the 2020 GSPs (i.e., from January 2020 to present). Outreach and engagement efforts prior to January 2020 are listed in **Appendix E** and are described in detail in the 2020 GSPs and Revised 2022 GSPs. The Basin's SGMA Communications Plan (**Appendix F**) was used as a framework for conducting the stakeholder outreach and engagement activities described in this document.

To assist with recent outreach and engagement efforts, the Basin GSAs sought and received funding from DWR for "Outreach and Engagement" in May 2022 as part of the SGM Grant Program SGMA Implementation – Round 1. In late 2023, the Basin GSAs took additional steps to improve public outreach during the process of developing this single GSP and developed a four-pronged approach to stakeholder communications that includes the following:

- Public Meetings (**Section 5.5.2.1**)
- Stakeholder Workshops and Education (**Section 5.5.2.2**)
- Direct Outreach (**Section 5.5.2.3**)
- DWR's Facilitation Support Services (**Section 5.5.4.2)**

Activities related to each of these categories of engagement are described herein.

5.5.1 Beneficial Uses and Users of Groundwater

☑ 23 CCR § 354.10(a)

Beneficial uses and users of groundwater within the Basin were identified as part of this GSP development process and include uses specified in the Basin Plan, various holders of groundwater rights, municipal well operators, public water systems, local land use planning agencies, environmental users of groundwater, surface water users, the federal government, and DACs/SDACs, as listed in **Table PA-6** below.

Table PA-6. Beneficial Uses and Users of Groundwater

User Type	Use	User
Holders of Groundwater Rights	Agricultural	• Aliso WD • Central California ID • Columbia Canal Company • Del Puerto WD • Eagle Field WD • Eastin WD • El Solyo WD • Farmers WD • Firebaugh Canal WD • Fresno Slough WD • Mercy Springs WD • Oak Flat WD • Oro Loma WD • Pacheco WD • Panoche WD • Patterson ID • San Luis Canal Company • San Luis WD • Tranquillity ID • Turner Island WD • Twin Oaks ID • West Stanislaus ID • Whitelake MWC
	Domestic Well Owners	• Primarily *de minimis* users
	Commercial / Industrial	• Food Processing • Manufacturing • Aggregate Mining • Power Plants
Municipal Well Operators		• City of Firebaugh • City of Gustine • City of Los Banos • City of Mendota • City of Modesto • City of Newman • City of Patterson • Crows Landing CSD • Grayson CSD • North Dos Palos WD • Santa Nella County WD • South Dos Palos County WD • Tranquillity ID • Westley CSD
Public Water Systems		• See **Section 5.1.4**
Land Use Planning Agencies		• See **Section 5.3**

User Type	Use	User	
Environmental Users	Agencies	• CDFW • Grassland Water District • Grassland RCD	• USBR • USFWS
	Environmental Groups	• The Nature Conservancy	• The Audubon Society
	Surface Water	• Creeks	• Rivers
	Refuges	• Alkali Sink Ecological Reserve • Cottonwood Creek Wildlife Area • Grasslands Wildlife Management Area • Little Panoche Reservoir Wildlife Area • Los Banos Wildlife Area • Mendota Wildlife Area	• North Grassland Wildlife Area • O'Neil Forebay Wildlife Area • San Joaquin River National Wildlife Refuge • San Luis National Wildlife Refuge • Volta Wildlife Area • West Hilmar Wildlife Area
	GDEs	• See **Section 8.8**	
Federal and State Government		• BLM • CDPR • CDFW • DWR	• SWRCB • USBR • USFWS
DACs/SDACs		• See **Section 5.1.3**.	

Abbreviations:
BLM = Bureau of Land Management
CDFW = California Department of Fish and Wildlife
CDPR = California Department of Parks and Recreation
CSD = Community Services District
DAC = Disadvantaged Community
DWR = California Department of Water Resources
GDE = Groundwater Dependent Ecosystem
ID = Irrigation District
MWC = Mutual Water Company
RCD = Resource Conservation District
SDAC = Severely Disadvantaged Community
SWRCB = State Water Resources Control Board
USBR = United States Bureau of Reclamation
USFWS = United States Fish and Wildlife Service
WD = Water District

5.5.2 Public Meetings Summary

☑ **23 CCR § 354.10(b)**

As discussed above, the Basin developed a four-pronged approach for public engagement during the development of this GSP. The first three components of this approach, Public Meetings, Stakeholder Workshops and Education, and Direct Outreach are discussed below.

5.5.2.1 Public Meetings

The Basin has held numerous meetings open to the public to discuss SGMA and GSP development and implementation. These include meetings of the Basin Coordination Committee, GSA Board meetings and meetings of the Northern and Central Delta-Mendota Region Management Committees.

- **Basin Coordination Committee**: Basin Coordination Committee meetings have generally occurred at least monthly since August 2017. During this GSP development process, Coordination Committee meetings were held on the second and/or fourth Monday of each month at 1:00 pm in the SLDMWA Boardroom, 842 6th St, Los Banos, California. These meetings are publicly noticed as required under the Brown Act, and meeting agendas are available on the Basin website at https://deltamendota.org/meetings/. Agendas and meeting materials (including meeting minutes and handouts) are provided at the meetings and by email to an interested parties list.
- **GSA Board /City Council Meetings**: The Basin GSAs and several GSA member agencies hold regular Board or city council meetings that are open to the public and provide SGMA-related updates and information. Information and notices for GSA Board/city council meetings can be found directly on the individual agency websites. Record of individual GSA Board meetings are included in **Appendix E.**
- **Central Delta-Mendota Region Management Committee Meetings:** Representatives from the GSAs in the Central Delta-Mendota GSA Group generally meet monthly. These meetings are open to the public and notice is provided on the Basin and SLDMWA websites. Meeting agendas are also posted on the SLDMWA and Basin websites. Agendas and meeting materials (including meeting minutes and handouts) are provided at the meetings and by email to an interested parties list.
- **Northern Delta-Mendota Region Management Committee Meetings:** Representatives from the GSAs in the Northern Delta-Mendota GSA Group generally meet monthly. These meetings are open to the public and notice is provided on the SLDMWA and Basin websites. Meeting agendas are also posted on the SLDMWA and Basin websites. Agendas and meeting materials (including meeting minutes and handouts) are provided at the meetings and by email to an interested parties list.

5.5.2.2 Stakeholder Workshops and Education

- **2024 Water Leadership Institute in the Delta-Mendota Subbasin:** The Basin partnered with Environmental Defense Fund (EDF) and the Rural Community Assistance Corporation (RCAC) to host the 2024 Water Leadership Institute (WLI) from March – June 2024. The WLI is a joint effort by EDF and the RCAC to identify and educate underserved populations, including residents in DACs

and SDACs, with the skills and opportunity to engage on water issues. EDF and RCAC hosted and facilitated the WLI, and representatives from the Basin GSAs served as speakers and hosts to engage with the cohort on topics related to SGMA and GSP development. The program included four sessions that covered foundational leadership skills and local water issues, including SGMA, in both English and Spanish. The WLI is grant funded and comes at no cost to participants.

- **Community Water Needs Assessment:** The Basin is updating the Community Water Needs Assessment reports completed in 2019 as part of the IRWM program. The Basin GSAs, the IRWM Regional Management Group, and SLDMWA are collectively funding these updates, which are being conducted by Self-Help Enterprises (SHE). The Community Water Needs Assessment updates will include the identification and engagement of water leaders in DACs, SDACs, and EDAs for engagement in the GSP development process.
- **Webinars on Draft GSP:** The Basin released several draft GSP chapters in April 2024 to provide stakeholders ample opportunity to begin reviewing the GSP and submit comments to the Coordination Committee. The Basin then released the complete draft GSP in May 2024. The Basin hosted webinars on 10 May 2024 and 7 June 2024 to give an overview of the draft GSP and information on how to submit comments.
- **In-person Public Meetings:** In-person public meetings were hosted on 22 April 2024 in Stanislaus County and 18 June 2024 at the Los Banos Community Center respectively to provide an overview of the GSP. Spanish translation was provided and handout materials were distributed to the public.

5.5.2.3 Direct Outreach

The Basin GSAs developed and used several coordinated tools, in addition to their own resources, to inform members of the public about GSP development activities and promote opportunities for public engagement. These tools are described below.

- **Website:** The Basin website – www.deltamendota.org – is the primary location for information related to SGMA implementation in the Basin. Information provided on the website includes: an overview of SGMA, a description of each of the GSA Groups, contact information for each of the GSAs, and upcoming workshops and public meetings. The website serves as a repository for outreach materials, workshop materials, and meeting agendas for the Basin Coordination Committee, Central Delta-Mendota Region Management Committee, Central Delta-Mendota GSA JPA, and Northern Delta-Mendota Region Management Committee. It also provides links to the websites maintained by each GSA Group.
- **Basin Newsletter:** The Delta-Mendota Subbasin Newsletter is distributed on a near-quarterly basis and serves as an informational tool to keep interested parties, beneficial users, and members of the general public informed about the development and implementation of the GSP. Newsletter topics include Basin-wide activities, general announcements, upcoming meetings and workshops, and past and upcoming GSP development activities. Copies of the newsletters are archived on the Subbasin website.
- **Informational Materials**: GSAs in the Basin developed a suite of materials in English and Spanish to educate and inform members of the public about SGMA and topics covered in the GSP. These

materials include bilingual presentations, fact sheets, handouts, frequently asked questions, and videos. Copies of the materials are available on the Basin website. GSA Group representatives distributed these materials before and during meetings, workshops, and other outreach activities.

5.5.3 Comments Received

☑ **23 CCR § 354.10(c)**

This section summarizes the comments received for consideration in the development of this GSP (**Appendix G**). **Table PA-7** and **Table PA-8** below describes the revisions made in response to the comments submitted on the public draft of this GSP. Comments on the previous GSPs received after January 2020 are summarized in **Appendix G**. Comments received prior to January 2020 are discussed and incorporated in the 2020 GSPs and Revised 2022 GSPs.

Table PA-7. General Responses to Public Comments

#	General Responses
General Response #1	Regarding the California Sportfishing Protection Alliance (CSPA) comments on the temporal and spatial resolution of analysis used to estimate depletion of Interconnected Surface Water (ISWs) and support definition of the sustainable management criteria (SMC): As indicated in Sections 8.9.5 and 9.6 of the Groundwater Sustainability Plan (GSP), insufficient data are currently available along several segments of the San Joaquin River with respect to shallow groundwater levels and streamflow. These data gaps are due to a combination of insufficient historical coverage, frequency of measurements, and spatial coverage. In addition, the Model used for quantifying the depletion of ISW due to pumping is a relatively coarse-resolution regional model that is not yet calibrated to represent finer-scale details due to both its timing of release and availability, and lack of sufficient local data. The Groundwater Sustainability Agencies (GSAs) in the Basin have presented a comprehensive plan to establish an expanded ISW monitoring network using shallow and nested monitoring wells along the river that can be used conjunctively with available stream gages. The ISW monitoring network is grant-funded and currently under implementation. Accordingly, GSAs in the Basin plan to rectify the identified data gaps through the continuation of their data-gathering efforts and revise any information or SMCs that seem needed upon the availability of additional data as part of future Periodic Review efforts. The GSAs have followed available guidance and used the best available tools and data at the time of GSP development to address the requirements pursuant to CCR 23, § 354.16: "Each Plan shall provide a description of current and historical groundwater conditions in the basin, including data from January 1, 2015, to current conditions, based on the best available information [...] (f) Identification of interconnected surface water systems within the basin and an estimate of the quantity and timing of depletions of those systems, utilizing data available from the Department, as specified in Section 353.2, or the best available information." The analysis and results were presented in the most representative spatial and temporal scale considering data gaps and uncertainties. Providing higher-resolution results that are not supported by measured data and the level of accuracy provided by the Model would lead to misinformed decision-making and planning. The GSAs have been proactive in their approach to addressing the depletion of ISWs and are committed to revising data, information, and criteria in the Plan if supported by additional data. This follows the Department of Water Resources (DWR) Depletion of ISW Introduction Paper (DWR First Paper): "[i]t is infeasible to provide details of data and analysis for estimation of depletions of ISW for every time scale and for every location of every surface water body. Thus, water managers need to select spatial and temporal scales appropriate for their basin and the beneficial uses and users that need to be considered." Further, "[r]egardless of the approach used to identify ISW, conclusions should be based on the best available science, information, and professional judgment; convey the uncertainty associated with those conclusions; and recommend reasonable approaches to fill identified data gaps."

#	General Responses
General Response #2	Regarding the CSPA comments on the inadequacy of the definitions of the depletion of ISWs Undesirable Results (UR) and SMC: The GSAs appreciate the sensitivity to this issue and are equally diligent in addressing any potentially significant and unreasonable impacts on beneficial users of surface water due to depletions of ISWs caused by groundwater pumping in the Basin. While many SGMA Basins, including those with approved GSPs, are still in the data-gathering phase and awaiting further guidelines from DWR to define URs and SMC based on the rate and volume of depletions, the GSAs have proactively decided to use the best available data and information to set protective SMCs that ensure the protection of beneficial users to the extent required under the Sustainable Groundwater Management Act (SGMA). It is important to acknowledge the complexity of an interconnected system such as the San Joaquin River, the variety of stakeholder groups and regulatory programs involved in its management, the multitude of factors impacting the depletion of surface water in the system, and the requirements outlined by SGMA. To assume the GSPs are the primary mechanism for protecting beneficial users impacted by various factors causing the depletion of surface water, one of which is the Basin's pumping, is not supported by SGMA, given the limited authority of GSAs to manage surface water systems. As indicated by CWC § 10727.2(b)(4): “The plan may, but is not required to, address undesirable results that occurred before, and have not been corrected by, January 1, 2015.” By defining the SMCs based on calculated volumes of depletion prior to January 2015, the GSP is fully complying with SGMA requirements while not allowing any further impacts beyond what was experienced before 2015 to beneficial users due to the depletion of ISWs caused by pumping in the Basin. In other words, the GSP considers any additional impact beyond what is not required to be addressed under SGMA as significant and unreasonable and intends to prevent that through the sustainable long-term operation of the Basin. Furthermore, the GSP defines SMC for the chronic lowering of groundwater levels to be equal to groundwater levels experienced in 2015. Several approved GSPs have used groundwater levels as a proxy for the depletion of ISWs. While the GSP complies with SGMA by defining SMC based on the rate or volume of depletion of ISWs caused by groundwater pumping, it also maintains groundwater levels at 2015 levels or above, further ensuring no additional impacts to beneficial users and uses compared to 2015 conditions. As the State Water Resources Control Board (SWRCB) noted in its staff letter for Tulare Lake Subbasin: "[s]etting groundwater level MTs at or above 2015 groundwater elevations will avoid undesirable results for other Sustainability Indicators beyond undesirable results that occurred before, and had not been corrected by, January 1, 2015." Lastly, the GSP includes a pumping reduction plan (PRP) that will be implemented conjunctively by all GSAs in the Basin. The PRP includes an overdraft mitigation component and a groundwater level MT avoidance component (GWL-MT), both focused on changing pumping patterns in the Basin to avoid groundwater level URs. Consequently, even before the Basin reaches any condition close to groundwater level URs (and correspondingly depletion of ISWs undesirable result), at the possibility of MT occurrence, pumping reduction actions will be taken in the Basin. The PRP will help ensure that the GSP avoids depletions of ISWs caused by Basin pumping that surpass conditions experienced in 2015. Overall, the definition of URs and SMC provided in the GSP fully comply with SGMA requirements and protect beneficial users and uses in the Basin. Additionally, the GSP goes further by maintaining groundwater levels at 2015 levels and taking proactive actions under the PRP to ensure compliance.

#	General Responses
General Response #3	Regarding the comments on the defined UR and SMC for Land Subsidence submitted by Friant Water Authority (FWA): The GSAs appreciate and share the concern regarding the management of subsidence in the Basin, particularly with respect to critical infrastructure. Unlike most basins located in subsidence hotspots in the Central Valley, the Basin provides reliable surface water supply under its senior water rights, primarily from the Central Valley Project (CVP) and San Joaquin River, using groundwater as a supplemental resource. The GSAs in the Basin depend on the Delta Mendota Canal (DMC), California Aqueduct, and other critical infrastructure in the Basin for water supply deliveries and have diligently set protective SMC and designed and implemented projects and management actions (P/MAs) and the PRP to ensure that actions within the Basin are not significantly impacting sustainable operation of critical infrastructure. This has resulted in the GSAs adopting one of the most stringent set of subsidence SMC among basins in the state. SGMA allows until January 2040 for critically overdrafted basins, such as the Basin, to reach sustainability, recognizing that chronic and complex problems like subsidence cannot be addressed in the short term and require collaboration among numerous basins and GSAs. As demonstrated in the GSP, a significant portion of subsidence experienced in the Basin originates from activities in neighboring basins. The Madera and Chowchilla subbasins, where some of the greatest nearby subsidence is occurring, also intend to halt subsidence by 2040. Understanding the physical characteristics of subsidence occurrence, the comparably limited cumulative subsidence defined as the MT in the Basin by 2040 is reasonable, while the Basin addresses the in-Basin causes of ongoing subsidence. The 2-ft subsidence considered in the GSP as the basis for setting SMC is not a circular reference but was estimated before GSA efforts in developing the Single GSP. The 2-ft minimum threshold applies to any location in the Basin, not just along the DMC. Additionally, the GSP defines both cumulative extent subsidence and the rate of subsidence as MTs, as required by SGMA, with each criterion needing compliance irrespective of the other. Therefore, GSAs will address subsidence at any location in the Basin due to Basin management that exceeds those rates, regardless of cumulative subsidence. Furthermore, the GSAs have set water level MTs in both aquifers at 2015 levels, with the intent to protect against additional subsidence due to Basin management beyond what occurred in 2015 and is not required to be addressed under SGMA. The SWRCB has concurred that maintaining water level MTs at 2015 water levels is considered sufficiently protective for the other sustainability indicators. Specifically, per the SWRCB Staff Report on Tulare Lake, “Setting groundwater level MTs at or above 2015 groundwater elevations will avoid undesirable results for other Sustainability Indicators beyond undesirable results that occurred before, and had not been corrected by, January 1, 2015.” The GSP further includes a comprehensive PRP framework with plans for overdraft mitigation, groundwater level MT avoidance, subsidence MT avoidance, and groundwater allocation backstop. These plans have clear triggers to manage pumping patterns in the Basin to avoid MTs. The *subsidence mitigation plan* includes a critical infrastructure component specifically designed to protect critical infrastructure and mitigate subsidence hotspots at any location in the Basin, including by pumping measurements, defined zones of influence along critical infrastructure, subsidence trigger rates, and timelines for initiating and continuing pumping reductions. The PRP and subsidence SMCs defined and designed under the GSP follow a

#	General Responses
	diligent subsidence study conducted by GSI (FWA's subsidence technical consultant) in 2022 and adhere to its recommendations (GSI Environmental Inc., 2022).

Table PA-8. Public Comments and Responses

Comment Reference	Comment	Relevant GSP Section	Comment Response
CSPA-1	The Draft GSP provides little information on streamflow. While the text and tables in Chapter 8 describe stream "stage," there is no table or figure comparing groundwater levels to flow. (Draft GSP at pp. 174-75, Fig. GWC-55.) And while the Draft GSP provides modeled depletion figures, these are expressed in acre feet per year, without any reference to streamflows. (Draft GSP at pp. 176-77.) In other words, the Draft GSP does not explain whether the depletions attributable to groundwater management in the basin represent a small percentage, half, or all of the flow of the river at a given time of the year.	8.7.1	The GSP provides total streamflow depletion and streamflow depletion due to pumping occurring in the identified interconnected portion of the San Joaquin River along the Basin boundary. The volume provided in acre-foot can be converted into other flow units on an average basis. The GSP section has been modified to provide an annual average value in CFS in parenthesis in said tables.
CSPA-2	Tables GWC 10 and 11 also fail to adequately characterize the timing of stream depletions, as required by SGMA Regs. section 354.16(f). Depletions are presented by season. But the definition of "season" is not presented, leaving ambiguity as to how the GSP defines each season. And a seasonal figure is insufficient for characterizing impacts to salmonids.	8.7	The draft GSP has been revised to provide a definition of seasons. Regarding the temporal resolution of analysis, refer to General Response #1.
CSPA-3	Failure to account for timing of depletions is notable in light of the Draft GSP's statement that "Depletions of ISW are minimal during low flow conditions because of low surface- water flow and stage. The most significant depletions of ISW happen during high flow conditions, specifically during periods of runoff following the dry Summer and Fall when groundwater levels are lowest." (Draft GSP at p. 176.) This statement ignores that instream beneficial uses may be at their most sensitive during low-flow conditions.	8.7	Regarding the temporal resolution of analysis, refer to General Response #1. The statement quoted from the GSP is solely comparing the volumes of depletions in different seasons and is not intended to provide correlation with impact on beneficial users. The sentence has been revised to better clarify.

Comment Reference	Comment	Relevant GSP Section	Comment Response
CSPA-4	Tables GWC 10 and 11 also fail to provide adequate information on the location of depletions, as required by SGMA Regulations section 354.16, subdivision (f). The tables only provide depletions for the entire basin (after excluding several streams and reaches of the San Joaquin River). The total depletions over a 100-mile stretch of the San Joaquin River provide insufficient information to manage groundwater to avoid harms to fish. This is especially true as some runs of salmonids require access to the Stanislaus, Tuolumne, and Merced Rivers, while others spawn in the upper reaches of the San Joaquin. Below the Merced confluence, the River is subject to the San Joaquin River Restoration Program (SJRRP), which may require different management strategies to ensure adequate flows reach the Merced confluence. A 2022 comment letter from the SJRRP Restoration Administrator to DWR regarding the Delta-Mendota Coordinated GSP stated that "During most times of the year other than the wettest periods, losses of 50 percent to 65 percent of the flows released to the river at Friant Dam prior to arrival at the Merced confluence are typical." These depletions, and their effects on instream beneficial uses, must be detailed and addressed.	8.7	Regarding the temporal and spatial resolution of analysis, refer to General Response #1. It is important to emphasize that under SGMA, the focus on the depletion of Interconnected Surface Waters (ISWs) is limited to those depletions caused by groundwater use within the Basin. Other primary factors contributing to the total depletion of surface water include, but are not limited to, flow regimes, reservoir and local releases, surface water diversions, climatic conditions, and river channel changes. Additionally, surface water bodies like the San Joaquin River, which is shared between the Basin and several other subbasins, and which receives water from rivers outside the Basin, are influenced by operations in other basins. Therefore, total depletion and streamflow are not measures required or suitable for investigation by the GSAs.

Comment Reference	Comment	Relevant GSP Section	Comment Response
CSPA-5	The exclusion of certain streams, water bodies, reaches from the definition of ISW also raises concerns, as described by Mr. Kamman. In addition, the GSP excludes reaches of the San Joaquin River south of milepost 106. (Draft GSP at p. 175.) This exclusion is based upon a correlation between stream stage and groundwater levels in the upper aquifer. Yet previous iterations of the GSP include those reaches as ISW. The GSP fails to explain why the methodology for describing ISW has changed, and why it now excludes sections of the San Joaquin River where the GSAs had previously reported significant communication between the river and shallow groundwater; nothing in SGMA justifies excluding such shallow or perched groundwater from the definition of ISW.	8.7	The analysis used to identify ISWs in the Basin is focused on using best available data and information and follows the recommended approaches by the DWR First Paper: "Perennial and intermittent surface water bodies are most likely to be ISW, while ephemeral surface water bodies are generally not ISW due to their relationship to the groundwater aquifer. [...] Determining if a surface water body is an ISW can be challenging. A common method is to compare groundwater elevation data at wells near the surface water body with the elevation of the bottom of the surface water body. [...] Nearby shallow wells that exhibit groundwater elevations that mirror water levels in the adjacent surface water body may indicate a connection at that location. [...] Regardless of the approach used to identify ISW, conclusions should be based on the best available science, information, and professional judgment; convey the uncertainty associated with those conclusions; and recommend reasonable approaches to fill identified data gaps." As shown in Figures GWC-55 and GWC-56, groundwater levels in the southern portion of the San Joaquin River do not track streamflow patterns and are significantly deeper than its streambed, confirming the disconnection between the River and the Upper Aquifer system beneath it.

Comment Reference	Comment	Relevant GSP Section	Comment Response
CSPA-6	Mr. Kamman has identified a major calculation error in the water budget, which casts doubt on all of the Draft GSP's conclusions, including its sustainable yield calculations and its conclusion that it will reach sustainability by 2040. This is discussed on pages 3 through 5 of his attached comments. This error must be addressed in the final GSP.	9.3	We understand the confusion and have accordingly adjusted the water budget tables and definitions of water budget components in the GSP to clarify. This is not an error in the water budget and does not have any impact on the calculation of other water budget components, overdraft, or sustainable yield. As explained in Section 9 of the GSP, the water budget is calculated from the Model and is not modified except to develop averages for different periods and round numbers to the nearest thousands. Water budgets resulting from models (here CVHM2) are inherently consistent. The confusion in stream-groundwater interaction is due to using aquifers as the receiver of the flow in both land-surface and groundwater budgets, which will be adjusted to provide better clarification of inflows and outflows from all systems. The 79,000 AFY flow is consistent between the Land-Surface Water System and Upper Aquifer, and the 101,000 AFY flow is the summation of 96,000 and 5,000 AFY in the Upper and Lower Aquifers.
CSPA-7	The draft GSP does not define undesirable results based on SGMA requirements and fails to assess the impacts of pumping on listed species and the ecosystems they rely on.	13.6	Refer to General Response #2.

Comment Reference	Comment	Relevant GSP Section	Comment Response
CSPA-8	While the GSP gestures towards impacts on surface water users and environmental users (Draft GSP at p. 250), it fails to analyze "when and where" impacts on those users become significant and unreasonable (SGMA Regs. § 354.26, subd. (b)(1).) Instead, by pegging the definition to conditions in 2014—a historic drought year in the midst of a multi-year drought—the GSP simply assumes that any greater depletions are significant and unreasonable, while smaller depletions are not. This logic ignores the text of SGMA and the regulations, both of which require linking groundwater conditions with the "effects" of those conditions, and determining when those "effects" become significant and unreasonable. (See § 10721, def. (x)(6), SGMA Regs. § 354.26, subd. (b).) The text of the regulations and the statute requires separately analyzing "depletions" and their "effects"; to do otherwise renders language in governing laws surplusage. (See Moyer v. Workmen's Comp. Appeals Bd. (1973) 10 Cal.3d 222, 230; Bernard v. Foley (2006) 39 Cal.4th 794, 811.) The GSP's logic takes an improper shortcut by defining "undesirable results" solely by reference to a modeled depletions figure, without any significant consideration of what effects those depletions have on streamflows at key migration periods, temperatures, surface water quality, or other relevant conditions.	13.6	Refer to General Response #2.

Comment Reference	Comment	Relevant GSP Section	Comment Response
CSPA-9	It is not enough to assume, as the Draft GSP does, that any depletion pre-2015 need not be addressed. (See Draft GSP at pp. 248-49; see § 10727.2, subd. (b)(4).) 2014 was a uniquely dry year, with the lowest precipitation in the 2003-2023 period.20 (Draft GSP at p. 185.) Yet groundwater extraction was above-average in 2014, implying that depletions caused by groundwater use were likely high that year. (See Draft GSP at Table WB-2.) Without analyzing the instream effects of pre-2015 depletions, the GSAs do not have the information to know whether those depletion levels were significant and unreasonable or not. Further, the GSP's own logic does not hold up. The Draft GSP states that "the Undesirable Results definition appropriately focuses on whether ISW has been depleted as a result of water management actions since the enactment of SGMA on January 1, 2015." (Draft GSP at p. 249.) But such an inquiry does not depend on depletion levels prior to January 1, 2015: the appropriate question is whether depletion levels are having a significant and unreasonable effect on beneficial uses.	13.6	Refer to General Response #2.

Comment Reference	Comment	Relevant GSP Section	Comment Response
CSPA-10	The failure to analyze the effects of the Draft GSP's undesirable results definitions extends to the discussion of Projects and Management Actions (PMAs) in Chapter 15 and Plan Implementation in Chapter 16. None of the PMAs discuss in any detail whether they will have negative effects on conditions in interconnected surface waters. And this is despite the fact that several may have direct effects on surface flows. These include the Del Puerto Creek reservoir project, the diversion of flows to recharge from the Chowchilla Bypass (along with infrastructure allowing additional diversions at lower flows) and reactivation of the Aliso Canal, the North Grassland Water Conservation and Water Quality Control Project, Los Banos Creek diversion projects. (Draft GSP at Table PMA-1.) All of these projects involve new or changed diversions from surface water systems, yet none analyze their effects on streamflows or the species that depend on such flows.	15.3	It is important to emphasize that SGMA requires GSAs to address the depletion of ISWs caused by groundwater pumping in the Basin. Most Projects and Management Actions (P/MAs) developed under the GSP intend to provide additional supply and recharge, both leading to improving conditions for ISWs. Impacts to surface water conditions due to projects that do not involve direct increases in groundwater use should be addressed outside the requirements of SGMA through existing regulations for surface water diversion and recharge permitting, CEQA and NEPA, etc. All projects outlined in the GSP will follow the appropriate regulatory and permitting processes as indicated in the GSP. None of the projects outlined in the GSP are projected to impact groundwater pumping in the Basin in a manner that causes significant and unreasonable impacts in the depletion of ISWs and their beneficial users and uses.
CSPA-11	And Chapter 16's Pumping Reduction Plan, while it contains specific plans for overdraft and for when the MTs for groundwater levels, water quality, and subsidence are exceeded, contains no plan for exceedance of the ISW MT. Nor does it provide any analysis of whether the other implementation activities will protect ISWs and beneficial uses of surface water in any way.	16.1	Refer to General Response #2. The GWL-MT component of Pumping Reduction Plan intends to avoid occurrence of groundwater level MTs in the Basin through targeted pumping reduction. Groundwater level MTs are set at 2015 levels and are protective of beneficial users and uses as required by SGMA and explained in General Response #2.
CSPA-12	GSP does not set protective MTs for depletion of ISWs required under SGMA.	13.6	Refer to General Response #2.

Comment Reference	Comment	Relevant GSP Section	Comment Response
CSPA-13	GSAs are required to include "monitoring and management of . . . changes in surface flow and surface water quality that . . . are caused by groundwater extraction in the basin," when such conditions are present in the basin.24 (§ 10727.2, subd. (d)(2).) The San Joaquin River is listed under Clean Water Act section 303(d) as impaired for temperature. Yet the GSPs contain almost no discussion of water temperature or the effects of groundwater management on river temperatures, nor do they contain a plan to do so. Moreover, section 10727.2, subdivision (f) requires monitoring "designed to detect" "flow and quality of surface water that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin." This section further emphasizes the need for surface water temperature and flow management monitoring. Yet the Monitoring Network chapter makes no mention of surface water temperature monitoring. This violates SGMA	14.2	Temperature impairment is a complex issue that is not solely caused by the depletion of ISWs due to groundwater pumping in the Basin and not intended to be resolved under SGMA. It needs to be comprehensively addressed under the appropriate regulatory program. The GSP complies with SGMA requirements by avoiding significant and unreasonable impacts on beneficial users and uses of surface waters caused by Basin pumping. This is achieved by maintaining both groundwater levels and ISW depletion volumes caused by pumping at 2015 levels, consistent with the intent of SGMA. Furthermore, in interpreting this regulation, DWR's BMP guidelines for monitoring networks and identification of data gaps (BMP Guidelines) do not indicate that surface water quality monitoring is required.

Comment Reference	Comment	Relevant GSP Section	Comment Response
CSPA-14	The Draft GSP contains no public trust analysis or findings.	8.7, 13.6, 16.1	The GSAs are empowered to act under SGMA and its associated regulations. SGMA clearly outlines a staged process to achieve full compliance by 2040. The public trust doctrine is a separate affirmative duty imposed by common law on the state to "take the public trust into account in the planning and allocation of water resources, and to protect the public trust uses whenever feasible." (National Audubon Society v. Superior Court (1983) 33 Cal.3d 419, 446., fn. omitted.) The public trust doctrine protects navigable waterways, the lands lying beneath them, and extends to actions in non-navigable waterways that negatively affect public trust resources, such as groundwater extractions that deplete interconnected navigable surface water. (See e.g., Environmental Law Foundation v. State Water Resources Control Bd. (2018) 26 Cal.App.5th 844.) However, the public trust doctrine does not impose a strict "procedural matrix" for consideration, which is left to the discretion of the state. (See Monterey Coastkeeper v. Central Coast Regional Water Quality Control Board (2022) 76 Cal.App.5th 1, 21 [citing Citizen's for East Shore Parks v. State Lands Com. (2011) 202 Cal.App.4th 549, 576].)

Comment Reference	Comment	Relevant GSP Section	Comment Response
			The GSP proposes a clear plan and adaptive management measures to prevent undesirable results for beneficial users of surface water caused by the depletion of ISWs due to pumping. Furthermore, the SWRCB's Draft Staff Report for Kaweah Subbasin clarifies the allocation of the public trust duties between the GSAs and the SWRCB: "GSPs that meet SGMA's requirements will assist in evaluating impacts to public trust resources, such as fish and wildlife beneficial uses, because they will include a physical description of groundwater-surface water interaction in the basin and, if applicable, monitoring and management of changes in surface flow and surface water quality caused by groundwater extraction in the basin (Wat. Code, § 10727.2, subds. (a)(2), (d)(2))." Therefore, the analysis provided in the GSP aligns with the requirements of the public trust doctrine, and a separate analysis is not necessarily required.

Comment Reference	Comment	Relevant GSP Section	Comment Response
AKT-1	AKT is in general agreement with the Draft GSP's findings and supports its lack of explicit groundwater pumping restrictions in the Delta-Mendota Subbasin's Upper Aquifer. AKT agrees that groundwater levels in the Upper Aquifer have stabilized over recent years, with several overall increases. AKT also agrees that each Groundwater Sustainability Agency (GSA) operating within the Delta-Mendota Subbasin should determine and adopt the technical framework specific to that GSA's or GSA Group's subbasin(s), under which the GSAs collectively will achieve the minimum overdraft reduction for each principal aquifer. Furthermore, AKT agrees that the Upper Aquifer requires far fewer overdraft reductions than the Lower Aquifer and that those reductions could be met by measures other than pumping reduction. AKT supports the GSP approach to prioritizing municipal use of groundwater, as reflected in footnote 57 in Chapter 16 of the Draft GSP.	8, 16.1.1.2	Comment acknowledged.

Comment Reference	Comment	Relevant GSP Section	Comment Response
FWA-1	GSP should have a figure or figures that highlight the areas of the DMC that have experienced historical/recent subsidence and these areas should be noted in the narrative text of this section, to the extent information is available.	8.6	To the extent this information is available, changes have been made to the text and figures. A key map has been added to Figure GWC-44 and Figure GWC-45 to show areas of the DMC that have experienced historical/recent subsidence. Canals and Aqueducts, including DMC, are shown on basin-wide subsidence figures (Figure GWC-43 and Figure GWC-48). The GSI Subsidence Master Plan has been included as an appendix in the GSP, and it is discussed in Section 8.6.3 of the GSP. The GSI Subsidence Master Plan formed the basis for the Representative Monitoring Network (Chapter 14) for land subsidence, the Projects and Management Actions (P/MAs) (Chapter 15), and the Pumping Reduction Plan (Chapter 16) to address subsidence within the Basin caused by pumping within the Basin.
FWA-2	Additional information should be obtained from the San Luis & Delta-Mendota Water Authority (SLDMWA) and the United States Bureau of Reclamation (USBR) in order to establish a baseline condition for the current reductions in the conveyance capacity of the DMC in terms of specific segments of the DMC (as opposed to the generalized statement in the Section 8.6 that "Subsidence within the Basin has reduced flow capacity on the DMC by as much as 1,000 cubic feet per second.")	8.6	Draft EA/IS provides estimates of reduction in flow in 2020 from design flows in Figure 2.1 and in Figure 1 of Appendix D. The figures have been cited to provide information.
FWA-3	Clarify the scope, status and timing of the proposed DMC capacity correction project and relationship to the proposed subsidence minimum threshold.	13.5	Noted and clarification have been provided to the extent possible and based on available information.

Comment Reference	Comment	Relevant GSP Section	Comment Response
FWA-4	Reconsider the proposal to set a two-foot minimum threshold for land subsidence as applicable to the entire DMC.	13.5	Refer to General Response #3.
FWA-5	Refine critical infrastructure subsidence management actions and mitigation measures based on further review and reconsideration of the MT for subsidence along the DMC.	16.1	Comment noted.
FWA-6	Refine the proposal to set groundwater level minimum thresholds at or above 2015 groundwater levels	13.1	Comment noted. Refer to CWC § 10727.2(b)(4): "The plan may, but is not required to, address undesirable results that occurred before, and have not been corrected by, January 1, 2015." The SWRCB has concurred that maintaining water level MTs at 2015 water levels is considered sufficiently protective for the other sustainability indicators. Specifically, per the SWRCB Staff Report on Tulare Lake, "Setting groundwater level MTs at or above 2015 groundwater elevations will avoid undesirable results for other Sustainability Indicators beyond undesirable results that occurred before, and had not been corrected by, January 1, 2015." (SWRCB, 2024)
FWA-7	Change subsidence measurement to be based on total subsidence not just inelastic subsidence	14.2	Comment noted.

Abbreviations:

AFY = Acre-Foot per Year
BMP = Best Management Practice
CEQA = California Environmental Quality Act
CFS = Cubic Feet per Second
CSPA = California Sportfishing Protection Alliance
CWC = California Water Code
DMC = Delta-Mendota Canal
DWR = California Department of Water Resources
FWA = Friant Water Authority
GSA = Groundwater Sustainability Agency
GSP = Groundwater Sustainability Plan
GWL = Groundwater Level
ISW = Interconnected Surface Water
MT = Minimum Threshold
NEPA = National Environmental Policy Act
P/MAs = Projects and Management Actions
SMCs = Sustainable Management Criteria
SWP = State Water Project
SWRCB = State Water Resources Control Board
UR = Undesirable Results
USBR = United States Bureau of Reclamation

5.5.4 Communication

☑ 23 CCR § 354.10(d)

Outreach and educational activities were conducted at the Basin, GSA Group, and GSA level throughout the GSP development process. This section describes the noticing and outreach conducted at the Basin-level for GSP development.

5.5.4.1 Decision-Making Process

☑ 23 CCR § 354.10(d)(1)

The Basin MOA outlines the responsibilities of all parties (i.e., GSA Groups and GSAs) in the Basin, including decision-making protocol and voting structure. The Coordination Committee voting structure is discussed in **Section 3.2**.

During GSP development, the Basin Ad-hoc Technical Subcommittee was charged with coordinating implementation of the required technical elements of the GSP (e.g., water budgets, monitoring networks), and providing recommendations to the Basin Coordination Committee. The Coordination Committee took actions and approved recommendations and work products and provided direction to the Basin Ad-hoc Technical Subcommittee and other ad hoc committees.

In general, the coordinated decision-making process included developing agendas for each meeting of the Basin Coordination Committee and for each Basin Ad-hoc Technical Subcommittee meeting. The agendas were developed in concert with the Basin Ad-hoc Technical Subcommittee and the respective representatives of each GSA Group. Agenda items were either educational, informational, or required direction or decision. Meeting agendas were posted on the Basin website for public access. Agendas and meeting materials (including handouts, presentations, and minutes) were provided at the meetings, via calendar invitations, and to the interested parties email list.

5.5.4.2 Public Engagement Opportunities

☑ 23 CCR § 354.10(d)(2)

The Coordination Committee and individual GSA representatives encouraged public input throughout the development of the GSPs. As described above and summarized below, the Basin developed a four-pronged approach to stakeholder communications and offered the following opportunities for public engagement throughout GSP development. **Appendix E** contains a complete record of public engagement opportunities.

- **Public Meetings**: Open meetings were held as recorded in **Appendix E** and included Basin Coordination Committee Meetings, GSA Board Meetings, and Northern and Central Delta-Mendota Region Management Committee Meetings (**Section 5.5.2**).
- **Stakeholder Workshops and Education**: The Basin, in partnership with several non-governmental organizations (NGOs), held several workshops and educational programs to increase public

awareness and knowledge of SGMA. These efforts included informational stakeholder workshops, the 2024 WLI, and the SHE Community Water Needs Assessment (**Section 5.5.2.2**).

- **Direct Outreach:** GSA staff made direct contact with community representatives to encourage their participation in the GSP development process. Outreach efforts included newsletters, direct mail, handout materials, or informational emails to provide updates on GSA activities (**Section 5.5.2.3**). Additionally, the GSAs led several tours for SWRCB members and staff to provide additional context on the challenges within the Basin and the efforts GSAs have been making to achieve sustainability.
- **DWR's Facilitation Support Services**: In late 2023, Subbasin GSAs took additional steps to improve public outreach during the process of developing a single GSP for the Subbasin. The first step was to apply for Facilitation Support Services funds (FSS) through DWR. The FSS funds were primarily used to set up and conduct public outreach meetings in the Subbasin to discuss the proposed single GSP development with interested stakeholders.

In addition to the engagement opportunities provided above, the public was given opportunity to comment on the Revised 2022 GSPs, submitted in July 2022. This GSP has taken into considerations public comments received from 2020 to 2022 (see **Section 5.5.3**) and a public draft was posted on the Basin website for public review and comment.

5.5.4.3 Stakeholder Involvement

☑ 23 CCR § 354.10(d)(3)

As discussed above, the GSAs developed a SGMA Communications Plan to use as a framework for conducting the stakeholder outreach and engagement activities described in this document. The Communications Plan is included as **Appendix F**.

5.5.4.4 Public Notification

☑ 23 CCR § 354.10(d)(4)

The Basin conducted targeted outreach and engagement to hard-to-reach communities, interested parties, and stakeholders. Outreach efforts have included updating the Basin website, newsletters, direct mail, or informational emails to provide updates on GSA activities, as described in **Section 5.5.2.3**. Records outreach conducted both Basin-wide and by individual GSAs are listed in **Appendix E**. This included outreach to the following stakeholder types:

- *Agricultural Interests:* Agricultural stakeholders in the Basin include agricultural well operators, growers, ranchers, farmworkers, and agricultural landowners. Strong agricultural representation exists within the leadership of the GSAs. To augment direct outreach being conducted by individuals GSAs, Basin representatives also coordinated closely with ILRP Coalitions and local

county farm bureaus to disseminate information related to GSP development and public workshops.

- *School Districts:* School districts are considered as both beneficial users of groundwater (for drinking water) and communication channels to disseminate information about SGMA and GSP development. GSA representatives directly contacted local school districts to notify them of the public workshops. Some schools also helped distribute informational materials and workshop flyers to their students and parents.
- *Industrial Interests:* There are many industrial interests in the Subbasin, including packaging and processing plants, mining industries, and other similar facilities that use groundwater in some fashion. The GSP Groups have identified these interests within their respective Plan areas and have disseminated information related to GSP development during individual outreach efforts.
- *Environmental/Conservation Interests:* Environmental and conservation interests in the Subbasin have been contacted and communicated with during GSP development. Specific related interest groups contacted during GSP development include The Nature Conservancy, the California Department of Fish and Wildlife, Audubon, and various sportsman clubs and wetland managers.
- *DACs/SDACs*: The GSAs followed best practices identified in Collaborating for Success: Stakeholder Engagement for Sustainable Groundwater Management Act Implementation (Community Water Center, 2015) and other guidance documents to engage DACs and SDACs. This included holding meetings in disadvantaged communities; holding meetings in the evening at known local venues, such as schools, civic centers, and community centers; translating fact sheets, meeting materials, and presentations into other languages; and providing interpreting services at all public workshops.
- *Other Interests*: Other potential groundwater users in the Basin (or those with groundwater-related interests) contacted during GSP development included the various counties in which the Basin lie and/or adjoin (including San Joaquin County and San Benito County), Caltrans, the DWR State Water Project Division of Operations and Maintenance, USBR, the U.S. Geological Survey, and the San Joaquin River Restoration Program.

5.5.5 Interagency Coordination

As discussed in **Section 3.2**, the GSAs ("Parties") in the Basin entered a MOA ("Agreement") (**Appendix D**), superseding the 2018 Coordination Agreement. The MOA reflects the GSAs' desire to adopt a single GSP for the Basin in response to DWR's Corrective Actions, and updates to the Basin governance structure to define seven GSA Groups to manage separate portions of the Basin. The MOA will take effect upon adoption of this GSP by all GSAs.

The Basin MOA covers the following topics:

1. Purpose and Key Principles of the Agreement, including:
    a. Compliance with SGMA
    b. Intention to Cooperate to adopt a single GSP for the Basin

c. Each party's rights
d. Participation Percentage (i.e., the share of Basin expenses allocated to GSA or GSA Group)
e. GSP Implementation, which will be carried out by each GSA within its jurisdictional boundaries

2. Role of SLDMWA, including:
    a. Agreement to Serve
    b. Fiscal Management by SLDMWA and Reimbursement to SLDMWA
    c. Termination of SLDMWA's Services
3. Coordination Committee, including:
    a. Governance Structure
    b. GSA Representation
    c. Non-entity Status
    d. Coordination Committee Officers
    e. Plan Manager
    f. Coordination Committee Authorized Actions and Limitations
    g. Subcommittees and Workgroups
    h. Coordination Committee Meetings
    i. Voting by Coordination Committee
4. Approval by Individual Parties
5. Powers Reserved to Parties
6. Exchange of Data and Information, including:
    a. Procedure for Exchange of Information
7. Monitoring Network[26]
8. Coordinated Data Management System
9. Adaptive Management Process
10. Modification of this MOA
    a. Addition of a Party
    b. Modification or Amendment of this MOA
    c. Amendment for Compliance with the Law

[26] The terms "shallow aquifer" and "deep aquifer" in the MOA refer to the Upper and Lower Aquifers, respectively.

11. Withdrawal, Term, and Termination
12. Procedures For Resolving Conflicts
13. General Provisions, including:
    a. Authority of Signers
    b. Governing Law
    c. Severability
    d. Counterparts
    e. Good Faith
14. Signatures of All Parties

Coordination During GSP Implementation

The MOA ensures that the multiple GSAs are working cooperatively and collaboratively to implement a single GSP for the Basin and demonstrates that the Basin will be sustainably managed to achieve the Basin's Sustainability Goal. The MOA will be updated as deemed necessary.

The Coordination Committee will continue meeting regularly following submittal of the GSP in order to develop the guidelines for, and coordinate implementation of, the GSP, including regular checks on the status of the Basin relative to the Sustainability Goal. The intent of the guidelines will be to outline processes that will ensure the GSAs are progressing toward the Basin Sustainability Goal, while meeting the Annual Reporting requirements or any other requirements agreed upon for purposes of coordination.

Agency Responsibilities

In meeting the terms of the MOA, all Parties (i.e., GSAs and GSA Groups) agree to work collaboratively to meet the objectives of SGMA and the MOA. Each Party to the MOA is a GSA and acknowledges that it is bound by the terms of the MOA as an individual party.

The Parties have established a Coordination Committee to provide a forum to accomplish the coordination obligations of SGMA. The decision-making processes of the Coordination Committee are discussed in **Section 5.5.4.1** above.

Exchange of Information

Timely exchange of information is a critical aspect of GSP coordination. All parties to the MOA have agreed to exchange public and non-privileged information through collaboration and/or informal requests made at the Coordination Committee level or through subcommittees designated by the Coordination Committee. To the extent it is necessary to make a written request for information to another Party, each Party designates a representative to respond to information requests and provides the name and contact information of the designee to the Coordination Committee. Requests may be communicated in writing and transmitted in person or by mail, facsimile machine, or other electronic means to the appropriate representative as named in the Agreement. The designated representative is required to respond in a reasonably timely manner. Nothing in the Agreement shall be construed to prohibit any Party from

voluntarily exchanging information with any other Party by any other mechanism separate from the Coordination Committee.

5.5.6 Interbasin Coordination

The SLDMWA, on behalf of the Northern Delta-Mendota Region and Central Delta-Mendota Region GSA Groups, and the SJREC GSA executed inter-basin data sharing agreements with Westlands Water District (the lead entity in the adjacent Westside Subbasin). The purpose of the agreement is to establish a set of common assumptions on groundwater conditions on either side of the boundary between the Westside Subbasin and the Delta-Mendota Subbasin to be used for the development of GSPs in support of implementation of SGMA. In this agreement, the parties agree to provide each other with recorded, measured, estimated, and/or simulated modeling data located within five (5) miles of the boundary between the Basin and the Westside Subbasin.

Data provided under the agreements are understood to be shared with consultants and other stakeholders in the Basin and Westside Subbasin, and that the information will be made public through the development and the supporting documentation of this GSP and the Westside Subbasin GSP. Other than publishing information for those purposes, neither Party will disclose the other Party's information to any third party, except if the other Party determines, at its sole discretion, the disclosure is required by law. Each Party may review preliminary results before publishing the information.

It is recognized that many of the Sustainability Indicators, notably groundwater quality, interconnected surface water, inelastic land subsidence and change in storage, are regional issues that may require future inter-basin discussions and coordination. GSAs within the Basin actively collaborate with the surrounding subbasins to demonstrate/confirm the subbasins' desires to coordinate during GSP implementation. These coordination efforts and discussions will allow for thoughtful consideration of the intent, structure, and need for future coordination with respect to data collection, reporting, regular meetings, and updates prior to annual reporting.

The Points of Contact (POCs) for the groundwater basins in the San Joaquin Valley have a regularly scheduled quarterly meeting with DWR staff. These meetings are an opportunity for DWR to inform the POCs about SGMA-related topics and for the POCs to discuss topics of mutual interest, including interbasin coordination. Past meetings have also involved representatives from GSAs and stakeholders. For example, at the end of 2023, the POCs held a meeting with stakeholders to begin discussions on how to conduct interconnected surface water monitoring on a regional basis.

Table PA-5. Production Well Counts by Aquifer and Use

Well Use (a)	Domestic (b)			Public Supply			Other Production				Unknown				Total
Aquifer (c)	Upper	Lower	Unknown	Upper	Lower	Unknown	Upper	Lower	Composite	Unknown	Upper	Lower	Composite	Unknown	
GSA Well Inventory (d)	30	2	10	15	18	3	320	172	80	145	4	28	29	6	862
OSWCR Dataset (e)															
Wells with Production or Unknown Use	2,073	171	51	66	14	1	1,063	426	-	25	309	95	-	1,205	5,499
Wells with Production or Unknown Use, Screened (f)	1,967	161	49	53	14	1	897	372	-	23	150	94	-	1,205	4,986

Abbreviations

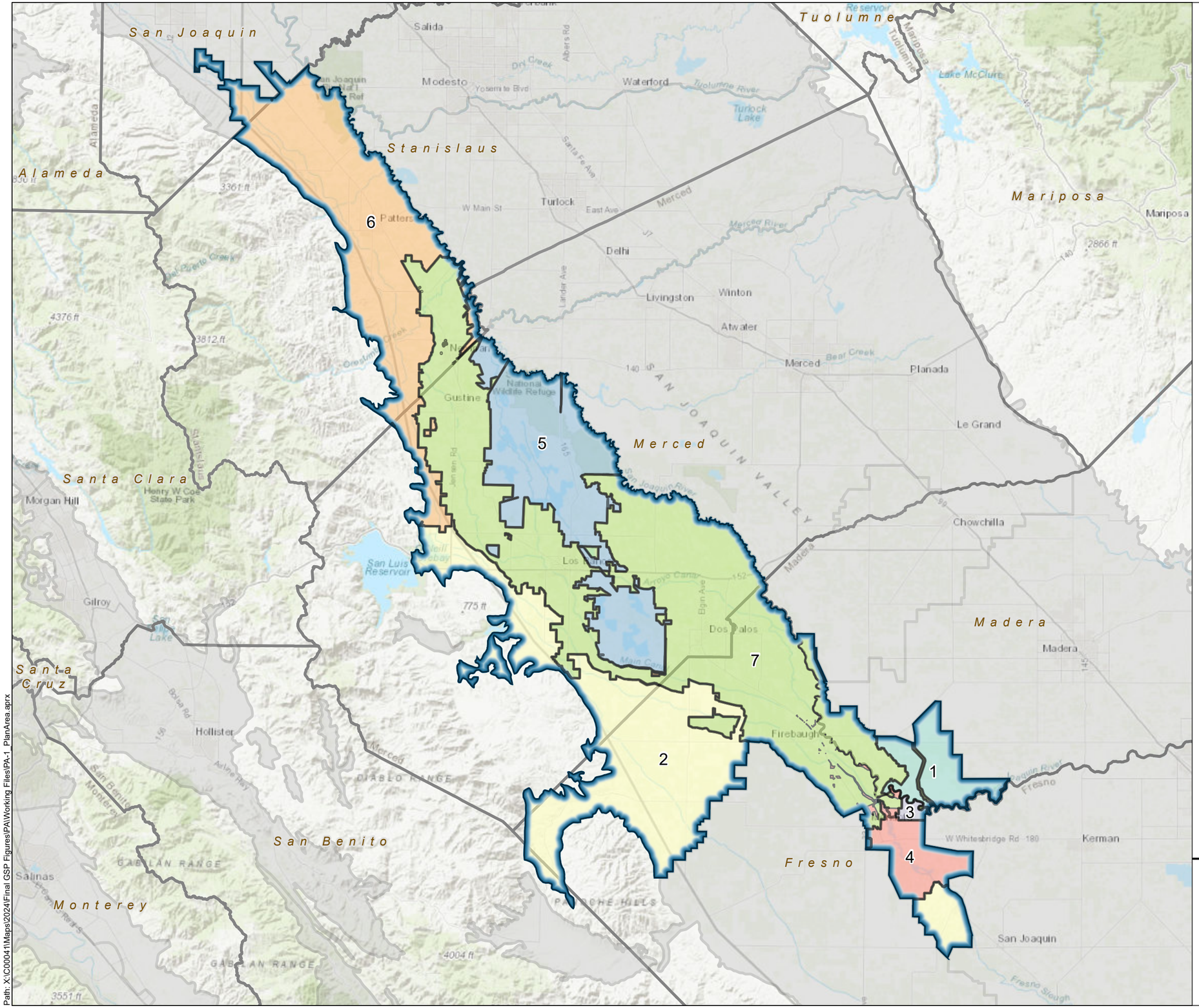
CWC = Community Water Center
DWR = California Department of Water Resources
ft bgs = feet below ground surface
GSA = Groundwater Sustainability Agency
OSWCR = DWR's Online System of Well Completion Reports

Notes:

a. Counts include known production wells and wells with unknown use types. Removed well types include monitoring, remediation, injection, and cathodic wells.
b. "Domestic" wells include wells designated for combined domestic/irrigation use.
c. Aquifers were designated using the following methodology:
1. When neither bottom of screen depth nor total completed depth was recorded, the aquifer was designated as "Unknown" (see Note D).
2. Wells with bottom of screen depth and/or total completed depth recorded but lie outside of the extent of the Corcoran clay were designated as Upper Aquifer.
3. When bottom of screen depth was recorded, the bottom of screen depth was compared to the bottom depth of the Corcoran clay. Wells with bottom screen depth above the bottom depth of the Corcoran clay were classified as "Upper Aquifer", and wells with bottom screen depth below the bottom depth of the Corcoran clay were classified as "Lower Aquifer".
4. When bottom of screen depth was not recorded but total completed depth was recorded, the aquifer was designated by comparing 80% of the total completed depth to the bottom depth of the Corcoran clay.
d. GSA-provided aquifer designations were used to identify composite wells and when well construction information was not available.
e. The following assumptions were made when processing and cleaning the OSWCR dataset.
- A screen depth or total depth of 0 feet reflects a lack of data, not a depth of 0 feet.
- Recorded depths for top of screen should be shallowest, followed by bottom of screen, and then total completed depth. If any of these are out of order, they were assumed to have been accidentally switched during logging or digitization and were reordered.
As a result of this methodology, there were no wells from the OSWCR database classified with aquifer type as "Composite".
f. The following screening process was developed to exclude records that are likely to have been destroyed, replaced, or are not used for groundwater extraction:
- Remove wells with "Unknown" use shallower than 50 ft bgs (determined by total completed depth or bottom screen depth, when available).
- Remove wells constructed prior to 1970, consistent with CWC's Drinking Water Tool.

Sources:

1. GSA Well Inventory, provided by the Subbasin GSAs
2. DWR's OSWCR Dataset, dated October 2023 (https://data.cnra.ca.gov/dataset/well-completion-reports/resource/8da7b93b-4e69-495d-9caa-335691a1896b)



Legend

- Delta-Mendota Subbasin (DWR Basin No. 5-022.07)
- California Groundwater Basin
- County Boundary

GSA Groups

1. Aliso Water District
2. Central Delta-Mendota
3. Farmers Water District
4. Fresno County
5. Grassland Water District
6. Northern Delta-Mendota
7. San Joaquin River Exchange Contractors

Abbreviations

DWR = Department of Water Resources
GSA = Groundwater Sustainability Agency
GSP = Groundwater Sustainability Plan
MOA= Memorandum of Agreement
SGMA = Sustainable Groundwater Management Act

Notes:

1. All locations are approximate.
2. GSA Group boundaries are defined per the Delta-Mendota Subbasin MOA and are consistent with the grouping of GSAs that authored the six original GSPs submitted in January 2020.
3. If accommodation or alternative format is needed for this figure, please contact the Plan Manager for assistance.

Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 8 September 2023.
2. DWR Groundwater basins are based on the boundaries defined in California's Groundwater Bulletin 118 - Final Prioritization, dated February 2019.
3. GSA boundaries obtained from DWR's SGMA Data Viewer, dated 25 August 2023.

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Plan Area

Delta-Mendota Subbasin
July 2024
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Figure PA-1

eki environment & water

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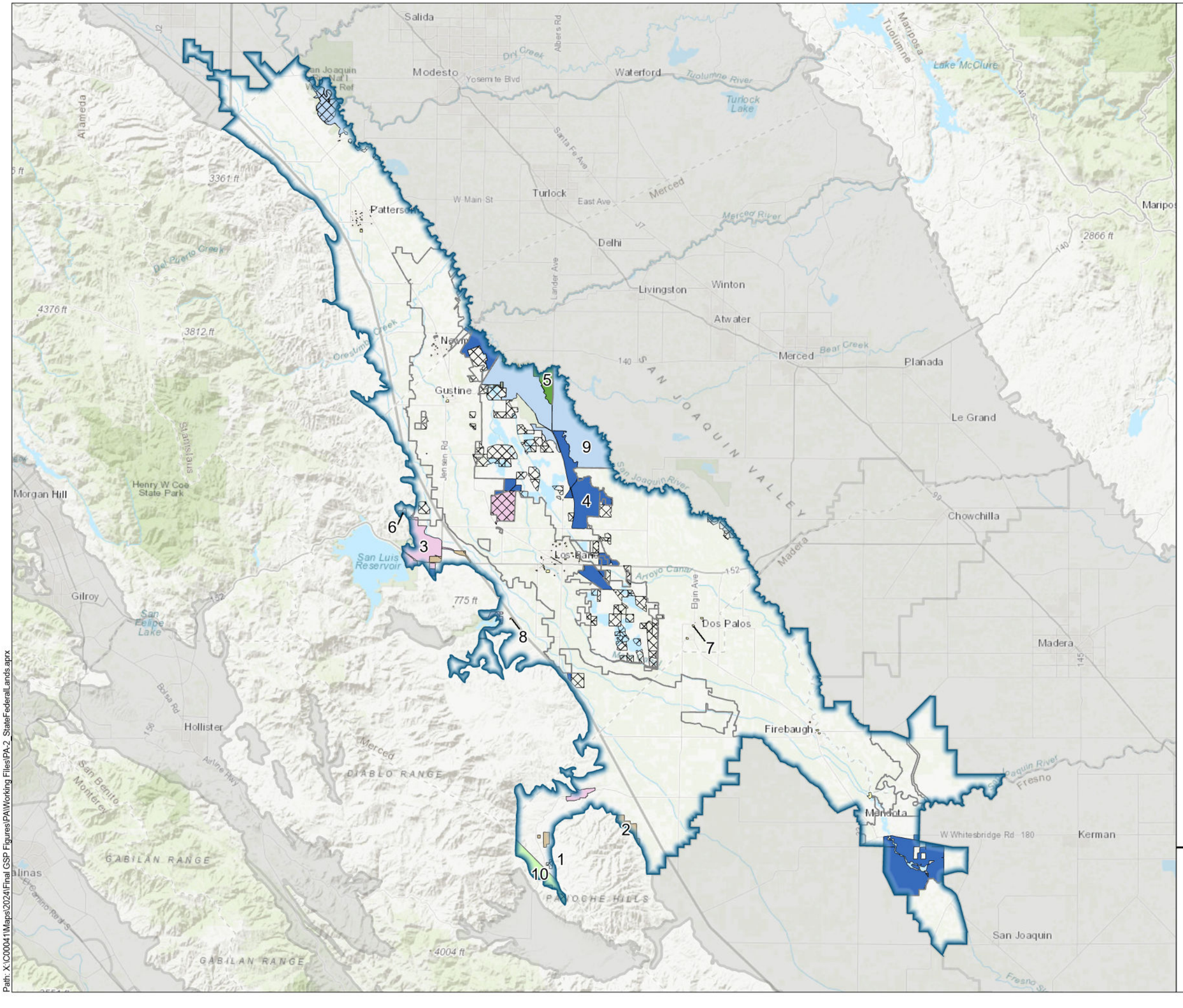

Legend

- Delta-Mendota Subbasin (DWR Basin No. 5-022.07)
- California Groundwater Basin
- GSA Group Boundary
- California Conservation Easement Database
- 1 Bureau of Indian Affairs
- 2 Bureau of Land Management
- 3 Bureau of Reclamation
- 4 CA Dept. of Fish and Wildlife
- 5 CA Dept. of Parks and Recreation
- 6 Department of Defense
- 7 Local Government
- 8 Other Federal Lands
- 9 US Fish and Wildlife Service
- 10 HCP Area

Abbreviations

CA = California
CCED = California Conservation Easement Database
Dept. = Department
DWR = California Department of Water Resources
GIS = Geographic information system
GSA = Groundwater Sustainability Agency
HCP = Habitat Conservation Plan
SGMA = Sustainable Groundwater Management Act
CDFW = California Department of Fish and Wildlife
US = United States
USDA = United States Department of Agriculture

Notes

1. All locations are approximate.
2. If accommodation or alternative format is needed for this figure, please contact the Plan Manager for assistance.

Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 8 September 2023.
2. DWR Groundwater basins are based on the boundaries defined in California's Groundwater Bulletin 118 - Final Prioritization, dated February 2019.
3. GSA boundaries obtained from DWR's SGMA Data Viewer, dated 25 August 2023.
4. CCED obtained from DWR's SGMA Data Viewer, dated 18th September 2023.
5. Other Federal and State Land Ownership data obtained from CA GIS Portal published by CA Department of Forestry and Fire Protection on 10th September 2023.
6. HCP Areas from the CDFW Open Data Portal.

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State and Federal Lands

Delta-Mendota Subbasin
July 2024
C00041.09

Figure PA-2

eki environment & water

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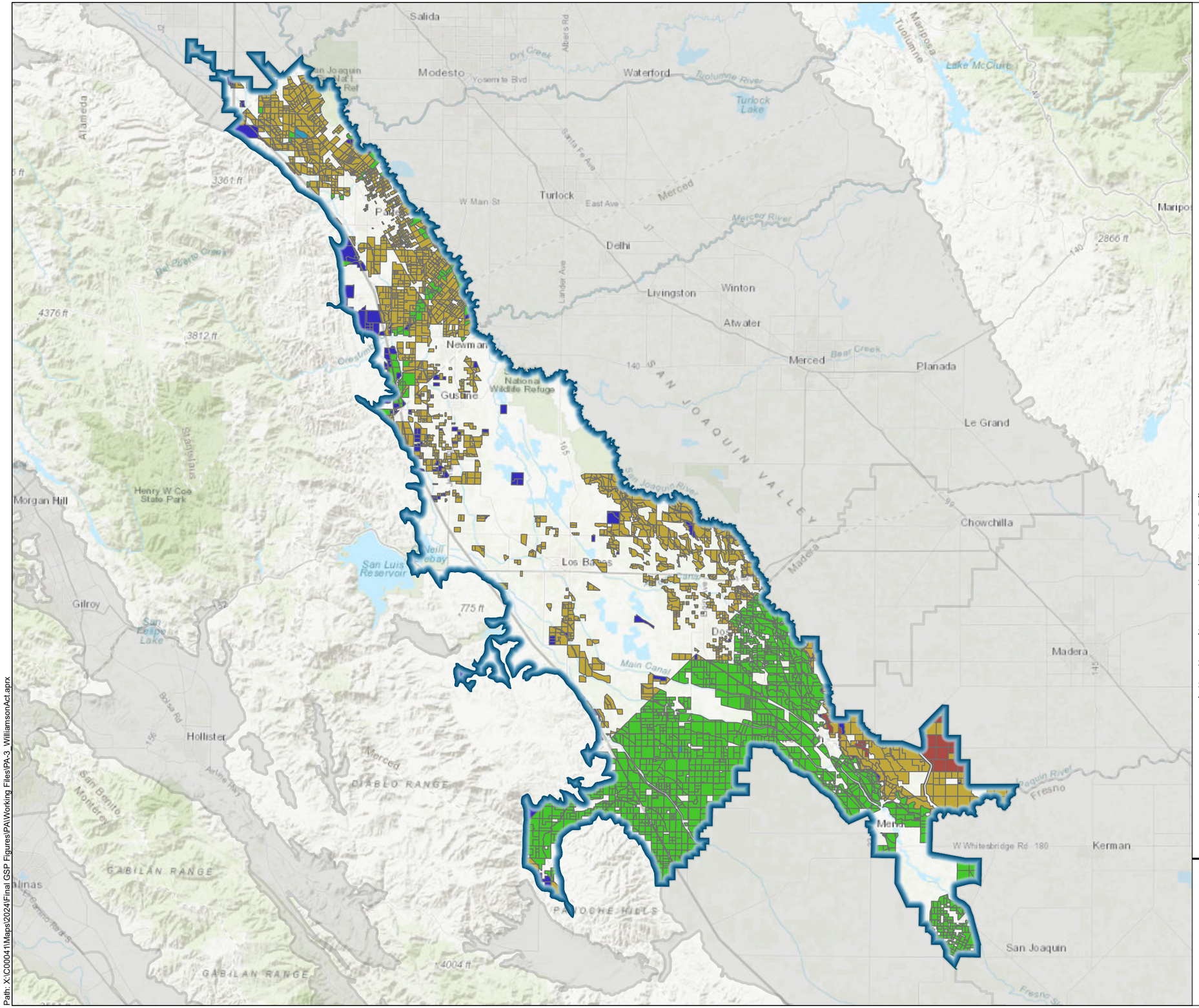

Legend

- Delta-Mendota Subbasin (DWR Basin No. 5-022.07)
- California Groundwater Basin

Williamson Act Contract Enrollment Status

- Farmland Security Zone
- Mixed Enrollment Agriculture Land
- Nonprime Agricultural Land
- Nonrenewal
- Prime Agricultural Land

Abbreviations

DWR = California Department of Water Resources
CA = California
GSA = Groundwater Sustainability Agency
SGMA = Sustainable Groundwater Management Act

Notes

1. All locations are approximate.
2. If accommodation or alternative format is needed for this figure, please contact the Plan Manager for assistance.

Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 8 September 2023.
2. DWR Groundwater basins are based on the boundaries defined in California's Groundwater Bulletin 118 - Final Prioritization, dated February 2019.
3. GSA boundaries obtained from DWR's SGMA Data Viewer, dated 25 August 2023.
4. Williamson Act Contract Areas obtained from the CA Department of Conservation GIS Portal.

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Williamson Act Contract Areas

Delta-Mendota Subbasin
July 2024
C00041.09

Figure PA-3

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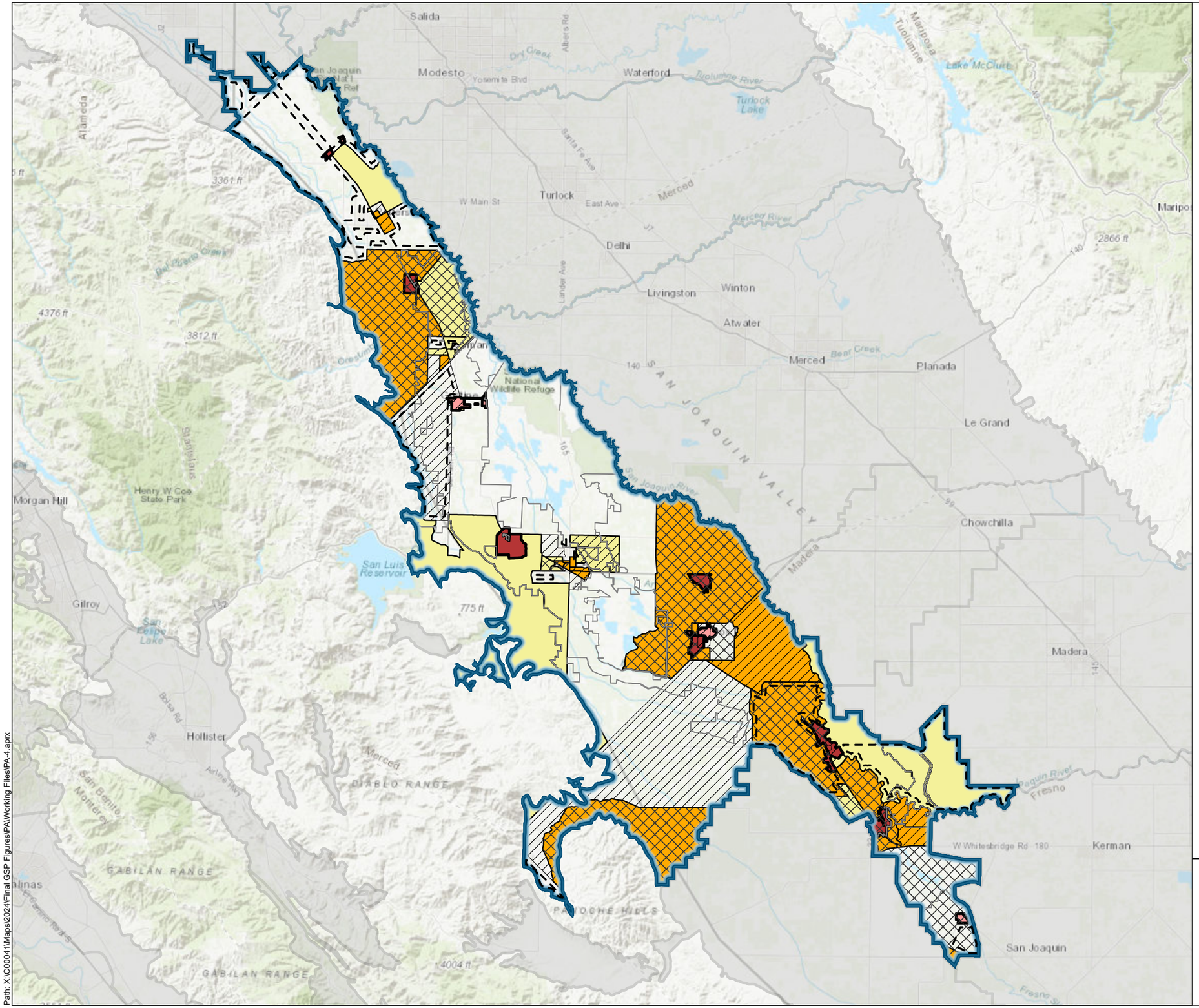

Legend

- Delta-Mendota Subbasin (DWR Basin No. 5-022.07)
- California Groundwater Basin
- GSA Group Boundary
- Economically Distressed Areas

Disadvantaged Community Census Tract

- Severely Disadvantaged Community
- Disadvantaged Community

Disadvantaged Communnity Census Place

- Severely Disadvantaged Community
- Disadvantaged Community

Disadvantaged Community Census Block Group

- Severely Disadvantaged Community
- Disadvantaged Community

Abbreviations

ACS = American Community Survey
CDP = Census Designated Place
CNRA = California Natural Resources Agency
DAC = Disadvantaged Community
DWR = California Department of Water Resources
GIS = Geographic information system
EDA = Economically Distressed Areas
GSA = Groundwater Sustainability Agency
MHI = Median Household Income
SDAC = Severely Disadvantaged Community
SGMA = Sustainable Groundwater Management Act

Notes

1. All locations are approximate.
2. DACS and SDACs determined using the 2016-2020 ACS and the 2020 MHI, except where no 2020 MHI data was available (see Note 3)
3. Westley CDP and Tranquility CDP were determined to be a SDAC and DAC, respectively, using 2021 MHI data.
4. If accommodation or alternative format is needed for this figure, please contact the Plan Manager for assistance.

Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 8 September 2023.
2. DWR Groundwater basins are based on the boundaries defined in California's Groundwater Bulletin 118 - Final Prioritization, dated February 2019.
3. GSA boundaries obtained from DWR's SGMA Data Viewer, dated 25 August 2023.
4. DAC by Census Tracts, Places, and Blocks obtained from the DWR GIS web portal on 29 August 2023.
5. EDAs (2018) obtained from the CNRA Open Data platform on 17 November 2023.

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Underrepresented Communities

Delta-Mendota Subbasin
July 2024
C00041.09

Figure PA-4

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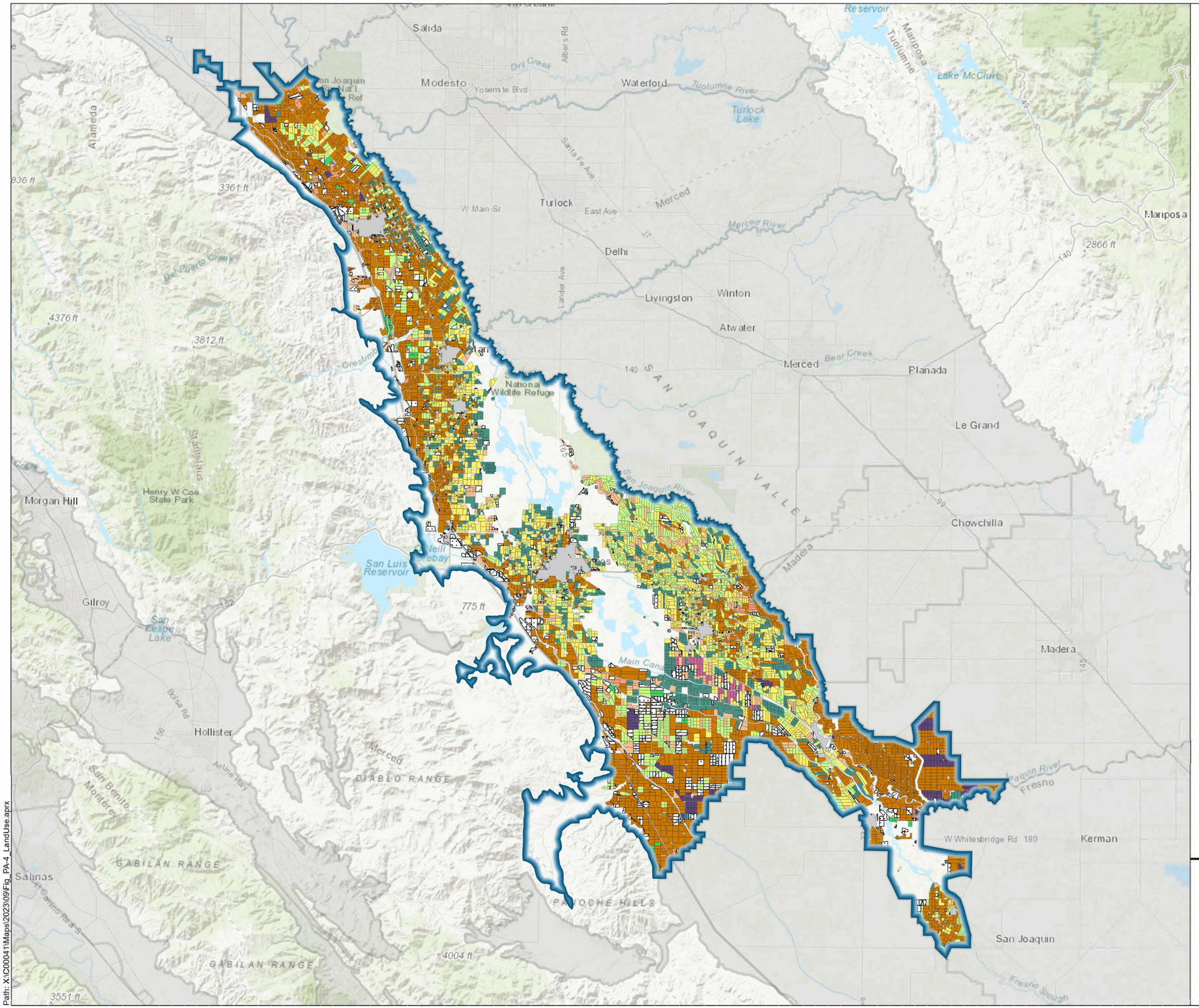

Legend

- Delta-Mendota Subbasin (DWR Basin No. 5-022.07)
- California Groundwater Basin

Land Use Type

- C | CITRUS AND SUBTROPICAL
- D | DECIDUOUS FRUITS AND NUTS
- F | FIELD CROPS
- G | GRAIN AND HAY CROP
- I | IDLE
- P | PASTURE
- R | RICE
- T | TRUCK NURSERY AND BERRY CROPS
- U | URBAN UNSPECIFIED
- V | VINEYARD
- X | UNCLASSIFIED (IRRIGATED/PARTIALLY IRRIGATED LAND)
- YP | YOUNG PERENNIAL

Abbreviations
DWR = California Department of Water Resources
WY = Water Year

Notes
1. All locations are approximate.
2. DWR land use data is collected at a regional-scale. Local land use surveys may exist that provide additional information about land use in the Delta-Mendota Subbasin
3. The DWR Land Use dataset primarily covers irrigated agriculture and additional areas of urban extents. Areas not covered by this dataset are likely covered by native vegetation, such as grasslands or wetlands.
4. If accommodation or alternative format is needed for this figure, please contact the Plan Manager for assistance.

Sources
1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 8 September 2023.
2. DWR Groundwater basins are based on the boundaries defined in California's Groundwater Bulletin 118 - Final Prioritization, dated February 2019.
3. Land use from DWR's Provisional Statewide Crop Mapping Dataset for WY 2021.

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Land Use

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Delta-Mendota Subbasin
July 2024
C00041.09

Figure PA-5

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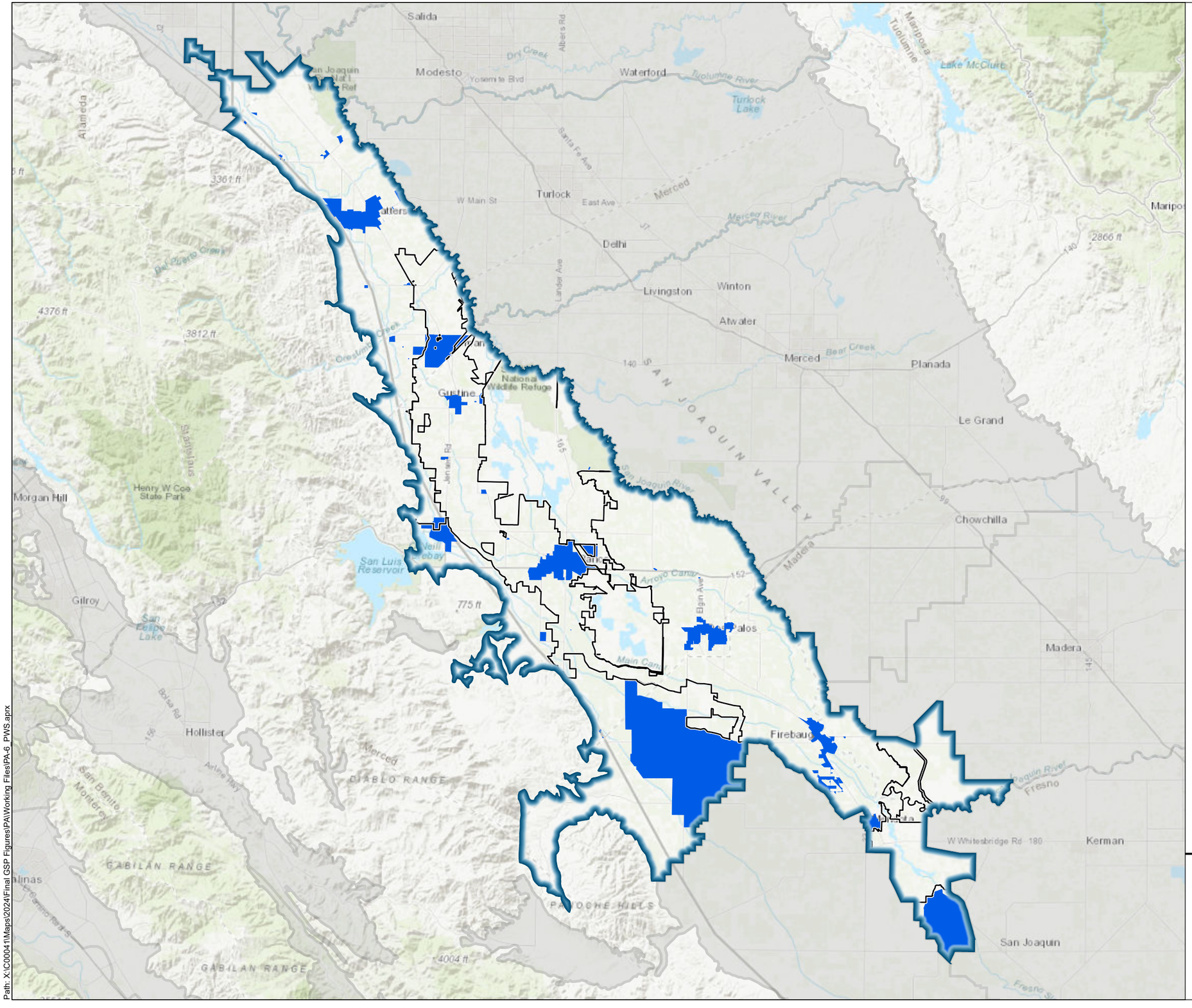

Legend

- Delta-Mendota Subbasin (DWR Basin No. 5-022.07)
- California Groundwater Basin
- GSA Group Boundary
- Public Water System

Abbreviations
DWR = California Department of Water Resources
GSA = Groundwater Sustainability Agency
SGMA = Sustainable Groundwater Management Act

Notes
1. All locations are approximate.
2. If accommodation or alternative format is needed for this figure, please contact the Plan Manager for assistance.

Sources
1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 8 September 2023.
2. DWR Groundwater basins are based on the boundaries defined in California's Groundwater Bulletin 118 - Final Prioritization, dated February 2019.
3. GSA boundaries obtained from DWR's SGMA Data Viewer, dated 25 August 2023.
4. Water Districts from DWR's i03 Water Districts dataset, obtained 16 February 2022.
5. Public Water Systems obtained from DWR's SGMA Data viewer on 8 September 2023.

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Public Water Systems

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Delta-Mendota Subbasin
July 2024
C00041.09
Figure PA-6

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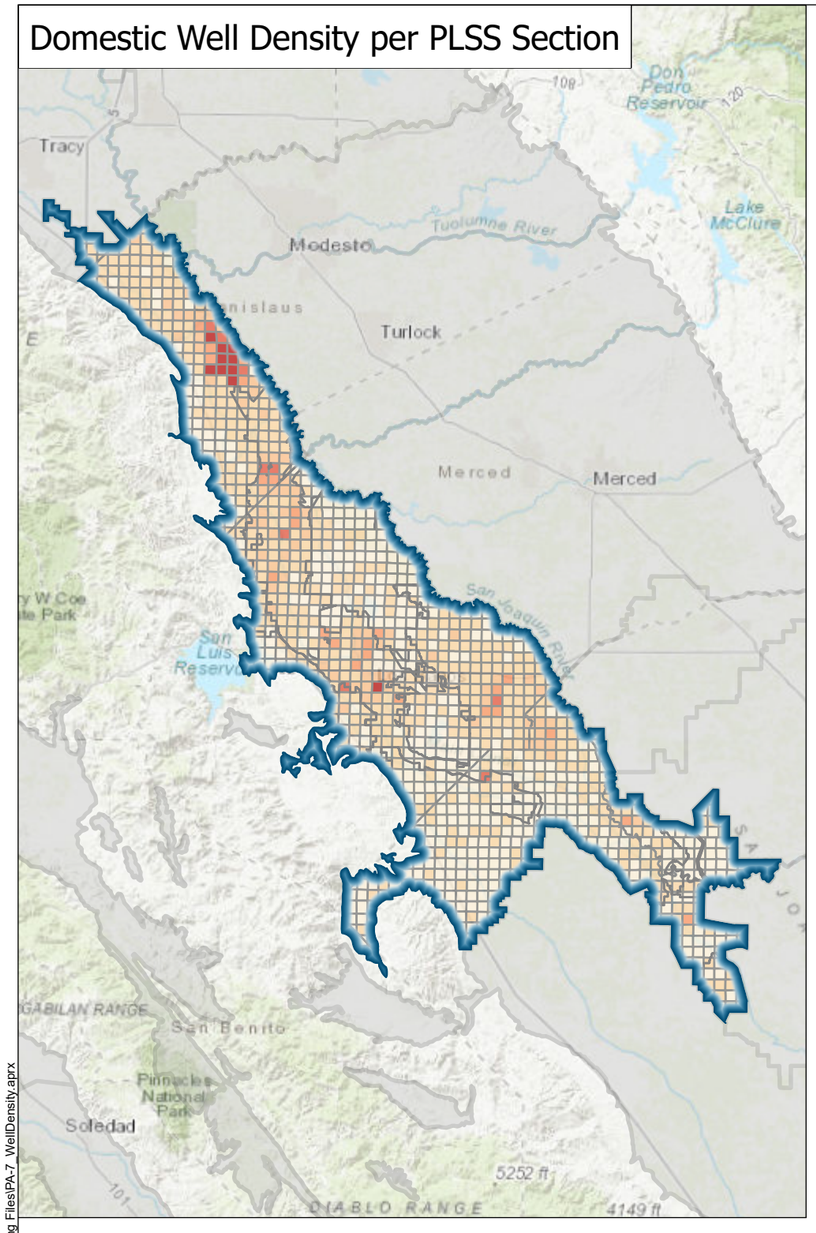
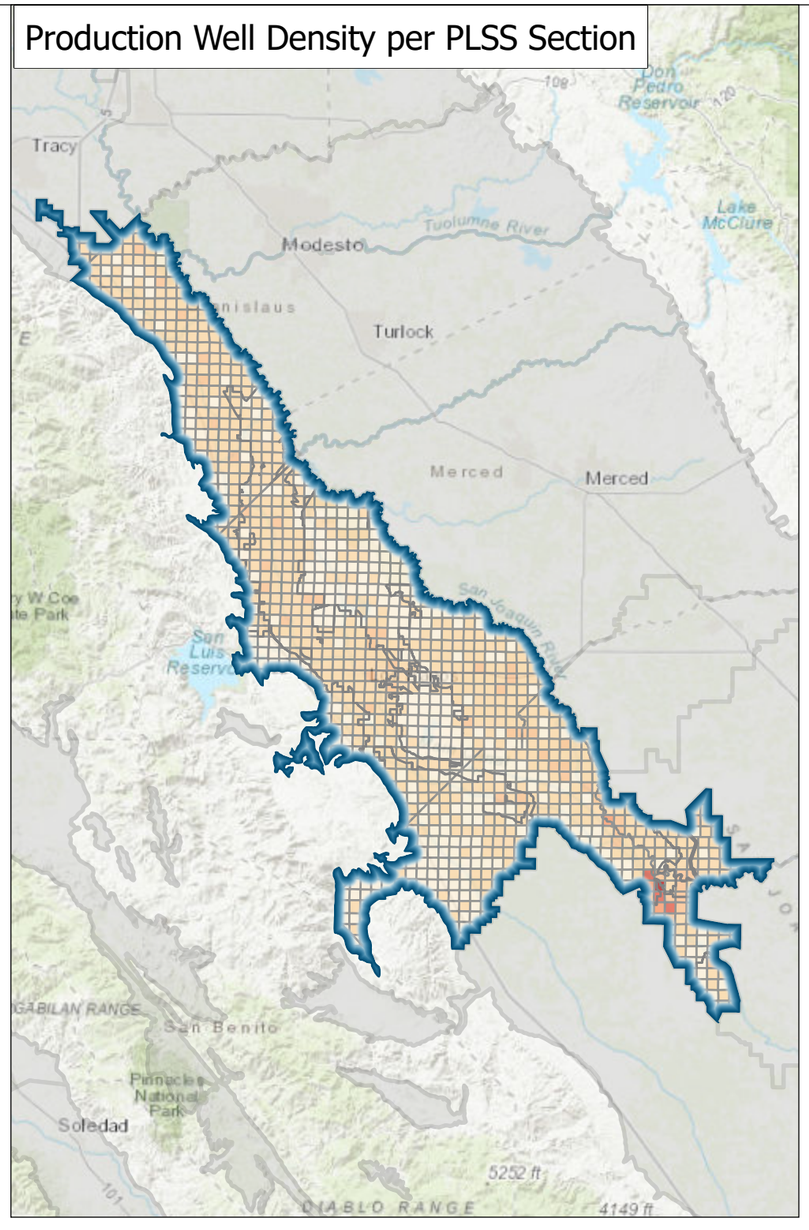
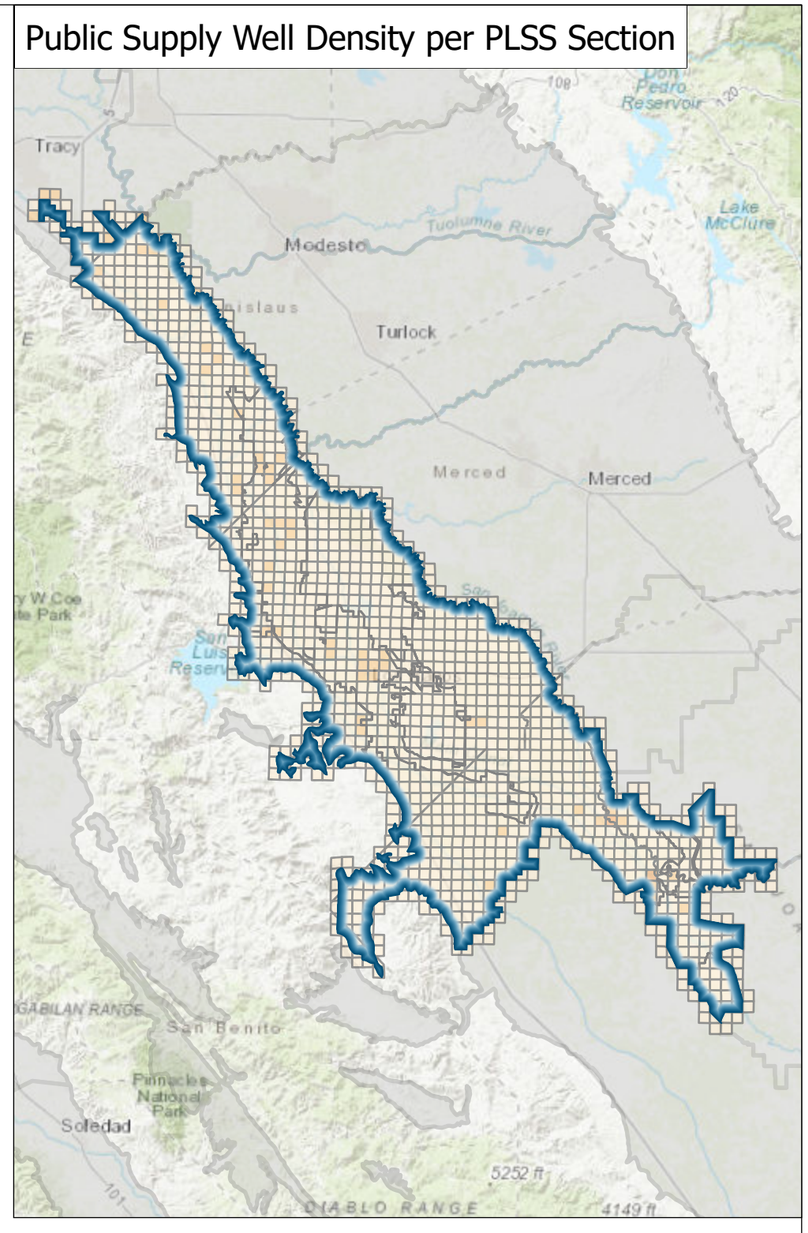
Domestic Well Density per PLSS Section



Production Well Density per PLSS Section



Public Supply Well Density per PLSS Section



Legend

- Delta-Mendota Subbasin (DWR Basin No. 5-022.07)
- California Groundwater Basin
- GSA Group Boundary

Well Density by PLSS Section

- 0
- 1 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- >20

Abbreviations
DWR = California Department of Water Resources
GSA = Groundwater Sustainability Agency
SGMA = Sustainable Groundwater Management Act
PLSS = Public Land Survey System

Notes
1. All locations are approximate.
2. If accommodation or alternative format is needed for this figure, please contact the Plan Manager for assistance.

Sources
1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 8 September 2023.
2. DWR Groundwater basins are based on the boundaries defined in California's Groundwater Bulletin 118 - Final Prioritization, dated February 2019.
3. GSA boundaries obtained from DWR's SGMA Data Viewer, dated 25 August 2023.
4. Well Count per square mile (PLSS section) from Well Completion Report Map Application, obtained on 14 September 2023, website: https://dwr.maps.arcgis.com/apps/webappviewer/index.html?id=181078580a214c0986e2da28f8623b37

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Well Density by PLSS Section from DWR Well Completion Reports Delta-Mendota Subbasin

Delta-Mendota Subbasin
July 2024
C00041.09

Figure PA-7

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Upper Aquifer

Lower Aquifer

Legend

Delta-Mendota Subbasin (DWR Basin No. 5-022.07)

Well Use

- Domestic
- Public Supply
- Other Production
- Unknown

Abbreviations

DWR = California Department of Water Resources
GSA = Groundwater Sustainability Agency

Notes

1. All locations are approximate.
2. Wells shown on this figure are field verified by the Subbasin GSAs.
3. If accommodation or alternative format is needed for this figure, please contact the Plan Manager for assistance.

Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 8 September 2023.
2. DWR Groundwater basins are based on the boundaries defined in California's Groundwater Bulletin 118 - Final Prioritization, dated February 2019.
3. Well locations provided by the Subbasin GSAs.

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GSA Well Inventory Upper and Lower Aquifer Wells

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Delta-Mendota Subbasin
July 2024
C00041.09

Figure PA-8

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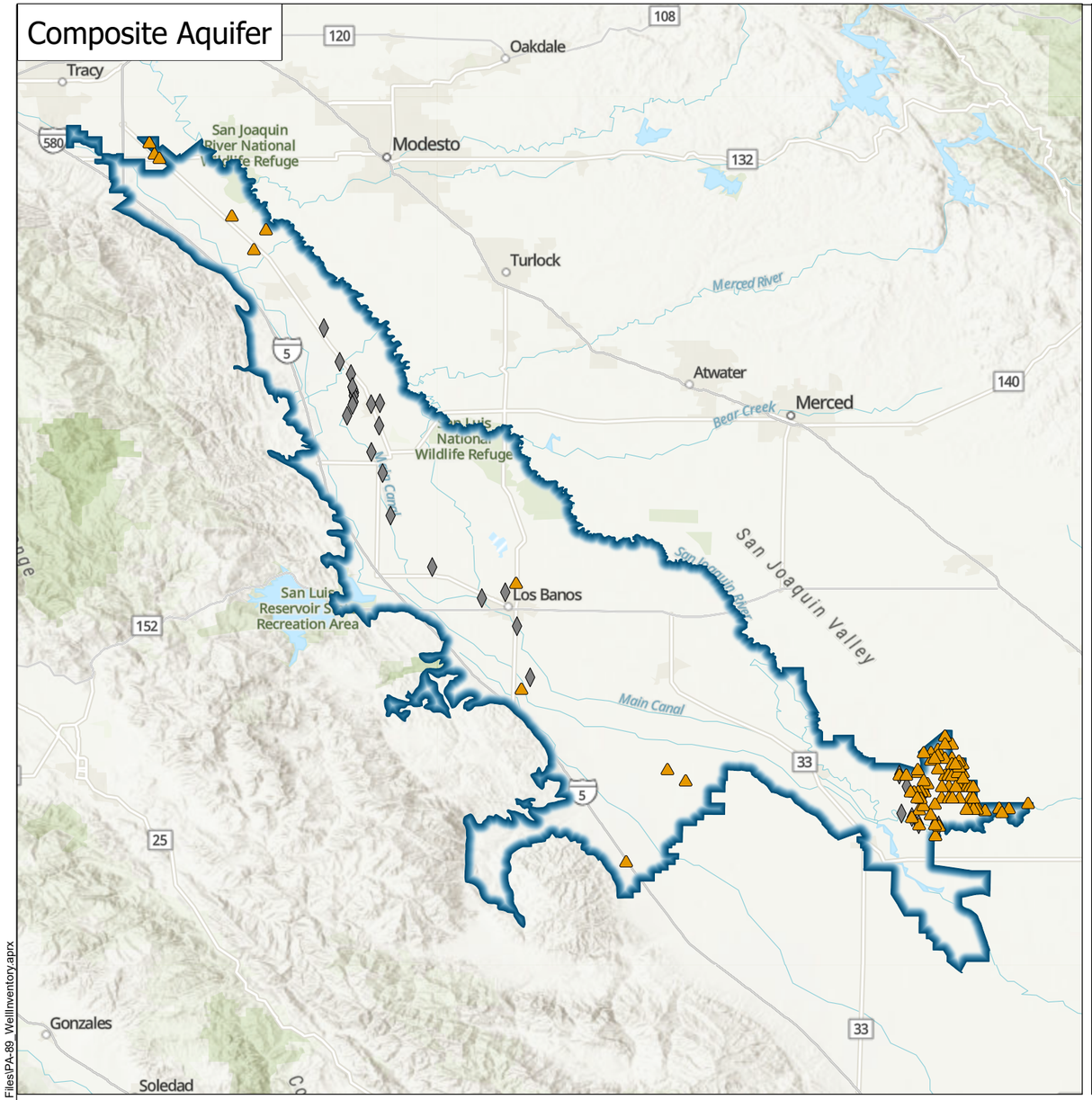

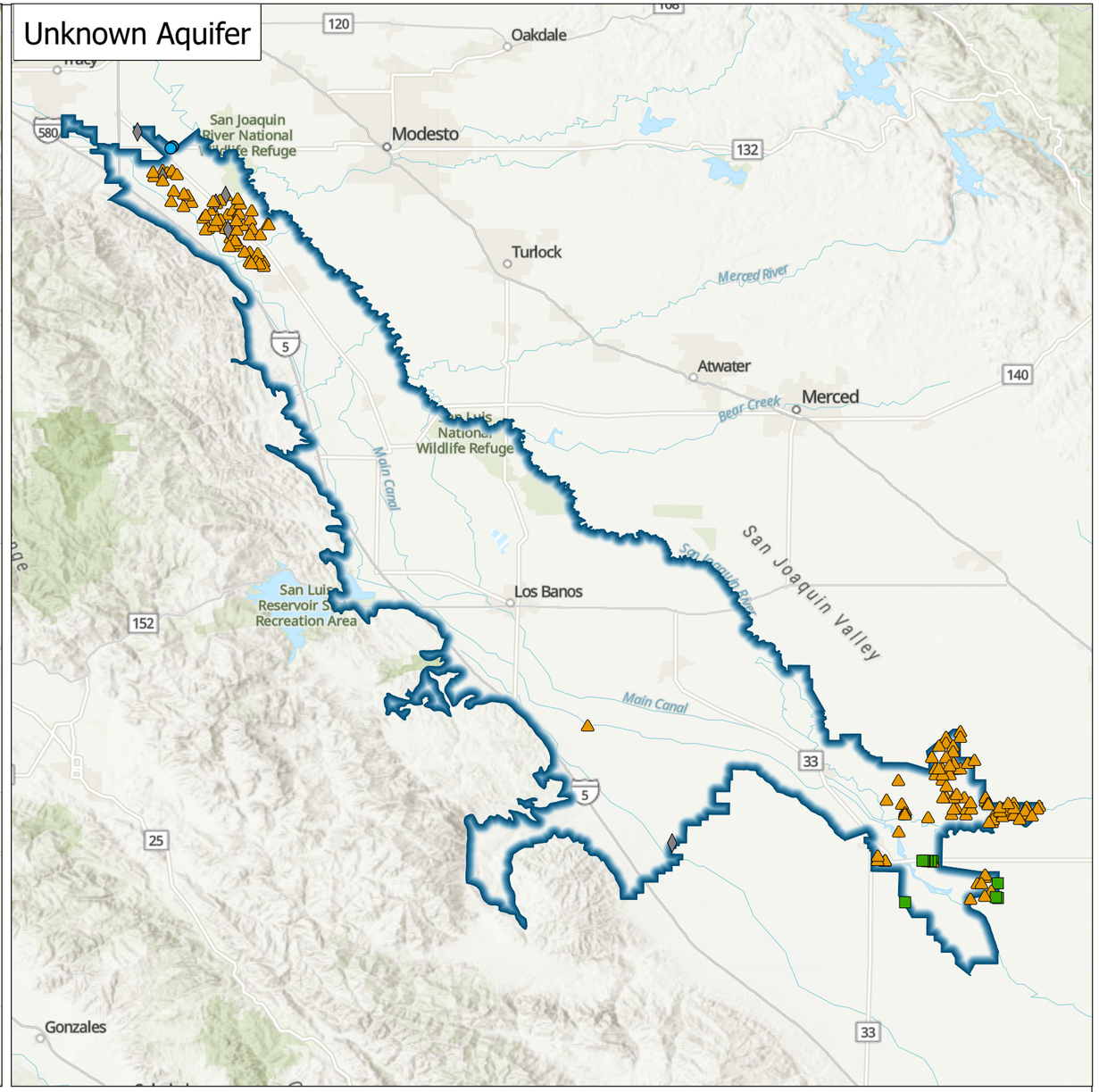

Legend

- Delta-Mendota Subbasin (DWR Basin No. 5-022.07)

Well Use

- Domestic
- Public Supply
- Other Production
- Unknown

Abbreviations
DWR = California Department of Water Resources
GSA = Groundwater Sustainability Agency

Notes
1. All locations are approximate.
2. Wells shown on this figure are field verified by the Subbasin GSAs.
3. If accommodation or alternative format is needed for this figure, please contact the Plan Manager for assistance.

Sources
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2. DWR Groundwater basins are based on the boundaries defined in California's Groundwater Bulletin 118 - Final Prioritization, dated February 2019.
3. Well locations provided by the Subbasin GSAs.

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GSA Well Inventory Composite and Unknown Aquifer Wells

Delta-Mendota Subbasin
July 2024
C00041.09
Figure PA-9

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