



Delta-Mendota Subbasin Groundwater Sustainability Plan

DRAFT

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List of Abbreviations

AB	Assembly Bill
AEM	Airborne Electromagnetic
AF	acre-feet
AFY	acre-feet per year
AWD	Aliso Water District
AWMP	Agricultural Water Management Plans
BCM	Basin Characterization Model
BLM	United States Bureau of Land Management
BMP	Best Management Practices
CAO	Cleanup and Abatement Order
CASGEM	California Statewide Groundwater Elevation Monitoring
CASP	California Aqueduct Subsidence Program
CC	Coordination Committee
CCID	Central California Irrigation District
CCR	California Code of Regulations
CDEC	California Data Exchange Center
CDFW	controlled by California Department of Fish and Wildlife
CDM	Central Delta Mendota
CDPR	California Department of Parks and Recreation
CE	Categorical Exemption
CEQA	California Environmental Quality Act
CFDW	California Department of Fish and Wildlife
cfs	cubic feet per second
CGPS	Continuous Global Positioning System
CGQMP	Comprehensive Groundwater Quality Management Plan
CIMIS	California Irrigation Management Information System
CNRA	California Natural Resources Agency
COC	constituents of concern
CPS	Crop Production Services
CSD	Community Services District
CVFPB	Central Valley Flood Protection Board
CVHM2	Central Valley Hydrologic Model 2
CVP	Central Valley Project
CVRWQCB	Central Valley Regional Water Quality Control Board
CWC	California Water Code
CWSRF	Clean Water State Revolving Fund
DAC	Disadvantaged Community
DCP	Drought Contingency Plan
DDW	Division of Drinking Water
DMC	Delta-Mendota Canal
DMS	Data Management System
DPWD	Del Puerto Water District
DTSC	California Department of Toxic Substances

DTW	Depth to water
DWR	California Department of Water Resources
DWSAP	Drinking Water Source Assessment and Protection
EDAs	economically distressed areas
EDF	Environmental Defense Fund
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
ESA	European Space Agency
ET	evapotranspiration
FCMA	Fresno County Management Areas
FMP	Farm Process Package
FSS	Facilitation Support Services
ft	feet
ft bgs	feet below ground surface
ft msl	feet above mean sea level
ft/day	feet per day
ft/yr	feet per year
GAMA	Groundwater Ambient Monitoring and Assessment
GAR	Groundwater Quality Assessment Report
GDE	Groundwater Dependent Ecosystem
GEA	Grassland Ecological Area
GIS	Geographic Information System
GMP	Groundwater Management Plan
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GRCD	Grassland Resource Conservation District
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GWC	Groundwater Conditions
GWD	Grassland Water District
GWE	groundwater elevation
HBSL	Health Based Screening Level
HCM	Hydrogeological Conceptual Model
ILRP	Irrigated Lands Regulatory Program
IM	Interim Milestone
IRWMP	Integrated Regional Water Management Plan
IS	Initial Study
ISW	Interconnected Surface Water
ITRC	Irrigation Training and Research Center
IWFM	Integrated Water Flow Model
JPA	Joint Powers Authority
JPL	Jet Propulsion Laboratory

LBCDD	Los Banos Creek Detention Dam
LIDAR	Light detection and ranging
LUST	Leaking Underground Storage Tanks
M&I	municipal and industrial
MAA	Management Area A
MAB	Management Area B
MAF	million acre feet
MAR	Managed Aquifer Recharge
MCL	Maximum Contaminant Level
meq/L	milliequivalents per liter
mg/L	milligrams per liter
MHI	median household income
MND	Mitigated Negative Declaration
MNW2	Multi-Node Well Package
MO	Measurable Objective
MOA	Memorandum of Agreement
MOI	Memoranda of Intent
MOU	Memorandum of Understanding
MPG	Mendota Pool Group
MT	Minimum Threshold
MWA	Mendota Wildlife Area
NAD83	North American Datum of 1983
NASA	National Aeronautics and Space Administration
NAVD	North American Vertical Datum
NAWQA	National Water-Quality Assessment
NCCAG	Natural Communities Commonly Associated with Groundwater
ND	Negative Declaration
NDM	Northern Delta-Mendota
NDVI	Normalized Derived Vegetation Index
NEPA	National Environmental Policy Act
NGO	Non-Governmental Organization
NHD	National Hydrography Dataset
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resources Conservation Service
NVRRWP	North Valley Regional Recycled Water Program
NWIS	National Water Information System
NWQMC	National Water Quality Monitoring Council
NWR	National Wildlife Refuge
OSWCR	Online System of Well Completion Reports
P&O	Prioritization & Optimization
PID	Patterson Irrigation District
PIP	Pump-in Program
PLSS	Public Land Survey System

PMA	Projects and Management Actions
POC	Points of Contact
POD	Points of Diversion
PWRPA	Power and Water Resources Pooling Authority
PWS	Public Water System
RCAC	Rural Community Assistance Corporation
RMN	Representative Monitoring Network
RMS	Representative Monitoring Site
RMW	Representative Monitoring Well
RPE	reference point elevation
RTWQMN	Real Time Water Quality Monitoring Network
SAGBI	Soil Agricultural Groundwater Banking Index
SB	Senate Bill
SDAC	severely disadvantaged community
SDWIS	Safe Drinking Water Information System
SFR	Streamflow Routing Package
SGMA	Sustainable Groundwater Management Act
SGWP	Sustainable Groundwater Management Planning
SHE	Self-Help Enterprises
SJR	San Joaquin River
SJREC	San Joaquin River Exchange Contractors
SJRECWA	San Joaquin River Exchange Contractors Water Authority
SJRIP	San Joaquin River Water Quality Improvement Project
SJRRP	San Joaquin River Restoration Program
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLDMWA	San Luis & Delta Mendota Water Authority
SLWD	San Luis Water District
SMARA	Surface Mining and Reclamation Act
SMC	Sustainable Management Criteria
SNMP	Salt and Nitrate Management Plan
SSURGO	Soil Survey Geographic Database
SWP	State Water Project
SWPPP	SWRCB Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAOC	Tidewater Associated Oil Company
TCP	trichloropropane
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
TNC	The Nature Conservancy
TRID	Tranquillity Irrigation District
UAVSAR	Unmanned Aerial Vehicle Synthetic Aperture Radar
ug/L	micrograms per liter
UNAVCO	University Navstar Consortium
UR	Undesirable Result

USACE	United States Army Corps of Engineers
USBR	United States Bureau of Reclamation
USCS	Unified Soil Classification System
USDA	United States Department of Agriculture
USEPA	United States Environmental Protective Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UWMP	Urban Water Management Plan
WDL	Water Data Library
WDR	waste discharge requirement
WIIN	Water Infrastructure Improvements for the Nation
WLI	Water Leadership Institute
WQP	Water Quality Portal
WRFP	Water Recycling Funding Program
WSID	West Stanislaus Irrigation District
WY	Water Year

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 water 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 Coastal 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-1** 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 December 11, 2023, to comply with Sustainable Groundwater Management Act (SGMA) requirements (**Appendix D**). Further description of each GSA Group is provided below.

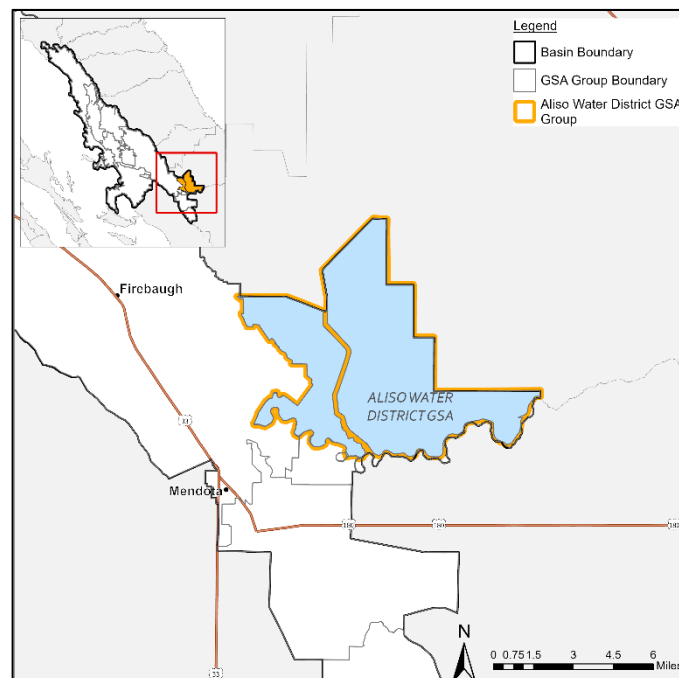
5.1.2.1 Aliso Water District GSA Group

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.

The 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 14.3**, Project AWD-1). Individual landowners within the GSA's jurisdiction also use surface water

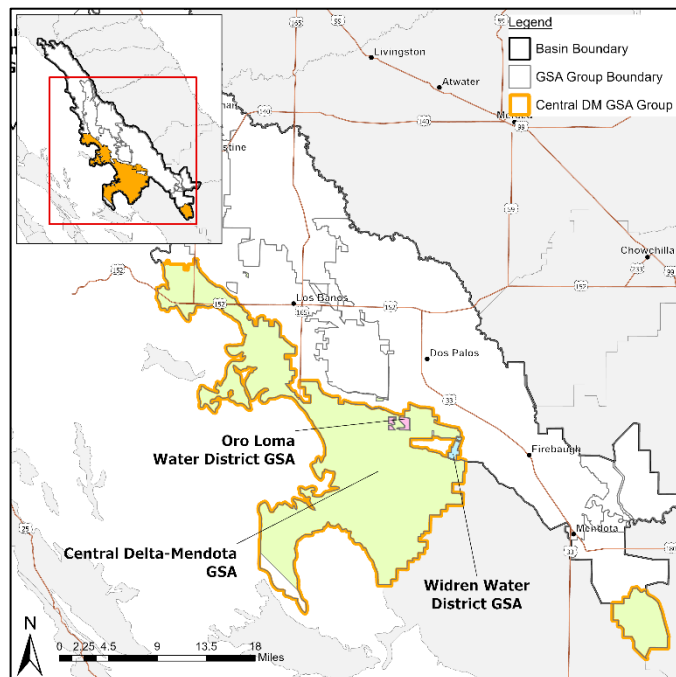


from the San Joaquin River and Chowchilla Bypass (Aliso Water District GSA, 2022). The primary water use sector is agriculture, but other water use sectors include native vegetation, managed recharge and a few rural domestic well users.

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 three counties: Fresno, Merced, and San Benito. The Central Delta-Mendota GSA is a Joint Powers Authority (JPA) that includes ten entities (see **Table Intro-1**). The Central Delta-Mendota GSA includes a portion of San Benito County through a Memorandum of Understanding (MOU). 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, Volta¹, 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

¹ The Community of Volta (previously served by the Volta Community Services District) was consolidated with the Santa Nella County Water District in 2023.

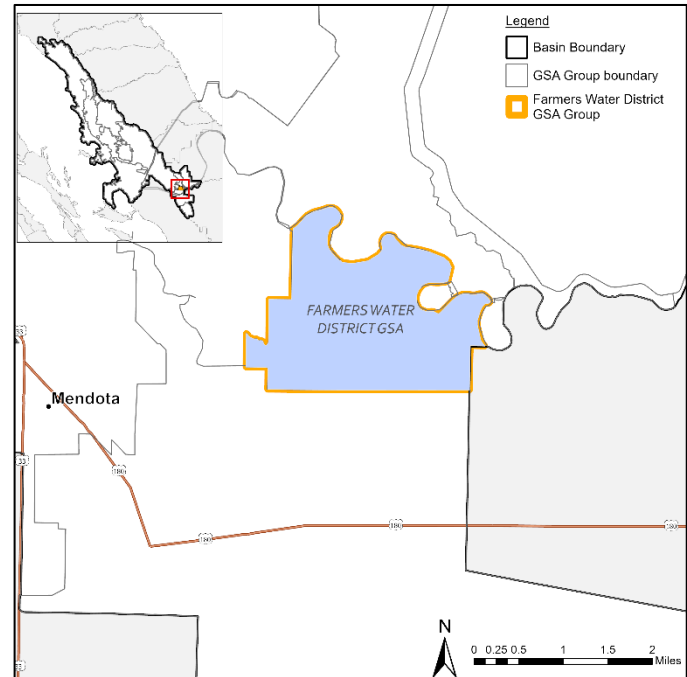
Water District, Panoche Water District, San Luis Water District, Santa Nella County Water District, and Tranquillity Irrigation District (Northern and Central Delta-Mendota GSAs, 2022). Water use sectors include agriculture, domestic, industrial, managed wetlands, managed recharge, and native vegetation.

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.

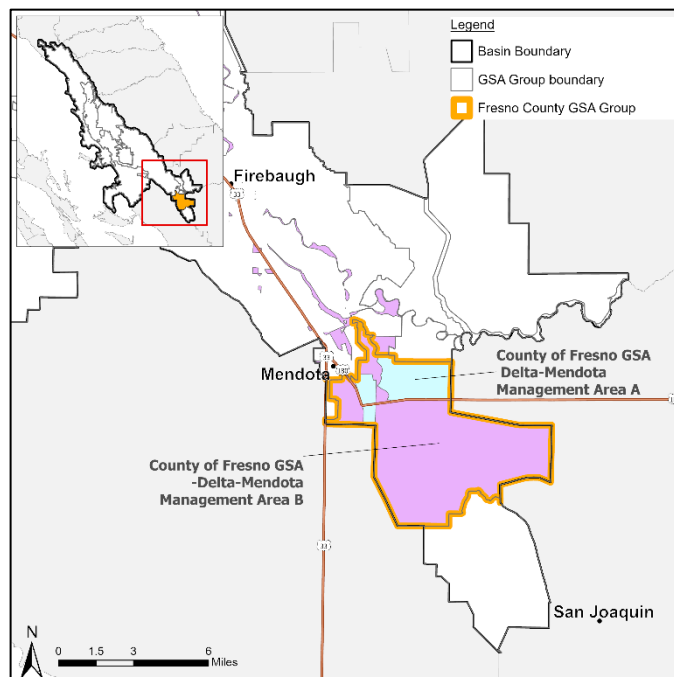


Farmers Water District lands within the Basin rely exclusively on groundwater to meet agricultural demands and de minimis domestic use; however, groundwater is pumped into the Mendota Pool in exchange for CVP water delivered to Farmer's Water District land in the Westside Subbasin (Farmers Water District, 2022). Water use sectors include agriculture, domestic, and native vegetation.

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 SJREC GSA Group as part of a MOU agreement between Fresno County and the SJREC.

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



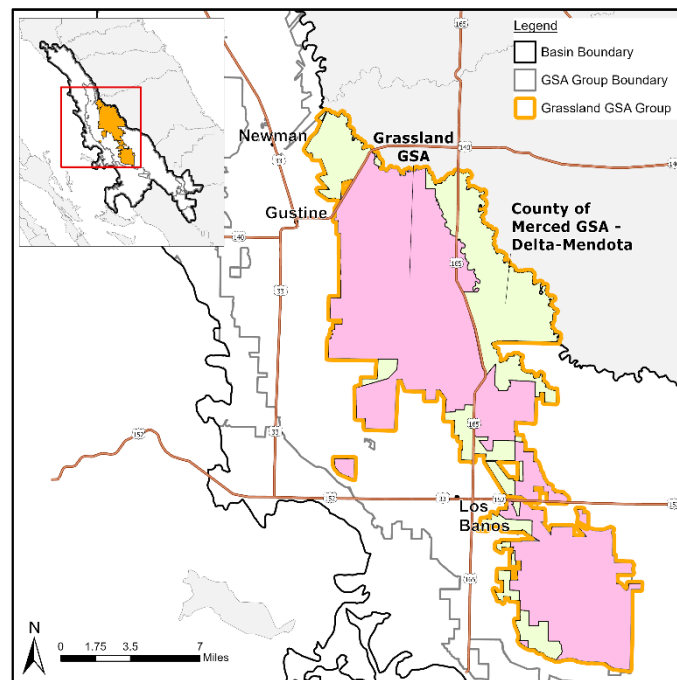
State lands covered by the Fresno County GSA Group include the Mendota Wildlife Area (MWA), which includes approximately 11,800 acres controlled by CDFW. All other lands are privately owned and used primarily for agriculture. State or federally owned water-related infrastructure that runs through the 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**.

Most landowners within the Fresno County GSA Group area are entirely dependent on groundwater for irrigation. Additionally, there are currently two groundwater recharge projects in the Fresno County GSA Group area, the Meyers Water Bank and the Terra Linda Recharge Canal. The Meyers Water Bank receives CVP water along with other surface water supplies, and the Terra Linda Recharge Canal receives 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 un-districted lands (“white 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 and GRCD meet 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 predominately made up of the GEA, which consists of a combination of privately managed wetland habitat, state wildlife areas, 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 DMC and 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, Grassland Water District and private lands in Merced County also receive agricultural operational spill and storm water from neighboring lands in order to meet demands. Flood waters from Los Banos and Garzas Creek are also utilized within the Grassland GSA Group area (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

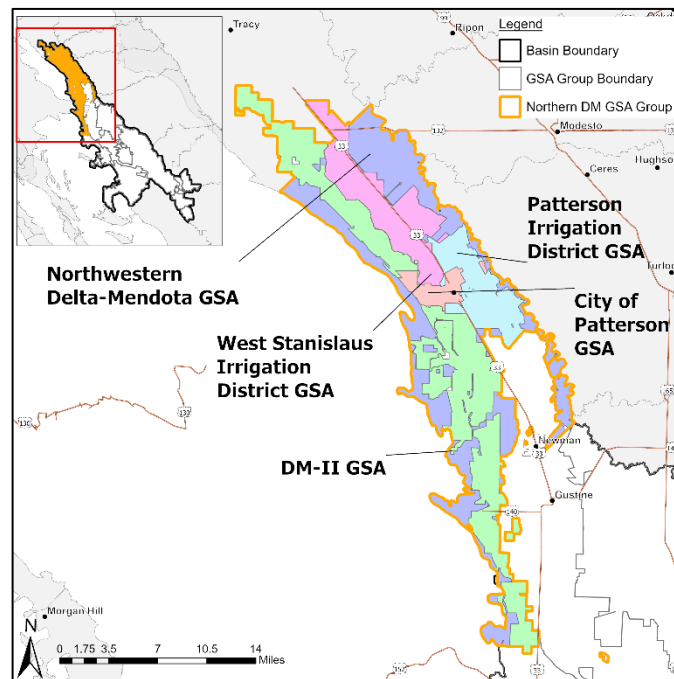
The Northern Delta-Mendota GSA group contains five GSAs: the City of Patterson GSA, the DM-II GSA, the Northwestern Delta-Mendota GSA, the Patterson Irrigation District GSA, and the West Stanislaus Irrigation District GSA, located in three counties: San Joaquin, Stanislaus, and Merced. The Northern Delta-Mendota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



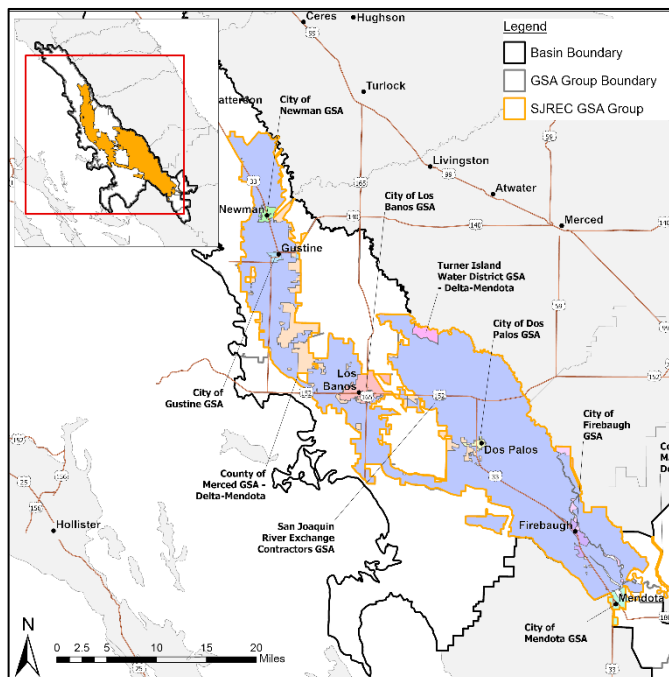
5.1.2.7 San Joaquin River Exchange Contractors GSA Group

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 Merced County GSA – Delta-Mendota GSA and the County of Fresno GSA – Delta-Mendota MAB, are shared with the Grassland GSA Group and Fresno County 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 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.² 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 that are completely dependent on groundwater. Those communities include: the cities of Newman,



² The SJREC member agencies and the City of Dos Palos both have CVP contracts.

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)

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 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 define easement and deed-based

restrictions on private land which limit land uses to maintained open spaces (e.g., farmed, grazed, forested, nature reserves) (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.

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.³ The DACs are those with a MHI of less than 80% of the statewide MHI and the SDAC communities are those with a MHI of less than 60% of the statewide MHI (California Code, Public Resources Code § 75005(g)). Additionally, DWR defines EDAs as communities with an MHI of less than 85% of the statewide MHI and either: (1) have a population of 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% higher than the statewide average, or (3) low population density.⁴

Figure PA-3 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% 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, and Tranquillity (see **Table PA-1**). Additionally, approximately 24% 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	GWD, SJREC	No	5,748
Volta	GWD, CDM, SJREC	Yes	133
Crows Landing	NDM, SJREC	Yes	346
Grayson	NDM	No	1,582

³ SGMA Data Viewer: <https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer>

⁴ DWR's EDA Mapping Tool: <https://gis.water.ca.gov/app/edas/>

DAC Census Designated Places (2020) ¹	GSA Group	SDAC	Population (2020)
City of Firebaugh	SJREC	Yes	7,772
City of Dos Palos	SJREC	No	5,266
South Dos Palos	SJREC	Yes	1,167
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
- GWD = Grassland Water District
- 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-4 and **Table PA-2** summarize the WY 2021 land use designations within the Basin based on statewide crop mapping data provided by DWR (DWR, 2023). 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 1,885 acres of California Protected Areas and approximately 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-4** 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%
Developed	481,381	62.9%
<i>Urban</i>	<i>14,618</i>	<i>1.9%</i>
<i>Deciduous Fruits and Nuts</i>	<i>195,295</i>	<i>25.5%</i>
<i>Field Crops</i>	<i>73,912</i>	<i>9.7%</i>
<i>Truck Nursery and Berry Crops</i>	<i>52,360</i>	<i>6.8%</i>
<i>Pasture</i>	<i>49,031</i>	<i>6.4%</i>
<i>Idle</i>	<i>30,820</i>	<i>4.0%</i>
<i>Grain and Hay Crops</i>	<i>23,020</i>	<i>3.0%</i>
<i>Unclassified / Other Irrigated</i>	<i>20,194</i>	<i>2.6%</i>
<i>Vineyards</i>	<i>11,552</i>	<i>1.5%</i>
<i>Young Perennial</i>	<i>5,167</i>	<i>0.7%</i>
<i>Citrus & Subtropical</i>	<i>3,116</i>	<i>0.4%</i>
<i>Rice</i>	<i>2,296</i>	<i>0.3%</i>
TOTAL	765,000	100%

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, cities, and private users. Major water-related infrastructure within the Basin includes the facilities required to bring CVP supplies to CVP water contractors, 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 Delta Cross Channel and the Tracy Fish Collection Facility. Other major CVP facilities include DMC/CA Aqueduct Intertie, Mendota Pool, and Sack Dam. SLDMWA and the USBR also jointly operated the Grassland Bypass Project. The 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, groundwater is relied upon 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” (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	<ul style="list-style-type: none"> Groundwater San Joaquin River flood flows (temporary water right permit) San Joaquin River and Chowchilla Bypass flood flows (landowner water rights) 	<ul style="list-style-type: none"> Agriculture Domestic Native Vegetation Managed Recharge
Farmers Water District	Farmers Water District GSA	<ul style="list-style-type: none"> Groundwater 	<ul style="list-style-type: none"> Agriculture Domestic Native Vegetation
Fresno County	County of Fresno GSA – Delta-Mendota MAA	<ul style="list-style-type: none"> Groundwater CVP supplies Kings River flood releases Local surface supplies 	<ul style="list-style-type: none"> Agriculture Domestic Native Vegetation Managed Recharge
	County of Fresno GSA - Delta-Mendota MAB	<ul style="list-style-type: none"> Groundwater Kings River flood releases Local surface supplies 	<ul style="list-style-type: none"> Agriculture Native Vegetation Managed Recharge
Grassland	County of Merced GSA - Delta-Mendota	<ul style="list-style-type: none"> Groundwater CVP supplies Los Banos Creek and Garzas Creek flood waters Operational spill and storm water from neighboring lands 	<ul style="list-style-type: none"> Managed Wetlands Agriculture Native Vegetation Domestic
	Grassland GSA	<ul style="list-style-type: none"> Groundwater CVP supplies 	<ul style="list-style-type: none"> Managed Wetlands Native Vegetation Agriculture

GSA Group	GSA	Water Source	Water Use Sector(s)
		<ul style="list-style-type: none"> Los Banos Creek and Garzas Creek flood waters Operational spill and storm water from neighboring lands 	<ul style="list-style-type: none"> Domestic
Central Delta-Mendota	Central Delta-Mendota GSA	<ul style="list-style-type: none"> Groundwater CVP supplies San Joaquin River water rights 	<ul style="list-style-type: none"> Agriculture Urban / Municipal / Domestic Industrial Managed Wetlands Managed Recharge Native Vegetation
	Oro Loma Water District GSA	<ul style="list-style-type: none"> Groundwater CVP supplies 	<ul style="list-style-type: none"> Agriculture Domestic
	Widren Water District GSA	<ul style="list-style-type: none"> Groundwater 	<ul style="list-style-type: none"> Agriculture
Northern Delta-Mendota	City of Patterson GSA	<ul style="list-style-type: none"> Groundwater 	<ul style="list-style-type: none"> Urban/ Municipal/ Domestic Industrial
	DM-II GSA	<ul style="list-style-type: none"> Groundwater CVP supplies SWP supplies 	<ul style="list-style-type: none"> Agriculture Domestic Industrial Managed Recharge Native Vegetation
	Northwestern Delta-Mendota GSA	<ul style="list-style-type: none"> Groundwater 	<ul style="list-style-type: none"> Agriculture Domestic Industrial Managed Wetlands Native Vegetation
	Patterson Irrigation District GSA	<ul style="list-style-type: none"> Groundwater CVP supplies San Joaquin River water rights 	<ul style="list-style-type: none"> Agriculture Domestic
Northern Delta-Mendota	West Stanislaus Irrigation District GSA	<ul style="list-style-type: none"> Groundwater CVP supplies San Joaquin and Tuolumne River water rights 	<ul style="list-style-type: none"> Agriculture Domestic Native Vegetation

GSA Group	GSA	Water Source	Water Use Sector(s)
San Joaquin River Exchange Contractors	City of Dos Palos GSA	<ul style="list-style-type: none"> Surface supplies delivered through the SJREC 	<ul style="list-style-type: none"> Urban/ Municipal/ Domestic Industrial
	City of Firebaugh GSA	<ul style="list-style-type: none"> Groundwater 	<ul style="list-style-type: none"> Urban/ Municipal/ Domestic Industrial
	County of Fresno GSA - Delta-Mendota MAB	<ul style="list-style-type: none"> Groundwater 	<ul style="list-style-type: none"> Agriculture
	City of Gustine GSA	<ul style="list-style-type: none"> Groundwater 	<ul style="list-style-type: none"> Urban/ Municipal/ Domestic Industrial
	City of Los Banos GSA	<ul style="list-style-type: none"> Groundwater 	<ul style="list-style-type: none"> Urban/ Municipal/ Domestic Industrial
	City of Mendota GSA	<ul style="list-style-type: none"> Groundwater 	<ul style="list-style-type: none"> Urban/ Municipal/ Domestic Industrial
	City of Newman GSA	<ul style="list-style-type: none"> Groundwater 	<ul style="list-style-type: none"> Urban/ Municipal/ Domestic Industrial
	County of Madera GSA - Delta-Mendota	<ul style="list-style-type: none"> Groundwater 	<ul style="list-style-type: none"> Agriculture
	County of Merced GSA - Delta-Mendota	<ul style="list-style-type: none"> Groundwater 	<ul style="list-style-type: none"> Agriculture Industrial
	San Joaquin River Exchange Contractors GSA	<ul style="list-style-type: none"> Groundwater CVP supplies San Joaquin River (senior water rights) 	<ul style="list-style-type: none"> Agriculture Managed Wetlands Managed Recharge Native Vegetation
	Turner Island Water District GSA - Delta-Mendota	<ul style="list-style-type: none"> Groundwater Drain water delivered through the San Luis Canal Company (SJREC member) 	<ul style="list-style-type: none"> Agriculture

Abbreviations:

CVP = Central Valley Project

MAB = Management Area B

GSA = Groundwater Sustainability Agency
MAA = Management Area A

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 PWSs within the Basin serving populations ranging from 25 to 46,639 people, as identified in **Table PA-4** and **Figure PA-5** (SWRCB, 2023). The largest PWSs 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, 2023).

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	5,945	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

PWS #	PWS Name	Population Served	Water Source
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
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	2,211	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

Sources:

- (1) State Water Resources Control Board (SWRCB), 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-6 shows the density of wells per square mile within the Basin based on DWR’s Online System of Well Completion Reports (OSWCR).⁵ According to these records, 2,295 domestic, 1,514 production, and

⁵ DWR Well Completion Report Map Application website: <https://dwr.maps.arcgis.com/apps/webappviewer/index.html?id=181078580a214c0986e2da28f8623b37>

81 public supply wells have been installed within the Public Land Survey System (PLSS) sections⁶ 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 accurate⁷, and well construction information may not always be accurate. 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 bgs⁸ – **removed 146 additional wells**
- Remove wells constructed before 1970⁹ – **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. The GSAs will continue efforts to field-verify active wells and register new wells, as discussed in **Section 7.1.5** and **Section 14.3**. The initial GSA well census and inventory project identified 42 domestic wells, 36 public supply wells, 717 other production wells, and 67 wells with

⁶ Each PLSS section represents approximately 1 square mile of area (i.e., 640 acres).

⁷ 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.

⁸ Domestic wells are the shallowest production well type in the Basin. However, 97.5% 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.

⁹ 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/>.

unknown use type (862 existing wells) that fall within the Basin (see **Figure PA-7** and **Figure PA-8**). 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 a field-verified estimate of operational production wells that is much lower. Estimates from both sources are presented in the Plan Area as to 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 12**).

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, hydrogeological 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 Viewer¹⁰.

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 (RMSs) 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 13**.
- DWR's California Statewide Groundwater Elevation Monitoring program (CASGEM)¹¹, 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 the SGMA with mandatory annual water elevation monitoring and reporting. The program's mission is to establish a permanent, locally

¹⁰ SGMA Data Viewer <https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer>

¹¹ CASGEM website: <https://water.ca.gov/Programs/Groundwater-Management/Groundwater-Elevation-Monitoring--CASGEM>

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 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:
 - State Water Resources Control Board (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, 2007).
 - 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 the agricultural waivers program (Irrigated Lands Regulatory Program [ILRP]) sites.
 - 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% 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 (Belitz and others, 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 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 Central Valley Regional Water Quality Control Board (CVRWQCB) long-term ILRP. The ILRP regulates wastes from commercial irrigated lands that discharge into surface and groundwater. The goal of the ILRP is to protect surface water and groundwater 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, the Grassland Drainage Area Coalition, and Eastern San Joaquin River Watershed Coalition under the San Joaquin Valley Drainage Authority, a California Joint Powers Authority (JPA). This region specifically emphasizes nitrogen, sediment, and erosion control. Growers in the Basin participate in a Groundwater Quality Trend Monitoring Program, a regional shallow groundwater quality monitoring program intended to ensure that irrigated agricultural discharges do not impair access to safe and reliable drinking water.
- Central Valley-Salinity Alternatives for Long-term Sustainability (CV-SALTS), which is 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 Central Valley Salinity Coalition, 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 adopted into the Basin Plans to address salt accumulation and nitrate discharges. Under Nitrate Control Program, dischargers are provided two compliance pathways: (1) traditional permitting as an individual discharger or as a coalition (i.e., the irrigated lands coalition), or (2) groundwater management zone permitting. Zone permitting allows dischargers to work as a collective in collaboration with the CVRWQCB to provide safe drinking water with the option to extend time to achieve nitrogen balance. 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 and defer compliance with more stringent requirements under option (1).
- 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 screened above and below the Corcoran Clay 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 electroconductivity, TDS, selenium, and boron. Results are evaluated in relation to refuge water quality requirement and compared to historic data to identify and track trends.

The CASGEM groundwater elevations and groundwater elevations collected from wells in the Basin 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 RMSs 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 13**.
- 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 WDL. 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. Efficient use of water resources benefits Californians by saving water, energy, and money.
- Mendota Pool Group (MPG) is a group of landowners, which 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 Fresno Slough portion of the Mendota Pool for use by USBR in exchange for CVP water deliveries to MPG-owned lands in San Luis Water District and Westlands Water District. Annual reports are produced in compliance with Agreement No. 3 for Mendota Pool Transfer Pumping Project and the EIR/EIS entitled Mendota Pool 20-Year Exchange Program (USBR & WWD,

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 is currently updating its RTWQMN stations with new sensors, modems, and loggers with funding from the USBR and DWR.

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

- GSAs within the Basin conduct regular land subsidence monitoring at the RMSs 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 13**.
- Continuous Global Positioning System (CGPS) subsidence monitoring through University Navstar Consortium (UNAVCO), which handles data management tasks for 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 (SLDMWA, 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 2020, with measurements typically reported monthly as cumulative displacement elevations (SLDMWA, 2022).
- Central Valley extensometers provided by USGS. There are 18 extensometers within the Basin. The data records begin as early as the late 1950s and extend until 2018 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 (SLDMWA, 2022).
- Vertical displacement estimates derived from 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 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 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 semi-annually as part of a study regarding the correlation between pumping volumes and depth to water.
- Subsidence information retrieved from the San Joaquin River Restoration Program, which has 78 GPS stations (SLDMWA, 2022). The database has land elevation data records starting from December 2011 to December 2021 and the GPS stations are measured twice each year, in July and December (SLDMWA, 2022). The GPS locations extend to the eastern side of DMC, and several are located next to some of the critical infrastructure.
- Light detection and ranging (LIDAR) data provided by DWR and 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. 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. 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 (see **Section 13**). 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 San Joaquin River Restoration Program (SJRRP) 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 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 Integrated Regional Water Management Plans (IRWMPs) overlie the Basin. The Westside-San Joaquin IRWM Plan covers most of the Basin, which was last updated in 2019, 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 (AB 3030) enacted through 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. Five pre-SGMA GMPs overlie the Basin. The GMP for the Northern Agencies in the DMC Service Area 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. 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 very urban water suppliers that provides 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.

- 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% 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.
- 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 proposed to be repurposed as a stormwater bypass. As part of the repurposed Grassland Bypass Project, five new monitoring wells will be installed to monitor subsurface conditions (Grassland GSA and Merced County, 2022; SLDMWA, 2019)

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 on-going monitoring and reporting that will be conducted pursuant to this GSP (see **Section 13**).

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 will be 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 regarding future demands from Cities' UWMPs have been integrated into water budget and model development within the Basin (see **Section 9**) and have provided key information for the buildout of potential Project 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 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 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 cubic feet per second (cfs) of flow at the Gravelly Ford gage station during critical years. Additionally, buffer flow 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, the Grassland GSA Group members with federal water contracts that supply water to wetland habitat are subject to water supply reductions. As a result, the Grassland GSA Group area may rely more on groundwater to supplement their supply during these years. Historically, the Grassland GSA Group lands with federal water supply contracts have not experienced stresses to the groundwater system following years with surface water shortages (Grassland GSA and Merced County, 2022). As discussed in **Section 5.2.3.5** below, the Grassland GSA Group is implementing a conjunctive use program that allows refuge contractors to increase groundwater pumping when surface supplies are reduced in critically dry years.

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. 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 14.3, 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 water rights to high-flow surface water, and some operate recharge basins. Other owners claim riparian rights. 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-1 in **Section 14.3, Table PMA-1** and **Table PMA-2**). The SWRCB authorized and approved the Temporary Water Right Permit for Aliso Water District GSA 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 GSA 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-2 in **Section 14.3, 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-3 in **Section 14.3**, and) (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 supplies 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**) 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 management area. Under the Fresno County General Plan (**Section 5.3.1**), 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 County of Fresno GSA – Delta-Mendota MAA for recharge to the Meyers Water Bank (Bank). The Bank 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 Bank is required to leave a total of 5% (4,960 AF) meaning 42,600 AF of available water is stored in the Bank. The cumulative total amount of banked water allowed in the Bank is 60,000 AF (County of Fresno GSA, 2022).

The Bank utilizes several sources of water during wet years when surface water supplies are abundant. The Bank 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 Bank 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 Canal, which has been operational since 2011, utilizes Kings River Flood water. In 2011, a total of 1,500 AF of flood water was recharged and it is estimated that over the next 20 year a total of over 4,000 AF of surface water will be recharged (County of Fresno GSA, 2022).

5.2.3.5 Grassland GSA Group

Grassland Water District GSA plans to participate in the “Basins and Storm Water Capture Project” (Project GWD-3 in **Section 14.3**, **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, and site investigations, CEQA documentation and preliminary plans for turnouts and basin cells are being prepared. The project is anticipated to be operational in 2025.

Grassland Water District 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 14.3** (Project SJREC-4 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 20-acre project to develop the Orestimba Creek Groundwater Recharge and Recovery Project, located in western Stanislaus County near the community of Newman (Project NDM-1 in **Section 14.3, Table PMA-1** and **Table PMA-2**). The proposed groundwater recharge facility near Orestimba Creek will allow the recharge of 500 AFY of surface water to the Basin. Existing connections to the DMC will deliver up to 500 AFY to the groundwater recharge facility and serve as a conveyance facility for deliveries during dry periods. A production well will be constructed to recover the banked water during dry periods, with the recharge water source varying from year to year. The proposed project will help provide a long-term solution by banking excess water during wet periods by diverting excess water and storing it in recharge ponds, accelerating the rate of groundwater recharge for the local aquifer. Monitoring or observation wells will be installed at key locations to monitor the rate of groundwater recharge. These data will also 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. As of WY 2022, preliminary design is complete. The project started construction in February 2023 and is expected to be operational by February 2024 (Delta-Mendota GSAs, 2023).

Del Puerto Water District is leading the Del Puerto Canyon Reservoir Project, which 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-9 in **Section 14.3, Table PMA-1** and **Table PMA-2**). Surface water will be pumped into the reservoir from the DMC when surplus water is available and discharged back to the DMC when necessary. Seasonal storm flows through Del Puerto Canyon will be captured by the reservoir and discharged perennially to Del Puerto Creek for downstream use. Project beneficiaries will store CVP supplies from their annual entitlements when excess to their immediate needs. 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% 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 within Patterson Irrigation District's service area. This stored groundwater supply is available to Patterson Irrigation District and others during drought conditions; thus recharge is 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 14.3, Table PMA-1** and **Table PMA-2**). The District 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 (NVRWP) is a large-scale conjunctive use project located primarily within San Joaquin, Stanislaus, and Merced Counties (Project NDM-2 in **Section 14.3, Table PMA-1** and **Table PMA-2**). Partnerships between Del Puerto Water District and the Cities of Ceres, Modesto, and Turlock and Grassland Water District and the City of Turlock have been formed to implement the NVRWP. Tertiary-treated recycled water from the Cities of Ceres, Modesto and Turlock will be blended with water in 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 (Northern and Central Delta-Mendota GSAs, 2022). The NVRWP 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 (Northern and Central Delta-Mendota GSAs, 2022). The NVRWP 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 constructing a stormwater detention basin to partially divert, retain, and percolate up to 270 cfs of flow from Little Salado Creek (Project NDM-6 in **Section 14.3, 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 would 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 Environmental Impact Report (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 for the Del Puerto Creek Stormwater Capture and Recharge project. The project consists of constructing percolation ponds to capture and infiltrate stormwater discharges from Del Puerto Creek and stormwater runoff captured as part of the yet-to-be constructed Zacharias Development (Project NDM-8 in **Section 14.3, 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 (SJREC) 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. Additionally, the SJREC adopted an updated Assembly Bill (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 14.3** (Project SJREC-1 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 February 2023 and is expected to be operational by February 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-4 in **Section 14.3, 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 14.3, 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 SGM Program SGMA Implementation – Round 1 grant funding from DWR in April 2022 for this project (Delta-Mendota GSAs, 2023). Construction of the recharge facility is scheduled for 2024.

The SJREC is implementing the BB Limited Recharge and Recovery project (Project SJREC-10 in **Section Table PMA-2, 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 Rivers 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 are 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 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 since 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 is under public review as of 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 the 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 aquifer.

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% 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 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.¹²

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-7-22 and EO N-3-23 (see **Section** below), Fresno County updated its well permitting process¹³ to have the County forward received well permit applications submitted to the relevant GSA for review. The County

¹² Fresno County Citizen Portal serving Environmental Health and Public Works:

<https://permitportal.fresnocountyca.gov/citizenportal/app/landing>

¹³ 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.>

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.¹⁴

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 Executive Order (EO) N-7-22 and EO N-3-23 (see **Section 5.3.4.1** below), Madera County updated its well permitting process¹⁵ 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.¹⁶

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-7-22 and 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”¹⁷ as part of the

¹⁴ 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>

¹⁵ 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>.

¹⁶ Merced County Well Permitting Documents and Resources: <https://www.countyofmerced.com/2247/Well-Systems>.

¹⁷ Merced County “GSA GSP Consistency Determination Form”:

<https://www.countyofmerced.com/DocumentCenter/View/29653/Groundwater-Sustainability-Agency-GSP-Consistency-Determination-Form>

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 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.¹⁸

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.¹⁹

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-7-22 and 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 Statement²⁰ (for exempt wells) or a New Well Information Form (for non-exempt wells).²¹ 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.

¹⁸ San Benito County Water District Well Permit Application: <https://www.sbcwd.com/wp-content/uploads/2018/08/Well-Permit-Procedure-and-Application-1.pdf>

¹⁹ Well and Pump Permit Application and New Well Information form: <https://www.sjgov.org/departments/envhealth/programs/well-permits>

²⁰ Well Exemption Statement: https://www.sjgov.org/docs/default-source/environmental-health-documents/well-permits/new-well-information-exemption-statement.pdf?sfvrsn=b658873d_3

²¹ New Well Information Form: https://www.sjgov.org/docs/default-source/environmental-health-documents/well-permits/new-well-information.pdf?sfvrsn=45f94c1a_3

- **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 Northern 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.²²

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 discretionary²³. 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 (URs). 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-7-22 and EO N-3-23 (see **Section 5.3.4.1** below), Stanislaus County updated its well permitting process to refer applicable well permits to the GSAs for approval. If a GSA finds that a well permit application is not consistent with requirements in its GSP to prevent URs, the applicant must provide substantial evidence that the proposed extraction 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 alteration of an existing well located in a medium- or high- priority basin subject to SGMA. For applicable wells²⁴, 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 in EO N-7-22. 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 is

²² Well Construction or Destruction form: <https://www.stancounty.com/er/pdf/water-well-construction-and-destruction-application.pdf>

²³ 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.

²⁴ The EO is not applicable to wells that provide less than 2 AFY or to public water systems.

consistent 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 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 (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 from the proposed Projects and Management Actions (see **Section 14**).

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 14**.

Water conveyance/extraction projects are in development as planned Projects and Management Actions (PMAs), see **Section 14**.

Water conservation practices and recycled water uses are described in **Section 5.2.1**.

5.4.9 Efficient Water Management Practices

Groundwater within the Basin is primarily used for agricultural irrigation, urban and domestic water supply, 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.

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. Record of specific activities and meeting dates that have occurred since January 2020 are included in **Appendix E**.

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 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Primarily <i>de minimis</i> users
	Commercial / Industrial	<ul style="list-style-type: none"> • Food Processing • Manufacturing • Aggregate Mining • Power Plants
Municipal Well Operators		<ul style="list-style-type: none"> • 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		<ul style="list-style-type: none"> • See Section 5.1.4
Land Use Planning Agencies		<ul style="list-style-type: none"> • See Section 5.3

User Type	Use	User	
Environmental Users	Agencies	<ul style="list-style-type: none"> • CDFW • Grassland Water District • Grassland RCD 	<ul style="list-style-type: none"> • USBR • USFWS
	Environmental Groups	<ul style="list-style-type: none"> • The Nature Conservancy 	<ul style="list-style-type: none"> • The Audubon Society
	Surface Water	<ul style="list-style-type: none"> • Creeks 	<ul style="list-style-type: none"> • Rivers
	Refuges	<ul style="list-style-type: none"> • Alkali Sink Ecological Reserve • Cottonwood Creek Wildlife Area • Grasslands Wildlife Management Area • Little Panoche Reservoir Wildlife Area • Los Banos Wildlife Area • Mendota Wildlife Area 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • See Section 8.8 	
Federal and State Government		<ul style="list-style-type: none"> • BLM • CDPR • CDFW • DWR 	<ul style="list-style-type: none"> • SWRCB • USBR • USFWS
DACs/SDACs		<ul style="list-style-type: none"> • See Section 5.1.3. 	

Abbreviations:

CDFW = California Department of Fish and Wildlife
 CDPR = California Department of Parks and Recreation
 CSD = Community Services District
 DAC = Disadvantaged Community
 GDE = Groundwater Dependent Ecosystem
 ID = Irrigation District

MWC = Mutual Water Company
 SDAC = Severely Disadvantaged Community
 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 monthly since August 2017 but have often been held more frequently during this GSP development

process. Currently, Coordination Committee meetings are held on the second and/or fourth Monday of each month at 1:00 pm in the SLDMWA Boardroom, 842 6th St, Los Banos, CA. These meetings are publicly noticed as required under the Brown Act, and meeting agenda, minutes and handouts are available on the Basin website at www.deltamendota.org.

- **GSA Board Meetings:** The Basin GSAs and several GSA member agencies hold regular Board meetings that are open to the public and provide SGMA-related updates and information. Information and notices for GSA Board 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 materials, including agendas and minutes, are also posted on the SLDMWA and Basin websites.
- **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 materials, including agendas and minutes, are also posted on the SLDMWA and Basin websites.

5.5.2.2 Stakeholder Workshops and Education

- **2024 Water Leadership Institute in the Delta-Mendota Subbasin:** The Basin is partnering 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 will host and facilitate the WLI and representatives from the Basin GSAs will serve as speakers and hosts to engage with the cohort on topics related to SGMA and GSP development. The program will include 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.

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 collateral, workshop materials, and meeting packets and minutes for the Basin Coordination Committee, Central Management Committee, Central Delta-Mendota GSA JPA, and Northern 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 after January 2020 for consideration in the development of this GSP (**Appendix G**). **Table PA-7** below describes the revisions made in response to the comments received. Comments received prior to January 2020 are discussed and incorporated in the 2020 GSPs and Revised 2022 GSPs.

Table PA-7. Comments Received on GSPs after January 2020

GSP	Source	Date	Type of Input	How Input was Incorporated
All	Environmental Law Foundation	9/22/2022	Comments regarding the quantification of overdraft and sustainable yield calculation, protectiveness of URs and SMCs, identification of ISW and GDEs, and using WY 2013 to define “current conditions”.	Developed a Basin-wide Water Budget using a numerical groundwater flow model, including a quantification of overdraft (Section 9.3.4) and refined Sustainable Yield estimate (Section 9.5). Provided additional description of impacts that SMCs have on beneficial users, including a well impacts analysis and developing a well mitigation program (Section 16.1.6). Refined the identification of ISWs and GDEs based on recent data (Sections 8.7 and 8.8). Updated the GSP to use WY 2022 to define “current conditions” (Section 8).
	San Joaquin River Restoration Program	9/19/2022	General feedback, as well as comments of support, for the Revised 2022 GSPs regarding stakeholder engagement, data gap filling, identification of GDEs, and ISW and Land Subsidence SMCs.	Refined and expanded the Basin-wide monitoring network to address spatial data gaps (Section 15). Refined the identification of ISWs and GDEs based on recent data (Sections 8.7 and 8.8). Revised SMCs per DWR deficiencies (Sections 1.2 and 12).
	Friant Water Authority	9/19/2022	Concerns regarding subsidence along the Delta-Mendota Canal.	Provided further justification to tie back Land Subsidence SMCs to impacts on critical infrastructure (Section 12). Developed a Basin-wide Water Budget using a numerical groundwater flow model, including a quantification of overdraft (Section 9.3.4) and refined Sustainable Yield estimate (Section 9.5). Refined and expanded the Basin-wide monitoring network to address spatial data gaps (Section 15).

GSP	Source	Date	Type of Input	How Input was Incorporated
	National Marine Fisheries Service ¹	9/16/2022	Concerns regarding ISW SMCs, estimation of streamflow depletions, and identification of ISW and GDEs.	Refined the identification of ISWs and GDEs based on recent data (Sections 8.7 and 8.8). Provided additional justification for ISW MTs and criteria for URs (Section 12).
	Clean Water Action and multiple NGOs	7/6/2022	Request for more public engagement by the GSAs	Comment noted. No changes to the GSP requested.
	Central Valley Flood Protection Board	5/15/2020	Permit requirements for P/MAs; input on potential subsidence impacts.	Included Encroachment Permit requirement for applicable P/MAs (Section 14.7). Incorporated recent subsidence data and revised Land Subsidence SMCs (Section 12).
	California Sportfishing Protection Alliance	5/15/2020	Concerns regarding consideration of environmental users in the GSPs	Provided additional justification for the Sustainable Management Criteria (SMCs) based on the impacts to beneficial users (Section 12).
Aliso Water District GSP	CDFW	9/19/2022	Concerns regarding the identification of ISW and GDEs, quantification of overdraft, and subsidence.	Developed a Basin-wide Water Budget using a numerical groundwater flow model, including a quantification of overdraft (Section 9.3.4) Refined the identification of ISWs and GDEs based on recent data (Sections 8.7 and 8.8). Provided further justification to tie back Land Subsidence SMCs to impacts on critical infrastructure (Section 12).
	USBR Mid-Pacific Region	5/15/2020	Concerns regarding Land Subsidence SMCs	Provided further justification to tie back Land Subsidence SMCs to impacts on critical infrastructure (Section 12).

GSP	Source	Date	Type of Input	How Input was Incorporated
	Kristin Dobbins (UC Davis)	5/15/2020	Evaluation of GSP with respect to the Human Right to Water and impacts on drinking water users.	Comments noted. Provided additional justification for the SMCs based on the impacts to drinking water user, including a Basin-wide well impacts analysis (Section 12). Developed a framework for a well mitigation program (Section 16.1.6)
Farmers Water District GSP	USBR Mid-Pacific Region	5/15/2020	Concerns regarding identification of ISW.	Refined the identification of ISWs and GDEs based on recent data (Sections 8.7 and 8.8).
	Kristin Dobbins (UC Davis)	5/15/2020	Evaluation of GSP with respect to the Human Right to Water and impacts on drinking water users.	See response to Kristin Dobbins' comment for the Aliso Water District GSP above.
	CDFW	3/11/2020	Concerns regarding increased salinity, subsidence at the Mendota Wildlife Area, identification of ISW and GDEs, SMCs, and level of detail included with P/MAs.	Refined the identification of ISWs and GDEs based on recent data (Sections 8.7 and 8.8). Revised groundwater conditions based on recent water quality and subsidence data (Section 8) and revised SMCs (Section 12). Included detailed project information, such as costs and benefits, in Table PMA-1 and Table PMA-2 .
Fresno County Management Areas A & B GSP	CDFW	9/27/2022	Concerns regarding the identification of ISW and GDEs, quantification of overdraft, and subsidence.	See response to the CDFW's comment for the Aliso Water District GSP above
	Multiple NGOs	5/15/2020	Priority actions for identification of GDE, the water budget, stakeholder notice and communication, the monitoring network, and P/MAs.	Developed a Basin-wide Water Budget using a numerical groundwater flow model (Section 9). Refined the identification of ISWs and GDEs based on recent data (Sections 8.7 and 8.8). Refined and expanded the Basin-wide monitoring network to fill spatial data gaps (Section).

GSP	Source	Date	Type of Input	How Input was Incorporated
	The Nature Conservancy (TNC)	5/15/2020	Comments addressing the engagement and consideration of environmental groundwater users in various GSP elements and identification and monitoring of ISWs and GDEs.	Refined the identification of ISWs and GDEs (Sections 8.7 and 8.8) based on recent data. Provided additional description of the impacts that ISW SMCs have on beneficial users (Section 12). Refined and expanded the Basin-wide monitoring network to fill spatial data gaps (Section).
	USBR Mid-Pacific Region	5/15/2020	Concerns regarding identification of ISWs and the GSP-specific Water Budget	Developed a Basin-wide Water Budget using a numerical groundwater flow model (Section 9). Refined the identification of ISWs and GDEs based on recent data (Sections 8.7 and 8.8).
	Audubon California	5/15/2020	Request to include and consider Managed Wetlands explicitly as a beneficial user.	Managed Wetlands added explicitly as a water use sector in Table PA-3 .
	Kristin Dobbins (UC Davis)	5/15/2020	Evaluation of GSP with respect to the Human Right to Water and impacts on drinking water users.	See response to Kristin Dobbins’s comment for the Aliso Water District GSP above.
	CDFW	4/28/2020	Comments regarding the GSP’s Plan Area, HCM, identification of ISW, Land Subsidence SMCs, and impacts of SMCs on beneficial users.	Comments noted. Refined the identification of ISWs based on recent data (Section 8.7). Provided additional justification for SMCs based on the impacts to beneficial users, including a well impacts analysis and development of a well mitigation program (Section 16.1.6). Provided further justification to tie back Land Subsidence SMCs to impacts on critical infrastructure (Section 12).

GSP	Source	Date	Type of Input	How Input was Incorporated
Grassland Water District GSP	Multiple NGOs	5/15/2020	Priority actions for identification of GDE, the water budget, stakeholder notice and communication, the monitoring network, and P/MAs.	See response to the multiple NGOs priority actions on the Fresno County GSP above.
	TNC	5/15/2020	Comments on Plan deficiencies on the engagement and inclusion of environmental beneficial uses and users in various GSP elements, identifying ISWs and GDEs, and considering impacts of SMCs on environmental users.	See response to TNC's comment on the Fresno County GSP above.
	USBR Mid-Pacific Region	5/15/2020	Concerns regarding identification of ISWs and Land Subsidence SMCs.	Refined the identification of ISWs and GDEs based on recent data (Sections 8.7 and 8.8). Provided further justification to tie back Land Subsidence SMCs to impacts on critical infrastructure (Section 12).
	Kristin Dobbins (UC Davis)	5/15/2020	Evaluation of GSP with respect to the Human Right to Water and impacts on drinking water users.	See response to Kristin Dobbins' comment for the Aliso Water District GSP above.
Northern and Central Delta-Mendota GSP	DWR SWP CASP	9/22/2022	Comments on the Revised Westside Subbasin GSP regarding subsidence along the California Aqueduct.	Comments noted. No changes to GSP requested.
	Friant Water Authority	6/9/2020	Comments regarding Land Subsidence SMCs	Provided further justification to tie back Land Subsidence SMCs to impacts on critical infrastructure (Section 12).

GSP	Source	Date	Type of Input	How Input was Incorporated
	Multiple NGOs	5/15/2020	Priority actions for identification of GDE, the water budget, stakeholder notice and communication, the monitoring network, and P/MAs.	See response to the multiple NGOs priority actions on the Fresno County GSP above.
	TNC	5/15/2020	Comments on Plan deficiencies on the engagement and inclusion of environmental beneficial uses and users in various GSP elements, identifying ISWs and GDEs, and considering impacts of SMCs on environmental users.	See response to TNC's comment on the Fresno County GSP above.
	American Rivers	5/15/2020	Comments regarding the impact that P/MAs will have on water quality and identification of ISWs.	The GSAs will continue to monitor groundwater quality for compliance with SMCs during implementation of P/MAs. Revised identification of ISWs and GDEs based on recent data (Sections 8.7 and 8.8).
	USBR Mid-Pacific Region	5/15/2020	Concerns regarding identification of ISWs and Land Subsidence SMCs.	See response to USBR's comment on the Grassland GSP above.
	Audubon California	5/15/2020	Request to include and consider Managed Wetlands explicitly as a beneficial user.	Managed Wetlands included as a water use sector in Table PA-3 .
	Kristin Dobbins (UC Davis)	5/15/2020	Evaluation of GSP with respect to the Human Right to Water and impacts on drinking water users.	See response to Kristin Dobbins's comment for the Aliso Water District GSP above.

GSP	Source	Date	Type of Input	How Input was Incorporated
	DWR Division of Flood Management	5/15/2020	Requests to refine Land Subsidence SMCs based on flood system capacities, infrastructure, and inundation areas	Provided further justification to tie back Land Subsidence SMCs to impacts on critical infrastructure (Section 12).
	DWR SWP CASP	5/15/2020	Comments regarding subsidence along the California Aqueduct.	Provided further justification to tie back Land Subsidence SMCs to impacts on critical infrastructure (Section 12).
	California Poultry Foundation	5/14/2020	Request for more stakeholder engagement from the Northern & Central Delta-Mendota GSA Groups.	Comment noted. No changes to the GSP requested.
	CDFW	3/11/2020	Comments regarding the identification and monitoring of ISW and GDEs, water quality, and subsidence at the Mendota Pool.	Refined the identification of ISWs and GDEs based on recent data (Sections 8.7 and 8.8). Expanded water quality SMCs to include additional constituents of concern, and provided further justification to tie back Land Subsidence SMCs to impacts on critical infrastructure (Section 12).
SJREC GSP	TNC	5/15/2020	Comments on Plan insufficiencies in addressing environmental beneficial uses and users	See response to TNC's comment on the Fresno County GSP above.
	USBR Mid-Pacific Region	5/15/2020	Concerns regarding identification of ISWs and Land Subsidence SMCs.	See response to USBR's comment on the Grassland GSP above.
	Kristin Dobbins (UC Davis)	5/15/2020	Evaluation of GSP with respect to the Human Right to Water and impacts on drinking water users.	See response to Kristin Dobbins's comment for the Aliso Water District GSP above.

GSP	Source	Date	Type of Input	How Input was Incorporated
	CDFW	4/16/2020	Comments regarding the Plan Area, identification of environmental beneficial users, Land Subsidence and ISW SMCs, identification of ISWs and GDEs, and monitoring network.	Identified and mapped CFDW lands for the Basin (Section 5.1.3 and Figure PA-2). Refined the identification of ISWs and GDEs based on recent data (Sections 8.7 and 8.8). Refined and expanded the Basin-wide monitoring network to fill spatial data gaps (Section 13). Provided further justification to tie back Land Subsidence SMCs to impacts on critical infrastructure (Section 12).

Notes:

1. Comment not included on the Grassland GSP.

Abbreviations:

CASP = California Aqueduct Subsidence Program
 CDFW = California Department of Fish and Wildlife
 DWR = California Department of Water Resources
 GDE = Groundwater Dependent Ecosystem
 GSA = Groundwater Sustainability Agency
 ISW = Interconnected Surface Water
 MT = Minimum Threshold
 NGO = Non-Governmental Organization

NOAA = National Oceanic and Atmospheric Administration
 P/MAs = Projects and Management Actions
 SMCs = Sustainable Management Criteria
 SWP = State Water Project
 TNC = The Nature Conservancy
 UR = Undesirable Results
 USBR = United States Bureau of Reclamation
 WY = Water Year

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 Memorandum of Agreement (MOA or “Agreement”) 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 to provide 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, meetings minutes and handouts have been posted on the Basin website for public access.

5.5.4.2 Public Engagement Opportunities

23 CCR § 354.10(d)(2)

The Coordination Committee and individual GSA staff 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, or informational emails to provide updates on GSA activities (**Section 5.5.2.3**).
- **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 will primarily be 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 local county farm bureaus to disseminate information related to GSP development and public workshops.
- **School Districts:** Schools districts are considered for both beneficial users of groundwater (for drinking water), as well 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”), superseding the 2018 Coordination Agreement (**Appendix D**). The MOA reflects the GSAs’ desire to adopt a single GSP for the Basin in response to DWR’s Corrective Actions and updates the Basin governance structure to define seven GSA groups to manage separate portions of the Basin.

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. Participation Percentage (i.e., the share of Basin expenses allocated to GSA or GSA Group)
 - d. 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
 8. Coordinated Data Management System
 9. Adaptive Management Process
 10. Modification of this MOA
 - a. Addition of a Party
 - b. Modification of amendment of this MOA
 - c. Amendment for compliance with the law
 11. Withdrawal, Term, and Termination
 12. General Provisions, including:
 - a. Authority of Signers
 - b. Governing Law
 - c. Severability
 - d. Counterparts
 - e. Good Faith
 13. Signatories of all Parties

Coordination During GSP Implementation

The MOA ensures that the multiple GSAs are working cooperatively and collaboratively to develop a single GSP for the Basin and demonstrates that the Basin will be sustainably managed to achieve the Basin's sustainability goal. The Coordination Committee intends to continue to meet and confer following the

submittal of the Basin GSP and will develop guidelines for GSP implementation between the GSA Groups. 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 coordinated implementation of the GSP. 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 and Central Delta-Mendota 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 this agreement 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, inelastic land subsidence and change in storage, are regional issues that may require future inter-basin discussions and coordination. Memoranda of Intent (MOI) are being discussed with the surrounding subbasins to demonstrate/confirm the subbasins' desires to coordinate during GSP implementation. These agreements, to be discussed further following submittal of GSPs, 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.

REFERENCES AND TECHNICAL STUDIES

§ 354.4. General Information

Each Plan shall include the following general information:

(b) A list of references and technical studies relied upon by the Agency in developing the Plan. Each Agency shall provide to the Department electronic copies of reports and other documents and materials cited as references that are not generally available to the public.

23 CCR § 354.4(b)

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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	
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

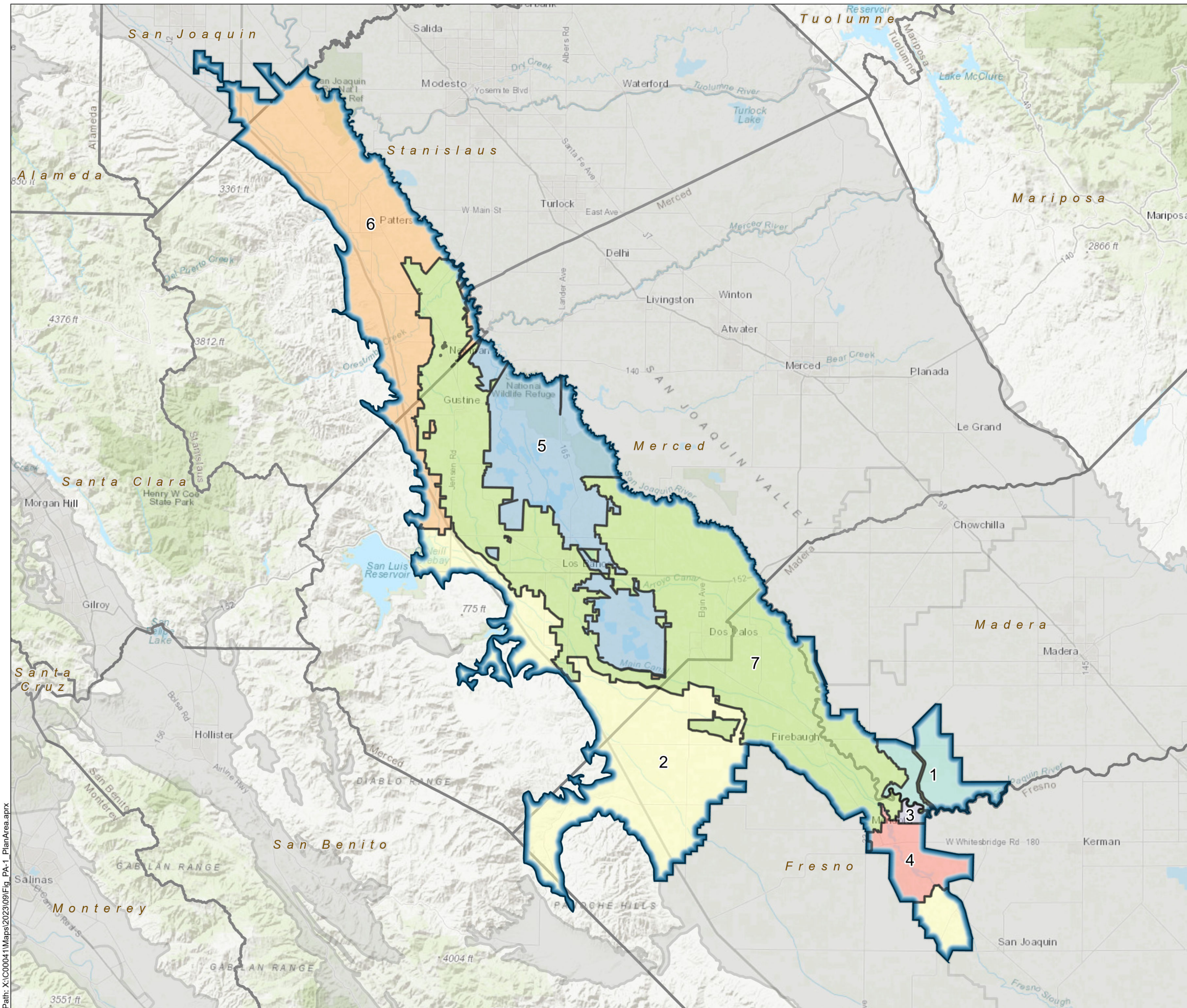
Notes:

- 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.



Plan Area

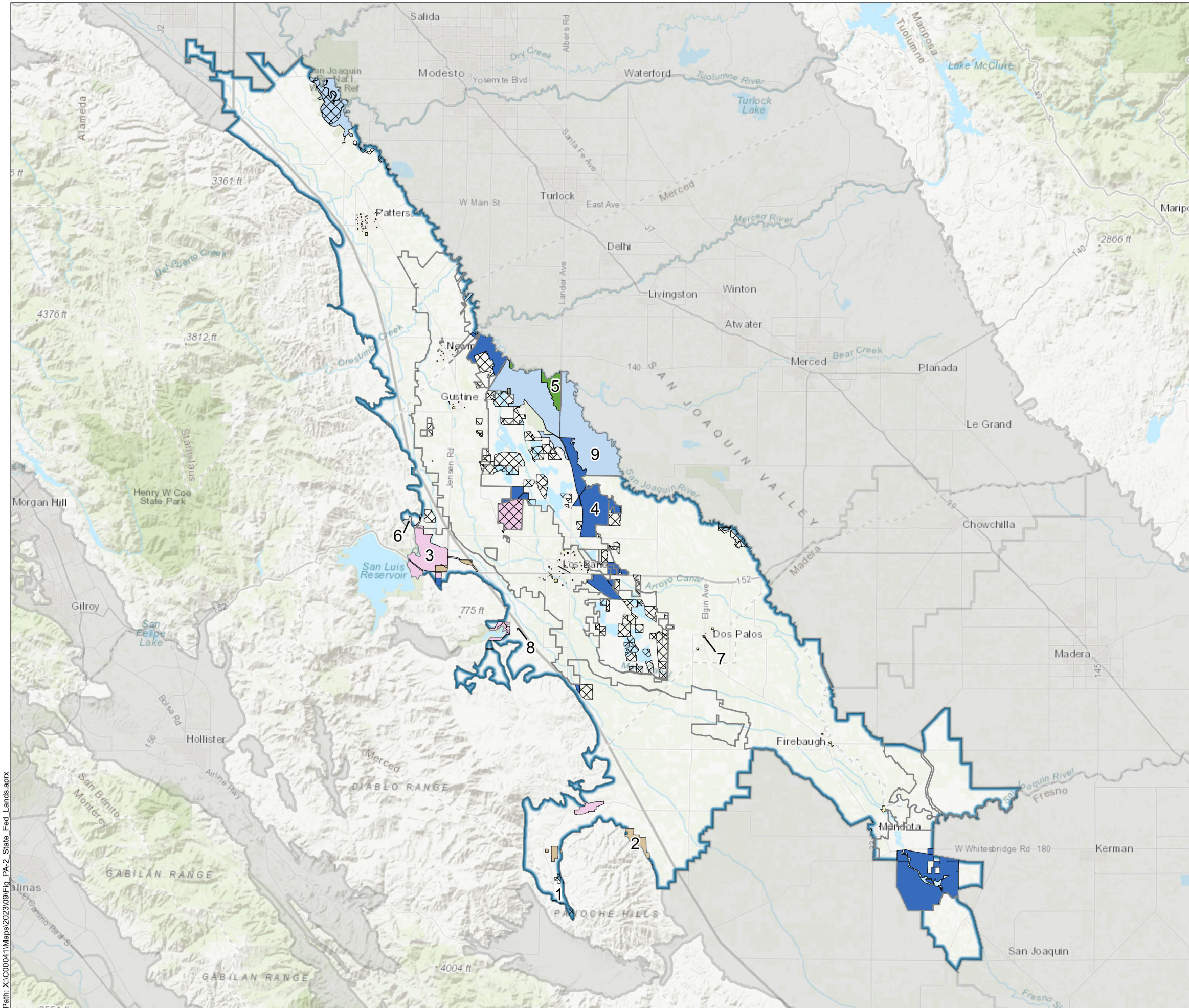
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Delta-Mendota Subbasin
July 2024
C00041.09

Figure PA-1

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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

Abbreviations

- DWR = California Department of Water Resources
- CA = California
- CCED = California Conservation Easement Database
- GSA = Groundwater Sustainability Agency
- 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.
1. 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



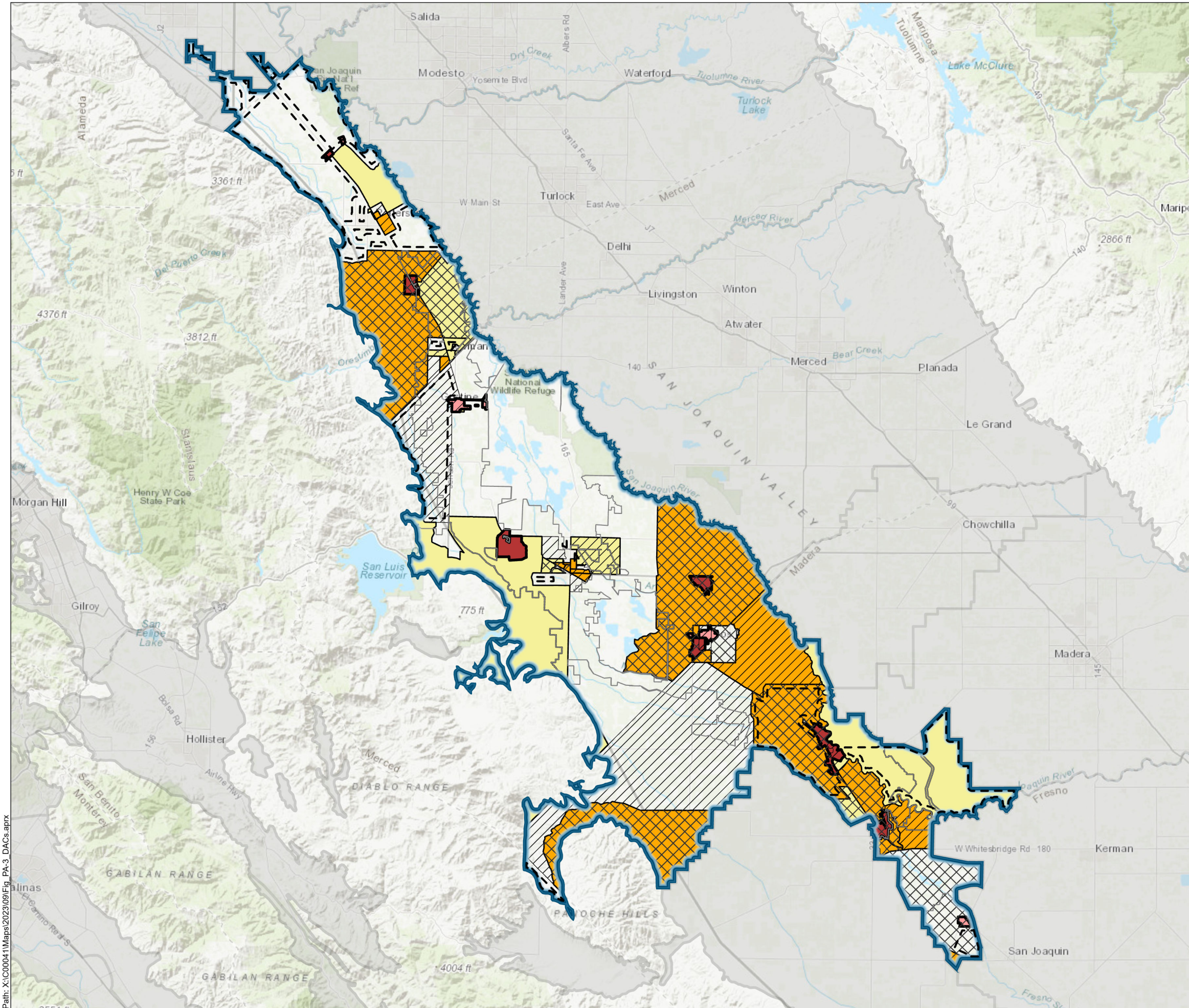
State and Federal Lands

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










Delta-Mendota Subbasin
July 2024
C00041.09

Figure PA-2



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 Community 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
- DAC = Disadvantaged Community
- DWR = California Department of Water Resources
- 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.



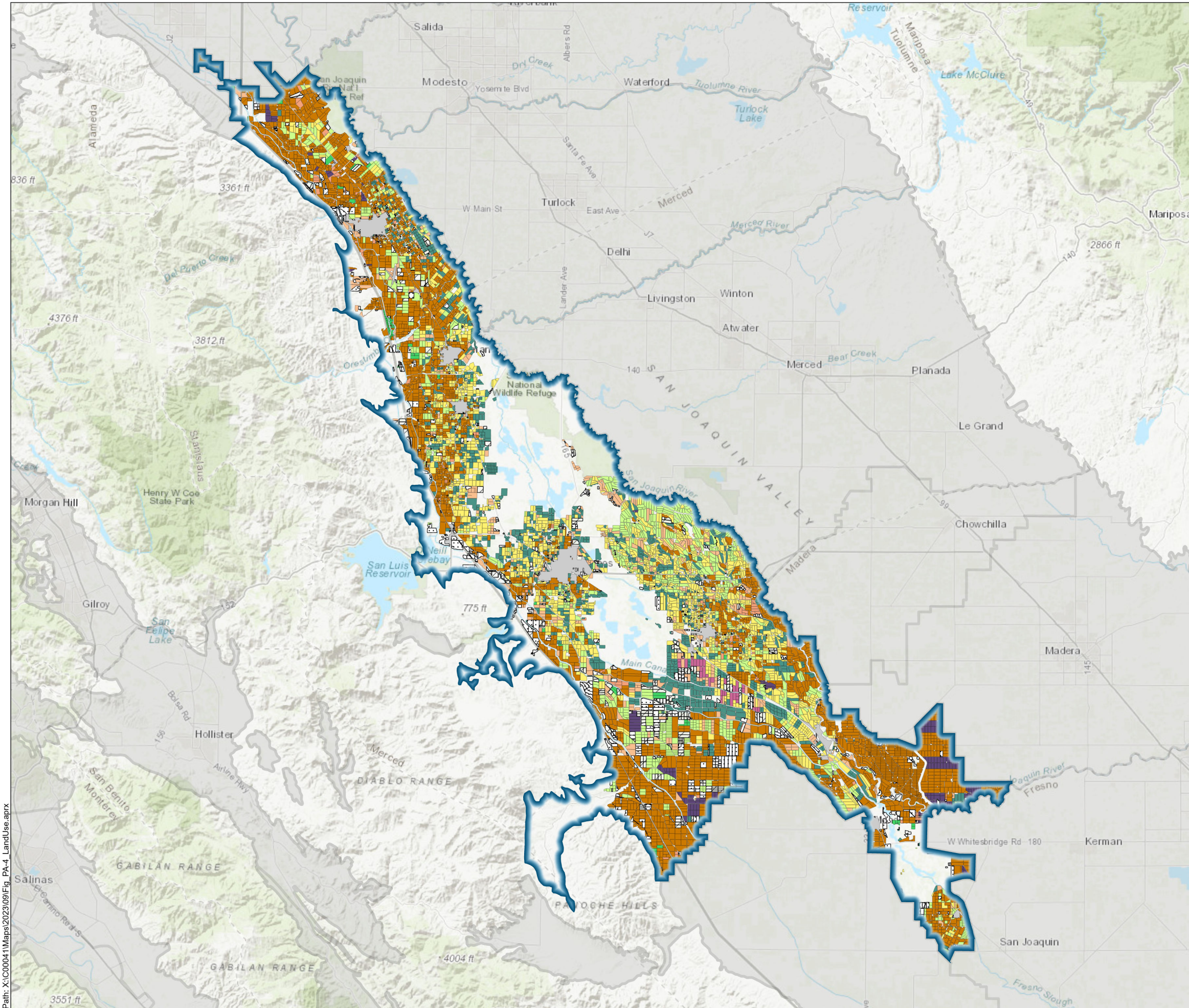
Underrepresented Communities

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eki environment & water

Delta-Mendota Subbasin
July 2024
C00041.09

Figure PA-3



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

Notes

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

Sources

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



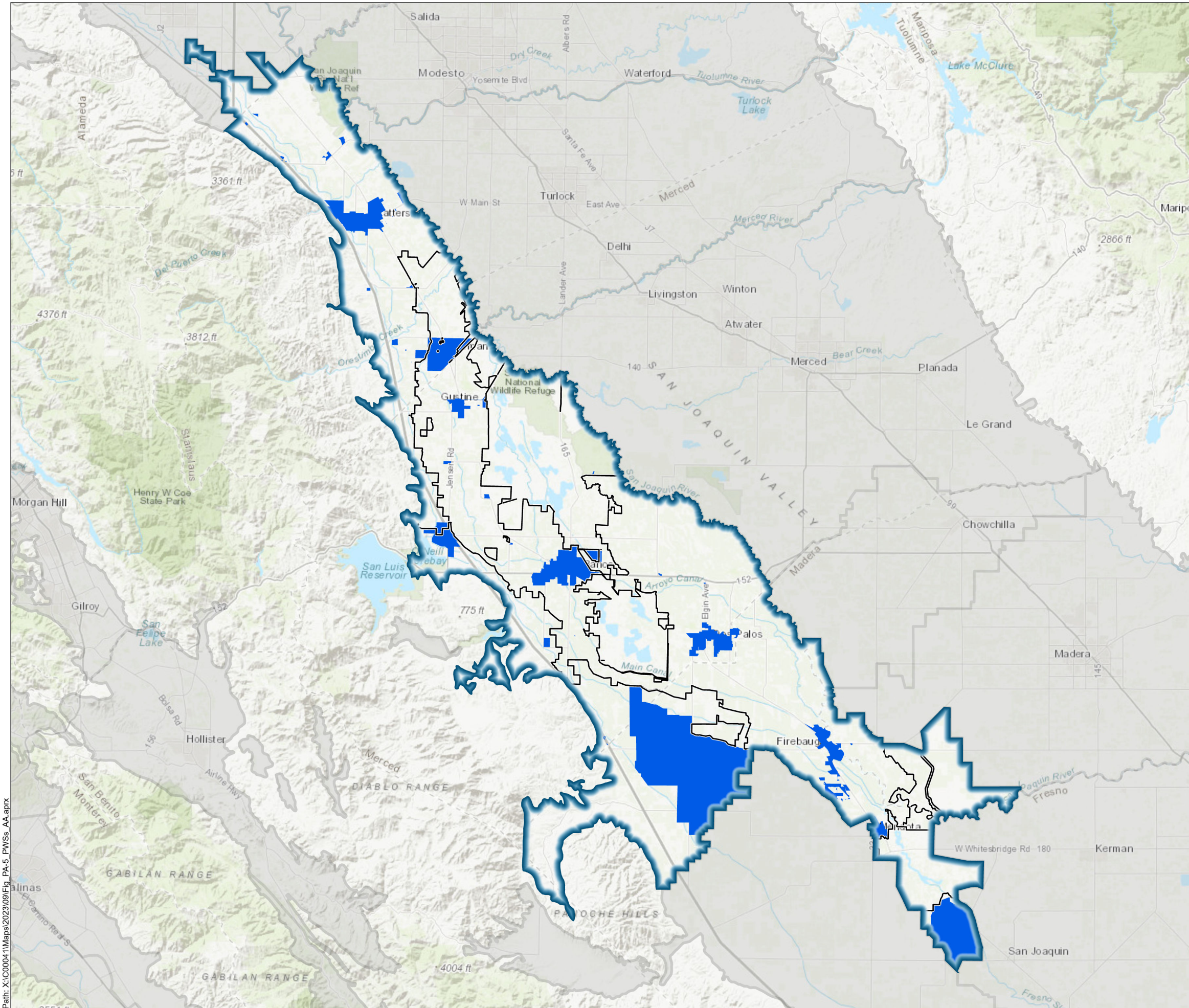
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Land Use

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Delta-Mendota Subbasin
July 2024
C00041.09

Figure PA-4



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.



Public Water Systems

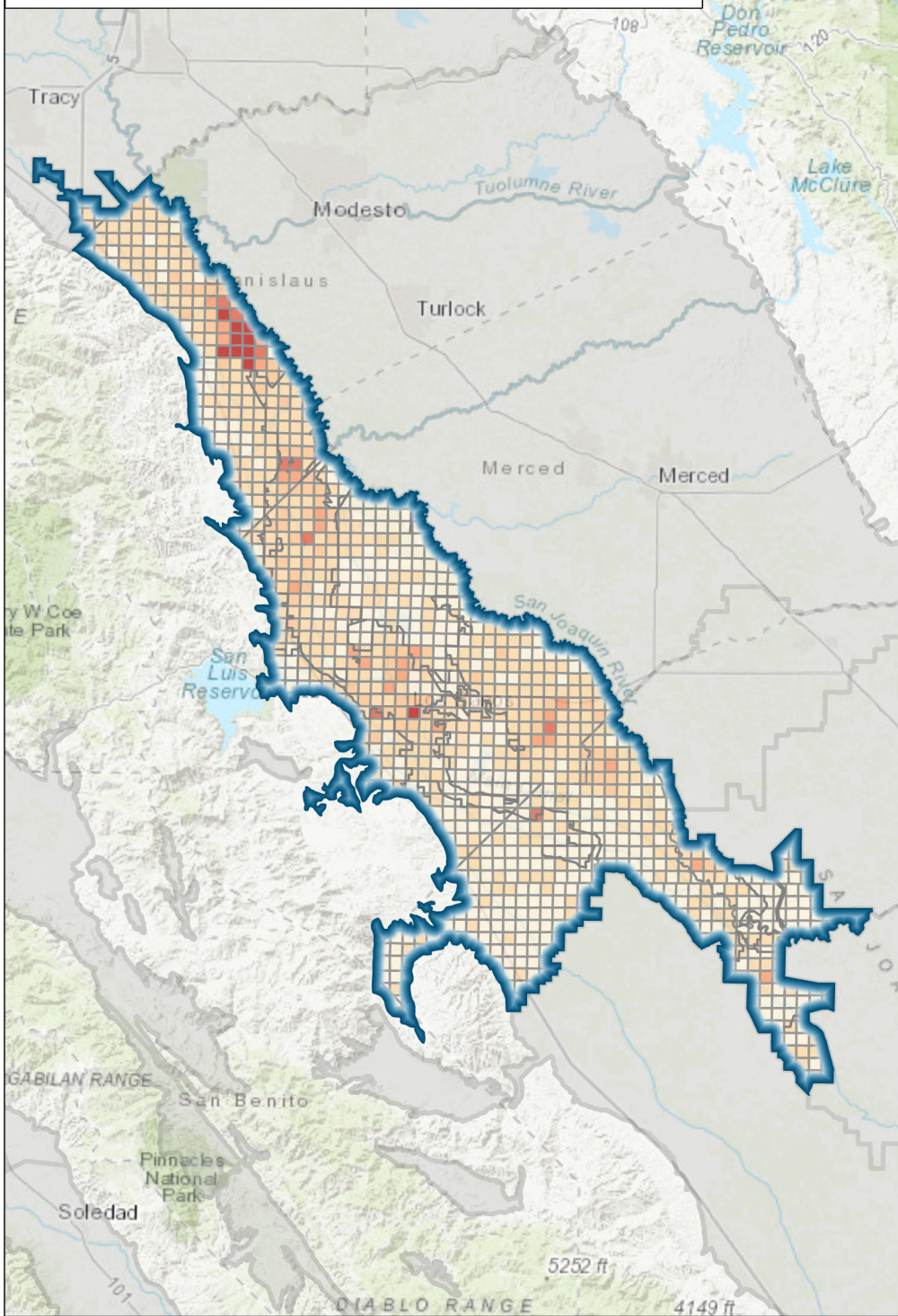
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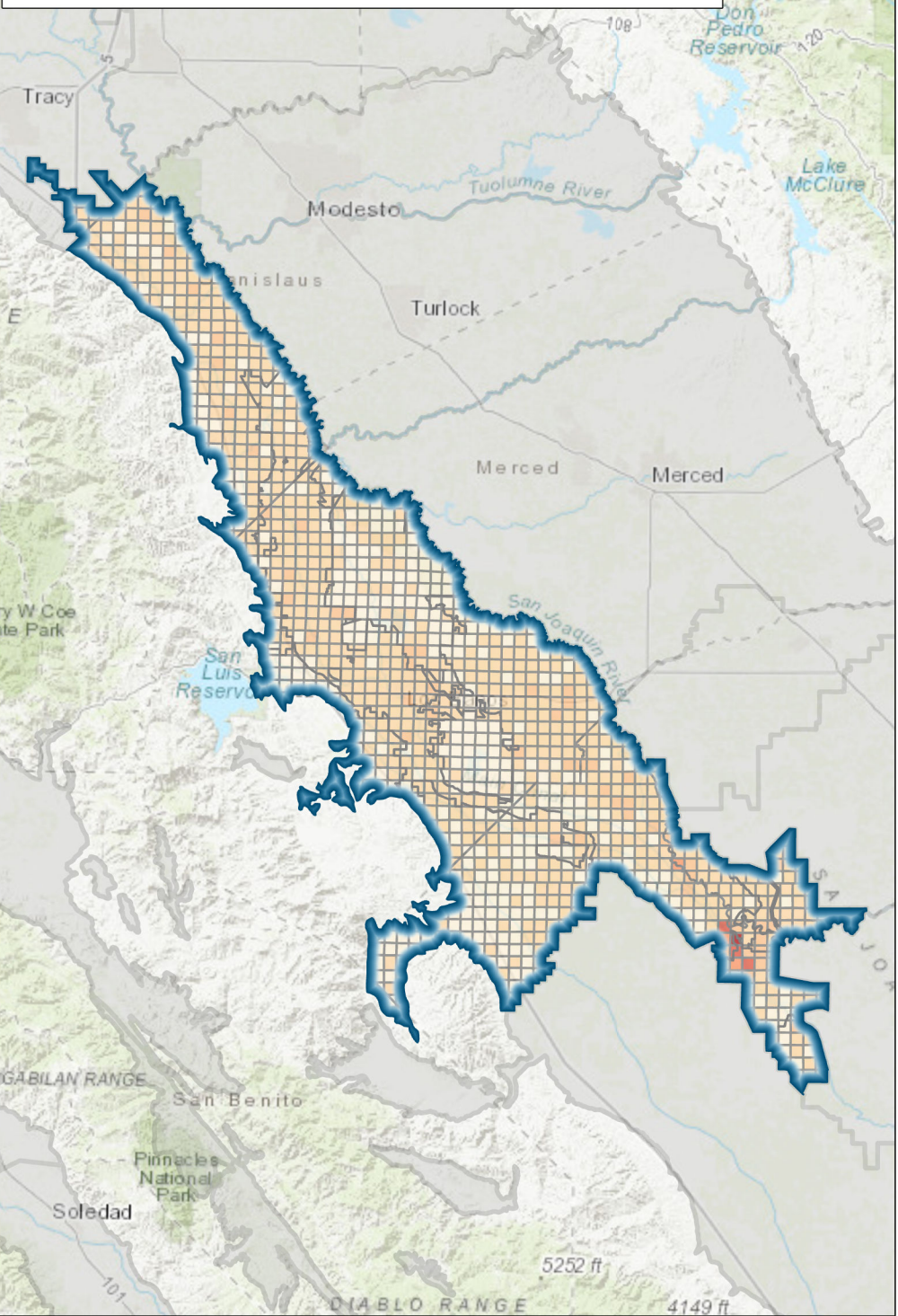
Delta-Mendota Subbasin
 July 2024
 C00041.09

Figure PA-5

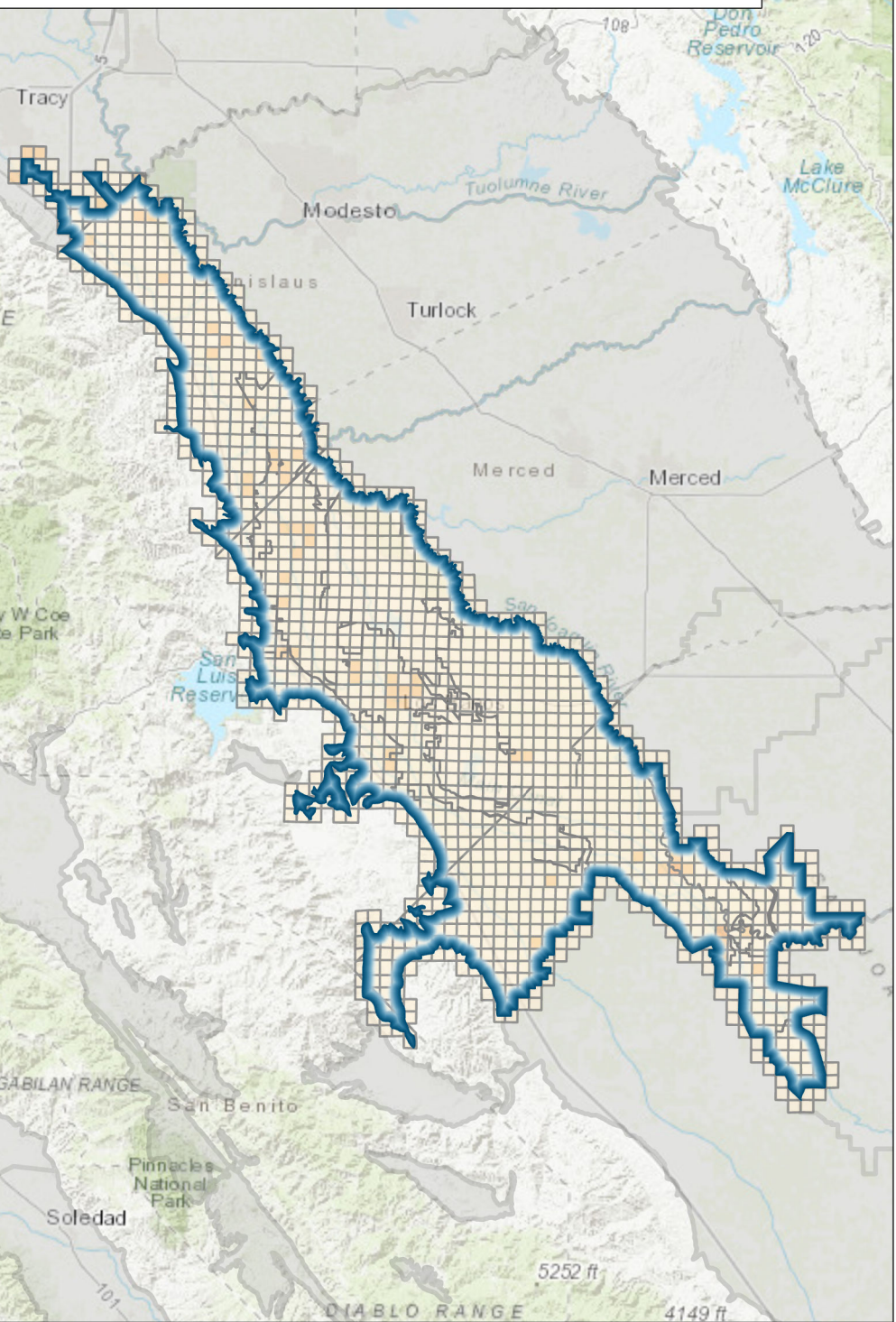
Domestic Well Density per PLSS Section



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>



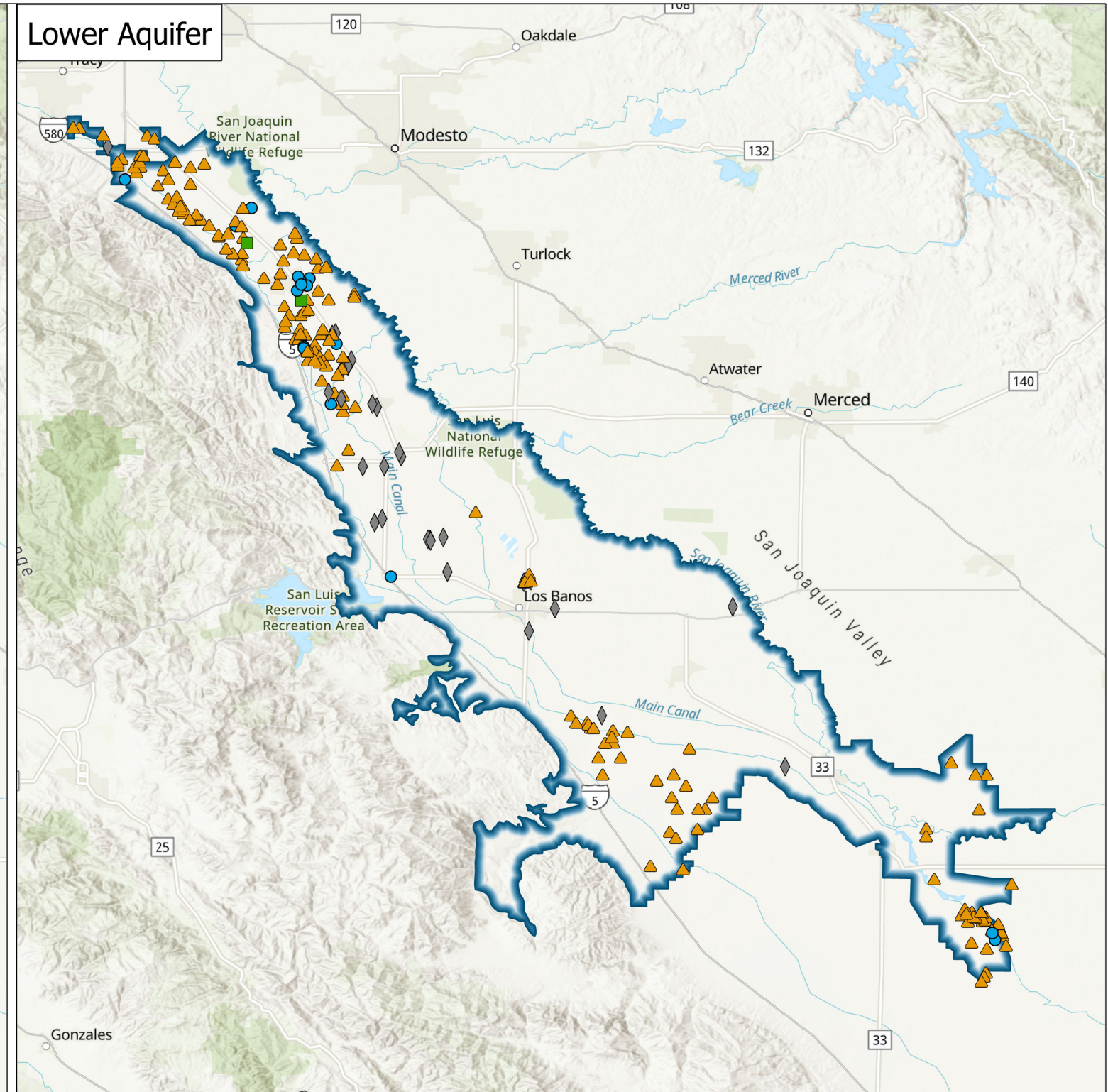
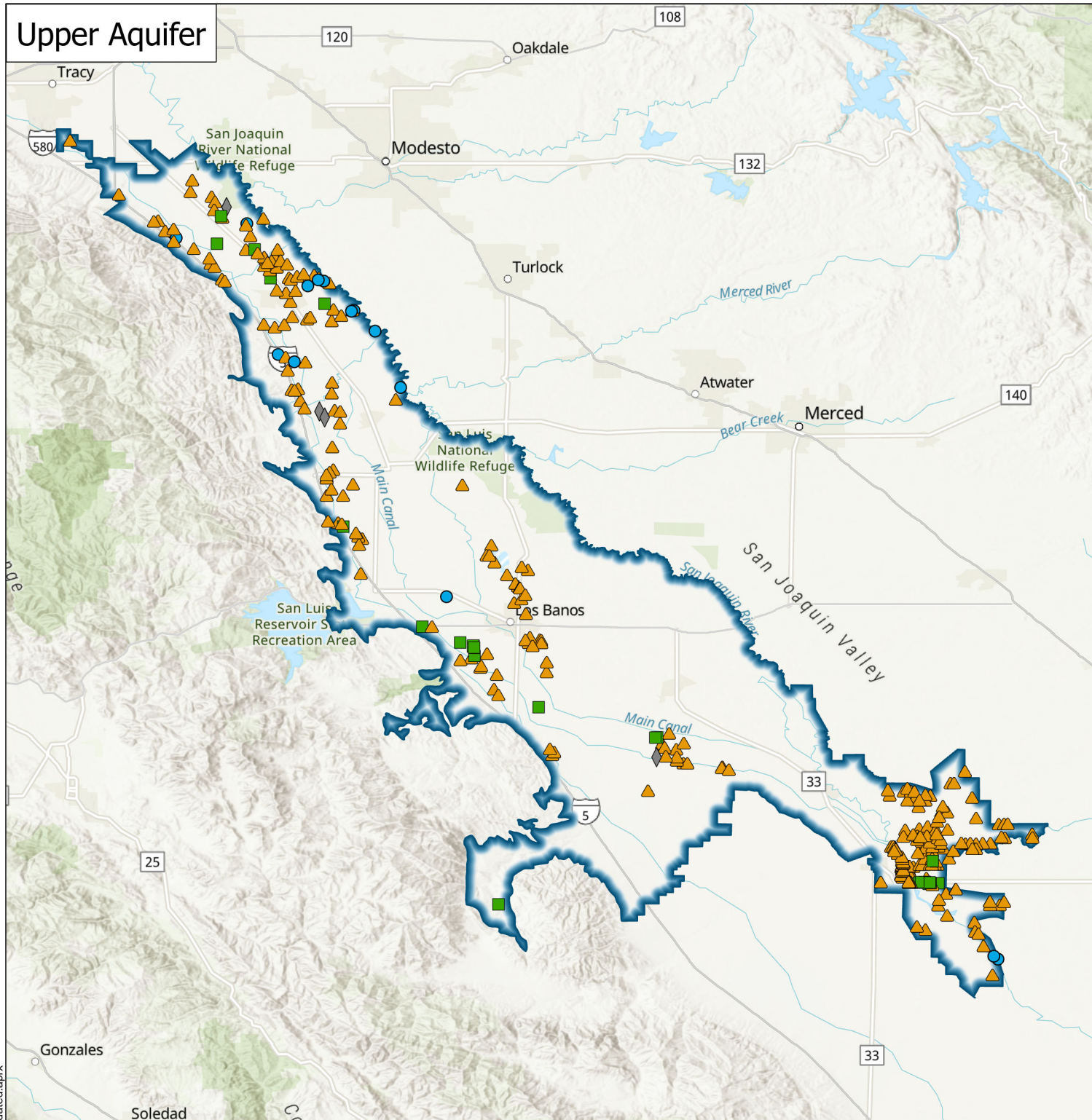
**Well Density by PLSS Section
from DWR Well Completion Reports
Delta-Mendota Subbasin**

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Delta-Mendota Subbasin
July 2024
C00041.09

Figure PA-6

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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
 SGMA = Sustainable Groundwater Management Act

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.



GSA Well Inventory Upper and Lower Aquifer Wells

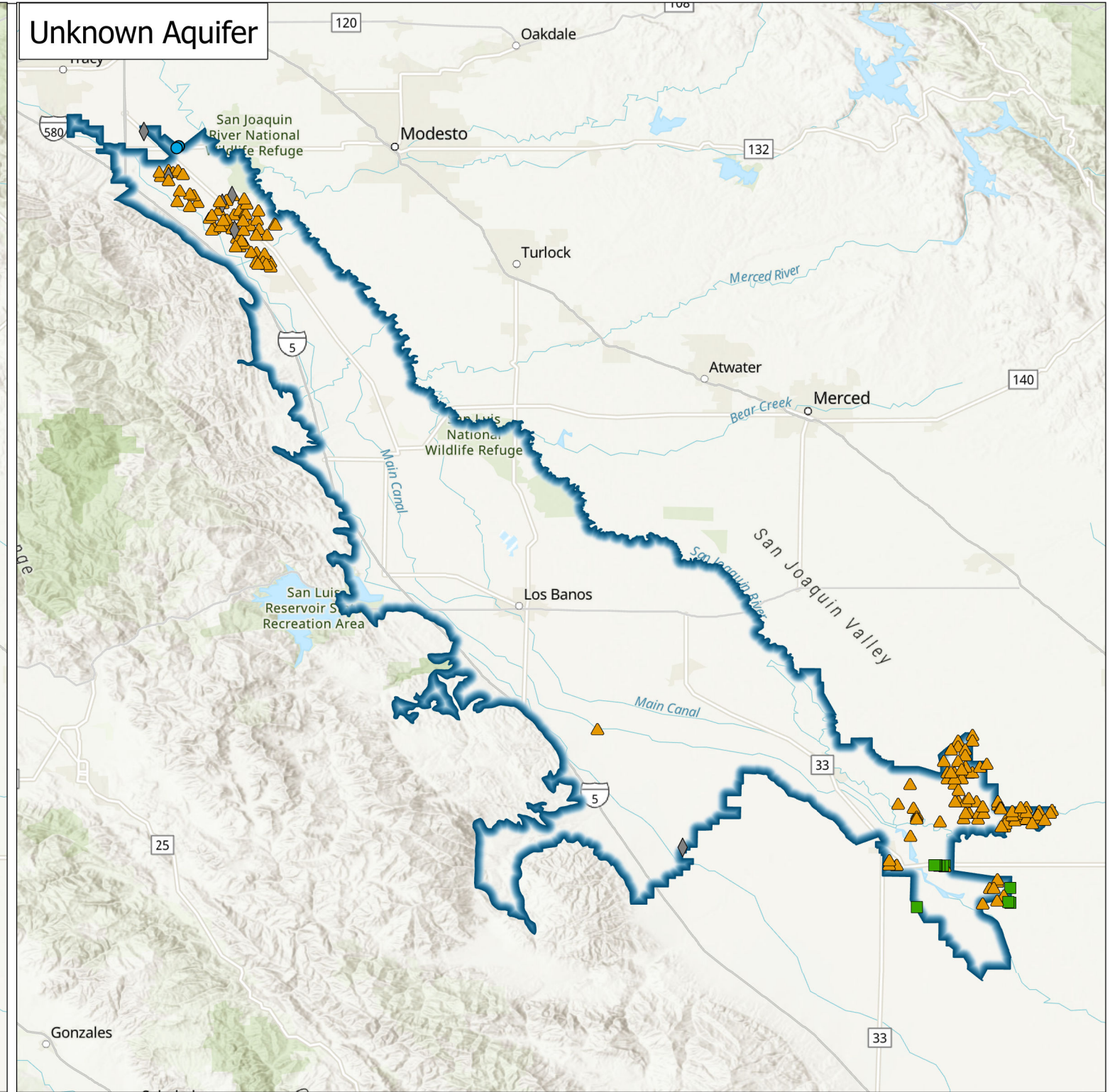
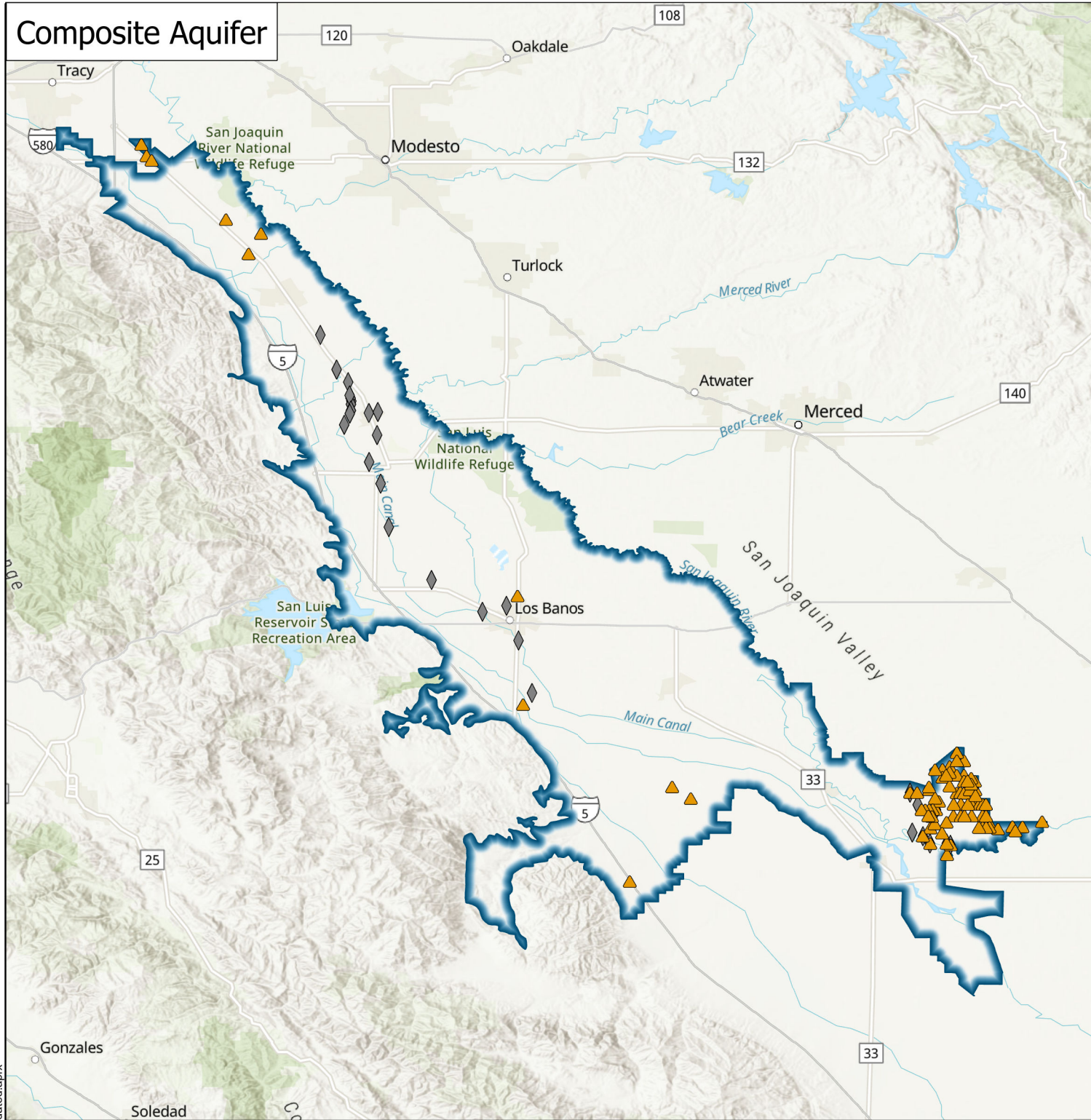
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Delta-Mendota Subbasin
 July 2024
 C00041.09

Figure PA-7

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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
 SGMA = Sustainable Groundwater Management Act

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.



GSA Well Inventory Composite and Unknown Aquifer Wells

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Delta-Mendota Subbasin
 July 2024
 C00041.09

Figure PA-8