

1 INTRODUCTION

1.1 Purpose of the Groundwater Sustainability Plan

The purpose of this Groundwater Sustainability Plan (GSP) is to concurrently optimize groundwater use and groundwater storage in the Westside Subbasin and meet the regulatory requirements set forth in the three-bill legislative package, Assembly Bill (AB) 1739 (Dickinson), Senate Bill (SB) 1168 (Pavley), and SB 1319 (Pavley) collectively known as the Sustainable Groundwater Management Act (SGMA) (California Water Code (Wat. Code) §§ 10720 *et seq.*). Under SGMA, high priority basins or subbasins that are categorized as critically overdrafted must submit an adopted GSP to the California Department of Water Resources (DWR) by January 31, 2020. The Westside Subbasin (Subbasin No. 5-22.09 of the San Joaquin Valley (Valley) Groundwater Basin) (Westside Subbasin or Subbasin) is a high priority subbasin designated by DWR as critically overdrafted. GSPs are prepared and implemented by Groundwater Sustainability Agencies (GSAs), which are local and regional authorities that have the authority and decide to manage groundwater resources within a basin. Westlands Water District (District) serves as the GSA for the Westside Subbasin. SGMA defines sustainable groundwater management as “management and use of groundwater in a manner that can be maintained during the planning and implementation horizon [50 years from 2020 through 2070] without causing undesirable results.” (Wat. Code § 10721(v). Per Water Code section 10721(x), undesirable results are any of the following effects caused by groundwater pumping occurring throughout the basin:

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

The Westside Subbasin GSP describes the existing hydrogeologic conditions and current management practices in the Subbasin. It contains the actions required to achieve and maintain sustainability over the planning and implementation horizon and to prevent the undesirable results listed above.¹ Measurable objectives and minimum thresholds developed and described in this GSP for each sustainability indicator are based on projected hydrologic conditions. This GSP will result in sustainable groundwater management and the preservation of groundwater resources for maximum benefit by all beneficial users of groundwater in the Westside Subbasin.

¹ The Westside Subbasin is not a basin threatened by seawater intrusion.

1.2 Sustainability Goal

The District, acting as the GSA, will manage groundwater resources responsibly and sustainably to maintain acceptable standards of groundwater levels, groundwater quality, groundwater storage, and subsidence. The sustainability goal is detailed in Chapter 3. The District's goal is to continue agriculture production while maintaining groundwater supplies and quality for all beneficial users of groundwater.

1.3 Agency Information

The Westside Subbasin is in the western portion of the San Joaquin Valley Groundwater Basin in Fresno and Kings counties. The Westside Subbasin is surrounded by the Pleasant Valley Subbasin (DWR Subbasin 5-22.10) that lies to the southwest, the Tulare Lake Subbasin (DWR Subbasin 5-22.12) to the south, the Kings Subbasin (DWR Subbasin 5-22.08) to the east, the Delta-Mendota Subbasin (DWR Subbasin 5-22.07) to the east and north, and the Coast Range resides along the western boundary.

The District was formed in 1952 under the California Water District Law (Wat. Code § 34000 *et seq.*). Upon formation, the District was composed of more than 400,000 acres. In 1962, the United States urged the District to merge with Westplains Water Storage District, which was located immediately to the west of the District, to optimize and support the federal government's delivery of surface water to the west side of the San Joaquin Valley. This merger extended the District's western service area boundary to the Interstate 5 corridor, expanded the District's acreage to approximately 600,000 acres, and increased the water supply contract amount from the United States Bureau of Reclamation (USBR) from 900,000 acre-feet (AF) per year in 1963 to a commitment of 1,150,000 acre-feet per year (AFY) in 1965. In March 2007, the lands within the Broadview Water District, located along the District's northern boundary, were annexed into the District to form the current District boundary.

As a result, today the District is the largest agricultural water district in the United States, encompassing approximately 1,000 square miles (approximately 614,000 acres) of farmland in western Fresno and Kings Counties (**Figure 1-1**). The District's federal water contracts provide water to approximately 700 family-owned farms that average 875 acres in size. These farms produce more than 60 different food and fiber crops for the fresh, dry, canned, and frozen food markets in the United States and abroad. For over 100 years, this region has played a central role in the economies of both Fresno and Kings Counties.²

The District's water users rely on surface water and groundwater to irrigate their crops efficiently. The District receives its surface water supply from the Central Valley Project (CVP) through the C.W. "Bill" Jones Pumping Plant and takes delivery from the San Luis Canal (SLC). The District has contracts with USBR for 1.195 million acre-feet (MAF). However, the reliability of the District's CVP water supply has been reduced in large part due to regulatory requirements, preventing the delivery of its full contractual allocation in most years. Therefore, the District's water users have resorted to groundwater to help offset shortages in available surface water and to meet on-farm demands. To maximize the beneficial use of the District's water resources, farms within the District's jurisdiction utilize water-efficient irrigation techniques.

² Shires, Michael A., Ph.D., "The Economic Impact of the Westlands Water District on the Local and Regional Economy," (October 12, 2016), pp, iii, vi, x.

SGMA authorizes a “local public agency that has water supply, water management, or land use responsibilities within a groundwater subbasin or basin to elect to become a GSA and to develop, adopt, and implement a GSP.” (Wat. Code § 10721(n).) As a California Water District formed under the California Water District Act (a copy of which is included in **Appendix A**), the District has the requisite water supply and water management authority to act as a GSA. (Wat. Code § 35401.) The District’s Board elected to serve as the GSA of the Westside Subbasin on July 19, 2016, per Resolution Number 111-16 (a copy of which is included in **Appendix B**). DWR deemed the District as the exclusive GSA of the Westside Subbasin on November 1, 2016. Pursuant to this authority, the District notified the DWR of its intent to develop a GSP on December 22, 2016. A copy of the District’s Notice of Intent (NOI) to serve as the GSA for the Subbasin and the NOI to Develop a GSP are included as **Appendix C**. The District’s boundaries do not encompass the entirety of the Subbasin. The areas of the Subbasin that are not within the District’s boundaries are limited in extent and the District entered into a Memorandum of Understanding with Fresno County (District-Fresno County MOU) on October 18, 2016 to include these non-District lands in the GSP for the Subbasin. The District-Fresno County MOU is attached in **Appendix D**. However, following the ninety (90) day posting period of the NOI, DWR and the State Water Resources Control Board indicated that those Subbasin areas outside of the jurisdictional boundary of an agency that filed to be a GSA for those areas would be considered unmanaged. Subsequently, on May 2, 2017, the County of Fresno Board of Supervisors adopted a Resolution (#17-275) to authorize Fresno County staff to submit a Notice of Intent to DWR indicating that Fresno County intended to serve as a GSA for the unmanaged areas that are within the jurisdictional boundary of Fresno County and outside the jurisdictional boundary of the District.

This GSP covers the entire Westside Subbasin. The majority of the Westside Subbasin falls within the District’s boundaries. Several small areas along the western and eastern edge of the Subbasin extend past the District’s boundaries and fall within the jurisdiction of Fresno and Kings Counties. Fresno County serves as the GSA for the portions of the Westside Subbasin outside of the District’s boundaries that lie within Fresno County. The Kings County portion of the Subbasin that falls outside the District’s boundaries lies within Naval Air Station Lemoore (NASL), which is owned by the federal government and is exempt from the requirements of SGMA. The District is implementing this GSP for the entire Westside Subbasin in collaboration with Fresno County.

1.3.1 Organization and Management Structure of the GSA

The District’s Board of Directors (Board) serves as the Subbasin’s GSA Board. The Board is comprised of nine members each of whom is (1) a holder of a title of land within the District, (2) the legal representative of a holder to a title of land within the District, or (3) a representative designated by the holder of title to land within the District. (See Wat. Code § 34700.) Board elections are held every two years, and Directors are elected to four-year terms of office.

The Board manages and conducts the business and affairs of the Subbasin. The Board meets on the third Tuesday of each month, except on holidays, and meetings are open to the general public. Agendas and Minutes are available on the District’s website. The Board’s tasks include, but are not limited to, the following:

- Develop budget(s) and appropriate cost sharing for any project or management action;

- Propose guidance and options for obtaining grant funding;
- Adopt rules, regulations, policies, and procedures related to implementation of the GSP;
- Recommend the adoption of rules, regulations, policies, and procedures related to the District-Fresno County MOU;
- Recommend the approval of any contracts with consultants or subcontractors that would undertake work on behalf of the Westside Subbasin and/or relate to Basin-wide issues ;
- Report to the GSAs respective governing boards when dispute resolution is needed to resolve an impasse or inability to make a consensus recommendation;
- Recommend action and/or approval of a GSP; and
- Perform any act necessary or proper to carry out the purposes of SGMA in the Subbasin.

Contact information for the District’s GSP manager and the District itself, is provided below:

Agency: Westlands Water District
Address: 286 W. Cromwell Ave, P.O. Box 5199
Fresno, CA 93711
GSP Manager: Katarina Campbell, Supervisor of Resources
Phone Number: 559-224-1523
Electronic Mail Address: kcampbell@wwd.ca.gov

Contact information for Fresno County GSP manager is provided below:

Agency: The County of Fresno, Department of Public Works
Address: 2220 Tulare St. 6th Floor
Fresno, CA 93721
GSP Manager: Augustine Ramirez, Water and Natural Resources Manager
Phone Number: 559-600-4292
Electronic Mail Address: WaterAndNaturalResources@fresnocountyca.gov

1.3.2 Legal Authority of the GSA

The following powers and authorities are granted to the District as the GSA (Wat. Code § 10725 *et seq.*):

- Adopt standards for measuring and reporting water use;
- Adopt rules, regulations, policies, and procedures to govern the adoption and implementation of the GSP, as authorized by SGMA, including funding of the GSA and the collection of fees or charges as may be applicable;
- Develop and implement conservation best management practices;

- Develop and implement metering, monitoring, and reporting related to groundwater pumping;
- Hire consultants as determined necessary or appropriate by the GSA;
- Prepare a budget; and
- Perform any act necessary or proper to implement the SGMA in the Subbasin.

Similarly, the County of Fresno has the authority to implement the GSP through its statutory land use and water management responsibilities pursuant to its constitutional police powers. Fresno County’s Board of Supervisors adopted a resolution (No. 17-275) and was recognized as the GSA in the Westside Subbasin for approximately 10,183 acres west of the District’s boundary, Appendix D.

1.3.3 Estimated Cost of Implementing GSP and the GSA’s Approach to Meeting Costs

The majority of the GSP development costs were funded through the District successfully obtaining a \$2.5 million Proposition 1 grant for GSP development and monitoring facilities. In addition to the grant funds, the District expended approximately \$500,000 on GSP development and related activities from revenue collected through the District’s operations and maintenance water rate. In early 2020, the District adopted a SGMA land-based charge to, in part, recover initial SGMA costs over a five-year term. The 2024–25 fiscal year is the last year the SGMA land-based charge will include this reimbursement component.

The Board is continually evaluating funding methods to implement the GSP. Implementation costs for the GSP include monitoring, management and administration, Periodic Evaluations and GSP amendments, and implementation of projects and management actions. Total costs are anticipated to average about \$6.1 million per year (partially grant funded) and are presented in **Chapter 5** of the GSP. The ongoing costs of GSP implementation will be subject to further planning and GSA approvals for future actions, including, but not limited to, administration and management, monitoring, metering, measurement, replenishment, and storage of water.

1.4 GSP Organization

This GSP is organized according to DWR’s “GSP Annotated Outline” for standardized plan development (CA DWR SGMP, 2016). The Preparation Checklist for GSP Submittal in DWR formatting can be found below in **Table 1-1** (CA DWR SGMP, 2016).

Table 1-1: DWR Preparation Checklist

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
352.2		Monitoring Protocols	<ul style="list-style-type: none"> • Monitoring protocols adopted by the GSA for data collection and management • Monitoring protocols that are designed to detect changes in groundwater levels, groundwater quality, inelastic surface subsidence for basins for which subsidence has been identified as a potential problem, and flow and quality of surface water that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin 	Ch. 3.5
354.4		General Information	<ul style="list-style-type: none"> • Executive Summary • List of references and technical studies 	Ex. Summary and Ch. 7
354.6		Agency Information	<ul style="list-style-type: none"> • GSA mailing address • Organization and management structure • Contact information of Plan Manager • Legal authority of GSA • Estimate of implementation costs 	Ch. 1.3

354.8(a)	10727.2(a)(4)	Map(s)	<ul style="list-style-type: none"> • Area covered by GSP • Adjudicated areas, other agencies within the basin, and areas covered by an Alternative Plan • Jurisdictional boundaries of federal or State land • Existing land use designations • Density of wells per square mile 	Ch. 2.1
354.8(b)		Description of the Plan Area	<ul style="list-style-type: none"> • Summary of jurisdictional areas and other features 	Ch. 2.1.1
354.8(c) 354.8(d) 354.8(e)	10727.2(g)	Water Resource Monitoring and Management Programs	<ul style="list-style-type: none"> • Description of water resources monitoring and management programs • Description of how the monitoring networks of those plans will be incorporated into the GSP • Description of how those plans may limit operational flexibility in the basin • Description of conjunctive use programs 	Ch. 2.1.2
354.8(f)	10727.2(g)	Land Use Elements or Topic Categories of Applicable General Plans	<ul style="list-style-type: none"> • Summary of general plans and other land use plans • Description of how implementation of the GSP may change water demands or affect achievement of sustainability and how the 	Ch. 2.1.3 and Ch. 2.1.4.1

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
			<p>GSP addresses those effects</p> <ul style="list-style-type: none"> • Description of how implementation of the GSP may affect the water supply assumptions of relevant land use plans • Summary of the process for permitting new or replacement wells in the basin • Information regarding the implementation of land use plans outside the basin that could affect the ability of the Agency to achieve sustainable groundwater management 	
354.8(g)	10727.4	Additional GSP Contents	<p>Description of Actions related to:</p> <ul style="list-style-type: none"> • Control of saline water intrusion • Wellhead protection • Migration of contaminated groundwater • Well abandonment and well destruction program • Replenishment of groundwater extractions • Conjunctive use and underground storage • Well construction policies • Addressing groundwater contamination cleanup, 	Ch. 2.1, Ch. 4

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
			<p>recharge, diversions to storage, conservation, conveyance, and extraction projects</p> <ul style="list-style-type: none"> • Efficient water management practices • Relationships with State and federal regulatory agencies • Review of land use plans and efforts to coordinate with land use planning agencies to assess activities that potentially create risks to groundwater quality or quantity • Impacts on groundwater dependent ecosystems 	
354.10		Notice and Communication	<ul style="list-style-type: none"> • Description of beneficial uses and users • List of public meetings • GSP comments and responses • Decision-making process • Public engagement • Encouraging active involvement • Informing the public on GSP implementation progress 	Ch. 2.1.5

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
354.14		Hydrogeologic Conceptual Model	<ul style="list-style-type: none"> • Description of the Hydrogeologic Conceptual Model • Two scaled cross-sections • Map(s) of physical characteristics: topographic information, surficial geology, soil characteristics, surface water bodies, source and point of delivery for imported water supplies 	Ch. 2.2
354.14(d)(4)	10727.2(a)(5)	Map of Recharge Areas	<ul style="list-style-type: none"> • Map delineating existing recharge areas that contribute to the replenishment of the basin, potential recharge areas, and discharge areas 	Ch. 2.2.5.1, Ch. 4.4, and Ch. 4.5
	10727.2(d)(4)	Recharge Areas	<ul style="list-style-type: none"> • Description of how recharge areas identified in the plan contribute to the replenishment of the basin 	Ch. 4.4 and Ch. 4.5
354.16	10727.2(a)(1) 10727.2(a)(2)	Current and Historical Groundwater Conditions	<ul style="list-style-type: none"> • Groundwater elevation data • Estimate of groundwater storage • Seawater intrusion conditions • Groundwater quality issues • Land subsidence conditions • Identification of interconnected surface water systems 	Ch. 2.2

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
			<ul style="list-style-type: none"> • Identification of groundwater-dependent ecosystems 	
354.18	10727.2(a)(3)	Water Budget Information	<ul style="list-style-type: none"> • Description of inflows, outflows, and change in storage • Quantification of overdraft • Estimate of sustainable yield • Quantification of current, historical, and projected water budgets 	Ch. 2.3
	10727.2(d)(5)	Surface Water Supply	<ul style="list-style-type: none"> • Description of surface water supply used or available for use for groundwater recharge or in-lieu use 	Ch. 2.2.9
354.20		Management Areas	<ul style="list-style-type: none"> • Reason for creation of each management area • Minimum thresholds and measurable objectives for each management area • Level of monitoring and analysis • Explanation of how management of management areas will not cause undesirable results outside the management area 	Ch. 3.4.7

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
			<ul style="list-style-type: none"> Description of management areas 	
354.24		Sustainability Goal	<ul style="list-style-type: none"> Description of the sustainability goal 	Ch. 3.1
354.26		Undesirable Results	<ul style="list-style-type: none"> Description of undesirable results Cause of groundwater conditions that would lead to undesirable results Criteria used to define undesirable results for each sustainability indicator Potential effects of undesirable results on beneficial uses and users of groundwater 	Ch. 3.4
354.28	10727.2(d)(1) 10727.2(d)(2)	Minimum Thresholds	<ul style="list-style-type: none"> Description of each minimum threshold and how they were established for each sustainability indicator Relationship for each sustainability indicator Description of how selection of the minimum threshold may affect beneficial uses and users of groundwater 	Ch. 3.3

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
			<ul style="list-style-type: none"> Standards related to sustainability indicators How each minimum threshold will be quantitatively measured 	
354.30	10727.2(b)(1) 10727.2(b)(2) 10727.2(d)(1) 10727.2(d)(2)	Measurable Objectives	<ul style="list-style-type: none"> Description of establishment of the measurable objectives for each sustainability indicator Description of how a reasonable margin of safety was established for each measurable objective Description of a reasonable path to achieve and maintain the sustainability goal, including a description of interim milestones 	Ch. 3.2
354.34	10727.2(d)(1) 10727.2(d)(2) 10727.2(e) 10727.2(f)	Monitoring Networks	<ul style="list-style-type: none"> Description of monitoring network Description of monitoring network objectives Description of how the monitoring network is designed to: demonstrate groundwater occurrence, flow directions, and hydraulic gradients between principal aquifers and surface water features; estimate the change in annual 	Ch. 3.5

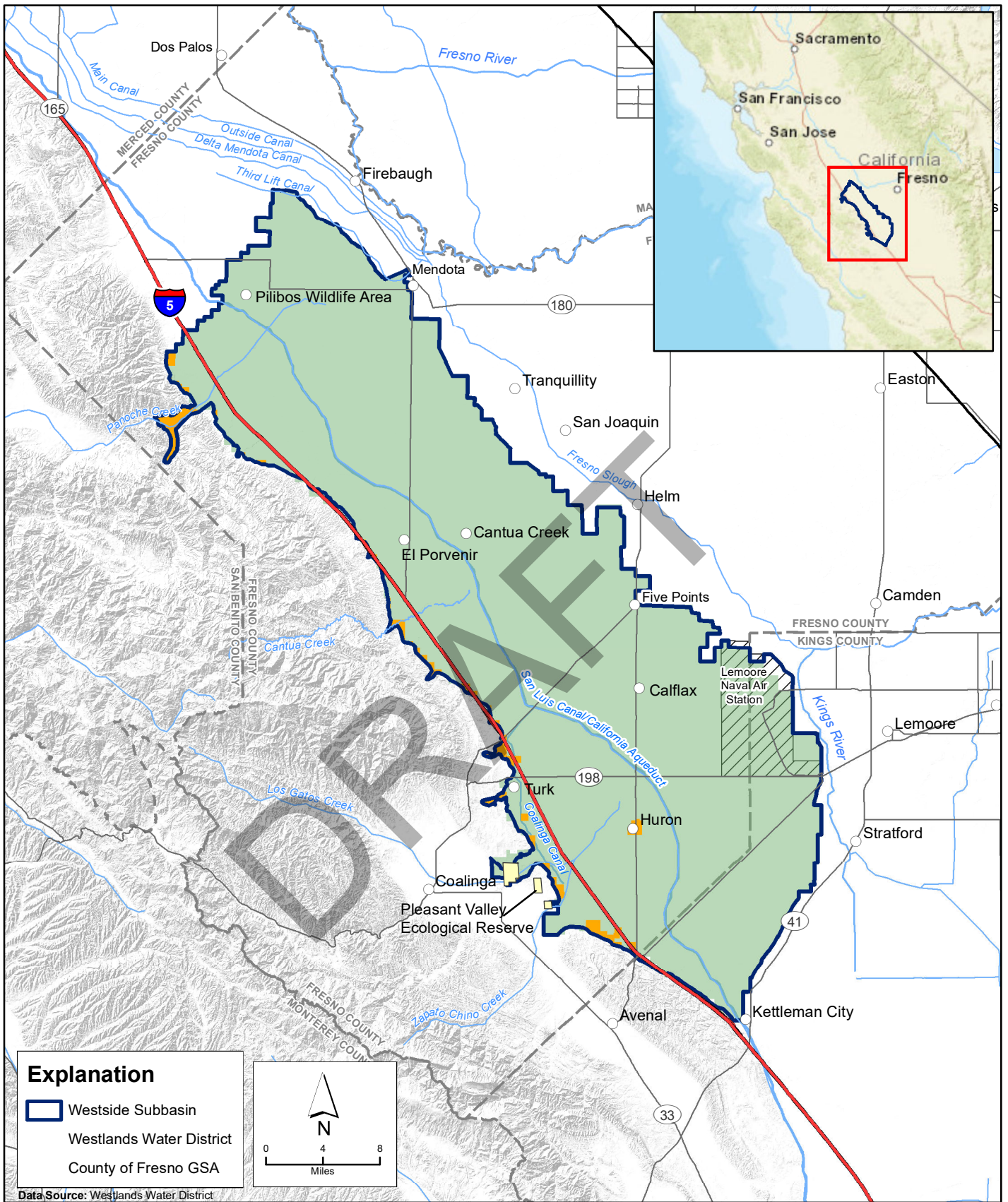
GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
			<p>groundwater in storage; monitor seawater intrusion; determine groundwater quality trends; identify the rate and extent of land subsidence; and calculate depletions of surface water caused by groundwater extractions</p> <ul style="list-style-type: none"> • Description of how the monitoring network provides adequate coverage of Sustainability Indicators • Density of monitoring sites and frequency of measurements required to demonstrate short-term, seasonal, and long-term trends • Scientific rationale (or reason) for site selection • Consistency with data and reporting standards • Corresponding sustainability indicator, minimum threshold, measurable objective, and interim milestone • Location and type of each monitoring site within the basin displayed on a map, and reported in tabular format, including information regarding the 	

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
			<p>monitoring site type, frequency of measurement, and the purposes for which the monitoring site is being used</p> <ul style="list-style-type: none"> • Description of technical standards, data collection methods, and other procedures or protocols to ensure comparable data and methodologies 	
354.36		Representative Monitoring	<ul style="list-style-type: none"> • Description of representative sites • Demonstration of adequacy of using groundwater elevations as proxy for other sustainability indicators • Adequate evidence demonstrating site reflects general conditions in the area 	Ch. 3.5.2
354.38		Assessment and Improvement of Monitoring Network	<ul style="list-style-type: none"> • Review and evaluation of the monitoring network • Identification and description of data gaps • Description of steps to fill data gaps • Description of monitoring frequency and density of sites 	Ch. 3.5.3

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
354.44		Projects and Management Actions	<ul style="list-style-type: none"> • Description of projects and management actions that will help achieve the basin’s sustainability goal • Measurable objective that is expected to benefit from each project and management action • Circumstances for implementation • Public noticing • Permitting and regulatory process • Time-table for initiation and completion, and the accrual of expected benefits • Expected benefits and how they will be evaluated • How the project or management action will be accomplished. If the projects or management actions rely on water from outside the jurisdiction of the Agency, an explanation of the source and reliability of that water shall be included. • Legal authority required • Estimated costs and plans to meet those costs 	Ch. 4

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
			<ul style="list-style-type: none"> Management of groundwater extractions and recharge 	
354.44(b)(2)	10727.2(d)(3)	Projects and Management Actions	<ul style="list-style-type: none"> Overdraft mitigation projects and management actions 	Ch. 4

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FIGURE 1-1
Westside Subbasin Location Map