

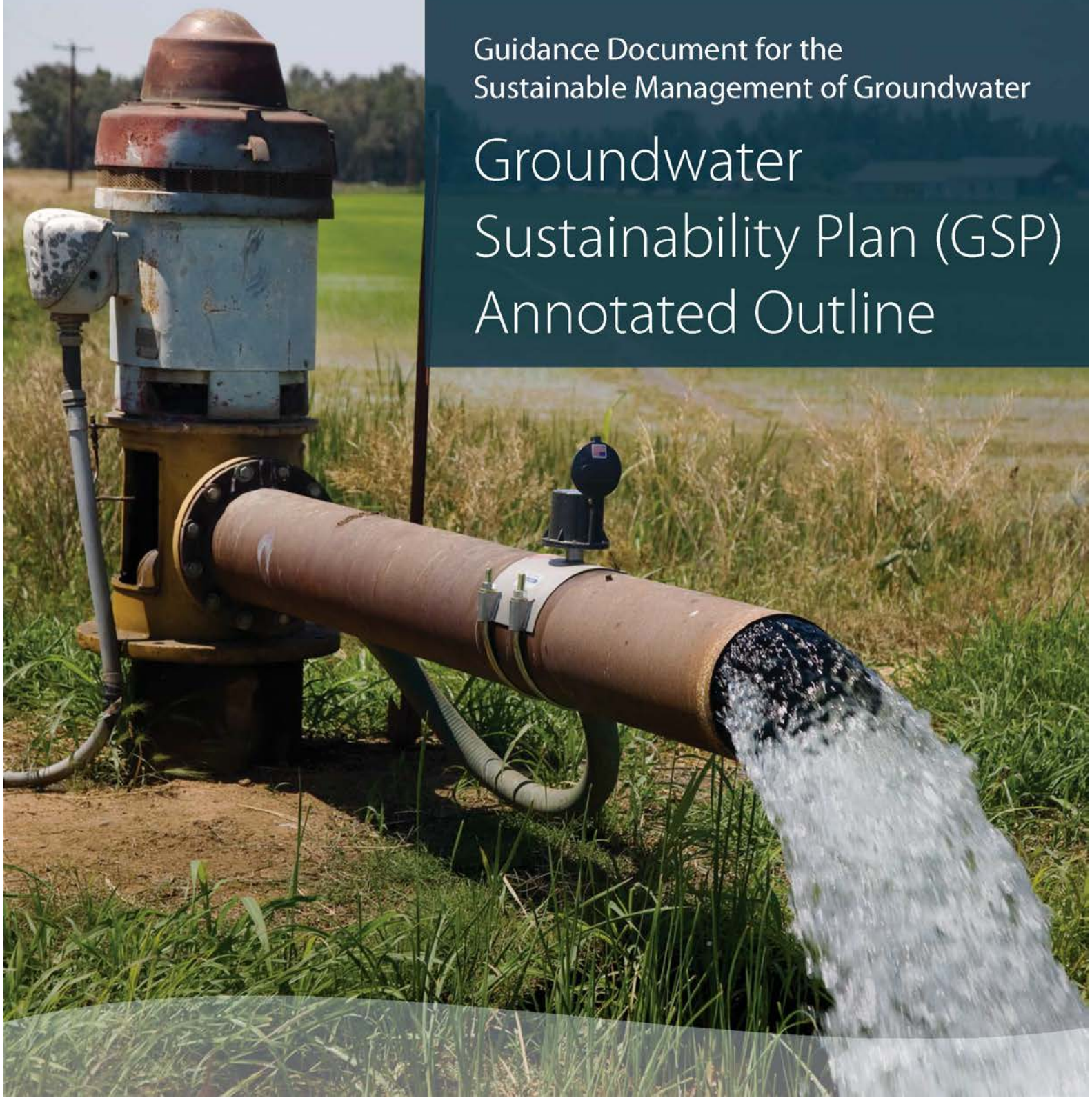


California Department of Water Resources
Sustainable Groundwater Management Program

December 2016

Guidance Document for the
Sustainable Management of Groundwater

Groundwater Sustainability Plan (GSP) Annotated Outline



Guidance Document for the Sustainable Management of Groundwater **Groundwater Sustainability Plan (GSP) Annotated Outline** December 2016

The objective of this Guidance Document is to provide Groundwater Sustainability Agencies (GSAs) and other stakeholders an example **Groundwater Sustainability Plan (GSP) Annotated Outline** to aid in GSP development and standardize future reporting.

The GSP Annotated Outline is only intended to be a guide. GSAs have the option of using this information as they develop a GSP. The content provided here does not create any new requirements or obligations for the GSA or other stakeholders.

Guidance Documents are not a substitute for the GSP Emergency Regulations (GSP Regulations) or the Sustainable Groundwater Management Act (SGMA). Those GSAs developing a GSP are strongly encouraged to fully read the GSP Regulations and SGMA. In addition, using this Guidance Document to develop a GSP does not equate to an approval determination by DWR.

Context with GSP Regulations and SGMA

The GSP Annotated Outline can be used by GSAs, in conjunction with the *Preparation Checklist for GSP Submittal Guidance Document*, to develop a GSP and determine if the GSP (or coordinated GSPs) meets the minimum requirements of the GSP Regulations and statutory provisions of SGMA. The detailed requirements of a GSP may be found in the GSP Regulations, primarily in Article 5 – Plan Contents, and in SGMA, primarily in Chapter 6 beginning with California Water Code Section 10727. All references to GSP Regulations relate to Title 23 of the California Code of Regulations, Division 2, Chapter 1.5, and Subchapter 2. All references to SGMA relate to California Water Code sections in Division 6, Part 2.74.



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Potential Groundwater Sustainability Plan Outline

Executive Summary (*Reg. § 354.4*)

1.0 Introduction

1.1 Purpose of the Groundwater Sustainability Plan (GSP or Plan)

1.2 Sustainability Goal

1.3 Agency Information (*Reg. § 354.6*)

1.3.1 Organization and Management Structure of the Groundwater Sustainability Agency (GSA or Agency)

1.3.2 Legal Authority of the GSA

1.3.3 Estimated Cost of Implementing the GSP and the GSA's Approach to Meet Costs

1.4 GSP Organization

- Description of how the GSP is organized
- Preparation Checklist for GSP Submittal

2.0 Plan Area and Basin Setting

2.1 Description of the Plan Area (*Reg. § 354.8*)

2.1.1 Summary of Jurisdictional Areas and Other Features (*Reg. § 354.8 b*)

- Map(s) (*Reg. § 354.8 a*):
 - Area covered by GSP
 - Adjudicated areas, other Agencies within the basin, and areas covered by an Alternative
 - Jurisdictional boundaries of federal or State land
 - Existing land use designations
 - Density of wells per square mile

2.1.2 Water Resources Monitoring and Management Programs

(Reg. § 354.8 c, d, e)

- Description of water resources monitoring and management programs
 - Description of how monitoring networks of those programs will be incorporated into the GSP
 - Descriptions of how those programs may limit operation flexibility in the basin
 - Description of conjunctive use programs

2.1.3 Land Use Elements or Topic Categories of Applicable General Plans (Reg. § 354.8 f)



- Summary of general plans and other land use plans
 - Information could include crop types and acreages, urban land designation, and identification of open spaces.
- Description of how implementation of the GSP may change water demands or affect achievement of sustainability and how the GSP addresses those effects
- 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

2.1.4 Additional GSP Elements (Reg. § 354.8 g)

- 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

- Groundwater contamination cleanup, recharge, diversions to storage, conservation, water recycling, conveyance, and extraction projects
- Efficient water management practices
- Relationships with State and federal regulatory agencies
- 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

2.1.5 Notice and Communication (*Reg. § 354.10*)

- Description of beneficial uses and users in the basin
- A Communications Section that describes:
 - Decision-making processes
 - Public engagement opportunities
 - Encouraging active involvement
 - Informing the public on GSP implementation progress

2.2 Basin Setting

2.2.1 Hydrogeologic Conceptual Model (*Reg. § 354.14*)

- Graphical and narrative description of the physical components of the basin
- At least two scaled cross-sections
- Map(s) of physical characteristics
 - Topographic information
 - Surficial geology
 - Soil characteristics
 - Delineation of existing recharge areas that substantially contribute to the replenishment of the basin, potential recharge areas, and discharge areas
 - Surface water bodies
 - Source and point of delivery for local and imported water supplies

2.2.2 Current and Historical Groundwater Conditions (Reg. § 354.16)

- Groundwater elevation data
- Estimate of groundwater storage
- Seawater intrusion conditions
- Groundwater quality issues
- Land subsidence conditions
- Identification of interconnected surface water systems
- Identification of groundwater-dependent ecosystems
 - Including potentially related factors such as instream flow requirements, threatened and endangered species, and critical habitat.

2.2.3 Water Budget Information (Reg. § 354.18)

- Description of inflows, outflows, and change in storage
- Quantification of overdraft (as applicable)
- Estimate of sustainable yield
- Quantification of current, historical, and projected water budget
- Description of surface water supply used or available for use for groundwater recharge or in-lieu use

2.2.4 Management Areas (as Applicable) (Reg. § 354.20)

- Reason for creation of each management area
- Level of monitoring and analysis
- Description of management areas
- Explanation of how management of management areas will not cause undesirable results outside the management area

3.0 Sustainable Management Criteria

3.1 Sustainability Goal (Reg. § 354.24)

- Description of sustainability goal, including:
 - Information from the basin setting used to establish the sustainability goal
 - Discussion of the measures that will be implemented to ensure that the basin will be operated within its sustainable yield

- Explanation of how the sustainability goal is likely to be achieved within 20 years of Plan implementation and is likely to be maintained through the planning and implementation horizon

3.2 Measureable Objectives (Reg. § 354.30)

- Description of each measureable objective and how the measurable objectives were established for each relevant sustainability indicator
- Description of how a reasonable margin of safety was established for each measureable objective
- Description of a reasonable path to achieve and maintain the sustainability goal including a description of interim milestones for each relevant sustainability indicator
 - Measurable Objective for Sustainability Indicator 1
 - Interim Milestone at 5 years
 - Interim Milestone at 10 years
 - Interim milestone at 15 years
 - Milestone at 20 years
 - Measurable Objective for Sustainability Indicator 2
 - Interim Milestone at 5 years
 - Interim Milestone at 10 years
 - Interim milestone at 15 years
 - Milestone at 20 years
 - Measurable Objective for Sustainability Indicator X
- If management areas are used, a description of (Reg. § 354.20 b):
 - The measurable objectives established for each management area, and an explanation of the rationale for selecting those values, if different from the basin at large.
 - An explanation of how the management area can operate under different measurable objectives without causing undesirable results outside the management area, if applicable.

3.3 Minimum Thresholds (Reg. § 354.28)

- Description of each minimum threshold and how they were established for each relevant sustainability indicator

- Relationship for each sustainability indicator
- Description of how minimum thresholds have been selected to avoid causing undesirable results
- Description of how minimum thresholds may affect the interests of beneficial uses and users of groundwater or land uses and property interests.
- Standards related to sustainability indicators
- How each minimum threshold will be quantitatively measured for each relevant sustainability indicator
- If management areas are used, a description of (*Reg. § 354.20 b*):
 - The minimum thresholds established for each management area, and an explanation of the rationale for selecting those values, if different from the basin at large.
 - An explanation of how the management area can operate under different minimum thresholds without causing undesirable results outside the management area, if applicable.

3.4 Undesirable Results (*Reg. § 354.26*)

- Description of undesirable results for any of the sustainability indicators
- Cause of groundwater conditions that would lead to undesirable results
- Criteria used to define undesirable results based on minimum thresholds
- Potential effects on the beneficial uses and users of groundwater, on land uses and property interests, and other potential effects that may occur or are occurring from undesirable results

3.5 Monitoring Network

3.5.1 Description of Monitoring Network (*Reg. § 354.34*)

- Description of how the monitoring network is capable of collecting sufficient data to demonstrate short-term, seasonal, and long-term trends in groundwater and related surface conditions, and yield representative information about

groundwater conditions as necessary to evaluate Plan implementation

- Description of monitoring network objectives including explanation of how the network will be developed and implemented to monitor:
 - Groundwater and related surface conditions
 - Interconnection of surface water and groundwater
- Description of how implementation of the monitoring network objectives demonstrate progress toward achieving the measureable objectives, monitor impacts to beneficial uses or users of groundwater, monitor changes in groundwater conditions, and quantify annual changes in water budget components
- Description of how the monitoring network is designed to accomplish the following for each sustainability indicator:
 - Chronic Lowering of Groundwater Levels. Demonstrate groundwater occurrence, flow directions, and hydraulic gradients between principal aquifers and surface water features
 - Reduction of Groundwater Storage. Estimate the change in annual groundwater in storage
 - Seawater Intrusion. Monitor seawater intrusion
 - Degraded Water Quality. Determine groundwater quality trends
 - Land Subsidence. Identify the rate and extent of land subsidence
 - Depletions of Interconnected Surface Water. Calculate depletions of surface water caused by groundwater extractions
- Description of how the monitoring plan provides adequate coverage of the 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 site on a map
- If management areas are used, a description of the level of monitoring and analysis appropriate for each management area.
(Reg. § 354.20 b)

3.5.2 **Monitoring Protocols for Data Collection and Monitoring (Reg. § 352.2)**

- Description of technical standards, data collection methods, and other procedures or protocols to ensure comparable data and methodologies.

3.5.3 **Representative Monitoring (Reg. § 354.36)**

- Description of representative sites if designated
- Demonstration of adequacy of using groundwater elevations as proxy for other sustainability indicators
- Adequate evidence demonstrating site reflects general conditions in the area

3.5.4 **Assessment and Improvement of Monitoring Network (Reg. § 354.38)**

- 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

4.0 Projects and Management Actions to Achieve Sustainability Goal (Reg. § 354.44)

4.1 Project #1 Description

- Measureable objective that is expected to benefit from the project or management action
- Circumstances for implementation

- Public noticing
- Overdraft mitigation projects and management actions
- 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 for the projects and managements and plans to meet those costs (economic analysis and finance strategy for projects and management actions)
- Management of groundwater extractions and recharge
- Relationship to additional GSP elements as described in Water Code §10727.4.

4.2 Project #2 Description

4.3 Project #X Description

5.0 Plan Implementation

5.1 Estimate of GSP Implementation Costs (Reg. § 354.6)

5.2 Schedule for Implementation

5.3 Annual Reporting

- GSA's plan for required annual reporting

5.4 Periodic Evaluations

- GSA's process for required periodic evaluations

6.0 References and Technical Studies (Reg. § 354.4)

Appendices

- Interbasin and Coordination Agreements (as applicable) (Reg. § 357)
- Contact Information for Plan Manager and GSA Mailing Address (Reg. § 354.6)
- List of Public Meetings (Reg. § 354.10)
- Technical Appendices
- Groundwater Model Documentation
- Comments and Responses (Reg. § 354.10)