GSP DEVELOPMENT CONSIDERATIONS AND RESOURCES

June 5, 2018

GRAC

Groundwater Sustainability Plan Preparation Workshop

California Department of Water Resources
Sustainable Groundwater Management Program

Outline

- SGMA Overview
- Phases of SGMA Implementation
- Planning, Technical, and Financial Assistance
- SGMA and GSP Considerations

Presentation Disclaimers

- The content provided in this presentation does not provide a comprehensive list of information necessary to develop a complete or approved GSP; however, the information is intended to provide GSAs with considerations as they develop GSPs.

- A GSP will be approved if, in the judgement of the Department, it satisfies the requirements of SGMA and the GSP Regulations.

- GSAs and those preparing GSPs should be well-versed in the SGMA Legislation and the GSP Regulations.

SGMA Overview

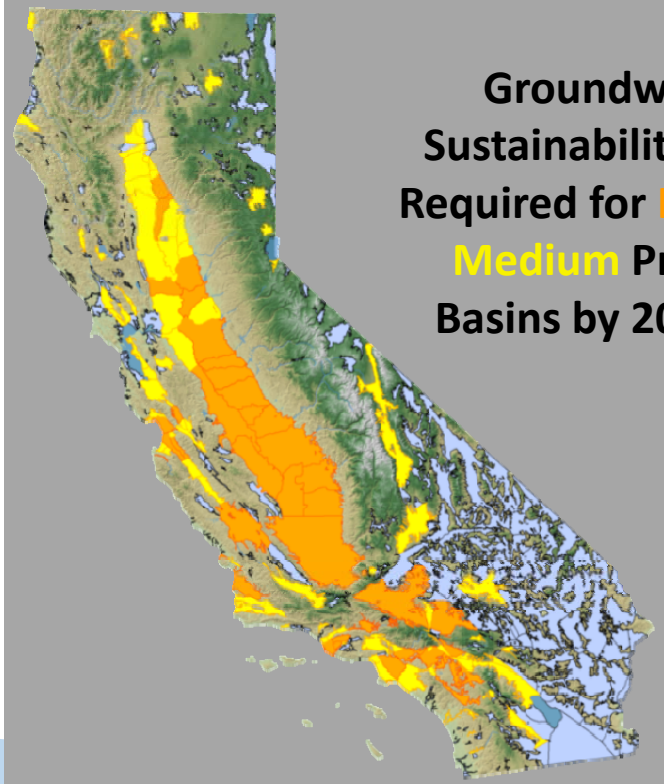
Local Control

"A central feature of these bills is the recognition that groundwater management in California is best accomplished locally."

Governor Jerry Brown, September 2014

Sustainability

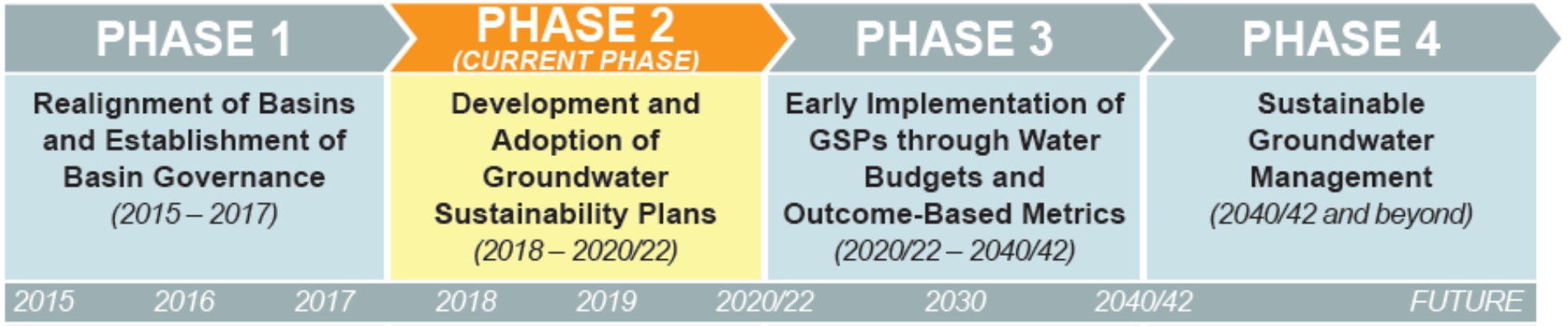
Avoid Six Undesirable Results



Groundwater Sustainability Plans Required for High and Medium Priority Basins by 2020/22

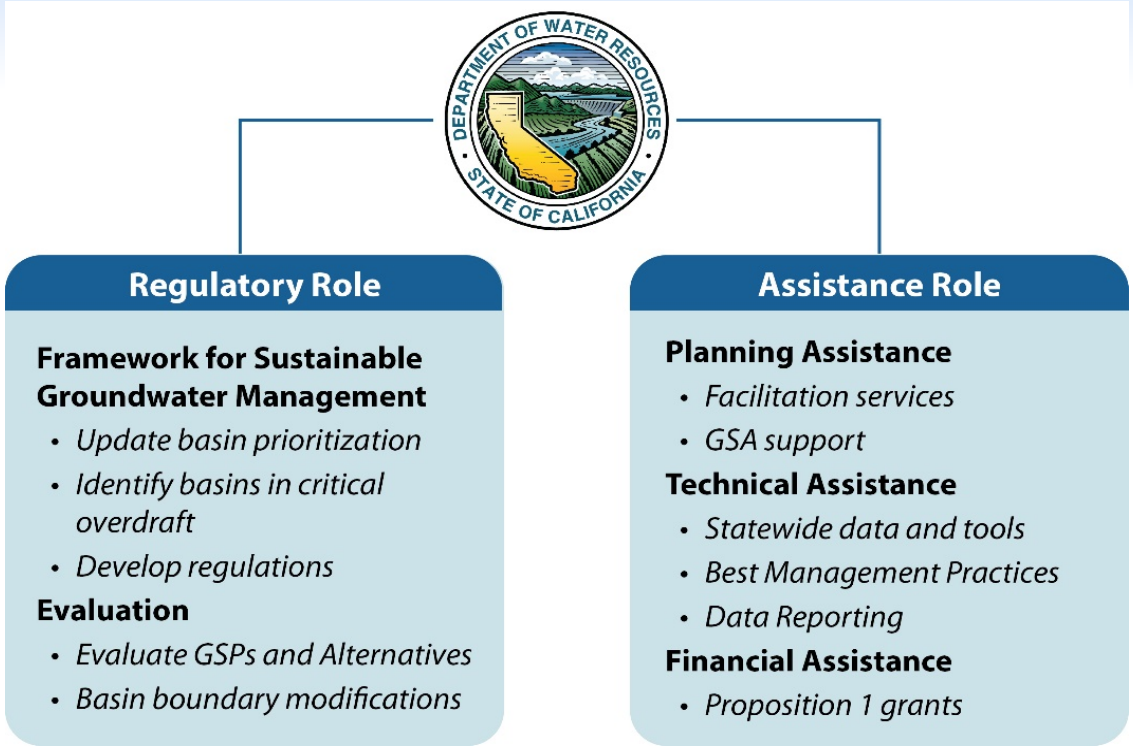
Phases of SGMA Implementation

Phases to Implement SGMA



- **Phase 1:**
  - *Complete*. But boundary realignment and governance reorganization will be ongoing.
- **Phase 2:**
  - *Active*. GSAs are developing GSPs. DWR is providing planning, technical, and financial assistance
- **Phase 3:**
  - *Near-Term Future*. GSAs can begin implementing GSPs upon submittal to DWR and GSAs must submit annual reports and GSP updates.
- **Phase 4:**
  - *Future*. Sustainability goals must be achieved within 20 years and address a 50-year planning and implementation horizon.

DWR's Phase 2 & 3 Role



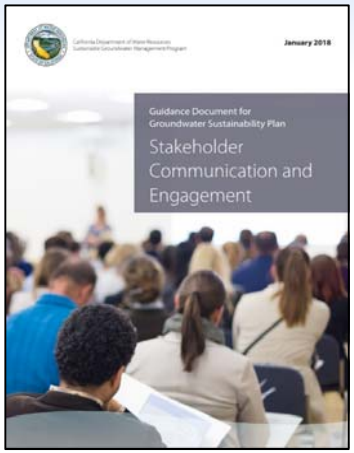
1. Provide planning, technical, and financial assistance to GSAs and interested parties to aid in the achievement of sustainable groundwater management.
2. Evaluate the technical adequacy of Alternatives and GSPs in accordance with SGMA and the GSP Regulations in order to determine if plans are likely to achieve sustainable groundwater management.

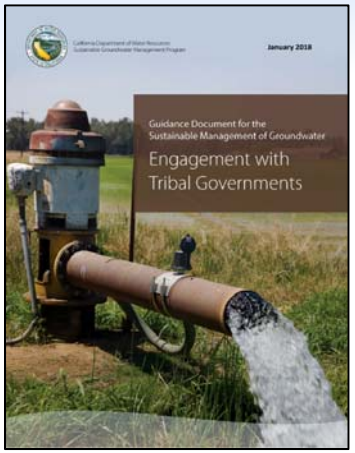
Phase 2: GSP Development
Planning Assistance

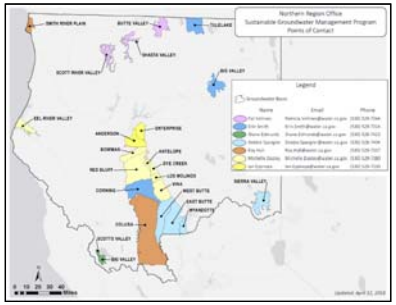
- **Facilitation Support Services (FSS)**
  - Offered through DWR-funded professional facilitators
  - Stakeholder identification and engagement
  - Meeting facilitation
  - Interest-based negotiation and consensus building
  - Public outreach facilitation

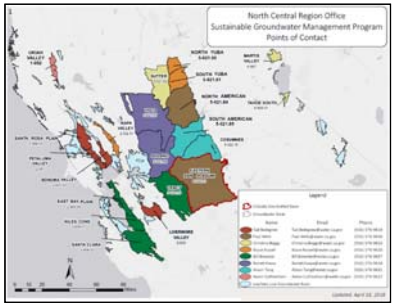
- Contact DWR's Regional Coordinators or Basin Points-of-Contact to apply for FSS.

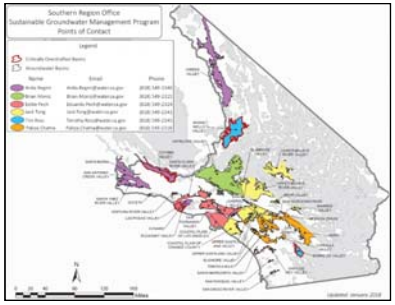
- DWR engagement during development of GSPs
  - DWR regional office Points-of- Contact (POC) by basin











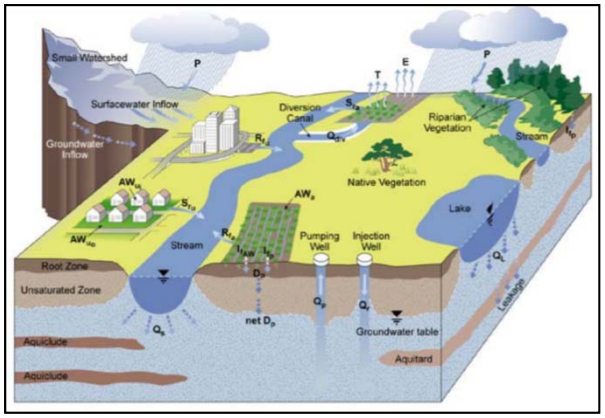
https://www.water.ca.gov/Programs/Groundwater-Management/Assistance-and-Engagement

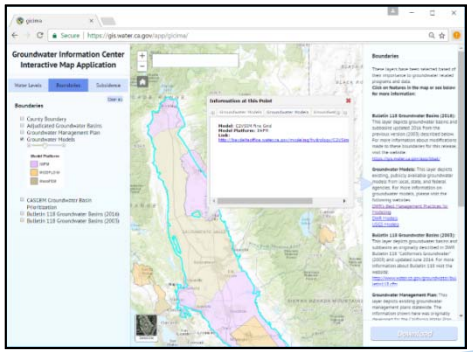
Phase 2: GSP Development
Technical Assistance

1. Guidance and Education
   - Best Management Practices
   - Guidance Documents
   - Fact Sheets and Reports

2. Technical Support Services (TSS)
   - Available to GSAs
   - Can help fill data gaps
     - ➢ Field Activities
     - ➢ Modeling and Tools

3. Statewide Datasets and Tools





Guidance and Education

- Statewide & Regional References
  - DWR's SGMA Webpages
  - Bulletin 118 – 2016/2020 Updates
  - Bulletin 160 – GW Content
- SGMA References

Best Management Practices

- BMP 1: Monitoring Protocols, Standards, Sites
- BMP 2: Monitoring Networks and Identification of Data Gaps
- BMP 3: Hydrologic Conceptual Model
- BMP 4: Water Budget
- BMP 5: Modeling
- BMP 6: Sustainable Management Criteria

Guidance Documents

- Preparation Checklist for GSP submittal
- GSP Annotated Outline
- Engagement with Tribal Governments
- Stakeholder Comm. & Engagement

www.water.ca.gov/Programs/Groundwater-Management/

Technical Support Services (TSS)

--- Contact your Basin POC or Regional Coordinator ---

Services Offered

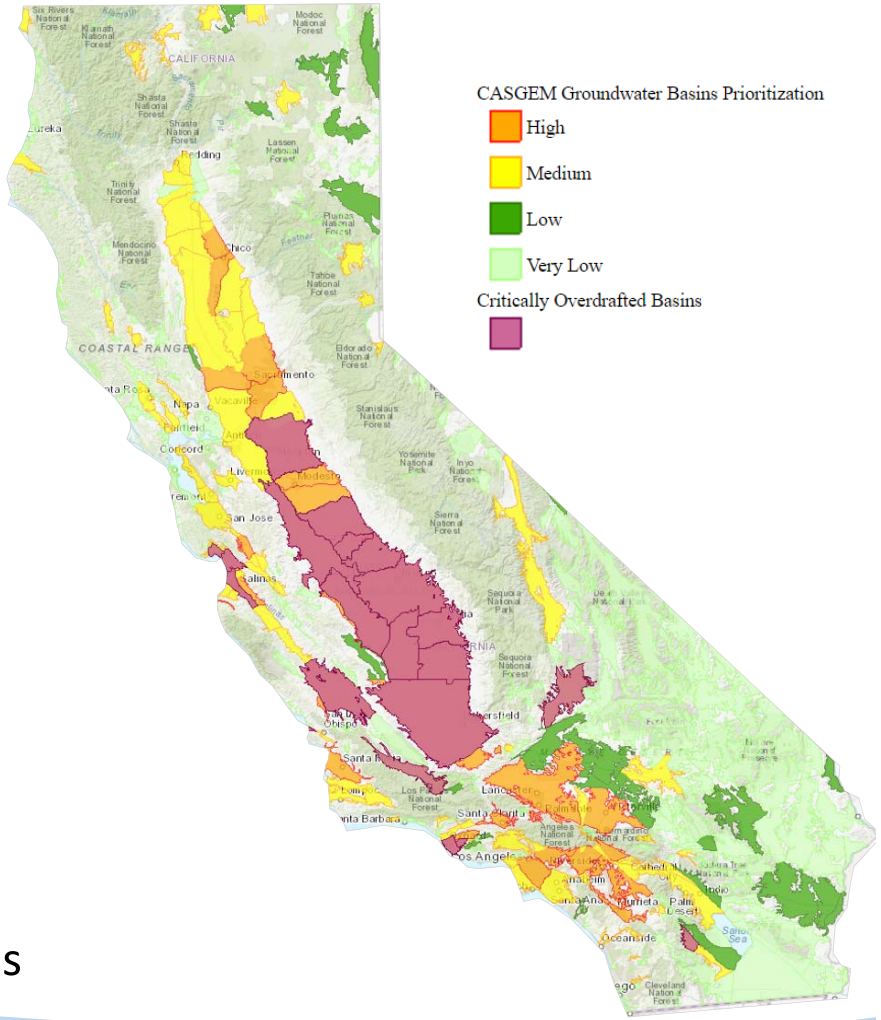
- Field Activities
  - Mon. Well Installation & Other Activities
- Modeling and Tools
  - Modeling Support/Training

Minimum Standards

- Must be a GSA & Submit GSP Notification
- Single contact for each basin
- Coordination within basin

Funding Priorities & Timeline

- TSS in critically-overdrafted basins
- TSS in high- and medium-priority basins
- Funding decisions made a on continuous basis

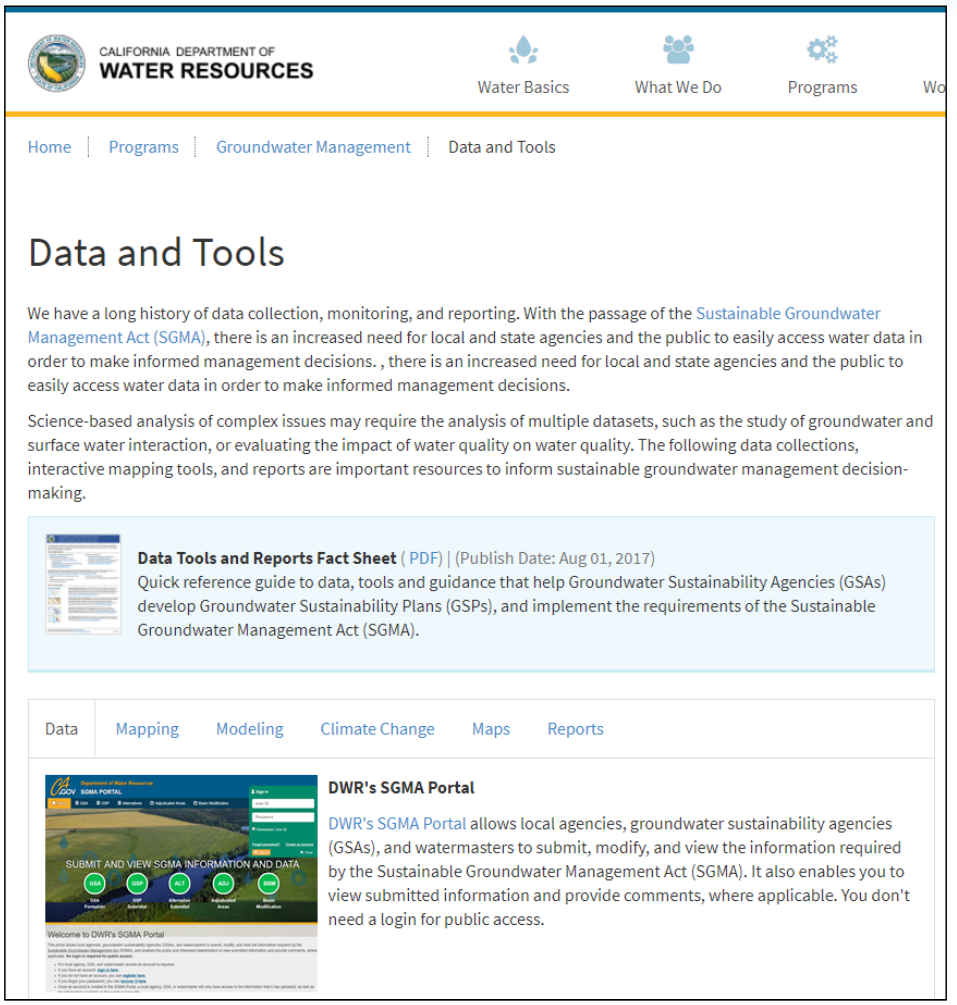


https://www.water.ca.gov/Programs/Groundwater-Management/Assistance-and-Engagement

Statewide Datasets and Tools

New Data, Tools, and Reports Webpage

- Download Data
- Groundwater Tools
  - Interactive Maps
  - Modeling Tools
- Climate Change Data/Tools
- Maps and Reports

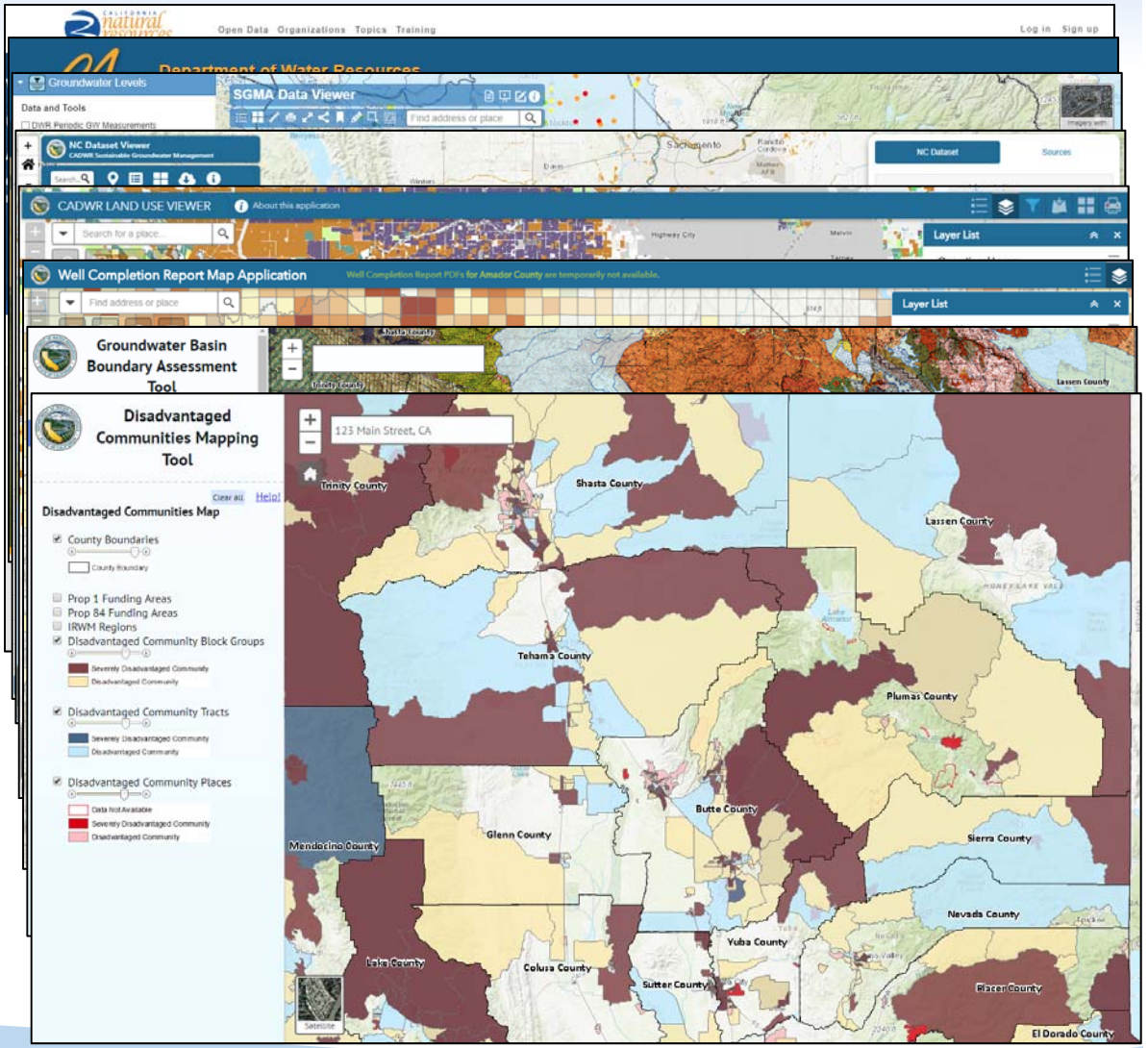


www.water.ca.gov/Programs/Groundwater-Management/Data-and-Tools

Statewide Data and Tools

- CNRA Open Data Platform
- SGMA Portal
- SGMA Data Viewer
- NCCAG Dataset Viewer
- Land Use Viewer
- Well Completion Report Map Application
- Basin Boundary Assessment Tool
- DAC Mapping Tool

More complete and updated datasets are being developed

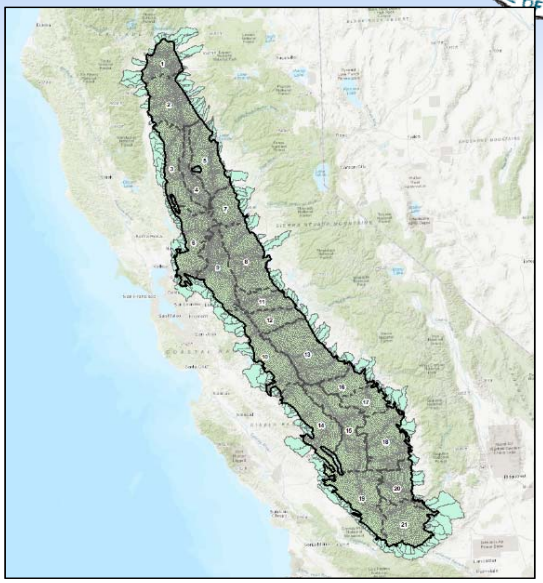


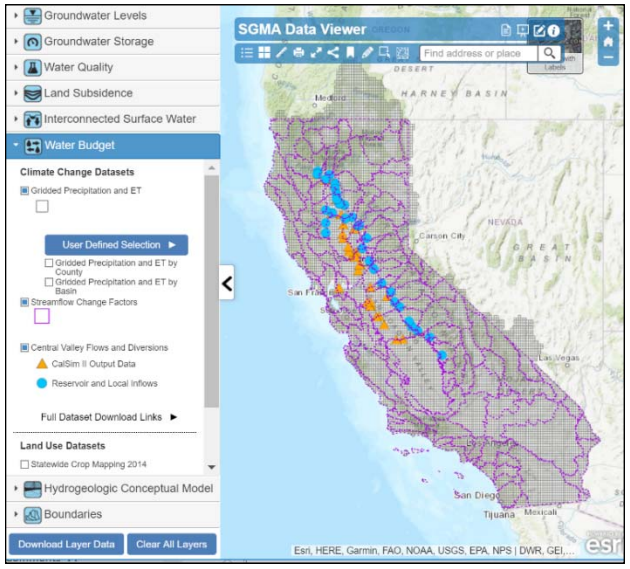
www.water.ca.gov/Programs/Groundwater-Management/Data-and-Tools

Statewide Datasets and Tools

Tools – DWR Models

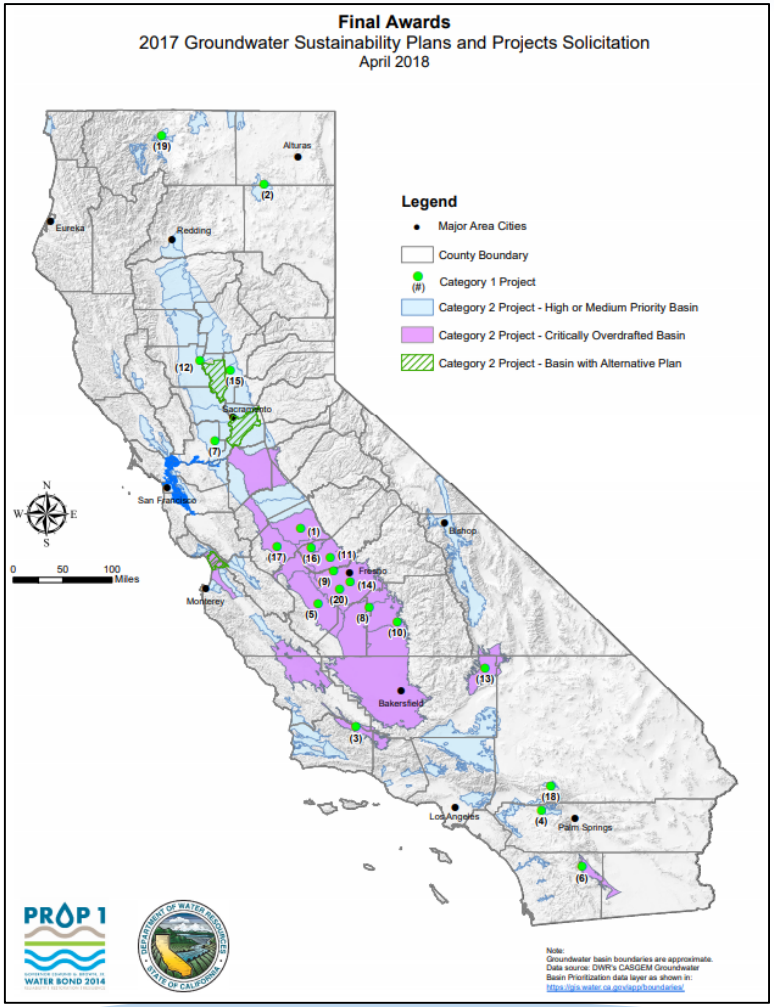
- **C2VSim - Fine Grid** (Central Valley)
  - Beta version – Now Available
- **SVSim** (Sacramento Valley)
  - Available Summer 2018
- **SGMA Climate Change Data and Guidance**
  - Climate Data on SGMA Data Viewer
  - Climate Data Guidance Document





www.water.ca.gov/Programs/Groundwater-Management/Data-and-Tools

Phase 2: GSP Development
Financial Assistance – Proposition 1



- Final awards on April 4, 2018
- $85.8 Million in total awards
  - $16.2 M Severely DACs
  - $69.6 M GSPs
- 3 grant recipients have submitted an alternative plan to DWR
- Some grant recipients may be re-prioritized

Next steps for grant awardees:

- Grant agreement execution
- Conduct work (if haven't started already)
  - Cost share – January 1, 2015
  - Grant reimbursement – July 1, 2017

https://www.water.ca.gov/Work-With-Us/Grants-And-Loans/Sustainable-Groundwater

GSP Development Considerations

This is not a comprehensive discussion. Refer to the SGMA Legislation, GSP Regulations, BMPs, and Guidance Documents for more detail.

GSP Development
Planning Deadlines and Intervention

- Initial GSP deadlines:
  - **January 31, 2020** – A GSP adopted and submitted in a basin subject to critical conditions of overdraft.
  - **January 31, 2022** – A GSP adopted and submitted in a basin determined to be a high- or medium-priority basin.
- Basins with an approved Alternative do not need to develop a GSP.

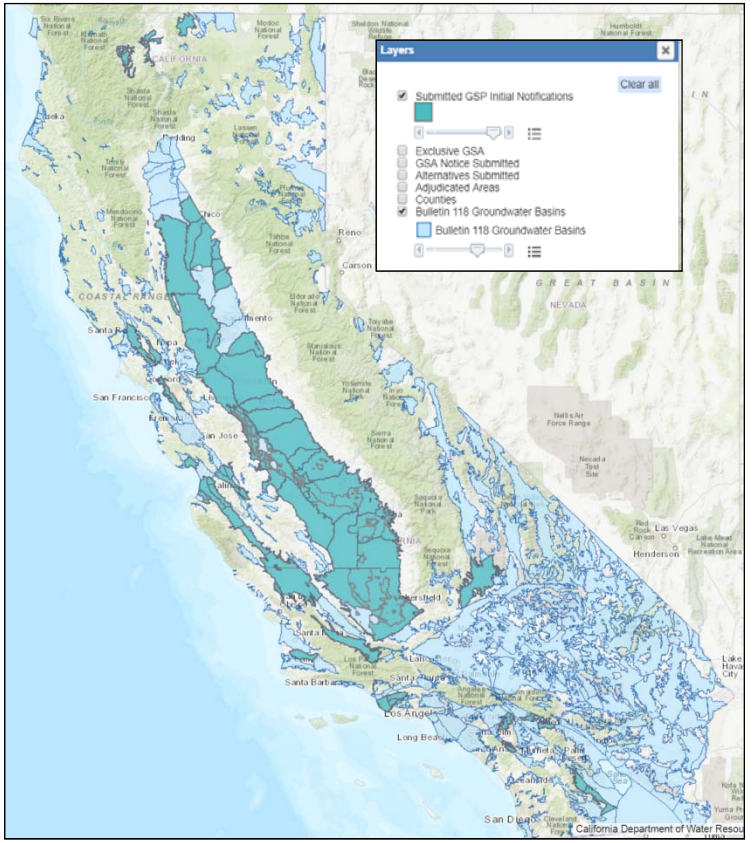
Contact the State Water Board about potential intervention…

https://www.waterboards.ca.gov/water_issues/programs/gmp/intervention.shtml

GSP Development
Initial Notification

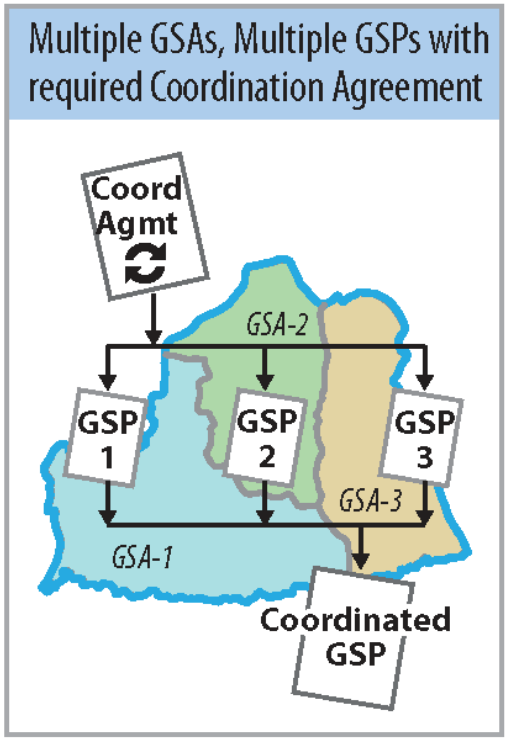
- GSAs must notify DWR, in writing, prior to initiating the development of a GSP.
  - SGMA Portal: http://sgma.water.ca.gov/portal/#intro
  - GSA Tools
    - Submit GSP Initial Notifications online
    - **Current total: 96 Notifications**
  - Public Tools
    - Table of Submitted GSP IN's
    - Map of Submitted GSP IN's
    - Public comments

- The GSA must provide the written statement to the legislative body of any city and/or county within the GSP's boundaries.
- If GSP area includes a public water system regulated by the PUC, the GSA shall provide the written statement to the commission.



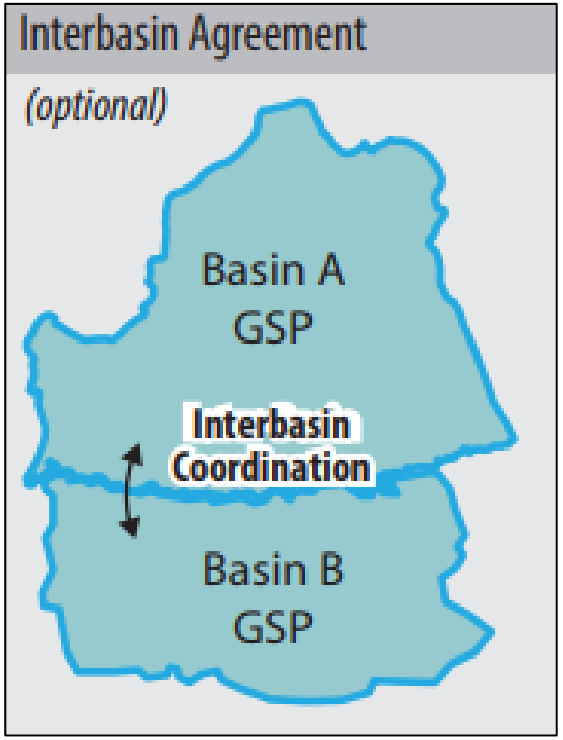
GSP Development
Coordination Agreements

Intra - Required



- Water Code §10727.6
- GSP Regulations, Article 8, §357.4
- Same data and methodologies

Inter - Optional



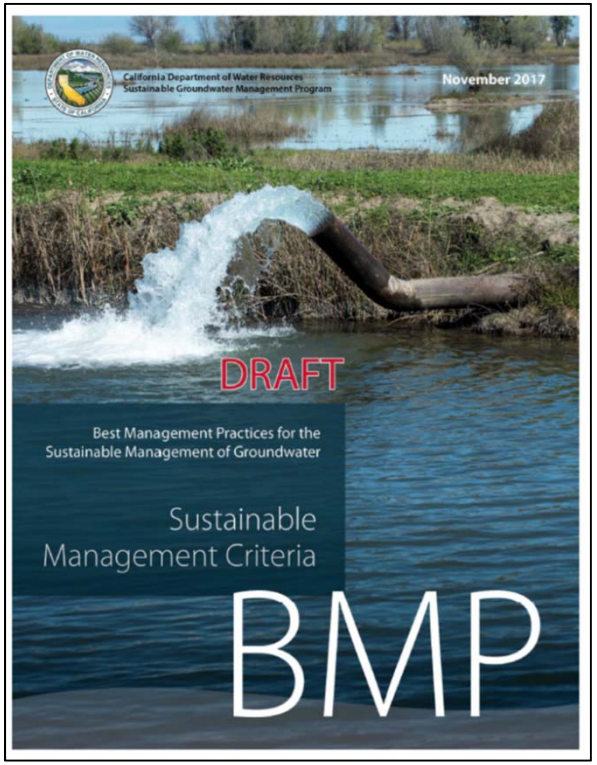
- GSP Regulations, Article 8, §357.2
- Optional agreement between two or more adjacent basins to coordinate sustainability goals

SGMA Considerations
Local Control

- Groundwater is best managed locally.
- If local agencies or GSAs cannot, or will not, sustainably manage a basin, the State has the responsibility to intervene.
- To require the development and reporting of data necessary to support sustainable groundwater management.
- To respect overlying and other property rights to groundwater.
- To recognize and preserve the authority of cities and counties to manage groundwater pursuant to their police powers.

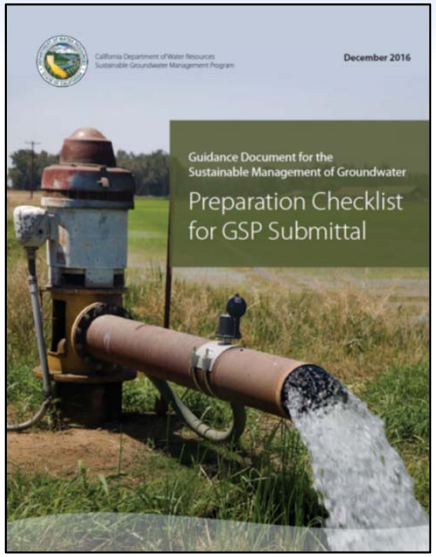
SGMA Considerations
Outcome-Based

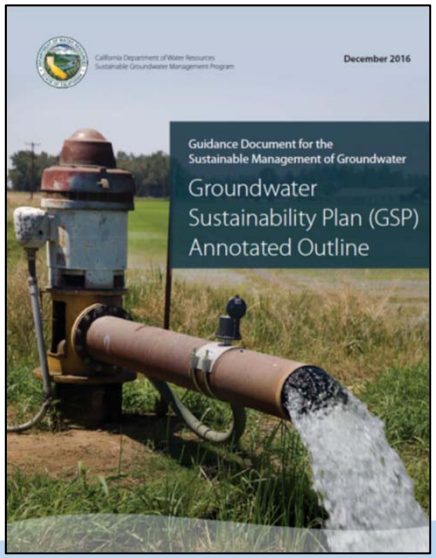
- SGMA is outcome based.
  - Outcomes are measurements of the six sustainability indicators
- Locally-defined “significant and unreasonable” within established framework
- Sustainable Management Criteria
  - Sustainability Goal
  - Undesirable Results
  - Minimum Thresholds
  - Measurable Objectives
  - Interim Milestones



General GSP Considerations

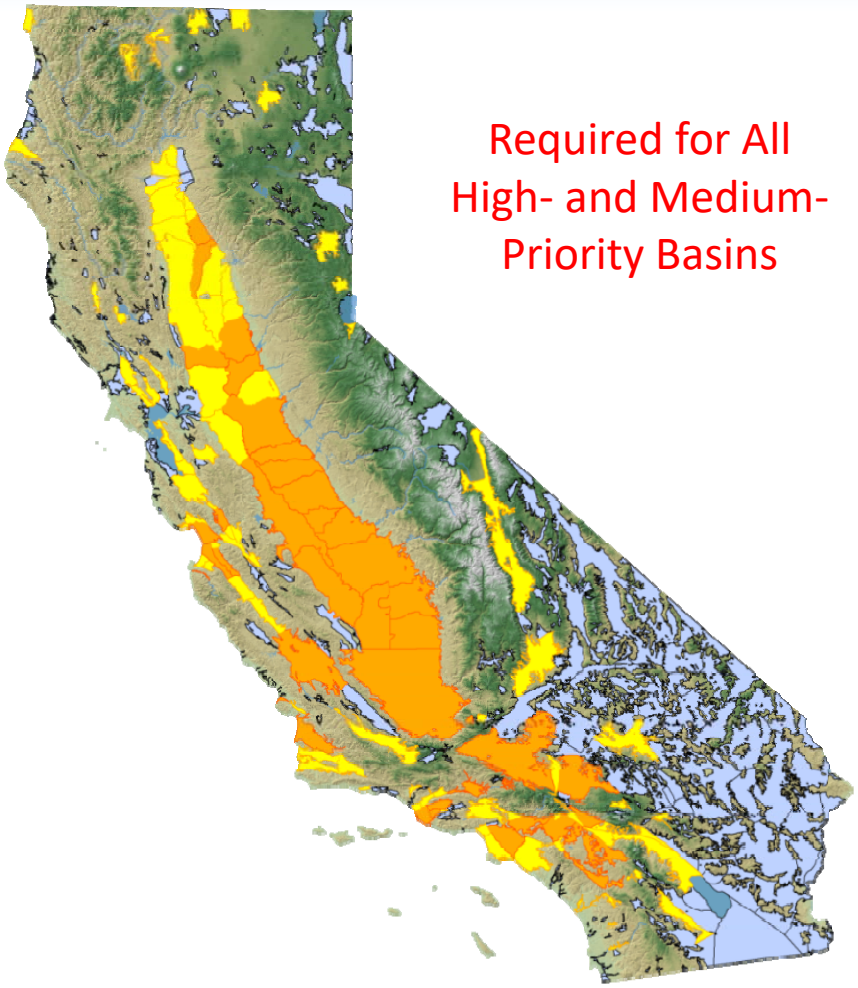
- GSP Regulations provide the requirements for developing a GSP.
- GSPs Must:
  - Be submitted within the statutory deadline.
  - Be complete.
  - Cover the entire basin.
- If multiple GSPs are prepared for a basin, those GSPs must be submitted together and include a coordination agreement.
- The GSP "looks and feels" like a plan.
- The efforts to develop the GSP have considered the beneficial uses and users of groundwater in the basin (10723.2).
- The GSP has taken into account local planning assumptions stated in General Plans.





GSP Regulation Articles

1. Introductory Provisions
2. Definitions
3. Technical and Reporting Standards
4. Procedures
5. **Plan Contents**
6. Department Evaluation and Assessment
7. Annual Reports and Periodic Evaluations by the Agency
8. Interagency Agreements
9. Alternatives



Required for All High- and Medium-Priority Basins

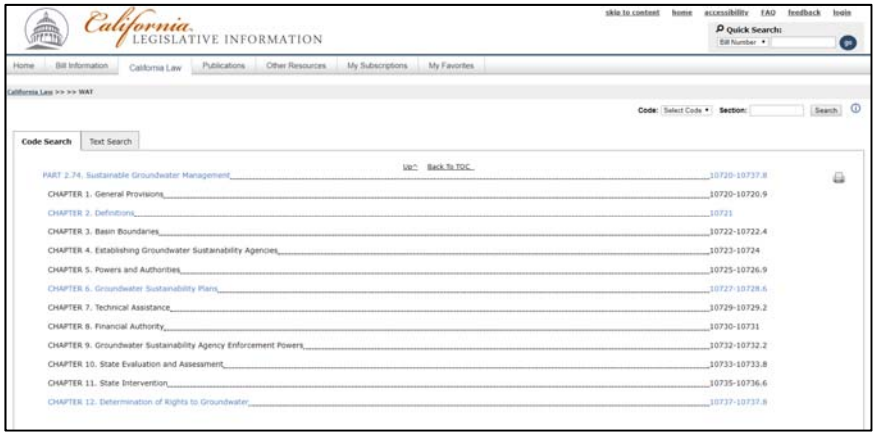
GSP Regulation Articles

ARTICLE 1
INTRODUCTORY PROVISIONS

- §350 Authority and Purpose
- §350.2 Applicability
- §350.2 General Principles
  - *Groundwater conditions must be adequately defined and monitored*
  - *GSP content must be sufficiently detailed and readily comparable*
  - *Must meet a substantial compliance standard*
  - *Uncertainty and data gaps must be addressed*
  - *A basin must be sustainably managed within 20 years Plan implementation*

ARTICLE 2
DEFINITIONS

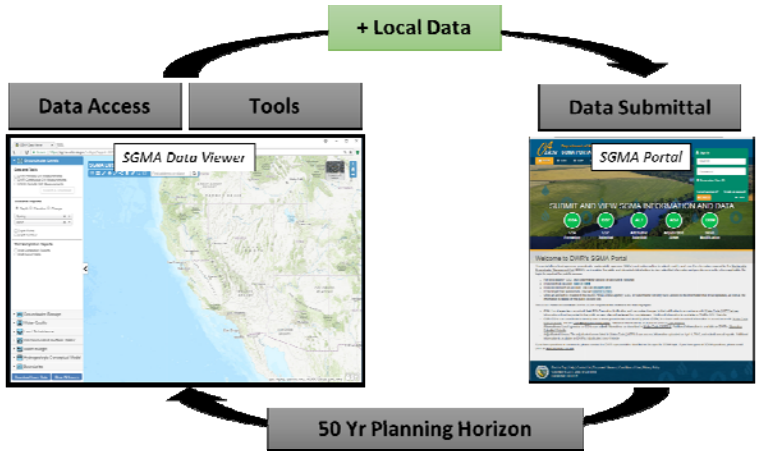
- §351 Definitions
- Additional definitions are located in SGMA in Water Code §10721



GSP Regulation Articles

ARTICLE 3
TECHNICAL AND REPORTING STANDARDS

- §352.2 Monitoring Protocols
- §352.4 Data and Reporting Standards
- §352.6 Data Management Systems



ARTICLE 4
PROCEDURES

- §353.2 Information Provided by the Department
- §353.4 Reporting Provisions
- §353.6 INITIAL NOTIFICATIONS
- §353.8 Comments
- §353.10 Withdrawal or Amendment of a Plan

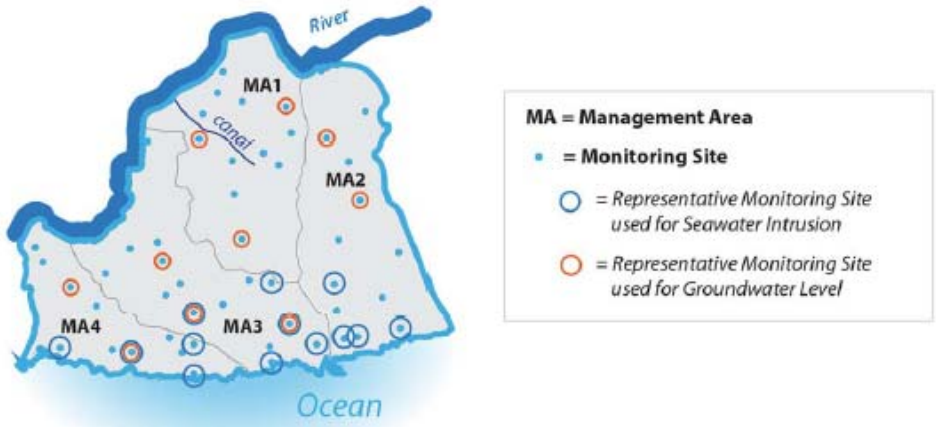
Article 5: Plan Contents

SUBARTICLE 1: ADMINISTRATIVE INFORMATION

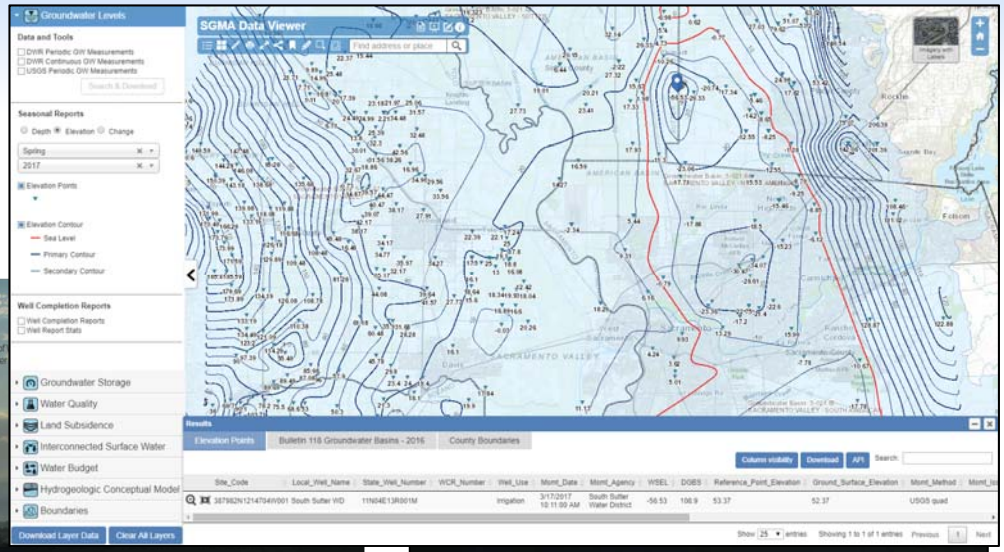
- General Information
- Agency (GSA) Information
- Description of Plan Area
  - Maps
  - Written descriptions
  - Description of land use elements
- Notice and Communication
  - Description of beneficial uses and users of groundwater
  - List of public meetings
  - A communications section

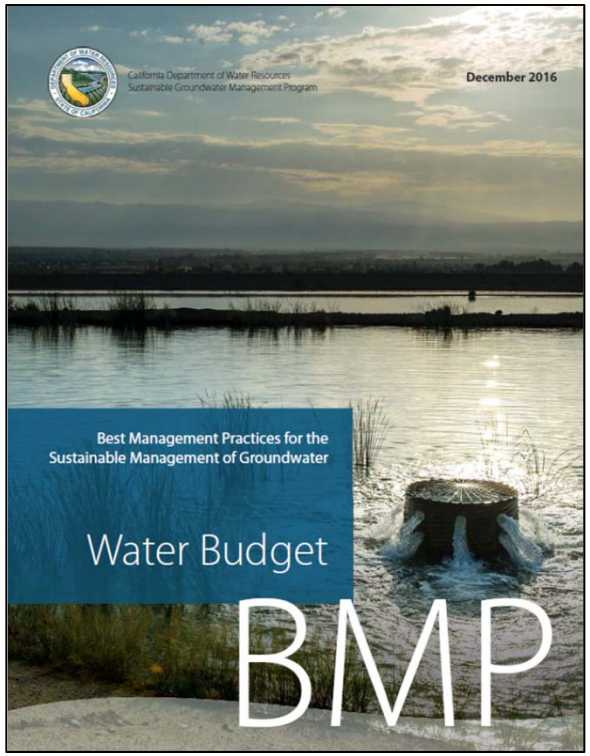
SUBARTICLE 2: BASIN SETTING

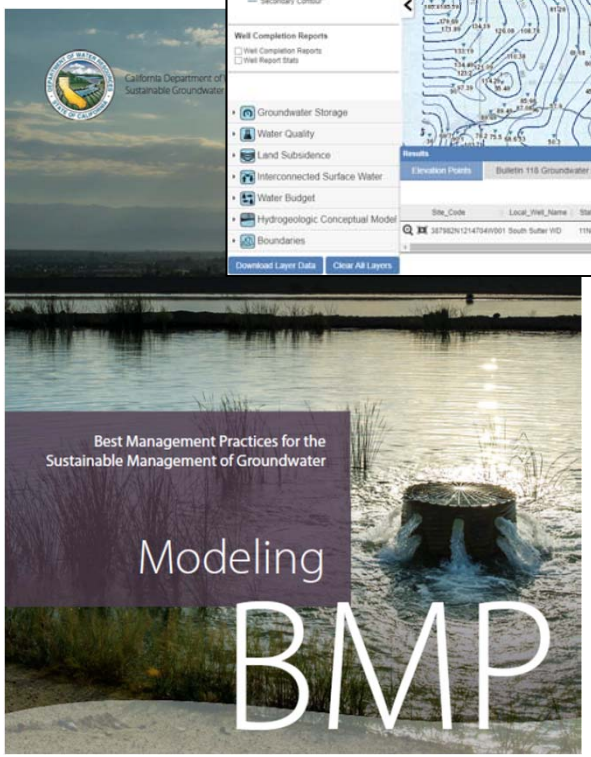
- Hydrogeological Conceptual Model
- Groundwater Conditions
- Water Budget
- Management Areas



GSP Considerations
Basin Setting

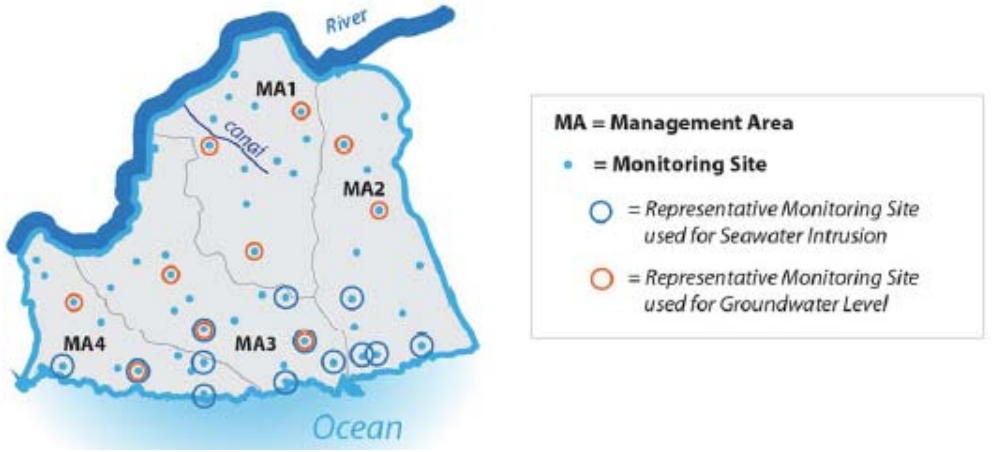






GSP Considerations Management Areas

- GSP Regulations, §354.20
- The use of management areas is **optional**, but, if used, shall describe:
  - The reason for the creation
  - The minimum thresholds and measurable objectives established
  - An explanation of the rationale for selecting values
  - The level of monitoring and analysis appropriate for the areas
  - An explanation of how they can operate without causing undesirable results
  - Include descriptions, maps, and other information to describe the conditions in those areas.



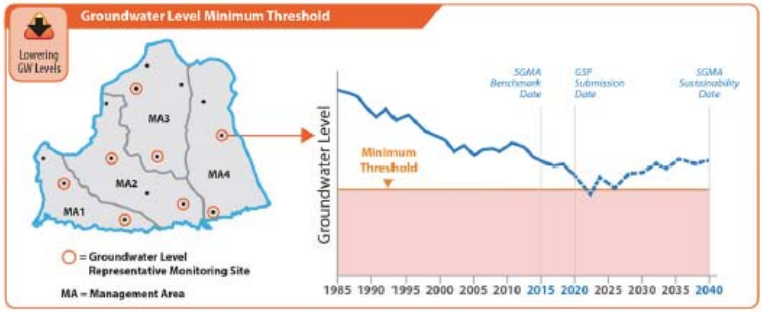
"Management area" refers to an area within a basin for which the Plan may identify different minimum thresholds, measurable objectives, monitoring, or projects and management actions based on differences in water use sector, water source type, geology, aquifer characteristics, or other factors.

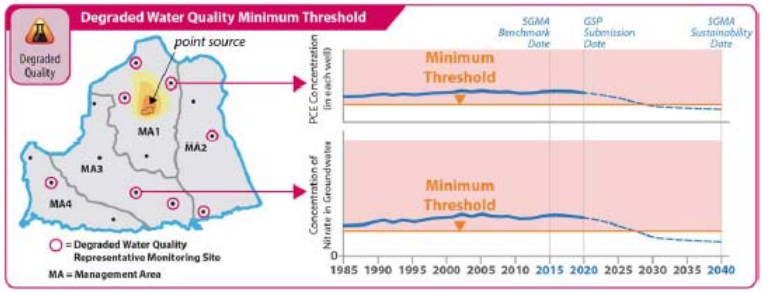
Article 5: Plan Contents

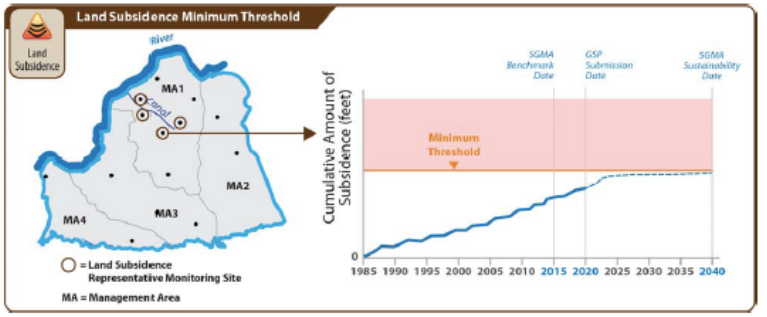
SUBARTICLE 3:
SUSTAINABLE MANAGEMENT CRITERIA

- Sustainability Goal
- Undesirable Results
- Minimum Thresholds
- Measurable Objectives
- Interim Milestones
- DWR expects these to be clear, specific, and quantifiable

Sustainability Indicators	Lowering GW Levels	Reduction of Storage	Seawater Intrusion	Degraded Quality	Land Subsidence	Surface Water Depletion
Metric(s) Defined in GSP Regulations	• Groundwater Elevation	• Total Volume	• Chloride concentration isocontour	• Migration of Plumes • Number of supply wells • Volume • Location of isocontour	• Rate and Extent of Land Subsidence	• Volume or rate of surface water depletion

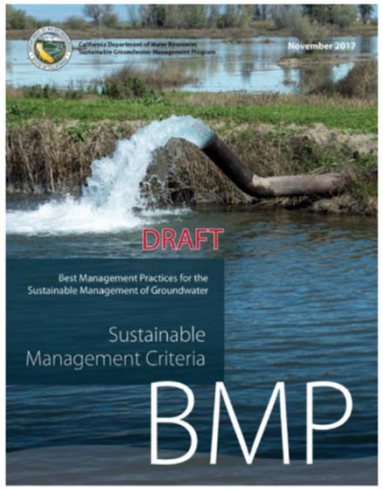


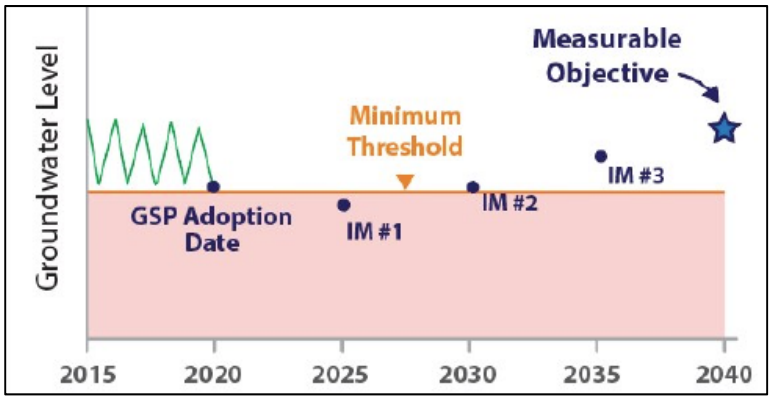




GSP Considerations Defining Sustainability

- SMC are the required, quantitative metrics that define sustainable management of a basin
- SMC are determined locally
- SMC support an outcome-driven process to achieving sustainability
- Sustainable Management Criteria
  - Sustainability Goal (Basin-wide)
  - Undesirable Results (Basin-wide)
  - Minimum Thresholds (Site-Specific)
  - Measurable Objectives (20 yrs, Site-Specific)
  - Interim Milestones (5 yrs, Site-Specific)



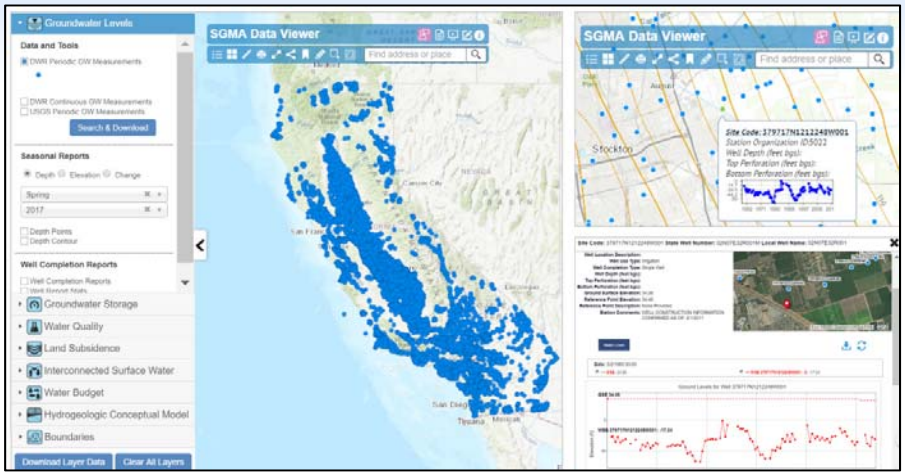


Article 5: Plan Contents

SUBARTICLE 4:

MONITORING NETWORKS

- Monitoring networks must include:
  - Monitoring objectives.
  - Monitoring protocols.
  - Data reporting requirements.
- Collection of data of sufficient quantity, frequency, and distribution to characterize groundwater and related surface water conditions.
- Monitoring network must be able to evaluate changing conditions in the basin.



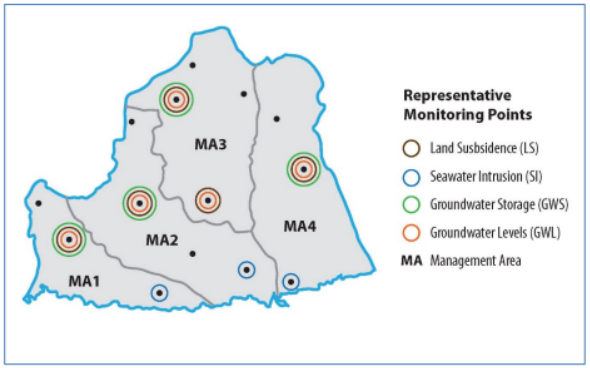
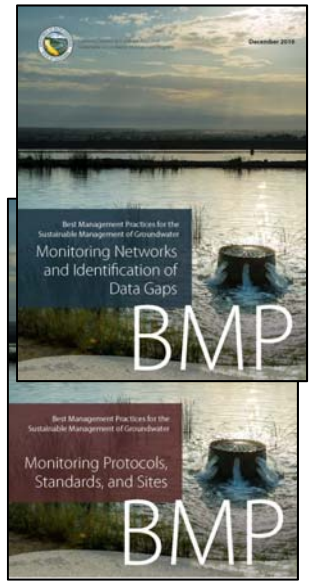
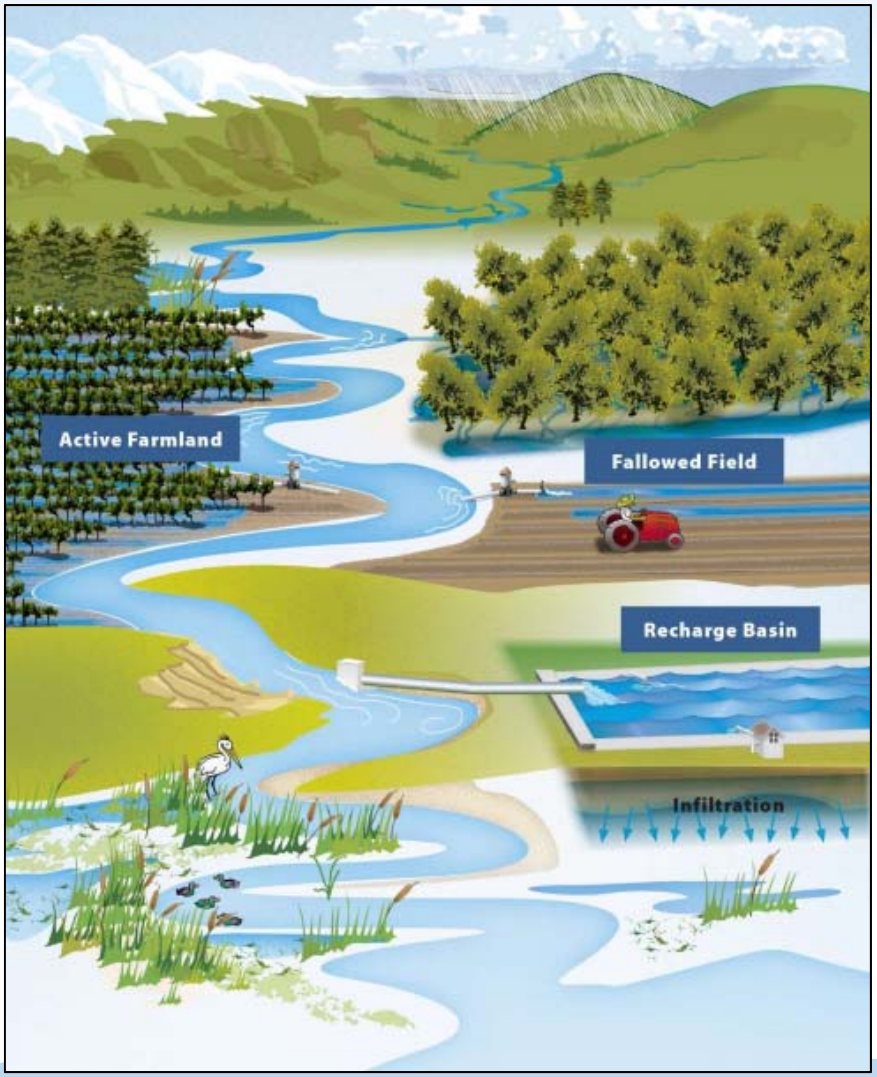


Figure 3: Representative Monitoring Points



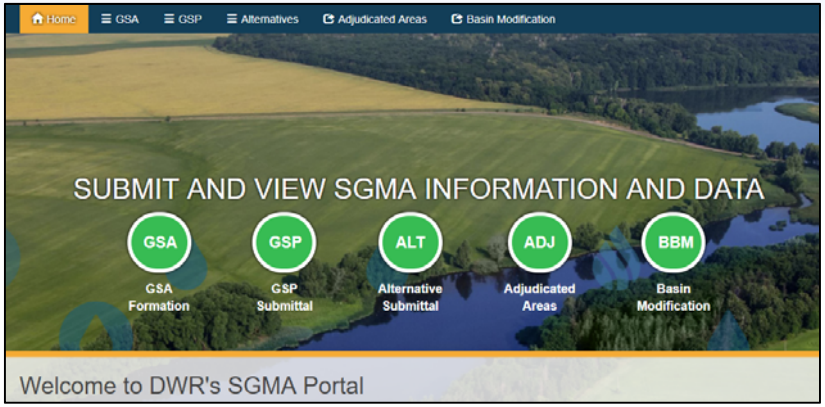
Article 5: Plan Contents

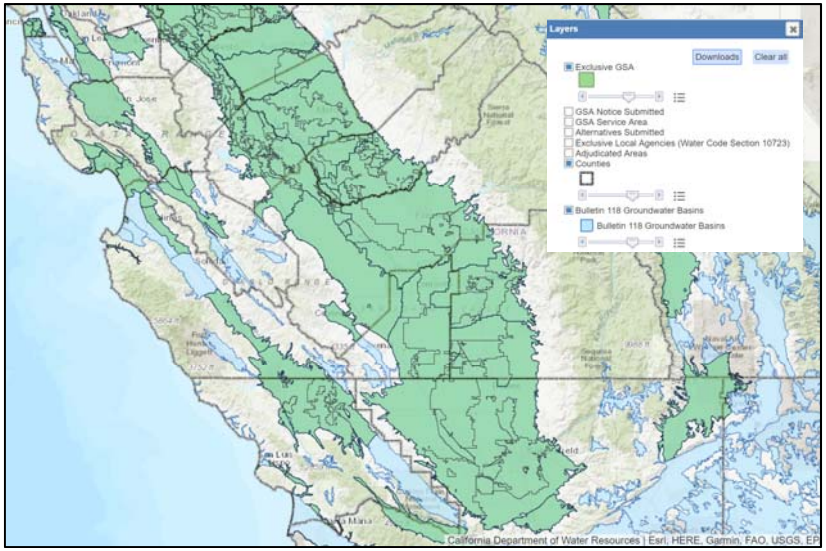


SUBARTICLE 5:
PROJECTS AND MANAGEMENT ACTIONS

- Realistic and sufficient projects and actions to achieve sustainability.
- Developed to a level that demonstrates GSAs have the resources, knowledge, and stakeholder acceptance to implement them.
- Known timeframe and general cost.
- Projects do not need to be designed.
- Supplemental plans and actions to address future uncertainties.
- All projects and management actions do NOT have to be implemented just because they are listed in the GSP.

GSP Submission Summary





- GSPs will be submitted online using the SGMA Portal.
- GSP information should be sufficiently detailed and the analyses sufficiently thorough and reasonable.
- DWR must be able to determine if the GSP can achieve the basin's sustainability goal.
- Public comments will be received and posted for at least 60 days following submission of the GSP.

Phase 3
GSP Implementation
2020/22 → 2040/42

GSP Evaluations and Assessments, GSP Implementation, and Annual Reports and GSP Updates

Phase 3: GSP Evaluations
Plan Adequacy Determinations

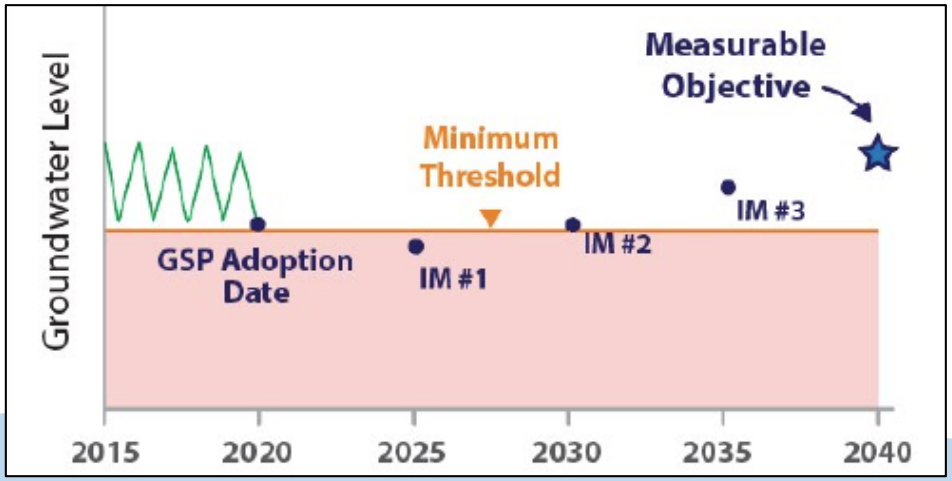
- **Article 6** of the GSP Regulations describes the methodology and criteria used by DWR to evaluate and assess GSPs.

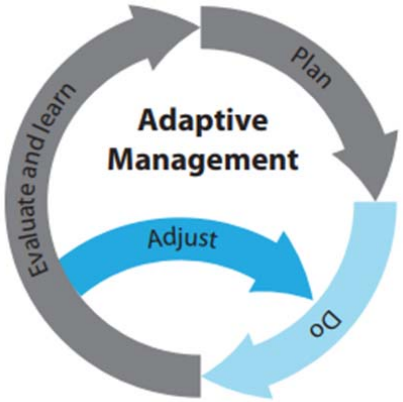
- DWR has up to 2 years to evaluate and assess GSPs after they are submitted.

- A GSP will be determined **approved, incomplete, or inadequate**.
  - A GSP will be **approved** if, in the judgement of the Department, it satisfies the requirements of SGMA and is in *substantial compliance* with the GSP Regulations.
  - A GSP will be determined **incomplete** if, in the judgement of the Department, it has only *minor deficiencies*.
    - An incomplete GSP may be revised and resubmitted.
  - A GSP will be determined **inadequate** if, in the judgement of the Department, it has *significant deficiencies*.

Phase 3: GSP Implementation
Annual Reports and Periodic Evaluations

- **Article 7** of the GSP Regulations describes the requirements for annual reports and periodic GSP evaluation.
- Annual reports are due by **April 1st** of each year following the adoption of a GSP.
- Each GSP, or Alternative, shall be evaluated at least ever five years.
  - Focus on determining whether the plan's actions are meeting the management objectives, and the basin's sustainability goal.
  - GSP and Alternative re-submittals will use the SGMA Portal.





Phase 4: "Sustainability Achieved"

Ongoing Sustainable Groundwater Management

Summary of GSP Development Considerations

Foundational and Fundamental

- GSPs submitted within the statutory deadline.
- The GSP is complete.
- GSP covers the entire basin.
  - If multiple GSPs are prepared for a basin, those GSPs must be submitted together and include a coordination agreement.
- DWR will evaluate a GSP within two years.
- A GSA can begin to implement a basin's sustainability program upon adoption and submittal of the GSP.

Plan Level

- DWR expects:
  - Demonstration of a path towards sustainability.
  - A clear quantitative definition of sustainability.
  - The GSP addressed the requirements in Article 5 (Subarticles 1-5)
  - The efforts to develop the GSP have considered the beneficial uses and users of groundwater in the basin.
  - Initial GSPs may have uncertainty and data gaps.
  - GSPs will be amended and modified over the 20-year implementation period.
- A GSP will be approved if it satisfies the requirements of SGMA and the GSP Regulations.

Thank You

Extra Slides

Undesirable Results and Sustainability Indicators

- Chronic **lowering of groundwater levels** indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon. Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and groundwater recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods.
- Significant and unreasonable **reduction of groundwater storage.**
- Significant and unreasonable **seawater intrusion.**
- Significant and unreasonable **degraded water quality**, including the migration of contaminant plumes that impair water supplies.
- Significant and unreasonable **land subsidence** that substantially interferes with surface land uses.
- **Depletions of interconnected surface water** that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

Minimum Thresholds

Each minimum threshold must be supported by documentation of:

1. *The information and criteria relied upon to establish and justify the minimum thresholds for each sustainability indicator. The justification for the minimum threshold shall be supported by information provided in the basin setting, and other data or models as appropriate, and qualified by uncertainty in the understanding of the basin setting.*

2. *The relationship between the minimum thresholds for each sustainability indicator, including an explanation of how the Agency has determined that basin conditions at each minimum threshold will avoid undesirable results for each of the sustainability indicators.*

3. *How minimum thresholds have been selected to avoid causing undesirable results in adjacent basins or affecting the ability of adjacent basins to achieve sustainability goals.*

4. *How minimum thresholds may affect the interests of beneficial uses and users of groundwater or land uses and property interests.*

5. *How state, federal, or local standards relate to the relevant sustainability indicator. If the minimum threshold differs from other regulatory standards, the Agency shall explain the nature of and basis for the difference.*

6. *How each minimum threshold will be quantitatively measured, consistent with the monitoring network requirements described in Subarticle 4.*