



Overview of Groundwater Sustainability Plans & Alternatives Regulations

Butte County Groundwater
Pumpers Advisory Committee

April 17, 2017



Overall Regulatory Approach

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

Governor Jerry Brown, September 2014



Public
Engagement

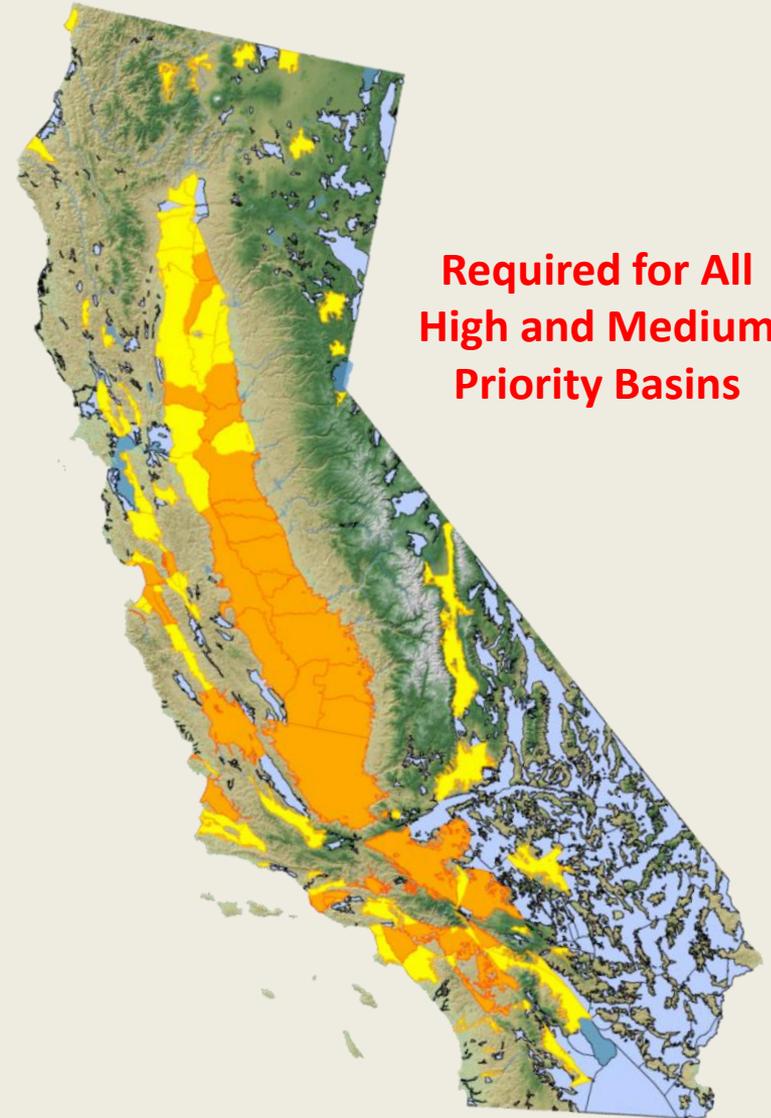
Local Agencies (GSAs)
Plan Development
Plan Implementation

Department of Water Resources
Plan Evaluation
Statewide Minimum Standards
Technical & Financial Assistance

**Sustainable
Groundwater
Management**

GSP Regulation Articles

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





ARTICLE 1. INTRODUCTORY PROVISIONS

Provides regulation intent, authority, methods, and criteria used by the Department (DWR) to evaluate plans, alternatives, and coordination agreements and information required by the Department to facilitate that evaluation

§ 350.2. Applicability (process and standards for agencies and DWR)

§ 350.4. General Principles (guide DWR in the implementation of the regulations)



ARTICLE 2. DEFINITIONS

Provides the simple key terms used in the regulation.

- *The definitions in SGMA, Bulletin 118, and Basin Boundary Regulations apply to these regulations.*
- *In the event of conflicting definitions, the definitions in the SGMA govern the meanings in this regulation.*

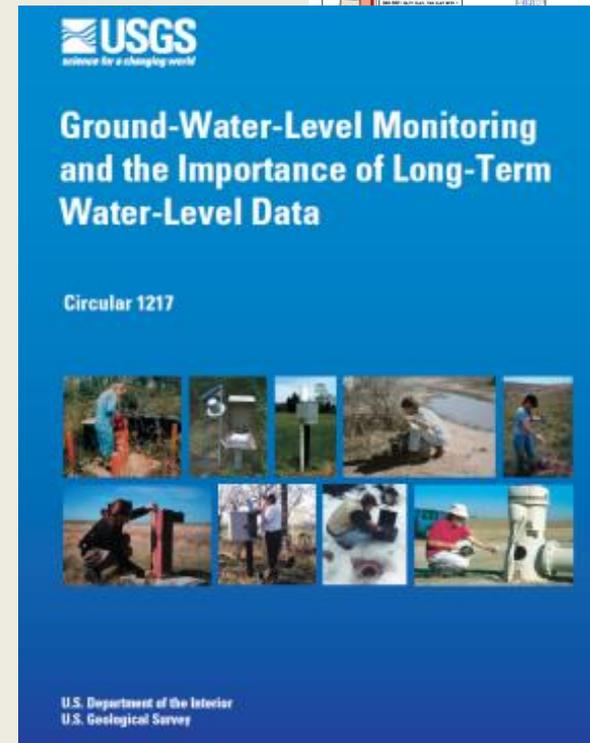
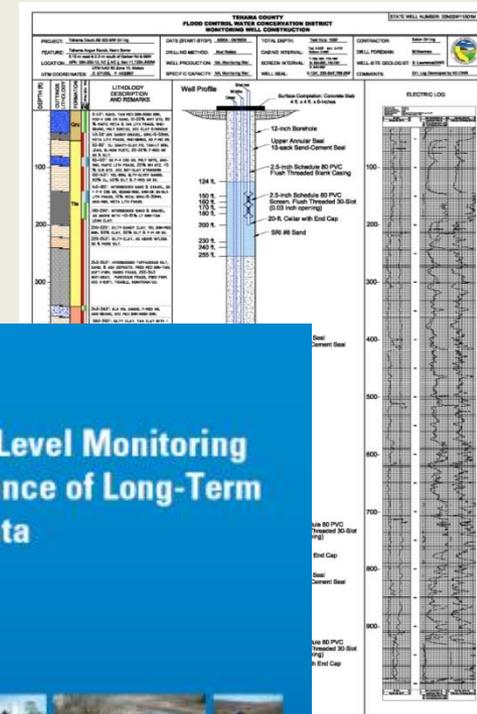
ARTICLE 3. TECHNICAL AND REPORTING STANDARDS

This Article describes the monitoring protocols, standards for monitoring sites, and other technical elements related to the development or implementation of a Plan.

§ 352.2. Monitoring Protocols

§ 352.4. Data and Reporting Standards

§ 352.6. Data Management System



ARTICLE 4. PROCEDURES

This Article describes various procedural issues related to the submission of Plans and public comment to those Plans.

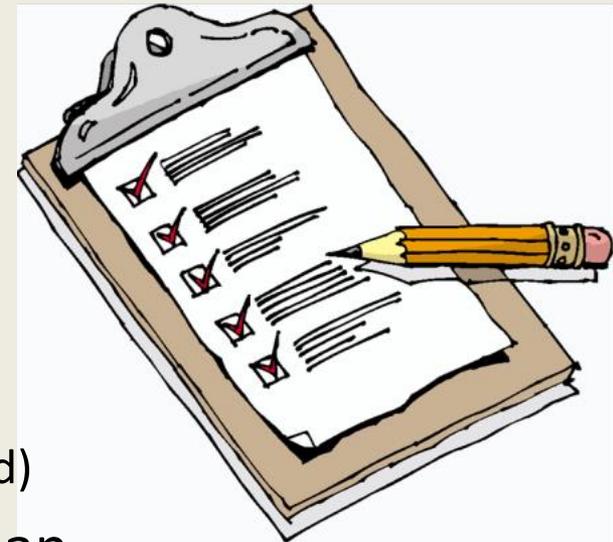
§ 353.2. Information Provided by the Department (instructions etc.)

§ 353.4. Reporting Provisions (how materials should be submitted)

§ 353.6. Initial Notification (in writing prior to development of their plan)

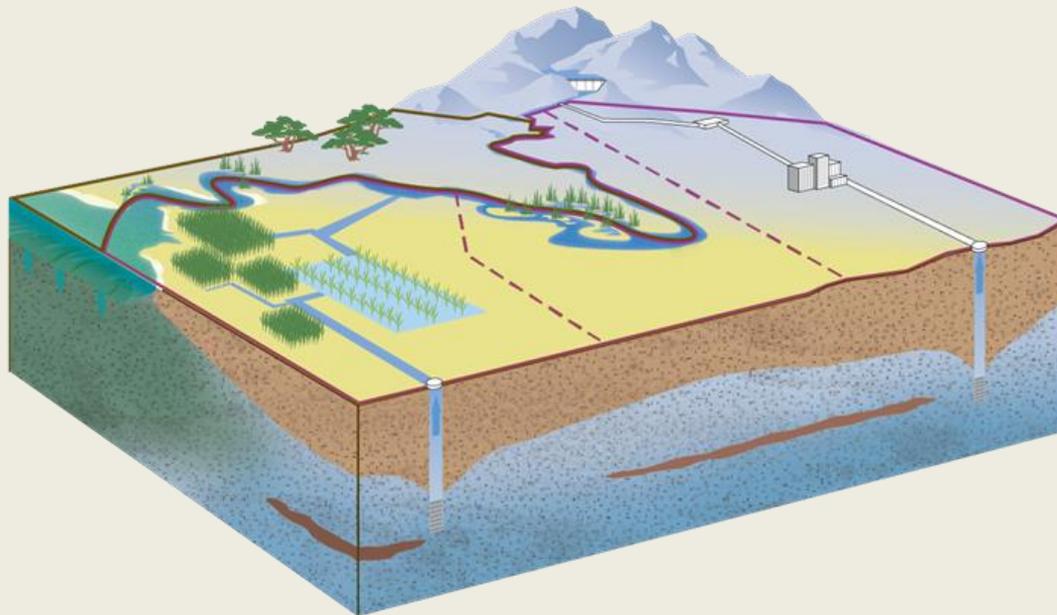
§ 353.8. Comments (no less than a 60 day period)

§ 353.10. Withdrawal or Amendment of Plan (anytime with written notice to DWR)



ARTICLE 5. PLAN CONTENTS

This Article describes the required contents of Plans submitted to the Department for evaluation, including administrative information, a description of the basin setting, sustainable management criteria, description of the monitoring network, and projects and management actions.



Article 5. Plan Contents

1. Administrative Information

- § 354.4. General Information
- § 354.6. Agency Information
- § 354.8. Description of Plan Area
- § 354.10. Notice & Communication

2. Basin Setting

- § 354.14. Hydrogeologic Conceptual Model
- § 354.16. Groundwater Conditions
- § 354.18. Water Budget
- § 354.20. Management Areas

3. Sustainable Management Criteria

- § 354.24. Sustainability Goal
- § 354.26. Undesirable Results
- § 354.28. Minimum Thresholds
- § 354.30. Measureable Objectives

4. Monitoring Networks

- § 354.34. Monitoring Network
- § 354.36. Representative Monitoring
- § 354.38. Assessment & Improvement
- § 354.40. Reporting Monitoring Data to the Department

5. Projects and Management Actions

- § 354.44. Projects & Management Actions

Undesirable Results

Significant and Unreasonable



Lowering
GW Levels



Reduction
of Storage



Seawater
Intrusion



Degraded
Quality



Land
Subsidence



Surface Water
Depletion



Article 5. Subarticle 3.

Sustainable Management Criteria

§ 354.24. Sustainability Goal (*Basin wide - Goal*)

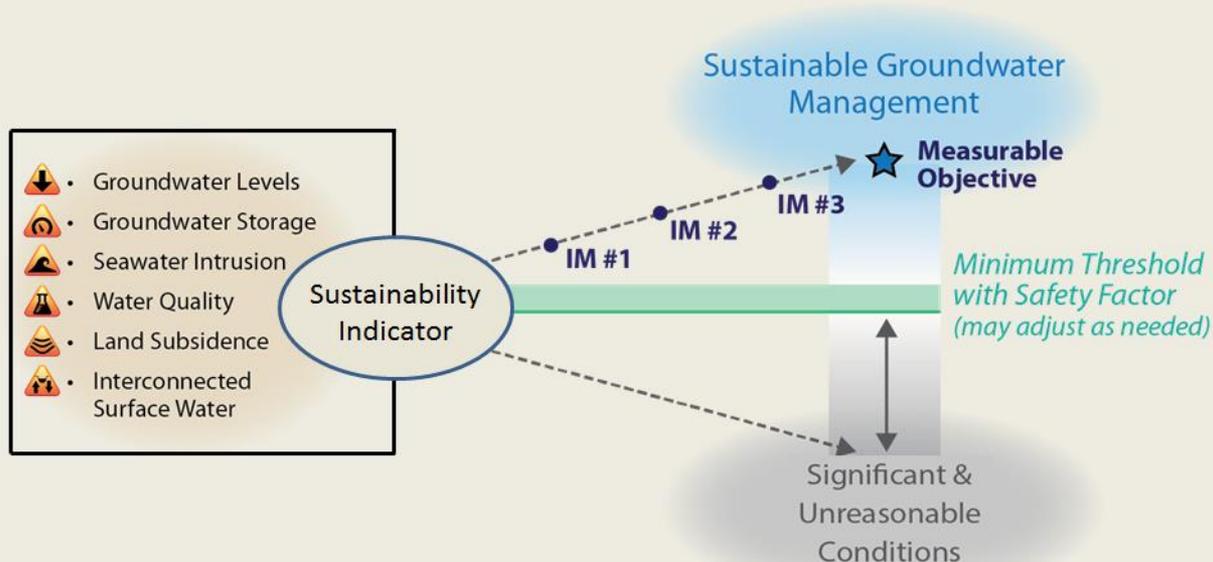
The existence and implementation of one or more groundwater sustainability plans that achieve sustainable groundwater management by identifying and causing the implementation of measures targeted to ensure that the applicable basin is operated within its sustainable yield.

- § 354.26. Undesirable Results (*Basin wide - Impacts*)
- § 354.28. Minimum Thresholds (*Site specific - Impacts*)
- § 354.30. Measurable Objectives (*Site specific - Goals*)

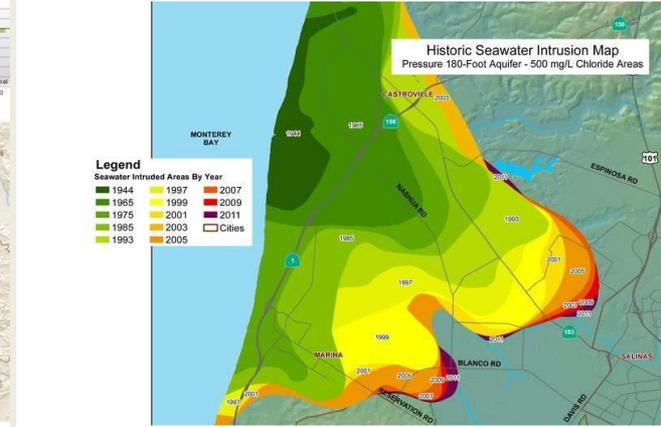
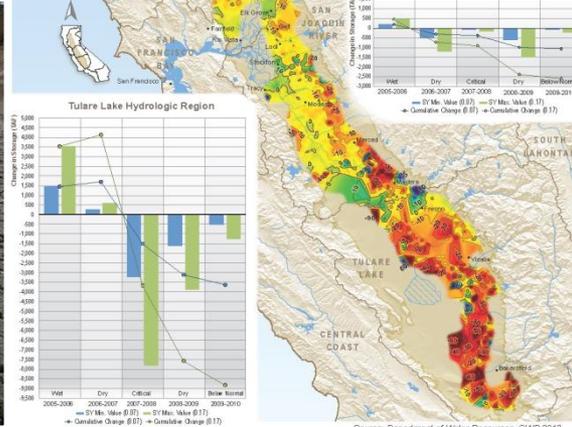
Article 5. Subarticle 3

Key Definitions

- **Sustainability Indicator** - Any of the effects caused by groundwater conditions occurring throughout the basin that, when significant and unreasonable, cause undesirable results, as described in Water Code Section 10721(x).
- **Minimum Threshold** – A numeric value for each sustainability indicator used to define undesirable results.
- **Measurable Objectives** - Specific, quantifiable goals for the maintenance or improvement of specified groundwater conditions that have been included in an adopted Plan to achieve the sustainability goal in a basin.



Undesirable Results



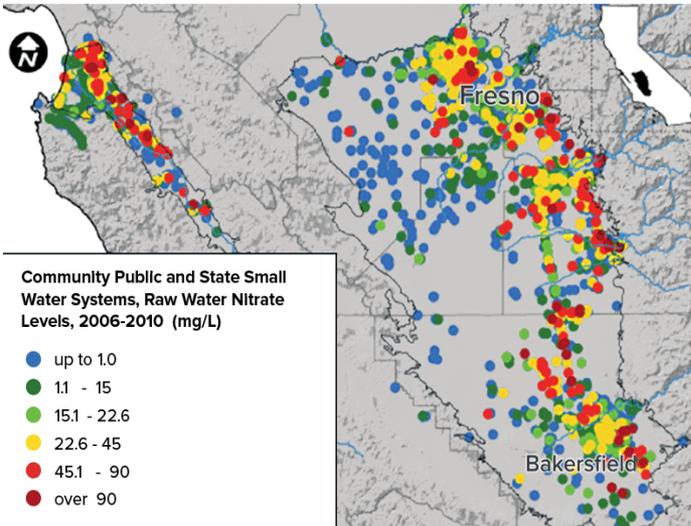
Lowering of GW Levels



Reduction of GW Storage



Seawater Intrusion



Water Quality Degradation



Land Subsidence

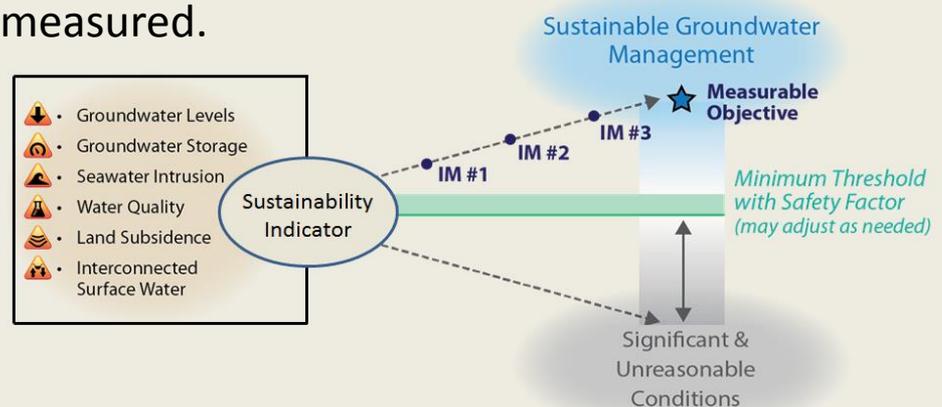


Depletion of Interconnected Streams

Article 5. Subarticle 3.

§ 354.28. Minimum Thresholds

- GSA shall establish minimum thresholds for each sustainability indicator
- Minimum thresholds shall be numeric values that define site specific conditions that, if exceeded, may cause undesirable results
- Description based on the following:
 1. Information and criteria used to establish the minimum threshold.
 2. Interrelationship between sustainability indicators and how each threshold will avoid undesirable results.
 3. Effects on the beneficial uses and users of groundwater, land uses, and adjacent basins.
 4. How the minimum threshold relates to state, federal, or local standards.
 5. How minimum threshold will be measured.

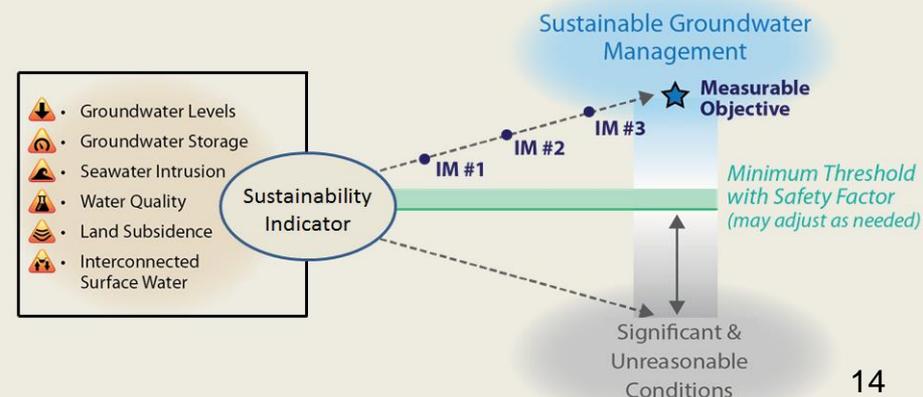


Article 5. Subarticle 3

§ 354.30. Measurable Objectives

- GSA shall establish one or more measurable objective for each sustainability indicator to achieve sustainability goal within 20 years.
 - Represented by same quantitative metric as Minimum Threshold
 - Selected to provide a reasonable margin of operational flexibility under adverse conditions
 - Defines operational range
 - Takes into consideration historical water budget, periods of drought, groundwater trends and level of uncertainty (climate change, etc.)
 - May establish a representative measureable objective for groundwater levels to serve multiple sustainability indicators

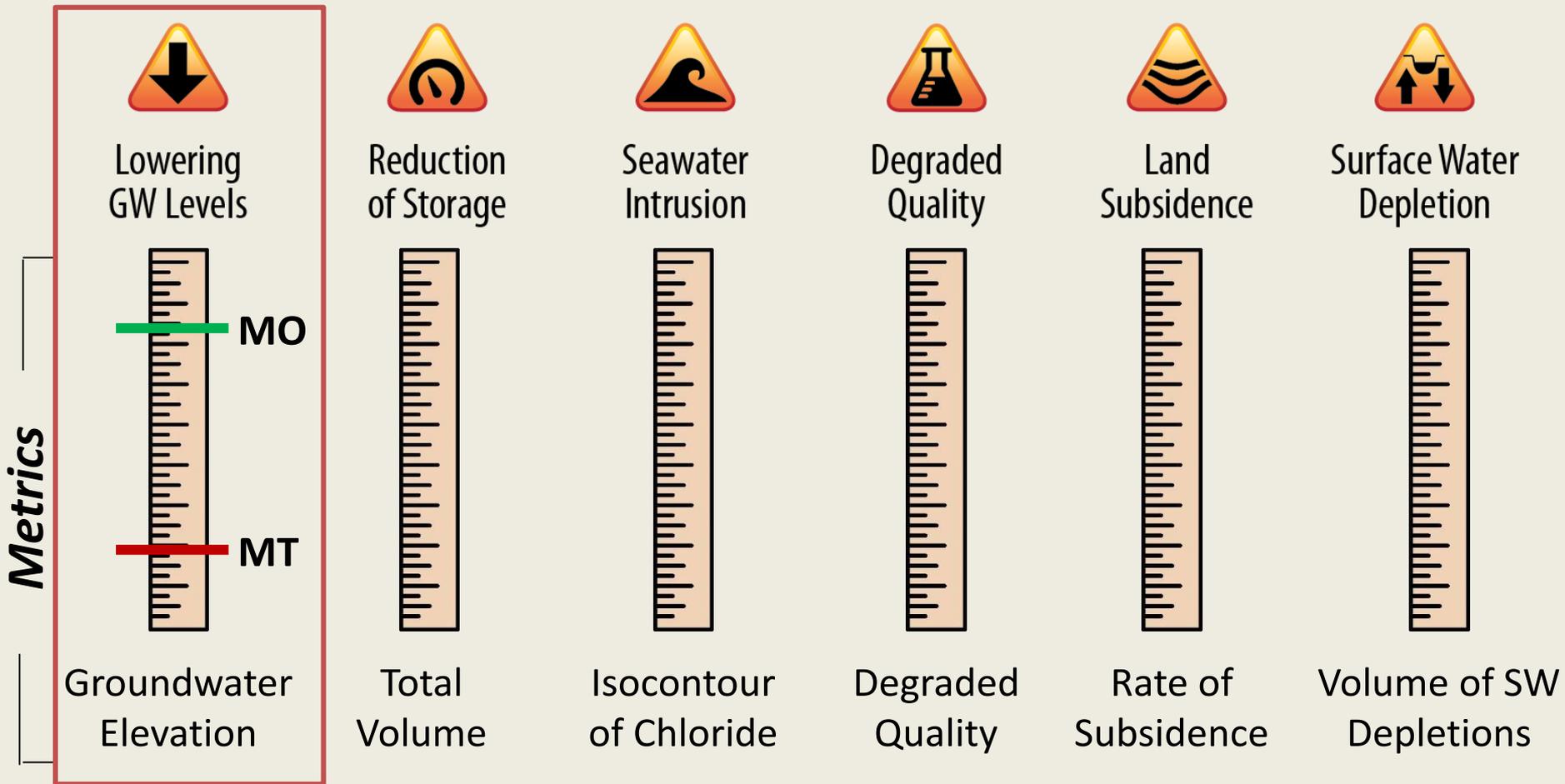
- Each Plan shall include interim milestones in increments of 5 years for each measurable objective.



Minimum Threshold Metrics

- Statewide Framework -

Sustainability Indicators

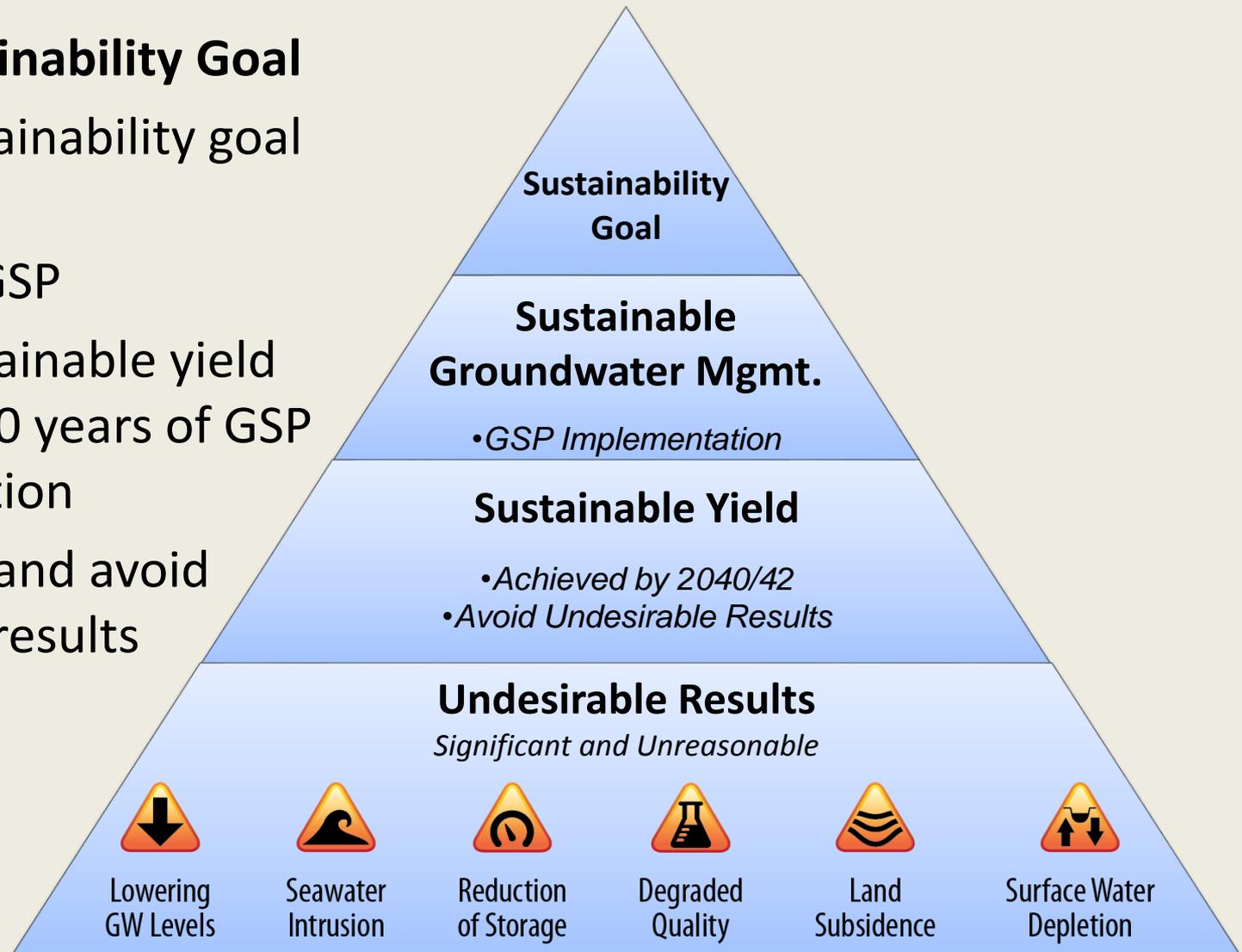


*Groundwater Elevations - can be used for multiple minimum thresholds

Sustainable Management Criteria

§ 354.24. Sustainability Goal

- A single sustainability goal for the basin
- Implement GSP
- Achieve sustainable yield (SY) within 20 years of GSP implementation
- Maintain SY and avoid undesirable results





ARTICLE 6.

EVALUATION AND ASSESSMENT

This Article describes the methodology and criteria used by the Department to evaluate and assess a Plan, periodically evaluate and assess the implementation of a Plan, or evaluate and assess amendments to a Plan.

§ 355.2. Department Review of Adopted Plans (2 years to review)

§ 355.4. Criteria for Plan Evaluation (complete, compliant, and on-time)

§ 355.6. Periodic Review of Plan by the Department (anytime, but at least every 5 years)

§ 355.8. Department Review of Annual Reports (for DWR to determine whether the plan is being implemented)

§ 355.10. Plan Amendments (anytime and then reviewed by DWR)

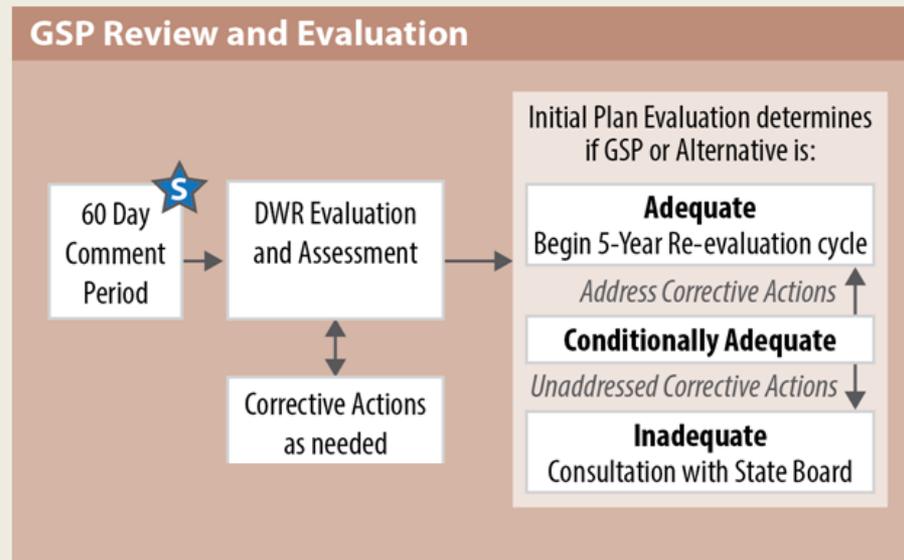


Article 6.

Evaluation and Assessment

§ 355.2. Department Review of Initial Adopted Plan

- GSA(s) submit GSP(s)
- DWR posts GSPs to website within 20 days
- 60 day public comment period
- DWR evaluates GSP within two years
- DWR approval determination
- DWR may identify GSP deficiencies and recommend corrective actions.

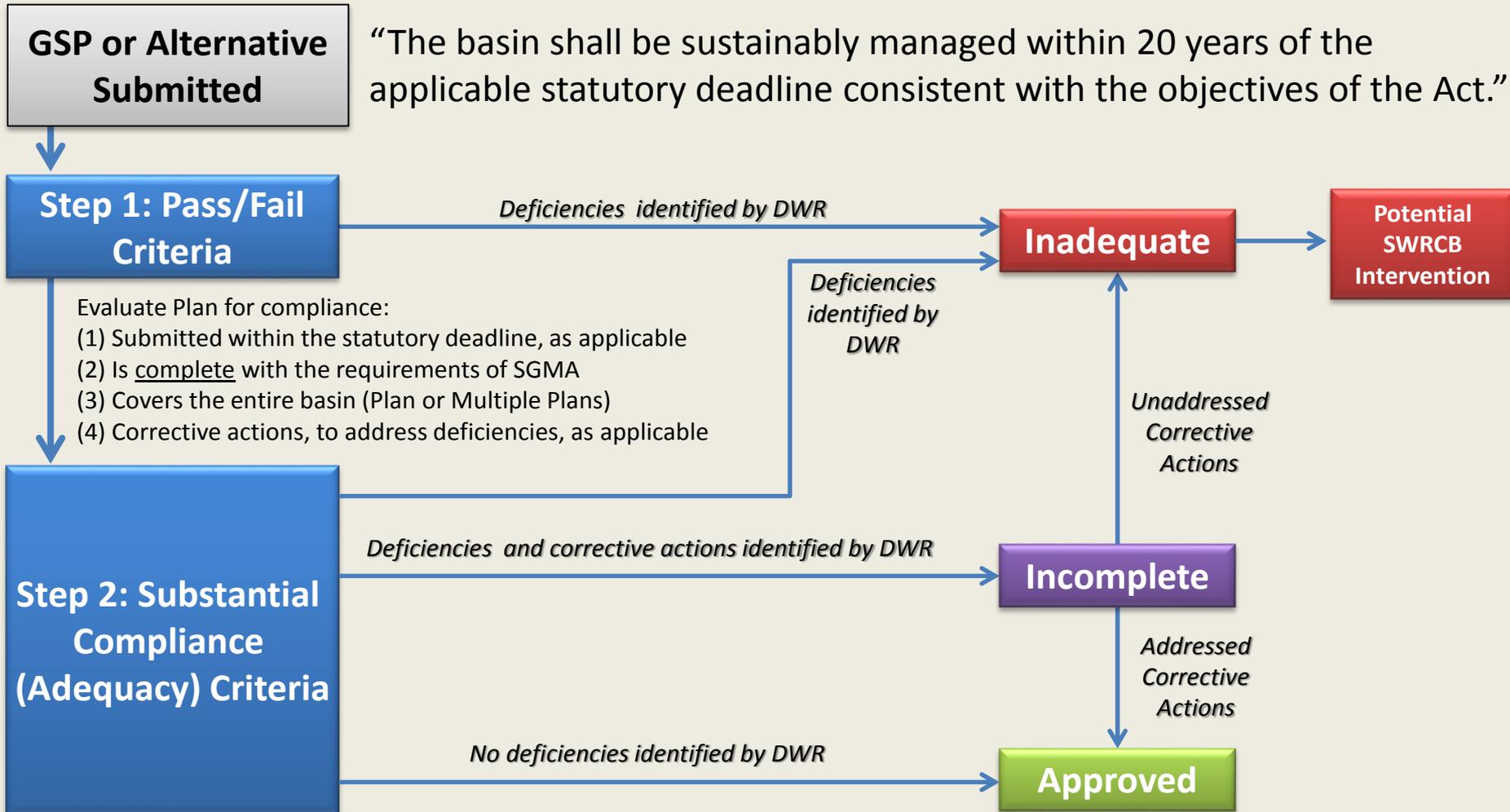


Article 6.

Evaluation and Assessment

§ 355.4. Criteria for Plan Evaluation

“The basin shall be sustainably managed within 20 years of the applicable statutory deadline consistent with the objectives of the Act.”

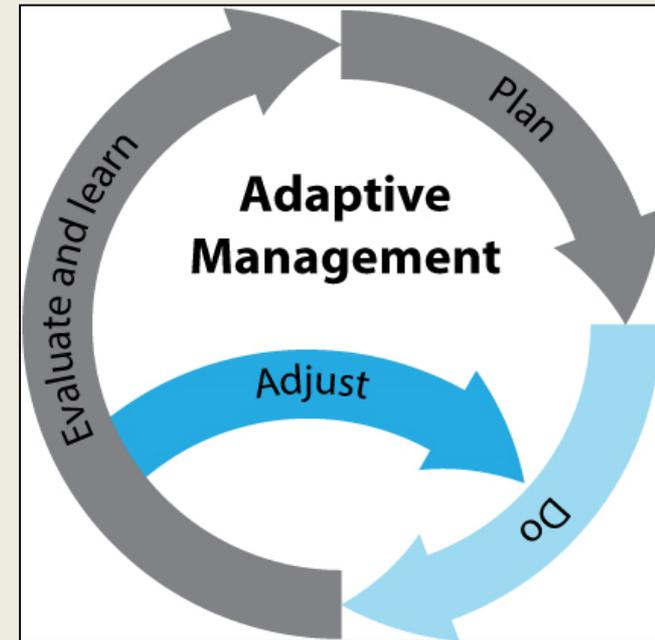


ARTICLE 7. ANNUAL REPORTS AND PERIODIC EVALUATIONS BY THE AGENCY

This Article describes the procedural and substantive requirements for the annual reports and periodic evaluation of Plans prepared by an Agency.

§ 356.4. Annual Reports (due April 1)

§ 356.6. Periodic Evaluation by Agency (at least every 5 years or when the plan is amended)





ARTICLE 8. INTERAGENCY AGREEMENTS

This Article describes the requirements for voluntary coordination agreements between agencies in different basins and mandatory coordination agreements between agencies within a basin developed pursuant to Water Code Section 10727.6.

§ 357.2. Inter-basin Agreements (between basins)

§ 357.4. Coordination Agreements (within basin)

Article 8.

Interagency Agreements

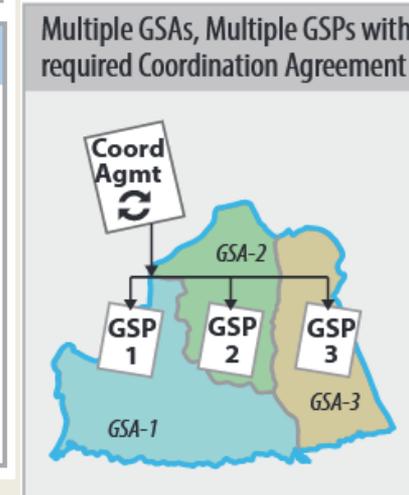
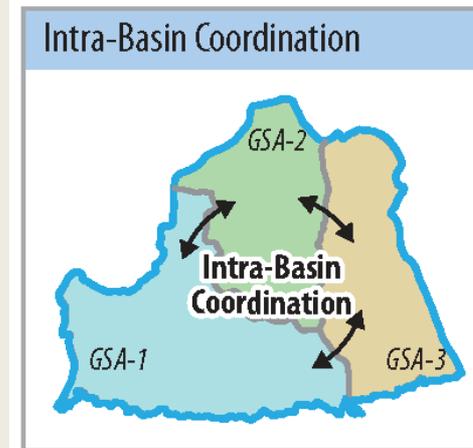
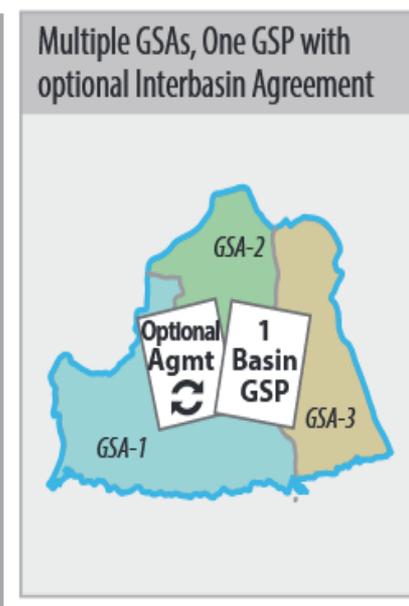
§ 357.2. Inter-Basin Agreements

- Optional requirement, *but recommended*
- Identification of all basins participating
- Technical information (flow across boundary, common SGM criteria, etc.)

§ 357.4. Coordination Agreements

(aka. Intra-Basin Coordination)

- Recommended if multiple GSAs intend to prepare a single GSP
- Mandatory for multiple GSPs in a basin (same data and methodologies)





ARTICLE 9. ALTERNATIVES

This Article describes the methodology and criteria for the submission and evaluation of Alternatives.

§ 358.2. Alternatives to Groundwater Sustainability Plans (were due January 1, 2017)

§ 358.4. Department Evaluation of Plan Alternatives (must comply with Water Code Part 2.11, GW monitoring)

DWR's SGMA Responsibilities and Due Dates



- ✓ • **Initial Basin Prioritization: §10723.4**
 - Completed by January 31, 2015
- ✓ • **Regulations for Modifying Groundwater Basin Boundaries: §10722.2**
 - Completed by January 1, 2016
- ✓ • **Identification of Critically Overdrafted Basins: §12924**
 - Completed by January 2016
- ✓ • **Groundwater Sustainability Plan and Alternatives Regulations: §10733.2**
 - Completed by June 1, 2016

DWR's SGMA Responsibilities and Due Dates



- ✓ • **Water Available for Replenishment: §10729(c)**
 - Completed by January 1, 2017

- ✓ • **Best Management Practices: §10729(d)**
 - Completed by January 1, 2017

- ✓ • **Bulletin 118: §12924**
 - Interim Update completed by January 2017;
 - Comprehensive Update due 2020



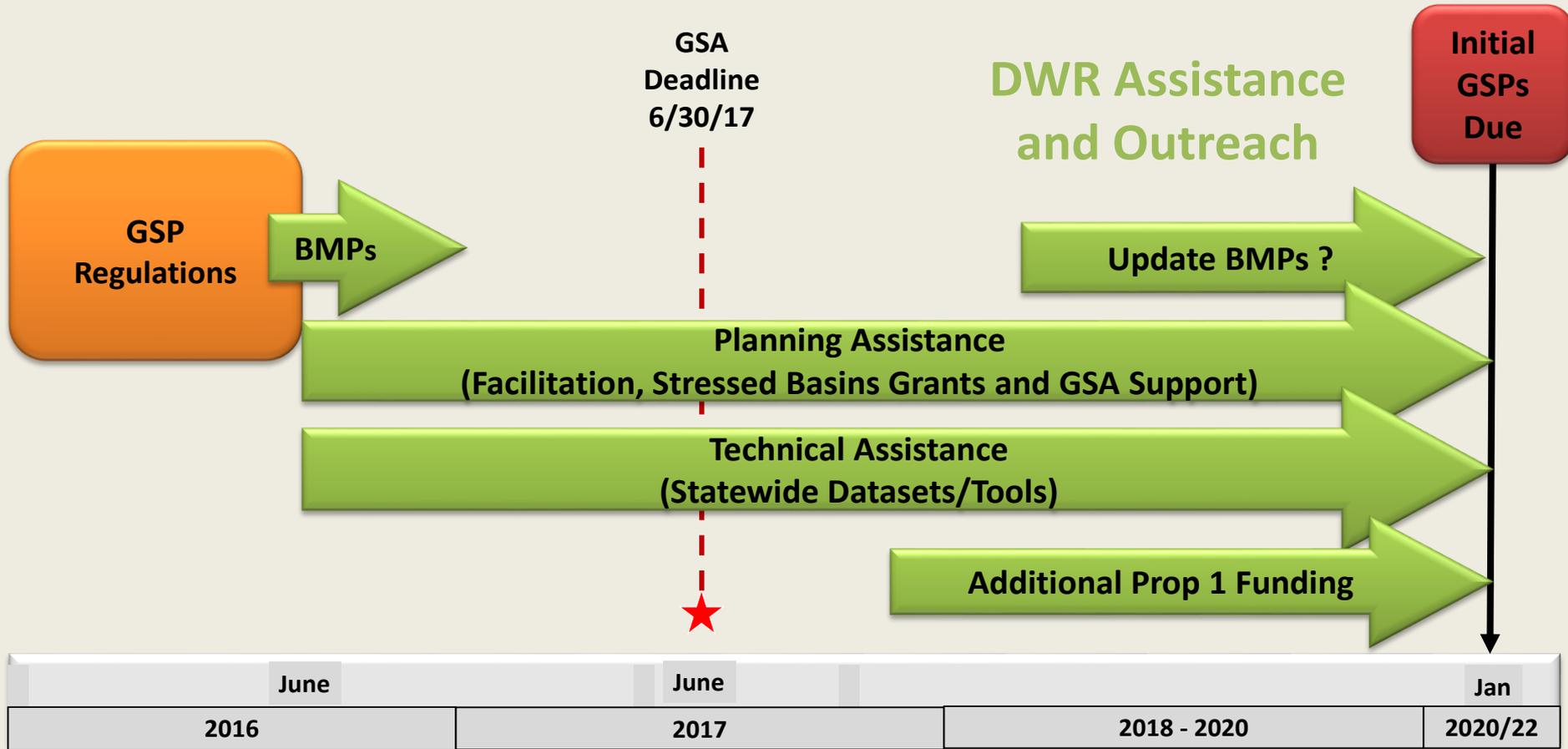
Local Agency Responsibilities and Due Dates

- **Groundwater Sustainability Agency Formation:**
 - Due by June 30, 2017

- **Groundwater Sustainability Plans:**
 - Due January 31, 2022 (2020 for basins identified as in critical overdraft)



Next Steps Timeline



- Data Management Framework
- Regional Water Budget Support
- Update Well Standards

Dates and Durations are Subject to Change



Department of Water Resources Web links

DWR Sustainable Groundwater Management (SGM)

<http://www.water.ca.gov/groundwater/sgm/index.cfm>

Subscribe to DWR SGM Email List

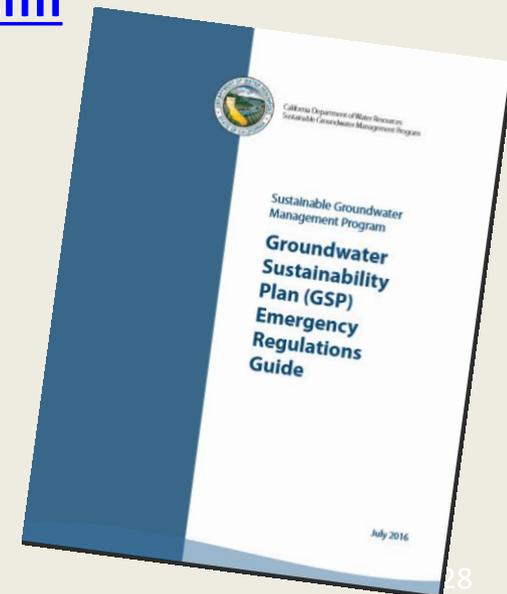
<http://www.water.ca.gov/groundwater/sgm/subscribe.cfm>

DWR GSP/Alt. Regulation Website

<http://www.water.ca.gov/groundwater/sgm/gsp.cfm>

DWR Water Management Planning Tool

<https://gis.water.ca.gov/app/boundaries/>





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Article 3. Pop Quiz (True or False)

GSAAs are required to use the monitoring protocol established by DWR's Best Management Practices.

False. Section 352.2 (b)

Wells used to monitor groundwater conditions do not have to be constructed according to well standards or have construction information.

False. Section 352.4 (c)(1)

GW-SW models developed in su proprietary software.

True and False. Sect



Input → BLACK BOX → Output