National Experience. Local Focus.

Implementing SGMA

An Update on California's Foray into Groundwater Regulation

December 4, 2017

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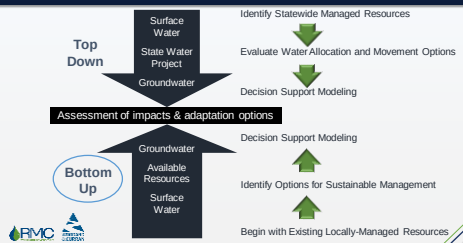
Sustainable Groundwater Management Act

- Passed in 2014; implemented starting January 1, 2015
- First comprehensive groundwater legislation in California
- Focus on local/regional groundwater sustainability
- Mitigation and/or prevention of 6 undesirable impacts

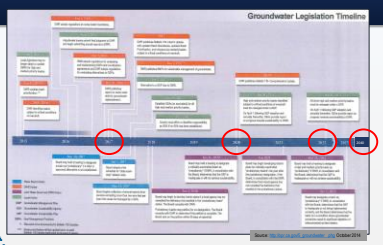
Different Approaches to SGMA Implementation



California's Groundwater Basins

- Applied to all 515 alluvial basins included in Bulletin 118 (2003)
- Excludes adjudicated groundwater basins
- Identifies specific water agencies created by statute as sole GSA in their basins

SGMA's Implementing Regulations and Guidelines



SGMA in 6 Parts

1. Basin Prioritization
2. Critical Overdraft Determination
3. Basin Boundary Revision
4. Groundwater Sustainability Agency (GSA) Formation
5. Groundwater Sustainability Plan (GSP) Preparation
6. GSP Implementation.

Parts 1, 2 & 3: Basin Determination
(all completed)

Part 1: Basin Prioritization
- 127 of 515 groundwater basins determined to medium or high priority
- SGMA optional for low and very low priority basins
- Reprioritization (post basin boundary revision) to occur in 2017

Part 2: Critical Overdraft Determination
- 21 basins/subbasins defined as in 'critical overdraft'
- One or more undesirable impacts within a basin places the basin in critical overdraft

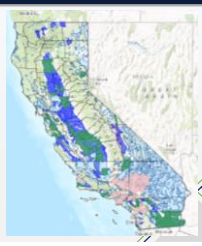
Part 3: Basin Boundary Revision
- Jurisdictional and administrative boundary adjustments
- 54 modification requests were received; most were approved
- Basin reprioritization to occur this year
- Another round of modifications scheduled for 2018

Part 4: Groundwater Sustainability Agencies (GSAs)
(deadline – June 30, 2017)

- Local agencies with water supply, water management or land use responsibilities
- Form by JPA, MOA, or other legal agreement
- Public hearing and notification required prior to formation
- Counties take responsibility for areas outside a GSA
- All GSAs in a single basin must meet requirements for entire basin
- SWRCB is backstop for GSA formation & white areas

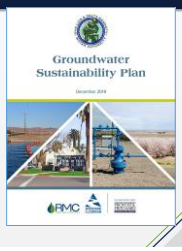
Part 4: GSA Formation Status (as of June 30, 2017)

- More than 99.9% of SGMA basins are compliant
- 264 GSA formation notifications submitted
- GSA notifications cover 376 separate areas in 140 basins
  - 108 basins are high and medium priority
  - 32 basins are low or very low priority
- Most counties have agreed to be GSAs for PUMAs



Part 5: Groundwater Sustainability Plans (GSPs) Preparation (deadline – January 31, 2020 or 2022)

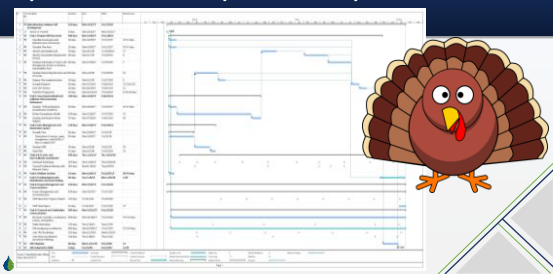
- Must be adopted and submitted to DWR by January 31, 2020 or 2022
- Sustainability to be achieved within 20 years
- 50-year planning horizon
- DWR approval of plan required to avoid State intervention
- Annual reporting re: progress
- 5-year updates
- Groundwater monitoring required



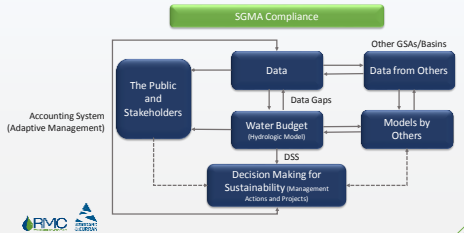
GSP Requirements

- **Technical and Reporting Standards**
  - Monitoring Protocols
- **Administrative Information**
  - General Information
  - Agency Information
  - Description of Plan Area and Map(s)
  - Water Resources Monitoring and Management Program
  - Land Use Elements
  - Additional GSP Contents
  - Notice and Communication
- **Basin Setting**
  - Hydrogeologic Conceptual model
  - Recharge Areas with Map
  - Current and Historical Groundwater Conditions
  - Water Budget Information
  - Surface Water Supply
  - Management Areas
- **Sustainable Management Criteria**
  - Sustainability Goals
  - Interim Goals
  - Undesirable Results
  - Minimum Thresholds
  - Measurable Objectives
- **Monitoring Networks**
  - Monitoring Network
  - Representative Monitoring
  - Assessment and Improvement of Monitoring Network
- **Projects and Management Actions**
  - Projects and Management Actions

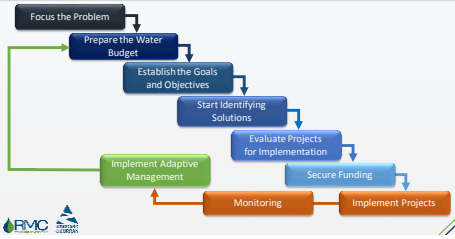
Expedited Schedule Required for Compliance



SGMA Compliance Framework



Where to Begin?



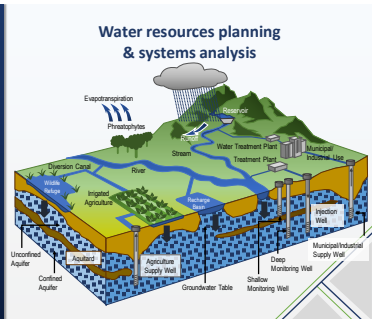
Step 1 - Focus the Problem

Step 2 - Define Sustainability & Gain Concurrence

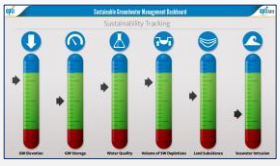
- Basin-specific definition
- Legislation requires prevention of undesirable outcomes (and avoidance)
- Approaches to achieve this requires consideration of:
  - Economic impacts
  - Social impacts
  - Environmental impacts/permitting
  - Implementability

Step 2a – Prepare the Water Budget

" ***Water budget*** means an accounting of the **total groundwater and surface water entering** and leaving a basin including the changes in the amount of water stored."



Step 2b – Establish Sustainability Goals and Objectives



- Required by SGMA
  - Minimum thresholds
  - Management objectives
- Monitoring for compliance
- Gain Stakeholder buy-in

Step 3 – Start Identifying Solutions

- Conjunctive use – recharge projects
- Stormwater capture and recharge
- Expanded recycled water use (NPR, IPR, DPR)
- Pumping curtailments/fees
- Imported water
- Internal/Regional water market – cap and trade program
- Conservation incentives
  - Improved water use efficiencies
  - Drought surcharges
  - Fallowing
  - Crop changes

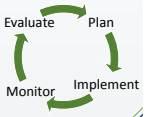
Thinking outside the box will be critical – leave no alternative behind!

Step 4 – Evaluate Alternatives and Develop Portfolio

- Evaluate alternatives and formulate portfolios of management actions and projects/programs
- Consider broad range of impacts
  - Financial Impacts
  - Social Impacts
  - Economic Impacts
  - Environmental Impacts
- Finalize preferred portfolio with stakeholder buy-in

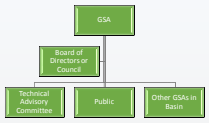
GSPs Call for Integrated Planning

- Traditional supply planning evaluations (single objective, driven by cost effectiveness) are unlikely to achieve desired objectives
- SGMA is, by nature, multi-objective (sustainability is multi-objective)
- The economic and social elements are key to sustainable solutions
- Integrated planning
  - Includes the water resources system as the evaluation scope
  - Involves multiple institutions and stakeholders
  - Considers multiple objectives
  - Formally evaluates risk and uncertainty in analysis implementation



Step 5 – Outreach, Engagement and Sustained Consensus

- Technical – provide technical input to and review of draft materials
- Public – interested parties that generally do not have strong technical knowledge, but are interested in the process
- GSAs – coordinate with other GSAs
- Proactive – message early and often



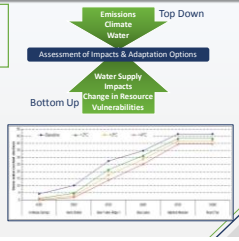
Step 6 - Monitoring for Administration and Evidence of Compliance

- Establish monitoring goals and objectives
- Look for opportunities for basin-wide or regional monitoring
- Don't forget surface water
- Use management areas to tailor monitoring program
- Document, document, document
- Use your results – analyze your data regularly
- Track data gaps and provide plan for addressing them

Data Management and Visualization Tools will be Critical

Step 7 – Plan for Adaptive Management

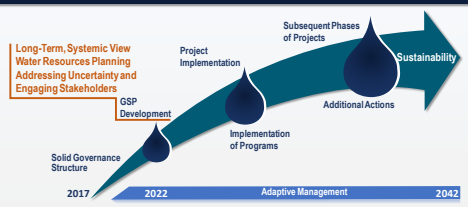
- Uncertainties include climate change, legislative, regulatory, other basins' actions, etc.
- GSPs will need to change with changing conditions
- Plan for refinements and program changes



SGMA Status (as of December 2017)

- GSA formation is complete
- Many GSAs are working on governance structures, operating agreements (MOUs), and coordination agreements
- State funding program has closed for proposal acceptance
- Next up – GSP preparation
  - Initial areas of concern:
    - Funding and cost allocation
    - Data collection, analysis and management
    - Model selection
    - Defining sustainability
  - Secondary areas of concern:
    - Monitoring
    - Outreach
    - Coordination agreements

Three Years of Planning - 20 Years of Action



Questions?

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