Implementing the Sustainable Groundwater Management Act: 
Local Governance Approaches and Considerations

HOSTED BY THE TULARE COUNTY WATER COMMISSION

February 4, 2015 | 9:30 am – 3:00 pm | Tulare, CA
Southern California Edison Energy Education Center | 4437 S. Laspina | Tulare, CA 93274

Workshop Objectives

- Learn about the governance requirements enacted through the Sustainable Groundwater Management Act.
- Explore common considerations and approaches to shaping a Groundwater Sustainability Agency (GSA).
- Through discussion of local case studies, learn how governance considerations are being applied to local groundwater basins.
- Identify common themes and takeaways from local case studies.

Agenda

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<th>Time</th>
<th>Topic</th>
<th>Presenter(s)</th>
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<tr>
<td>9:30 a.m. – 10:00</td>
<td>Check-in and Refreshments</td>
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<tr>
<td>10:00 – 10:15</td>
<td>Welcome &amp; Introductions</td>
<td>• Supervisor Allen Ishida, Tulare County</td>
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<tr>
<td>10:15 – 11:00</td>
<td>Overview of SGMA and Local Governance</td>
<td>• Kate Williams, California Water Foundation</td>
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<td>11:00 – 11:45</td>
<td>Case Study: Kern County Basin</td>
<td>• Supervisor David Couch, Kern County</td>
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<td>• Eric Averett, Rosedale-Rio Bravo Water Storage District</td>
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<td>11:45 – 12:30 p.m.</td>
<td>Case Study: Kings Basin</td>
<td>• Dave Orth, Kings River Conservation District</td>
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<td>• Alan Weaver, Fresno County</td>
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<td>12:30 – 1:15</td>
<td>Lunch</td>
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<td>1:15 – 2:00</td>
<td>Case Study: Kaweah Basin</td>
<td>• Mark Larsen, Kaweah Delta Water Conservation District</td>
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<td>• Denise England, Tulare County</td>
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<td>2:00 – 2:50</td>
<td>Practical Applications of Workshop Perspectives and Insights</td>
<td>• Mike Harty, Kearns &amp; West</td>
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<td>• Workshop Participants</td>
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<td>2:50 – 3:00</td>
<td>Wrap-up and Evaluation</td>
<td>• Mike Harty, Kearns &amp; West</td>
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Implementing the Sustainable Groundwater Management Act:

Local Governance Approaches and Considerations

February 4, 2015
Tulare, California
Kern County &
The Sustainable Groundwater Management Act ("SGMA")

A Discussion of Options
Kern County & the SGMA

Kern County Water

• Progressive water management
• Significant groundwater banking projects
• Robust groundwater resources

Recent Water Trends – The Perfect Storm

• Reductions impacting imported water supplies
• Drought
• Increasing Local Impacts
• Litigation

Water supply challenges prompted action.

• Meetings between local policy makers (2010-2011)
• Kern Groundwater Committee formed (January, 2012) to:

"Establish a framework ("basin plan") for the active, comprehensive management of the groundwater basin underlying Kern County to preserve and maintain local control ("self-determination") and provide long-term surety for all basin users."
Kern County & the SGMA

Kern Groundwater Committee

• Build upon existing groundwater management efforts
  • AB3030
  • SB1938
  • Urban Water Management Plans
  • Progressive water management

• Put the puzzle pieces together to gain a common understanding of the Kern Basin
  • Cost share agreement for analysis of basin supply and demand

• Compile into single unifying report
• Technical based effort to inform policy makers
Kern County & the SGMA

Groundwater Legislation Anticipated

• Formed Kern Groundwater Authority ("Authority") (2014)
  • Experience with Joint Powers Authorities
  • Board exclusively elected officials
  • Current Agreement limits powers of Authority
• 19 Members (County/Cities/Water Interests)
  • Meetings held monthly - open to and attended by public/interest groups etc.
Kern Groundwater Authority Membership Map

- Kern Groundwater Authority Member
- Kern Groundwater Authority Non-Member
- Non-District Areas (County of Kern)

*Improvement District No. 4 is a KGA Member on behalf of its purveyors
Kern County & the SGMA

Groundwater Legislation Enacted

• White paper on potential governance options circulated for review/discussion

• Outreach to all interested parties in Basin to join/coordinate efforts

• Workshops scheduled to evaluate potential organizational structures going forward
Kern County & the SGMA

SGMA – What is Required?

• Requires formation of a Groundwater Sustainability Agency ("GSA") (or Agencies) for each Basin (Due in 2017)

• Requires Each Basin to prepare a Groundwater Sustainability Plan ("GSP") (or Plans).

• Requires significant coordination of information for Basins which have multiple GSP's.....(more later)
  • GSP must have measureable objectives with 5-year milestones to achieve sustainability in 20 years (2020-2040). (Due in 2020)

• Failure to act will result in State Board imposing their own "interim" plan with potential for immediate pumping restrictions.
Kern County & the SGMA

SGMA – What is Required?

• Requires the GSA to Manage Groundwater to prevent Undesirable Results.
  • Chronic lowering of groundwater levels
  • Significant / unreasonable reduction of groundwater storage
  • Seawater Intrusion
  • Degraded water quality / contaminant plume migration
  • Land subsidence
  • Significant surface water depletions

• Provides GSA's with authority (Financial & Enforcement) to implement GSP's and manage groundwater.
Kern County & the SGMA

SGMA – Fundamental Questions

• Who should act as the GSA for a specific area?
  • Basin-wide GSA
  • Smaller GSA designations

• Who should coordinate the data necessary for development of a GSP (or GSP's) for the basin?

• Who should develop the GSP (or GSP's) for your service area?

• Who should implement (GSA role) and enforce the GSP (or GSP's) for your service area?
What role should the Authority play (if any) in Development of a GSP for the Kern Basin?

- The Authority may draft a Single GSP for service area of its Members.
- The Authority may act as the "coordinating" entity to collect and disseminate data necessary for development of the Members GSP for their service areas.
- The Authority may be a forum for facilitation / resolution of issues related to the development of a GSP.

"I'm trying to organize a stampede, but everybody's got their own agenda"
What role should the Authority play (if any) as a GSA for the Kern Basin?

- Authority has no role as a GSA
  - Members wish to be responsible for implementation and enforcement of the GSP
  - Loss of control (Is the Authority implementing/enforcing in a manner acceptable to Member?)

- Authority as the GSA
  - Authority may be a cost-effective way of coordinating various implementation activities
    - Basin-wide satellite demand survey for GSP compliance
    - Coordination of groundwater elevation data
    - Single point of data collection/reporting to minimize ongoing debates/arguments
  - Authority may act as interface between landowners and Members.
  - Authority may be more effective in leveraging grant funds and/or interfacing with regulatory agencies
Most Pressing Issue - What organizational approach is the most reasonable, offers the most value /benefit and has the highest likelihood of success for Kern?

GSA = Groundwater Sustainability Agency
    Entity responsible for implementing/enforcing GSP
GSP = Groundwater Sustainability Plan
    Plan detailing how sustainability will be achieved

Basins may be managed under one of the following:

1. Single GSA – Single GSP
2. Multiple GSA's – Single GSP......Multiple "Plans"
3. Multiple GSA's – Multiple GSP's
Success is predicated upon:

• Preservation of local control at as many levels as possible
  • Members should feel that they can and will have input into the process and that "others" will not decide their future

• The expectation that working together will provide an outcome that is better than the alternatives.
  • No one will want to participate or support in a process whose outcome is likely to be less desirable than other available alternatives. (state intervention/adjudication)

• Developing an approach to groundwater management within the Kern Basin that is flexible enough to accommodate the various interests and entities.
Option 1a
Single GSA – Single GSP …….Multiple "Plans"

**Single GSA**

- Authority acts as GSA for Members & assumes responsibility for monitoring/reporting and implementation of member "Plans"……..consistent and within the limits of the "Plan".

**Multiple Local "Plans" – Single GSP**

- Authority members develop the equivalent of a GSP for their respective service areas.
- Each GSP is incorporated as a “chapter” into the Kern Basin GSP.
Option 1a - Single GSA - Single GSP... Multiple "Plans"

Step 1 - Authority (GSA) coordinates data necessary for drafting GSP – Provides to Members

Step 2 - Members prepare GSP equivalent or "Plan" for their service area & give to Authority

Step 3 - Authority Reviews Plan for coordination and compliance

Step 4 - Authority compiles all Member "Plans" into chapters of Single GSP and submits to DWR

Step 5 - Authority administers and implements GSP on behalf of Member – acting within the scope of the Member’s approved "Plan". No action may be taken by Authority that is beyond those approved or contemplated by the members GSP

GSP Implementation & Enforcement

DWR & State Board
Kern County & the SGMA

**Option 2**

Multiple GSA’s – Single GSP……Multiple "Plans"

**Multiple GSA’s**
- Multiple areas/members of the Authority self designate as GSA's.
- Authority may or may not act as GSA for some Members

**Single GSP**
- Authority acts as coordinating entity/resource to compile member "Plans" into chapters of Single GSP.
Option 2 - Multiple GSA – Single GSP……Multiple "Plans"

Step 1 - Authority coordinates data necessary for drafting GSP – Provides to Members
Step 2 - Members prepare GSP equivalent or "Plan" for their service area & give to Authority
Step 3 - Authority Reviews Plan for coordination and compliance
Step 4 - Authority compiles all Member "Plans" into chapters of Single GSP and submits to DWR
Step 5 - Members act as GSA and implement and enforce the GSP within their respective service areas. Authority may act as GSA for requesting Members
**Option 3**
**Multiple GSA's – Multiple GSP's**

**Multiple GSA's**
- Multiple areas/members of the Authority self designate as GSA's.
- Authority may or may not act as GSA for some Members

**Multiple GSP's**
- Authority acts as coordinating entity/resource to ensure sum of GSP's within Basin meet "sustainability" requirements
- Authority may act as coordinating entity/resource to compile member "Plans" into chapters of a coordinated/multi-member GSP.
Option 3 – Multiple GSA's & Multiple GSP's

Step 1 - Authority coordinates data necessary for drafting GSP – Provides to Members
Step 2 - Members prepare GSP for their service area and submits to DWR
Step 3 - Members implement GSP for their service area
## Organizational Approach – Kern County

<table>
<thead>
<tr>
<th>Option</th>
<th>Basin Coordination</th>
<th>GSP Development</th>
<th>GSP Implementation (GSA Actions)</th>
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<tbody>
<tr>
<td></td>
<td>Member</td>
<td>Authority</td>
<td>Member</td>
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<tr>
<td>1a-Single GSA Multiple &quot;Plan&quot;</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>2 Multiple GSA Single GSP</td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>3 Multiple GSA Multiple GSP</td>
<td>X</td>
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1. **Authority only able to take actions consistent with approved member "Plan"**

- Distinction without a difference.
Where is Kern Headed?

- Single GSA or Multiple GSA's?
- Single GSP or Multiple GSP's?
- Authority will act as resource for members
  - Authority may act as GSA for those members who wish to delegate that responsibility to Authority
  - Authority may author GSP for members who wish to coordinate that effort through Authority
  - Authority is able to act as coordinating entity to ensure all GSP's within the Basin meet the coordinating requirements

Ultimately, the Authority membership will decide what role the Authority will play in the SGMA (if any).

Authority members need more information to make this decision – Subject of workshops scheduled over next several months.
Questions
Implementation of the Sustainable Groundwater Management Act in the Kings Basin

February 4, 2015
Change in Storage in Kings Basin
1964 to 2013

Change in Storage (1,000 AF)

Water Year

Cumulative change

20% below normal = dry
20% above normal = wet

Insufficient Data
Kings Basin
Groundwater Flow Patterns
Possible Kings Basin Governance Structures

• Several Possible Structures
  – One GSA / One GSP
  – One GSA / Multiple GSPs
  – Multiple GSAs / One GSP
  – Multiple GSAs / Multiple GSPs

• Legal Entities
  – JPA
  – Memorandum of Agreement or other legal agreement
  – Special Purpose Entity (legislation)
  – Coordination Agreement
IRWMP Creates Foundation for Kings Basin GSA(s)

- Monitoring/Data
- Organization
- IRWM Plan
- Relationships within basin
- Relationships with neighboring basins
  - Inter-regional IRWMP discussions
Cultivation of IRWM in the Kings Basin

- 2001 the **Upper Kings Basin Advisory Panel** was formed (MOU)

- 2004 the **Upper Kings Basin Water Forum** was formed

- 2006 resolutions supporting **Agreements-in-Principle** adopted by Forum members for drafting IRMWP

- 2007 the **Kings Basin Integrated Regional Water Management Plan** adopted, updated in 2012

- 2009 the **Kings Basin Water Authority** was formed
Kings Basin Water Authority Participation

**MEMBERS** (16)

- Alta Irrigation District
- City of Clovis
- City of Dinuba
- City of Fresno
- City of Kerman
- City of Parlier
- City of Reedley
- City of Sanger
- City of Selma
- County of Fresno
- County of Tulare
- Consolidated Irrigation District
- Fresno Metro. Flood Control Dist.
- Fresno Irrigation District
- Kings County Water District
- Kings River Conservation District

**INTERESTED PARTIES** (41)

- Bakman Water Company
- Biola Community Services District
- California Native Plant Society, Sequoia Chapter
- California State University, Fresno
- City of Kingsburg
- City of Orange Cove
- City of San Joaquin
- Community Water Center
- County of Kings
- Crescent Canal Company
- Cutler Public Utilities District
- East Orosi Community Services District
- Easton Community Services District
- El Rio Reyes Conservation Trust
- Fresno County Farm Bureau
- Hardwick Water Company
- James Irrigation District
- Kings River Conservancy
- Kings River Water Association
- Lanare Community Services District
- Laguna Irrigation District
- Laton Community Service District
- Liberty Canal Company
- Liberty Water District
- London Community Services District
- Malaga County Water District
- Mid Valley Water District
- Orange Cove Irrigation District
- Orosi Public Utilities District
- Raisin City Water District
- Reed Ditch Company
- Riverdale Irrigation District
- Riverdale Public Utility District
- Sanger Environmental Fund
- Self-Help Enterprises
- Sierra Club, Tehipite Chapter
- Sierra Resource Conservation District
- Sultana Community Services District
- Terranova Ranch, Inc.
- Tulare Basin Wildlife Partners
- UC Cooperative Extension - Fresno

**OTHER PARTICIPATION**

- CA Department of Fish & Game
- CA Department of Water Resources
- Center for Collaborative Policy
- Fresno Audubon Society
- Kings River Fisheries Program
- Regional Water Quality Control Board
- Sierra Nevada Research Institute (UCM)
- State Water Resources Control Board
Upper Kings Basin
Average Annual Water Budget 1964-2004

Data from IGSM Output

Stream Inflows (Rivers, tributaries, runoff)
2,550,000 AF

Stream Outflows
820,000 AF

Precipitation

Evapotranspiration

Crops & Urban
Delivered
1,105,000 AF

Intentional Recharge
230,000 AF

Reclaimed
50,000 AF

Deep Percolation
850,000 AF

Pumping
1,830,000 AF

Conveyance Percolation
115,000 AF

Recharge Ponds
280,000 AF

Groundwater

Small Watershed Boundary Flow (E)
75,000 AF

Boundary Flow (N,W,S)
80,000 AF

Change in Storage
-150,000 AF
Kings Basin Strategies

• Numerous strategies to reach sustainability
  – Reduce water demand
  – Improve operational efficiency and transfers
  – Increase water supply
  – Improve flood management
  – Increase Recharge
GSA Responsibilities/Authorities

- Coordination
- Stakeholder engagement
- Data
- Boundary Adjustment
- Reporting
- Fees
- Regulations
- Investigations
- Enforcement
IMPLEMENTING SGMA IN TULARE COUNTY

KAWEAH SUB-BASIN
TULARE COUNTY SUB-BASIN PRIORITIZATION
TULARE COUNTY SUB-BASINS

• Three High Priority Sub-basins within the County
  • Kings
    • Proposing a new “Eastern Kings” Sub-basin
      • 1 Tulare County city, multiple Fresno County cities
      • 2 Tulare County Irrigation Districts
  • Tule
    • 1 City
    • Extensive “white area” in the South County
  • Kaweah

• Multi-County Agencies
  • Several water agencies that straddle the Kern and Tulare County lines.
TULARE COUNTY WATER AGENCIES
KAWEAH RIVER SUB-BASIN

• Two Counties
• Five incorporated cities
• More than 40 water agencies
  • Irrigation Districts
  • Water Companies
  • Public Utility Districts
  • Community Services Districts
  • Water Districts
KAWEAH BASIN CROSS SECTION
KAWEAH BASIN GROUNDWATER ELEVATIONS

SPRING 1999
KAWEAH BASIN CHANGE IN ELEVATION

1981-1999
KAWEAH BASIN GROUNDWATER CONDITIONS

Historical Average Depth to Groundwater (Fall Measurement)

- % Water Year
- Avg. Depth to Groundwater
- Historical Trend

Depth (Feet)

% Water Year

## Urban & Groundwater Management Plans

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<tr>
<th>Urban Water Supplier</th>
<th>Year Last Adopted</th>
<th>Agency</th>
<th>Year Last Adopted</th>
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<tr>
<td>Visalia (CalWater)</td>
<td>2014</td>
<td>Kaweah Delta Conservation District</td>
<td>2006</td>
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<tr>
<td>Tulare</td>
<td>2012</td>
<td>Tulare Irrigation District</td>
<td>2010</td>
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<tr>
<td>Exeter</td>
<td>2011</td>
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INTEGRATED REGIONAL WATER MANAGEMENT PLANS

• Integrated Planning for over 20 Years
• DWR IRWM Development Since 2006
• DWR Adopted Kaweah River Basin IRWM 2014
EXISTING GROUNDWATER PROGRAMS IN THE SUB-BASIN

- Monitoring (GMP, CASGEM, ILRP)
  - Groundwater Elevation
  - Water Quality
  - Crop Water Use Modeling
  - Land Surface Elevation Monitoring

- Studies and Investigations
  - Kaweah River Basin Investigation
  - Water Resources Investigation
  - Numerical Groundwater Flow Modeling
  - Agricultural Water Management Plan
  - Tulare Lake Basin Disadvantaged Community Water Study
CURRENT GROUNDWATER MANAGEMENT ACTIVITIES

• **Recharge**
  • Water Importation
  • Development of Facilities – Basins & Channel Structures
  • Cloud Seeding of the Kaweah Watershed

• **Exchanges & Transfers**
### GROUNDWATER MANAGEMENT PLAN – 16 PARTIES

- County of Tulare
- City of Visalia
- City of Tulare
- City of Lindsay
- City of Farmersville
- Tulare Irrigation District
- Exeter Irrigation District
- Lakeside Irrigation Water District
- Kaweah Delta Water Conservation District
- Consolidated People Ditch Co.

### INTEGRATED REGIONAL WATER MANAGEMENT PLAN – 9 PARTIES

- County of Tulare
- City of Visalia
- City of Tulare
- City of Lindsay
- City of Farmersville
- Tulare Irrigation District
- Exeter Irrigation District
- Lakeside Irrigation Water District
- Kaweah Delta Water Conservation District
- Consolidated People Ditch Co.

- St. Johns Ditch Company
- Lakeside Ditch Company
- Kings County Water District
- California Water Service Co
- Ivanhoe Irrigation District
- Stone Corral Irrigation District
- City of Woodlake

- Corcoran Irrigation District
GOVERNANCE OPTIONS

• Single GSA with Single Entity
  • Boundary adjustment of existing agency
  • Special Act District

• Single GSA with Multiple Collaborating Agencies
  • JPA

• Multiple GSAs Coordinating to cover the Kaweah Basin
  • Coordinating Agreement

• Hybrid
GSA SWOT ANALYSIS

• **Strengths**

  • Local Agency relationships and collaboration
  • Existing Local Agency structures and systems
    - 20 year Groundwater Management Plans in place
    - Urban Water Management Plans in place
  • Existing regional structures and systems
    - Integrated Regional Water Management Planning Group
    - Irrigated Lands Regulatory Program third party
  • Existing data pool
GSA SWOT ANALYSIS

• Weaknesses
  • Additional data needs
    • For adjacent sub-basin coordination
    • Other data gaps that exist
  • Local funding source does not exist
    • Prop 218 challenges of new fees
  • Limited experience with extractor outreach
  • White area coverage
GSA SWOT ANALYSIS

• Opportunities
  • New authorities
    • Fee collection
    • Ability to restrict/limit extraction
  • Tools to responsibly manage a crucial resource
  • Coordination with adjacent sub-basins
GSA SWOT ANALYSIS

• Threats
  • Liability for the Plan and its implementation
  • Economic impacts from Plan implementation
  • Diverse and sometimes competing beneficial uses
  • Stakeholder opposition
CURRENT DISCUSSION

• SGMA Education
  • Growers
  • Cities
  • Local Community Groups

• Roundtables
  • County
  • Private Ditch Companies
  • Rules and Regulation Shaping
LOCAL DIRECTION

• Determine Water Users
  • Who are the interested parties?
  • What level of participation are they interested in?

• Introduction of Third Party Facilitation
  • Is the area best served by having impartial guidance in the development process?
  • How is that best achieved?
Questions
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