DWR’s Role in Sustainable Groundwater Management

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

Governor Jerry Brown

CA Department of Water Resources
Outline

• Groundwater: Current Conditions
• Groundwater Management and Recent Legislation
• Strategic Program Formulation and Implementation
• Near Term Activities
• Final Thoughts
Groundwater: Current Conditions
Groundwater Storage

- Groundwater Basins carry 10 times the capacity of California’s surface storage
- Cost-effective, local storage
Groundwater Supply in California 2005-10 Average

The Tulare Lake region is the largest user of groundwater.

The Central Coast region is the most groundwater dependent.
Most of CA in Exceptional Drought Condition

U.S. Drought Monitor
California

March 24, 2015
(Released Thursday, Mar. 26, 2015)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

<table>
<thead>
<tr>
<th></th>
<th>D0-D4</th>
<th>D1-D4</th>
<th>D2-D4</th>
<th>D3-D4</th>
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<tr>
<td>Current</td>
<td>0.15</td>
<td>99.85</td>
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<tr>
<td>Last Week</td>
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<td>99.94</td>
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<tr>
<td>3 Months Ago</td>
<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
<td>0.00</td>
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<td>Start of Calendar Year</td>
<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
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<td>0.00</td>
</tr>
<tr>
<td>Start of Water Year</td>
<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>One Year Ago</td>
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<td>100.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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</tbody>
</table>

Intensity:
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Eric Liebenthal
U.S. Department of Agriculture

http://droughtmonitor.unl.edu/
Black Dots = Groundwater Level at Lowest Recorded
Water Quality

- Seawater intrusion in coastal areas
Subsidence

- Permanent loss of water storage
- Damage to infrastructure and water delivery systems
Subsidence
Ecosystem Impacts
Vital Resource Under Stress
Water Balance is essential for sustainability

Water Portfolio Database (Model Data)

- Compute Agricultural Water Use
- Compute Managed Wetland Water Use
- Compute Urban Water Use
- Estimate Precipitation Volume
- Analyze Surface Water Supply
- Analyze Recycled Water Supply
- Estimate Groundwater Supply
- Analyze Environ. Water Requirements

Aggregate Spatially and/or Temporally

Federal, State, and Local Databases
PREPARING FOR THE FUTURE

California Water Action Plan

- Financing
- Safe Drinking Water
- Delta Co-Equal Goals
- Ecosystem Restoration
- Prepare for Dry Periods
- Storage and Groundwater
- Regional Self Reliance
- Flood Protection
- Operational Efficiency
- Conservation
Action 6: Expand water storage capacity and improve groundwater management
Expand Water Storage Capacity & Improve Groundwater Management

FIGURE 8: OCWD GROUNDWATER RECHARGE SITE (SOURCE: OCWD)
Groundwater Management and Recent Legislation
The Sustainable Groundwater Management Act of 2014

• Requires sustainable groundwater management
• Promotes local control
Sustainable Groundwater Management: Overview

Framework
- Applicability
- Definitions

Local’s Role
- Establish GSA
- Powers & Authorities
- Sustainability Plans
- Deadlines

State’s Role
- Define Rules (Regulations)
- Technical & Planning Assistance
- State Evaluation and Assessment
- State Intervention
Sustainability:

- Prevent "Undesirable Results"

- Sustainability Goal
- Sustainable Management
- Sustainable Yield

- Lowering of Groundwater Levels
- Reduction in Groundwater Storage
- Seawater Intrusion
- Water Quality Degradation
- Land Subsidence
- Depletions of Surface Water
SGMA 2014

- Requires GW sustainability plans in high- and medium-priority basins
- Authorizes management tools for local agencies
- Creates state “backstop”
- Defines time frame for accomplishing goals
- Does not require adjudicated basins
New Local Management Tools

• Requires creation of “groundwater sustainability agencies”
• Empowers GSAs to:
  – Register groundwater wells
  – Measure extractions
  – Require reports
  – Manage extractions
  – Assess fees
• Exempts preparation of local groundwater sustainability plans from CEQA
• Establishes “sustainability goal” over time to guide management
Monitored Groundwater Basins

Program Statistics
(as of Oct 7, 2014)

- 354 Basins represented by notification (includes portions)
- 130 Unique agencies submitting notifications
- 222 Basins either fully or partially designated
- 99 Unique agencies designated as Monitoring Entities
- 4,790 CASGEM wells in the Online System
- >100k groundwater elevation records (includes historic data)

87% of the 127 classified as High and Medium priority basins are now being Fully or Partially Monitored under CASGEM
CASGEM Basin Prioritization

- 127 High and Medium Priority Basins
- 96% of Groundwater Use
- 88% of population overlying the basins
California’s Major Milestones toward Sustainable Groundwater Management

- **1992**
  - Bulletin 118 -03
  - AB 3030

- **2002**
  - SB 1938

- **2003**
  - CASGEM Program

- **2009**
  - California Water Action Plan

- **2010**
  - Governors Drought Proclamations (Jan/Apr)

- **2011**
  - DWR Initiates Sustainable Groundwater Management

- **2012**
  - Governor Signs Groundwater Legislation

- **2013**
  - Groundwater Sustainability Plans (Basins in Overdraft)

- **2014**
  - Groundwater Sustainability Plans (Non-Overdraft High/Medium Priority Basins)

- **2015**
  - 2020

- **2022**
  - 2020
DWR Groundwater Management Program: Integrating Recent Actions and Programs

- CA Water Action Plan
- Sustainable Groundwater Management Act
- AB3030, SB1938, CASGEM
- Bulletin 118
- Bulletin 160
- Integrated Regional Water Management
DWR’s
Strategic Program Formulation and Implementation
Legislation Timeline

Groundwater Legislation Timeline

- Jan 1, 2015: Local Agencies may no longer adopt or update GSPs for high and medium priority basins.
- Jun 1, 2016: DWR adopts regulations for evaluating and implementing GSPs and coordination agreements and DWR adopts regulations for evaluating alternatives to GSPs.
- Dec 31, 2015: DWR updates basin prioritization.
- 2015-2016: DWR identifies basins subject to critical conditions of overdraft.
- Jan 1, 2016: Adjusted basin submits final judgment to DWR and begins submitting annual reports to DWR.
- Dec 31, 2016: DWR publishes report on water available for groundwater replenishment.
- Jan 1, 2017: DWR publishes BMPs for sustainable management of groundwater.
- Jan 30, 2017: Establish all GSA or equivalent for all high and medium priority basins.
- Jul 1, 2017: All other high and medium priority basins identified subject to critical conditions of overdraft must be managed under a GSP. On April 1 following GSP adoption and annually thereafter, GSA provides report on progress towards sustainability to DWR.
- Jan 1, 2018: Board may begin developing interim plans for critically overstressed 'protectionary' or 'priority' basins.
- Jan 1, 2018: Board begins collection of annual reports from persons extracting more than 100,000 gallons per year from areas not managed by a GSA.
- Jan 1, 2019: Board may hold a hearing to designate a basin as 'protectionary' if it is impacted or if alternative is not established.
- Jan 1, 2020: Board may begin developing interim plans for critically overstressed 'protectionary' or 'priority' basins.
- Jan 1, 2022: Board may hold a hearing to designate a high and medium priority basin as 'protectionary' or 'priority' in consultation with the Board, determines if a basin is in a condition where groundwater extractions result in significant depletion of interconnected surface waters.

Water Board Action
- DWR Action
- Joint Water Board and DWR Action
- Local Action
- GSP Groundwater Management Plan
- GSA Groundwater Sustainability Agency
- GSP Groundwater Sustainability Plan
- BMPs Best Management Practices
  - Elements to be documented in Bulletin 11B Update
  - **Basin prioritization will be updated prior to each Bulletin 11B Update (estimated to be every 5 years)
### Phases to Implement Groundwater Legislation and Achieve Sustainable Groundwater Management

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Phase 4</th>
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<tbody>
<tr>
<td>Realignment of Governance and Area</td>
<td>Development and Adoption of Groundwater Sustainability Plans (GSPs)</td>
<td>Initial Management through Water Budgets</td>
<td>Sustainable Groundwater Management</td>
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<td>(Oct 2014 through 2017)</td>
<td>(2017 to Jan 2020 or 2022)</td>
<td>(Jan 2020 or 2022 plus 5-10 years)</td>
<td>(20 years from 2020 or 2022)</td>
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</table>
Communication and Engagement

Outreach

Agency Alignment
Communication and Outreach

- State Agency Partners
- Practitioners
- DWR’s Sustainable Groundwater Program Management Team
- One on One Agency & Organizations
- Statewide Public Meetings
- Associations, Foundations & Organizations
- Federal Agencies and Tribal Governments
Communication

• **Joint Websites**
  – www.groundwater.ca.gov
  – www.waterboards.ca.gov/water_issues/programs/gmp/
  – www.water.ca.gov/groundwater

• **Speaking Engagements**
  – 30 engagements since mid November

• **Brochures, Technical Fact Sheets**

• **Webinars**

• **Workshops**

• **Strategic Plan**

• **Assistance to local agency communication**
Outreach

• SWRCB
  – Management Team
  – Communication Team
  – Data Team
  – Regulations Team

• Water Commission
  – Sub Committee

• Advisory Panels

• Leveraging Organizations

• Tribal Governments

• Federal Agencies

• Public Listening Sessions
DWR’s Sustainable Groundwater Management Program

Provide Statewide Planning Assistance

Provide Statewide Technical Assistance

Assist State and GSA Alignment and provide Financial Assistance

Develop a Framework for Sustainable Groundwater Management

Provide Interregional Assistance
1. Develop a Framework for Sustainable Groundwater Management

- Develop Comprehensive Water Budgets
- Update basin prioritization
- Publish Best Management Practices
- Develop and Adopt Regulations for Basin Boundary Revisions
- Develop and Adopt Regulations for Groundwater Sustainability Plan Assessment and GSP Alternatives
- Identify Basins Subject to Critical Conditions of Overdraft
- Evaluate Adequacy of Groundwater Sustainability Plans

DWR will support locally developed groundwater sustainability plans
2. Provide Statewide Technical Assistance

DWR will conduct technical activities to improve groundwater management

- Develop Groundwater Management Information System
- Collect Groundwater Quality Data
- Collect Groundwater Elevation Data
- Collect Subsidence Data
- Establish Well Standards
- Implement the CASGEM Program
- Promote Water Conservations
3. Provide Statewide Planning Assistance

DWR will conduct planning activities to improve groundwater management

- Publish 2017 - Bulletin 118 “Interim Update”
- Publish 2020 - Bulletin 118 “Comprehensive Update”
- Integrate Groundwater information into Bulletin 160
- Local Assistance for Recharge Projects
4. Assist State and GSA Alignment and provide Financial Assistance

DWR will support local activities to improve alignment of groundwater management

- Alignment for management of groundwater programs
- Provide Financial Assistance
- Provide Education and Communication Assistance
- Provide Facilitation and Engagement Assistance
5. Provide Interregional Assistance

DWR will support projects and programs to improve interregional management

- Assist in the Implementation of Storage and Conveyance projects
- Provide Information on Surface Water Reliability
- Advance Studies on Surface/Groundwater Interaction
- Provide Information for Water availability for Replenishment
Near Term Activities
<table>
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<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>Jan. 2015</td>
<td>Basin Priority</td>
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<tr>
<td>Nov. 2015</td>
<td>Basins in Critical Conditions of Overdraft</td>
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<td>Jan. 2016</td>
<td>Basins Boundary Regulations</td>
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<tr>
<td>Jun. 2016</td>
<td>GSP &amp; Alternative GSP Regulations</td>
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<td>Dec. 2016</td>
<td>Water Available for Replenishment</td>
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<tr>
<td>Jan. 2017</td>
<td>Bulletin 118 Interim Update</td>
</tr>
<tr>
<td>Jan. 2017</td>
<td>BMPs for Sustainable GW Mgmt</td>
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Immediate Actions

1. Developing Regulations for Basin Boundaries
2. Updating Basin Prioritization
3. Identify basins subject to conditions of critical overdraft
4. Developing Regulations for Groundwater Sustainability Plans
Establishing GSAs

• Local Agency or combination of Local Agencies
  – Single GSA, Single GSP
  – Multiple GSAs, Single GSP
  – Multiple GSAs, Multiple GSPs with “Coordination Agreement”

• Publication of Notice and Public Hearings

• “Exclusive” local agencies within statutory boundary

• Notice of Intent to DWR posted with proposed boundaries

• Consider all interests of beneficial uses and users of groundwater (specific information identified in act)
Basin Boundary and GSP/ALT Regulations Process

- **Phases of Implementation**

  - **Internal Project Scoping**
    - Notify OAL
    - Collection of Statewide Issues
    - Coordinate with SWRCB

  - **Draft Principles for Regulations**
    - Public Listening Sessions
    - Input from Advisory Panels and Public

  - **Draft Emergency Regulations**
    - Required Public Meetings
    - Record and Evaluate Comments

  - **Adopt Emergency Regulations**
    - CWC Approval
    - Noticing and Submittal to OAL

  **Input and Feedback from the California Water Commission**
Basin Boundary and GSP/ALT Regulations

Estimated Project Timeline

Basin Boundary (BB) Emergency Regulations

- CWC July 15 BB Draft Regulations
- BB Public Listening Sessions
- BB Required Public Meeting Comment Period
- Submit BB Regs to OAL

Groundwater Sustainability Plan (GSP) Emergency Regulations

- CWC Oct. 21 Draft Final BB Regulations
- CWC Nov. Adopt Final BB Regulations

Input From SWRCB
Input From Advisory Panels

CWC April 15 BB Draft Principles
CWC June 17 GSP Draft Principles
GSP Public Listening Sessions

CWC Nov. GSP Draft Regulations
CWC Nov. Adopt Final GSP Regulations
CWC March Draft Final GSP Regulations
Submit GSP Regs to OAL

SGM Strategic Plan Comments Due

Review and Adoption of BB Revisions

BB Deadline

GSP Deadline

Submit GSP Regs to OAL
Public Listening Sessions

• WILLOWS – Tuesday, April 28, 2015
  – 3:00pm to 5:00pm
  – Willows Memorial Hall
  – 525 West Sycamore Street
  – Willows, CA 95988

• VISALIA – Wednesday, April 29, 2015
  – 3:00pm – 5:00pm
  – Visalia Convention Center - Charter Oak Ballroom, C/D
  – 303 E Acequia Avenue
  – Visalia, CA 93291

• SAN BERNARDINO – Thursday, April 30, 2015
  – 1:00pm – 3:00pm
  – Feldheym Central Library – Bing Wong Lecture Hall
  – 555 W 6th Street
  – San Bernardino, CA 92410

• WEBINAR – Friday, May 1, 2015
  – 12:00pm – 2:00pm
  – Details to Follow
Basin Priorities

- Initial priorities established June 2014
- Compiling habitat and streamflow data and evaluating methods to update priorities
- Will conduct extensive outreach
- Formalize priorities with next Bulletin 118
Updating Basin Prioritization

• Updates prioritize to include adverse impacts on local habitat and streamflow
• Consideration of impacts into basin prioritization by January 31, 2015
• Determination of basin priority is required so GSAs will know if and when they need to develop and implement a GSP
Identify basins subject to conditions of critical overdraft

- Develop process to identify basins subject to critical overdraft
- Process to include local agency input and coordination
- Basins subject to conditions of critical overdraft require GSP’s by 2020
Updating Bulletin 118 (2017 Update Planned)

- “California’s Groundwater” – Comprehensive Info on the State’s Groundwater conditions
- 2017 Interim Update Planned
  - Information to aid GSA’s to move forward with GSPs
    - Updated Basin Boundaries
    - Updated Basin Priorities
    - Identification of Basins subject to Critical Overdraft
Questions

When properly managed, groundwater resources will help protect communities, farms, and the environment against the impacts of prolonged dry periods and climate change.

California Water Action Plan 2014

www.water.ca.gov/groundwater/sgm/subscribe.cfm

State: www.groundwater.ca.gov

DWR: www.water.ca.gov/groundwater/

SWRCB: www.waterboards.ca.gov/water_issues/programs/gmp/