California Groundwater

“The Taming of the Wild (and DRY) West”
Tulare Irrigation District

- Approx. 65,000 Irrigated Acres
- 230 Farm Accounts
- 150,000 AF Surface Water
  - 60,000 AF Friant CVP
  - 90,000 AF Kaweah River Rights
- Crops: wheat, corn, alfalfa, nut trees
- 300 miles of earthen canals
- 30 miles of pipelines
- 1,250 Acres Recharge Basins
- 21 Employees (8 Admin.)
Tulare Irrigation District
CA Groundwater Chapters

- Late 1800’s – Plentiful Underground Supplies, Surface Water Developing but Unstable

- By 1920’s Running Short
  - 1st Way Out: Deeper Wells

- By 1940’s Groundwater Supply Unsustainable
  - 2nd Way Out: Surface Water Facilities CVP, Terminus Dam, SWP

- By 1990’s, CVP/SWP Import Supplies Eroding & Pumping Accelerates
  - 3rd Way Out: Capitalize on Wet-Year Resources

2014: Enter the Sustainable Groundwater Management Act
Surface Water / Groundwater Relationship
Surface Water Trends

![Surface Water Trends Graph]
Statewide Groundwater Issues

- CASGEM Prioritization
- Subsidence
- Massive well drilling efforts
  - Tulare County 1,140 rural residential wells dry
- Water Quality Issues
SGMA Timeline

Groundwater Legislation Timeline

2015
- Jan 1, 2015: DWR releases initial basin plan.
  Water Code § 10722.4
  Water Code § 10730.6
- 2015-2016: Water agencies may no longer adopt or update GMPs for high and medium priority basins.
  Water Code § 10751.1
- Jan 1, 2016: DWR adopts regulations for evaluating and implementing GSPs and coordination agreements.
  Water Code § 10730.2
- Jul 1, 2016: Board adopts a fee schedule for water balance reports.
  Water Code § 10725.5
- Dec 31, 2016: Board may hold a hearing to designate areas as "probationary" if GSPs or approved alternative is not established.
  Water Code § 10751.8
- Jul 1, 2017: Board adopts a fee schedule for water balance reports.
  Water Code § 10725.5
- Dec 31, 2017: Board may adopt a fee schedule for water balance reports.
  Water Code § 10725.5
- Jan 1, 2018: DWR publishes the "Groundwater Management Plan" for GSA.
  Water Code § 10725.5
- Jan 1, 2019: Board adopts a fee schedule for water balance reports.
  Water Code § 10725.5
- Jan 1, 2020: Board may begin developing interim plans for critically overdrafted basins.
  Water Code § 10725.5
- Jan 31, 2021: Board may designate a basin as "probationary." DWR, in consultation with the Board, determines that the GSP is inadequate or will not achieve sustainability.
  Water Code § 10725.5
- Jan 31, 2025: Board may designate a basin as "probationary." DWR, in consultation with the Board, determines that the GSP is inadequate or will not achieve sustainability.
  Water Code § 10725.5

2020
- Jan 1, 2020: DWR publishes the "Groundwater Management Plan" for GSA.
  Water Code § 10725.5
- Dec 31, 2020: All other high and medium priority basins must be managed under a GSP.
  Water Code § 10725.5
- Jan 1, 2021: DWR publishes the "Groundwater Management Plan" for GSA.
  Water Code § 10725.5
- Jan 1, 2022: On April 1 following GSP adoption and annually thereafter, GSA provides a report on progress towards sustainability to DWR.
  Water Code § 10725.5
- Jan 31, 2025: Board may hold a hearing to designate a high and medium priority basin as "probationary." DWR, in consultation with the Board, determines that the GSP is inadequate or will not achieve sustainability.
  Water Code § 10725.5
Key SGMA Dates

- June 2016 – DWR Regulations for GSAs, Coordination Agmts.
- June 2017 – Notify DWR of GSA Formation
- July 2017 – County Notification to DWR if no GSA(s) step up
- Jan 2020 – Basins must be under management of a GSP
- By Jan 2040 – Sustainability achieved
- Two potential 5-yr extensions beyond 20 yrs “for good cause”
- Total 50-year planning horizon to maintain sustainability
Kaweah Sub-Basin #5-22.11
(part of San Joaquin Valley Basin 5-22)

- 700 sq miles in size

- Surface water use ≈ 540 TAF per year
  - 80% local
  - 20% imported

- Groundwater use ≈ 660 TAF per year

- Overdraft/change in storage estimates(*)
  - KDWCD 1972 report – 89 TAF
  - DWR circa 1980 – 150 TAF
  - KDWCD 2003 report – 30 AF

(*) Estimates are wide-ranging and reflect differing methodologies, assumptions, boundary conditions, etc.
• Myriad of surface water rights and attendant water budgets
• Overlying versus appropriative rights to groundwater
• Shared versus individual overdraft responsibilities
• SUM OF THE PARTS MUST EQUAL THE WHOLE
Mid-Kaweah Groundwater Subbasin GSA

≈ 1/3 of Sub-Basin Area, Water Supply/Use

Two cities, combined pop. 190,000; one I.D., 70,000 acres

Cities all groundwater; TID 50% groundwater
SGMA Challenges

• Metering of wells
• Equitable allocation of groundwater
  – Cities/open ground/permanent crops
• Synergy with neighboring cities and entities
• Water supply assumptions based on 50-year planning horizon
• Working with inter- and intra-basin entities
• Who gets to take credit or bear the burden of underflow
We Have Questions???

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