Kaweah Basin
GROUNDWATER MANAGEMENT
...and then there was SGMA

Stanford – Groundwater Workshop Series, Part 3
June 3, 2016
Petition for Formation of “Kaweah Delta Water Conservation District”

Under the Provision of the “Water Conservation Act of 1927”

BEFORE THE BOARD OF SUPERVISORS OF THE COUNTY OF TULARE, STATE OF CALIFORNIA.

[Text continues with a detailed description of the proposed district boundaries and purposes, involving specific geographic coordinates and distances.]

Groundwater Management

[Diagram showing groundwater flow with labeled sections: Aquifer, Cone of depression, Groundwater flow.]

Flood Water System Management
1995 established first Groundwater Management Plan AB3030

- MOU developed to encourage collaboration
- Parties began to join
- Monitoring
- Investigating
- Identifies Goals & Projects
- Annual Report Documented Activities
2006 Updated -
Groundwater Management Plan
SB1938

- 15 Parties to MOU
- Monitoring
- Investigating
- Identifies Goals & Projects
- Annual Report
- Activities: Supply Side
Management Activities

• Monitoring
  + Groundwater levels
  + Water transfers
  - Water Quality
  - Land surface (subsidence)

• Evaluation and Planning
  + Modeling
  + Mapping groundwater levels & flow
  - Land use planning

• Activities and Projects
  + Recharge basins
  + Water importation
  + In-Lieu recharge
  + Conjunctive use
    - Exportation of groundwater
    - Metering
    - Pumping restrictions
Management Activities (cont’d)

• Recent, Progressive Activities
  + Satellite imagery = Crop demand
  + Land surface monitoring
  + Update of Water Resources Investigation
  ~ Water Quality, ILRP

• Local Discussions
  ~ Well ordinance
  ~ GW Exportation ordinance
  ~ City recharge program
Kaweah Subbasin Challenges

• Overdraft – 60,000 annual acre feet
• High Dependency on Groundwater – Drought year >80%
• Extreme Variability in Local Surface Water Supply
• Extreme Variation in Geology/Hydrogeology from East to West
• Haves and Have Nots
SGMA = Inclusion of Demand Side Management

• Well monitoring?
• Using balance to determine GW supply per Acre?
• Limit Extractions?
• Initiate GW Market?
• Develop Formal Water Importation Program?
• Develop Formal Land Fallowing Program?
(appendix)
Hydrologic Budget Summary
Subsurface Flow
Inflow - Outflow
Kaweah Subbasin
Water Estimates from Remote Sensing

Time Series Evapotranspiration and Applied Water Estimates from Remote Sensing

Figure 3.1. 2010 NDVI Time Series for KDWCD.