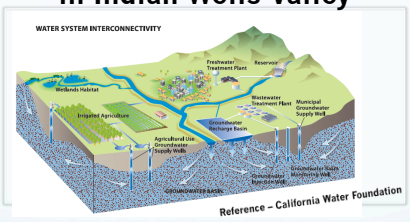
Sustainable Groundwater Management in Indian Wells Valley



GSA-Eligible Agencies In-Person Meeting
Ridgecrest City Chambers
June 17, 2016

Presentation Overview

- **Reminder of SGMA Requirements**
  - Overview
  - Indian Wells Valley Designation
  - Indian Wells Valley Basin Conditions
  - Three Steps
  - State Backstop
- **SGMA Update**
  - Department of Water Resources Actions
  - Legislation

Sustainable Groundwater Management Act Requirements

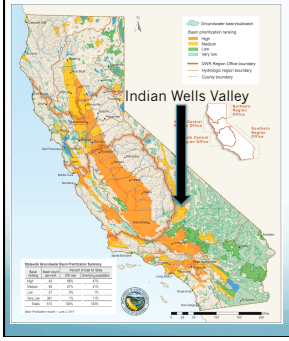
State of California

Sustainable Groundwater Management Act (SGMA)

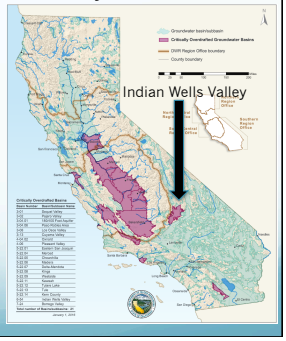
- Signed by Governor September 16, 2014
- Took effect January 1, 2015
- Recognizes preference for management by local agencies
  - Provides additional authorities to local management agencies
    - Conduct studies
    - Register & monitor wells
    - Set well spacing requirements
    - Require extraction reporting
    - Regulate extractions
    - Implement capital projects
    - Assess fees to cover costs
- Provides for State as backstop to regulate unmanaged or poorly managed basins

DWR Basin Prioritization

SGMA Basin Prioritization

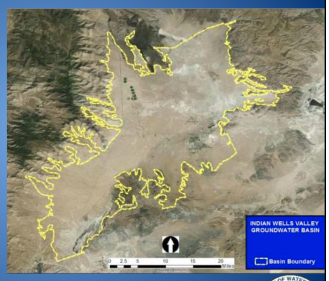


Critically Overdrafted Basis

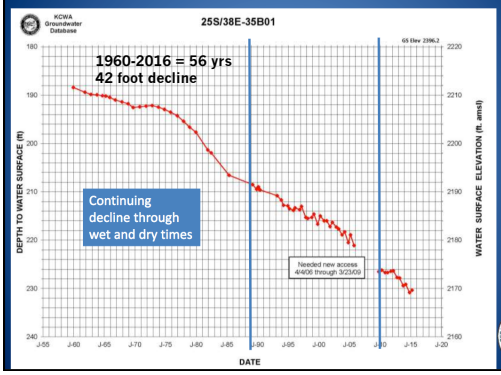


Indian Wells Valley

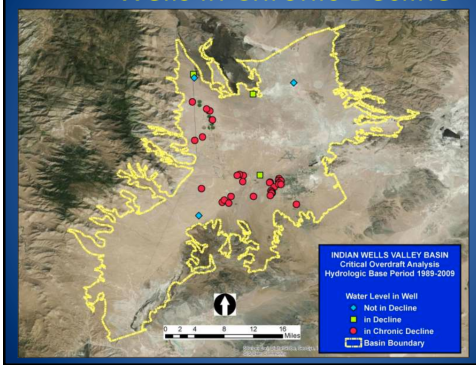
- **Groundwater Level Hydrographs**
  More than 30 hydrographs
  Evaluate for Chronic Decline
- **Technical Reports**
  Reviewed >20 technical reports
  Evaluate for chronic reduction of storage
  Evaluate for Water Quality Degradation

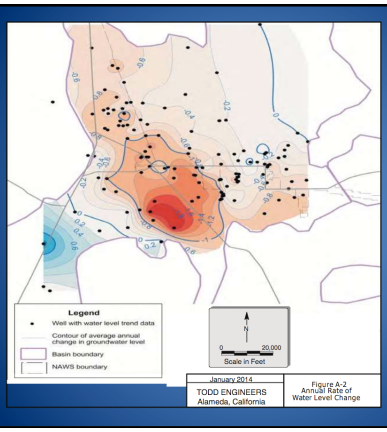


Well Showing Chronic Decline in Water Levels



Wells in Chronic Decline





References reviewed:

Overdraft, Water Level Declines

- 2015 – Kern County Draft EIR
- 2014 – Todd Engineers
- 2009 – Brown and Caldwell
- 2008 –Geochemical Technologies Corporation
- 2003 – Houghton HydroGeo-logic
- 2001 – Tetra Tech
- 1995 – Houghton (MS Thesis)
- 1994 – Berenbrock and Schroeder
- 1993 – US Bureau of Reclamation
- 1991 – Berenbrock and Martin
- 1989 – Bean
- 1989 – Lofgren
- 1987 – Berenbrock
- 1986 – St. Amand
- 1979 – Mallory
- 1974 – Banta
- 1973 – Banta
- 1969 – Kunkel and Chase
- 1963 – DWR Bulletin 91-9

Not Overdraft

- 1999 – Thyne, Gillespie, and Ostdick
- 11989 – Erskine
- 1989 – Whelan, Baskin, and Katzenstein
- 1988 – Austin

Indian Wells Valley Groundwater Basin Conditions

- IWV Groundwater Basin has been documented in overdraft since at least the 1960's
- Declines of 1-2 feet per year, and some localized declines may be greater
- IWV Groundwater Basin is listed as a SGMA medium priority basin – GSA needs to be formed by June 30, 2017
- IWV Groundwater Basin is listed as a critically overdrafted basin – GSP needs to be adopted by January 31, 2020
- IWV Groundwater Basin needs to be sustainably managed within 20 years of adoption of the GSP

Indian Wells Valley Groundwater Basin Estimated Groundwater Demand

GW USER	2010 Water Use AFY[3]	2013 Water Use AFY[3]	2025 Water Use AFY[3]
Private Domestic	1,000	1,000	1,100
IWVWD & Inyokern CSD	8,000	8,000	8,000
Naval Air Weapons Station	1,800	1,800	1,800
Searles Valley Minerals	2,600	2,600	2,600
Ridgecrest Park irrigation	350	350	350
Subtotal - Agriculture	8,500	9,950	20,400
Subtotal of Current Uses	**22,300**	**23,700**	**34,500**
Estimated Overdraft[4]	15,000	16,400	27,200

Notes:
1) Table modified from "Indian Wells Valley Resource Opportunity Plan, Water Availability and Conservation Report," Todd Engineers, 2014.
2) Assumes that water use except for new alfalfa fields and pistachio orchards was approximately the same in 2010 as in 2013.
3) AFY – Acre feet per year - All water use entries rounded to two significant digits.
4) Overdraft estimated based on an assumed basin yield of 7,300 AFY.
IWVWD = Indian Wells Valley Water District; CSD = Community Services District; Naval Air Weapons Station China Lake

SGMA Steps to Groundwater Sustainability

Step one
Form Groundwater Sustainability Agency
June 30, 2017

Step two
Develop Groundwater Sustainability Plan
January 31, 2020

Step three
Achieve Sustainability
20 years after adoption of plan*
January 31, 2040

- DWR may grant up to two, five-year extensions on Implementation upon showing good cause and progress

Step One: Form Groundwater Sustainability Agency (GSA)

- Local agency or combination of local agencies
- "Local agency" is any public agency that does one of the following:
  - Supplies water
  - Manages water
  - Controls land use
- Counties are the default GSA in "unmanaged" areas
- Can be more than one GSA in basin

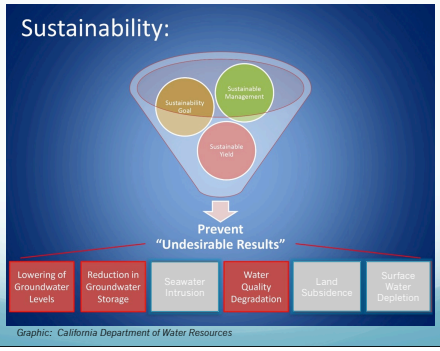
Domestic Wells and SGMA

- Referred to as "de minimis" users in SGMA
  - Use 2 acre-feet per year or less for domestic purposes
- De minimis users are subject to SGMA, depending on local needs
  - GSAs will decide how de minimis users are incorporated
  - GSAs can decide to exclude or include
  - GSAs can decide on fees
  - GSAs *cannot* require metering
  - May be subject to reporting and fees to state if intervention occurs
- Domestic wells can also be regulated by authorities (counties, water districts, etc.) outside the scope of SGMA

Step 2: Develop Groundwater Sustainability Plan

- Groundwater Sustainability Agency (GSA) must develop a sustainability plan by 2020
- California Department of Water Resources
  - Issues requirements for those plans in 2016
    - Draft regulations will be available beginning 2016
  - Reviews GSPs for completeness within two years of submittal to DWR

Step 3: Achieve Sustainability in 20 Years



Graphic: California Department of Water Resources

Sustainability Options

- Reduce demand
- Increase conservation
- Increase recycled water use
- Increase recharge (stormwater, recycled water, imported water)
- Brackish water project
- Import surface water

Outreach and Input

"GSA shall consider interests of all beneficial uses and users of groundwater" including:

- Agriculture users
- Domestic users
- Public & private water systems
- Local land use planning agencies
- Federal government
- Tribes
- Environmental users
- Disadvantaged communities
- *Surface water users*

The "Backstop" State Board Intervention

After	Intervention Trigger
June 30, 2017	Areas without a GSA begin reporting well locations and extraction data to SWRCB; can begin probationary basin designation 180 days later.
Jan. 31, 2020	Can begin probationary basin designation in critically overdrafted basins with no GSP or where DWR finds the GSP is inadequate
Jan. 31, 2022	Can begin probationary basin designation in other high/medium priority basins without a GSP or where DWR finds the GSP is inadequate
Jan. 31, 2025	Probationary basin designations where DWR finds GSP is inadequate and significant depletions of interconnected surface waters

In all triggering events, intervention is the result of failure by locals to create a GSA or adopt and implement a GSP

State Board Can Act as a Basin Manager

Develop fees to support basin management

Designate probationary basins

Probationary basins lead to interim sustainability plans

Interim plans manage basins until local efforts come up to speed

State Intervention is Not The Final Step

- State intervention is temporary, and basin water users would still be required to develop their own plan for their basin.
- State intervention would focus on "demand management" with limited options for solving overdraft problems.
- After reimbursing the state, basin water users would still be required to fund their own solution for managing the basin.
- A basin adjudication after January 1, 2015 would still be required to comply with all the requirements of SGMA.

Sustainable Groundwater Management Act Update

SGMA Update

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

- **Groundwater Sustainability Agency Formation**
  - 171 GSA Filings
  - 75 Exclusive GSA's formed
  - 74 in Overlap Status
  - 22 in 90 day waiting period

SGMA Update

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

Groundwater Sustainability Plan Regulations

- Adopted May 18th California Water Commission
- Scheduled for Promulgation by June 1, 2016 per SGMA
- 153 formal letters received with over 2,000 individual comments

SGMA Update

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

Groundwater Sustainability Plan Content

- Groundwater Sustainability Goal
- Water budget and sustainable yield
- 50 years hydrology
- 50-year planning horizon
- Detailed monitoring program
- Data management system
- Stakeholder involvement

SGMA Update

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

Groundwater Sustainability Plan Content

- Groundwater *sustainability indicators* vulnerable to undesirable results
  - Measurable objectives
  - Minimum thresholds
  - 5-year interim milestones
  - *Groundwater levels*
  - *Groundwater storage*
  - *Groundwater quality*
  - *Land subsidence*
  - *Seawater intrusion*
  - *Surface water depletion and ecosystems*

SGMA Update

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

Groundwater Sustainability Plan Content

- Projects an actions to meeting sustainability goal by 2040
- Annual data submittal to State
- Periodic review and update of GSP

SGMA Update

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

Best Management Practices

- DWR initiated – integration with GSP Regs
- Final BMPs due January 1, 2017

Basin Boundary Modifications

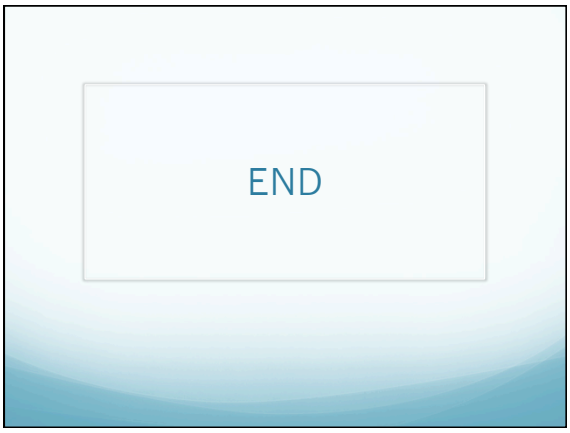
- 54 submitted to State
- Public meetings scheduled in July

Water Available for Replenishment

- DWR white paper drafted and on website
- Final report due December 31, 2016

Pertinent Legislation

- AB 1755 Dodd – Open and Transparent Data Act – in Senate Natural Resources and Water Committee
- SB 995 Pavley – Well Standards – in Assembly Environmental Safety and Toxic Materials
- SB 1317 Wolk – Conditional Use Permit – Groundwater Extraction Facility - in Assembly Water Parks and Wildlife


END