SGMA and Groundwater Management Case Studies

2016 AEP Conference

April 4, 2016

STOEL RIVES LLP
ATTORNEYS AT LAW

PANORAMA ENVIRONMENTAL, INC.

Presentation Objectives

Part 1:
- Provide an introduction to SGMA

Part 2:
- Provide the scientific/technical background
  - Background on groundwater and groundwater management in California
  - SGMA Groundwater Sustainability Plans
- Case study for groundwater management in the desert at Hay Ranch, Rose Valley

Part 3:
- Provide the policy and legal background
  - California water history leading up to SGMA
  - SGMA milestones and process
- Case study for Antelope Valley Adjudication

Part 4:
- Provide perspectives and strategies as the regulation unfolds

Presenters

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- Wes Miliband, Attorney, Stoel Rives LLP
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What is the Sustainable Groundwater Management Act?

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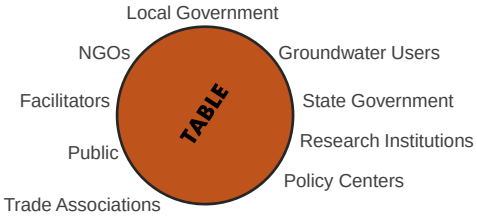
The Regulation

- **Sustainable Groundwater Management Act of 2014**
  - Three bills make up SGMA: AB 1739, SB 1319, and SB 1168, clarifications in SB 13 in 2015
  - Framework for sustainable local groundwater management for first time in CA history
  - Maintain sustainable yield

"A central feature of these bills is the recognition that groundwater management in California is best accomplished locally. Local agencies will now have the power to assess the conditions of their local groundwater basins and take the necessary steps to bring those basins in a state of chronic long-term overdraft into balance." – Governor Edmund G. Brown Jr.

Why?

- **Prior to SGMA, Groundwater Largely Unregulated**
  - Draught
  - Lowering of water tables
  - Drying of wells
  - Land subsidence
  - Increased energy costs from pumping
  - Reduced base flow in streams and rivers
- **SGMA → Meet Long-term Water Needs of State**
- **Many Involved Entities**



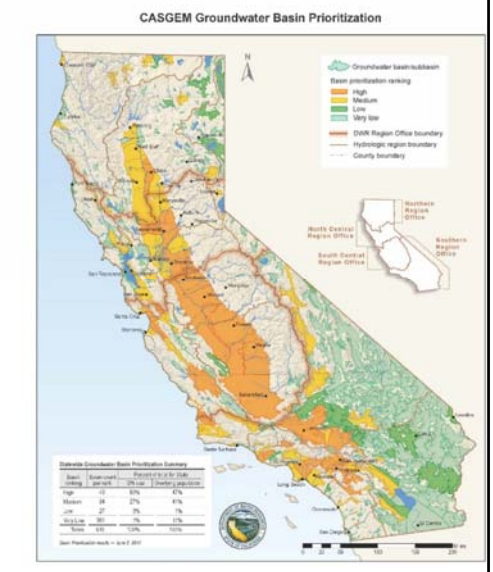
The Elements of SGMA

- **Key Components**
  - Establish and refine **Groundwater Basins** and priorities
  - Define **Groundwater Sustainability Agencies**
  - Develop and implement **Groundwater Sustainability Plans**



The Elements of SGMA

- **Groundwater Basins**
  - First established in January 2015 (Bulletin 118) based on June 2014 CASGEM Program
  - 127 high- and medium-priority basins covering 96% of the groundwater use in California



The Elements of SGMA

- **Groundwater Sustainability Agencies (GSAs)**
  - Local agency to implement the Act in one or more groundwater basins or subbasins
  - 149 entities have submitted to be a GSA as of Thursday

Table of GSA Formation Notifications Received by DWR

Show 10 entries Search:

GSA Name	Basin Name	Basin Number	County(s) the GSA is Located	Date Notice Posted	Status or 90-day Period
Patterson Irrigation District	Delta-Mendota	5-22.07	Stanislaus	03/28/2016	06/26/2016
Tri-County Water Authority	Tule	5-22.13	Tulare	03/18/2016	06/16/2016
Buena Vista Water Storage District	Kern County	5-22.14	Kern	03/10/2016	06/08/2016
North San Joaquin Water Conservation District	Eastern San Joaquin	5-22.01	San Joaquin	03/01/2016	Overlap
North San Joaquin Water Conservation District	Cosumnes	5-22.16	San Joaquin	03/01/2016	Overlap
West Stanislaus Irrigation District	Tracy	5-22.15	San Joaquin	02/25/2016	Overlap
West Stanislaus Irrigation District	Delta-Mendota	5-22.07	Stanislaus	02/25/2016	05/25/2016
City of Tracy	Tracy	5-22.15	San Joaquin	02/25/2016	Overlap
West Side Irrigation District	Tracy	5-22.15	San Joaquin	02/25/2016	Overlap
City of Lodi	Eastern San Joaquin	5-22.01	San Joaquin	02/09/2016	Overlap
GSA Name	Basin Name	Basin Number	County(s) the GSA is Located	Date Notice Posted	Status or 90-day Period

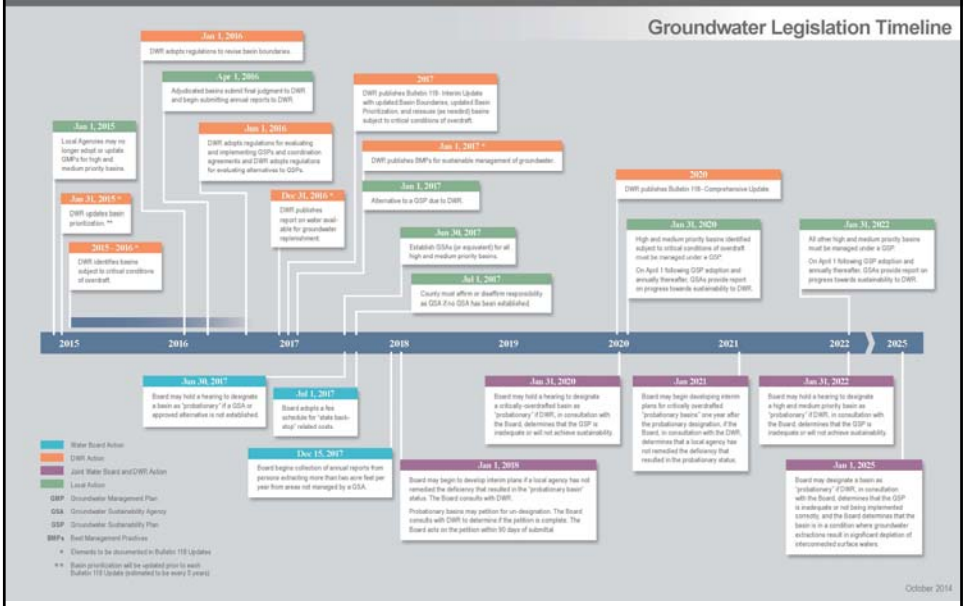
Showing 1 to 10 of 149 entries Previous 1 2 3 4 5 … 15 Next

The Elements of SGMA

- **Groundwater Sustainability Plans (GSPs)**
  - To be developed by each GSA
  - Must provide opportunities for public participation
  - GSP deadlines either January 2020 or January 2022
  - February 2016 – Draft regulations for steps for preparation of GSPs

From venturariver.org

SGMA Timetable



Groundwater Management – Science and Technical Requirements

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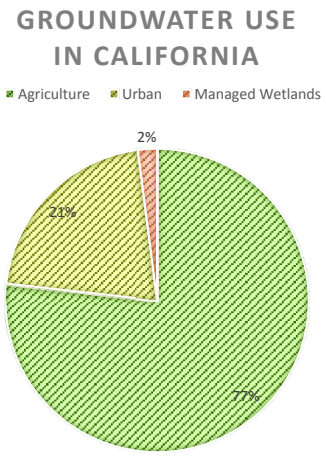
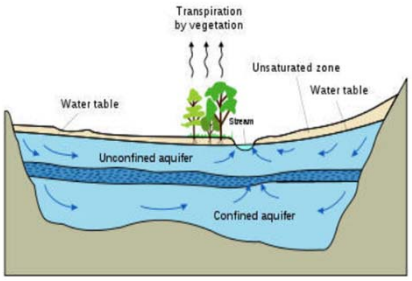
Groundwater Basics

- **Groundwater Use**
  - Water in California from:
    - Streamflow from mountain snowpack (~30%)
    - Water stored in reservoirs (~30%)
    - Groundwater (~40%)
  - Dry years and drought
    - 2005-2010 – 38% of water supply
    - Increases to 50% in dry years and 60% in drought years
  - Chronic groundwater level decline in some areas
    - 2M ac-ft overdraft Tulare Lake and San Joaquin River



Groundwater Basics

- **Groundwater Basins and Subbasins**
  - Groundwater basin
    - An alluvial aquifer or stacked series of alluvial aquifers with reasonably well-defined boundaries
    - Boundaries are geologic structure or feature
  - Groundwater subbasin
    - Subdivisions of a basin using geologic and hydrologic barriers or institutional boundaries
  - Basin boundaries are inherently scientific but can also be jurisdictional under SGMA



Groundwater Management

- **Groundwater Management Plans**
  - Since 1990s – 125 Groundwater Management Plans (GWMPs) have been developed, implemented, and updated – submitted to DWR
  - 2015 – can't have new GWMP in medium and high-priority basins
  - Several for Central Valley (Sacramento Valley and San Joaquin Valley)
- **GSPs can be built off of these plans but require**
  - More on existing conditions
  - More on plan objectives
  - More required management activities
  - More monitoring requirements

Groundwater Sustainability Plans

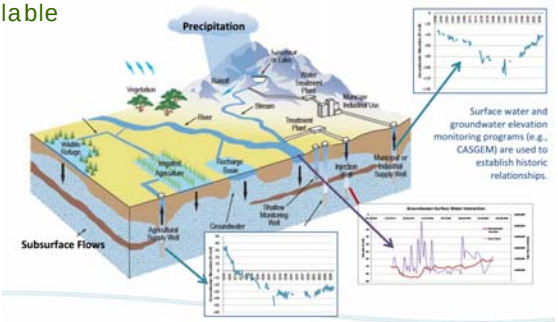
- **GSP – February 16, 2016**
  - Draft regulations – numerous, detailed, demanding
  - GSAs can define problems, establish numeric minimum thresholds, set measurable objectives, determine local projects and actions over 20-year timeframe
  - Submittals of GSPs to DWR for approval – opens July 1, 2017

GSP components

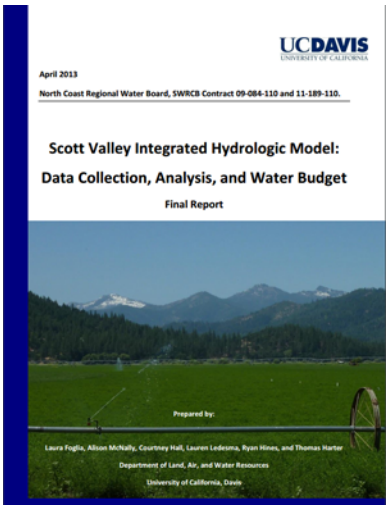
1. Background information and Basin setting
2. Identify where and when groundwater conditions cause problems for critical parameters
3. Spell out specific projects and management actions GSAs will implement to address and prevent identified problems
4. Include how GSAs will monitor groundwater and adaptive management

Groundwater Sustainability Plans

- **Basin Setting**
  - Static physical characteristics and dynamic conditions from in water supply, demand, and climatic conditions
    - Collect data on all users, geologic and hydrologic conditions, precipitation, streamflows, land use cover, soils
  - Hydrogeologic conceptual model
    - DWR datasets available
  - Water budget
    - Water budget models available (C2VSIM and IWFM)



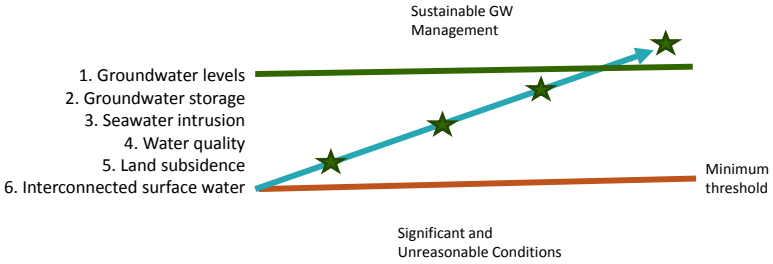
Groundwater Sustainability Plans



- **Example**
  - 100+ page report
  - Scott Valley is ag basin in north, part of Klamath Basin
  - Multiple parameters, evaluation methods, data collection, statistical modeling, Lidar analysis, water budget modelling
  - Grant from SWRB and NCRWCB

Groundwater Sustainability Plans

- **Sustainable Management Criteria**
  - Establish minimum thresholds for each critical parameter
    - Measurable
    - Interim milestones
  - Progress reports to DWR every 5 years



Groundwater Sustainability Plans

- **Management Strategies**
  - Maximize recharge and conjunctive water use between ground and surface water
    - Develop recharge facilities
    - Protect recharge zones at regional scale
    - Bank water in wet years to replenish basins in dry years
    - Cap and trade water market



Groundwater Sustainability Plans

- **Monitoring Networks**
  - Detailed description of monitoring network for GSP implementation
    - Use CASGEM monitoring wells, existing wells – may need to add more
    - Different types, frequency, protocols for monitoring
    - Specific to the basin and it's characteristics
  - Parameters
    - Achieve sustainability in 20 years
    - No adverse affect to adjacent basins
    - Timeline for data gaps
  - Adaptive Management
    - 5-year assessment and re-evaluation

Issues

- **Major Issues**
  - Removing 23 adjudicated basins, ~40 percent of the basins requiring GSPs lack adequate groundwater monitoring networks, as defined by the DWR CASGEM program
  - Connected basins – particularly in the Central Valley
    - How to deal with complexities and responsibilities
  - GSA may have no authority over recharge area
    - Central Valley recharged from foothills
  - GSAs must develop numeric models in the face of uncertainty
    - Coordinating modeling decisions and agency buy-off

Questions?

Hay Ranch Groundwater Pumping Project

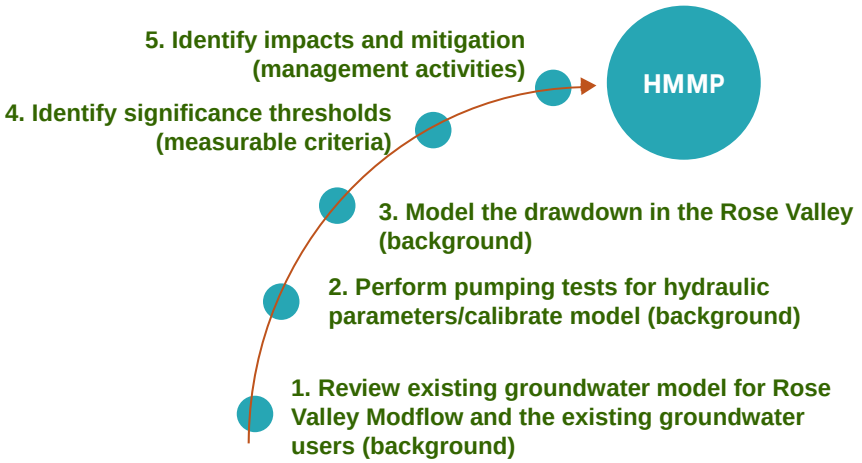
- Groundwater Pumping from Rose Valley
- Pipeline 9 mile long for injection into Coso Geothermal Field
- Two wells to be pumped at 3,000 gpm or 4,839 acre-feet per year

Environmental Process

- Approvals Needed
  - Inyo County CUP to transfer water from one basin to another
  - CEQA triggered
- Hydrologic Analysis and Hydrologic Monitoring and Mitigation Plan (HMMP)

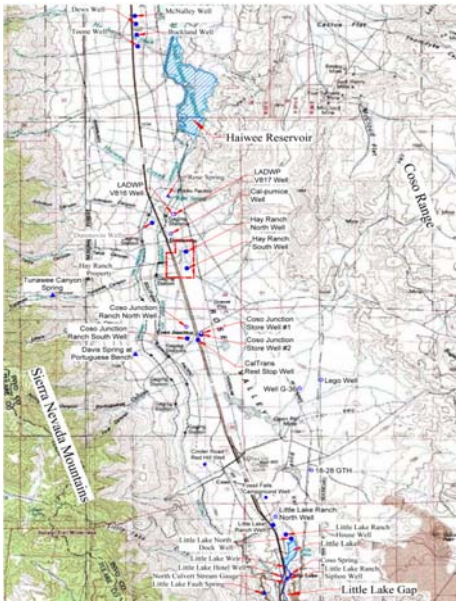
Key Issue – Groundwater impacts to nearby wells, surface waters, and Little Lake

Analysis Methods



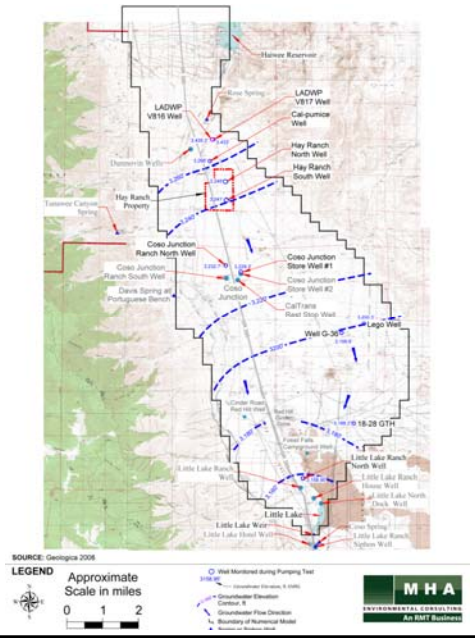
Establish Background Data

- **Groundwater Users**
  - Wells
  - Surface Waters
    - Haiwee Reservoir
    - Springs
      - Rose
      - Tunawee
      - Davis at Portuguese Bench
      - Little Lake Fault Spring
      - Coso Spring
    - Little Lake – man-made 90 acre lake 9 miles south

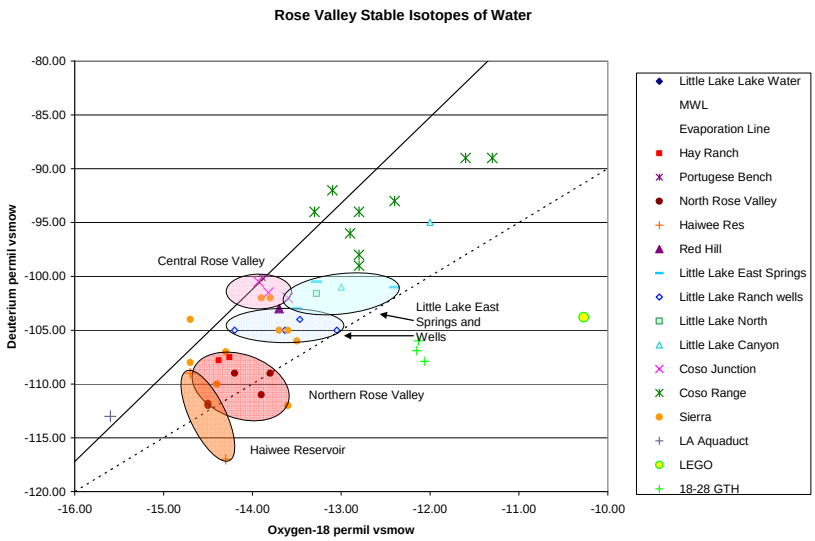


Establish Background Data

- **Groundwater**
  - Rose Valley 140 to 240 ft bgs to 40 ft bgs
  - Groundwater sources
    - Mountain-front recharge
    - Inflow from Owens Valley/Haiwee Reservoir
  - Looked at stable isotope signatures



Analysis Methods



Establish Background Data

- **Field Data Collection**
  - Pumping tests
    - Short-term test in 2003
    - 20-day test in 2007
    - Installed temporary pump on existing well and pumped 2000 gpm for 14 days – monitored groundwater levels for 20 days
  - Model recalibration
    - Initial Brown and Caldwell, 2006
    - Geological Model, 2008
      - Recalibrated B&C Model with data from pumping test
      - Included redefined inflow estimates and permeability data
      - Used USGS storage parameter values for Owens Valley

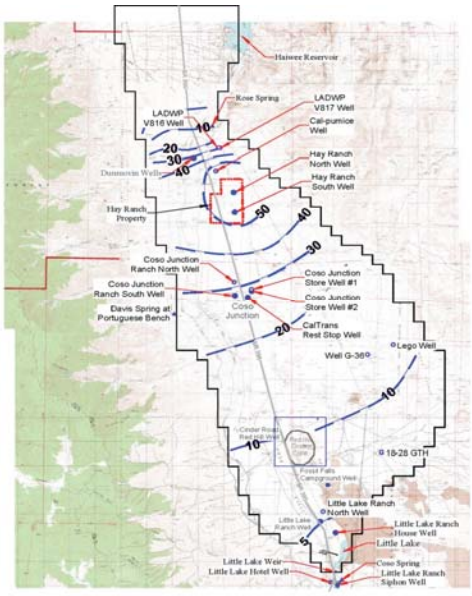
Modeling

Table 3.2-3: Rose Valley Conceptual Groundwater Budget

Budget Components	2006 Model		2007 Model	
	Flow Rate, acre-ft/yr	Simulation Package used in Model	Flow Rate, acre-ft/yr	Simulation Package used in Model
Groundwater Inflow				
Mountain Front Recharge from west	4,191	Well	4,194	Well
Groundwater Underflow from the North	788	Constant Head	898	Constant Head
Total Inflow	**4,979**		**5,092**	
Groundwater Outflow				
Existing extraction wells	0	--	50	Well
Groundwater underflow to Indian Wells Valley exiting from southeastern Rose Valley	2,050	General Head	842	General Head
Evaporation from Little Lake and Evapotranspiration from adjacent Palustrine wetland plants	500	Evapotranspiration	700	Evapotranspiration
Phreatophyte plant transpiration on Little Lake Ranch property south of Little Lake (outside model grid)	0	--	500	--
Groundwater Discharge through Little Lake Gap to Indian Wells Valley	2,429	Drain	3,000	General Head
Total Outflow	**4,979**		**5,092**	
*Conceptual budget, simulated budget components were adjusted during model calibration process.				

Establish Measurable Criteria

- Predicted drawdown after 30 years of full pumping rates
- Up to 5 feet at Little Lake



Establish Measurable Criteria

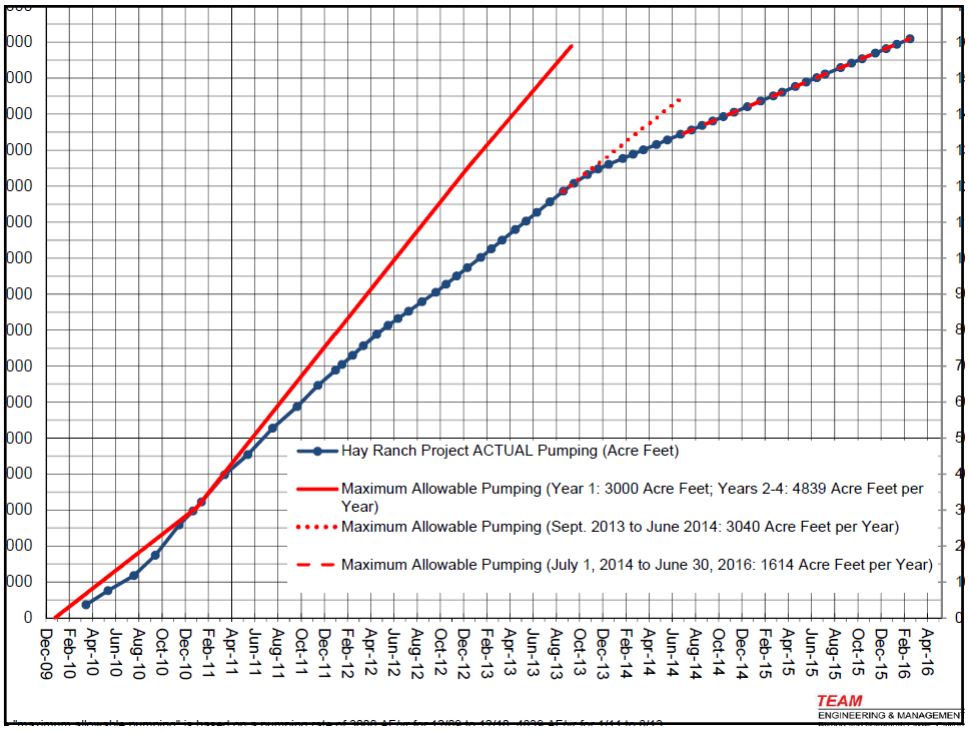
- **Plan Criteria**
  - Can't withdraw without impacting Rose Valley
  - Determined a >0.3 foot change in lake levels would result in significant effects
  - No more than 10% decrease in lake volume – which falls within the natural variation seen – water is managed at the lake
  - Based on wetland plant biology and morphology of lake
  - Root zone inundation
  - Maintenance of riparian zone width
- **Monitoring Program**
  - Existing and new wells, defined trigger points to stop or curtail pumping before effects to LL

Hydrologic Mitigation and Monitoring Program

Project Elapsed Time, years	Dunmovin Area Well	Pumice Mine Well	Hay Ranch Observation Well	Coso Ranch North Well	Coso Junction #1 Well	Navy C-96 Well	Navy Lago Well	Red Hill Cinder Road Well	Navy 19-21 Well	Little Lake Ranch North Well	Little Lake North Dock well (not a monitoring point)
Distance from Hay Ranch (ft)	9,000	8,100	1,300	9,700	10,800	28,000	27,300	12,000	38,000	42,600	48,600
1 yr	1.1	5.3	11.5	1.4	1.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2
2 yr	2.3	9	9.2	2.4	2.1	0.3	0.3	0.4	<0.2	<0.2	<0.2
3 yr	2.7	4.8	4.8	2.5	2.2	0.5	0.4	0.4	<0.2	0.2	<0.2
4 yr	2.6	4.1	4	2.5	2.2	0.6	0.6	0.5	0.2	0.3	0.2
5 yr	2.7	3.6	3.5	2.4	2.2	0.7	0.7	0.6	0.3	0.3	0.2
Maximum Drawdown (feet)	2.9	7.2	13	2.6	2.3	1.1	1.1	0.7	1	0.4	0.3
Time since Project Started (years)	4	1.5	1.2	3	3.6	14.5	15	12	22	15	13.5

Adaptive Management

- Results after almost 7 years of monitoring
  - Model predictions had correct trend
  - Generally see an downstream lag in drawdown a few years after max pumping, as predicted
- Pumping rates reduced
  - Was 3,040 ac-ft/yr from Sept 2013 through June 2014
  - Now 1,614 ac-ft/yr from July 2014 to June 2016
    - Max drawdown based on pumping rate of 1,614 ac-ft/yr
    - As of January to Feb 2016 monitoring, no trigger levels reached



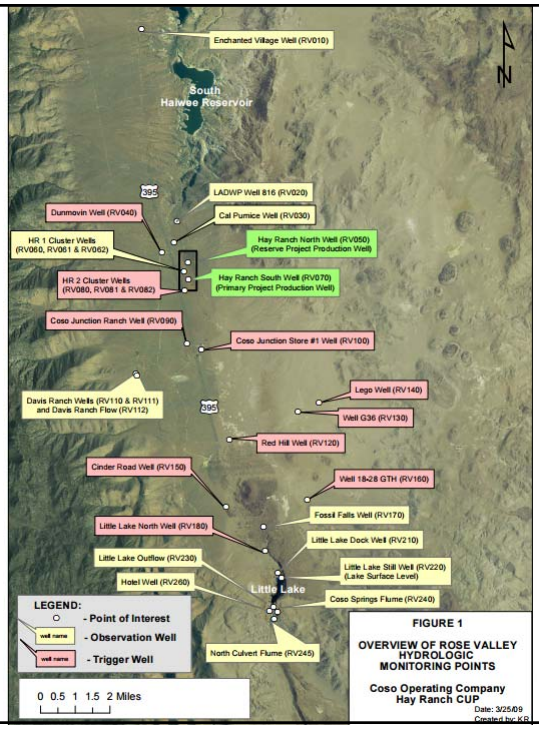
Adaptive Management

- Data collected from May 2009 to present
- Model recalibrated in 2011
- Trigger levels readjusted in 2014 for new max pumping rate allowed

Hay Ranch Project Groundwater Baselines and Trigger Levels
February 2016

Well ID	Monitoring Point	Baseline GWE[1] (feet amsl)	Recent Date of Measurement	Recent GWE (feet amsl)	Recent GWE Compared to Baseline (feet)	Trigger Level[3] (feet)	Recent GWE Compared to Trigger Level (feet)	Recent GWE Above Max DD[2] (feet)
RV-80	HR 2A	3240.92	02/17/16	3230.66	-10.26	15.3	5.04	6.24
RV-90	Coso Jct Ranch	3230.65	02/17/16	3228.00	-2.65	9.30	6.65	6.65
RV-100	Coso Jct Store #1	3227.59	02/17/16	3224.31	-3.29	8.30	5.02	5.12
RV-120	Red Hill Well	3200.66	02/17/16	3200.29	-0.37	3.00	2.63	3.43
RV-130	G-36	3198.35	02/17/16	3197.72	-0.63	2.20	1.57	2.67
RV-140	Lego	3199.21	02/17/16	3198.78	-0.43	0.70	0.27	1.97
RV-150	Cinder Road	3186.92	02/17/16	3186.22	-0.70	1.00	0.30	1.60
RV-160	18-28 GTH	3187.67	02/17/16	3188.03	0.36	0.70	1.06	2.46
RV-180	LLR North Well	3158.88	02/18/16	3158.52	-0.36	0.40	0.04	0.94

1) GWE: Groundwater elevation measured in feet above mean sea level. Baseline GWEs set January 2010 and March 2011 and approved by Inyo County Water Department (ICWD)
2) Max DD: Maximum Acceptable Drawdown from Table 1 of ICWD's "June 27, 2014 Conditional Use Permit#2007-003/Coso "
3) "Trigger Level at Cessation of Pumping" from Table 1 of ICWD's "June 27, 2014 Conditional Use Permit#2007-003/Coso "



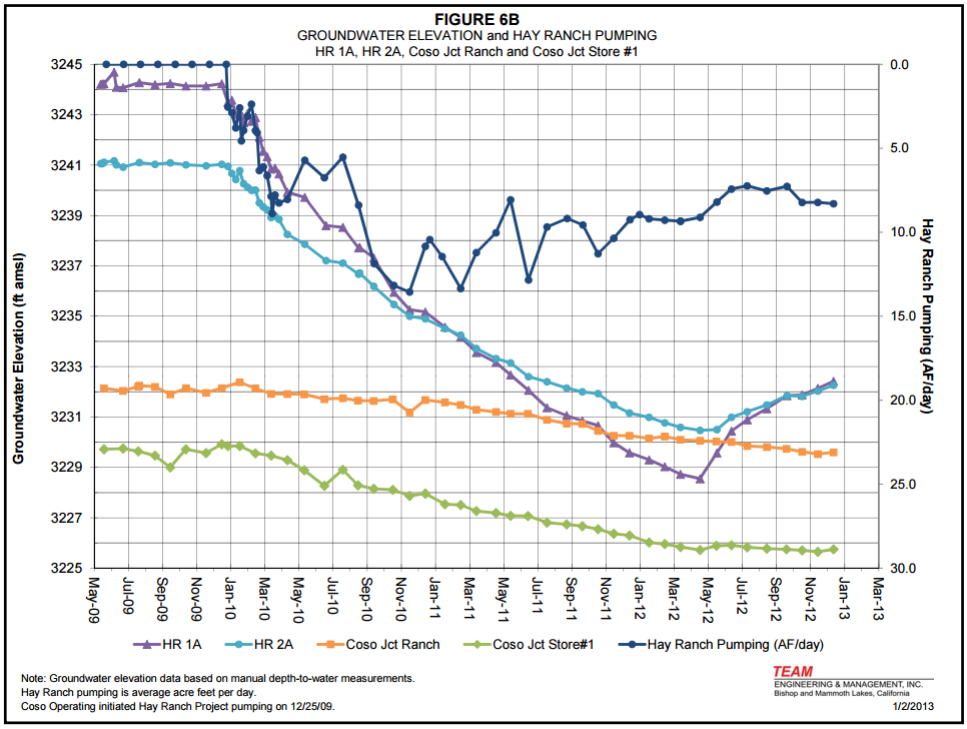
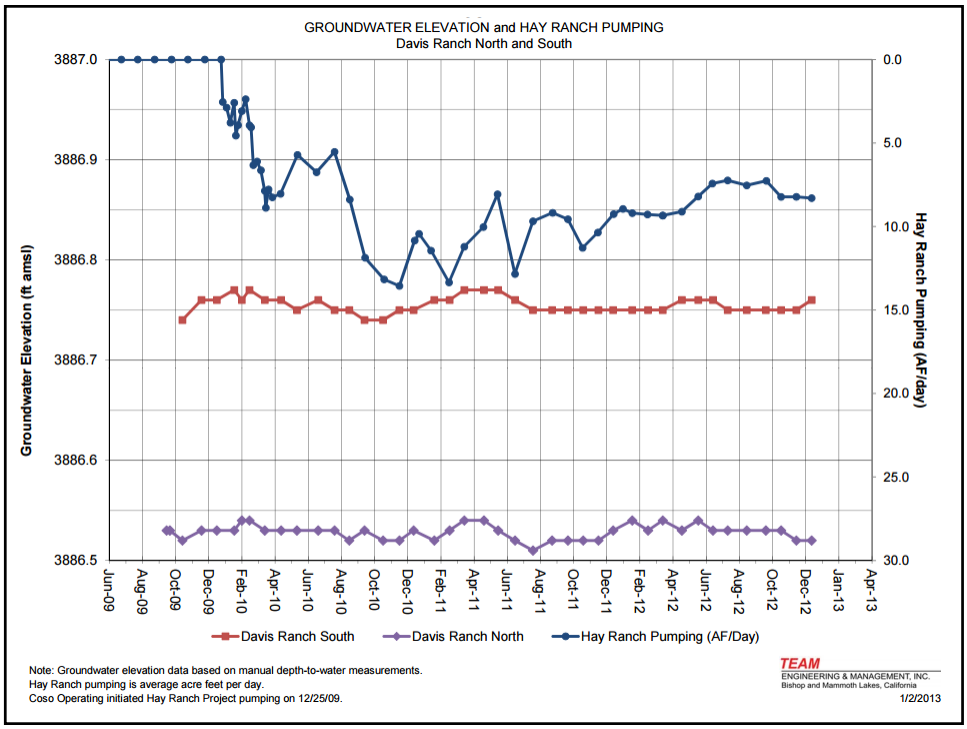


FIGURE 6B
GROUNDWATER ELEVATION and HAY RANCH PUMPING
HR 1A, HR 2A, Coso Jct Ranch and Coso Jct Store #1
Groundwater Elevation (ft amsl)
Hay Ranch Pumping (AF/day)
3245
3243
3241
3239
3237
3235
3233
3231
3229
3227
3225
0.0
5.0
10.0
15.0
20.0
25.0
30.0
May-09
Jul-09
Sep-09
Nov-09
Jan-10
Mar-10
May-10
Jul-10
Sep-10
Nov-10
Jan-11
Mar-11
May-11
Jul-11
Sep-11
Nov-11
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
HR 1A
HR 2A
Coso Jct Ranch
Coso Jct Store#1
Hay Ranch Pumping (AF/day)
Note: Groundwater elevation data based on manual depth-to-water measurements.
Hay Ranch pumping is average acre feet per day.
Coso Operating initiated Hay Ranch Project pumping on 12/25/09.
TEAM
ENGINEERING & MANAGEMENT, INC.
Bishop and Mammoth Lakes, California
1/2/2013


GROUNDWATER ELEVATION and HAY RANCH PUMPING
Davis Ranch North and South
Groundwater Elevation (ft amsl)
Hay Ranch Pumping (AF/day)
3887.0
3886.9
3886.8
3886.7
3886.6
3886.5
0.0
5.0
10.0
15.0
20.0
25.0
30.0
Jun-09
Aug-09
Oct-09
Dec-09
Feb-10
Apr-10
Jun-10
Aug-10
Oct-10
Dec-10
Feb-11
Apr-11
Jun-11
Aug-11
Oct-11
Dec-11
Feb-12
Apr-12
Jun-12
Aug-12
Oct-12
Dec-12
Jan-13
Apr-13
Davis Ranch South
Davis Ranch North
Hay Ranch Pumping (AF/Day)
Note: Groundwater elevation data based on manual depth-to-water measurements.
Hay Ranch pumping is average acre feet per day.
Coso Operating initiated Hay Ranch Project pumping on 12/25/09.
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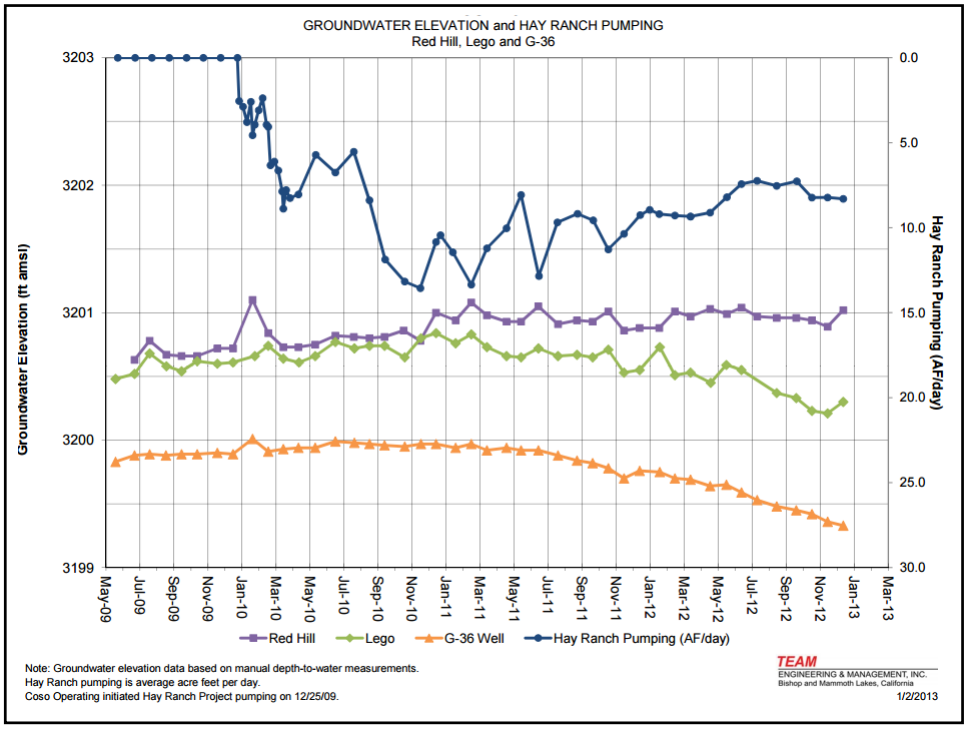
1/2/2013


GROUNDWATER ELEVATION and HAY RANCH PUMPING
Red Hill, Lego and G-36
Groundwater Elevation (ft amsl)
Hay Ranch Pumping (AF/day)
3203
3202
3201
3200
3199
0.0
5.0
10.0
15.0
20.0
25.0
30.0
May-09
Jul-09
Sep-09
Nov-09
Jan-10
Mar-10
May-10
Jul-10
Sep-10
Nov-10
Jan-11
Mar-11
May-11
Jul-11
Sep-11
Nov-11
Jan-12
Mar-12
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
Red Hill
Lego
G-36 Well
Hay Ranch Pumping (AF/day)
Note: Groundwater elevation data based on manual depth-to-water measurements.
Hay Ranch pumping is average acre feet per day.
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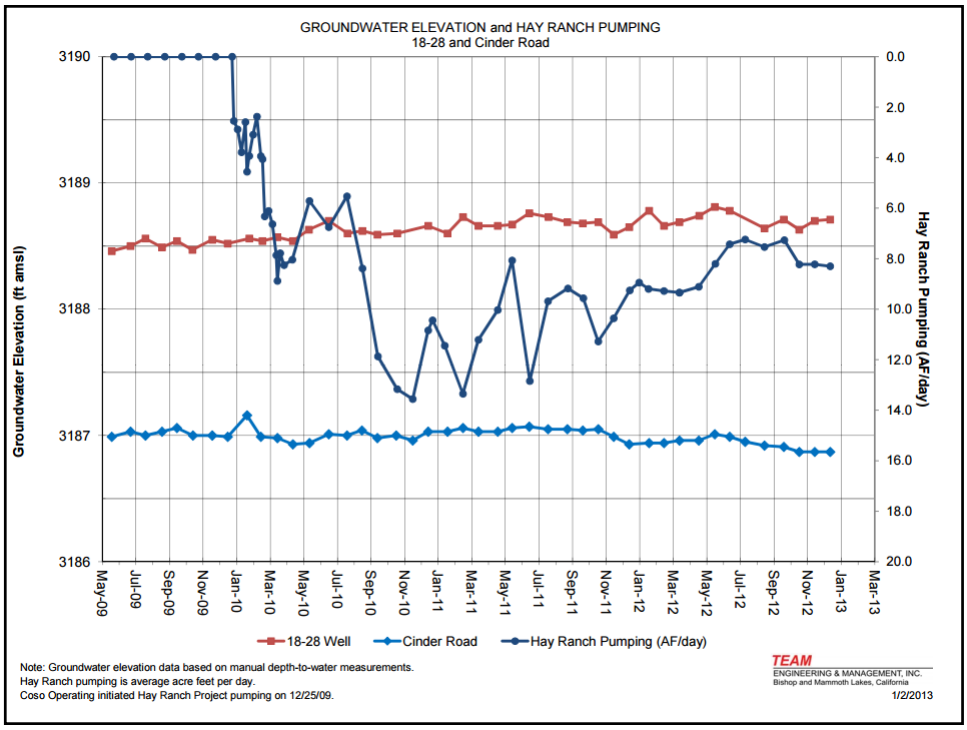
GROUNDWATER ELEVATION and HAY RANCH PUMPING
18-28 and Cinder Road
Groundwater Elevation (ft amsl)
Hay Ranch Pumping (AF/day)
3190
3189
3188
3187
3186
0.0
2.0
4.0
6.0
8.0
10.0
12.0
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Jan-12
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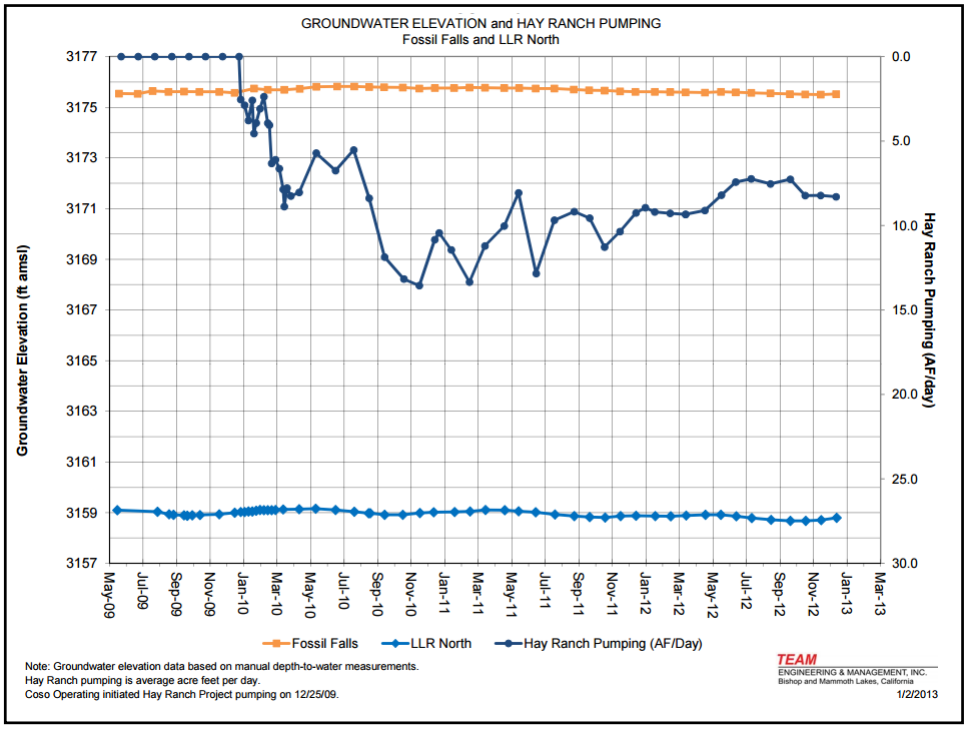
May-12
Jul-12
Sep-12
Nov-12
Jan-13
Mar-13
18-28 Well
Cinder Road
Hay Ranch Pumping (AF/day)
Note: Groundwater elevation data based on manual depth-to-water measurements.
Hay Ranch pumping is average acre feet per day.
Coso Operating initiated Hay Ranch Project pumping on 12/25/09.
TEAM
ENGINEERING & MANAGEMENT, INC.
Bishop and Mammoth Lakes, California
1/2/2013


GROUNDWATER ELEVATION and HAY RANCH PUMPING
Fossil Falls and LLR North
Groundwater Elevation (ft amsl)
Hay Ranch Pumping (AF/day)
3177
3175
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Fossil Falls
LLR North
Hay Ranch Pumping (AF/Day)
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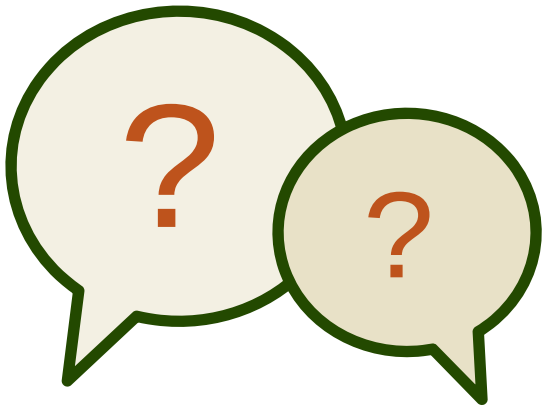
Questions?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Groundwater Management – Policy and Legal

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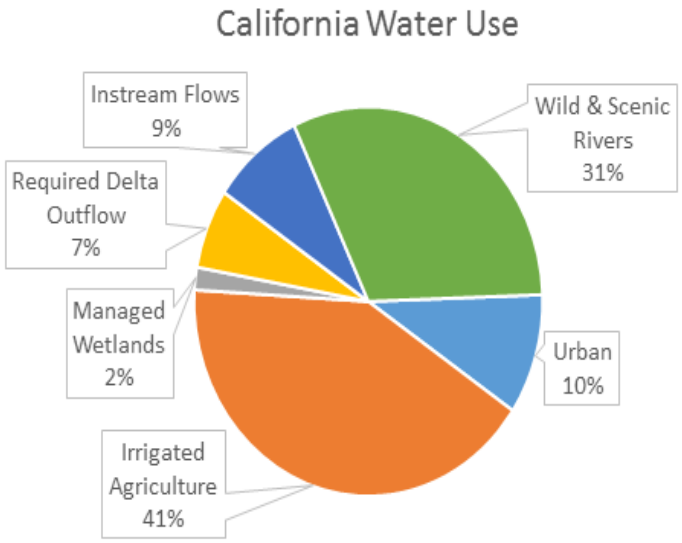
Sources of Water

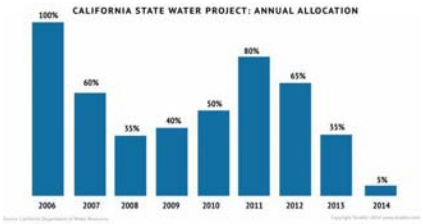
- Groundwater
- Surface water
- "New" water
  - Recycled Water
  - Desalination
  - Stormwater

T1



Plumbing for Surface Water

- SWP is a major supply source yet record low delivery levels

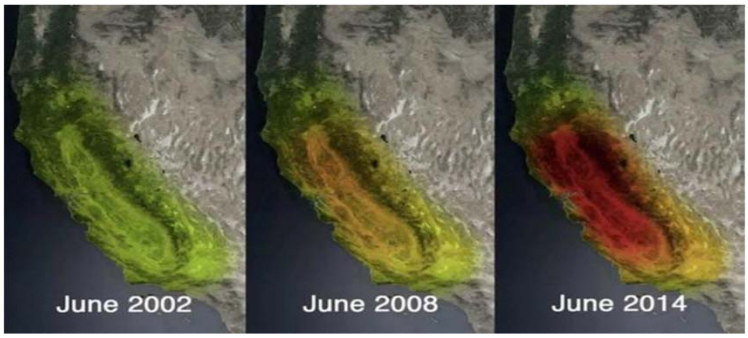


Source:
http://www.water.ca.gov/swpao/deliveries.cfm

Slide 47

T1 this slide conflicts with my slide, I think...
Tania, 4/3/2016

Groundwater Basins…from afar



Source:
http://www.jpl.nasa.gov/news/news.php?feature=4693

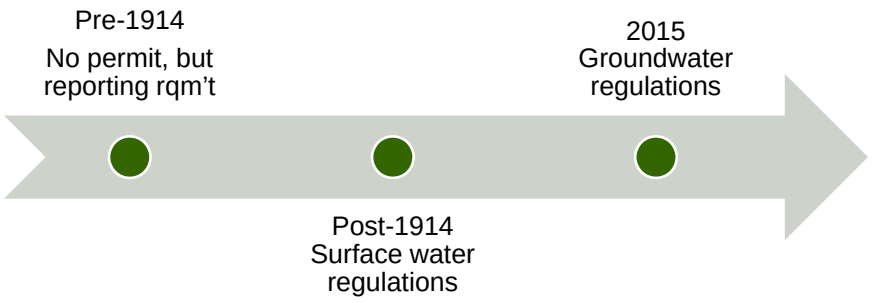
California Water History

- **Surface Water or Subterranean Streams**
  - Regulated by State Water Resources Control Board
  - 1914: Water Commission Act sets up the water permit system for surface water (appropriative rights):
    - Post-1914 requires permits/decrees with dates/seasons when the water right will be used
    - Pre-1914 water rights are not subject to the permit system and often dates and seasons of use are not specified but actual beneficial use determines both the amount and season of diversion that can be used

California Water History

- Groundwater – mostly unregulated for over 100 years after surface water
- Groundwater regulation mandatory 2015 with SGMA
  - Law presumes groundwater is percolating groundwater
  - Prior to SGMA, groundwater management:
    - Voluntarily, such as AB 3030 Plans
    - Adjudicated Basins (Approx. 23 in the State in the past 100 years)

California Water History



Water Rights

- California's "System":
  - "Hybrid" system of riparian/overlying and appropriative doctrines
  - *Contra* contractual rights
- Real Property Right of "Bundle of Sticks": Water right *usually* part and parcel to land
- Usufructuary Right: Right to possess and use, not own, water



Riparian (Surface)/Overlying (Ground) Water Right

- Arises from land ownership
  - **Riparian:** Land that is adjacent/contiguous to surface stream
  - **Overlying:** Land that sits above groundwater
  - Subdivision of parcels may "break" contiguity/overlying status but water right may be preserved where deed explicitly reserves the right to the land
  - Amount limited to **"reasonable and beneficial"** uses on land; generally not quantified
- Generally not subject to forfeiture for non-use

Appropriative Right (Post-1914)

- Arises from actual use of water for non-riparian/overlying lands
  - First in time, first in right (potential exception Water Code § 1460 for "municipalities")
- Amount limited to quantified amount for "reasonable and beneficial" uses (usually based on 5 preceding years)
- Can be lost to prescription (unless public entity per Civil Code § 1007) or forfeiture for non-use

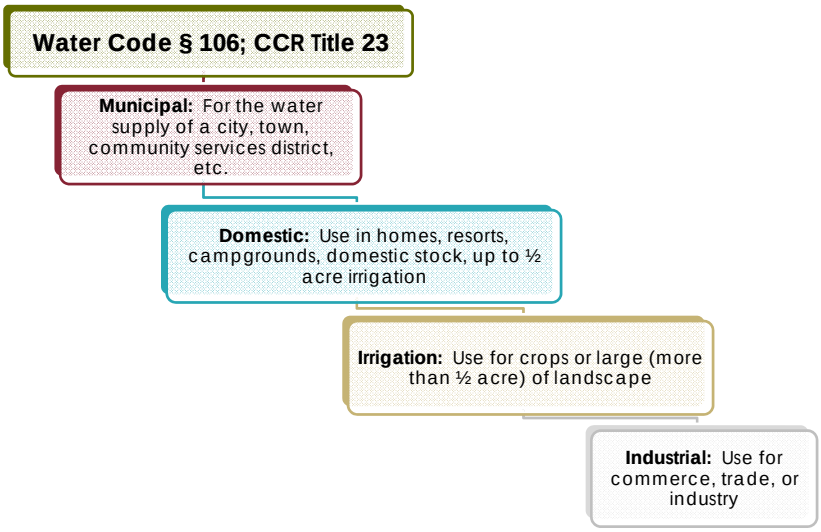
Prescriptive Water Right

- Arises from taking water away from another legal water user
  - Real Property Law Elements:
    - Hostile/Adverse
    - Open/Notorious
    - Continuous (5 years)
    - Exclusive
    - Claim of Right

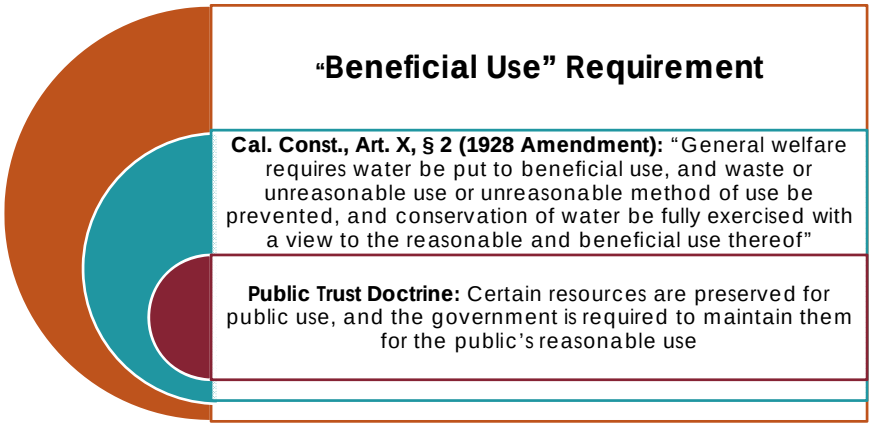
Federal Reserved Right

- Unique water right quantified by the needs of the federal lands at the time the installation commenced
- McCarran Amendment: Serves as the basis for the federal government to waive its sovereign immunity to be sued in state court; requires a comprehensive adjudication of all issues among all stakeholders/ parties
- *Winters* doctrine & examples:
  - Agua Caliente Band of Cahuilla Indians suing purveyors in Coachella Valley
  - Edwards Air Force Base in Antelope Valley Groundwater Cases

Water Uses and "Hierarchy"



Reasonable & Beneficial Use



SGMA Milestones

- Still in earliest stages of implementation
- Many more steps and milestones over next 27 years

Implementation Deadlines

When	Who	What
January 31, 2015	Department of Water Resources (DWR)	Categorize and prioritize basins as high, medium, low, or very low [§ 10722.4(a)]
January 1, 2016	DWR	Adopt regulations for basin boundary adjustments and accept adjustment requests from local agencies [§ 10722.2(4)(b)]
April 1, 2016	Local water agencies or water-masters in adjudicated areas	Submit final judgment /order / decree and required report to DWR (report annually thereafter) [§ 10720.8(f)]
June 1, 2016	DWR	Adopt regulations for evaluating adequacy of Groundwater Sustainability Plans (GSPs) and Groundwater Sustainability Agency (GSA) coordination agreements [§ 10733.2]
December 31, 2016	DWR	Publish report estimating water available for groundwater replenishment [§ 10729(c)]
January 1, 2017	DWR	Publish groundwater sustainability best management practices [§ 10729(d)]
By June 30, 2017	Local agencies	Establish GSAs [§ 10735.2(a)(1)]
After July 1, 2017	State Water Resources Control Board (SWRCB)	Designate basins as probationary where GSAs have not been formed [§ 10735.2(1)]
After July 1, 2017	Groundwater users in probationary basins	File annual groundwater extraction report with SWRCB by December 15 each year [§ 5202]
January 31, 2020	GSAs in medium- and high-priority basins in critical overdraft	Adopt GSPs and begin managing basins under GSPs [§ 10720.7(a)(1)] or alternative [§ 10733.6]
After January 31, 2020	SWRCB	Designate basins as probationary where GSPs have not been adopted in medium- and high-priority basins in critical overdraft [§ 10735.2(1)]
January 31, 2022	GSAs in other medium- and high- priority basins	Adopt GSPs and begin managing basins under GSPs [§ 10720.7(a)(2)]
After January 31, 2022	SWRCB	Designate basins as probationary where GSPs have not been adopted in other medium- and high-priority basins [§ 10735.2(1)]
After January 31, 2025	SWRCB	Designate basins as probationary where GSPs are inadequate or not being implemented, and extractions result in significant depletions of interconnected surface waters [§ 10735.2(a)(3)(B)]
After January 31, 2040	GSAs (in medium- and high-priority basins in critical overdraft)	Achieve groundwater sustainability goals (DWR may grant two five-year extensions upon a showing of good cause) [§ 10727.2(3)(A)]
After January 31, 2042	GSAs (in other medium and high priority basins)	Achieve groundwater sustainability goals (DWR may grant two five-year extensions upon a showing of good cause) [§ 10727.2(3)(A)]

SGMA Milestones

Establish Medium and High-Priority Groundwater Basins	✓
Develop Groundwater Sustainability Agencies	June 30, 2017
Develop Groundwater Sustainability Plans for Medium and High-Priority Basins in Critical Overdraft	January 31, 2020

GSP Emergency Regulations

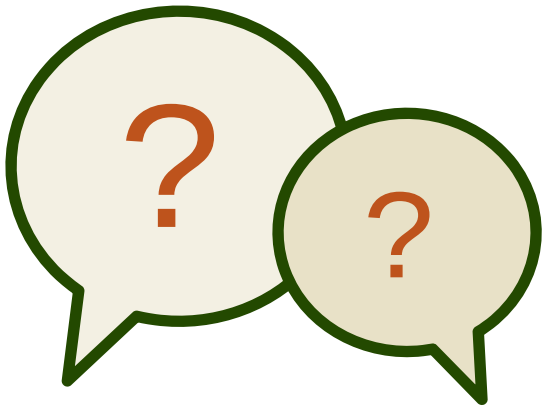
- DWR is required to draft and adopt emergency regulations for:
  - the Evaluation of GSPs and Alternatives;
  - the Implementation of GSPs and Alternatives; and
  - Coordination agreements (WC 10733.2)

DEADLINE: June 1, 2016

Basin Boundaries

- The basin boundary defines the management area under SGMA
  - GSA limits are tied to basins
  - If no modification of basin and subbasin boundaries: Bulletin 118 applies
    - DWR modifying Bulletin 118 right now

Questions?



Groundwater Adjudication

- **Antelope Valley Adjudication Cases**
  https://www.scefiling.org/**cases**/**case**home.jsp?**case**Id=19

  – 17 years of trial court litigation
  – 9,000 docket entries
  – 145 parties & 2 class actions
  – Moved from judge to judge;
  – Mediators for years
  – 180 TAF demand, but…
  – 110 TAF safe yield
  – Now on appeal

Adjudication: Antelope Valley

- Major agricultural operations, public water suppliers; 70,000 unexercised overliers; 3000-4000 small pumpers; 100-1,000 large pumpers
- 900 square mile area
- Edwards Air Force Base – largest property owner (federal land)

Common Adjudication Issues

- Judge and Forum Changes ("Shopping")
- Defining basin boundaries
- Determining if there has been overdraft
- Water rights determinations
- Forming a "physical solution"
- Appointing a Watermaster
- Ongoing court jurisdiction, studies, reporting, etc.
- Real world impacts: property values, land use planning, etc.

Unique Adjudication Issues in Antelope Valley

- McCarran Amendment: federal government can waive its sovereign immunity to be sued in state court; requires a comprehensive adjudication of all issues among all stakeholders/parties
  - AFB: U.S. insisted on bringing in every claimant to water in the area
- Creating classes: pumper class and non-pumper class
- Legal issues: recapture of native water return flow

Perspectives and Strategies for the Future

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Looking Ahead: Adjudications or SGMA?

- Where SGMA does not succeed, adjudications are very likely
- Antelope Valley: Poster child for reform (AB 1390/SB 26):
  - Plaintiff must undertake various steps, including:
    - Name all public water suppliers;
    - Provide public notification of the lawsuit;
    - Provide a draft model answer; and
    - Provide initial disclosures re historical water use, locations of extraction and use, and the claimed legal basis for a water right such as an overlying right or prescriptive right.
  - Trial court and other parties:
    - Identify trial issues and divide the process into phases
    - Parties required to expedite factual discovery about water use, etc.

Hot Topics That Lead To Heated Disputes

- Stakeholder's land boundaries vs. Basin boundaries
- Multiple GSAs
- Multiple GSPs
- Ramp down to reach "sustainability" vs. water rights preservation
  - Supplemental supplies like "new" water become key!
- Ramp up of costs to fund GSA and GSP administration and enforcement
  - Proposition 218 rate setting…unchartered waters!

Benefits of Plan Environmental Documents

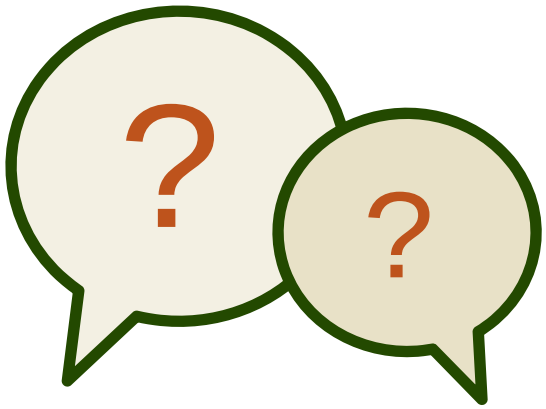
For **individual projects** within the **plan area**:

- Provide clear guidance and definitions
- Provide legally vetted and City-approved information
- Provide a better understanding of potential issues
- Identify resources or the likelihood of resources

Risk Management Tips for Avoiding Disputes

- Form the right team!
- Identify water supply sources:
  - actual water right, contractual right, or other basis for claiming share of the water supply pie
- Evaluate groundwater basin's characteristics and conditions
- Learn what legal, regulatory and strategic options exist
- Engage friends and befriend foes at local level through GSA and GSP process

Questions?



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- Wes Miliband wes.miliband@stoel.com

Thank you!