‘Sustainable Groundwater Management’ A New Law in California

IAH Congress – Montpelier, France – September 2016

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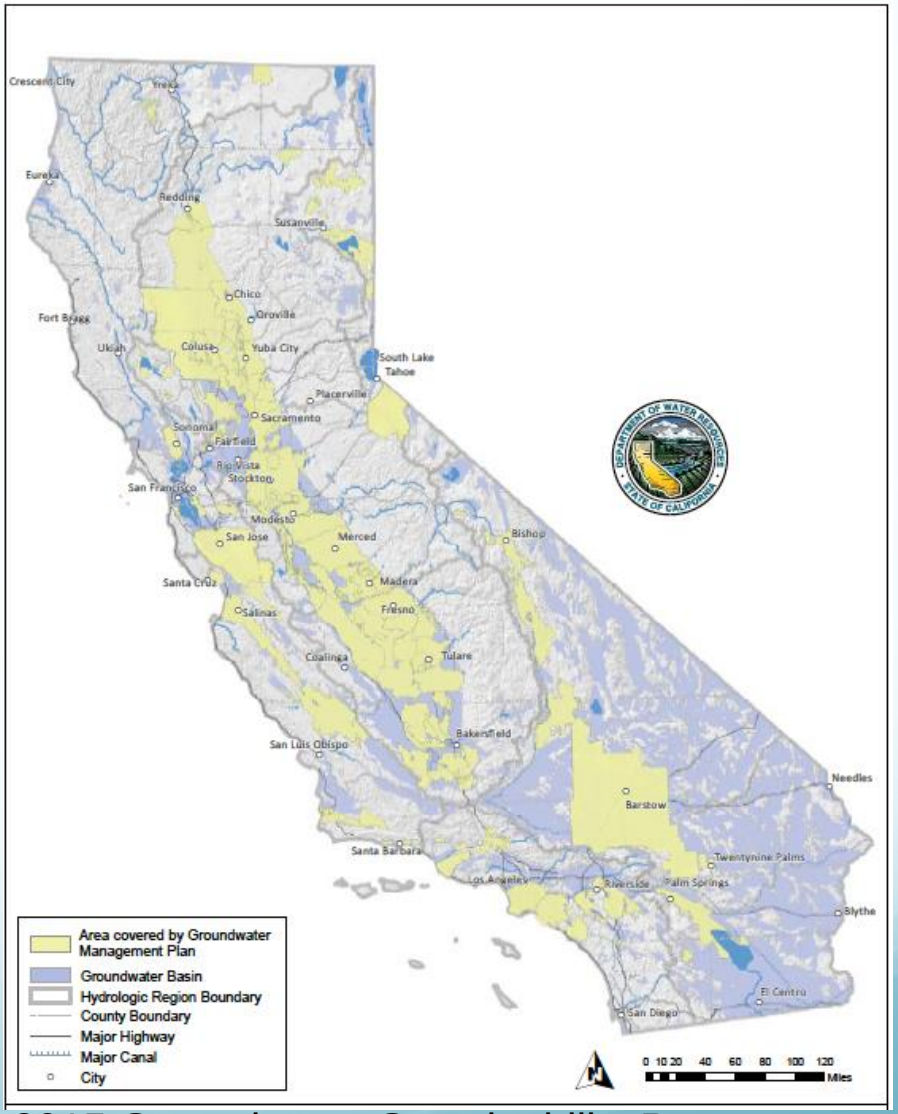
California Setting

Water Supply & Conveyance

California Water Plan Update 2013

GW Basins & Management



2015 Groundwater Sustainability Program Draft Strategic Plan

Leading Up To SGMA

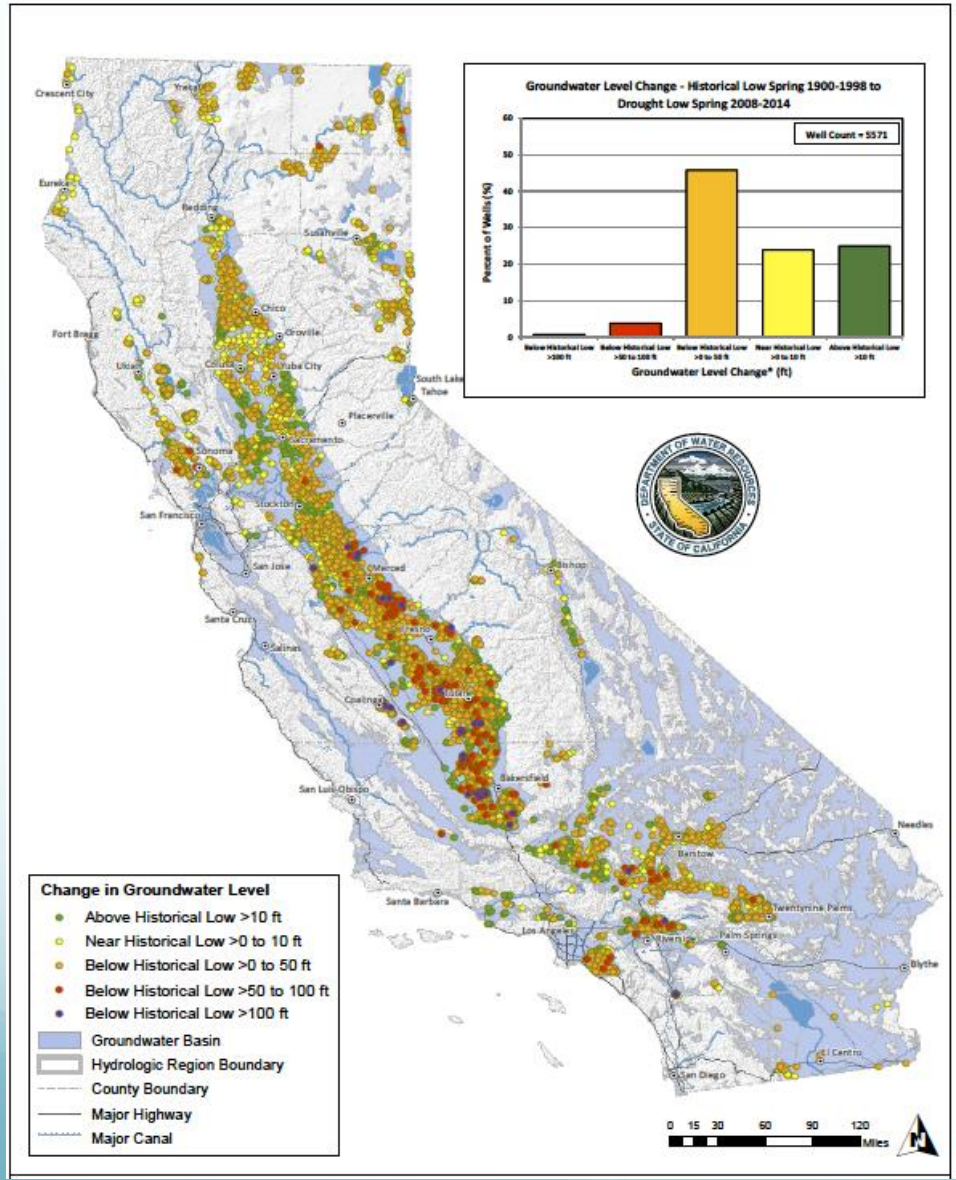
Some Background Actions

- 1978 Water Commission
- 1992 - AB 3030 – voluntary GW Management authorities
- 2002 - SB 1938 – tied requirements to funding
- 2009 – SBX7-6 Statewide Groundwater Monitoring
- 2011 - AB 359 Recharge mapping
- Water Bonds
  - $26B in past 10 years
  - $7.5B voted in 2015

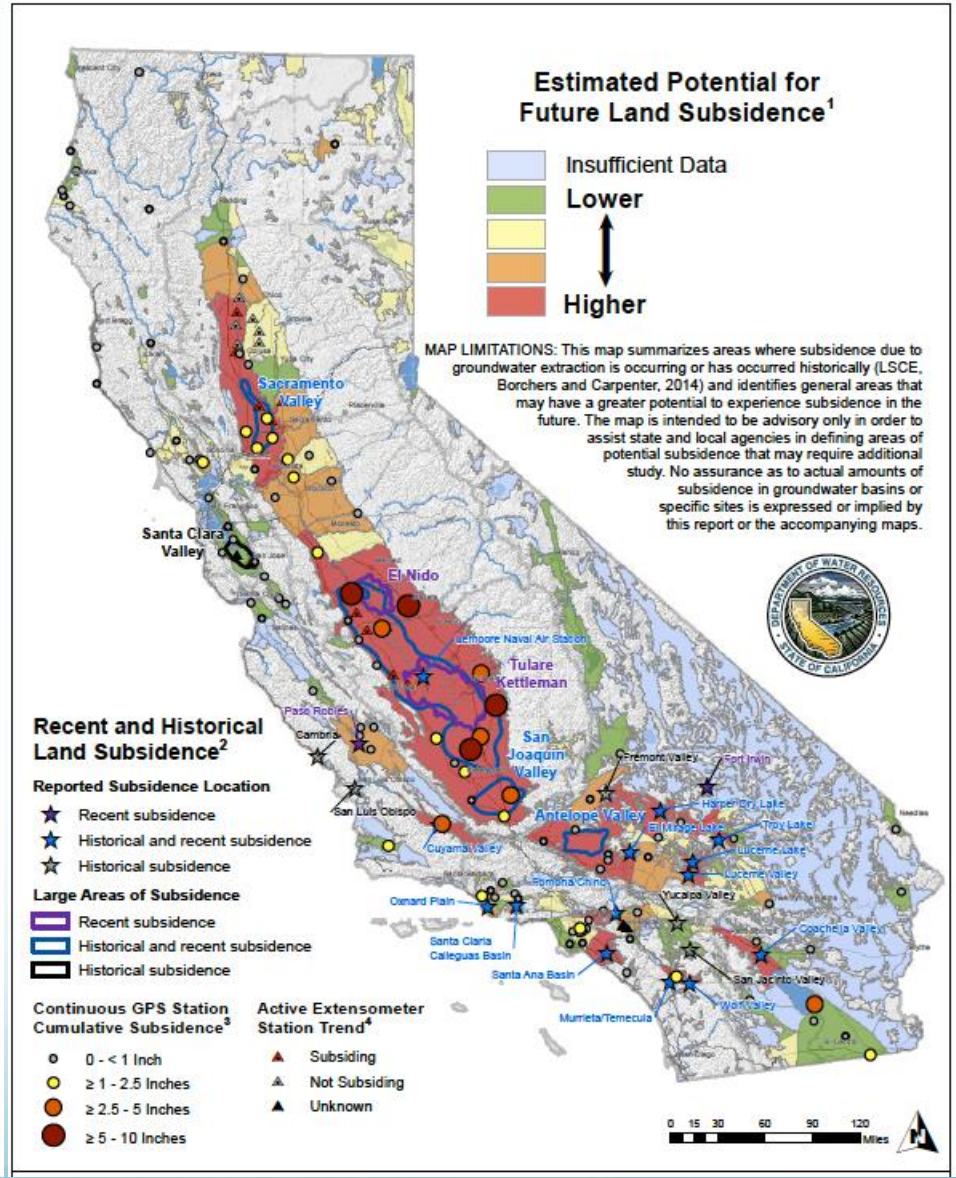
A Perfect Storm

- Drought – less surface water deliveries
- Increasing GW Demand
  - More crop rotations
  - Permanent crops/demand hardening
- Land Subsidence
- California Water Action Plan
- Administration takes lead in drafting gw law - asks industry and Legislature to develop the policy

1900-1998 GW Level Change to 2008-2014



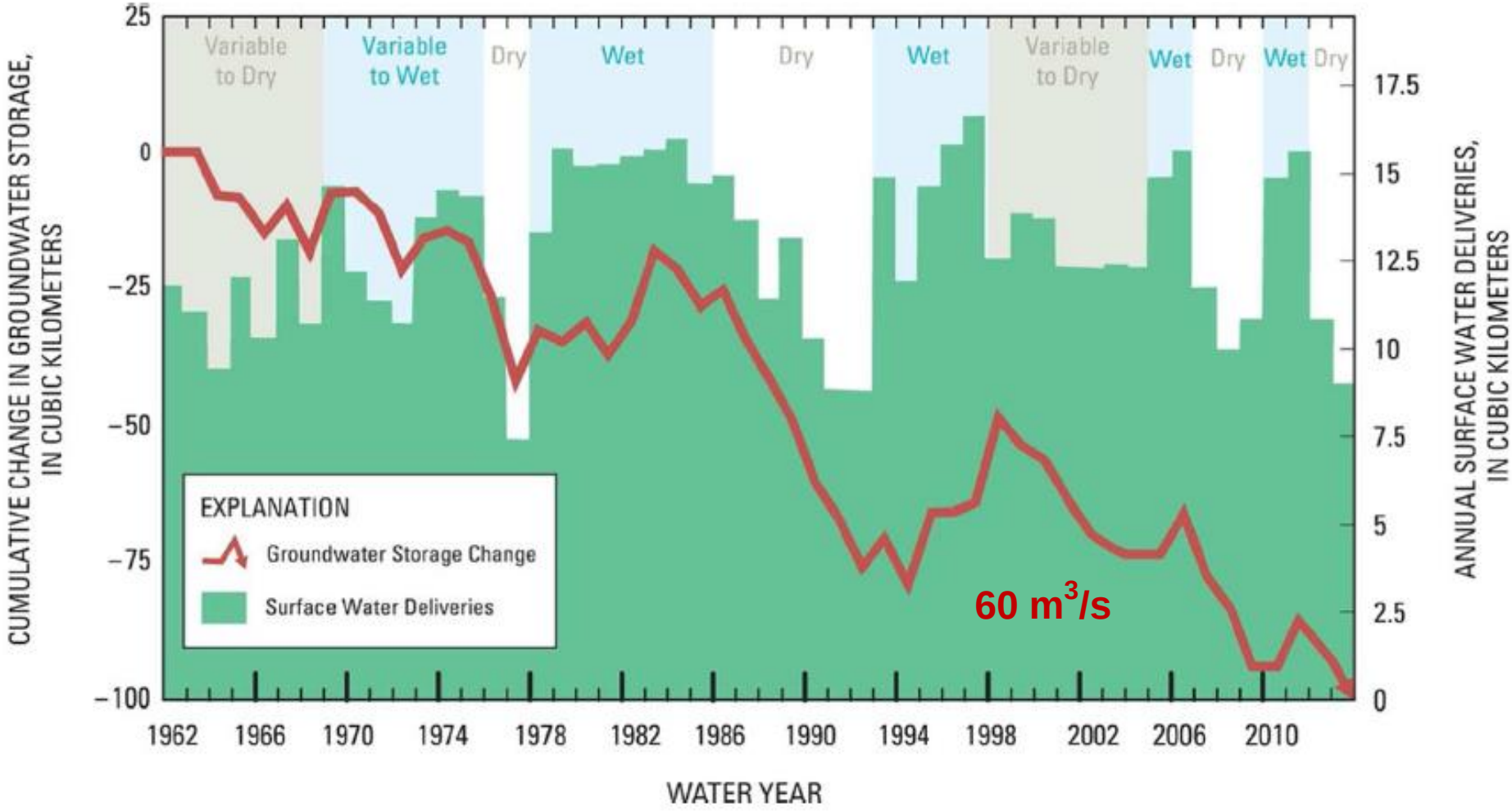
Historic to Present Land Subsidence



Summary of Recent, Historical, and Estimated Potential Land Subsidence in California, California Department of Water Resources, 2014

California Central Valley

Cumulative Groundwater Storage Change versus Annual Surface Water Deliveries 1962 – 2014



Faunt, C., et al, Water Availability and Land Subsidence in the Central Valley, Online Hydrogeology Journal – 17 November 2015

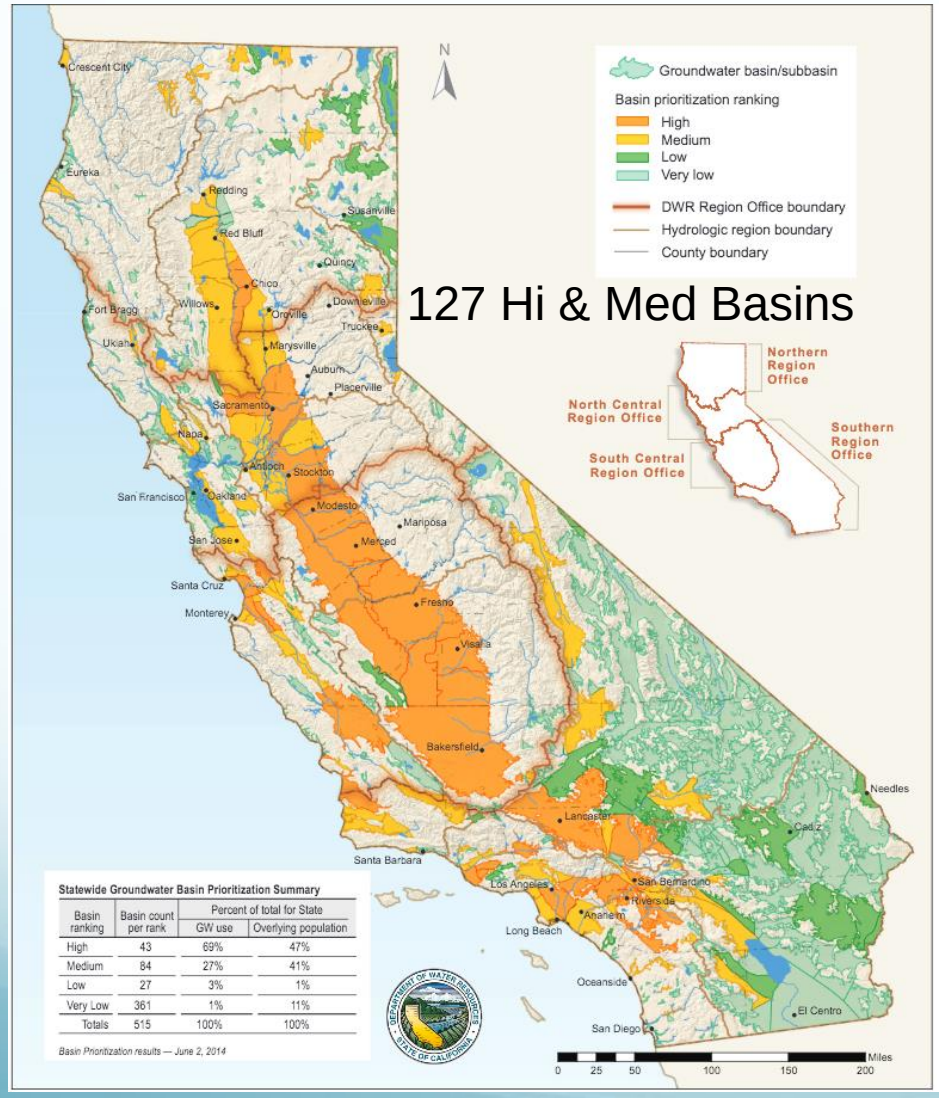
Sustainable Groundwater Management Act (SGMA)

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

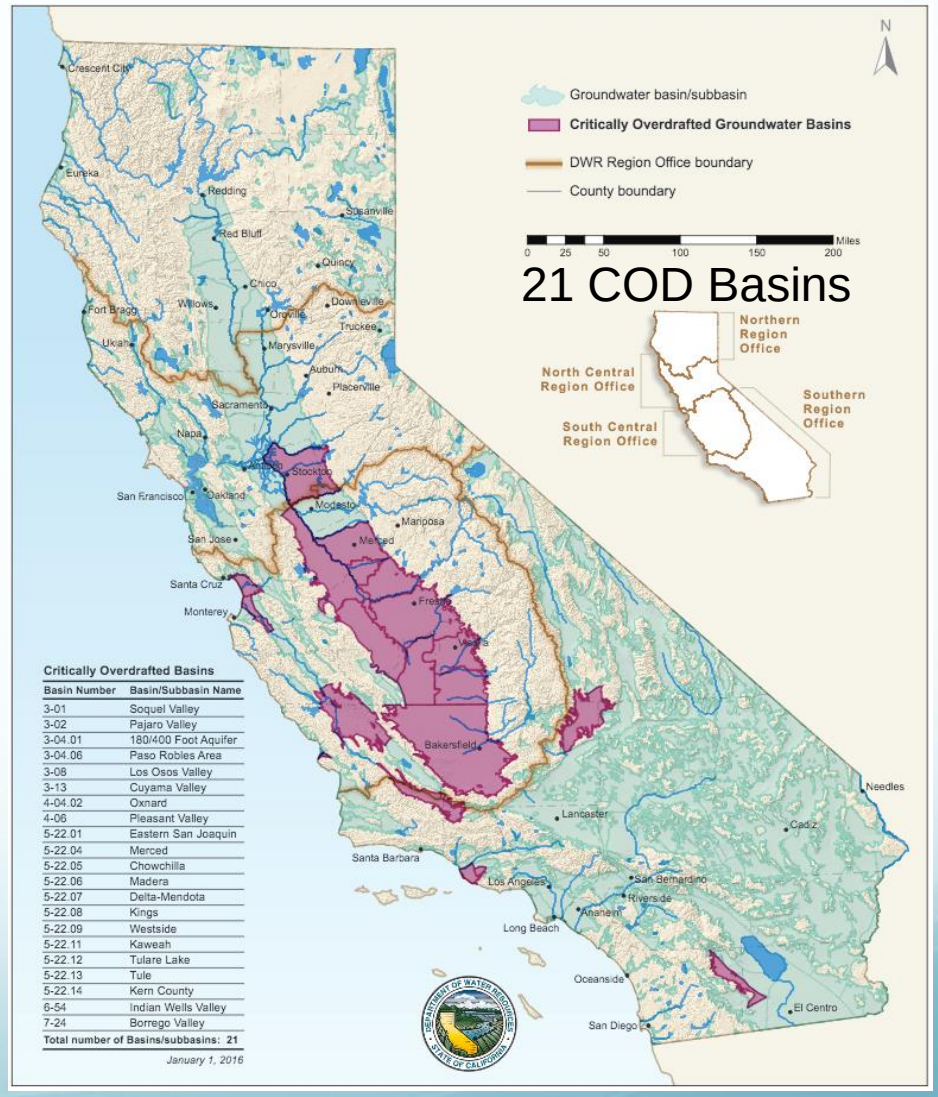
- Signed by Governor September 16, 2014
- Took effect January 1, 2015
- Recognizes preference for management by local agencies
  - Provides additional authorities to local management agencies
    - Conduct studies
    - Register & monitor wells
    - Set well spacing requirements
    - Require extraction 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 Basins



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

SGMA Steps to Groundwater Sustainability

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

** Critically overdrafted basins have two years less for GSP.

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
    - Over 2,000 local agencies have some sort of land use or water authority or responsibility
- Counties are the default GSA in "unmanaged" areas
  - State broken up into 58 counties
- Can be more than one GSA in basin

Domestic Wells and SGMA

- Referred to as “de minimis” users in SGMA
  - Use 2 acre-feet (2466 cubic meter) 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 (GSP)

- Groundwater Sustainability Agency (GSA) must develop a sustainability plan by 2020 or 2022
- California Department of Water Resources
  - Issues regulations for GSPs - will be law in June 2016
  - Reviews GSPs for completeness within two years of submittal to DWR

Groundwater Sustainability Plans

Groundwater Sustainability Agency (GSA) must develop a Groundwater Sustainability Plan by 2020 or 2022

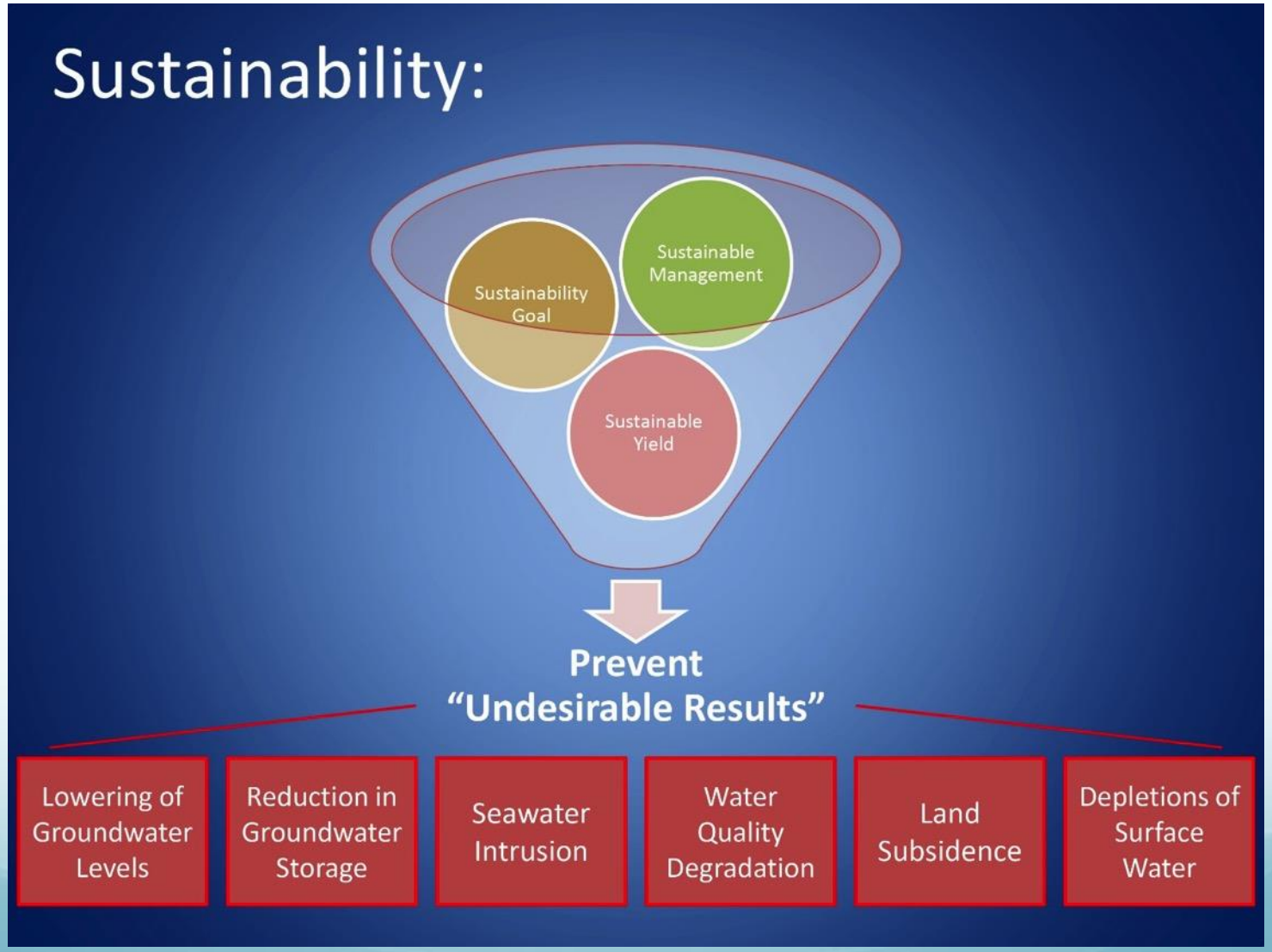
- Groundwater Sustainability Goal
- Water budget and sustainable yield
- 50 years historical hydrology
- 50-year future planning horizon with climate models
- Coordination with local land use planning
- Comprehensive monitoring and reporting program
- Data management system
- Stakeholder involvement program
- Projects and actions to meet sustainability goal
- Annual data submittal to State
- Periodic review and update of GSP

Groundwater Sustainability Plans

- ***Groundwater sustainability indicators*** vulnerable to significant of unreasonable undesirable results
  - Measurable objectives
  - Minimum thresholds
  - 5-year interim milestones
- ***Sustainability Indicators:***

1) *Groundwater levels*
2) *Groundwater storage*
3) *Groundwater quality*
4) *Land Subsidence*
5) *Seawater intrusion*
6) *Surface water depletion and degradation or loss of ecosystems from pumping*

Step 3: Achieve Sustainability in 20 Years



Graphic: California Department of Water Resources

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

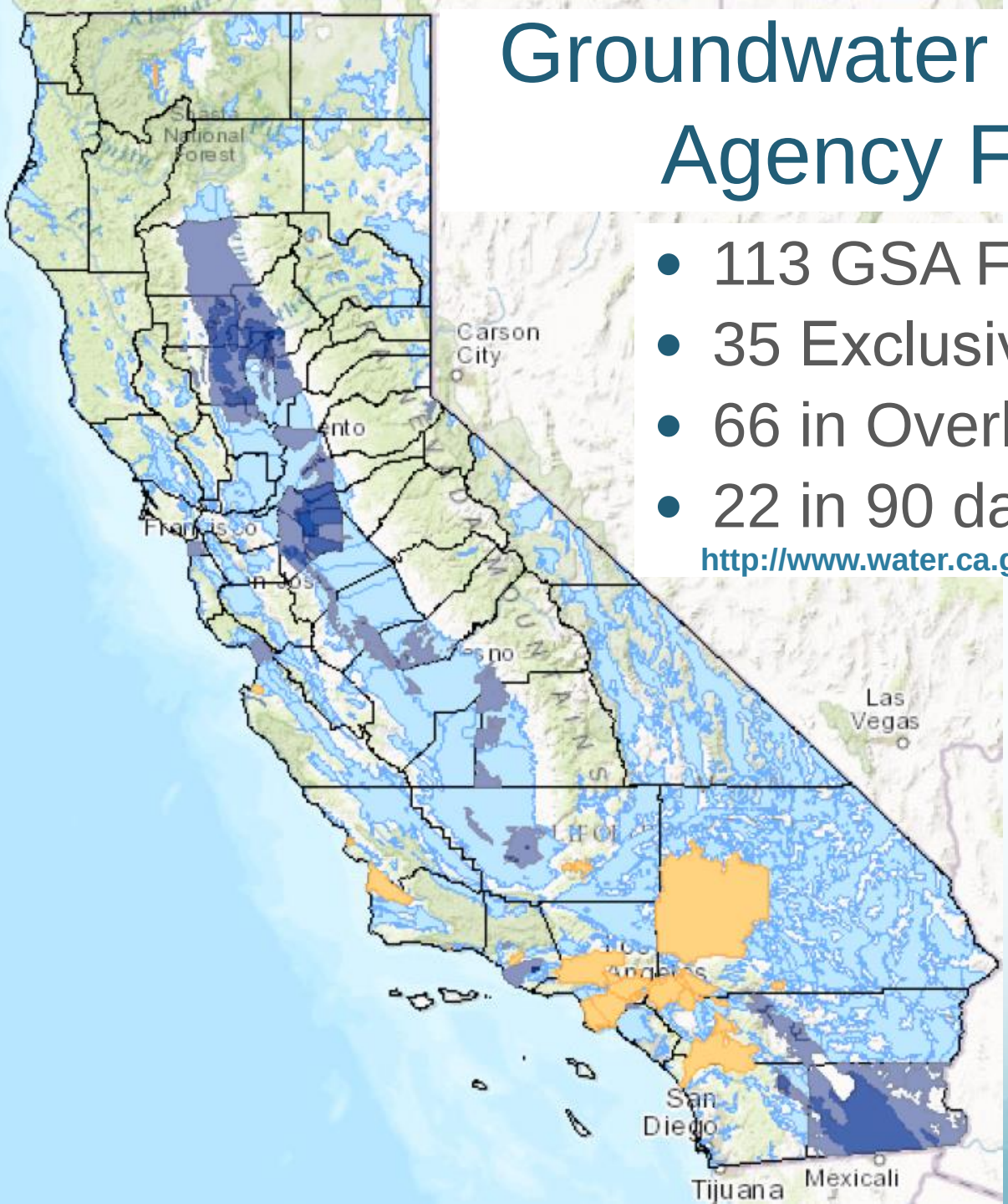
In all triggering events, intervention is the result of failure by locals to create a GSA or adopt and implement a GSP

State Board Can Act as a Basin Manager

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.

Groundwater Sustainability Agency Formation



- 113 GSA Filings
- 35 Exclusive GSA's formed
- 66 in Overlap Status
- 22 in 90 day waiting period

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

SGMA Work in Progress

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

Summary

- SGMA went into effect beginning of 2015
- Three steps:
  - Form Groundwater Sustainability Agencies to cover all high and medium priority basins and sub-basins
  - Develop Groundwater Sustainability Plans by 2020 or 2022 covering high and medium priority basins
  - Become Sustainably Managed by 2040 or 2042
- State will intervene if not accomplished by locals
- There is a lot of work to do in California, and a lot of adaptive management moving forward
- Recharge polices are in place and new technical approaches and policies are being developed to meet sustainability requirements in the future

References

- California Department of Water Resources, 2014. California Water Plan Update 2013. http://www.water.ca.gov/waterplan/cwpu2013/final/index.cfm
- California Department of Water Resources, 2014. Summary of Recent, Historical, and Estimated Potential Land Subsidence in California.http://www.water.ca.gov/groundwater/docs/Summary_of_Recent_Historical_Potential_Subsidence_in_CA_Final_with_Appendix.pdf
- California Department of Water Resources, 2015. Groundwater Sustainability Program Draft Strategic Plan.http://groundwater.ca.gov/docs/GW_Sustainability_Program_Draft_Strategic_Plan_March2015.pdf
- Faunt, C., et al, 17 November 2015. Water Availability and Land Subsidence in the Central Valley, Online Hydrogeology Journal. http://ca.water.usgs.gov/pubs/2015/FauntEtAl2015.pdf
- Sustainable Groundwater Management Act and supporting documents:
  http://www.water.ca.gov/groundwater/sgm/index.cfm
  http://www.water.ca.gov/groundwater/gwinfo/index.cfm
  http://www.water.ca.gov/cagroundwater/
  http://www.waterboards.ca.gov/water_issues/programs/gmp/index.shtml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QUESTIONS?
We Are Here