Background on Groundwater Recharge & Storage

Jeanine Jones, California Department of Water Resources

Terminology

- Groundwater Storage Projects
  - Large projects comparable in storage capacity to surface reservoirs
  - Recharge by spreading basins/ponds/river channels
  - Often incorporate conjunctive use or banking elements
- Flood-MAR
  - DWR flood-managed aquifer recharge studies
  - Post-SGMA, interest in exploring recharge opportunities on ag lands, wildlife refuges, flood bypasses, etc
- Aquifer Storage & Recovery (ASR)
  - Generally storage of treated drinking water
  - Recharge by injection wells
  - SWRCB waste discharge permit
- Stormwater Capture
  - Urban runoff
  - SWRCB Clean Water Act permit process
  - Turning a waste into a resource

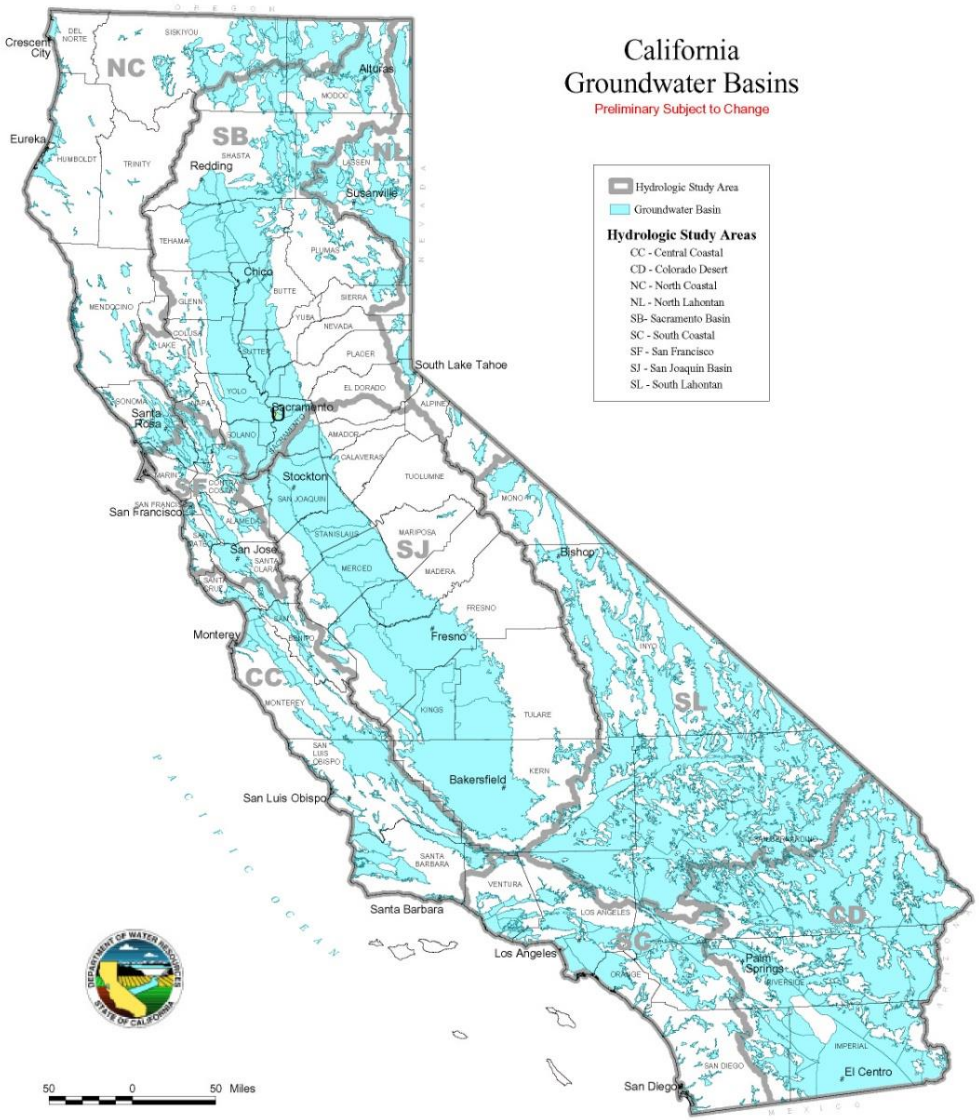
Urban Southern California

San Joaquin Valley
(projects comparable in size to Folsom Lake)

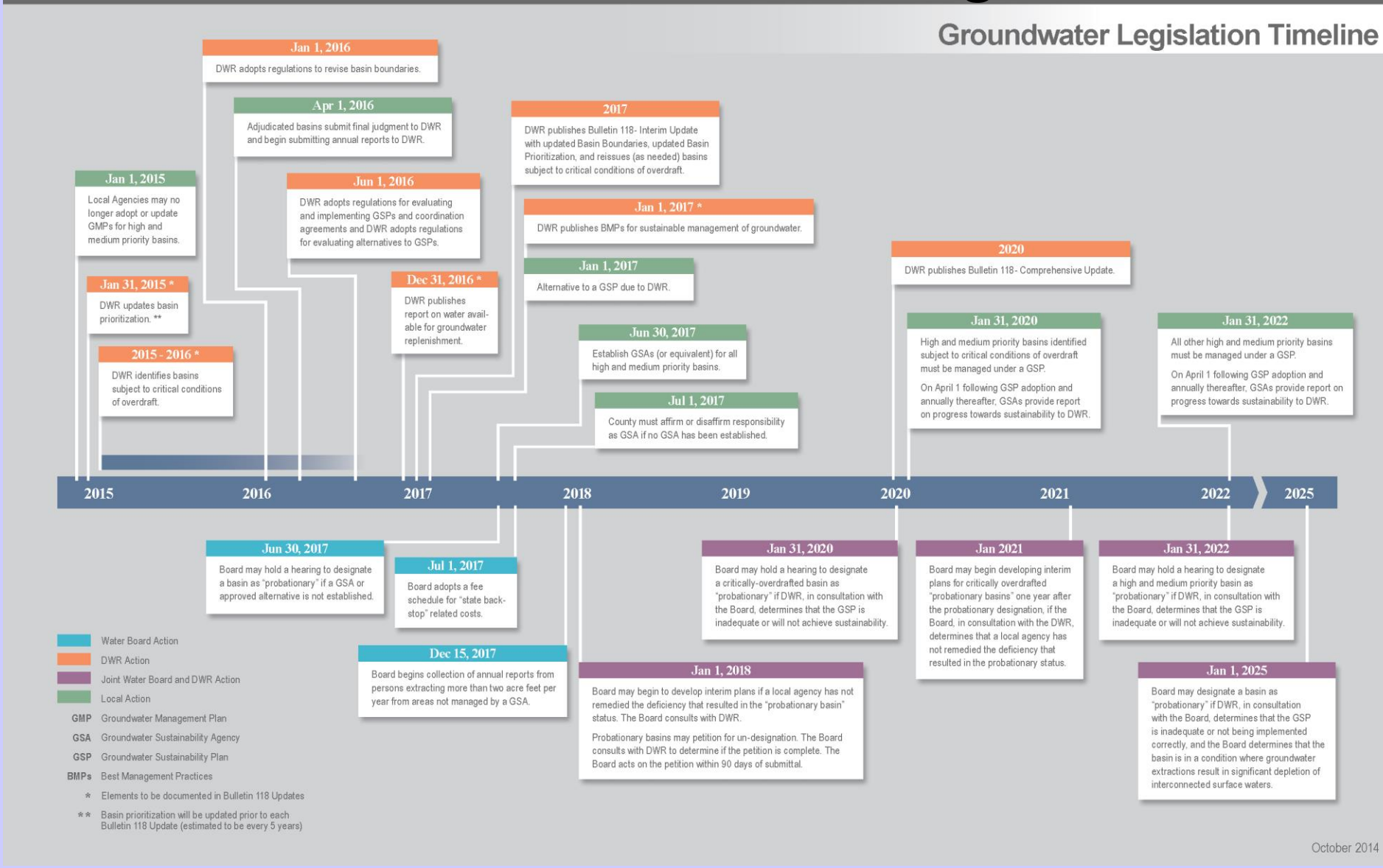
Elements of a Groundwater Storage Project

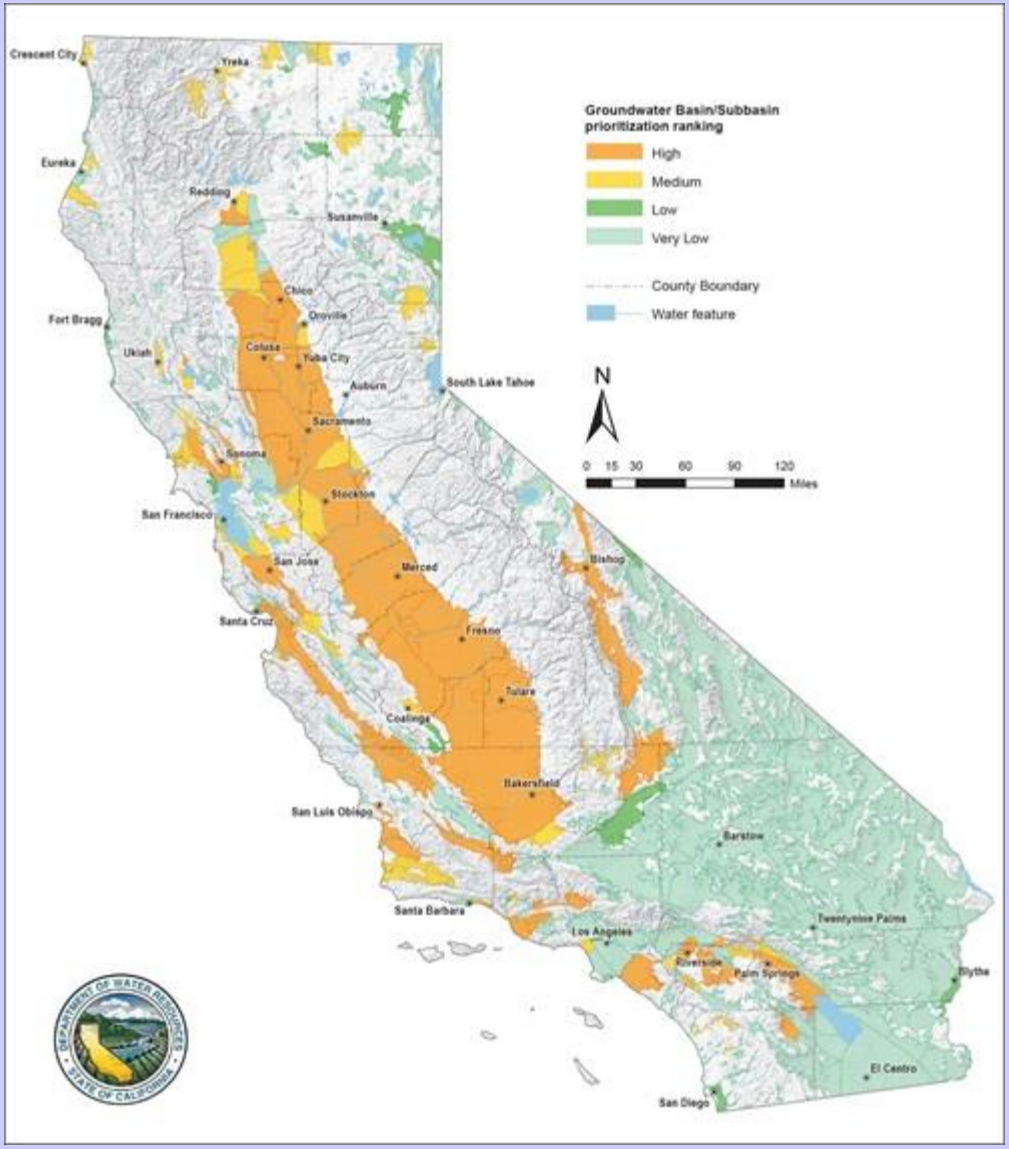
- Source of recharge water
- Conveyance
- Empty groundwater basin
- Recharge & extraction facilities
- Money


Major Rivers
State Projects
Federal Projects
Local Projects
Redding
Sacramento
San Francisco
Fresno
Los Angeles
San Diego


California
Groundwater Basins
Preliminary Subject to Change
Hydrologic Study Area
Groundwater Basin
Hydrologic Study Areas
CC - Central Coastal
CD - Colorado Desert
NC - North Coastal
NL - North Lahontan
SB- Sacramento Basin
SC - South Coastal
SF - San Francisco
SJ - San Joaquin Basin
SL - South Lahontan
NC
SB
NL
SF
SJ
SL
CC
SC
CD
Crescent City
Eureka
Redding
Alturas
Susanville
Chico
South Lake Tahoe
Sacramento
Santa Rosa
Stockton
San Francisco
San Jose
Monterey
Fresno
Bishop
Bakersfield
San Luis Obispo
Santa Barbara
Los Angeles
Palm Springs
El Centro
San Diego
50 0 50 Miles

Sustainable Groundwater Management Act




Groundwater Basin/Subbasin prioritization ranking
High
Medium
Low
Very Low
County Boundary
Water feature
N
0 15 30 60 90 120
Miles
Crescent City
Yreka
Eureka
Redding
Susanville
Chico
Oroville
Fort Bragg
Ukiah
Colusa
Yuba City
Auburn
South Lake Tahoe
Sacramento
Sonoma
Stockton
San Francisco
San Jose
Merced
Bishop
Santa Cruz
Fresno
Tulare
Coalinga
Bakersfield
San Luis Obispo
Barstow
Santa Barbara
Los Angeles
Twentynine Palms
Riverside
Palm Springs
Blythe
El Centro
San Diego
DEPARTMENT OF WATER RESOURCES
STATE OF CALIFORNIA

Groundwater Basins Subject to Critical Conditions of Overdraft

Basin/Subbasin Number*	Basin/Subbasin Name
3-001	Santa Cruz Mid-County
3-002.01	Pajaro Valley
3-004.01	180/400-Foot Aquifer
3-004.06	Paso Robles Area
3-008	Los Osos Valley
3-013	Cuyama Valley
4-004.02	Oxnard
4-006	Pleasant Valley
5-022.01	Eastern San Joaquin
5-022.04	Merced
5-022.05	Chowchilla
5-022.06	Madera
5-022.07	Delta-Mendota
5-022.08	Kings
5-022.09	Westside
5-022.11	Kaweah
5-022.12	Tulare Lake
5-022.13	Tule
5-022.14	Kern County
6-054	Indian Wells Valley
7-024.01	Borrego Springs

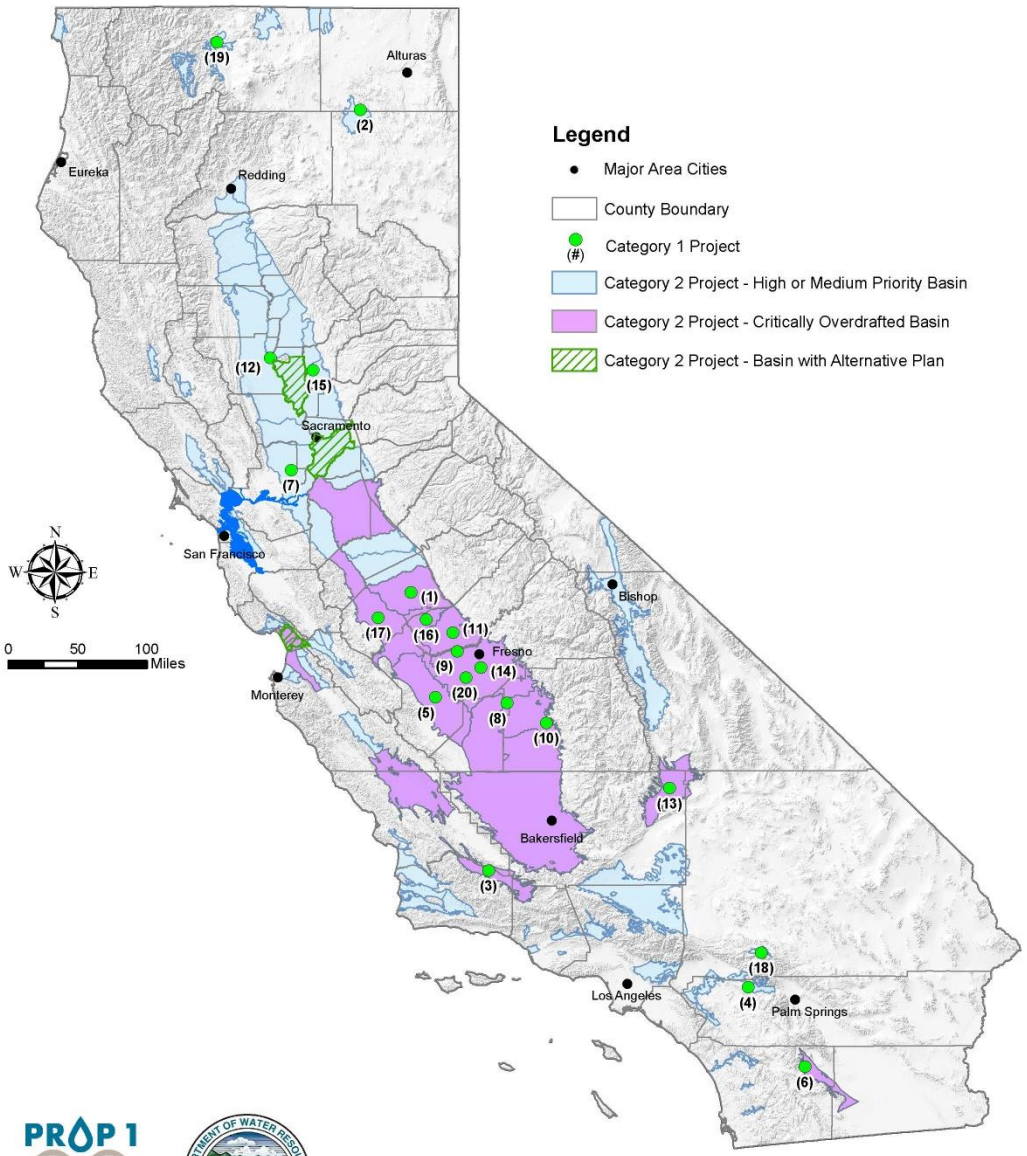
Map created from B-118 basin boundary data – updated by DWR on October 18, 2016.
The list of basins with critical conditions of overdraft was finalized in 2016, after the revisions to the B-118 basin boundaries were finalized.

Prepared by California Department of Water Resources for *Bulletin 118, Interim Update 2016*.

Final Awards

2017 Groundwater Sustainability Plans and Projects Solicitation

April 2018



Legend

- Major Area Cities
- County Boundary
- (#) Category 1 Project
- Category 2 Project - High or Medium Priority Basin
- Category 2 Project - Critically Overdrafted Basin
- Category 2 Project - Basin with Alternative Plan

PROP 1 WATER BOND 2014

DEPARTMENT OF WATER RESOURCES · STATE OF CALIFORNIA ·

Note:
Groundwater basin boundaries are approximate.
Data source: DWR's CASGEM Groundwater Basin Prioritization data layer as shown in:
https://gis.water.ca.gov/app/boundaries/

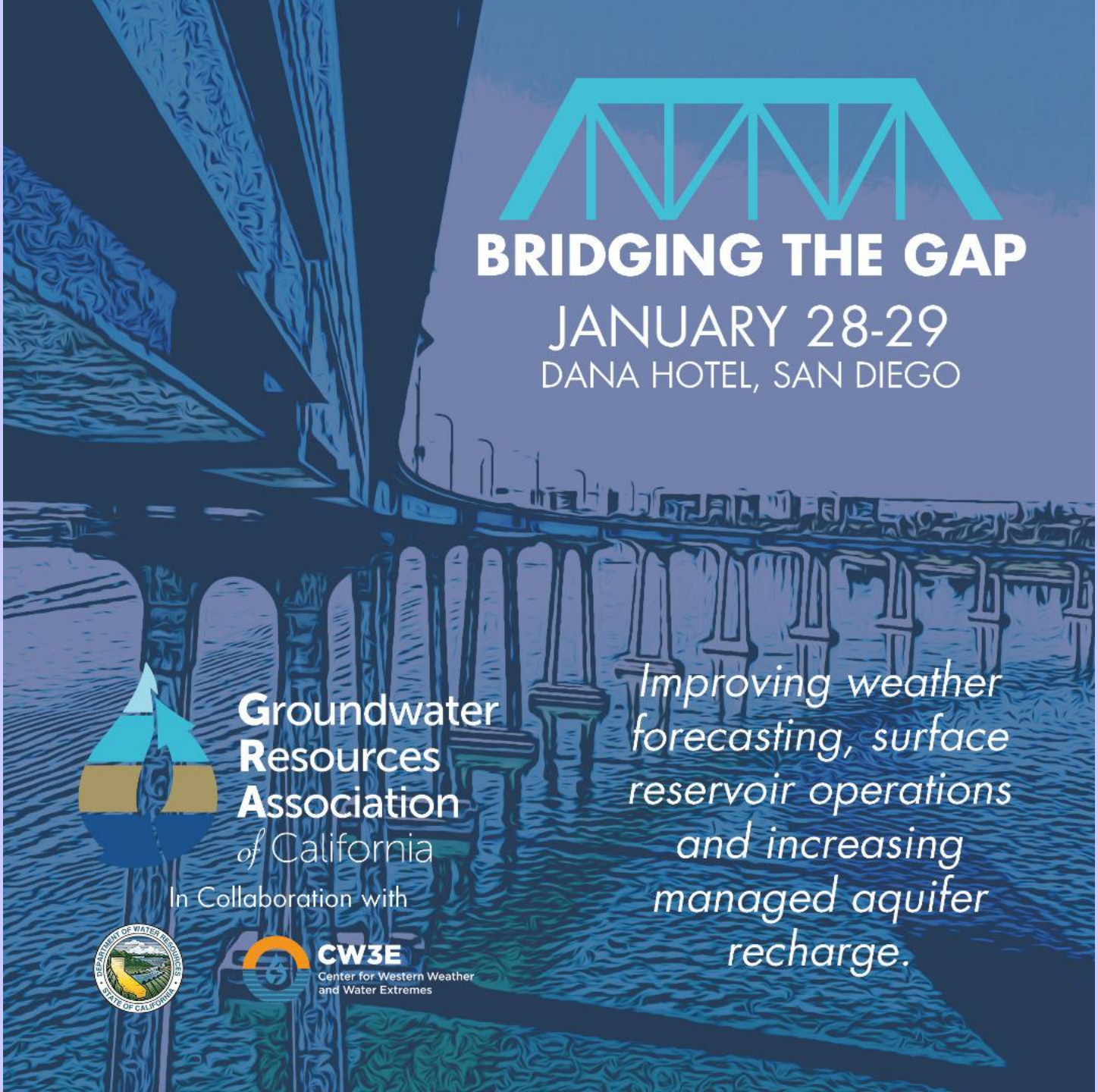
Y:\FABranch\GIS_2015\Projects\Prop1_SGWP_R2\Prop1_SGWP_R2_Applicant_rev-08.mxd | 02/05/2018

Executive Order B-39-17

- To increase available capacity in river and flood control channels statewide and to utilize anticipated high water flows to recharge local groundwater while minimizing flooding risks, the State Water Resources Control Board and California Regional Water Quality Control Boards shall prioritize temporary water rights permits, water quality certifications, waste discharge requirements, and conditional waivers of waste discharge requirements to accelerate approvals for projects throughout the state that the enhance the ability of a local or state agency to capture high runoff events for local storage or recharge, consistent with water rights priorities and protections for fish and wildlife.

Many Studies of Recharge on Ag Lands Underway

The Almond Board is investing in field research and partnerships to determine the feasibility of using almond acreage as locations for groundwater recharge when excess water is available from winter flood releases.


BRIDGING THE GAP
JANUARY 28-29
DANA HOTEL, SAN DIEGO
Groundwater
Resources
Association
of California
In Collaboration with
CW3E
Center for Western Weather
and Water Extremes
Improving weather forecasting, surface reservoir operations and increasing managed aquifer recharge.