

Santa Ana River Watershed Conference

21st Century Water Strategy:

*Working Together to Make
a Finite Resource Infinite*

May 25, 2017 • Ontario Convention Center



WATER EDUCATION
FOUNDATION

SAWPA
Celeste Cantú
General Manager
May 25, 2017

New Santa Ana watershed agency to study river pollution problem

1968

By DON MACPHERSON
Daily Enterprise Staff Writer
The newly created Santa Ana Watershed Planning Agency yesterday voted to move as rapidly as possible to apply for a federal grant to study pollution problems of the Santa Ana River.

At its first meeting — held in Riverside for formal organization — the three-county agency agreed to invite officials of the Federal Water Pollution Control Administration (FWPCA) to meet later this month in Santa Ana to help prepare the grant application.

THE AGENCY HOPES to be the first in California to make a study of water quality problems of an entire river from the mountains to the sea. It will ask William Schroeder of San Francisco, FWPCA chief for California, and one of his assistants, Richard O'Connell, project director, Alameda, to come to the Santa Ana session.

Answering fears expressed in Riverside, San Bernardino and Orange Counties, O'Connell is reported to have assured agency members they can take the initiative "and establish a program before the federal agency moves in and does it for us."

There has been widespread criticism of the newly created FWPCA in California over federal "dictation" of water quality for the Colorado River and for the Sacramento-San Joaquin Delta.

THE NEW AGENCY is the creation of Western Municipal Water District of Riverside County, San Bernardino Valley and Chino Basin Municipal Water Districts in San Bernardino County and the Orange County Water District.

The plan was proposed by Western. After nine months of negotiations, the agency decided to organize under a joint powers agreement which was reached a couple of months ago and final action taken by the last of the four last month.

In honor of Western's leadership the agency elected Western's manager, Howard Hicks, president. Don Owen, district engineer and assistant manager of the Orange County Water District, was elected vice president.

The meeting place will be rotated clockwise among the four agencies with the February and March meetings to be held in Cucamonga and San Bernardino and the April meeting in Riverside again.

Two of the four member agencies made it clear their respective boards of directors don't want the new joint agency to become involved in legal tangles.

BEAVER SAID San Bernardino Valley "doesn't want to get the work (of the agency) diluted with legal pan-der."

Owen said the engineers of the four Santa Ana watershed agencies are pretty well agreed (in contrast to the lawyers) on the physical data on the river.

"We're dealing with physical and factual conditions and there is no need for legal discussions," said Beaver.

"The agency shouldn't become a forum for legal debate."

OWEN CAUTIONED: "It's up to us four (the four men, one from each member agency, who constitute the board). Any one of us could get it into the legal field."

Beaver then declared the "physical facts" which he had mentioned "are going to get worse the longer we delay."

Owen called the new attempt at cooperation among elements along the river which already are involved in more than one lawsuit over the water in it "an experiment in regional government."

"We are dealing in the future," Owen said, "Not in the past, as in the lawsuit."

THE SUIT HE MENTIONED is Tuesday, January 9, 1968

Daily Enterprise

the huge one, filed several years ago but still a long way from trial, by which his district seeks to limit the use of Santa Ana water by 2,550 users in Riverside and San Bernardino Counties.

Beaver described the new approach as a "cookbook operation — too many stews are made without a recipe."

To which Owen responded: "What you are trying to say is that too many cooks don't spoil the broth if a recipe is followed."

THE FOURTH MEMBER of the board is Richard R. Hall, manager of Chino Basin.

One reason for formation of the district — according to observers not directly involved — is to question whether Riverside County's plan for a \$26 million industrial waste sewer to the sea is justified.

Just last week a consulting engineering firm told the San Bernardino district it is economically impractical for the San Bernardino area to join because it does not have enough land available there for heavy industry to justify the high cost of the line.

ORANGE COUNTY already has such a sewer. Chino Basin is building one to connect with a Los Angeles County line at Pomona.

Although water quality is to be the first concern of the new agency its backers hope it may eventually lead to a management plan for the entire Santa Ana.

Such a plan presumably would involve supplementing the admittedly inadequate amount of water in the river with Northern California water — of relatively high quality — brought in through the California Aqueduct.

Formed in 1967

First meeting Jan 1968

To study water quality on a watershed scale

Later moved to comprehensive watershed management







IEUA MISSION STATEMENT

Inland Empire Utilities Agency is committed to providing essential services in a regionally competitive, cost-effective, health, promoting economic development and environmental protection.

Areas of service:
- Acquiring, storing and supplying imported water
- Producing high-quality renewable water
- Recycling water, composting

RECYCLED WATER

IEUA's five wastewater treatment plants produce 100 million gallons of recycled water annually that is beneficially used for irrigation, industrial processes and other purposes.

RENEWABLE ENERGY

IEUA's energy portfolio, which includes solar, wind, hydro, and biomass, produces 2.8 MW of renewable energy. The agency also has 3.5 MW of solar panels on its buildings, 100 kW of solar panels on its fleet, and the world's largest solar water heating facility.

QUALITY

IEUA is committed to providing high-quality water and wastewater services to the Inland Empire. The agency's water quality is consistently excellent, and its wastewater treatment plants are among the most advanced in the world. IEUA's commitment to quality is reflected in its ISO 9001 certification and its ISO 14001 certification.

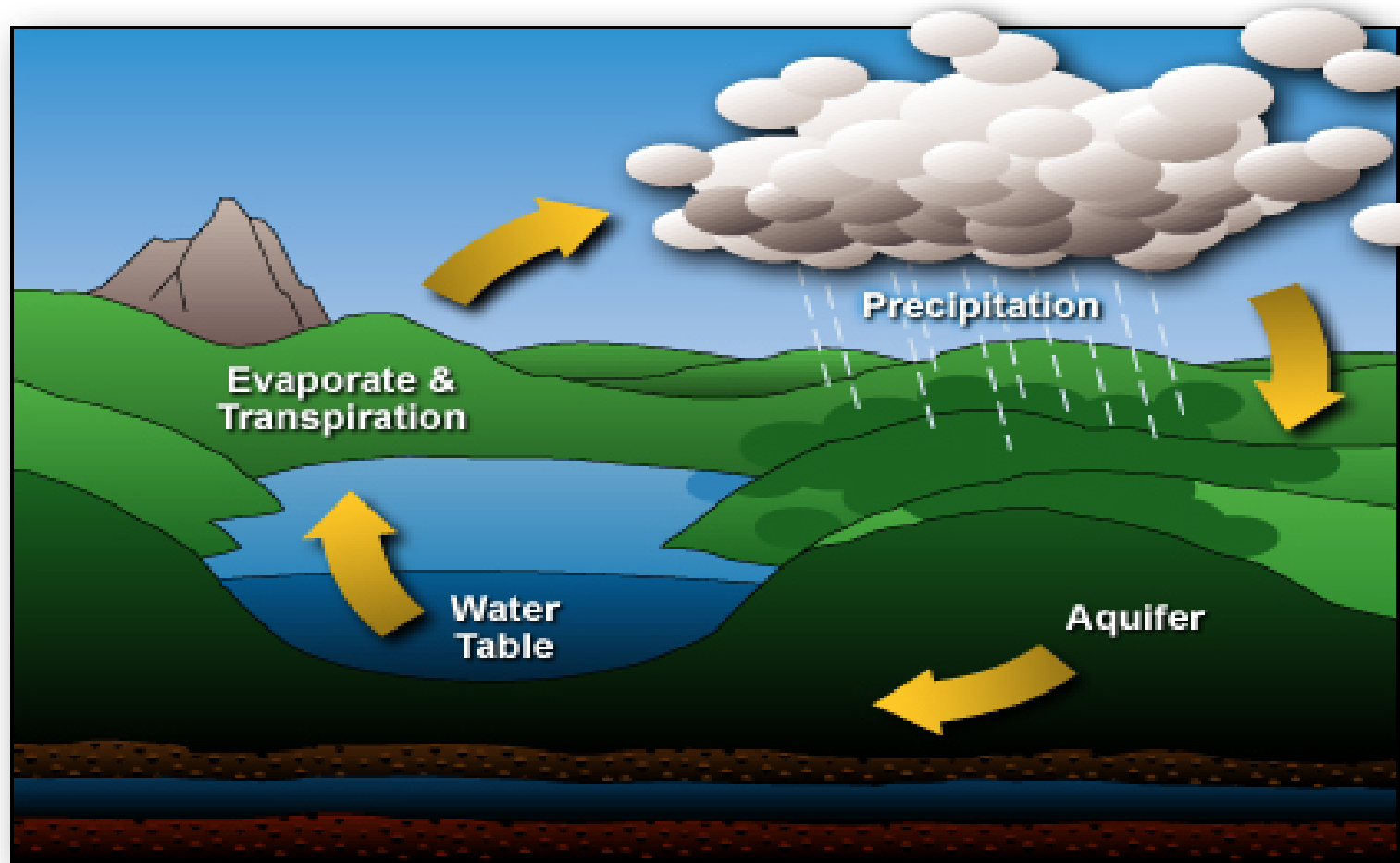
19th Century California Water Management



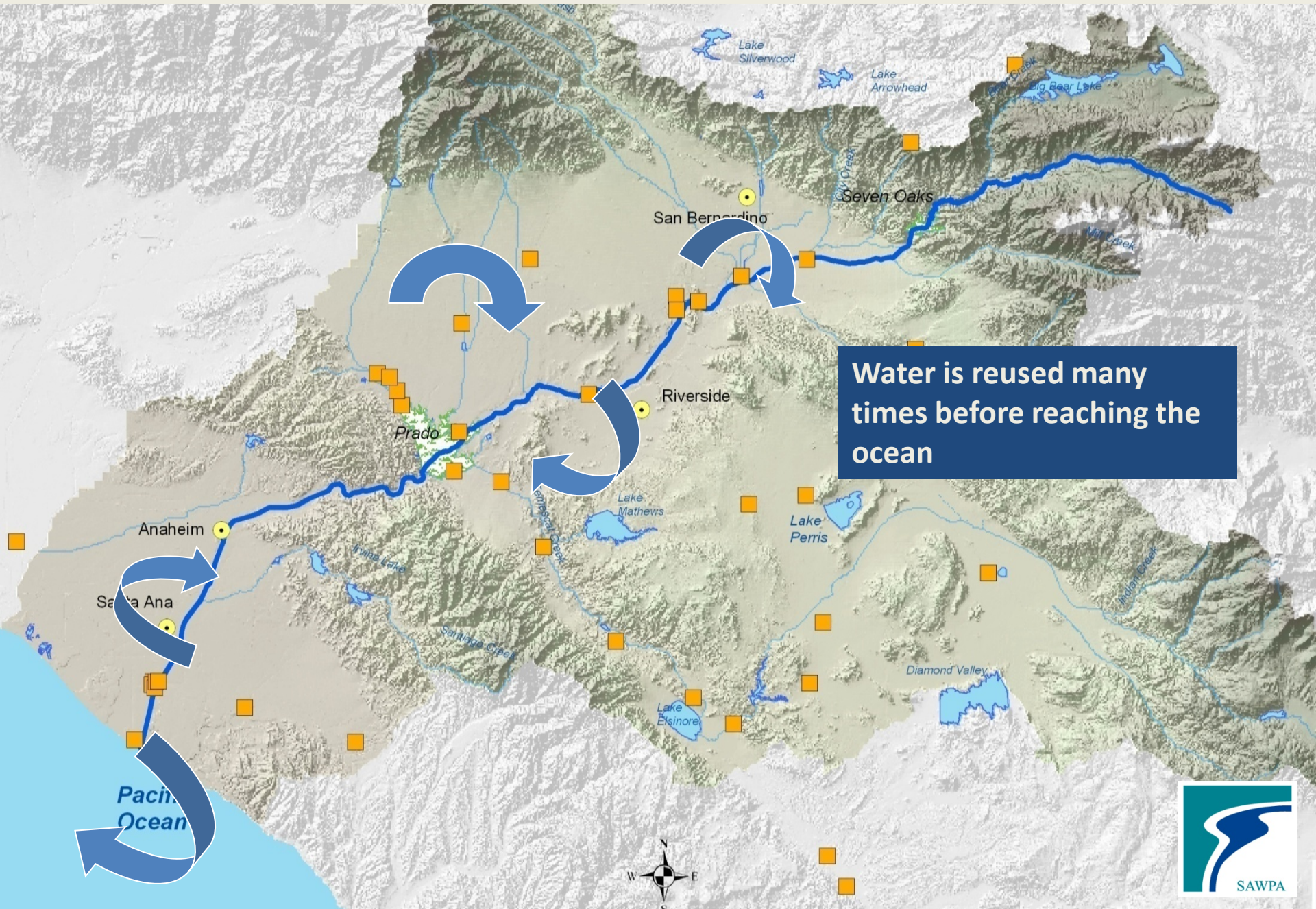
20th Century California Water: Conveyance Projects



The Hydrologic Cycle



21st Century Water Management Strategy



Water is reused many times before reaching the ocean

First OWOW Meeting April 2007



Santa Ana River Watershed's Six Horsemen of the Apocalypse



Fiscal
Crisis

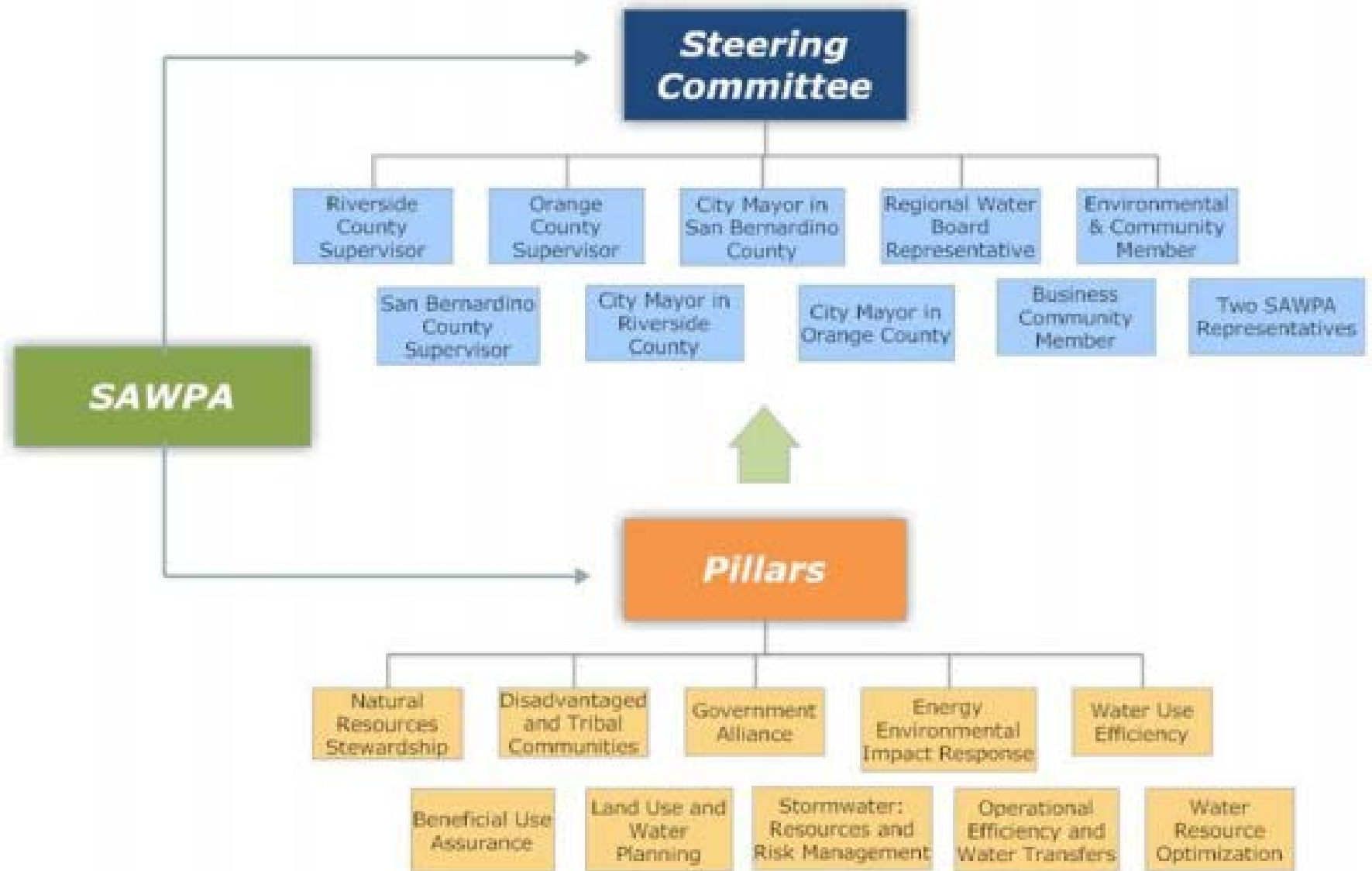
Colorado
River

Climate
Change

Sacramento
Delta

Energy
Urban
Hardscaping

OWOW Governance





The Watershed approach

1

- The Watershed is a hydrologic whole

2

- Working in concert with nature is cost effective

3

- See each problem as interrelated, seek efficiencies and synergies



Create A New

1

- OWOW is a shared Vision for the Watershed

2

- Breakthrough innovations

3

- Create a Water Ethic



Collaborate Across Boundaries

1

- As citizens of the Watershed, create synergies

2

- No ONE can do it alone

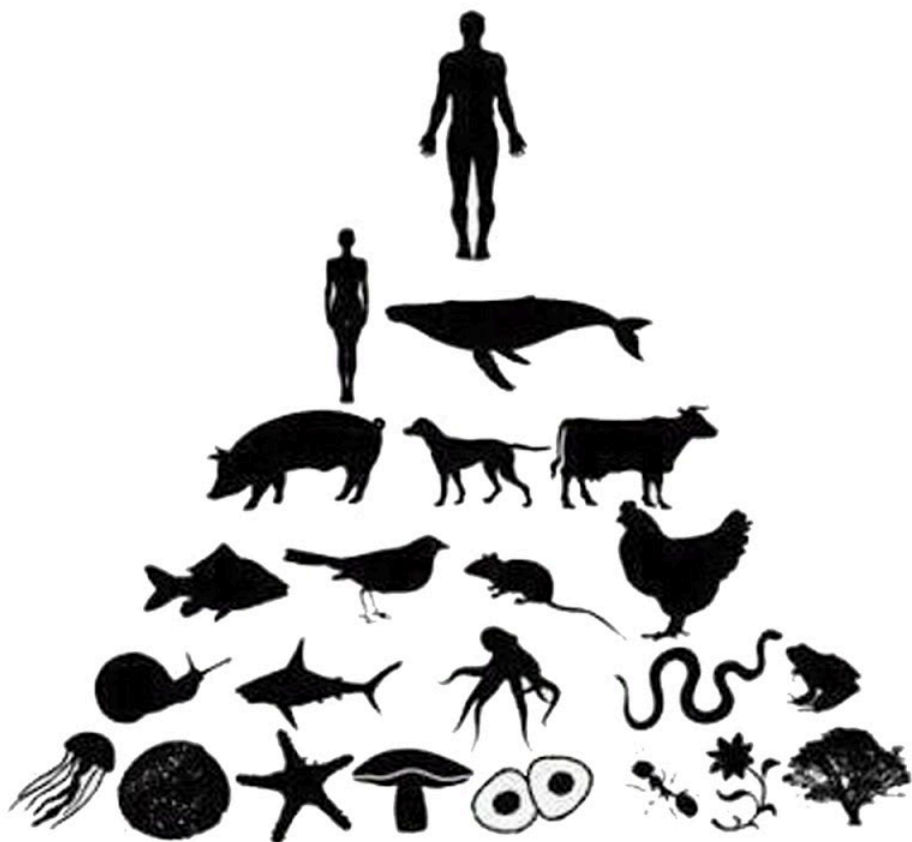
3

- **Think Big!**

Watershed Level Thinking



EGO



ECO



Collaboration
is not about gluing together
existing egos. It's about the
ideas that never existed until
after everyone entered the room.

@Daily.Dose



Meet Conflict and
make him your
friend.



Hard Path & Soft Path





Lake Oroville

June 2005: 897.12 Feet Elevation - 3,492,262 Acre Feet

Lake Oroville Jan 2015







Improving Coordination Water Management & Land Use Planning



1/4
wy 1 1/2

91
Riverside

EXIT 50
Main Street
1/2 MILE

Grand Blvd
↗



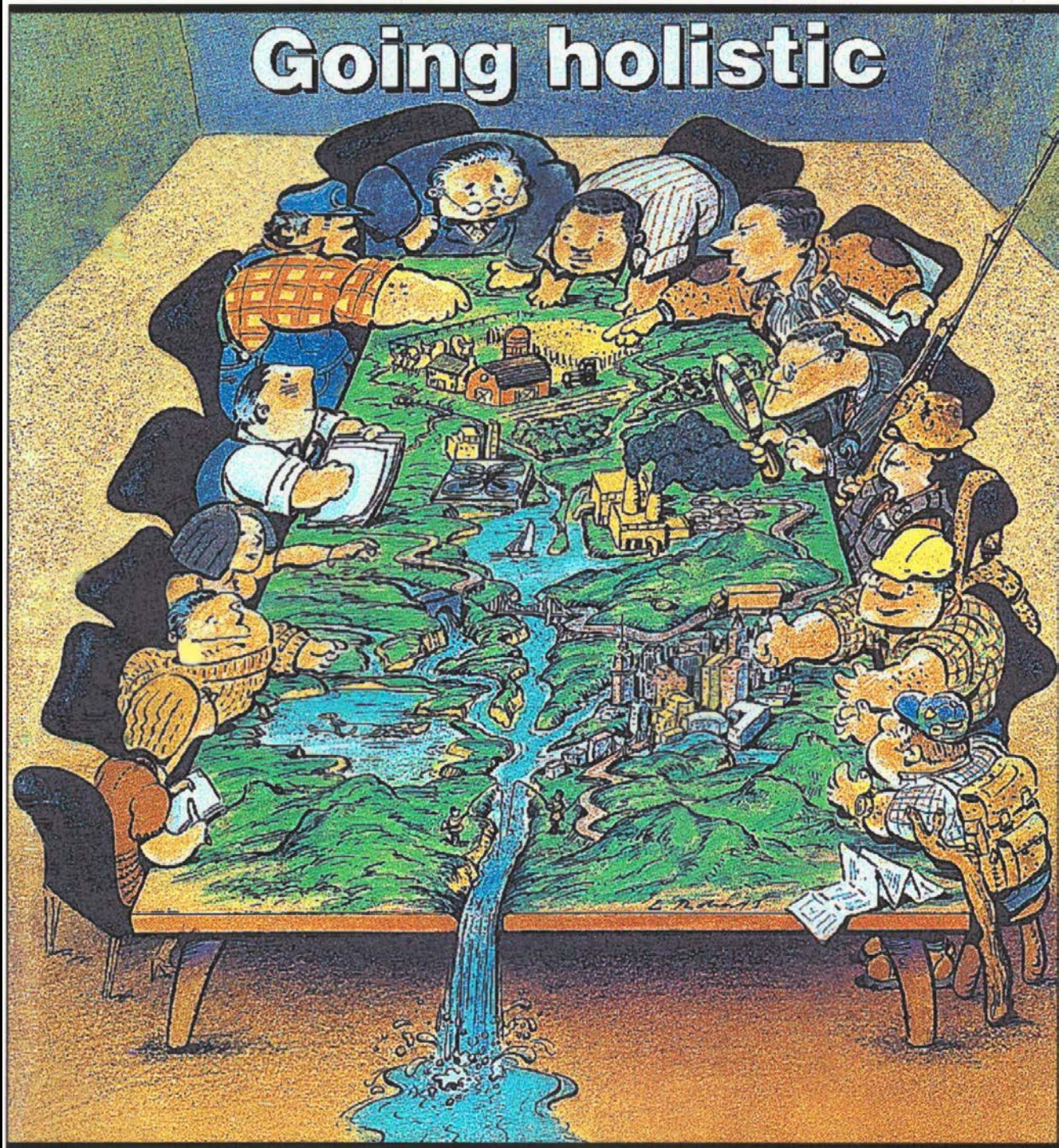
H

SPEED
EXIT
49B
↗

ONE
Plumbing, Heating &
Air, Inc.
dialonesomahine.com
33058

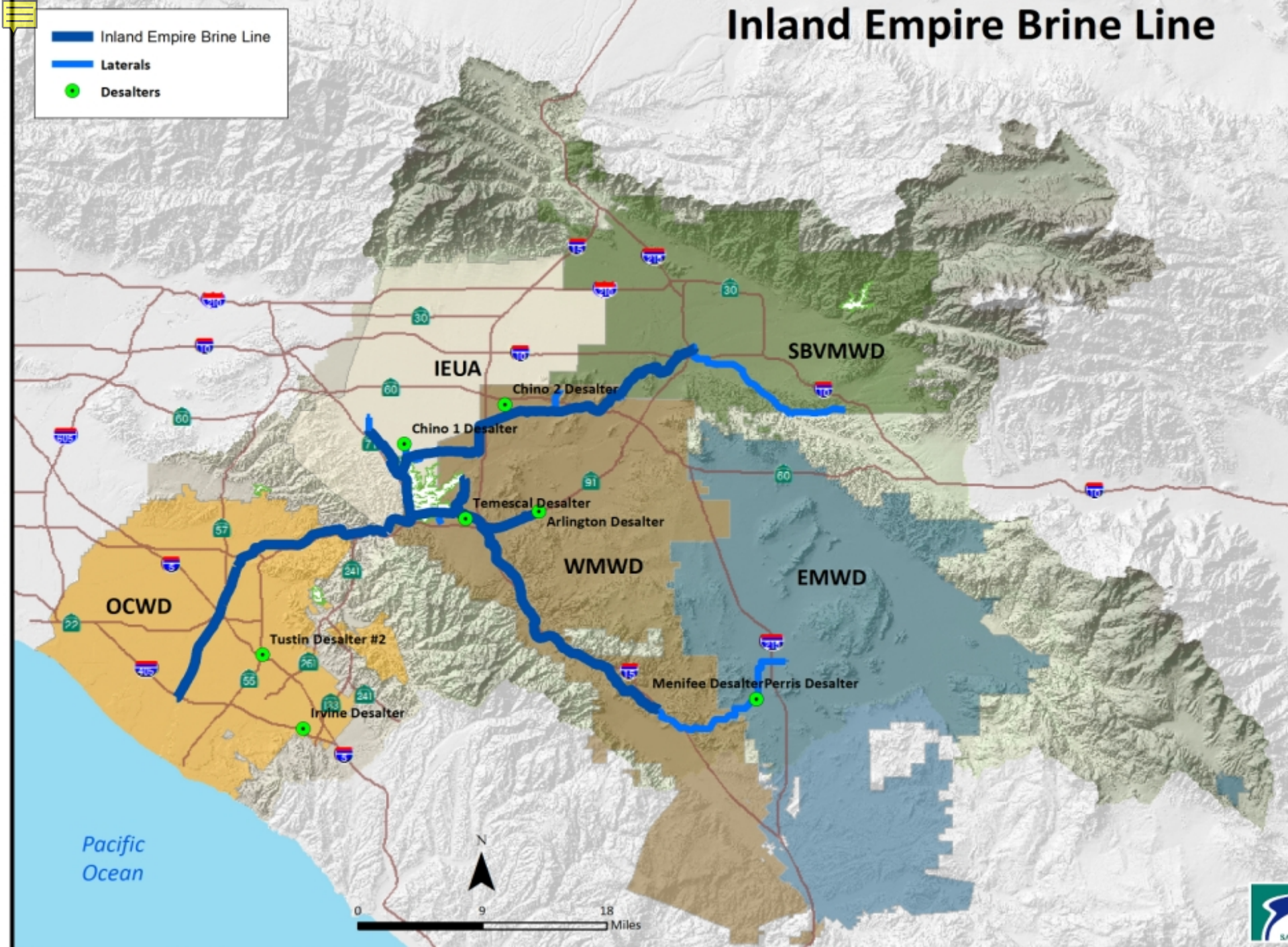
Going holistic

Water
must be at
the table



Inland Empire Brine Line

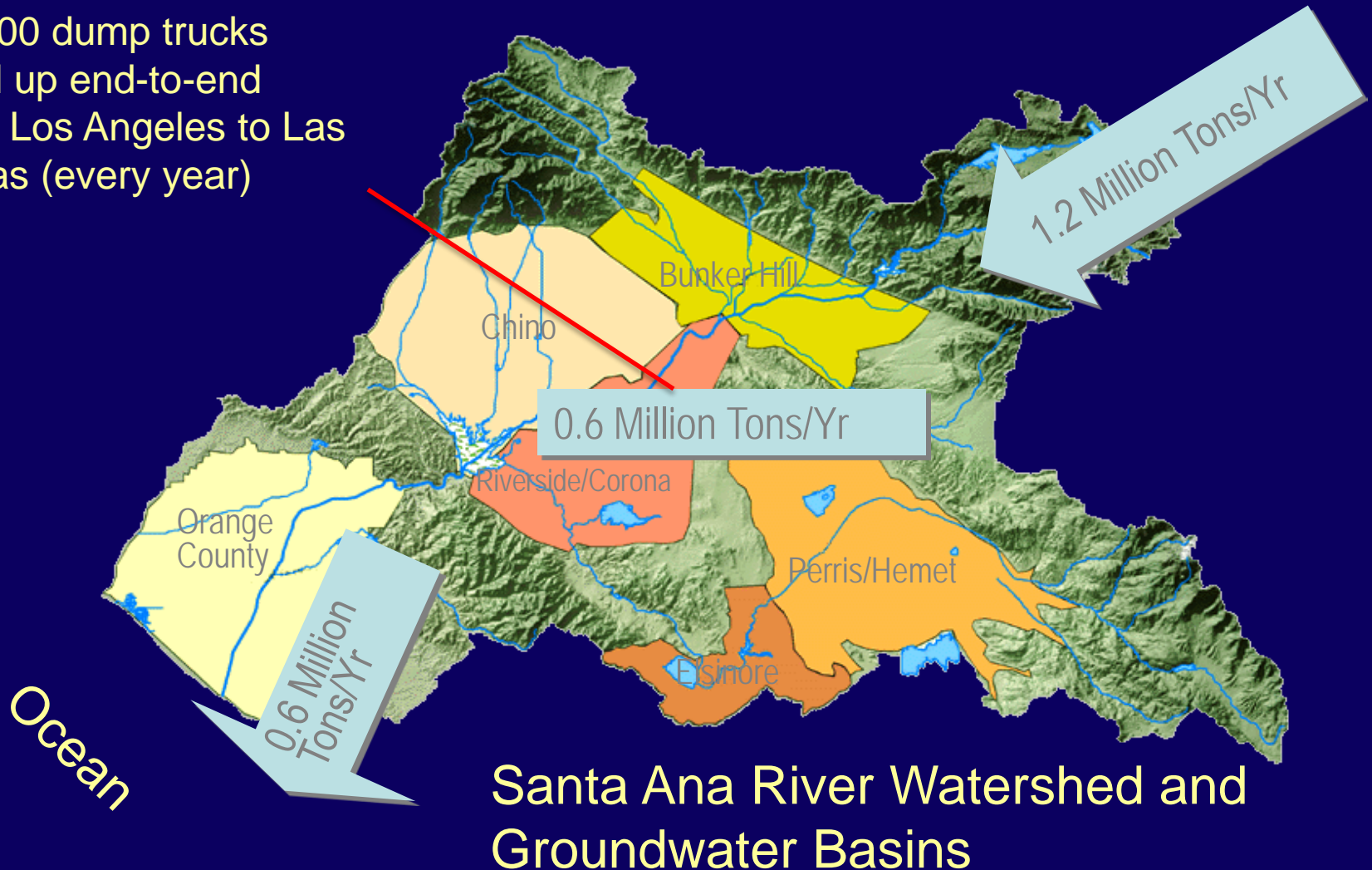
- Inland Empire Brine Line
- Laterals
- Desalters



Salt Accumulation



37,000 dump trucks lined up end-to-end from Los Angeles to Las Vegas (every year)



Santa Ana River Watershed and Groundwater Basins



Brine Line Pretreatment TEAM






SARI MAINLINE RELOCATION
1500mm Sewer Pipe
October 11, 2017 Groundbreaking



High Visibility Turf Removal and Replacement





Living Desert
The Living Desert

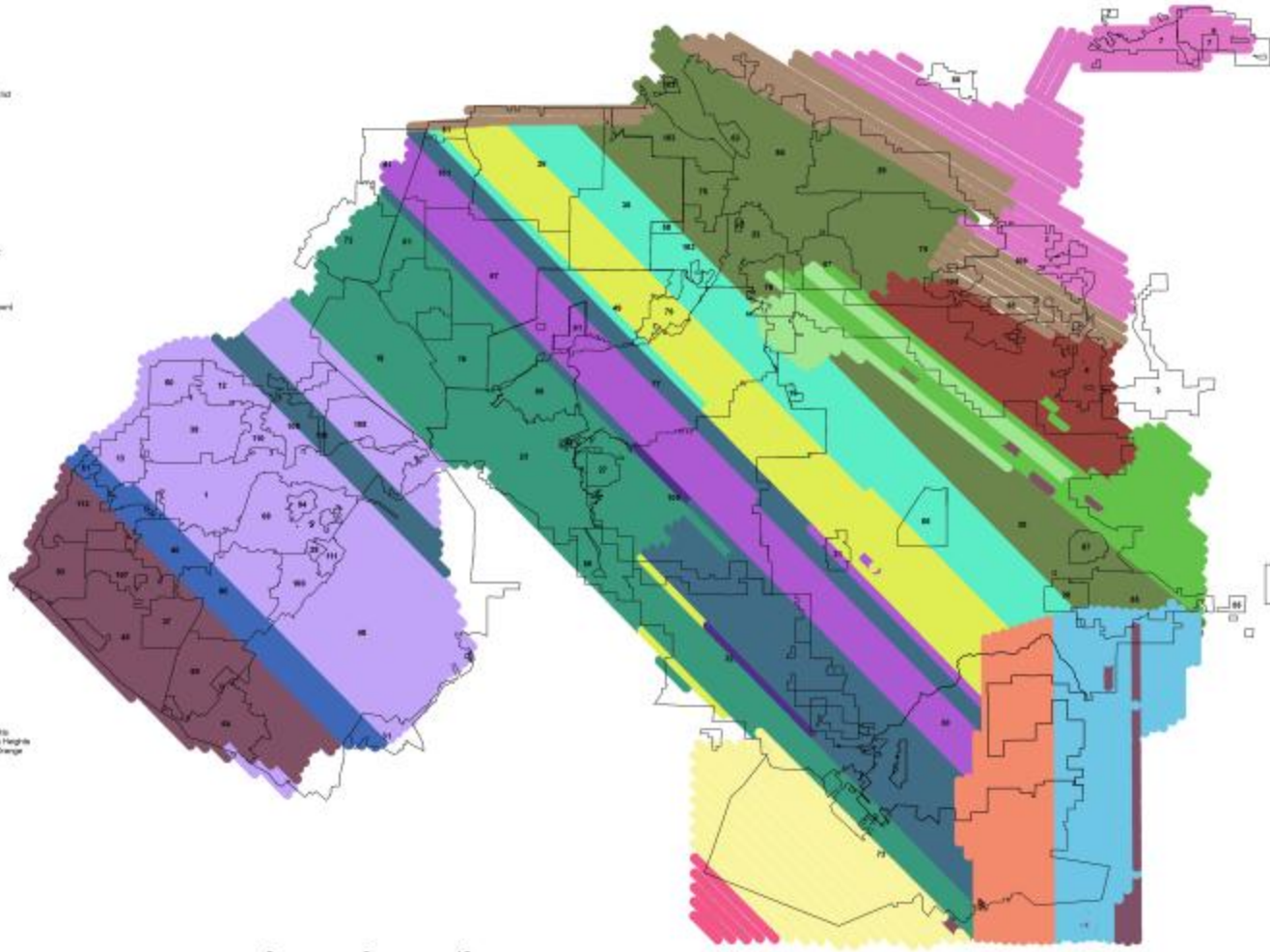




SAWPA



- AgencyID AgencyName
- 1 Anaheim City
- 2 Banning City
- 3 Beaumont Cherry Valley Water District
- 4 Big Bear City Community Services District
- 5 Big Bear Lake City
- 6 Box Springs Mutual Water Company
- 7 Brea City
- 8 Buena Park City
- 9 Chino Hills City
- 10 Chino City
- 11 Claremont City Water Department
- 12 Perris City Water Department
- 13 Colton City
- 14 Colton City
- 15 Cucamonga Valley Water District
- 16 Eagle Valley Mutual Water Company
- 17 East Orange County Water District
- 18 East Valley Water District
- 19 Eastern Municipal Water District
- 20 El Toro Water District
- 21 Diamond Valley Municipal Water District
- 22 Foothill Water District
- 23 Fontana Water Company
- 24 Fontana City
- 25 Garden Grove City
- 26 Golden State Water Company - Claremont
- 27 Golden State Water Company - Claremont
- 28 Huntington Beach City
- 29 Imperial Municipal Water District
- 30 Irvine Ranch Water District
- 31 Janss Community Services District
- 32 La Habra City
- 33 La Habra City
- 34 La Palma City
- 35 Lake Arrowhead Water District
- 36 Lake Arrowhead Water District
- 37 Lake Arrowhead Water District
- 38 Lake Arrowhead Water District
- 39 Lake Arrowhead Water District
- 40 Lake Arrowhead Water District
- 41 Lake Arrowhead Water District
- 42 Lake Arrowhead Water District
- 43 Lake Arrowhead Water District
- 44 Lake Arrowhead Water District
- 45 Lake Arrowhead Water District
- 46 Lake Arrowhead Water District
- 47 Lake Arrowhead Water District
- 48 Lake Arrowhead Water District
- 49 Lake Arrowhead Water District
- 50 Lake Arrowhead Water District
- 51 Lake Arrowhead Water District
- 52 Lake Arrowhead Water District
- 53 Lake Arrowhead Water District
- 54 Lake Arrowhead Water District
- 55 Lake Arrowhead Water District
- 56 Lake Arrowhead Water District
- 57 Lake Arrowhead Water District
- 58 Lake Arrowhead Water District
- 59 Lake Arrowhead Water District
- 60 Lake Arrowhead Water District
- 61 Lake Arrowhead Water District
- 62 Lake Arrowhead Water District
- 63 Lake Arrowhead Water District
- 64 Lake Arrowhead Water District
- 65 Lake Arrowhead Water District
- 66 Lake Arrowhead Water District
- 67 Lake Arrowhead Water District
- 68 Lake Arrowhead Water District
- 69 Lake Arrowhead Water District
- 70 Lake Arrowhead Water District
- 71 Lake Arrowhead Water District
- 72 Lake Arrowhead Water District
- 73 Lake Arrowhead Water District
- 74 Lake Arrowhead Water District
- 75 Lake Arrowhead Water District
- 76 Lake Arrowhead Water District
- 77 Lake Arrowhead Water District
- 78 Lake Arrowhead Water District
- 79 Lake Arrowhead Water District
- 80 Lake Arrowhead Water District
- 81 Lake Arrowhead Water District
- 82 Lake Arrowhead Water District
- 83 Lake Arrowhead Water District
- 84 Lake Arrowhead Water District
- 85 Lake Arrowhead Water District
- 86 Lake Arrowhead Water District
- 87 Lake Arrowhead Water District
- 88 Lake Arrowhead Water District
- 89 Lake Arrowhead Water District
- 90 Lake Arrowhead Water District
- 91 Lake Arrowhead Water District
- 92 Lake Arrowhead Water District
- 93 Lake Arrowhead Water District
- 94 Lake Arrowhead Water District
- 95 Lake Arrowhead Water District
- 96 Lake Arrowhead Water District
- 97 Lake Arrowhead Water District
- 98 Lake Arrowhead Water District
- 99 Lake Arrowhead Water District
- 100 Lake Arrowhead Water District
- 101 Lake Arrowhead Water District
- 102 Lake Arrowhead Water District
- 103 Lake Arrowhead Water District
- 104 Lake Arrowhead Water District
- 105 Lake Arrowhead Water District
- 106 Lake Arrowhead Water District
- 107 Lake Arrowhead Water District
- 108 Lake Arrowhead Water District
- 109 Lake Arrowhead Water District
- 110 Lake Arrowhead Water District
- 111 Lake Arrowhead Water District
- 112 Lake Arrowhead Water District



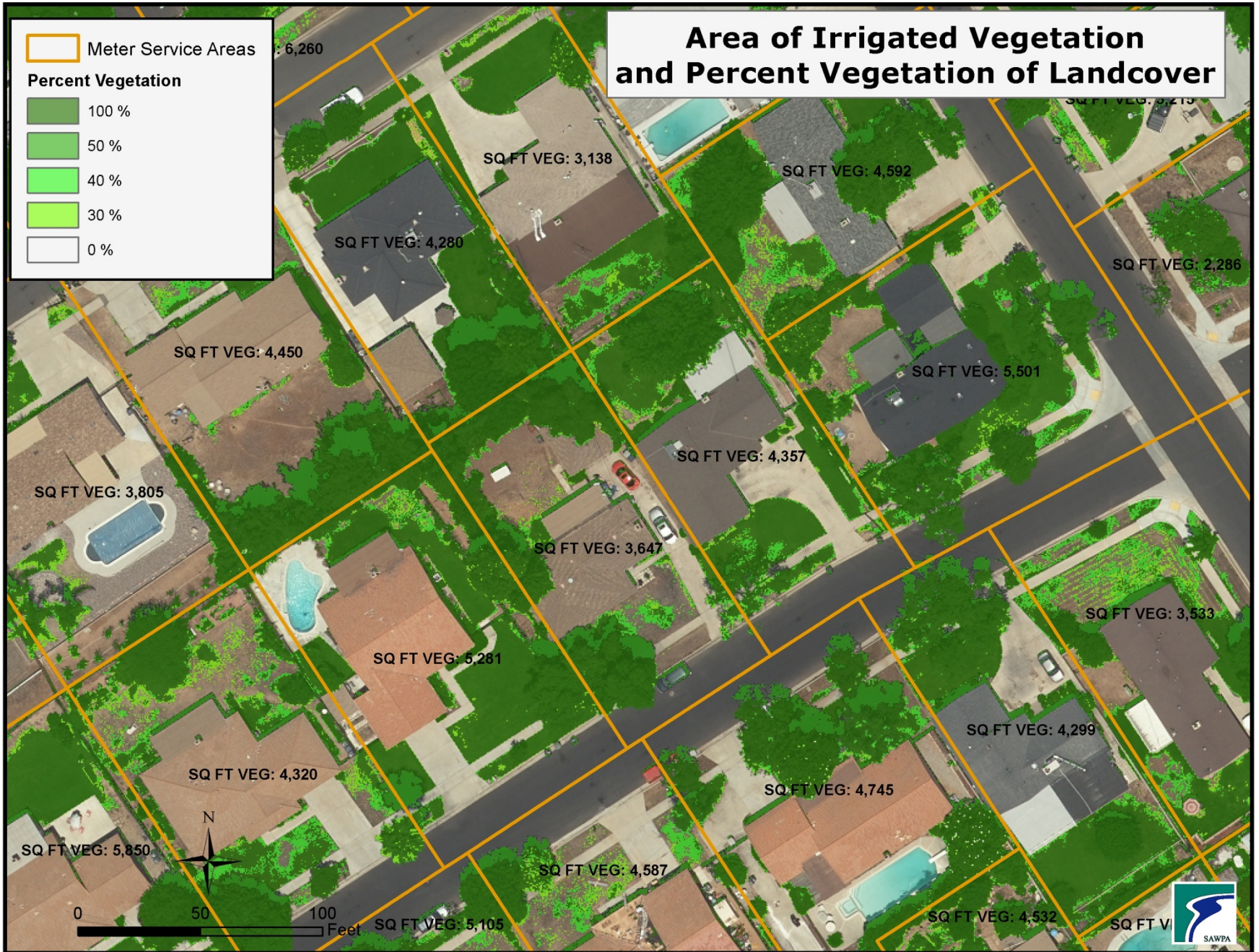
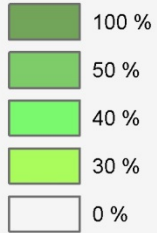
- Flight Date**
- Jul 02 2015
 - Jun 01 2015
 - Jun 02 2015
 - Jun 05 2015
 - Jun 08 2015
 - Jun 07 2015
 - Jun 08 2015
 - Jun 15 2015
 - Jun 16 2015
 - Jun 20 2015
 - Jun 24 2015
 - Jun 25 2015
 - Jun 26 2015
 - Jun 30 2015
 - Jun 02 2015
 - May 03 2015
 - May 11 2015
 - May 28 2015
 - May 29 2015



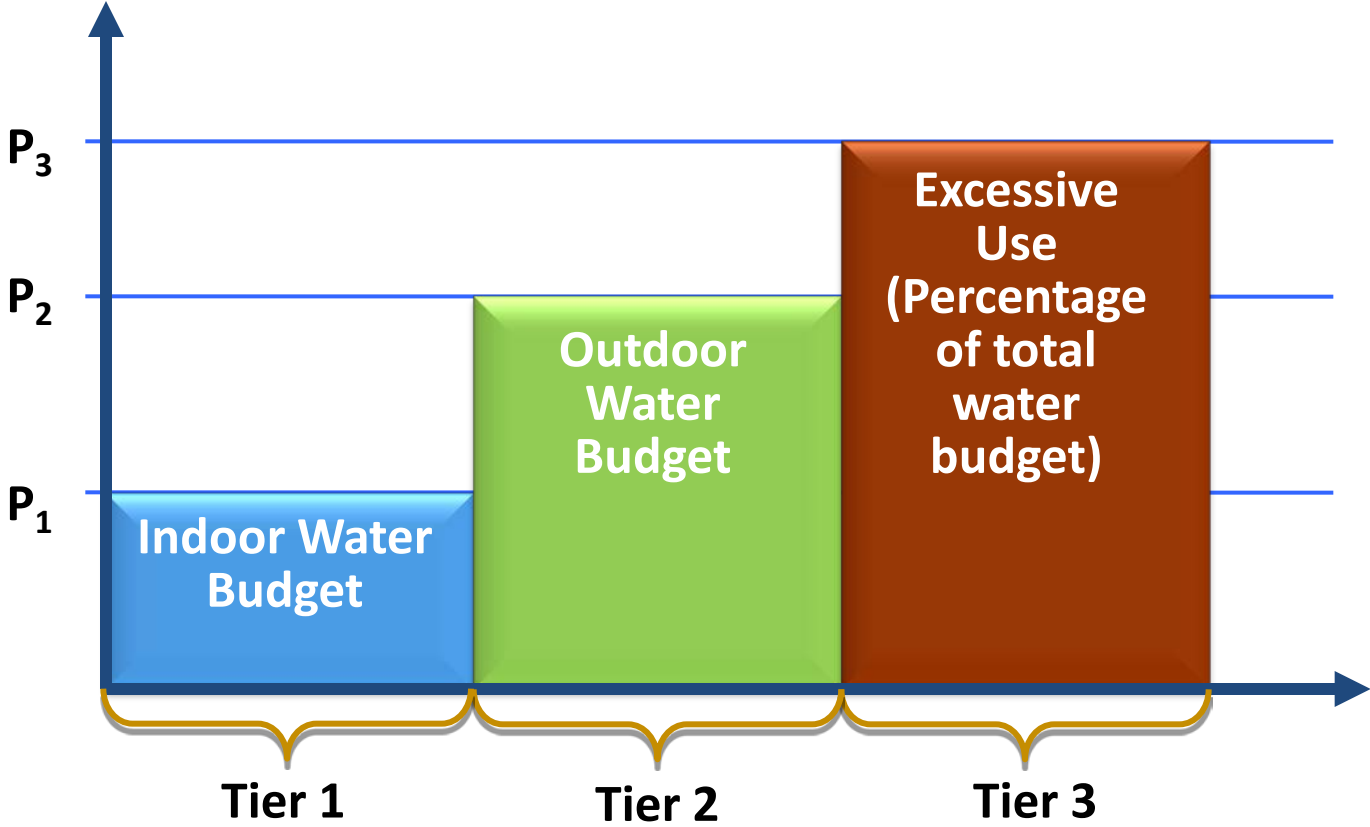
Area of Irrigated Vegetation and Percent Vegetation of Landcover

Meter Service Areas

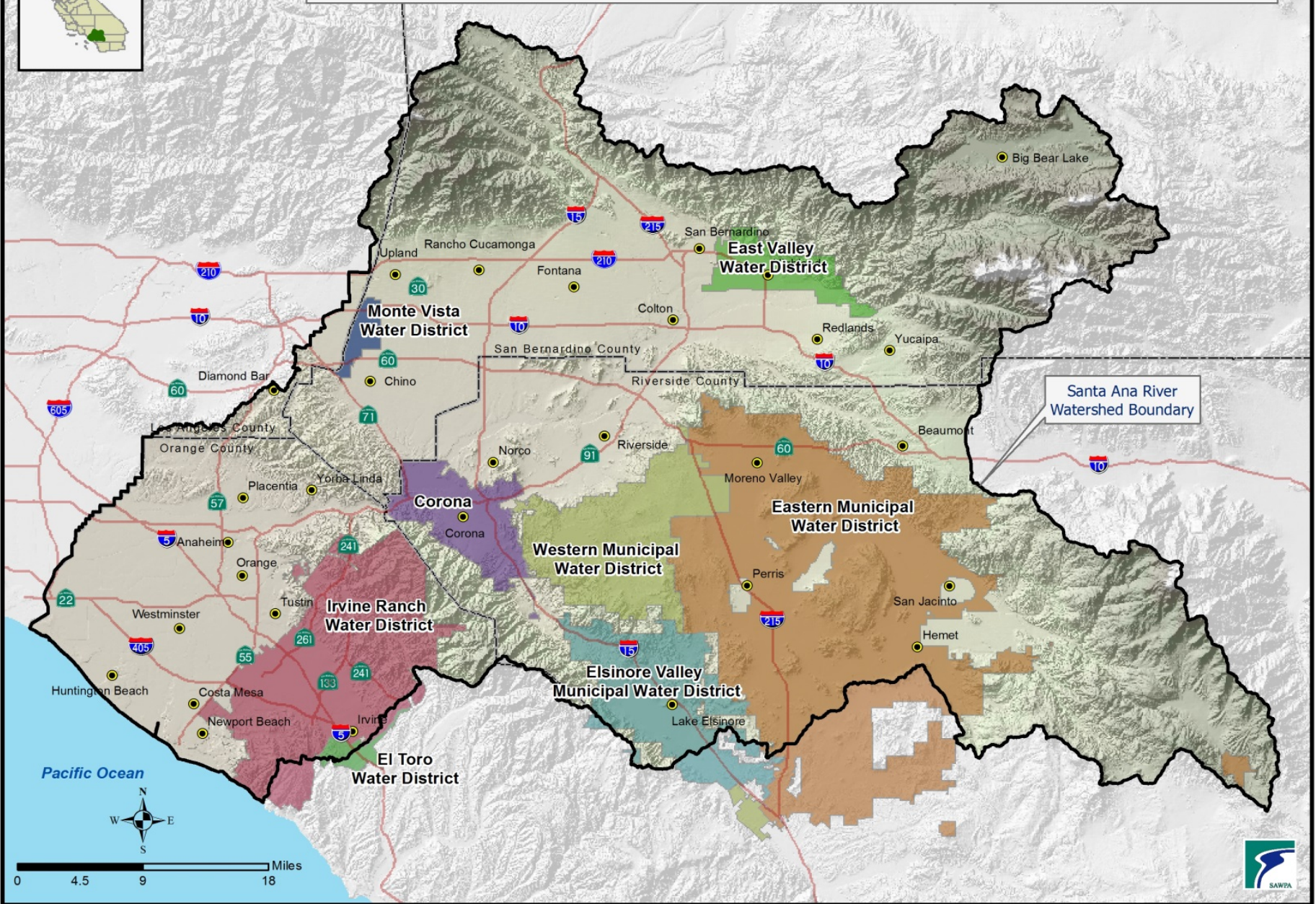
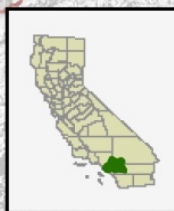
Percent Vegetation



WATER BUDGET TIERED RATE



Retail Water Agencies in the Santa Ana River Watershed Using Budget Based Rates for Some or all of their Customers



Forest First

Defining Ecosystem Services





Three Numbers to Remember


■ 33%


■ 90%

■ 60%



District

 Western Municipal Water District

 Inland Empire Utilities Agency



ANTHONY

TERRY CATLIN

CELESTE CANTU



Disadvantaged Communities Involvement



1. Strengths and Needs Assessment
2. Education and Engagement
3. Project Development

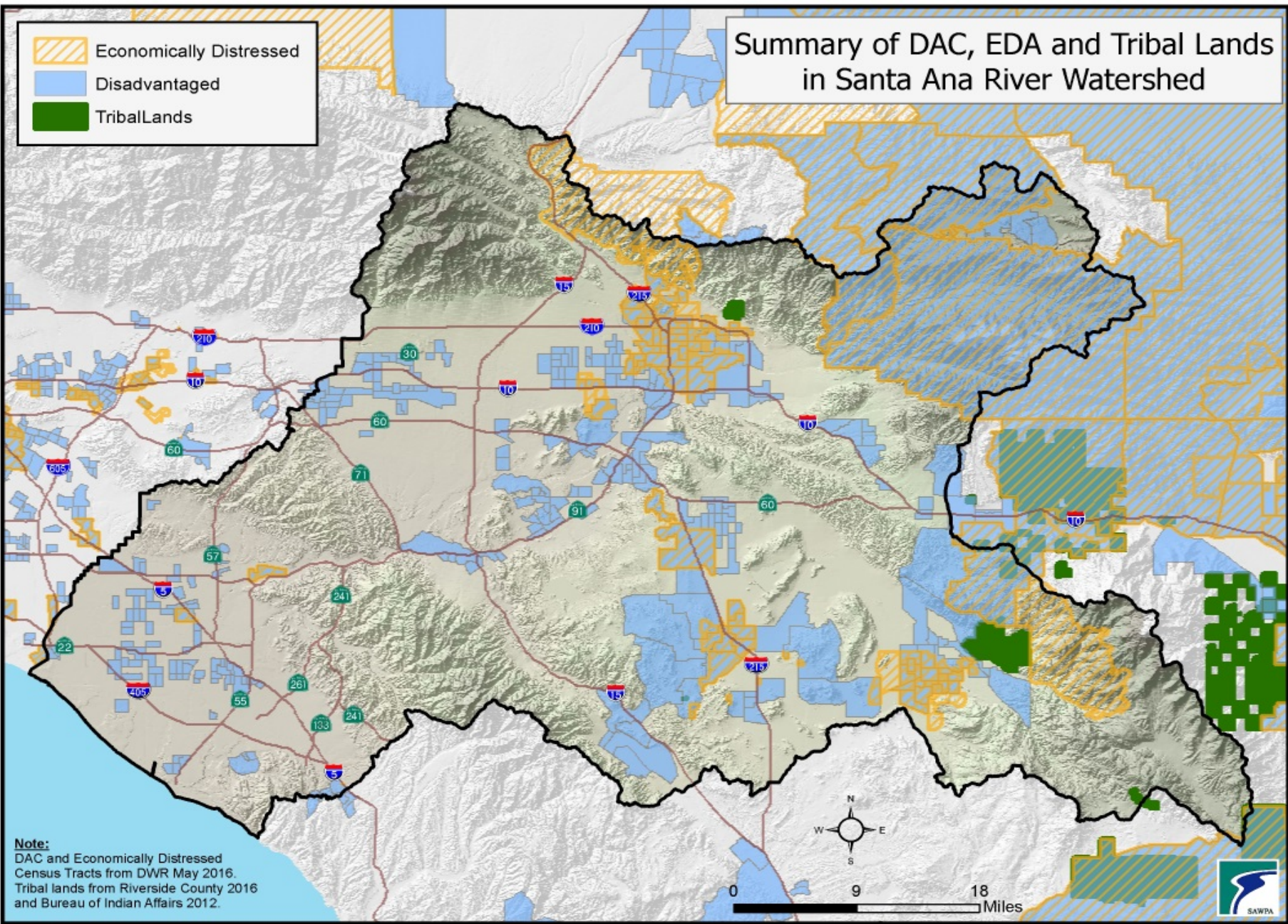


- OWOW Steering Committee
- Disadvantaged and Tribal Communities Pillar
- DCI Program Technical Advisory Committee



Summary of DAC, EDA and Tribal Lands in Santa Ana River Watershed

-  Economically Distressed
-  Disadvantaged
-  Tribal Lands



Note:
DAC and Economically Distressed
Census Tracts from DWR May 2016.
Tribal lands from Riverside County 2016
and Bureau of Indian Affairs 2012.



0 9 18 Miles



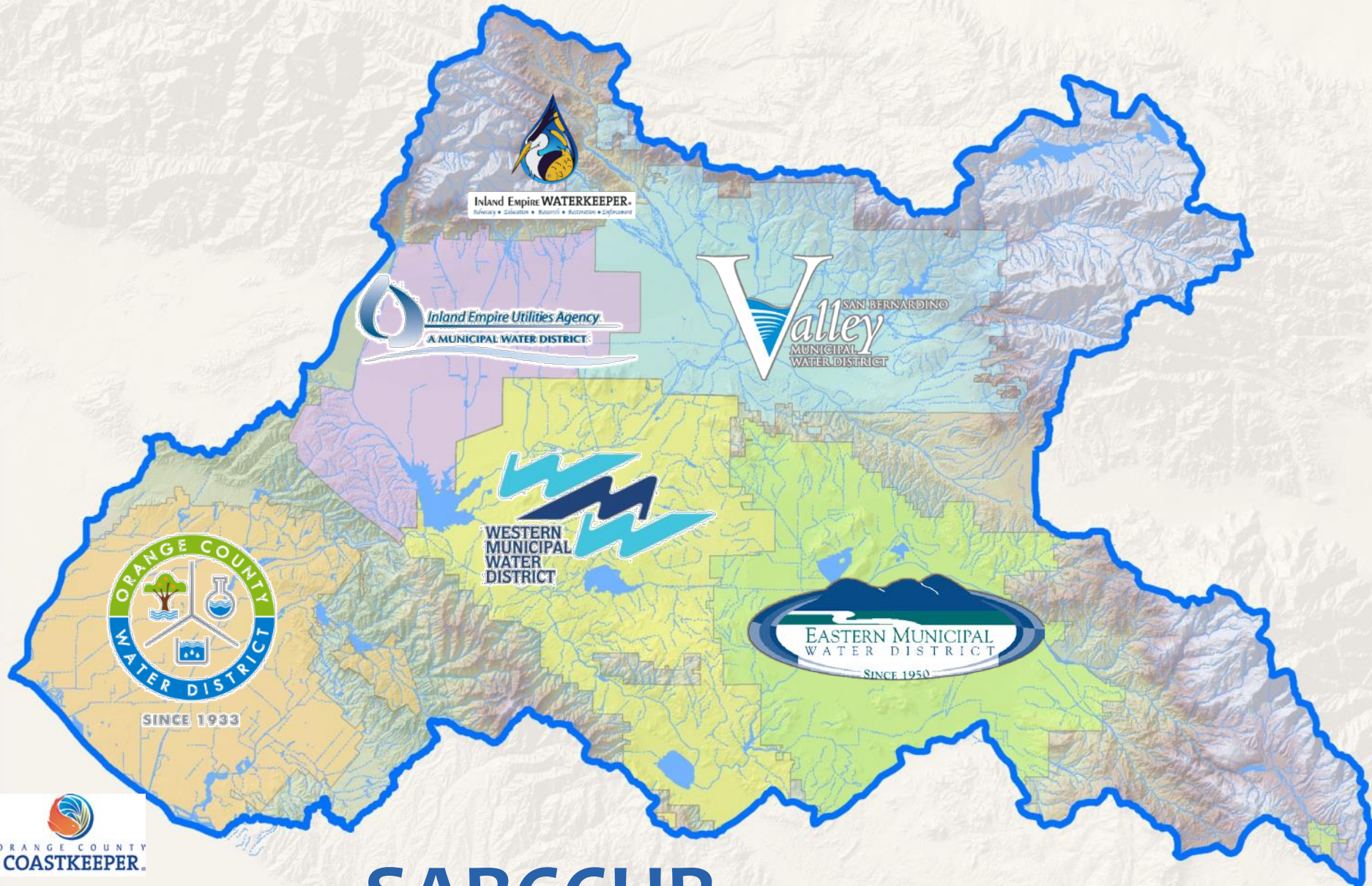
Water Energy Community Action Network



WE CAN



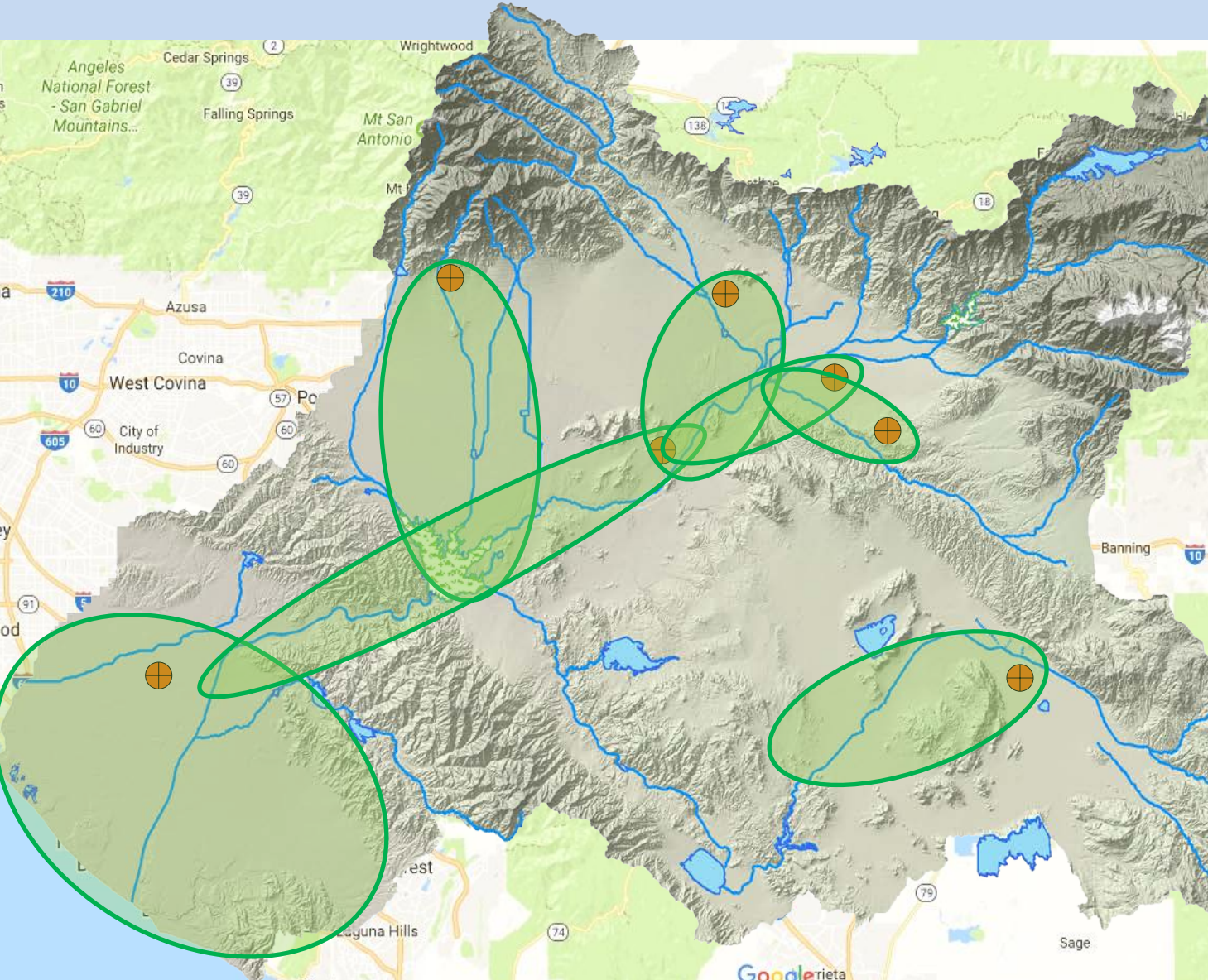
WATERSHED-SCALE COLLABORATION



SARCCUP



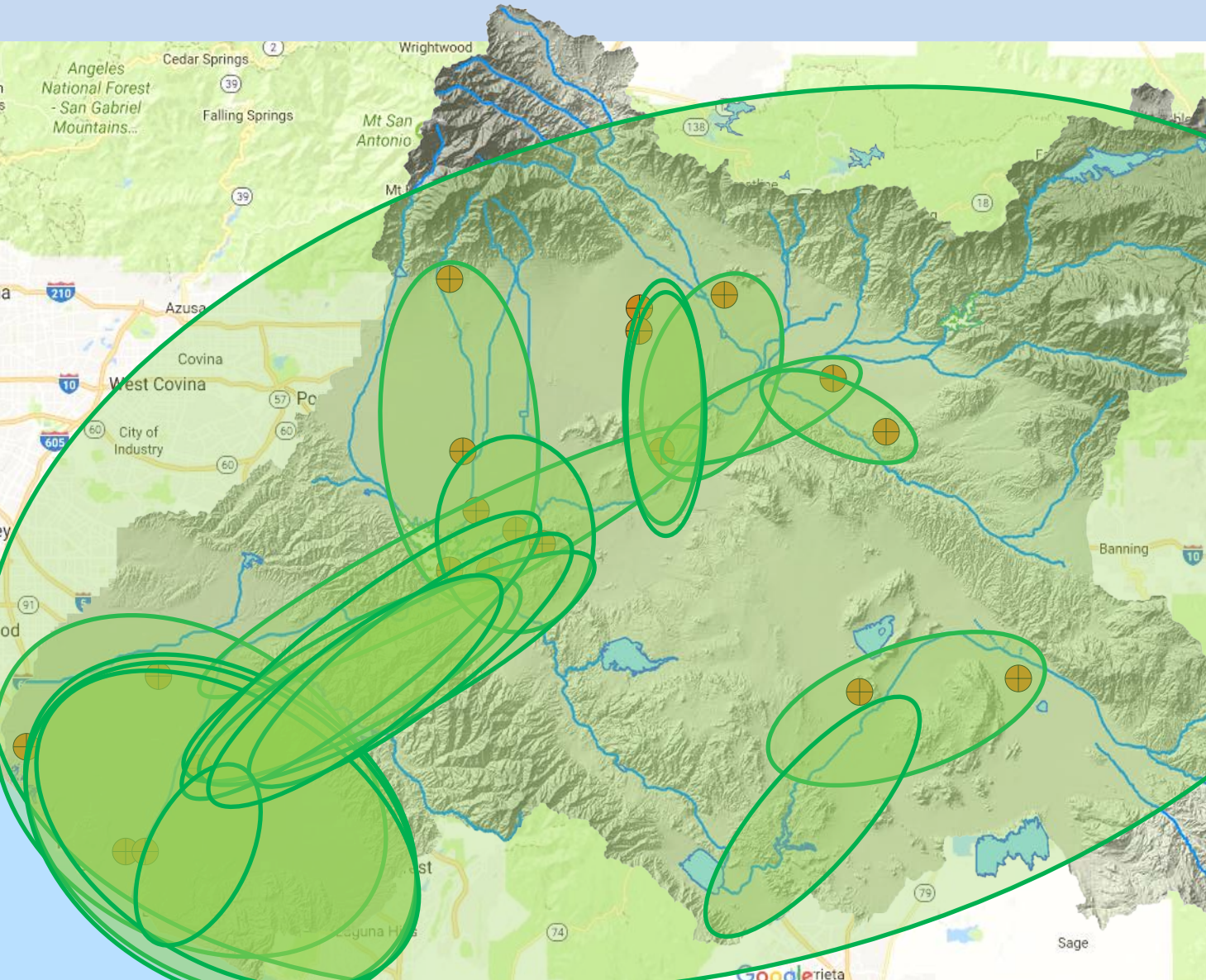
OWOW Projects Map



Recycled Water (AFY)	41,100
Recharge (AFY)	7,500
Arundo Removal Habitat Restoration (AC)	930
Habitat Restore (AC)	0
Sediment Removal (CY)	0
Salt Removal (Tons/Year)	0
Selenium/Nitrate Removal (Tons/Year)	0
Reduce Nonpoint Source Pollution (MGD)	0
Additional Potable Water (AFY)	21,000
Additional Non Potable Water (AFY)	8,000
Stormwater Capture (AFY)	0



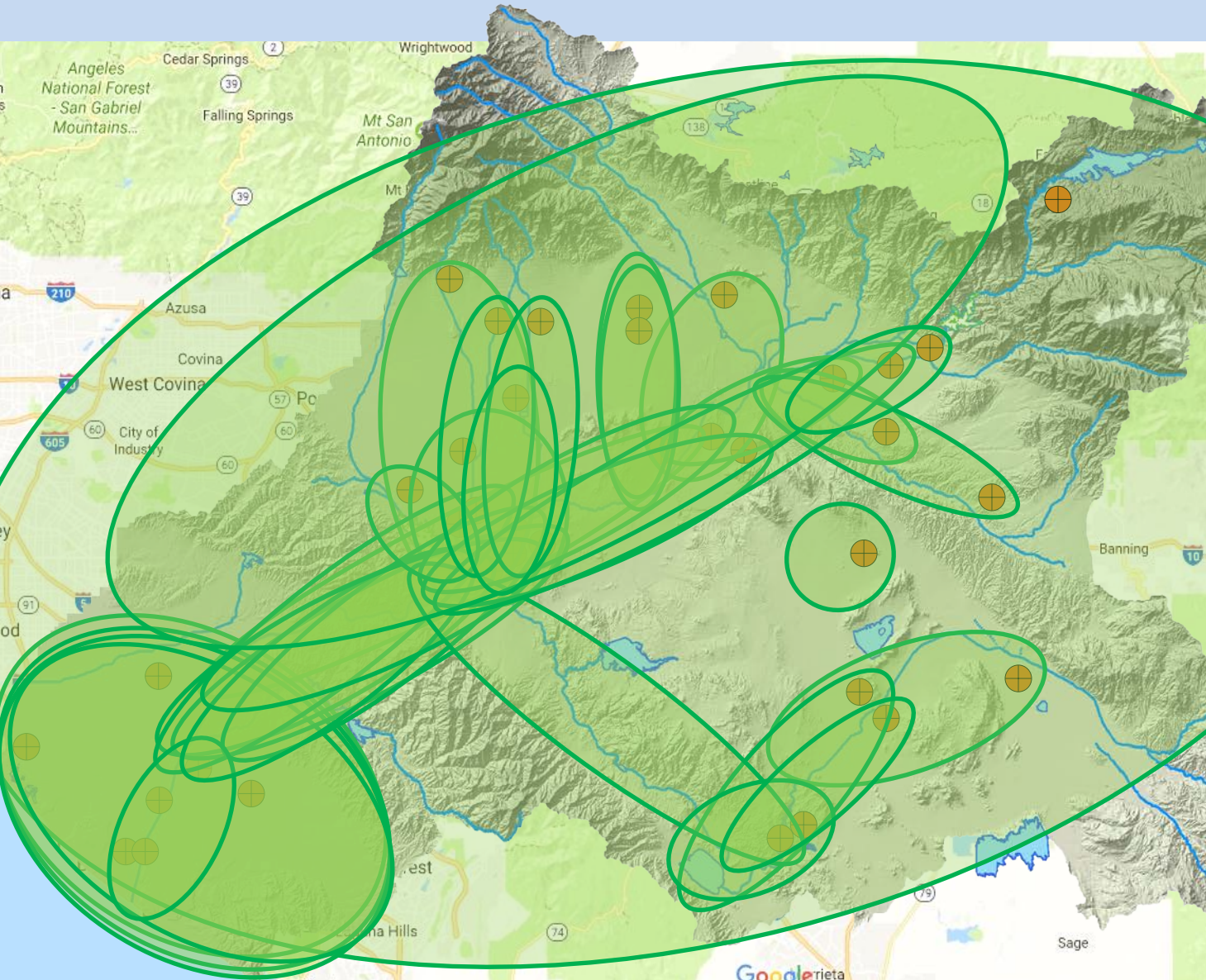
OWOW Projects Map



Recycled Water (AFY)	41,100
Recharge (AFY)	215,000
Arundo Removal Habitat Restoration (AC)	930
Habitat Restore (AC)	0
Sediment Removal (CY)	0
Salt Removal (Tons/Year)	32,000
Selenium/Nitrate Removal (Tons/Year)	0
Reduce Nonpoint Source Pollution (MGD)	0
Additional Potable Water (AFY)	216,000
Additional Non Potable Water (AFY)	8,000
Stormwater Capture (AFY)	2,370



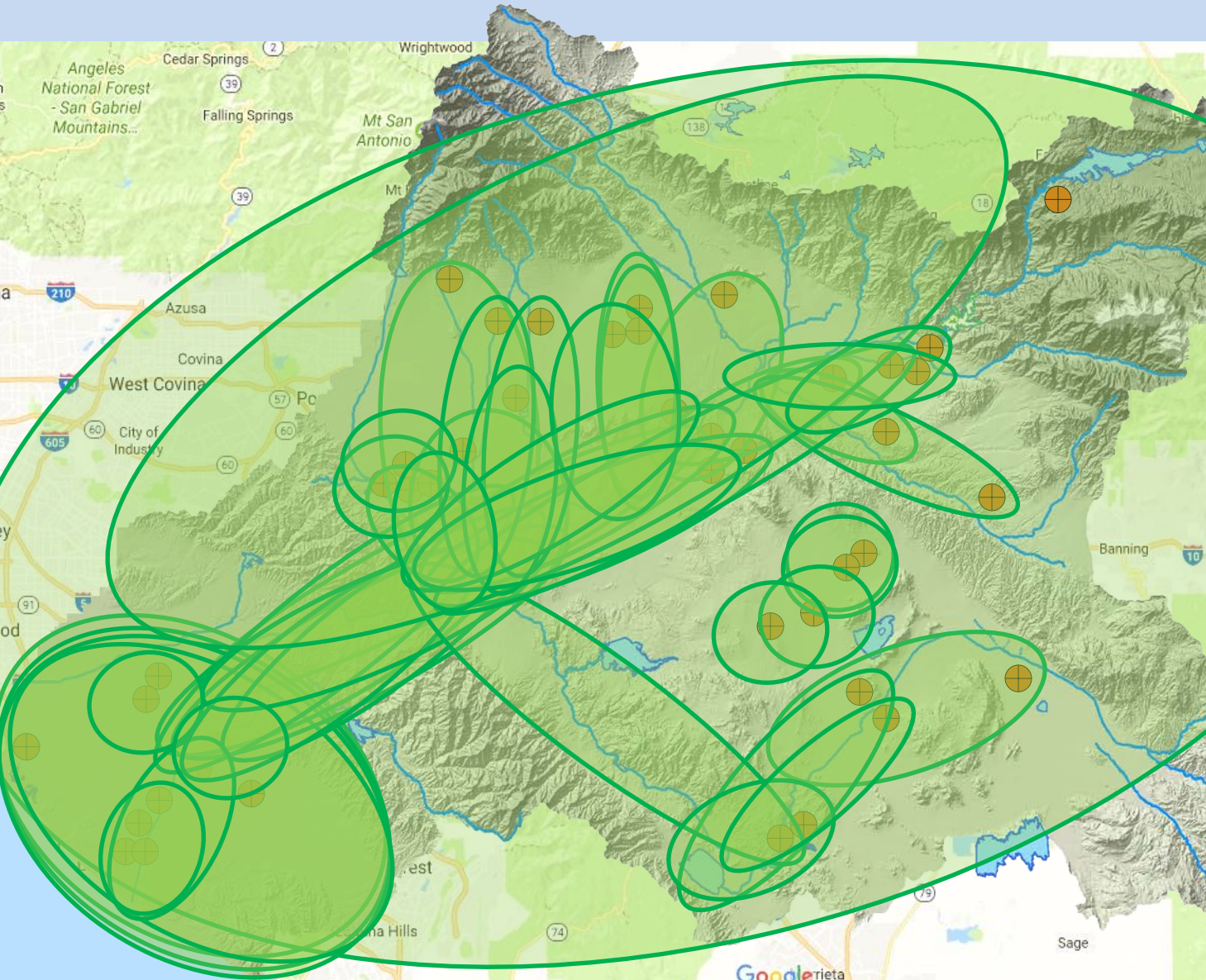
OWOW Projects Map



Recycled Water (AFY)	41,100
Recharge (AFY)	113,870
Arundo Removal Habitat Restoration (AC)	930
Habitat Restore (AC)	110
Sediment Removal (CY)	500,000
Salt Removal (Tons/Year)	32,000
Selenium/Nitrate Removal (Tons/Year)	35.03
Reduce Nonpoint Source Pollution (MGD)	2.38
Additional Potable Water (AFY)	86,947
Additional Non Potable Water (AFY)	86,000
Stormwater Capture (AFY)	3,370



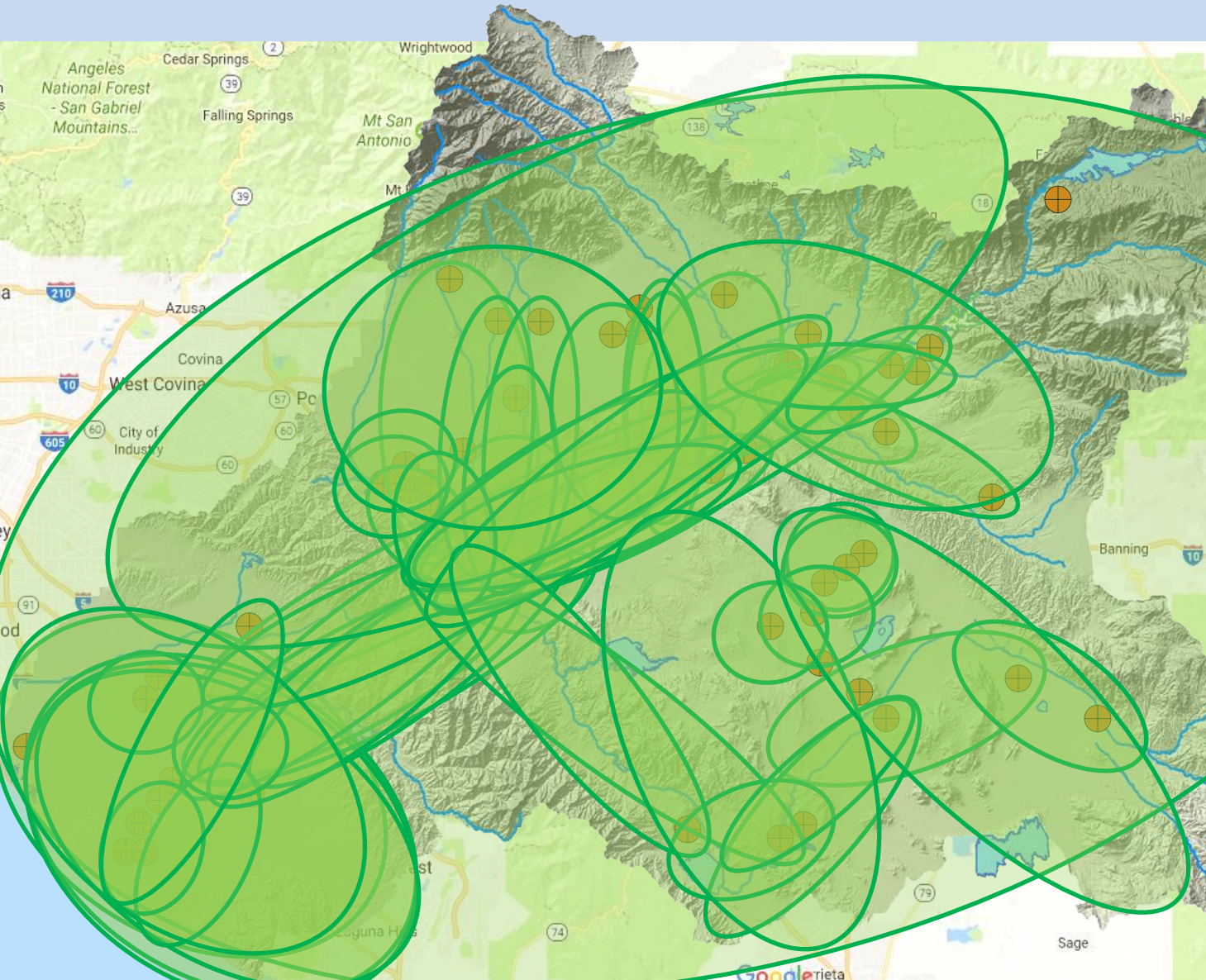
OWOW Projects Map



Recycled Water (AFY)	41,100
Recharge (AFY)	113,670
Arundo Removal Habitat Restoration (AC)	930
Habitat Restore (AC)	110
Sediment Removal (CY)	500,000
Salt Removal (Tons/Year)	32,000
Selenium/Nitrate Removal (Tons/Year)	35.13
Reduce Nonpoint Source Pollution (MGD)	2.33
Additional Potable Water (AFY)	88,947
Additional Non Potable Water (AFY)	16,100
Stormwater Capture (AFY)	3,170

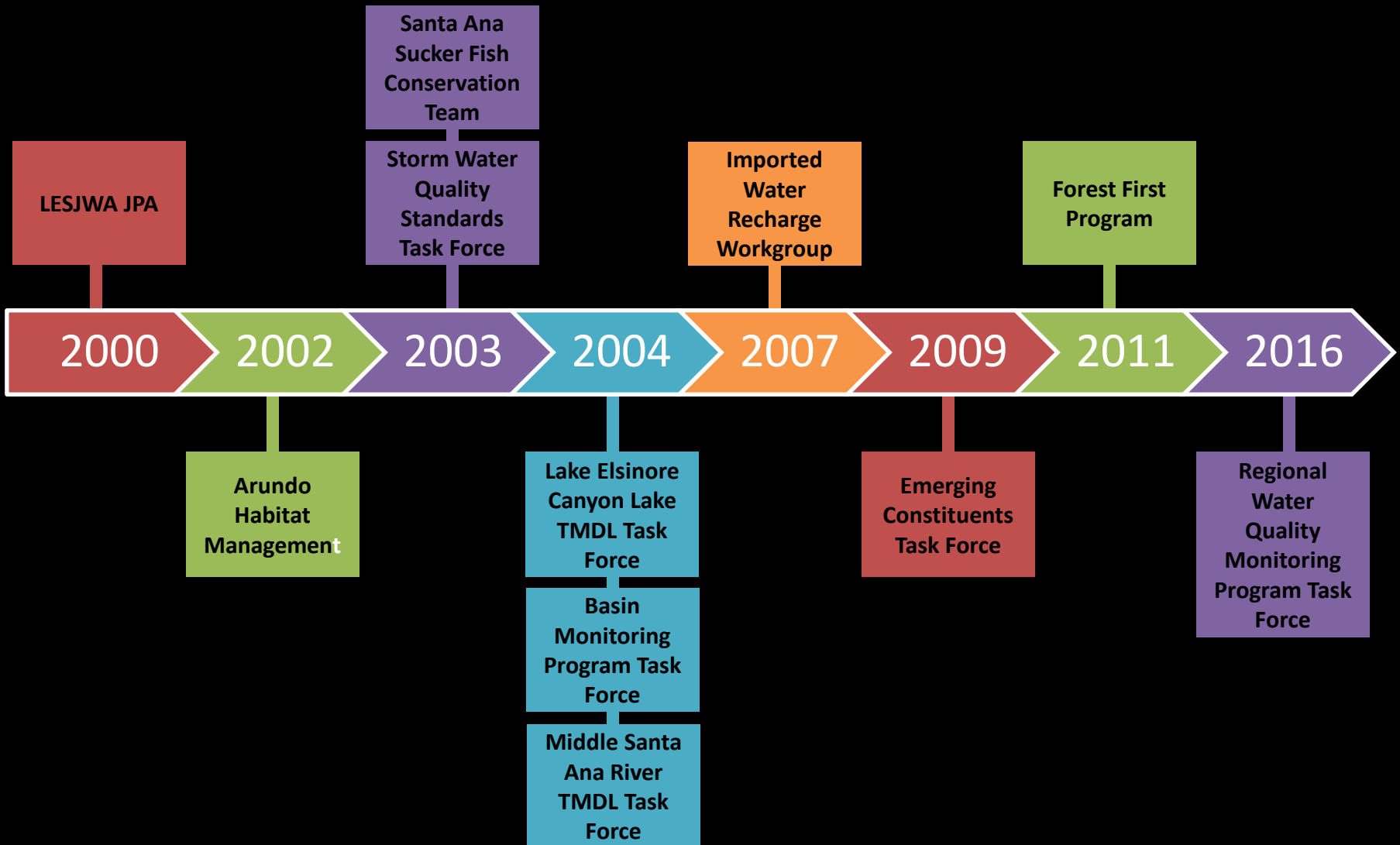


OWOW Projects Map



Recycled Water (AFY)	41,100
Recharge (AFY)	114,870
Arundo Removal Habitat Restoration (AC)	19,370
Habitat Restore (AC)	150.5
Sediment Removal (CY)	500,000
Salt Removal (Tons/Year)	32,000
Selenium/Nitrate Removal (Tons/Year)	35.13
Reduce Nonpoint Source Pollution (MGD)	2.33
Additional Potable Water (AFY)	268,570
Additional Non Potable Water (AFY)	16,100
Stormwater Capture (AFY)	3,170

Roundtables



SAWPA's Stellar Staff.





**NEXT
BIG THING
AHEAD**

One Water One Watershed:

One Water One Watershed
2010 Integrated Regional Water Management Plan

Threats

- Climate Change
- Colorado River Basin Drought
- Reduced Water from Delta
- Reduced Groundwater Recharge

Moving Toward Sustainability

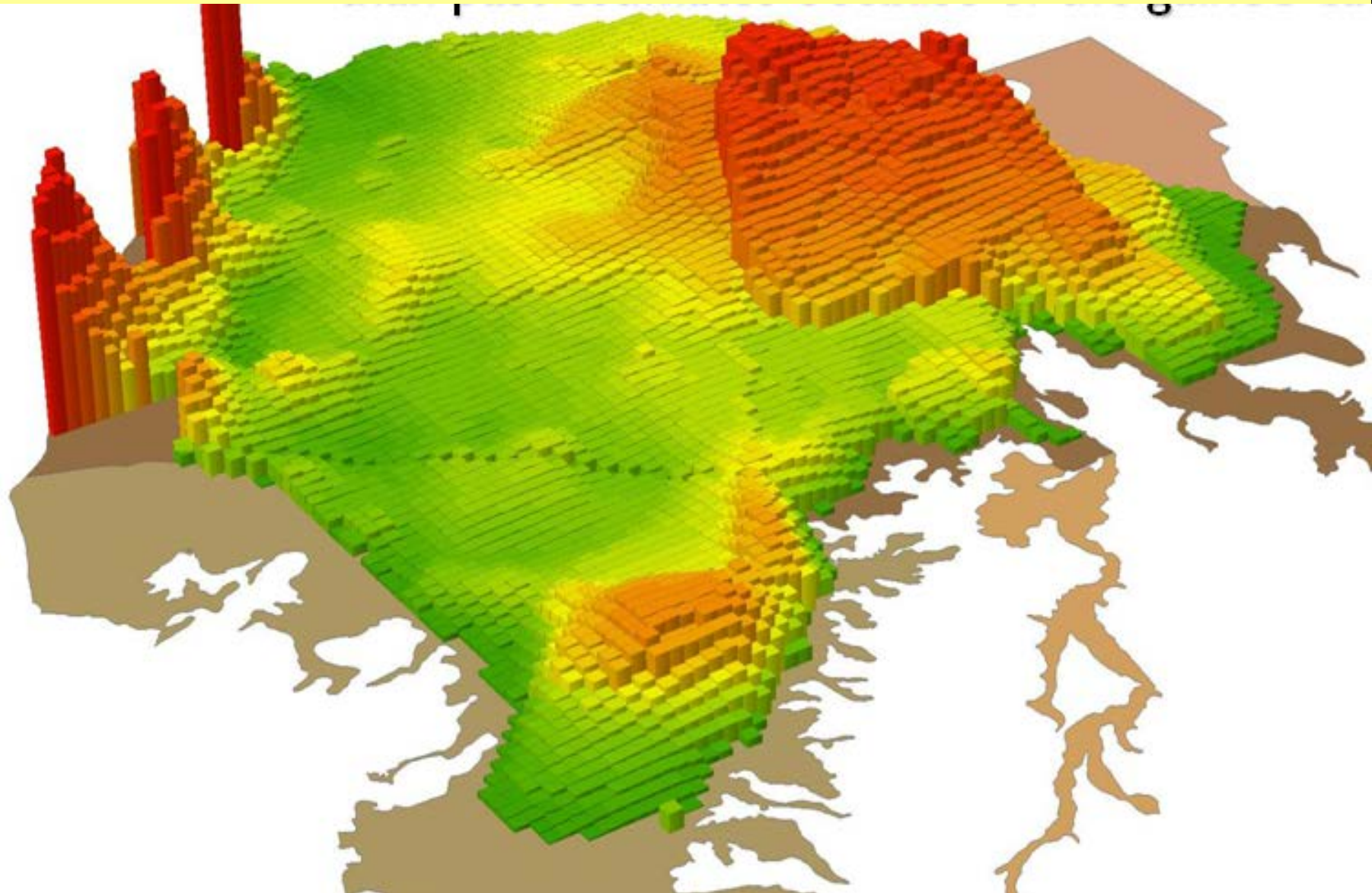
Santa Ana Watershed Project Authority

The cover features a collage of images: a group of people on horseback, a tree with pink irrigation pipes, a water tap with a sunburst effect, a landscape with a lake, a water treatment facility, and a pink flower. A map of the Santa Ana Watershed is visible in the bottom right corner.

HARVARD Kennedy School
ASH CENTER
for Democratic Governance
and Innovation

The logo includes the Harvard University shield on the left.

Salt Concentration





Increased Investment in the Forests





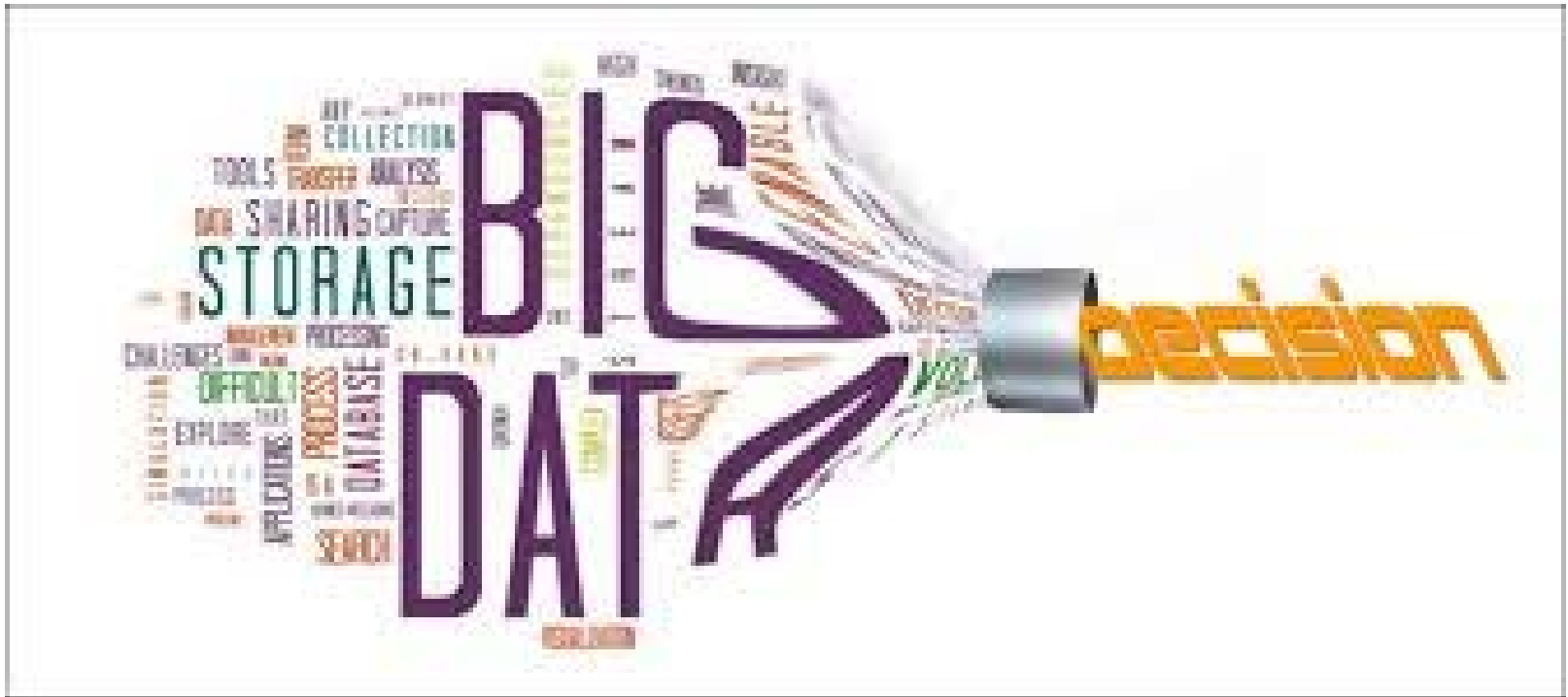
Photo: Jay Calderon/The Desert Sun)

Commercial, Industrial Landscape Transformation



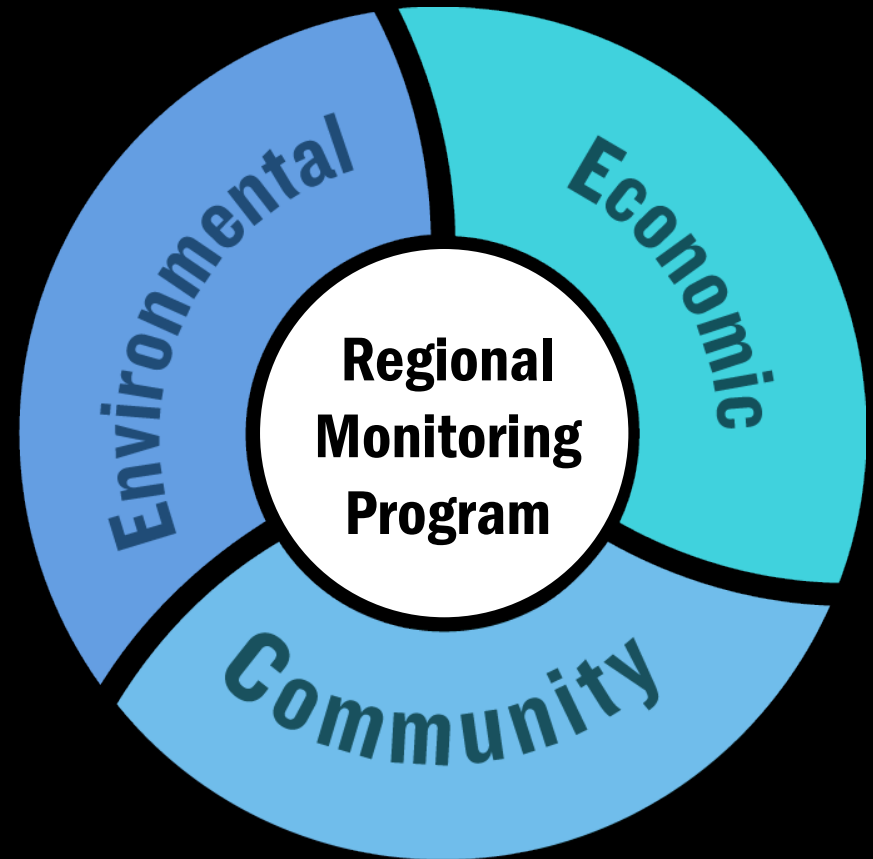


Data to create information, knowledge, and ACTION



Benefits of a Regional Monitoring Program

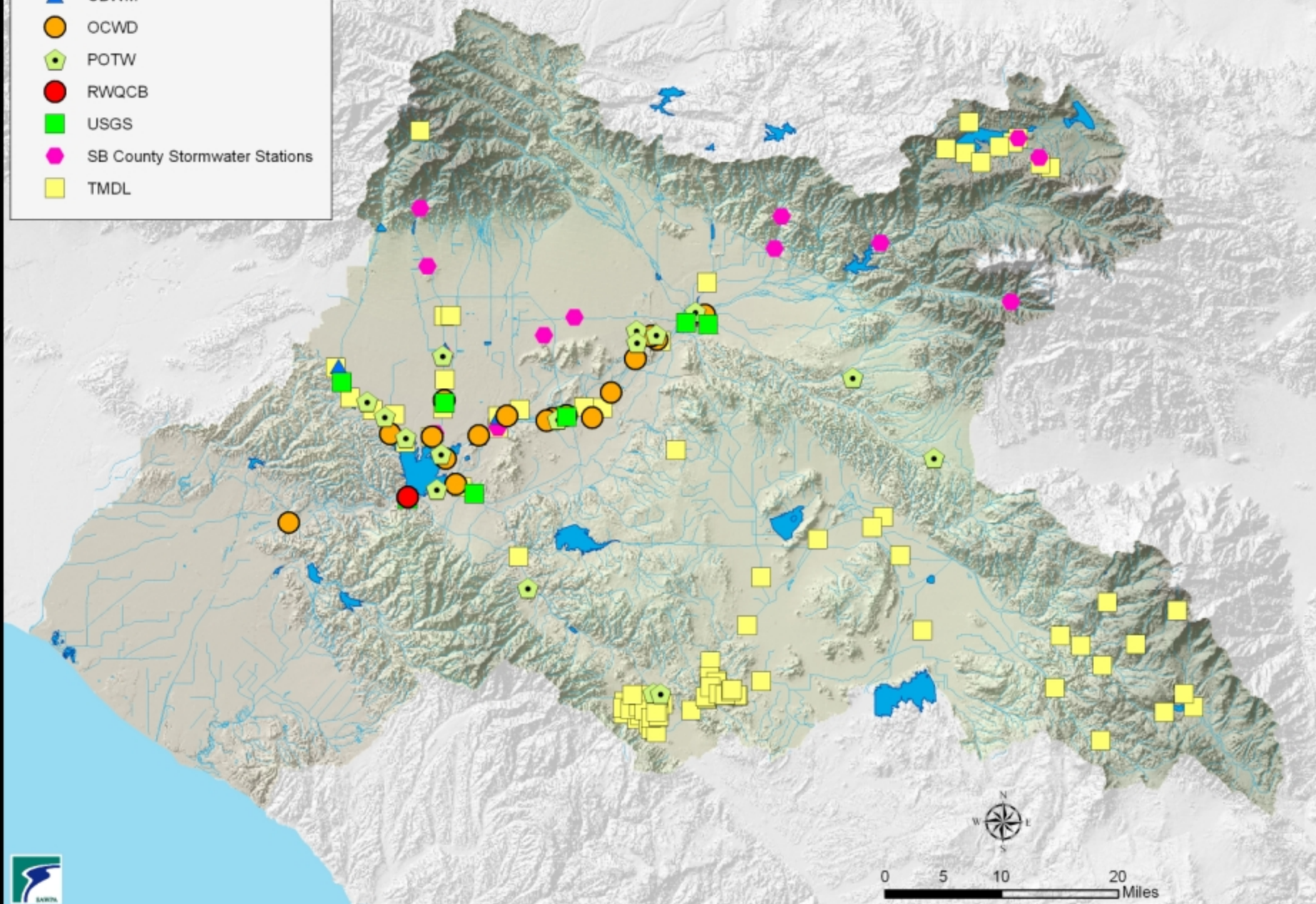
- Reduced region-wide monitoring costs
- Compliance – along with peace of mind – your staff won't need to do the field work
- Reduced paperwork (both stakeholders and Regional Board)
- Voluntary program



Santa Ana Watershed Surface Water Sampling Stations

Surface Water Sampling Stations

- ▲ CBWM
- OCWD
- ⬠ POTW
- RWQCB
- USGS
- SB County Stormwater Stations
- TMDL



Emerging Constituents



Santa Ana Watershed Project Authority



April, 2014



**NO DIVING
FROM
BRIDGE**



How many gallons to produce a...?



19



634



500

39,000



32



63

37



45



53

