

Mapping the California Stormwater Opportunity

Gary Conley, Chief Scientist 2NDNATURE
Cabrillo College GIS Day, November 13 2019

2NDNATURE

A high-speed photograph of a person's legs splashing in water, creating a large, dynamic splash of water droplets and bubbles. The background is a soft-focus outdoor setting.

Committed to improving water
resource management through
decision-driven design



Building Green and Healthy Cities

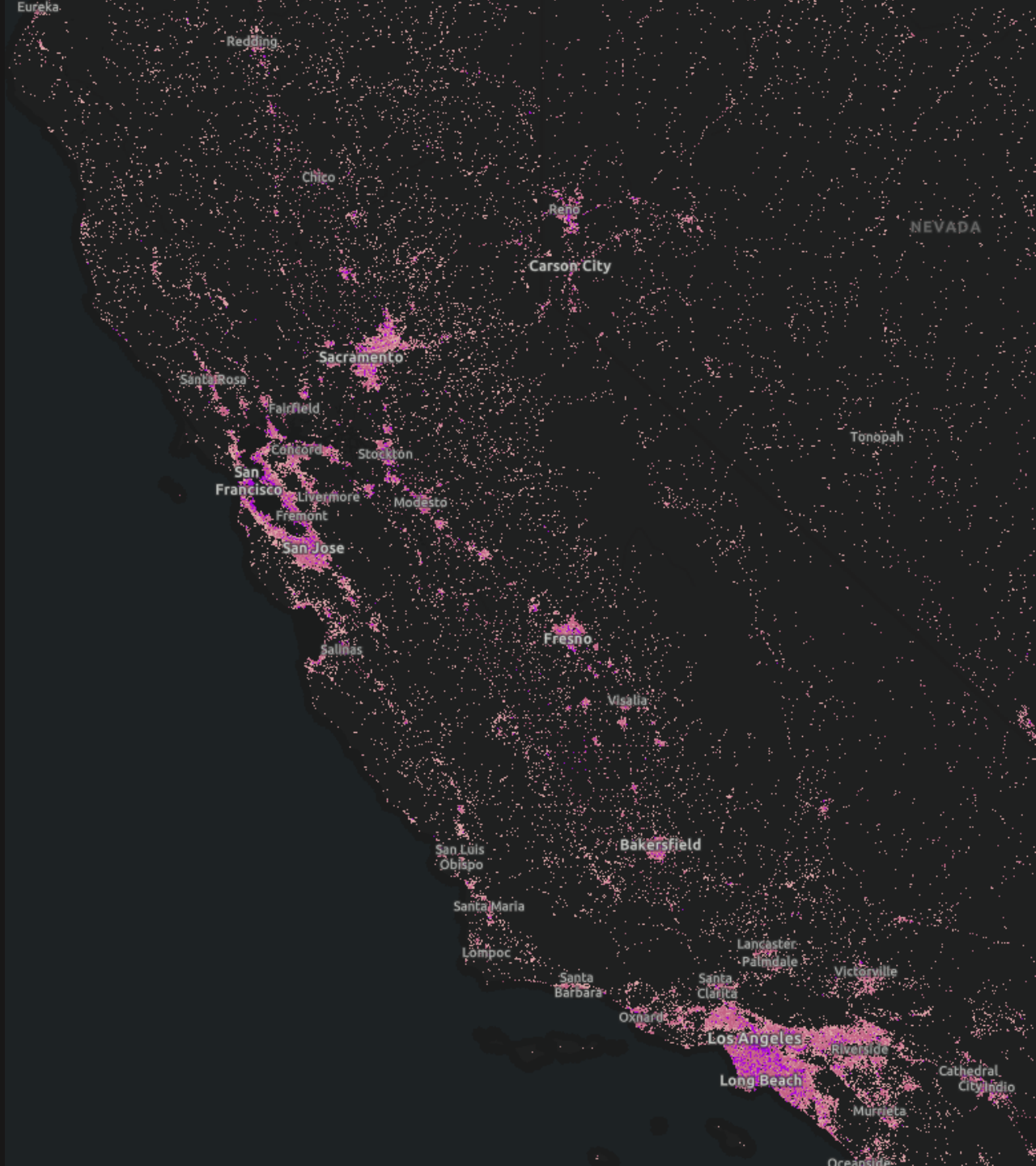
2NDNATURE showcases clean stormwater innovations at TechStars Demo Day 2019 in partnership with The Nature Conservancy

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**Stormwater is
a problem**



Impervious cover
changes the way a
landscape works






**We already know
the solutions**

**A green city is a
healthy city**



An aerial, black and white photograph of a city grid, showing numerous buildings and streets. A semi-transparent black rectangular box is overlaid on the center of the image, containing white text.

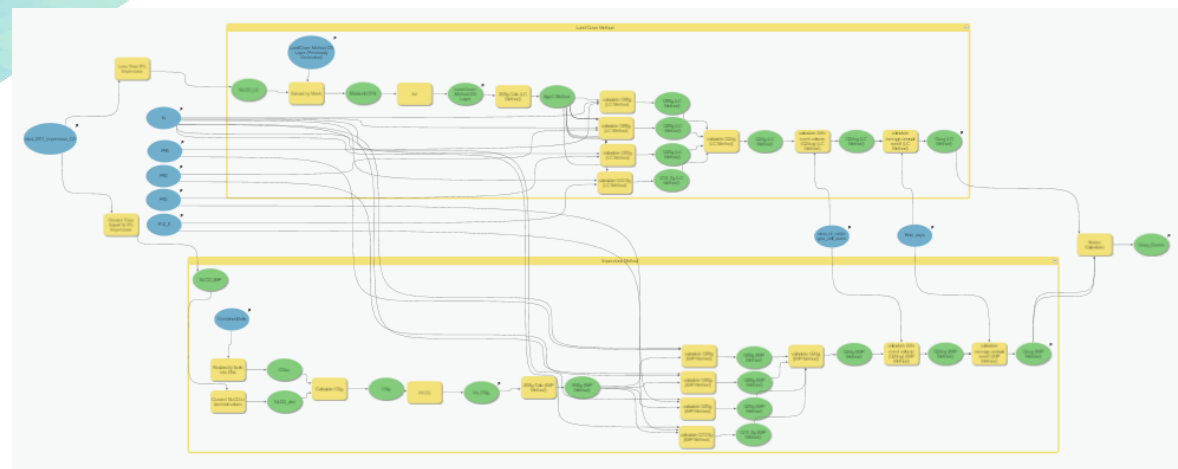
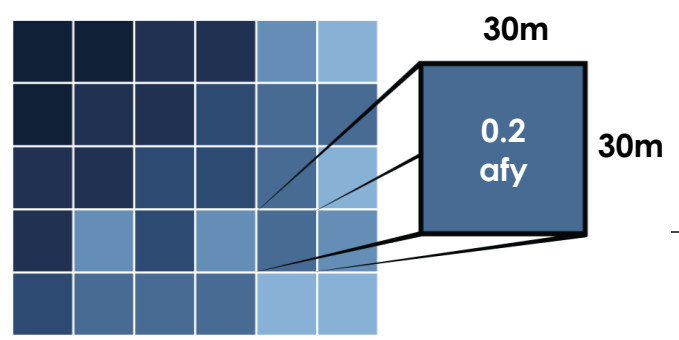
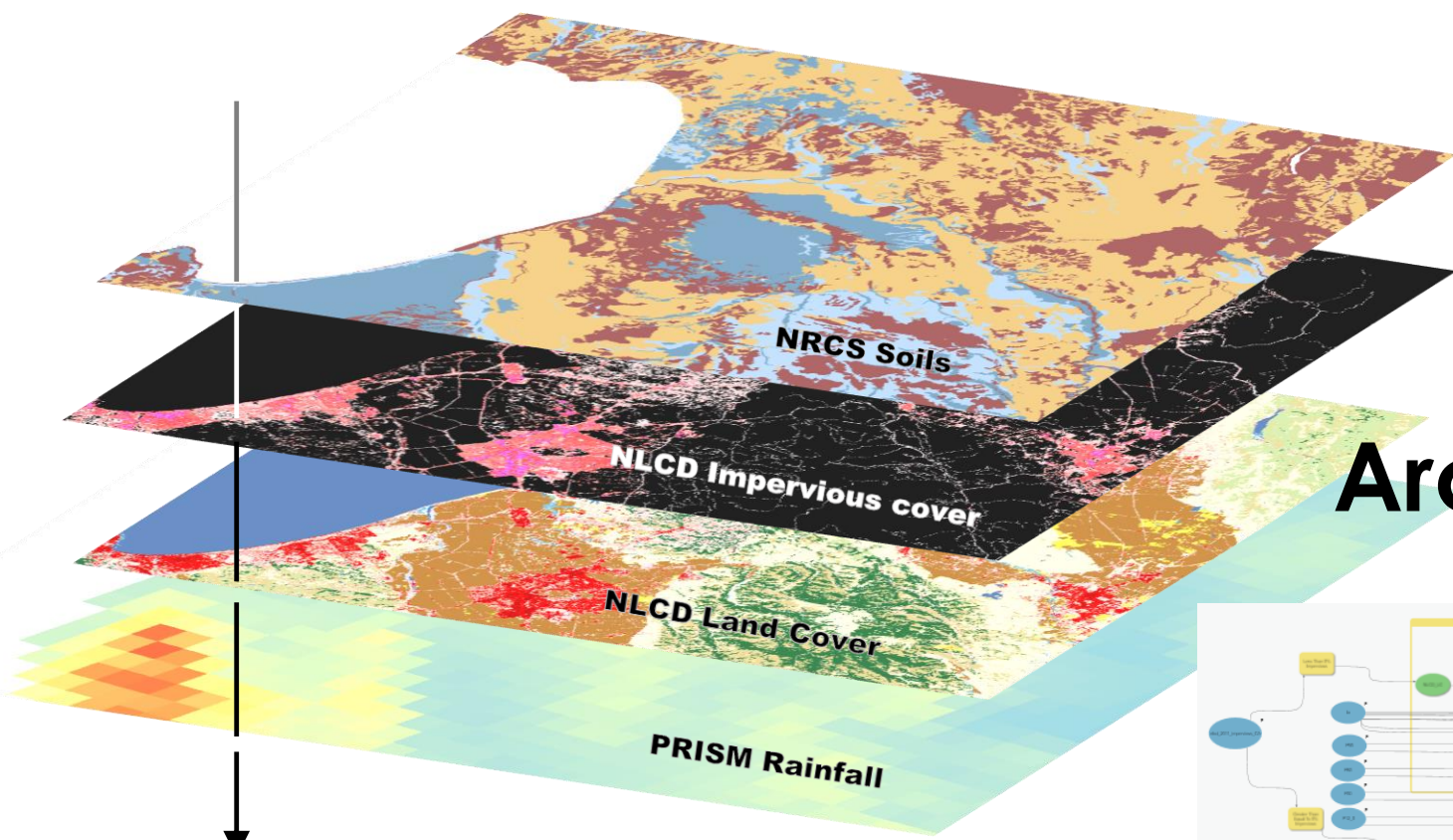
**Modeling helps
us know what to
do where**



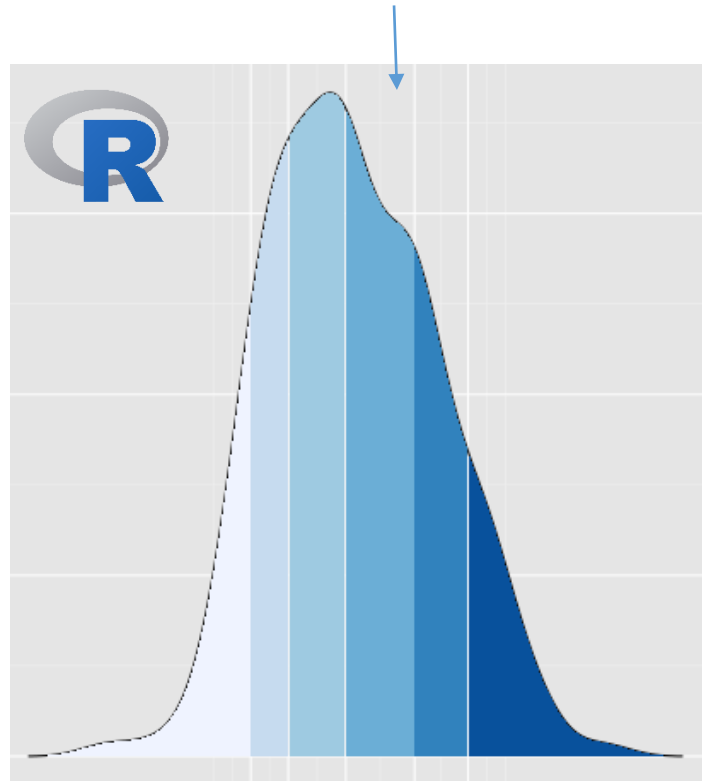
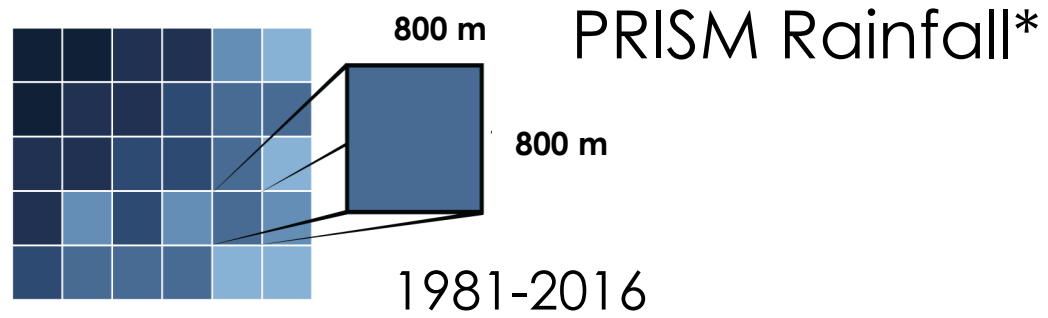
Raster spatial data

+

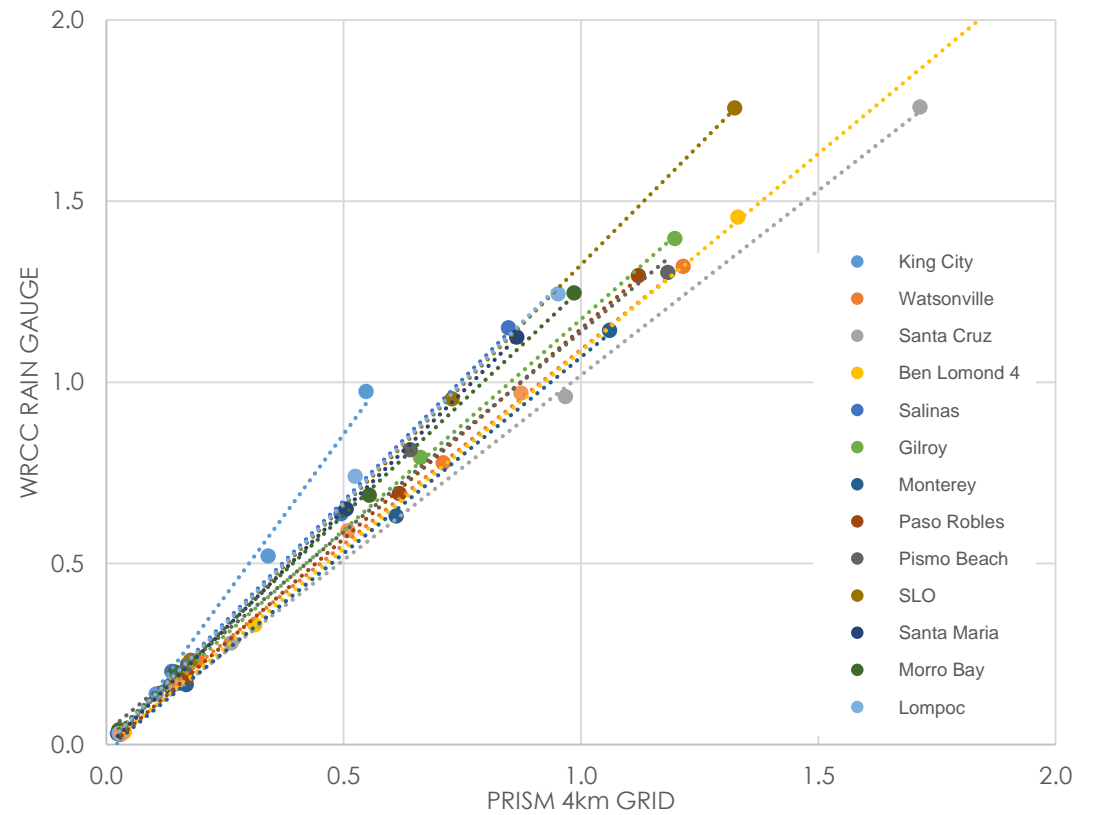
ArcGIS Model Builder



Distributed Rainfall Data

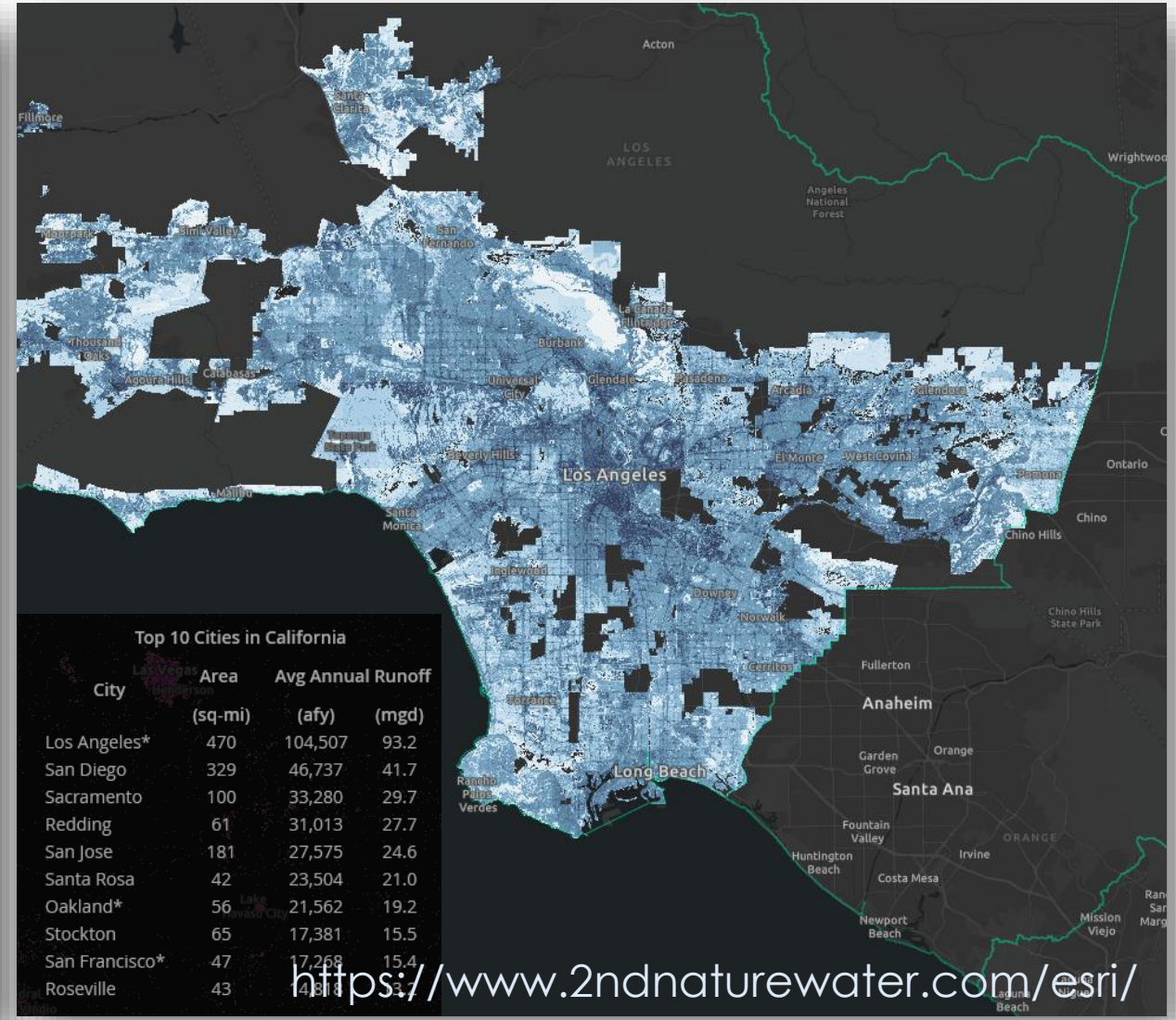
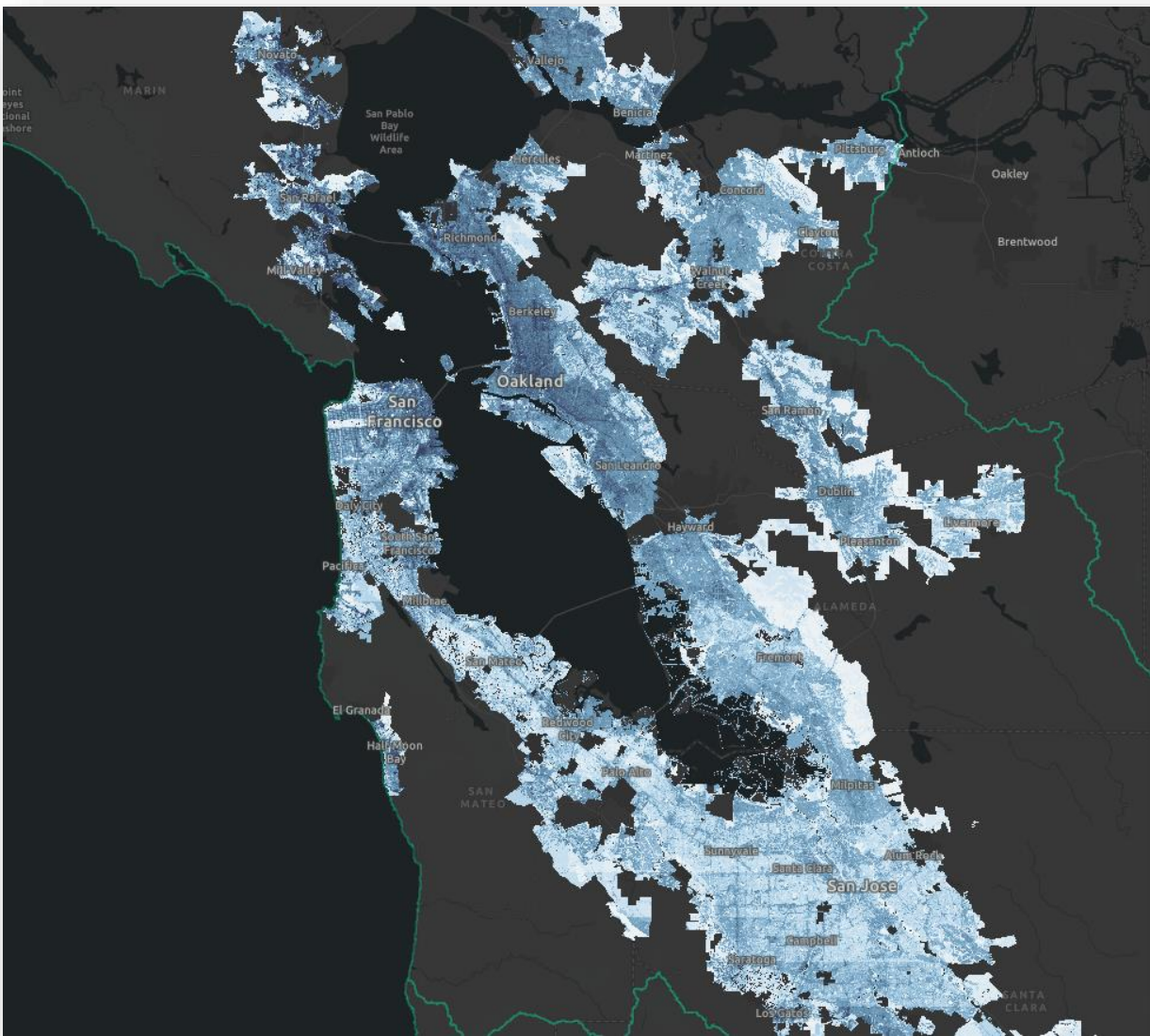


PRISM vs WRCC Percentile Events



*PRISM Climate Group - Oregon State University

2 Million acre-feet available for infiltration



Top 10 Cities in California

City	Area	Avg Annual Runoff	
	(sq-mi)	(afy)	(mgd)
Los Angeles*	470	104,507	93.2
San Diego	329	46,737	41.7
Sacramento	100	33,280	29.7
Redding	61	31,013	27.7
San Jose	181	27,575	24.6
Santa Rosa	42	23,504	21.0
Oakland*	56	21,562	19.2
Stockton	65	17,381	15.5
San Francisco*	47	17,268	15.4
Roseville	43	14,811	13.1

<https://www.2ndnaturewater.com/esri/>

Modified: 11/10/19, 1:47 AM PST

Results Map

Progress Chart

Inputs Map

Prepare ▲ 46

Planning Scenarios

CITY OF SALINAS CA OPPORTUNITIES

Runoff Rate 2019 Current

BASELINE	CURRENT	REDUCTION
5,643.3 afy	5,643.3 afy	0.0 afy (0%)

Search for Catchments

Filters

Name	Load afy	Rate ft/yr
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- > All
- > Alisal Creek
- > Carr Lake
- > Gabilan Creek
- > Markeley Swamp
- > Natividad Creek
- > Reclamation Ditch West
- > Salinas River
- > Santa Rita Creek

LAYERS

- Runoff
- Discharge Points
- Streams
- MS4 Boundary
- Storm Drains

Dark Gray

LEGEND

Runoff Rate (ft/yr)

- 0.0
- 0.0-0.20
- 0.20-0.38
- 0.38-0.42
- 0.42-0.48
- > 0.48

Prioritize implementation
Communicate progress

Urban water use =
7 million ac-ft

Stormwater runoff =
2 million ac-ft

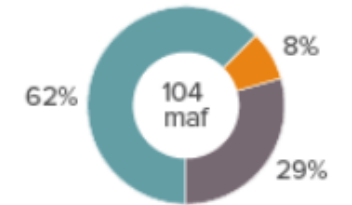
29% of annual urban
water needs can be met
with stormwater runoff *

Average annual applied water use
(1998–2015)

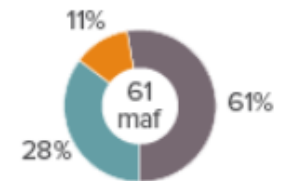


Statewide applied water use,
millions of acre-feet (maf)

Wet year (2006)



Dry year (2014)



* Data from Water Policy Center- Public Policy Institute of California
<https://www.ppic.org/publication/water-use-in-california/>

Stormwater is
a **solution**





**Water supply
resiliency**



**Community
engagement**



**Habitat
protection**



**Open space
creation**

An aerial photograph of a vast, arid landscape. A prominent, winding river channel flows through the center, surrounded by a complex network of smaller, branching channels and dry, cracked earth. The terrain is a mix of light brown and grey tones, suggesting sand and silt. In the far distance, a range of rugged, brown mountains stretches across the horizon under a clear sky. The overall scene conveys a sense of extreme dryness and environmental stress.

Questions ?