



Achieving Water Resilience
Through
Integrated Regional Water Management
In Ventura County

*Lynn Rodriguez, Manager
Watersheds Coalition of Ventura County*

Central Coast Sustainability Summit
October 16, 2019



Key Challenges/Opportunities



Climate
Change



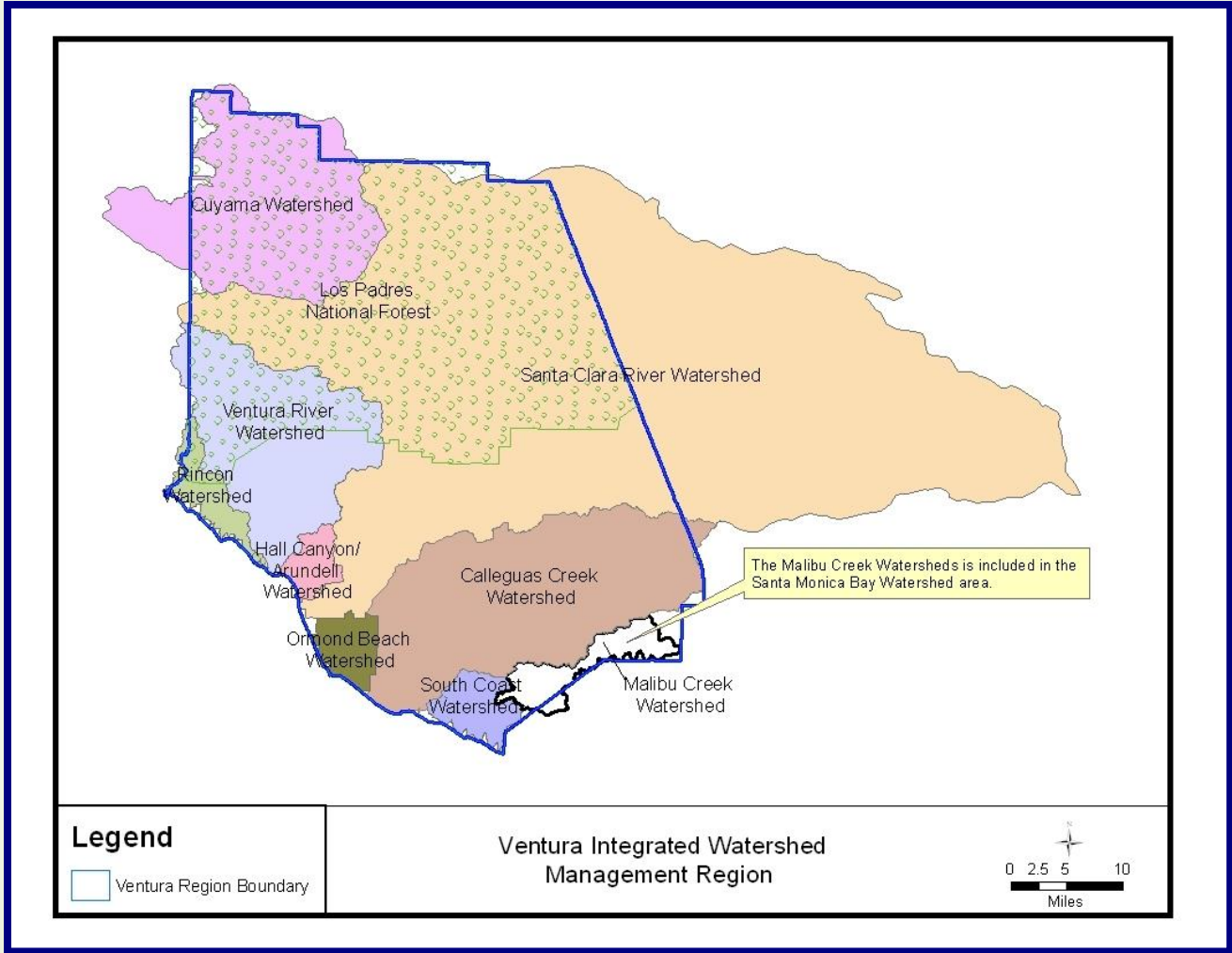
Public
Engagement



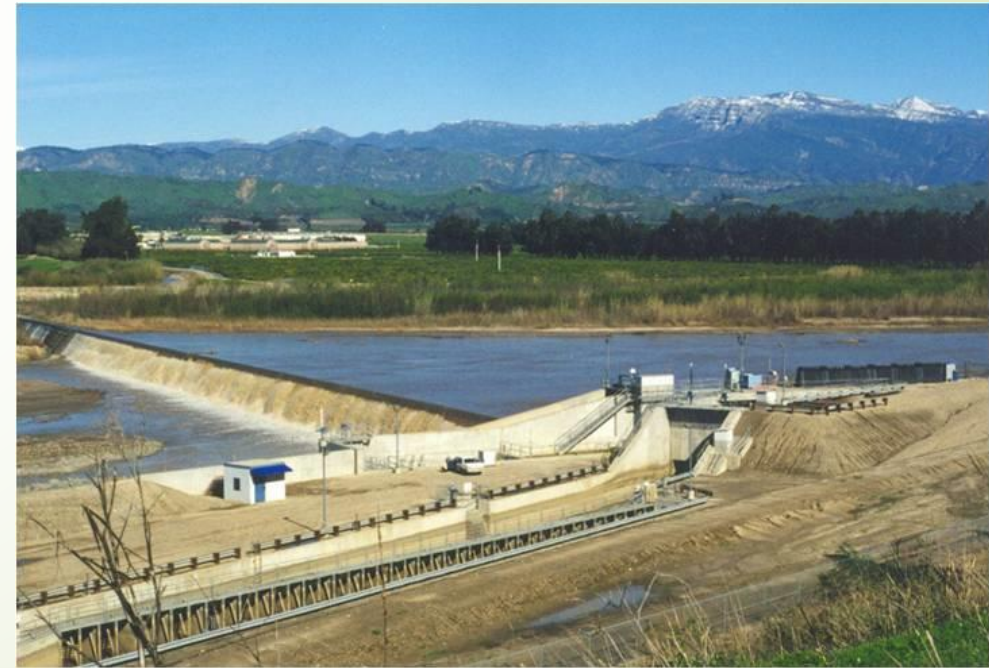
Funding

Region Overview

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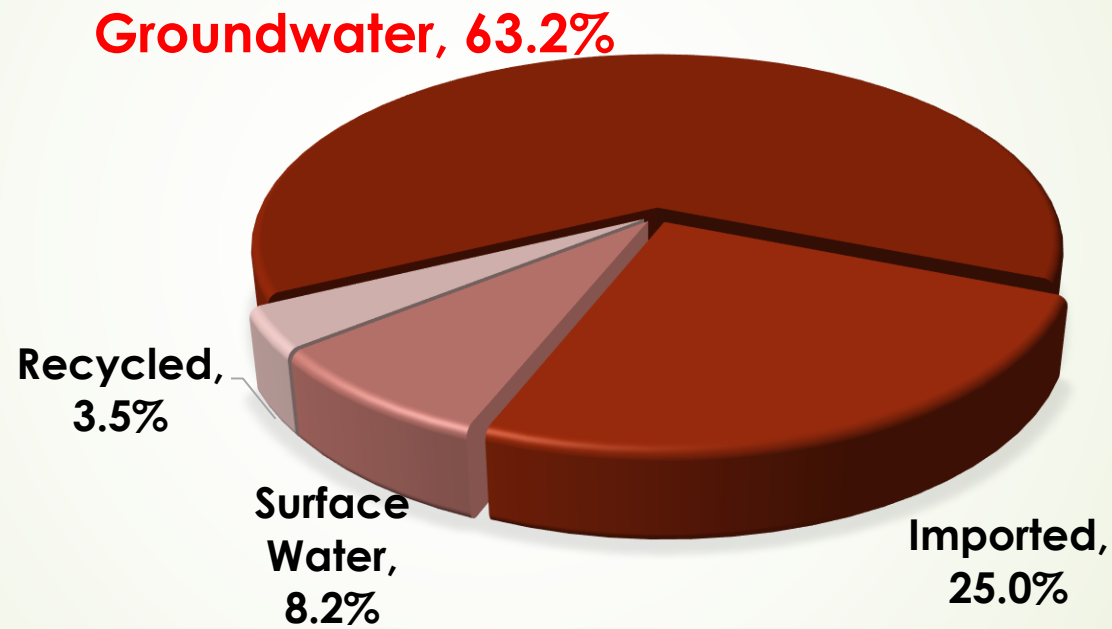








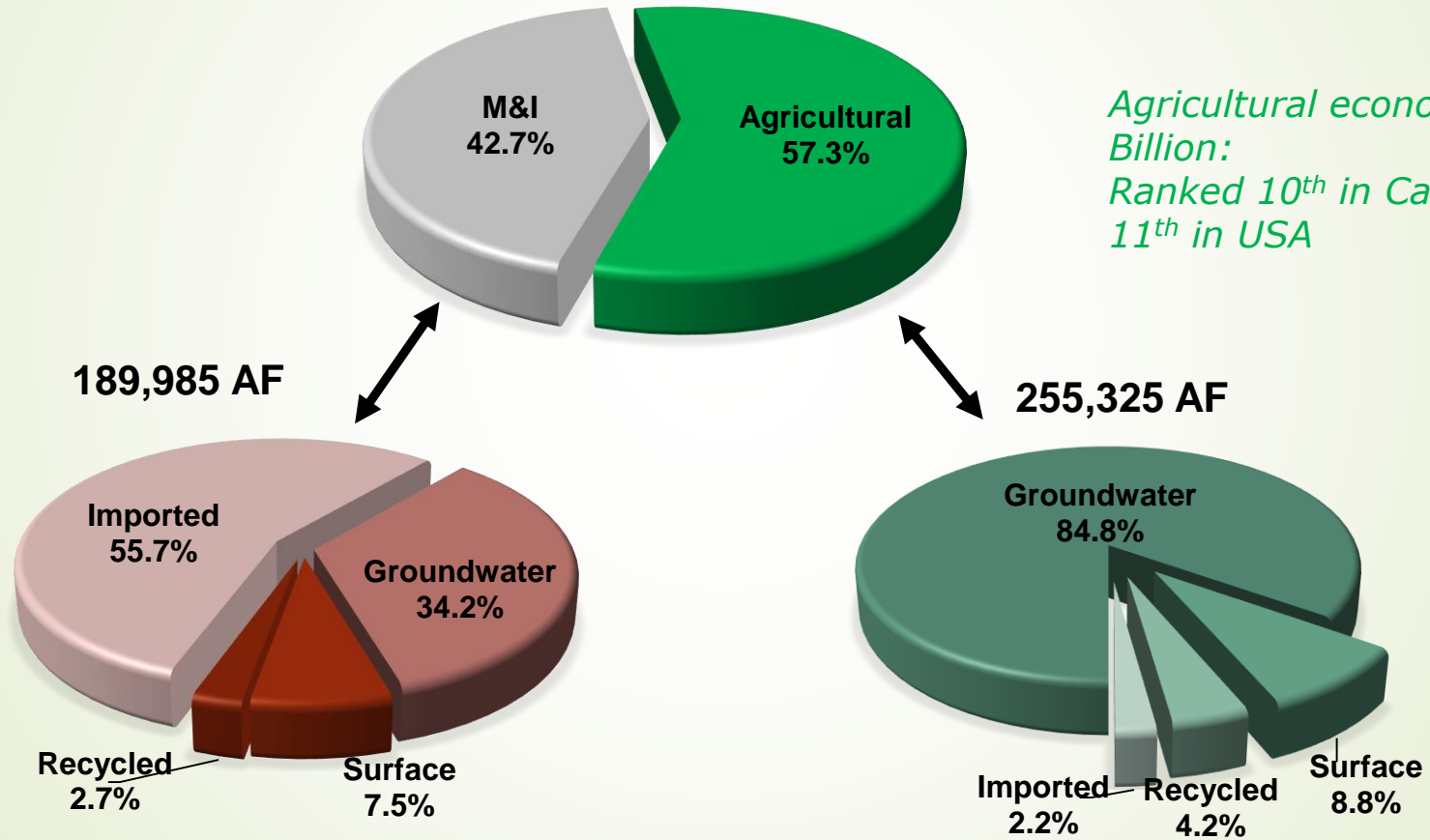
WATER SUPPLIES IN VENTURA COUNTY



Source: County of Ventura 2013
Water Supply and Demand: Hydrometrics

2013 DEMAND = 445,310
ACRE-FEET

M&I AND AGRICULTURAL WATER SOURCES 2013



Source: County of Ventura 2013
Water Supply and Demand: Hydrometrics



Challenges



- Seawater intrusion – overdraft
- Declining groundwater Levels
- Development pressures
- Limited water supplies (for human and ecosystem Uses)
- Water quality degradation
- Periodic severe flooding
- Steelhead habitat
- Invasive species - Quagga mussels/Arundo Donax
- Climate change impacts

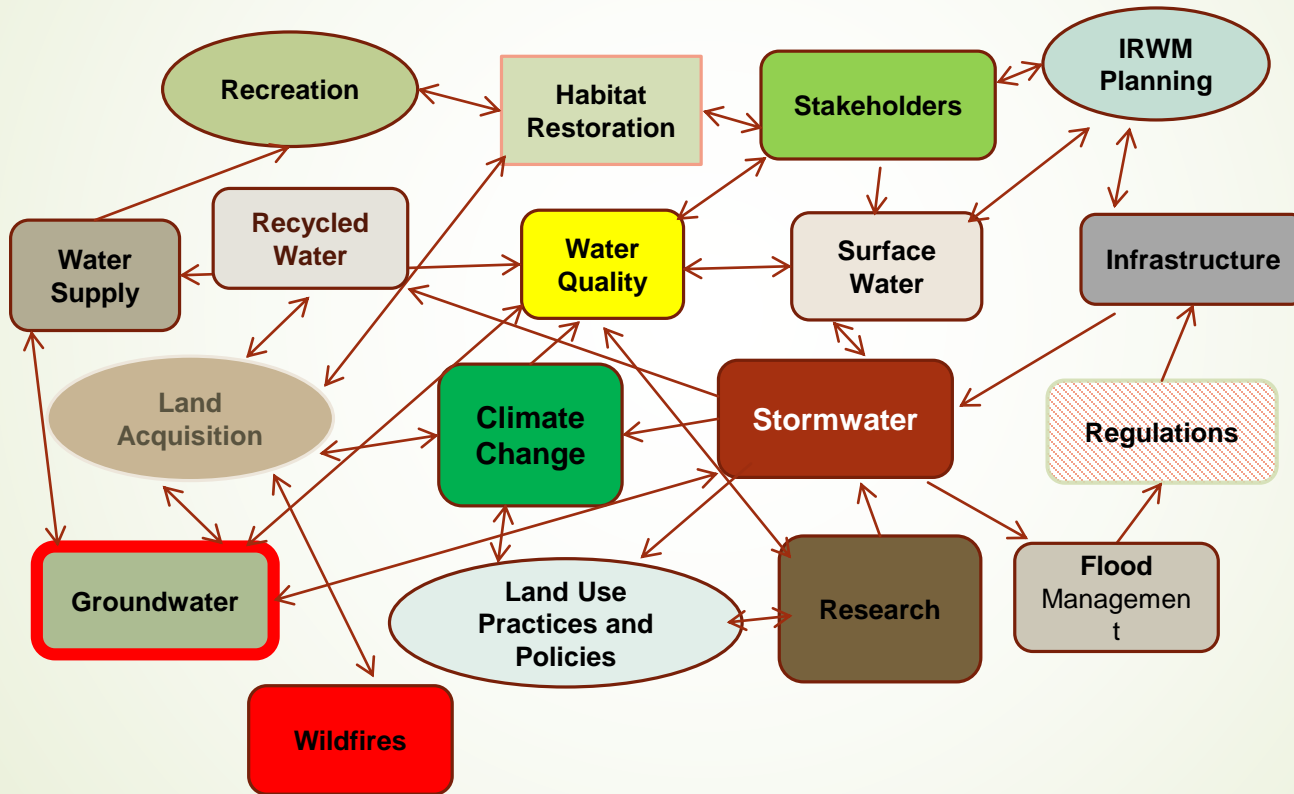
Integrated
Regional
Water
Management

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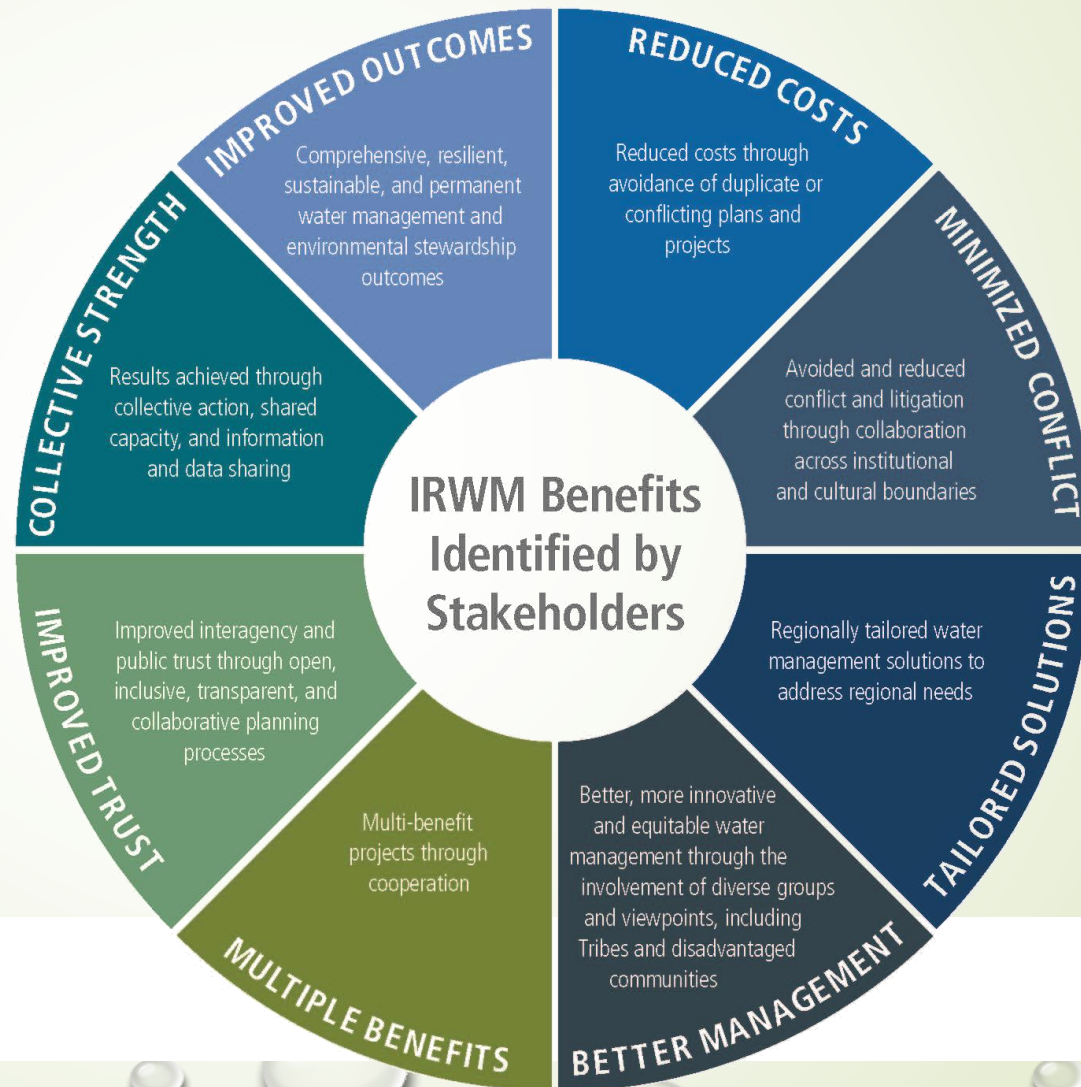
What is IRWM?

- ◆ Collaborative effort to manage all aspects of water resources in a region
- ◆ Crosses jurisdictional, watershed, and political boundaries
- ◆ Involves multiple agencies, stakeholders, individuals, and groups
- ◆ Attempts to address complex issues and differing perspectives through mutually beneficial, integrated solutions

Integrated Regional Water Management: Connections

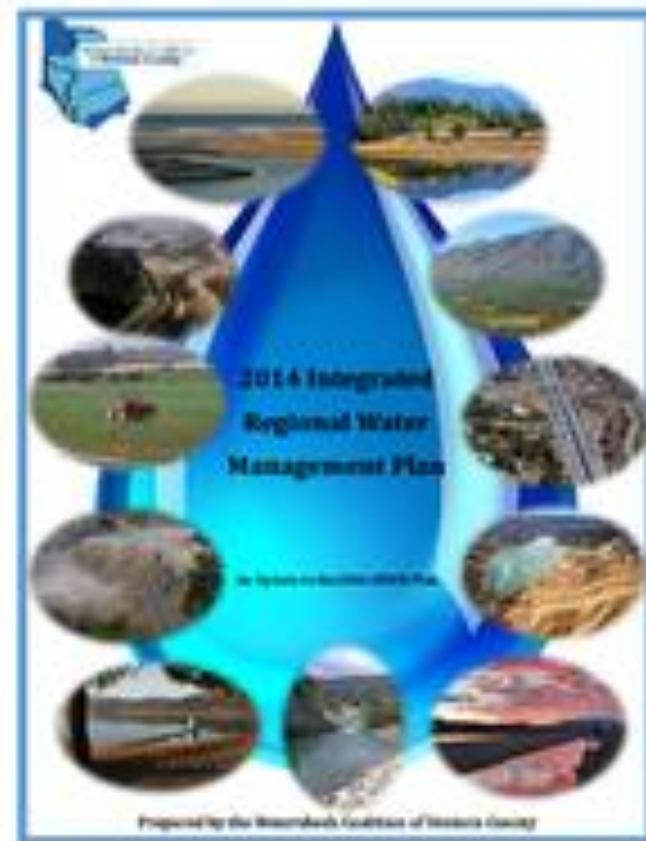


IRWM Benefits



Source: Stakeholder Perspectives
Recommendations for Sustaining and
Strengthening IRWM; 2017

Watersheds Coalition of Ventura County Integrated Regional Water Management Program





WCVC IRWM Plan Goals

- Protect, conserve, and augment local water supply portfolio to increase local water resilience.
- Protect and improve water quality
- Protect people, property and the environment from adverse flooding impacts
- Protect and restore habitat and ecosystems in watersheds
- Provide water-related recreational, public access, stewardship, engagement and educational opportunities
- **Prepare for and adapt to climate change**





Public Engagement

Stakeholder Engagement....



- ▶ County of Ventura
- ▶ Cities
- ▶ Wholesale Water Agencies
- ▶ Sanitation Districts
- ▶ Water Purveyors
- ▶ Native American Tribes
- ▶ Flood management entities
- ▶ State and Federal Agencies
- ▶ Environmental Groups
- ▶ Other Non-Profits
- ▶ Resource Conservation District
- ▶ Land use planners
- ▶ Farm Bureau
- ▶ Other Special Districts





Climate Change and Resilience

“Climate Change is no longer some far-off problem; it is happening here, it is happening now”



Lake Casitas, 2018

Key Projected Climate Changes in California

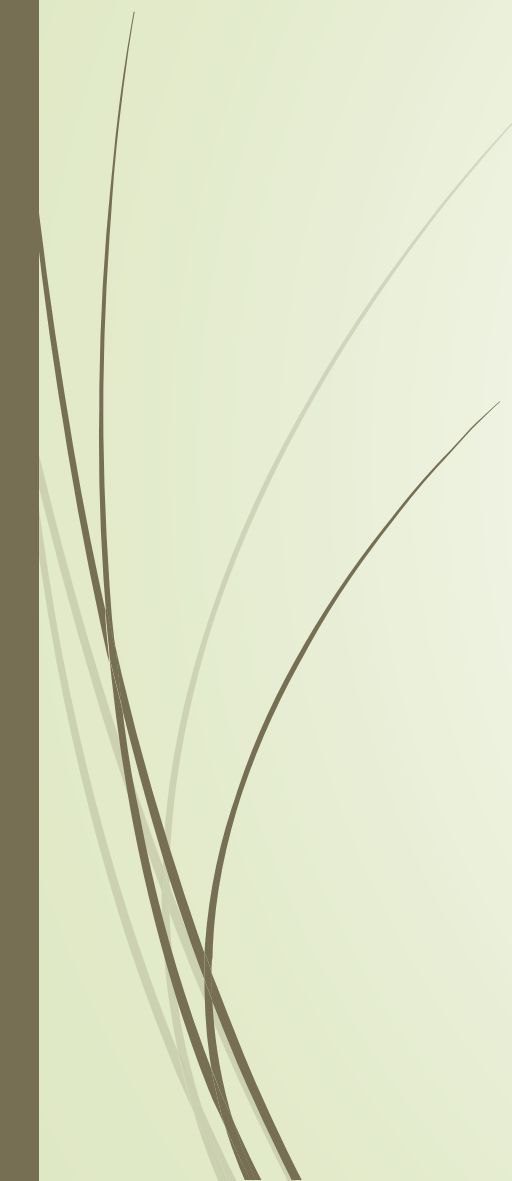


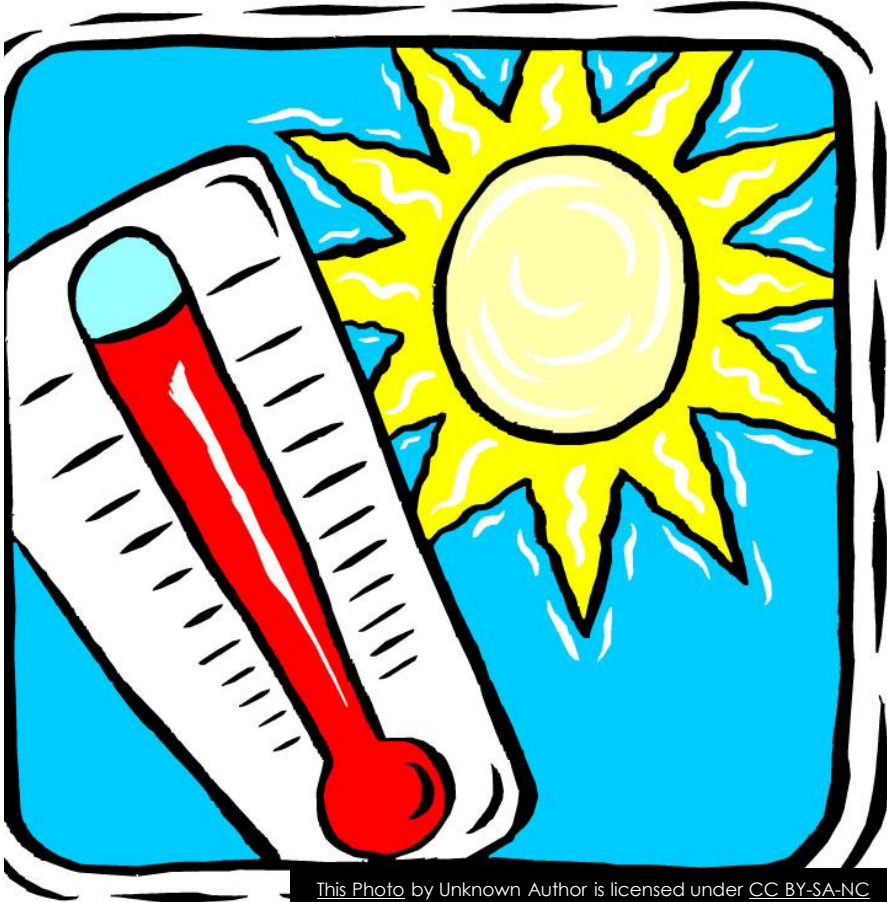
- Continued warming temperatures
- *Extreme* temperatures expected to increase
- Dry and wet weather extremes expected to increase
- Snowpack levels are projected to decline
- Sea levels are projected to continue rising
- Droughts projected to occur more frequently
- Areas burned by wildfires may increase

* **Source – 4th Climate Change Assessment**

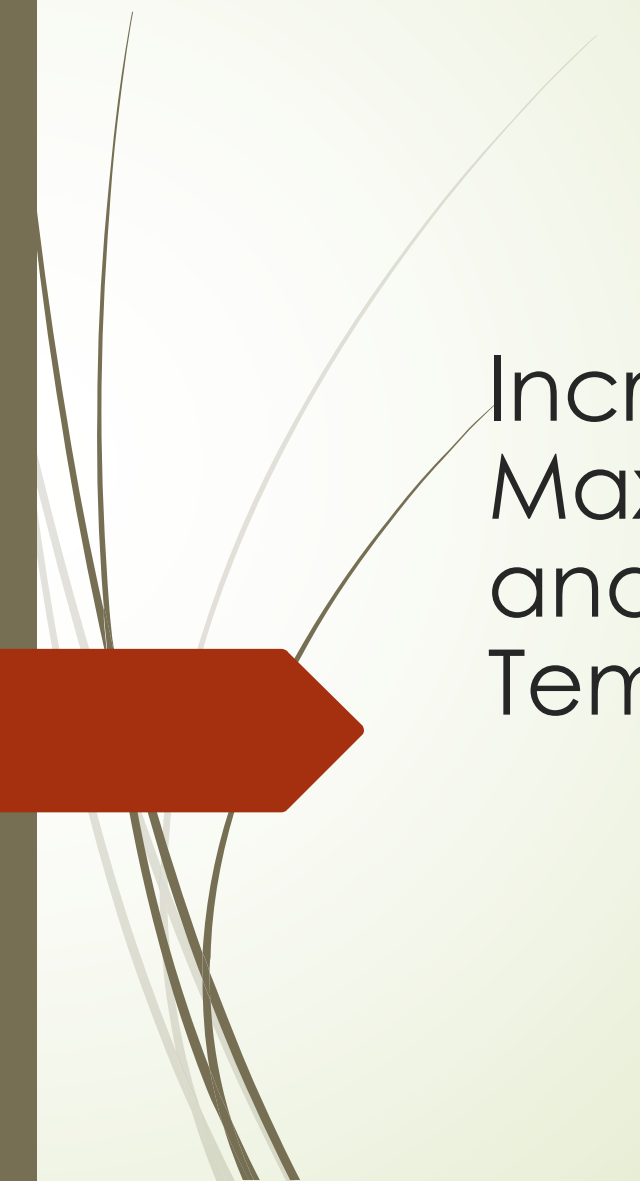


Key Vulnerabilities to Climate Change in Ventura County

- Water supply reductions due to droughts
 - Water quality degradation
 - Water demand increases
 - Potential threats to infrastructure due to sea level rise, flooding
 - Impacts to agriculture and the local economy
 - Threats to natural resources and property
 - Potential for increased wildfire
- 



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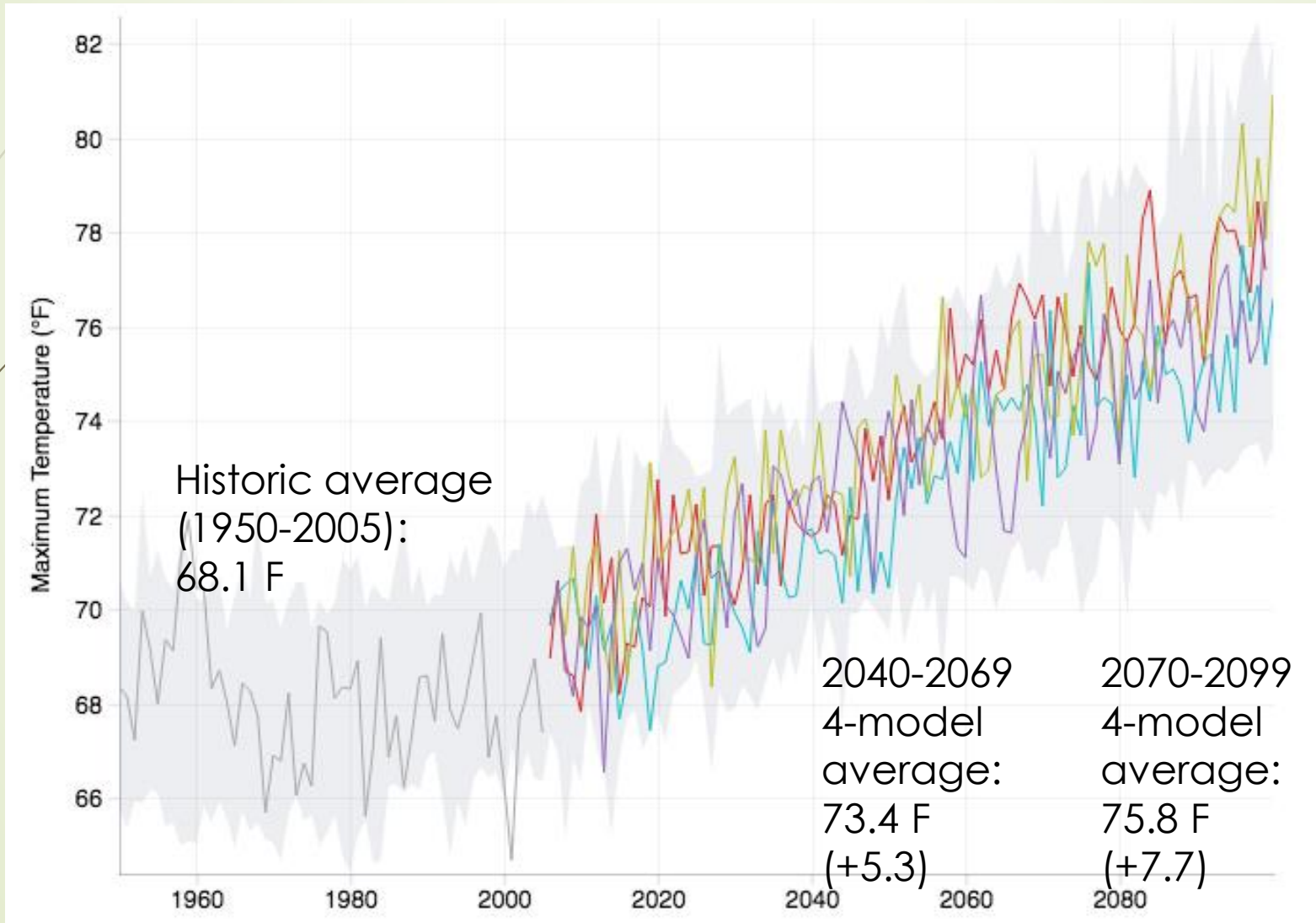


Increased
Maximum
and Minimum
Temperatures

Maximum temperature changes

26

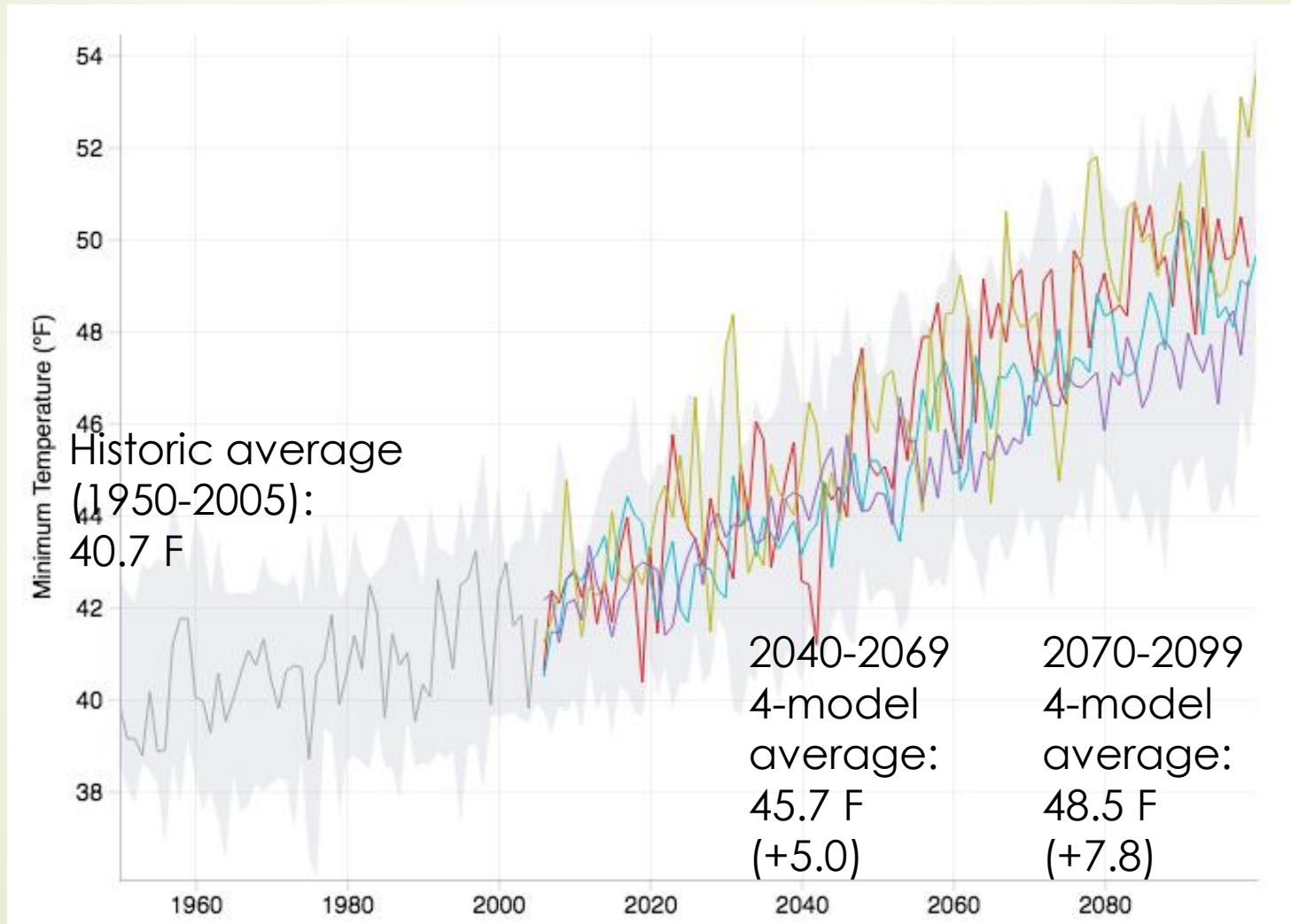
Ventura River Watershed (RCP 8.5)



Minimum temperature changes

27

Ventura River Watershed (RCP 8.5)



High Intensity Rainfall and Flash Flooding



Post-fire debris flow in Camarillo Springs 12 December 2014



2005 Flooding Events





Prolonged, Intense Droughts

Lake Casitas - 2018

Wildfires and Related Debris Flows



2018 Thomas Fire



Sea Level Rise



Photo Courtesy of Ventura County Planning Division

- VC County Resilient Coastal Adaptation Project
- Coastal modeling – USGS HERA and CoSMoS, TNC Coastal Resilience Project
- City of Oxnard Local Coastal Plan Update
- Consideration of hazards, economic impacts, land use requirements

Projected sea level rise:

- 2030 - 8 inches
- 2060 – 16 inches
- 2100 – 58 inches



Considerations for IRWM Projects

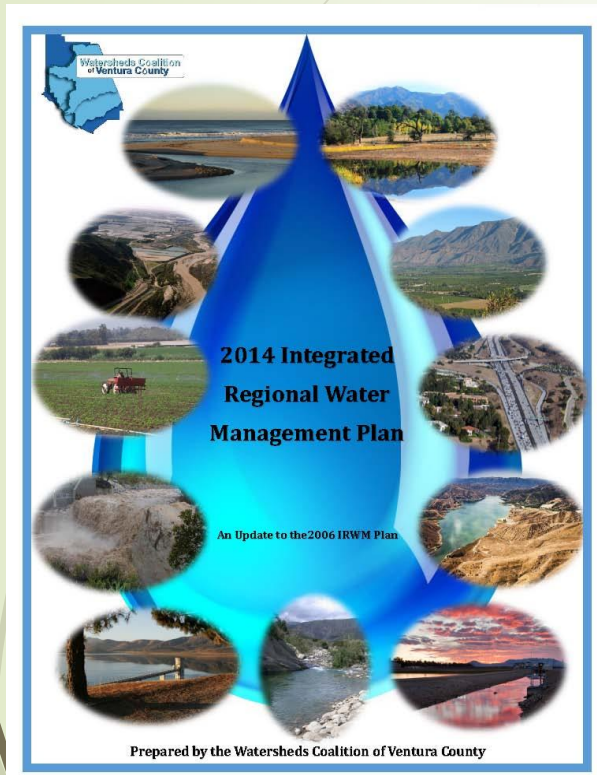
► Mitigation

- Quantify greenhouse gas emissions (GHG)
- Ability to help IRWM region reduce GHG emissions
- Reduces energy consumption

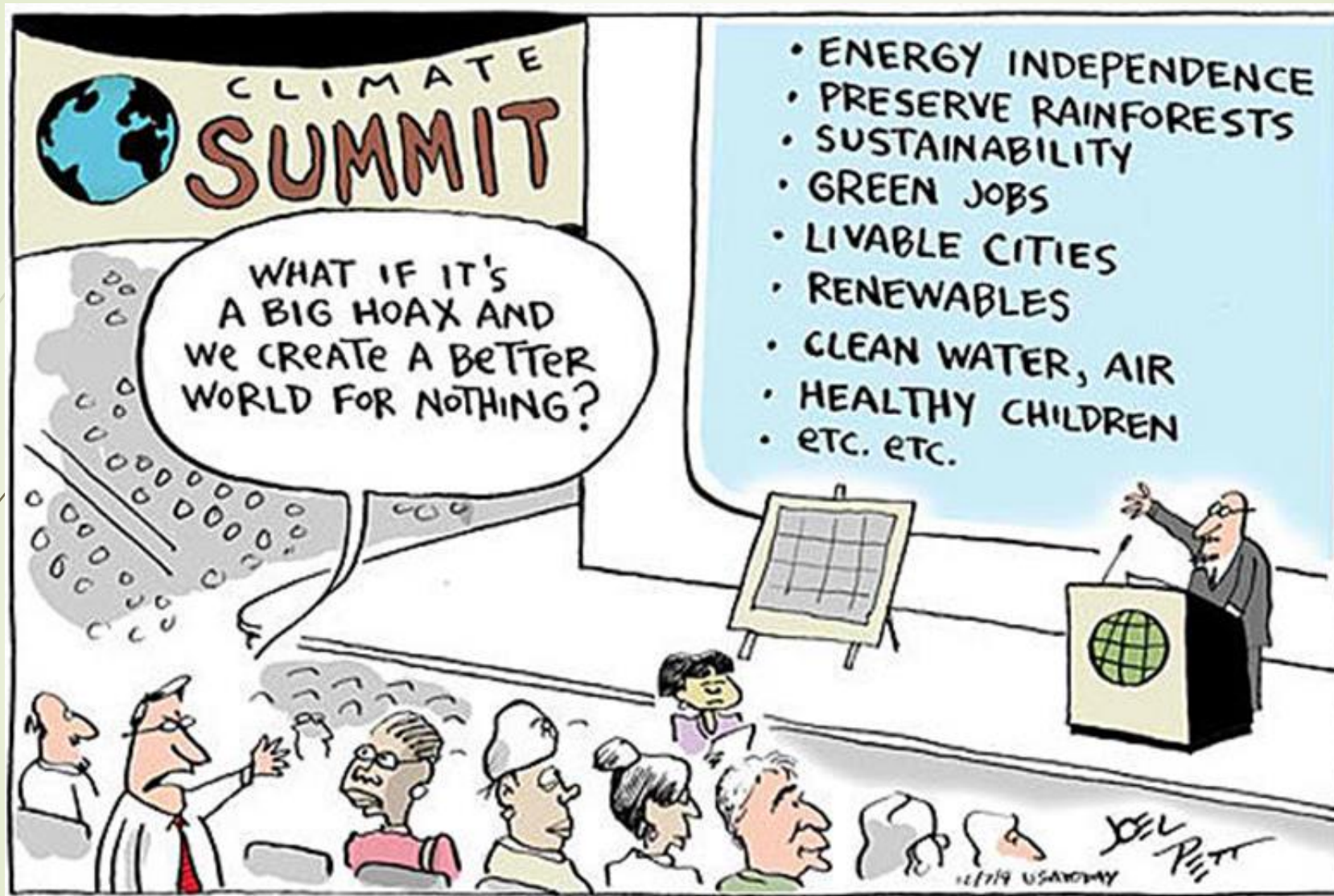
► Adaptation

- Adapts to climate change vulnerabilities
- Considers adaptations to water management system
- Considers change in the amount, timing, intensity, quality and variability of runoff and recharge
- Considers effects of sea level rise on water supply conditions

Resilience Strategies and Projects



- Natural Floodplain management
- Invasive species removal
- Land use policies – i.e . setbacks, low-impact development
- Recycled water (with solar power)
- Stormwater capture, treatment, spreading
- Demand reduction/efficiency
- Strategic siting/re-siting infrastructure
- Emergency inter-ties
- Watershed planning



Funding



Funding opportunities

- State and Federal Grants – Prop. 1, Prop. 68
- Low-Interest and Revolving Loans
- Foundation Grants and other Private Investments
- Public-Private Partnerships
- Groundwater Assessment Fees
- Local Matching Funds/Contributions

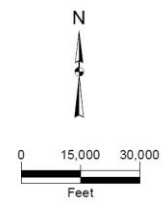
WCVC Funding Success

Planning Grants	\$ 1.2 million
Prop 50 Implementation Grant (closed out)	\$ 25 million
Prop 84 Implementation Grant (Rnd 1)	\$ 17.5 million
Prop 84 Implementation Grant (Rnd 2)	\$ 18 million
Prop 84 Drought Implementation Grant	\$ 8.4 million
Prop 84 Implementation Grant (Final Rnd)	\$12.3 million
Total Grant Funding Awarded	\$ 82.4 million

37 PROJECTS FUNDED THROUGH IRWM



- Legend**
- ⑦ WCVI IRWMP Project
 - County Boundary
 - ⊕ Ventura River Watershed
 - ⊕ Santa Clara River Watershed
 - ⊕ Calleguas Creek Watershed



Kennedy/Jenks Consultants
Watersheds Coalition of Ventura County

WCVI IRWMP Projects

K/J 1444234'00
January 2016
Figure 1

Snapshot of Projects

- ◆ Groundwater Recharge
- ◆ Septic-To-Sewer Conversion
- ◆ Wastewater Treatment Plant Upgrades/Recycled Water
- ◆ **Invasive species (Arundo) removal**
- ◆ **Regional Landscape and Agricultural Efficiency**
- ◆ **Natural floodplain management and protection**
- ◆ Turf replacement/conservation
- ◆ Flood protection
- ◆ Groundwater management
- ◆ Water quality improvement



Key Elements for Sustainability

- Diverse portfolio of solutions and strategies
- Access to good data
- Innovative technology and new approaches
- Commitment to public education and engagement
- Ongoing integrated planning and adaptive management
- Strong relationships and partnerships - collaboration
- Adequate funding
- Commitment to long-term resilience

If you wish to go quickly, go alone.

If you wish to go far, go together.

-- African proverb

Photo: Taken by David J. Phillip/AP – August 27, 2017 ~ Houston, Texas



Questions?

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- www.watershedscoalition.org

