

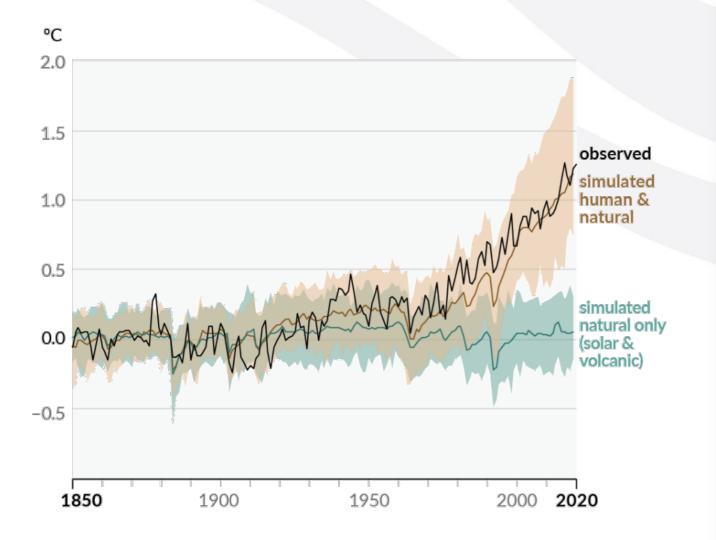
Office of Research, Planning, and Performance

## Agenda

- 1. Overview: Climate and water
- 2. Review: State Water Board Climate Resolution 2017
- 3. Next Steps: Seeking input on planned process to develop a new climate resolution

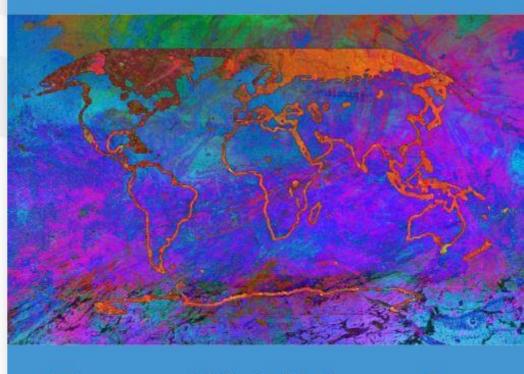


## Overview: Climate & water





## Climate Change 2021 The Physical Science Basis



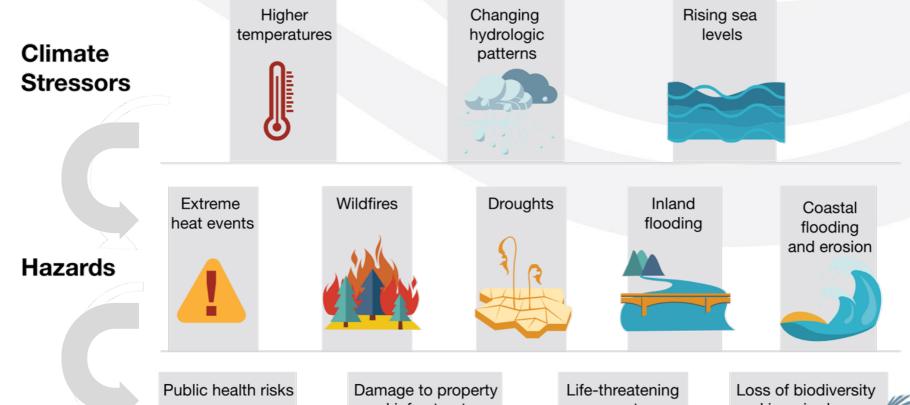


Working Group I contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change





## Climate Stressors → Hazards → Impacts



Major Impacts









SOURCE: LAO

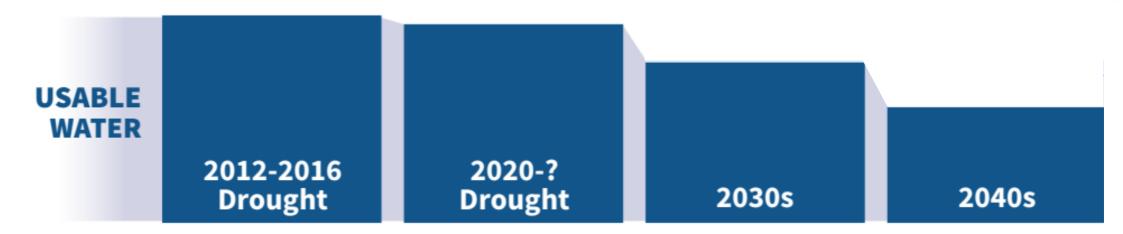
## Weather whiplash: extreme dry and wet swings



SOURCE: UCLA/SWAIN

# California could lose 10% of its water supplies over the next 20 years

#### **WATER SUPPLY WITH NO ACTIONS**



SOURCE: California Water Supply Strategy

## Disproportionate climate risks in the US



#### **AIR QUALITY AND HEALTH\***

New asthma diagnoses in children due to particulate air pollution.



**EXTREME TEMPERATURE AND HEALTH** 

Deaths due to extreme temperatures.



**EXTREME TEMPERATURE AND LABOR** 

Lost labor hours for weather-exposed workers.



#### **COASTAL FLOODING AND TRAFFIC**

Traffic delays from high-tide flooding.



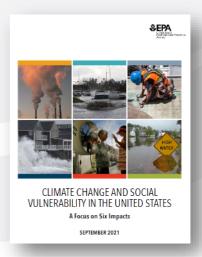
#### **COASTAL FLOODING AND PROPERTY**

Property inundation due to sea level rise.

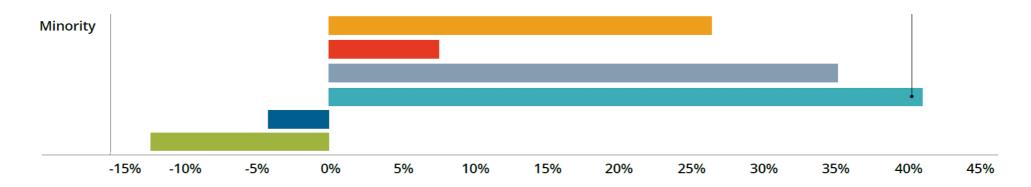


#### **INLAND FLOODING AND PROPERTY**

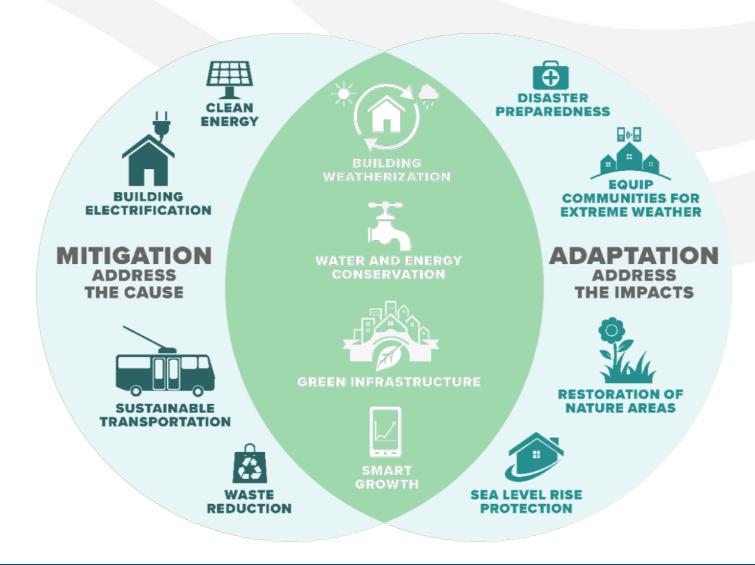
Property damage or loss due to inland flooding.



Difference in Risks Relative to Reference Populations with 2°C of Global Warming or 50 cm of Sea Level Rise

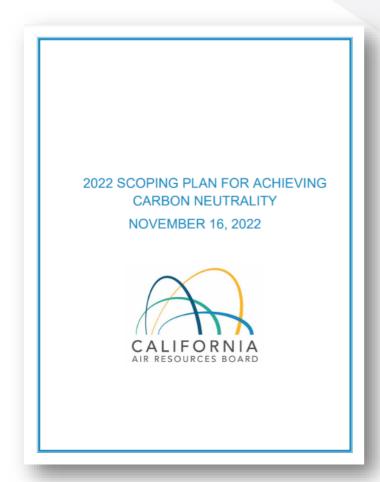


## Climate action > mitigation & adaptation

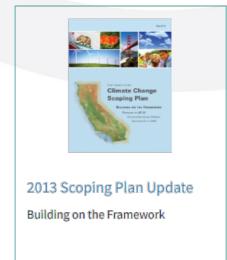


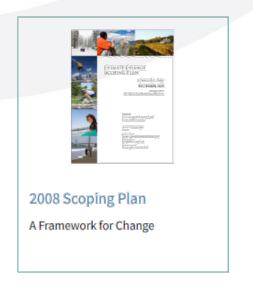
SOURCE: LOS ALTOS

# Mitigation: Scoping Plan sets state greenhouse gas reduction goals









# CALIFORNIA'S WATER SUPPLY STRATEGY Adapting to a Hotter, Drier Future

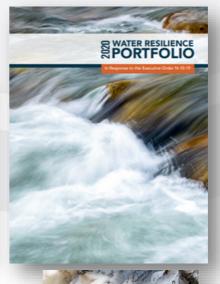
CalEPA Codfa

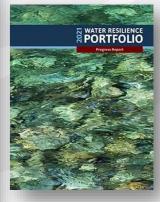
# Adaptation: State strategies address climate impacts













## Regional Water Boards resolutions and plans

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD LOS ANGELES REGION

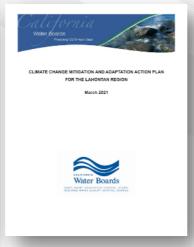
Climate Change on the Los Angeles Region's Water Resources and

- The mission of the Los Angeles Water Board is to preserve and enhance water quality in the Los Angeles Region for the benefit of present and future generations. Fururunt to the federal Grean Water Act and the California Porter-Cologne Water Quality Control Act, the Board designorus beneficial uses of the Region's authors and ground waters and astablishes water quality objectives for the reasonable protection of those uses. Beneficial uses are the uses of water necessary for the survival or well-being of humans, plants, and wildlife. In the tabe of climate change, the Board's success in achieving its mission requires a clear understanding of the foreseestile impacts to our water resources and necodated beneficial uses and implementation of strategies to adapt to and mitigate such impacts.
- Human activities over the past contary have resulted in the receise of large quantities of carbon diocels and other greenhouse gaises (GHG) into the atmosphere, leading to the onset of significant changes in the earth's climate that will have substantial impacts on
- As discussed in detail in Part 1 of the Los Angeles Region Framework for Christic Change Adaptation and Mitigation Current State of Knowledge & Motor Cavalhir Regulatory eightened frequency of extreme weather conditions including extreme precipitation events and drought, and resultant increase in the occurrence of flooting and eticline along with sea livel rise could drastically after hydrological and ecosystem processes.

Los Angeles Region Framework for Climate Change Adaptation and Mitigation Potential Regulatory

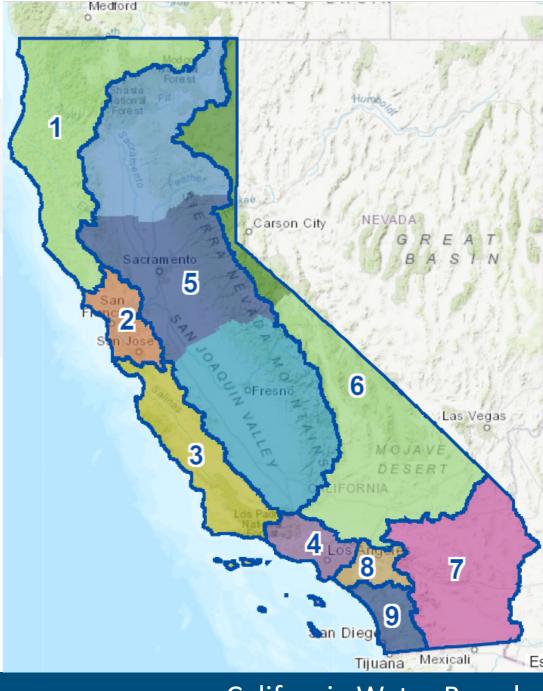
Adaptation and Mitigation

Los Angeles Regional Water Quality Control Board



RESOLUTION NO. R9-2018-0051





## State Water Board climate commitments

## Climate Resolution 2007

#### STATE WATER RESOURCES CONTROL BOARD RESOLUTION NO. 2007-0059

APPROVAL TO DEVELOP ADDITIONAL INFORMATION AND CONSIDER ACTIONS PERTAINING TO CLIMATE CHANGE AND WATER RESOURCES

#### WHEREAS

- Climate change is predicted to alter water availability with consequential adverse impacts to water quality, water temperature, and the ability to meet water right allocations.
- The Water Boards recognize that their actions and the programs that they administer may contribute to future Greenhouse Gas emissions and/or may require adaptations to accommodate climate change.
- The Water Boards are committed to careful consideration of climate change strategies to further our ability to preserve, enhance, and restore the quality of California's water resources, and to ensure their proper allocation and efficient use for the benefit of present and future cenerations.
- Assembly Bill 32, The California Global Warming Solutions Act of 2006, signed by the Governor on September 27, 2006, states that all state agencies shall consider and implement strategies to reduce their greenhouse gas emissions.
- On August 23, 2007, the State Water Board and the Department of Water Resources held a joint workshop soliciting suggestions to reduce Greenhouse Gas emissions and identify adaptations to accommodate changing climatic conditions.
- Suggestions presented at the joint workshop were extensive, including but not limited to, water-energy relationships, water recycling and conservation, water quality regulation, basin planning, Best Management Practices, and land use notines.

#### THEREFORE BE IT RESOLVED THAT:

- In partnership with the Department of Water Resources, State Water Board staff shall eavaluate the input received from the August 23, 2007 joint meeting on Climate Change to identify.
  - Which specific strategies are primarily the responsibility of either the Water Boards or the Department of Water Resources for Independent consideration;

## Climate Resolution 2017

#### STATE WATER RESOURCES CONTROL BOARD RESOLUTION NO. 2017-0012

COMPREHENSIVE RESPONSE TO CLIMATE CHANGE

#### WHEREAS:

- Sharp rises in the atmospheric concentration of greenhouse gases over the last century and a half, due to human activity, have led to an increase in global average temperature, and associated climate chance.
- 2. Climate change is affecting and will affect different regions in different ways. Current and future impacts include increasing frequency of extreme weather events, prolonged fire seasons with larger and more intense fires, increased tree mortality, heat waves, sea-level rise and storm surges. Changes in hydrology include declining snowpack and more frequent and longer droughts, more frequent and more severe flooding, changes in the timing and volume of peak runoff, and consequent impacts on water quality and water availability. Vulnerabilities of water resources include, but are not limited to, changes to water supplies, subsidence, increased amounts of water pollution, erosion, flooding, and related risks to water and wastewater infrastructure and operations, degradation of watersheds, alteration of aquatic ecosystems and loss of habitat, multiple impacts in coastal areas, and ocean accidification.

Examples of water quality impacts include, but are not limited to: dry periods and drought lowering stream flow and reducing dilution of pollutant discharges, harmful algal blooms due to a combination of warm waters, reduced ability of warm water to hold dissolved oxygen, and nutrient pollution, more erosion and sedimentation caused by intense rainfall events, especially following wildfire, and increased velocity of stream flow, potential sewer overflows due to more intense precipitation and increased storm water runoff, rising sea levels inundating lowlands, displacing wetlands, and altering tidal ranges, and increased absorption of carbon dioxide creating coastal zone "hotspots" of acidification and increased absorption of carbon dioxide creating coastal zone "hotspots" of acidification and hypoxia.

- 3. The risks of abrupt or irreversible changes increase as the magnitude of the warming increases. The Intergovernmental Panel on Climate Change in its Fifth Assessment Report indicates that limiting global average temperature increase to below 2 degrees Celsius is necessary in order to minimize the most catastrophic climate disruptions. The California Climate Change Assessments have provided a strong foundation of research addressing the impacts of climate change on the state, as well as potential response strategies.
- Mitigation, in the context of climate change, refers to actions taken to reduce concentration of greenhouse gases in the atmosphere. The most effective way to reduce greenhouse gas concentrations in the atmosphere is to reduce emission sources

## Racial Equity Resolution 2021 Racial Equity Action Plan 2023-25

#### ATE WATER RESOURCES CONTROL BOARD

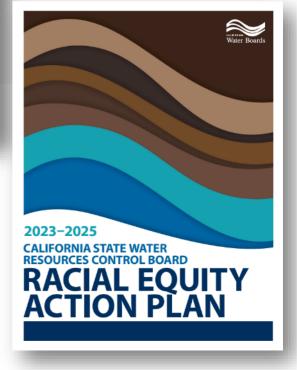
CONDEMNING RACISM, XENOPHOBIA, BIGOTRY, AND RACIAL INJUSTICE AND STRENGTHENING COMMITMENT TO RACIAL EQUITY, DIVERSITY,

#### WHEREAS:

- 1. As part of the California Environmental Protection Agency (CaliFPA), the shared mission of the State Water Resource Control Board (State Water Board) and nine Regional Water Qualify Control Boards (Regional Water Board) and nine Regional Water Board) and nine Regional Water Board (State Water Board) and nine Regional Water Board). The Regional Water Board (State Water Board) and nine Regional Water Board (State Water Board) and nine Regional Water Board). The protection of the environment, public health, and all beneficial uses, and to ensure proper water resource ablocation and efficient use for the benefit of present and failure generations. In relation to this mission, the Water resource ablocation and discharged peaced gradual and extracting activated and estimation and discharged peaced gradual and estimation.
- 2. The Water Boards are a member of the Government Alliance on Race and Equity (GARE) and have adopted its definition of racial equity; racial equity occurs when race can no longer be used to predict life outcomes, and outcomes for all groups are improved. Because non interests with manry, if not all, other marginalized identities, prioritizing and addressing racial

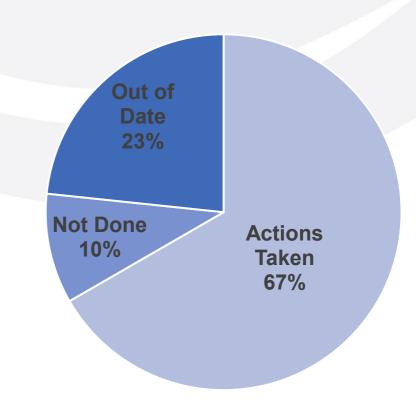
#### Race as a Determinant of Environmental and Racial Inequities

- Historically, decision-makers representing government agencies used to establish structures and systems that continue to deliver disparate outcomes, including wealth, health, educational, and environmental inequities.
- LadEPA 2021 Polulion and Prejudice Story may demonstrates that instructively reclaim engisherhoods are "generally associated with worse environmental conditions and greater population vulnerability to the effects of the properties of the properties of the effects of the properties of the properties



## Review: Climate Resolution 2017

- March 2017
  - Climate Resolution adopted
  - 30 committed actions
- March 2024
  - Preliminary review by State Water Board Climate Team
  - Feedback from State Water Board divisions & offices



## Key Climate Resolution 2017 Accomplishments

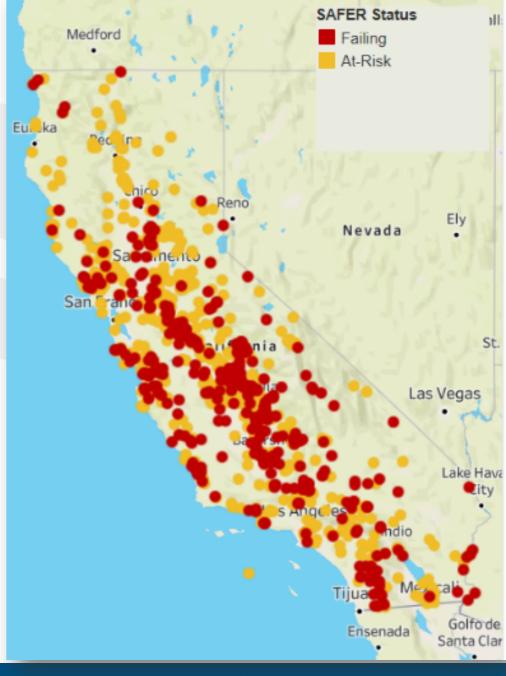
- Building resilience for drinking water systems
- Annual reporting of recycled water data since 2019
- Water Rights Response to Climate Change report released 2021
- Water quality permitting processes and plans include climate
- Expand water resources
- Climate planning included in State Revolving Fund applications
- Urban water efficiency regulations and data collection
- Drinking water **climate vulnerability surveying** since 2018
- Ongoing Bay-Delta consultation
- Internal Water Boards Climate Roundtable continues

## **Drinking Water**

Resolution 2017: Provide assistance to protect drinking water systems

- SAFER: Safe and Affordable Funding for Equity & Resilience
- Drinking Water Needs Assessment

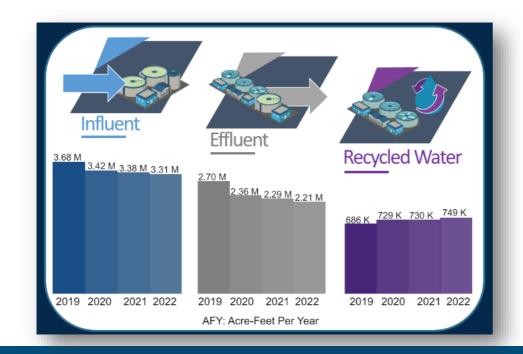


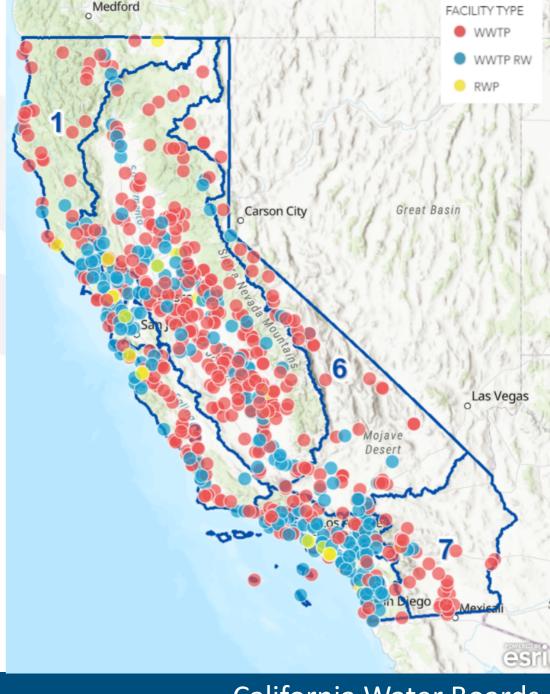


## Water Recycling

Resolution 2017: Summarize annual volume of recycled water

Annual summary since 2019

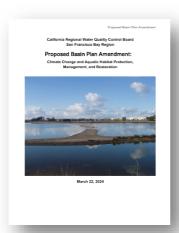




# Water Quality Planning & Permitting

Resolution 2017: Consider need to modify permits and other regulatory requirements

 All Regions have included climate change considerations in resolutions, planning, and/or permitting

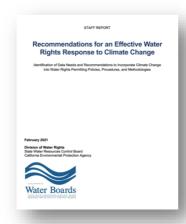


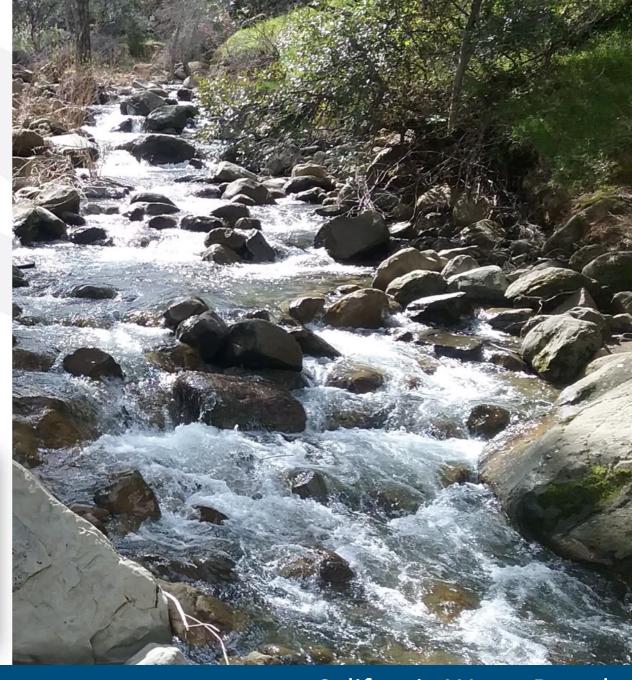


## Water Rights Recommendations

Resolution 2017: Make recommendations regarding the use of models to account for projected impacts of climate change

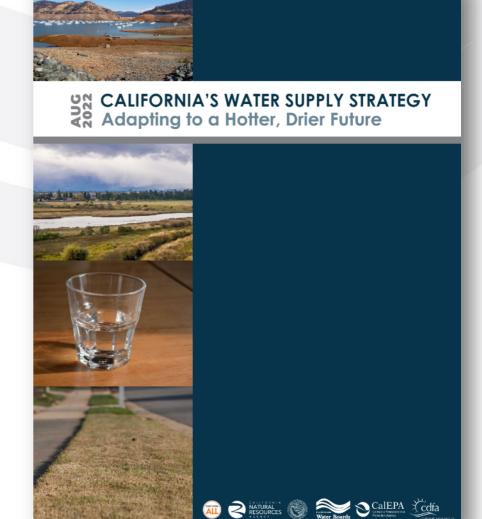
 Report: recommendations to incorporate climate change analysis into permitting new water rights





## Water Resources

- Resolution: identify and recommend actions the Water Boards could take for effective permitting of projects to develop new and underutilized water resources
- Water Supply Strategy 2022
  - Identify recycled water projects
  - Assist with recycled water permitting & funding
  - Review groundwater basins impaired by salts and nutrients
  - Develop siting criteria for desalination



## Lessons Learned

Climate Resolution 2017 was an action plan

Complete, in process, outdated

Need of long-term guidance for climate action

- Not a revision
- Guideposts: principles and processes
- Shared framework

Opportunity for a new climate resolution

- Divisions, Offices, Regional Water Boards
- Co-produced with interested parties



# Content a new climate resolution may include

### 1. Purpose statement

#### 2. Principles

Examples: Prioritize...

- Natural and green infrastructure
- Equity and most vulnerable
- Mult-benefit: mitigation + adaptation
- Avoid maladaption

#### 3. Process

Examples: how to track actions, how to align actions across strategies, how to develop new actions

#### 4. Actions

New or revised actions



# Why purpose, principles & processes?

- Specific actions are important but can quickly become outdated
- Purpose and principles provide long-term guidance to staff

#### Processes

- ensure we are going the right direction
- identify resources and management to track and follow that direction
- assess the need to revise our commitments



# Approach to develop new climate resolution

- Participatory approach
- Drafting team
- Internal management and executive feedback
- Public engagement
- Resolution tracking tool

