

CLIMATE RESILIENCE

For California, climate change is a real and present danger. In the past year, the state has experienced extreme winds and devastating wildfires, extreme heat, and flooding and mudslides. The state also continues to address longer-term, chronic climate impacts like sea level rise and the increasing volatility of its water supply.

California continues to lead in mitigating the risks from current climate impacts while aggressively reducing greenhouse gas emissions. The state must continue to be proactive in the face of clear threats to infrastructure and communities, critical ecosystems, and food systems, and continue to meet ambitious targets to reduce the very emissions that are responsible for these impacts. The state must do so with the recognition that climate policies are also economic and workforce policies, with the potential to help create a more inclusive and sustainable economy for all Californians.

REDUCING CLIMATE RISK WHILE TRANSITIONING TO CARBON NEUTRALITY

As a responsible member of the global community, the state must reduce climate risk, especially in the most climate-vulnerable communities, while transitioning to a carbon neutral economy by 2045. Key to this transition is achieving maximum decarbonization while also investing in land-based carbon removal strategies across all regions, sectors, and areas of government. At the same time, the state must invest in resilience in the face of an already-changing climate. Investing in these forward-looking strategies today will save lives and dollars tomorrow.

Executive Order N-19-19 directed the Department of Finance, in consultation with the Governor's Office of Planning and Research and the California Department of Human Resources, to develop a Climate Investment Framework for the California Public Employees' Retirement System, California State Teachers' Retirement System, and the University of California Retirement Plan. The framework will include an analysis of sound investment practices and where each pension fund currently stands in relation to statewide goals to support sustainable investments. The Department of Finance anticipates completion of the framework in spring 2020.

The Budget reflects the following priorities to address both short- and long-term climate risks:

- **Transportation—Decarbonization** in the state's largest sector of emissions by providing clean vehicles, clean fuels, low-carbon transportation options, and transit-oriented development, with enhanced prioritization on short-term environmental and public health benefits in disadvantaged and vulnerable communities.
- **Natural and Working Lands—Strategies** that increase sequestration and reduce emissions from the state's forests, agricultural lands, and conservation lands, and that support resilience across water systems.
- **Climate Resilience—Assistance** to regions and communities to become more resilient in the face of current and future climate impacts.

To tackle these goals at the scale and speed the science demands, the Administration proposes creating an integrated and comprehensive Climate Budget that prioritizes using government dollars to strategically leverage private sector capital in all three priority issue areas.

CLIMATE BUDGET

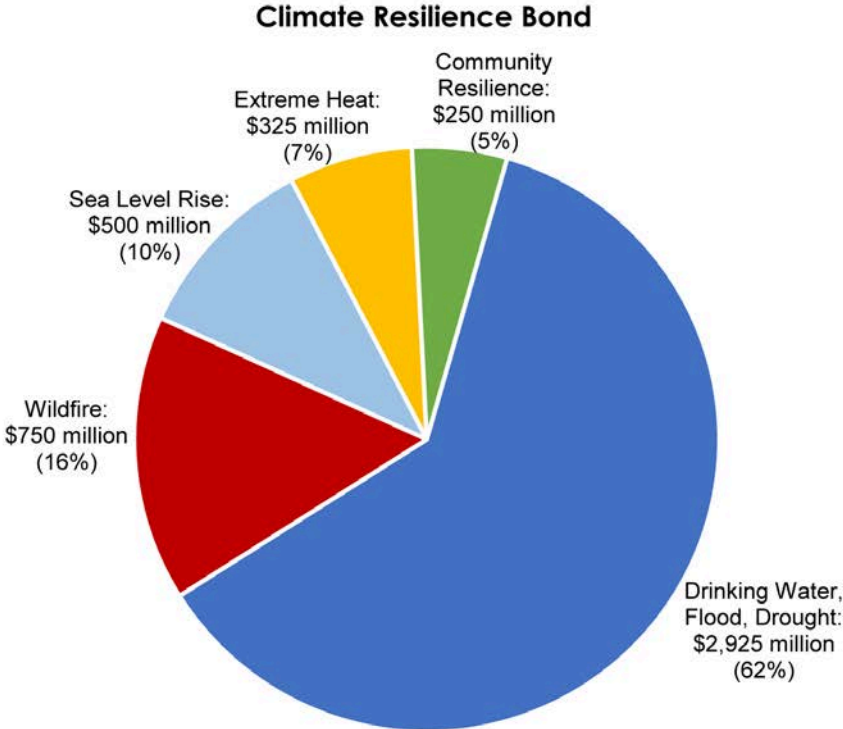
The Climate Budget takes a disciplined approach to government investment in meeting the state's priority climate goals of reducing climate risk while achieving carbon neutrality. The Climate Budget will invest \$12.5 billion over the next five years, including the following key components:

Climate Budget
(Dollars in Millions)

Funding Mechanism	2020-21 Total	5 Year Total
Climate Resilience Bond	-	\$4,750
Cap and Trade Expenditure Plan	\$965	\$4,825
Climate Catalyst Fund	\$250	\$1,000
General Fund One-Time Investments	\$169	\$169
General Fund Ongoing Expenditures	\$35	\$315
Existing Bond and Special Fund Expenditures	\$308	\$1,424
Total	\$1,727	\$12,483

CLIMATE RESILIENCE BOND

The Administration is proposing a \$4.75 billion climate resilience bond for the November 2020 ballot to support investments over the next five years to reduce specific climate risks across California through long-term investment in natural and built infrastructure, especially in the state’s most climate-vulnerable communities. The bond is structured based on climate risks, and approximately 80 percent of the funds are allocated to address immediate, near-term risks (floods, drought, and wildfires), while the remaining funds lay the groundwork for addressing long-term climate risk (sea level rise and extreme heat). The bond aligns with the Administration’s draft Water Resilience Portfolio in addressing drought and flood risks, and also makes strategic investments in community resilience. If approved by the voters, the bond will help the state move toward achieving carbon neutrality and carbon sequestration goals, and provide funding for programs that result in multiple benefits, leverage non-state funding, and help address liabilities such as the Salton Sea. For additional information on the draft Water Resilience Portfolio, see the Infrastructure chapter.



Climate Resilience Bond
(Dollars in Millions)

Investment Category	Department	Program	Amount
Drinking Water, Flood, Drought	Department of Water Resources / State Water Resources Control Board	Regional and Inter-regional Water Resilience	\$1,000
	Department of Water Resources	Sustainable Groundwater Management	\$395
	State Water Resources Control Board	Safe Drinking Water	\$360
	Department of Water Resources	Flood - Urban/USACE Projects	\$340
		Flood - Systemwide Multi-benefit	\$270
	Natural Resources Agency	Salton Sea	\$220
	California Department of Food and Agriculture	Environmental Farming Incentive Program	\$200
	Department of Fish and Wildlife	Enhanced Stream Flows and Fish Passage	\$140
	Subtotal	\$2,925	
Wildfire	Natural Resources Agency, CAL FIRE, and Office of Emergency Services	Hardening of Critical Community Infrastructure	\$500
	CAL FIRE	Forest Health	\$250
	Subtotal	\$750	
Sea Level Rise	Ocean Protection Council	Coastal Wetland Restoration	\$320
		Nature-Based Solutions to Build Resilience	\$130
		Demonstration Projects to Protect Critical Infrastructure	\$50
	Subtotal	\$500	
Extreme Heat	Natural Resources Agency	Urban Greening and Forestry	\$200
	Strategic Growth Council	Cool Surface Materials	\$125
	Subtotal	\$325	
Community Resilience	Strategic Growth Council	Community Resilience Planning	\$25
		Community Resiliency Centers	\$225
	Subtotal	\$250	
	Total	\$4,750	

DRINKING WATER, FLOOD, AND DROUGHT

Across various categories of water resilience approaches, 62 percent of the bond focuses on reducing risks to communities from climate impacts on water systems,

including floods, droughts, and degraded drinking water quality. The bond takes a regional and integrated state approach to these issues, recognizing that each area of the state faces different challenges and opportunities. These funds will be allocated to:

- Regional and Inter-regional Water Resilience—\$1 billion to support various water management programs and projects with a focus on regional and inter-regional water projects, including but not limited to: Integrated Regional Water Management projects; multi-benefit stormwater management; wastewater treatment; water reuse and recycling; water use efficiency and water conservation; water storage; water conveyance; watershed protection, restoration, and management; and water quality. This funding specifically supports the regional resilience approach identified in the draft Water Resilience Portfolio.
- Sustainable Groundwater Management—\$395 million to support local groundwater sustainability agencies implementing projects and programs related to the groundwater sustainability plans for critically overdrafted basins.
- Safe Drinking Water—\$360 million to provide grants and loans to disadvantaged communities to improve access to safe drinking water, including funding capital infrastructure costs for improved water supplies, treatment, and distribution to make vulnerable communities more resilient to the effects of climate change.
- Flood Control: Urban/U.S. Army Corps of Engineers Projects—\$340 million for Urban Flood Risk Reduction projects that provide the projected state cost share needs for various priority projects through 2024-25.
- Flood Control: Systemwide Multi-benefit—\$270 million to support multi-benefit flood risk reduction and ecosystem restoration efforts.
- Salton Sea—\$220 million to support Salton Sea habitat and air quality mitigation projects necessary for the 2018 Salton Sea Management Plan.
- Environmental Farming Incentive Program—\$200 million for grants, incentives, and demonstration projects to enhance agricultural lands for soil health, water quality and efficiency, biodiversity, resiliency, and habitat benefits. Specific projects include healthy soils, water efficiency, nutrient management, and other conservation practices on farms and ranches.
- Enhanced Stream Flows and Fish Passage—\$140 million to remove barriers to passage of native fish species and provide enhanced water flows, and reconnect aquatic habitat to help fish and wildlife endure drought and adapt to climate change.

WILDFIRE

In recognition of the unprecedented wildfires the state has experienced in recent years, the bond allocates \$750 million to harden critical public infrastructure in high fire-risk communities and makes additional investments in forest health. This forest health investment is complementary to the forest health and fuel reduction activities supported by the Greenhouse Gas Reduction Fund, and to the investments the Governor and Legislature have required that utilities make in high-risk areas across the state. These funds will be allocated to:

- **Hardening of Critical Community Infrastructure**—\$500 million to facilitate hardening of critical infrastructure, with a focus on low-income areas at significant risk of wildfires. Types of projects include hardening of drinking water infrastructure, emergency shelters (such as fairgrounds), and public medical facilities.
- **Forest Health**—\$250 million to support various long-term forest health projects, including reforestation; conservation easements; activities that promote long-term carbon storage; and upper watershed, riparian, mountain meadow, and inland wetland restoration.

SEA LEVEL RISE

Sea level rise is a chronic long-term threat facing the state's coastal communities. The bond invests \$500 million in reducing risks from sea level rise and changing ocean conditions. This complements funding from Proposition 68 and the Greenhouse Gas Reduction Fund to support coastal communities in planning for sea level rise. These funds will be allocated to:

- **Coastal Wetland Restoration**—\$320 million to support the restoration of coastal wetlands, which provide protection against sea level rise and flooding, enhance carbon sequestration, and provide benefits for biodiversity.
- **Nature-Based Solutions to Build Resilience**—\$130 million to support projects that build resilience of ocean ecosystems, such as kelp forests, seagrass habitat, eelgrass beds, and marine protected areas.
- **Demonstration Projects to Protect Critical Infrastructure**—\$50 million to support demonstration projects to protect infrastructure that is vulnerable to sea level rise and flooding such as roads, railways, sewage treatment plants, and power plants.

EXTREME HEAT

Extreme heat is both an immediate and chronic risk to many communities, especially in the Central Valley and inland regions. The bond invests \$325 million in proven cooling techniques such as urban greening and urban forestry, as well as in advanced materials for buildings and transportation systems that are designed to reflect rather than trap heat. Both sea level rise and extreme heat are areas where strategic bond investments today will help to create stronger and more resilient infrastructure over the next several decades. These funds will be allocated to:

- Urban Greening and Forestry—\$200 million to mitigate urban heat island impacts in the regions most affected by extreme heat. Funds would support urban forestry projects and an expanded urban greening program that supports the creation of green recreational parks in underserved areas.
- Cool Surface Materials—\$125 million for a new program to incentivize the use of "cool materials" in projects (e.g. paving and roofing) within vulnerable communities.

COMMUNITY RESILIENCE

Finally, the bond provides \$250 million to invest directly in communities to bolster community resilience centers, and support local preparedness, planning, and education around resilience. This community-level support will help to provide a pipeline of locally defined and driven climate resilience projects and programs that are effectively positioned to leverage state, federal, and private investment opportunities, including during emergencies. These funds will be allocated to:

- Community Resilience Planning—\$25 million for planning activities to address community-specific climate risks and develop climate resilience plans.
- Community Resiliency Centers—\$225 million for the construction of new and retrofitting of existing facilities, including at fairgrounds, to support adaptation needs to address locally relevant climate risks. These centers will serve both as community evacuation and emergency response centers, and to build long-term resilience and recovery operations for local communities.

CAP AND TRADE EXPENDITURE PLAN

Another primary pillar of the Climate Budget is a proposed \$965 million Cap and Trade Expenditure Plan. The Budget supports several existing ongoing programs (such as CAL

FIRE's forest health and fuel reduction programs) while prioritizing emission reductions in the transportation sector, the largest greenhouse gas emissions source in California. To maximize and leverage appropriate resources as part of the integrated Climate Budget, the Cap and Trade Expenditure Plan focuses on areas that are most appropriate for direct government grant funding: support to disadvantaged communities and investments in research, capacity building, and workforce necessary to drive the state's long-term transition to carbon neutrality.

In particular, the Cap and Trade Expenditure Plan continues a strong focus on community air protection, and community engagement generally, by providing \$235 million to support the AB 617 program, which reduces exposure in communities most impacted by air pollution through community air monitoring and community emissions reduction programs. Complementing this funding is a focus on reducing emissions in the transportation sector and prioritizing disadvantaged communities and clean mobility options for lower-income households, which make up \$400 million in Cap and Trade spending. Key among these programs are those aimed at truck, bus, off-road, and agricultural vehicles, where emissions have a disproportionate impact on disadvantaged populations in both urban and rural communities. These programs also provide targeted incentives for consumers to purchase both new zero-emission vehicles, but also to retire older, higher-polluting vehicles in favor of more low-emission alternatives—one critical strategy for improving clean mobility options for lower-income households.

The Cap and Trade Expenditure Plan includes \$35 million in strategic investments to reduce short-lived climate pollutants, especially methane.

Finally, the Cap and Trade Expenditure Plan includes foundational support for the research, capacity building, technical assistance, and workforce training that underpins the entirety of the Climate Budget. These programs include the Fifth California Climate Change Assessment, which provides the foundation for state, regional, and local agencies and departments to work together to understand and address projected physical climate impacts across the state. This research, coupled with strategies to directly engage local and tribal leaders as partners on the Assessment and to build capacity at the local level to respond to climate threats, is included as a foundational element of a \$25 million ongoing investment.

2020-21 Cap and Trade Expenditure Plan
(Dollars in Millions)

Investment Category	Department	Program	Amount
Air Toxic and Criteria Air Pollutants	Air Resources Board	AB 617 - Community Air Protection and Local Programs to Reduce Air Pollution	\$200
		AB 617 - Local Air District Implementation	\$25
		AB 617 - Technical Assistance to Community Groups	\$10
Low Carbon Transportation	Air Resources Board	Clean Vehicle Rebate Program	\$125
		Clean Trucks, Buses and Off-Road Freight Equipment	\$150
		Enhanced Fleet Modernization Program, School Buses and Transportation Equity Projects	\$75
		Agricultural Diesel Engine Replacement and Upgrades	\$50
Healthy Forests	CAL FIRE	Healthy and Resilient Forests	\$165
		Forest Carbon Plan: Prescribed Fire and Fuel Reduction	\$35
		2019 Fire Safety and Prevention Legislation	\$8
Climate Smart Agriculture	Department of Food and Agriculture	Healthy Soils	\$18
Short-Lived Climate Pollutants	CalRecycle	Waste Diversion	\$15
	Department of Food and Agriculture	Methane Reduction	\$20
Integrated Climate Action: Mitigation and Resilience	Coastal Commission and SF Bay Conservation and Development Commission	Coastal Resilience	\$4
	California Conservation Corps	Energy Corps	\$7
Research and Technical Assistance	Natural Resources Agency, California Energy Commission, Office of Planning and Research, and Strategic Growth Council	Climate Change Research, Technical Assistance, and Capacity Building	\$25
Workforce Training	Workforce Development Board	Apprenticeships and Job Creation/Just Transition Strategies for a Carbon Neutral Economy	\$33
Total			\$965

TRANSIT AND SUSTAINABLE COMMUNITY INVESTMENTS

These Cap and Trade investments will build on the climate resilience and greenhouse gas emission reduction benefits of \$1.5 billion of annual continuous appropriation programs.

The Affordable Housing and Sustainable Communities Program supports the Administration's housing and transportation agendas by investing in integrated projects that have to date provided nearly 10,000 affordable housing units for low-income residents, as well as increased access to transit, walking, and biking. Additionally, the Transit and Intercity Rail Capital Program, Low Carbon Transit Operations Program, and High Speed Rail investments are building an integrated low-carbon transportation network and providing a foundation for sustainable community development, with a strong focus on the state's most disadvantaged communities in terms of economic, community, and workforce development. Combined with the ongoing support for safe drinking water in disadvantaged communities, these Cap and Trade investments provide a model for how California can continue to grow and prosper even as the state's population increases over the next decade.

CLIMATE CATALYST FUND

Recognizing the scale and immediacy of the climate problem and the need to dramatically increase and leverage private sector investment in these critical programs to maximize and direct state investments, the Budget includes a \$1 billion General Fund investment (\$250 million in 2020-21, with additional funding in later years) for a Climate Catalyst Fund, to be administered by the state's Infrastructure Economic Development Bank in consultation with the Strategic Growth Council and the Labor and Workforce Development Agency. This revolving loan fund will provide low-interest loans for a portfolio of climate-related projects, prioritized in areas that help meet the state's climate and equity goals, and where technologies and infrastructure exist that could be deployed at much greater speed and scale but face barriers in the private market.

As with the overall Climate Budget, the Fund will be structured and managed to simultaneously address the state's climate goals while also building an inclusive and sustainable economy across all California regions and for all California businesses and workers.

Climate Catalyst Fund projects would be focused on the following key areas, with a commitment to re-examine the state's climate priorities and adjust these investment areas as needed. Technologies listed below are examples, but not requirements, nor are they the only types of projects that may be considered.

- Transportation emission reduction—Zero-emission vehicles (ZEV) and charging infrastructure including light and heavy-duty ZEV vehicles (with a focus on those owned by individual operators and small businesses), transit and rail ZEV fleet and

equipment, advanced technology freight, electric school buses, and electric/hydrogen charging infrastructure.

- Climate smart agriculture and forestry—Dairy digesters, agricultural and off-road engine replacement (with a focus on vehicles owned by individual operators/small businesses), efficient on-farm irrigation, sustainable food processing, small business/landowner loans for forest management, and community hardening.
- Circular Economy—Municipal waste and recycling, compost, wood waste collection and utilization, and carbon/methane capture and utilization. This includes a special emphasis on small business owners and emerging technologies.

Other significant adjustments in the Climate Budget:

In addition to the components mentioned above, and to further help address immediate needs in anticipation of this proposed bond funding, the Climate Budget also includes the following:

- \$103 million one-time General Fund for efforts to support the draft Water Resilience Portfolio, including groundwater management, the State Water Efficiency and Enhancement Program, as well as investments in the New River and the Tijuana River.
- \$66 million one-time General Fund for Urban Flood Risk Reduction projects and for investments to help modernize operations for fish, wildlife, and habitat protection.
- \$35 million ongoing General Fund to support various resources investments that align with the draft Water Resilience Portfolio, including Sustainable Groundwater Management Act implementation and enhancements to the Department of Fish and Wildlife.
- \$257 million existing bond funds (\$1.4 billion over the next five years, primarily from Proposition 68) to continue to support strategic natural resources programs.
- \$51 million one-time Alternative and Renewable Fuel and Vehicle Technology Fund to the California Energy Commission to accelerate deployment of electric vehicle charging infrastructure.

This comprehensive approach supports programs that will achieve the state's long-term climate goals while creating a sustainable and inclusive economy for all Californians.