

Adaptation and Resilience Funding and Finance in California

From fragmented funding to a durable adaptation and resilience investment framework

California has made substantial progress in understanding climate risk and identifying effective resilience strategies. The challenge is increasingly how to pay for it at the scale, speed, and duration the risk requires.

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Executive Summary

California has entered a new phase of building climate resilience. The state has established the foundation for ambitious approach to resilience: state planning and coordination frameworks, a robust climate science and research program, and decades of investments. But California is increasingly constrained by a funding and finance system that was not designed to sustain adaptation and resilience at scale.

The central finding of the 2026 Integrated Climate Adaptation and Resilience Program (ICARP) Technical Advisory Council (TAC) funding and finance work is straightforward: California needs to build a coordinated resilience investment framework. This framework should identify the state's resilience needs, invest in the full resilience lifecycle, prioritize the most vulnerable, match the right capital for the right projects, and sustain investment before disaster. The goal is to reduce underlying risks to communities, households, and the state's economy in a way that avoids disaster costs and provides long-term societal benefits.

Public funding remains indispensable, especially for underserved communities and for projects with broad public benefits, but the current grant-based model is episodic, oversubscribed, administratively intensive, and too small relative to the scale of need. At the same time, federal support has become less reliable, climate risk is beginning to affect insurance and credit, and many local governments lack the revenue authority, staffing, or technical capacity to build and finance a pipeline of adaptation and resilience projects.

The policy choice is not whether California will pay for climate risk. It is whether the state pays strategically before disasters or pay more afterward through losses, emergency response, recovery, insurance stress, infrastructure failure, and economic disruption.

California also enters this challenge with a strong base for action:

- Statewide plans and frameworks for action
- ICARP's statewide coordination role
- Robust climate research and science program
- Decades of public climate investment, including the Greenhouse Gas Reduction Fund and the \$10 billion 2024 Climate Bond (Proposition 4)
- Regional conservancies and collaboratives
- Local authority to raise revenue for resilience
- State financial institutions, private capital, insurers, philanthropy, and communities already testing new approaches

The opportunity lies in connecting these assets into a coherent system.

What the TAC heard

- The scale of need is outrunning visible funding. Adaptation costs are large, recurring, and cross-sectoral, while many funding programs remain short-lived and project-specific.
- The structure of existing finance is mismatched to long-term resilience. Traditional tools often reward discrete projects rather than sustained risk reduction, maintenance, and lifecycle investment.

- While climate risks cross boundaries, funding is fragmented across agencies, sectors, jurisdictions, and capital sources. Communities must navigate multiple programs with different timelines, eligibility rules, metrics, and application requirements – often on their own.
- Risk and access to capital are uneven. Communities facing the greatest climate vulnerability often have the least staff capacity, fiscal flexibility, and ability to secure adaptation funding and financing.
- California lacks a common way to measure adaptation needs, track where resilience dollars are going, and demonstrate avoided losses and other benefits over time.

What California should do next

The TAC heard key opportunities to create an adaptation finance system for California: make existing public investment work better; build the project and financing capacity needed to move from plans to implementation; and establish a durable statewide framework that connects risk, capital, equity, and results. To get there, this report outlines six actions:

1. Mainstream climate risk into public investment and capital decisions so resilience becomes a standard condition of how California plans, builds, replaces, and maintains assets.
2. Protect and create more durable public funding for resilience while shifting from one-time grant cycles toward sustained, multi-year investment and regional delivery models.
3. Mobilize additional capital by matching financing tools to project types and by reducing barriers to private, institutional, utility, insurance, and philanthropic participation.
4. Select revenue and financing tools that fit local conditions. Build local and regional finance capacity so communities can move from plans to finance-ready project pipelines. Incentivize cross-jurisdictional collaboration and partnerships to aggregate projects, align investments across regional risk landscapes, and improve access to funding, technical expertise, and implementation capacity.
5. Create statewide accountability infrastructure: an adaptation finance inventory, common metrics, benefit and avoided-loss tracking, and regular public reporting.
6. Establish a coordinated statewide resilience investment framework that aligns state agencies and partners around priority outcomes, equity standards, and a shared implementation agenda.

Bottom line: California needs to move from a portfolio of resilience programs to a resilience finance system; one that is capable of achieving long-term risk reduction and sustaining investment across administrations, economic cycles, disasters, and changing federal priorities. Importantly, building this system does not begin with finding a single new source of funding. California can make existing dollars work better through longer investment horizons, project aggregation, predevelopment support, coordinated applications, and shared measures of success.

1. California's Adaptation Finance Position

Californians are already paying costs associated with climate change

California is already experiencing the costs and cascading economic consequences of climate change (McCord et al., 2026). Climate change impacts every sector of the economy. Climate change is impacting workforce and productivity, business operations and investments, household costs, and government revenue. These impacts do not stay in one sector, but ripple across interconnected systems amplifying losses (McCord et al., 2026). These disruptions are also destabilizing insurance and financial markets (CLEE, 2025).

The economic impacts of climate change reach California households as concrete, recurring costs (California Earthquake Authority, 2026). An average American born in 2024, is projected to pay \$500,000 to \$1 million in climate-related costs over their lifetime, including higher housing, food, energy, healthcare, transportation, taxes, and lost income (ICF, 2024). For Californians, energy costs are increasing. Utilities are passing wildfire recovery and mitigation costs directly to ratepayers. Wildfire-related charges now add approximately \$41 per month to the average PG&E residential bill, or about 19% of the total bill (California Earthquake Authority, 2026). With growing wildfire risks, home insurance premiums in California increased by more than 23% between 2017 and 2022. Following the 2025 Los Angeles fires, regulators granted State Farm, California's largest insurer, a request for a 22% average rate increase for insurance policies across California (CLEE, 2025). On top of that, private insurers also passed \$1 billion in FAIR plan assessments to cover losses from the Los Angeles fires on to policyholders. The assessment translated into surcharges of 1% to 3% on policy premiums for households across California—not just those in fire-prone areas (California Earthquake Authority, 2026).

These costs are symptoms of larger economic impacts: an insurance market that is strained by the increasing frequency and severity of hazards and higher borrowing costs and downgraded credit ratings of utilities. These impacts not only directly affect household costs but also government revenue sources. As insurance becomes unaffordable or unavailable in high-risk areas, home sales stall and property values decline – cutting local property tax revenues that local governments rely on to support critical public services (CA FWD, 2026b).

Ultimately, climate change is already increasing costs for Californian households and eroding long-term economic competitiveness and the state's revenue base (CA FWD, 2026b). These pressures arrive as federal mitigation and resilience funding becomes less predictable and state and local budgets face competing demands.

The return on resilience is substantial

The economic case for acting before losses occur is substantial. A U.S. Chamber of Commerce analysis estimates that each \$1 invested in resilience can save \$13 in avoided economic costs, damages, and cleanup (U.S. Chamber of Commerce, 2024).

Adaptation is not simply a climate expenditure. It is a strategy for protecting California's fiscal capacity, infrastructure, housing, public services, and economic competitiveness.

But the financing model has not caught up to the risk

Resilience and adaptation investment is not commensurate with the scale of climate risks. Current model for financing adaptation and resilience is largely reliant on public grants. But this model is not well suited to the challenge:

- Adaptation costs are large, recurring, and cross-sectoral, while many funding programs remain short-lived and project-specific.
- Communities must navigate multiple programs with different timelines, eligibility rules, metrics, and application requirements – often on their own.
- Communities facing the greatest climate vulnerability often have the least staff capacity, fiscal flexibility, and ability to compete for funding.

Ultimately, California cannot grant-fund its way to resilience (CA FWD, 2026b). Not every resilience investment can or should be financed through debt or private capital. The challenge is to distinguish where public funding is essential from where financing can extend the reach of public dollars. California needs to move from a portfolio of resilience grant programs to a resilience finance system—one capable of mobilizing additional capital and more effective at achieving long-term risk reduction.

California is not starting from zero

Adaptation is a priority issue, and the state's policies reflect that. The California Climate Adaptation Strategy provides a clear framework and coordination structure for building community, economic, and environmental resilience to climate impacts. Assembly Bill 1482 (Gordon, 2015), requires the state adaptation strategy to be updated every three years and for state agencies to integrate climate considerations into state investments.

In 2015, Senate Bill 246 (Wieckowski, 2015) and Public Resources Code §§ 71350–71360 established ICARP to coordinate regional and local efforts with state climate adaptation strategies to adapt to the impacts of climate change.

Senate Bill 379 (Jackson, 2015) and California Government Code §65302(g)(4) require local jurisdictions to review and update their General Plans' Safety Elements to address climate adaptation and resiliency strategies.

Layered on top of these core adaptation policies is policy to strengthen planning and action to reduce risk of wildfires, extreme heat, drought, flooding, and sea level rise.

The state also has a robust climate science and research program. Since 2006, California's Climate Change Assessments have been conducted approximately every five years and Senate Bill 1320 (Stern, 2020) formally placed responsibility for the assessment under ICARP. California's Climate Change Assessments provide world-class climate models and a scientific foundation for understanding climate-related vulnerabilities. Information and data produced through the assessment support on-the-ground action at the local, regional, tribal, and state levels.

California has invested in climate adaptation and resilience for decades, including through statewide bonds supporting water, parks, coastal protection, ecosystem services, wildfire resilience, and nature-based solutions. As of October 2025, California had funded \$15.5 billion in over 600,000 implemented climate-focused projects through the Greenhouse Gas Reduction Fund (California Climate Investments, 2026). In November 2024, voters also approved the \$10

billion Safe Drinking Water, Wildfire Prevention, Drought Preparedness, and Clean Air Bond Act (Proposition 4).

The state also has institutional assets that many jurisdictions do not: regional conservancies and collaboratives; mature local public finance systems; an active insurance market; state financial institutions, private capital, insurers, philanthropy, and communities already testing new approaches.

Purpose

This report synthesizes the 2026 work of the ICARP TAC on adaptation funding and finance. It is intended to translate partner experience and practitioner input into a policy-oriented analysis of the current system and an actionable agenda for the many partners engaged in funding and financing resilience.

The role of ICARP TAC



Image 1: ICARP TAC. Photo of Councilmember's after its Q3 meeting in August, 2026.

The ICARP TAC is a statewide public forum dedicated to climate adaptation and resilience. Its 23 members represent state, regional, and local government, community-based organizations, tribal representatives, and the private sector. The TAC helps align state resilience efforts with local implementation needs, elevates on the ground challenges, and provides strategic input on emerging statewide priorities.

In 2026, the TAC centered its quarterly discussions on adaptation funding and finance. This report reflects recurring themes from those discussions and is designed as a shared roadmap rather than an exhaustive catalog of every funding program or financial instrument.

Key Terms

Resilience describes a state of readiness to face climate risk including the ability of communities to withstand, recover, and to learn from past disasters to strengthen future response and recovery efforts (CalOES, 2026). **Adaptation** refers to actions that reduces physical climate risk (CalOES, 2026).

Resilience and adaptation measures are needed across economic sectors, so systems continue operating through both acute shocks (such as storms or outages) and chronic stresses (such as heat, aging infrastructure, or sea level rise). For example, measures include increasing use of recycled water to manage drought risks, installing cool roofs to reduce temperatures, restoring wetlands to reduce flood risks, and building workforce for landscape treatments to reduce wildfire risks.

Resilience also includes **risk transfer** mechanisms, such as insurance, which help spread residual financial risks but does not, by themselves, reduce underlying physical risk.

Resilience and adaptation measures are often designed to deliver **co-benefits**—meeting community needs while also improving system reliability, reducing costs, and stabilizing economic activity (Duke University & ICLEI USA, 2026). Adaptation measures that reduce greenhouse gas emissions have compounding benefits, reducing the likelihood of climate losses now and reducing the cost of adaptation in the future (CA FWD, 2026b).

Resilience and adaptation finance refers to the broader practice of translating risk reduction into structures that can support investment decisions. It includes a full range of mechanisms used to mobilize, structure, repay, transfer, or leverage capital to fund and finance resilience (Duke University & ICLEI USA, 2026).

For purposes of this report, **funding** refers to money that do not have to be repaid, such as grants, appropriations, dedicated revenues, or philanthropic support. **Financing** refers to money that must be repaid.

California needs both: sufficient public funding and a stronger finance architecture that can extend the reach and durability of those public dollars. This requires understanding the value of resilience investments: what is being protected, who benefits, who can pay, and who has authority to act (Duke University & ICLEI USA, 2026).

2. The Adaptation Finance Ecosystem

No single actor can finance California's adaptation needs. The state's challenge is to make the full ecosystem work together while preserving public accountability and equity.

Public sector: Federal, state, regional, and local governments remain the backbone of adaptation investment because many resilience benefits are public, diffuse, or difficult to monetize. Public dollars also de-risk projects, build pipelines, and attract other capital.

Private capital and lenders: Private investment and lending can supplement public resources where projects generate revenue, protect assets, reduce operating risk, or support marketable resilience products and services. Public policy can help make viable projects more investable without privatizing public responsibilities.

Insurance: Insurance is a critical form of disaster risk finance and a major source of post-disaster capital. As climate risk changes, insurance must be considered alongside—not instead of—risk reduction and long-term resilience investment.

Households and businesses: Residents and businesses already pay directly for adaptation through home hardening, flood protection, water efficiency, business continuity, and other measures. Incentives can help align these individual investments with community-scale risk reduction.

Philanthropy and community finance: Philanthropic grants and mission-driven finance can fill gaps, support planning and capacity, test new approaches, and reach organizations or communities that conventional capital may not serve.

3. Five Systemic Challenges

The TAC discussions point to five interlocking problems. Treating them as isolated issues understates the challenge. Together, they describe structural challenges that require system change in how we think about resilience investments.

***"The starting point for consideration of pathways and strategies for greater resiliency is acknowledging the status quo is not working."** - California Earthquake Authority, 2026*

Challenge 1 — Scale and investment need

California's adaptation needs are large, recurring, and growing. Wildfire protection spending increased from approximately \$750 million in FY 2005-06 to \$2.9 billion in FY 2020-21 (McCord et al., 2026). An Earth Economics analysis estimated that moderately hardening the 616,000–770,000 California homes identified as at wildfire risk would cost approximately \$16–\$20 billion (Risner & Delaney, 2025). The Bay Area's latest long-range plan adopted in 2026 determined that adapting the shoreline to sea level rise would cost approximately \$96 billion (Plan Bay Area 2050+, 2026). These are only slices of a much larger statewide need spanning water supply, flood, sea level rise, extreme heat, public health, energy, transportation, housing, ecosystems, and other sectors.

Demand for existing programs illustrates how needs exceed available funding. The SB 1 Sea Level Rise Adaptation Planning Grant Program (APGP) requests were 183% of available funding (\$11 million available compared with \$20.2 million requested); requests for the Healthy Soils Program were 1,024% of available funding (\$10 million available compared with \$102.3 million requested); and a Sierra Nevada Conservancy Wildfire Recovery & Forest Resilience grant round received 267% requests compared to available funding (\$35.15 million available compared with \$93.97 million requested) (CDI, 2026). Oversubscription is not unique to adaptation and resilience, but the pattern is a clear signal: viable demand is already exceeding available funding.

California faces a structural gap between the scale of its climate risks and the long-term investment required to manage them (CA FWD, 2026b). State grants alone cannot fill this gap (CDI, 2026), requiring a system change that uses state funding more effectively and brings more partners to the table.

Adaptation needs will increase with continued climate change, emphasizing the need for approaches that integrate climate mitigation and adaptation. Furthermore, deferring adaptation limits options and effectiveness of adaptation measures in the future. Action now to curb greenhouse gas emissions and reduce physical climate risk has compounding benefits, reducing

the likelihood of climate losses now and reducing the cost of adaptation in the future (CA FWD, 2026b).

Challenge 2 — Structure: Today's tools were not designed for sustained resilience

Many public programs – which remain the backbone of resilience finance - are organized around short application windows, discrete projects, and fixed periods of performance. For example, the Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program period of performance generally ends 48 months after the application period closes, and that clock continues to run while FEMA reviews project applications. With federal review taking one or two years or longer, communities often have less than two years after approval to complete land acquisition, environmental and historic preservation review, design, permitting, procurement, construction, and closeout. That may be insufficient for complex projects, particularly those involving multiple jurisdictions or whole-community solutions.

Moreover, funding for federal and state programs is episodic. An analysis of 31 state adaptation and resilience programs conducted by California Forward found that the average lifespan of these programs is just two funding cycles, and over a third are one-time efforts (CA FWD, 2026a). Resilience, by contrast, requires long-term planning, project development, capital investment, operations, maintenance, monitoring, and repeated adjustment as risk changes.

Text box: Adaptation Planning Grant Program

The APGP was authorized through the 2021 State Climate Budget. The program provided funding to support climate adaptation and resilience planning statewide. Round 1 invested \$8 million across 14 climate adaptation planning projects led by partnerships made up of local, regional, tribal governments, non-profits, and academic institutions. When Round 1 closed in 2023, the program was more than six times oversubscribed, with \$48.2 million in requests for just \$8 million available.

Round 2 was cancelled in summer 2024 due to the state's budget's constraints. The program received 94 applications requesting over \$146 million in funding with only \$9.5 million available. This underscores the critical need for sustainable and long-term funding for climate adaptation planning.

The program prioritized investments in vulnerable communities, equipping communities with the tools and capacity to identify climate resilience priorities and strategies. The funding provided an opportunity for grantees to move beyond developing plans to meeting statutory requirements and to strengthen partnerships, deepen community engagement, and develop strategies rooted in community needs and priorities.

Key accomplishments include:

- Grantees conducted outreach and engagement to over 18,821 community members at over 620 events in 8 different languages, directly compensating more than 396 community members for their participation.
- In total, APGP has resulted in 14 new or updated Climate Adaptation and Resilience Plans and strategies and four new or updated General Plan Elements to address the impacts of climate change.

- Through meaningful and intentional partnerships with CBOs, tribes, and academic institutions, APGP grantees developed plans and strategies that reflect the needs and priorities of those most impacted by climate change.

This case study illustrates demand exceeding available funding, but it also exemplifies the episodic nature of state grants with the program being cancelled due to budget constraints. APGP is also notable in providing support for multi-hazard adaptation planning, which helps build local capacity but is underfunded by state programs (CLEE, 2024).



Image 2: Adaptation Planning Grant Program. Grantee, San Fernando, conducted outreach to inform its Climate Adaptation and Resilience Plan and related updates to its general plan. In total, APGP Grantees conducted outreach and engagement to 18,821 community members at more than 620 events.

Local governments are increasingly exploring new revenue streams that can provide sustained funding for risk reduction. Bonds and taxes are familiar and trusted mechanisms for major public investment, but voter approval and local fiscal constraints can limit their use. Propositions 13, 218

and 26 impose limits on taxes and fees, requiring voter approval for new taxes and constraining local governments' ability to raise funds through the tax code. The result is a mismatch between the duration of the funding and the duration of the risk.

Climate Resilience Districts, authorized by SB 852, expand the menu of local tools. CRDs fill a gap in climate funding by providing a mechanism for raising and allocating funds for climate projects that span jurisdictional boundaries. CRDs can use a variety of funding sources, including tax increment financing (TIF), infrastructure project revenues, sales taxes, benefit assessments, special taxes, service charges, and more. Yet many available revenue mechanisms still require political support and voter action. The Sonoma County Regional Climate Protection Authority (RCPA) was designated as California's first CRD in 2022. It has adopted a charter and developed a timeline for an expenditure plan addressing transportation, buildings, land, and water. RCPA uses its CRD as a regional governance structure, however, securing long-term revenue remains a challenge. A 2024 tax measure did not initially secure sufficient voter support.

Challenge 3 — Fragmentation: Money, programs, and decision-making are disconnected

Climate risk and the benefits of resilience are fragmented across households, businesses, utilities, insurers, and public agencies. Discussions about adaptation finance can often get stuck with who pays, without recognizing the distributed benefits and shared interest in action. Avoided loss, service continuity, reduced claims, stronger repayment reliability, lower physical-risk exposure, and revenue stability are different ways of describing the same result.

Communities often struggle to identify these distributed benefits, determine how to capture that value, and align capital. Instead, they are left piecing together adaptation dollars spread across agencies, sectors, programs, levels of government, utilities, insurers, philanthropy, and private markets. Each source with different eligibility rules, timing, metrics, match requirements, and administrative processes.

Fragmentation also causes missed opportunities. A landscape wildfire treatment, household hardening program, infrastructure upgrade, and insurance incentive may each reduce the same underlying risk, yet they are rarely designed and financed as a coordinated package. California needs mechanisms that better identify value of resilience, connect actors that will benefit, and align capital.



Amount	Source	Scope	Status	Time Period
\$350,000	City General Fund	Initial studies	Completed	2020-2021
\$100,000	Local Stormwater Fees	Initial studies	Completed	2021-2023
\$1.5M	FEMA/Congressionally Directed Spending	30% Design	Completed	2022-2025
\$500,000	City General Fund – FEMA match	30% Design	Completed	2022-2025
\$305,000	City General Fund	Geotechnical Studies and 30% Design Refinement	In process	2025-2026
\$2.6 million	Prop 68 Grant	60% Design	Awarded	2026-2028
\$200,000	City General Fund	60% Design	Requested	2026-2027
\$585,000	SB1 Track 2	100% Design (nature-based components only)	Requested	2027-2028
\$6.14 million		Total Project Cost: \$75 Million		

Image 3: Bay Farm Island adaptation project. At the Q1 2026 TAC meeting, the City of Alameda presented the Bay Farm Island Adaptation Project, which was identified as a priority in Alameda's 2019 Climate Action and Resiliency Plan. With funding from multiple sources, Alameda has advanced design of the project (see table). Alameda had partnered regionally to apply for FEMA Building Resilient Infrastructure and Communities (BRIC) funding that would have provided sufficient funding to design and construct key elements of the project (shown in the photo). After BRIC cancellation, the city and its partners are using a more traditional funding approach where each jurisdiction is pursuing funding for their own components of the project and funding each phase of the project separately in a piecemeal fashion.

Challenge 4 — Equity and capacity

Climate change disproportionately affects socio-economically disadvantaged individuals and communities. These communities also face greater challenges in accessing funding and financing.

The current grant-driven adaptation ecosystem is reliant on the capacity of a local government to apply to multiple often overlapping and oversubscribed grant opportunities with a range of different application requirements. Communities with the greatest need for adaptation funding often have the least capacity to engage in this process. Rural, low-income, tribal, and under-resourced communities face barriers at every step of the process. They have fewer staff, less technical expertise, and less ability to find funding opportunities, prepare applications, and cultivate partnerships. According to [Prosper Sustainably's Better Funding report](#), “even some well-resourced communities have shared that up to 50% of sustainability or environmental staff time is spent pursuing grants” (2024). Competitive funding results in an enormous cost burden on unawarded applicants. To give an example of the scale of the wasted capacity, FEMA's 2022 BRIC program only awarded 15% of applications received, leaving behind 716 fully scoped projects. If 1,000 local governments, tribes, and their partners in CA each unsuccessfully apply for three climate grants per year, that could easily account for \$100M in lost capacity annually (Prosper Sustainably, 2024).

Under-resourced communities may also be less able to raise revenue through tax or bond funding measures to fund adaptations to operations, public goods, and services. Many financial instruments are linked to asset values and credit ratings, which are inherently lower in disinvested communities and low-income households. Moreover, these mechanisms often shift costs toward households and communities least able to bear them.

Without taking steps to intentionally addressing these inequities, there is a risk of uneven adaptation responses with the most vulnerable unable to respond.

Challenge 5 — Measurement and tracking

A persistent challenge to making the case for investment in resilience is the crisis averted and the dollar saved often go unnoticed. While resilience investments help avoid cascading economic cost associated with climate impacts, protect government revenues, and support economic stability, these benefits are not regularly quantified or recognized (CDI, 2026). The state lacks consistent metrics to measure and track resilience investments and risk reduction (CDI, 2026). Local practitioners similarly lack information about cost-effectiveness of resilience measures or the appropriate expertise to make a strong business case for those investments.

Better measurement and tracking of resilience investments can demonstrate the effectiveness of these actions and help build support for investment. In addition, measurement and tracking can help inform what interventions are best suited in a specific context and help coordinate investments. Common metrics that can be used across state agencies, local governments, and even businesses are needed track progress across the state and compare adaptation measures.

A changed federal landscape raises the stakes

The 2026 TAC discussions occurred amid significant uncertainty in federal hazard mitigation and resilience support. Since January 2025, hundreds of millions of dollars in FEMA mitigation,

resilience, and preparedness funding affecting California communities have been cut, withdrawn, or cancelled.

After the BRIC program was launched in 2020, the second Trump administration cancelled all BRIC grant applications from fiscal years 2020 to 2023, returning \$3 billion in undisbursed grant funds to the Treasury or the Disaster Relief Fund (FEMA Advisory, 2025). FEMA announced its intention to cancel the fiscal year 2024 notice of funding opportunity, where \$750 million in grants was to be allocated. California Office of Emergency Services (CalOES) identified \$870 million in BRIC-funded projects that would have lost federal funding for critical hazard mitigation if the cancellation had remained in place (Assemblymember Rhodesia Ransom, 2025). A court subsequently found the termination unlawful and ordered FEMA to reinstate the program in 2026 (State of Washington et al. V. FEMA, 2025), but communities still faced uncertainty about when projects could proceed.



Image 4: Fuels reduction in Napa County. Napa County received a \$50 million BRIC grant to support fuels reduction and home hardening. After the project kicked off in 2024 and work was well underway, the county received notice of cancellation in April 2025. Given uncertainty, Napa County is exploring alternative funding options. Napa County presented at the Q1 2026 TAC meeting.

Hazard Mitigation Grant Program (HMGP) funds were allocated for the LA fires, but no funds have been awarded despite projects being submitted to FEMA as early as November of 2025 for review and consideration (U.S. House Committee on Financial Services, 2026). Nearly \$88 million in HMGP funds are awaiting final obligation/award at FEMA headquarters with no projected

timeline for approval (U.S. House Committee on Financial Services, 2026). Meanwhile, long-term recovery funding for the 2025 Los Angeles wildfires remains incomplete. As of August 2026, Congress had not passed a disaster supplemental appropriation for needs such as affordable housing reconstruction and economic recovery, the type of funding that can support a Community Development Block Grant–Disaster Recovery (CDBG-DR) allocation. California also reported that more than \$939 million in LA wildfire Public Assistance funding approved at the FEMA regional level was awaiting final federal approval as of September 2026 (California Governor's Office, 2026). Together, program disruption, absent supplemental appropriations, and delayed approvals make it harder for communities to sequence recovery and risk reduction investments.

The lesson for California is larger than any single federal program. Federal resources should remain part of the strategy when available, but the State cannot build a durable adaptation system on the assumption that historic federal funding levels, program structures, or priorities will remain constant.

5. A California Action Agenda for Adaptation Funding and Finance

Action 1 — Mainstream climate risk into public finance and investment decisions

Climate resilience should become a standard consideration in how the state and local jurisdictions plans, funds, procures, builds, replaces, and manages public assets—not a separate overlay activated only when a climate grant is available. Private asset owners and managers should similarly consider climate risk in investment decisions. Investors and lenders are encouraged to consider physical climate risk to their portfolios and increase transparency on how they consider these risks in investment decisions.

- Strengthen climate-resilience screening in public infrastructure funding and capital outlay decisions.
- Embed physical climate-risk analysis in transportation, water, schools, housing, energy, facilities, and other infrastructure planning.
- Integrate resilience criteria into procurement, asset management, facility management, and replacement cycles.
- Establish statewide maladaptation guardrails so state-funded projects do not transfer flood, fire, heat, water, insurance, or other risk to neighboring or lower-income communities.
- Favor investments that reduce exposure over the long term and deliver benefits across multiple hazards and sectors.
- Encourage integrated land use, housing, transportation, water, and ecosystem planning so one sector's solution does not worsen another sector's risk.

Work underway

Executive Order B-30-15, signed by Governor Jerry Brown in 2015, requires all state agencies to consider climate change in planning and investment decisions. Specifically, the executive order

outlines that state agencies' planning and investment decisions should be guided by the following principles:

- Priority should be given to actions that both build climate preparedness and reduce greenhouse gas emissions.
- Where possible, flexible and adaptive approaches should be taken to prepare for uncertain climate impacts.
- Actions should protect the state's most vulnerable populations.
- Natural infrastructure solutions should be prioritized.

It also directs the state to incorporate climate change impacts into the state's Five-Year Infrastructure Plan.

Under the direction of the Executive Order – and to support state agencies in considering planning and investment decisions – LCI (then the Office of Planning and Research) published “Planning and investing for a resilient California: A guidebook for state agencies” (2017).

In 2025, California Senate Concurrent Resolution 50 (S. Con. Res. 50, 2025) recognized the serious and urgent threat maladaptation poses to the success and cost-effectiveness of California's climate resilience actions. Maladaptation is generally defined as actions or policies that increase climate-related risks or shift vulnerability rather than reduce them. The resolution calls on LCI to develop a statewide policy with a definition of maladaptation and evaluate the effectiveness of measures to improve climate resilience.

These policies provide a foundation to mainstream climate risk into public finance and investment decisions.

Action 2 — Strengthen and modernize public funding

Public funding is critical where benefits are broadly shared, revenue streams are weak, or communities lack fiscal capacity. California should preserve grant-based funding while making it more durable, coordinated, and accessible. The goal is not simply more grants, but a public funding system that is longer-term, more coordinated, easier to navigate, and better aligned with project development and implementation.

- Protect multi-year resilience funding through the state budget, Climate Bond implementation, the Greenhouse Gas Reduction Fund, and other existing climate and infrastructure programs.
- Design longer-lived programs that support the full project lifecycle—from planning and design through implementation, maintenance, and evaluation.
- Expand regional and block-grant approaches where trusted intermediaries can coordinate across boundaries, develop project pipelines, and reduce administrative burden.
- Continue simplified applications, outreach, technical assistance, clear guidance, and other measures that improve access for disadvantaged and under-resourced communities.
- Coordinate state funding opportunities so applicants can navigate complementary programs as a portfolio rather than as disconnected competitions.
- Create a ‘queue’ and ‘hub’ model for public funding. Regional collaboratives act as ‘hubs’ and assess vulnerabilities, coordinate cross-jurisdictional investments, and develop a project proposal pipeline that reduces administrative burden on local governments. These projects

are submitted to a statewide funding 'queue' where they can be matched to appropriate funding sources on a rolling basis.

- Project funding applications from the last five years should be collected, inventoried, and reviewed to identify "orphaned" unfunded projects that may be good candidate for a second chance at existing or future funding opportunities across agencies.
- Rather than asking for public feedback and input on each new funding program or round, agencies should track, store, share input they have received through engagement or previous applicants.

Work underway

In November 2024, California voters approved a \$10 billion General Obligation Bond called the [Safe Drinking Water, Wildfire Prevention, Drought Preparedness, and Clean Air Bond Act of 2024](#), referred to as the Climate Bond (Proposition 4). The Climate Bond made significant strides in creating more equitable and consistent program guidelines. At least 40% of Climate Bond funding is legally required to benefit disadvantaged and severely disadvantaged communities and vulnerable populations and the state has identified a consistent set of tools used to identify these communities along with guidance on a simplified application process, outreach programs, and technical assistance.

However, the TAC heard that design and rollout of the Climate Bond displays many of the same issues that have been previously described in this document. Each Climate Bond program is run by a separate agency or department that comes up with their own timeline and application requirements. The TAC also heard that organizations had difficulty looking for funding, planning which ones they should apply to, and finding the capacity to complete applications for multiple programs.

Action 3 — Mobilize additional capital and align incentives

California should use public policy and public dollars strategically to attract private and institutional capital where appropriate. The goal is not to replace grants with debt; it is to reserve scarce grant dollars for projects with broad, public benefits while using other capital for projects that can support repayment (Duke University & ICLEI USA, 2026; OECD, 2026). Private and institutional capital will not replace public investment. Its greatest value is where resilience investments generate revenue, protect assets, reduce operating costs or losses, or can be made investable through targeted public support.

- Set clear adaptation and resilience policy goals that provide signal for private investment
- Develop clearer pathways for lenders, utilities, insurers, community development financial institutions, investors, and philanthropy to participate in resilience projects.
- Use planning, predevelopment support, credit enhancement, guarantees, revolving structures, or other de-risking tools where they can make public-purpose projects financeable.
- Explore the role of state financial entities, including infrastructure finance institutions, in scaling resilience lending and project aggregation.
- Evaluate resilience bonds, catastrophe-risk instruments, and other risk-transfer or capital-market tools for appropriate use cases before recommending statewide deployment.
- Create incentives for businesses and property owners to invest in risk reduction in advance of a disaster, particularly where private action produces measurable community benefits.

Work underway

Clear adaptation and policy goals or targets can improve coordination between public and private sector stakeholders, establish clear standards, and scale public and private investments in risk reduction (Tailwind, 2024). For example, California has set the ambitious target to treat 1 million acres annually to reduce wildfire risk. This sends a strong signal to private entities to scale up work force and invest in technologies that support this work. Similarly, California regulation on safe indoor temperatures for employers is a signal for investment in efficient cooling technologies.

Mobilizing additional capital often relies on articulating the distributed benefits of adaptation (Duke University & ICLEI USA, 2026). The Forest Resilience Bond (FRB), developed by Blue Forest, is an example of how distributed benefits can be organized into beneficiary payments that support a larger resilience financing structure. FRB is a public-private partnership model that channels new funding into high-priority forest restoration and distributes costs across multiple stakeholders who benefit from reduced risk. The FRB accelerates restoration work in Yuba County, directly reducing the severity and frequency of catastrophic wildfire events by deploying private capital upfront. Private investors supply upfront capital and are repaid over time with predictable revenue streams by beneficiaries (e.g., utilities, local governments, and private companies) (CDI, 2026).

This example illustrates an approach to manage the challenge of distributed beneficiaries: FRB identified who benefited from reduced wildfire risk, proved the value of those benefits, and created a structure through which those beneficiaries could contribute to the cost of restoration. Rather than waiting for a single funder to cover the full cost, it aggregates contributions from multiple beneficiaries—water utilities, hydropower operators, insurers, local governments, and conservation funds—into a single financing structure that pays for forest restoration upfront and recovers costs over time through contractual payments (Duke University & ICLEI USA, 2026). It also illustrates the predevelopment work that resilience finance requires. The model became finance-ready through early work to prove who benefits, quantify the value of avoided losses, and build the partnerships that make private capital possible.

Existing state financial entities are also exploring how to support adaptation and resilience. The California Infrastructure and Economic Development Bank (IBank) is a state-owned and operated financing authority that aids development and financing of infrastructure projects in California. IBank finances public infrastructure and private development through bond issuance, loan provision, and guarantees. IBank launched the Climate Catalyst Revolving Loan Fund to accelerate deployment of climate solutions through flexible, low-cost credit and credit enhancements to public and private applicants. The Climate Catalyst Revolving Loan Fund adopted sector-specific financing plans in three sectors central to California's mitigation and resilience goals: forest biomass management and utilization, clean energy transmission, and climate-smart agriculture. IBank is well situated in the California capital market structure to provide catalytic investment that can draw other sources of capital to resilience investments. A challenge of a project debt-based model for climate resilient infrastructure investment is that much of this pipeline does not generate direct revenue, making the debt repayment model more challenging (CDI, 2026).

Action 4 — Build local and regional finance capacity

California needs to build a pipeline of finance-ready resilience projects. Communities need the capacity to identify priorities, develop projects, determine the right funding or financing tool, assemble capital, and manage implementation.

- Provide seed funding and predevelopment resources for staffing, feasibility analysis, benefit-cost analysis, engineering, community engagement, and finance planning needed to develop finance-ready projects.
- Provide technical assistance on local revenue and financing options, including Climate Resilience Districts and other district, fee, assessment, tax, bond, and financing mechanisms.
- Support regional entities that can aggregate projects, coordinate across jurisdictional boundaries, and provide shared technical and financial expertise.
- Develop finance-ready project pipelines tied to local and regional adaptation plans rather than relying on grant notices to define priorities.

Work underway

California already has examples of the governance, coordination, and delivery capacity needed for a more mature finance system. Across California, regional coordination mechanisms are being strengthened or established to help support resilience efforts. Coordination mechanisms serve important role, many provide:

- Cross-boundary coordination and landscape-scale planning that individual jurisdictions cannot achieve alone
- Development of a pipeline of projects
- Strategic planning and prioritization of projects
- Support for partners in the region with technical assistance and capacity building

Examples:

- **North Coast Resource Partnership (NCRP):** is a long-term collaborative initiative among Northern California Tribes, counties and diverse partners to enhance watersheds, communities, and quality of life in the North Coast Region. The partnership covers 19,000 square miles and includes the Tribal lands and seven counties. Since 2004, the partnership has engaged in collaborative, integrated planning and project implementation, investing over \$120 million in hundreds of projects. NCRP is a particularly strong model of maintaining a list of projects ready for investment and using common metrics to track and report outcomes.
- **Marin Wildfire Prevention Authority (MWPA):** A Joint Powers Agreement among 17 member agencies, MWPA coordinates fire prevention activities using funds from a parcel tax approved by voters in 2020. This provides a successful model of local revenue offering sustained risk reduction.

While many regional coordination mechanisms exist across the state, some lack the funding to fully deliver.

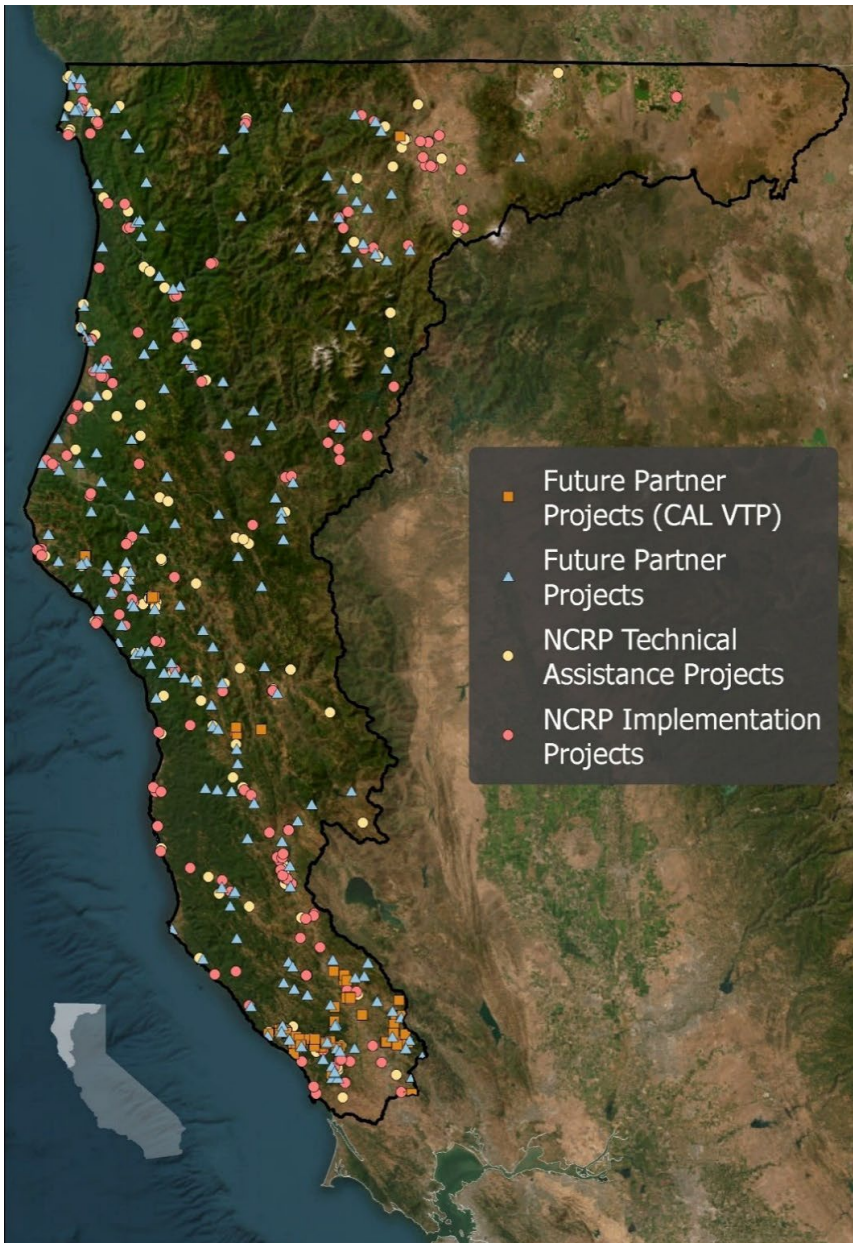


Image 5: North Coast Resource Partnership (NCRP) project pipeline. At the Q3 2026 TAC meeting, the NCRP presented its approach to maintain a regional project pipeline. Having a comprehensive portfolio of projects for the region allows NCRP and its partners to assess project development gaps in the region while also reporting on the collective project benefit and return on investment.

Action 5 — Build an accountability and measurement system

California needs a common way to show where resilience dollars are going, what risks they are reducing, who benefits, and what costs are being avoided. This information is essential to making the fiscal case for sustained investment.

- Create a statewide adaptation finance inventory that tracks funding source, instrument, geography, sector, beneficiaries, project stage, and status.
- Quantify near-, medium-, and long-term adaptation needs across major sectors and compare those needs against visible public and private finance flows.

- Develop common resilience metrics across agencies while allowing sector-specific measures where necessary.
- Track who receives funding, who benefits, and whether investments reduce vulnerability in frontline and priority communities.
- Advance benefit-cost and avoided-loss accounting so the fiscal value of resilience can be communicated to budget and policy decision-makers.
- Publish a recurring adaptation finance report or scorecard to show progress, gaps, leverage, and outcomes over time.

Action 6 — Create a statewide resilience investment framework

The preceding actions are pieces of the same system. California should use them to build a statewide resilience investment framework that connects risk, priorities, projects, funding, finance, equity, capacity, and performance. The framework should clarify what the state is trying to achieve, how investments are prioritized, which actors are responsible, how projects move from planning to finance and implementation, and how progress is measured. Equity should be a core principle that shapes how the entire investment system allocates resources, builds capacity, measures outcomes, and defines success.

- Define priority statewide adaptation outcomes and the risks the state is trying to reduce.
- Map funding and financing tools to project types and stages of development.
- Establish equity standards and maladaptation guardrails.
- Support regional entities that can develop finance-ready project pipelines tied to local and regional priorities.
- Create shared metrics and reporting expectations across agencies.
- Clarify the roles of state agencies, financial entities, regions, local governments, tribes, utilities, insurers, philanthropy, and private capital.
- Use ICARP as a forum for cross-sector coordination, learning, and periodic refinement of the framework.

6. High-Value Areas for Finance Innovation

TAC feedback identified several areas that warrant focused development as California builds the broader framework. The available evidence does not support prescribing a single financial instrument for each area; instead, these should be treated as priority areas for design, testing, and evaluation.

Natural infrastructure and nature-based solutions: Develop finance approaches that recognize the multiple public benefits of watershed, forest, coastal, habitat, and other natural-system investments, including avoided losses and ecosystem co-benefits.

Core infrastructure: Integrate resilience finance into transportation, water, energy, schools, ports, and other capital-intensive systems where asset lifecycles and financing horizons can extend for decades.

Insurance-linked risk reduction: Build stronger mechanisms for verified risk-reduction investments to increase access to insurance and reduce premiums, while recognizing that insurance cannot substitute for reducing underlying risk.

Household and small-business resilience: Pair grants and incentives with accessible lending or other financing so property-level resilience is not limited to households with substantial disposable income.

Regional project aggregation: Use regional partnerships and intermediaries to combine smaller projects, create scale, coordinate benefits, and make project pipelines easier to finance and administer.



Image 6: Insurance that rewards risk reduction. At the Q2 2026 TAC meeting, The Nature Conservancy and RockRose Risk presented on their separate efforts to create insurance mechanisms that reward wildfire risk reduction. The before (left image) and after (right image) show landscape treatments in Tahoe Donner that were part of the first insurance policy in the US that factored risk reduction benefit of large-scale fuel reduction work into wildfire risk assessments and policy pricing.

7. Supporting Reports

Building upon collective recognition that the state must take bolder adaptation funding action, this report has come to similar conclusions as other related reports and efforts:

- **CA FWD's [“Paying for Preparedness: Why California Needs Sustained Investment in Climate Resilience” \(2026\)](#):** Elevates treating climate as an economic and fiscal issue and provides an initial framework for considering revenue sources for resilience investments.
- **California's Fifth Climate Change Assessment report, “Climate Impacts to the Economy” (2026):** Discusses fiscal and economic impacts of current and projected climate change events and trends in California.
- **SB 254 [Natural Catastrophe Resiliency Study \(2026\)](#):** SB 254 required a comprehensive assessment to analyze and develop long-term reforms that protect access to insurance, reduce litigation costs, provide fair and expeditious compensation to claimants, support wildfire mitigation, safety, and community resilience, and ensure large electrical corporations are accountable for safety and also have the financial health to attract low-cost capital on behalf of ratepayers.
- **Duke University & ICLEI USA Local Governments for Sustainability's [“Resilience Finance Guidebook for Local Governments” \(2026\)](#):** Gives practitioners a working framework for diagnosing resilience finance gaps and closing them, including how to define what must

keep working; translate risk reduction into financial terms that budgets, insurers, lenders, and investors recognize; build credible proof; confirm legal authority; and match each part of a project to the funding or financing role it can realistically support.

- **UC Berkeley Center for Law, Energy & the Environment's [“Bridging the Implementation Gap: Challenges and Opportunities for California’s Resilience Funding Landscape” \(2024\)](#):** Evaluated two grant programs administered by ICARP and identifies three challenges facing the state's adaptation and resilience funding landscape: oversubscription, instability, and complexity.
- **Prosper Sustainably CEO Angie Hacker's [“Better Funding: Recommendations for State and federal agencies to drive energy and climate action through more effective investment in California local and tribal governments” \(2024\)](#):** Synthesized and catalogued themes gathered over years of active input generously given by community-serving practitioners, including local and tribal government representatives and those that work with them, and suggests ways state and federal agencies can better deploy the dollars needed to avoid the worst impacts of climate change.

8. Proposed State Implementation Roadmap

A hard-hitting report should end with an implementation pathway, not only a list of recommendations. The following sequence translates the TAC findings into a practical state agenda. Specific lead agencies, statutory changes, and fiscal commitments would need to be assigned through subsequent executive and legislative action.

Horizon	Priority	Illustrative deliverables
Near term	Take stock of existing finance	Statewide adaptation finance inventory; initial cross-agency funding map; common definitions for funding, finance, leverage, beneficiaries, and project status.
Near term	Align existing state investment	Resilience screening and maladaptation principles for major state capital and climate programs; coordinated applicant navigation across complementary programs.
Near-medium term	Build project and finance capacity	Regional technical assistance; predevelopment and project-pipeline support; guidance on CRDs and other local finance tools; project aggregation pilots.
Medium term	Expand the capital toolkit	Assessment of state finance entities and credit-enhancement tools; pilots for revolving, insurance-linked, or other finance mechanisms where appropriate.
Medium term	Measure results	Shared resilience metrics; avoided loss and benefit tracking; equity reporting; recurring adaptation finance scorecard.
Long term	Institutionalize the system	A durable statewide resilience investment framework linked to budget, infrastructure, adaptation planning, and periodic ICARP review.

9. Conclusion: From Programs to a System

California's next adaptation milestone should be a re-imagined financial framework: building a system that can sustain risk reduction before disaster occurs. That means three things: make

existing public investment work better; build the project and financing capacity needed to move from plans to implementation; and establish a durable statewide framework that connects risk, capital, equity, and results. The goal is not simply to fund more resilience projects. It is to build a system capable of continuously identifying needs, assembling the right capital, protecting communities with the least fiscal capacity, and sustaining investment over time.

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