

Protecting Californians from Deadly Heat

GUIDANCE FOR AN EQUITABLE AND EFFECTIVE STATE STRATEGY

Heat is a public health, climate resilience and social equity problem.

Health Impacts: Extreme heat is among the deadliest climate impacts.¹ It has taken the lives of thousands of Californians, as estimated in recent years.² Beyond mortality, both chronic heat stress and extreme heat have wide-ranging impacts on public health, causing heat stroke and worsening pre-existing conditions such as heart disease.³

Education and Employment: Heat makes it harder for students to learn,⁴ for teachers to teach and for workers to do their jobs safely⁵ and financially support themselves. These effects exacerbate educational and economic inequalities.

Economic and Racial Inequities: Rising temperatures force families to pay more to cool their homes,⁶ making electricity shut-offs more likely. Shut-offs can have life or death consequences for those who lack access to affordable cooling. Extreme heat disproportionately harms low-income communities and communities of color due to structural discrimination and social inequities.⁷

Climate Impacts: The urgency of heat mitigation is underscored by the worsening climate crisis. By 2069, the average California day is projected to be around 5.8 degrees Fahrenheit warmer than the historical average.⁸ This does not account for the additional heat increases associated with the urban heat island effect.

Need for State Action: The State of California has begun to take unprecedented action and investments to address heat, but has not historically recognized extreme heat as a public health crisis deserving of comprehensive, targeted, and well-funded action to save lives. The state [Extreme Heat Action Plan](#) released in April 2022 is a very important step. As the plan will be periodically updated, this brief recommends next steps, including to further address the gaps identified in our report, [Adapting to Extreme Heat in California: Assessing Gaps in State-level Policies & Funding Opportunities](#).

Summary of Recommendations



Establish an overarching framework for heat management, linked to broader principles and priorities.



Operationalize a performance management approach with research, reporting and transparency.



Take targeted action to protect vulnerable Californians where they are most exposed to extreme heat.



Establish a comprehensive and coordinated all-of-government approach supported by long-term funding.



Increase financial and technical support for cities and communities to facilitate locally-led solutions.

*This revised brief provides an update to a policy brief released in April (see acknowledgments).



RECOMMENDATION 1

Establish an overarching framework for heat management, linked to broader principles and priorities.

Status Quo: The Extreme Heat Action Plan is organized into four action tracks. Each action track contains three to four goals, and each goal contains a list of established and recommended actions. Although this plan is more comprehensive than the state's original plan from 2013, the current action tracks and myriad goals do not yet connect back to a broader set of principles to guide investment decisions across the action tracks. The state intends to fully integrate the Extreme Heat Action Plan into the [California Climate Adaptation Strategy](#), which sets six priorities for climate resilience. Doing so as part of an overarching framework would allow for the development of funding guidelines and a performance management approach.

Recommendation: We advise explicitly linking the goals of the Extreme Heat Action Plan to the six climate resilience priorities of the Climate Adaptation Strategy. We also recommend that the next iterations of both the Extreme Heat Action Plan and the Climate Adaptation Strategy specify broad principles to guide goals and action prioritization across the action tracks of the Extreme Heat Action Plan. (These principles could also apply to other plans nested under the Climate Adaptation Strategy.)

Figure 1 (on the following page) gives an example of our proposed framework. The figure illustrates how the state could nest the Extreme Heat Action Plan within the Climate Adaptation Strategy. It also introduces example guiding principles that could help the state to prioritize heat goals and actions. We took the example principles from the [California Climate Investments Funding Guidelines](#), which detail cross-cutting guiding principles that function as screening criteria. Actual guiding principles should be developed through a collaborative public process.

A heat management framework, such as the example shown in Figure 1, would serve as the foundation for heat funding guidelines. For example, the guiding principles could become screening criteria that apply to all goals and actions (similar to what the state has established for California Climate Investments).⁹ In this scenario, in order for any heat action investment to be granted funding, it would need to align with the guiding principles, the state's climate resilience priorities and the heat plan action tracks.

Figure 1. Linking Heat Action Plan to Climate Adaptation Strategy (anchored by proposed, cross-cutting guiding principles)

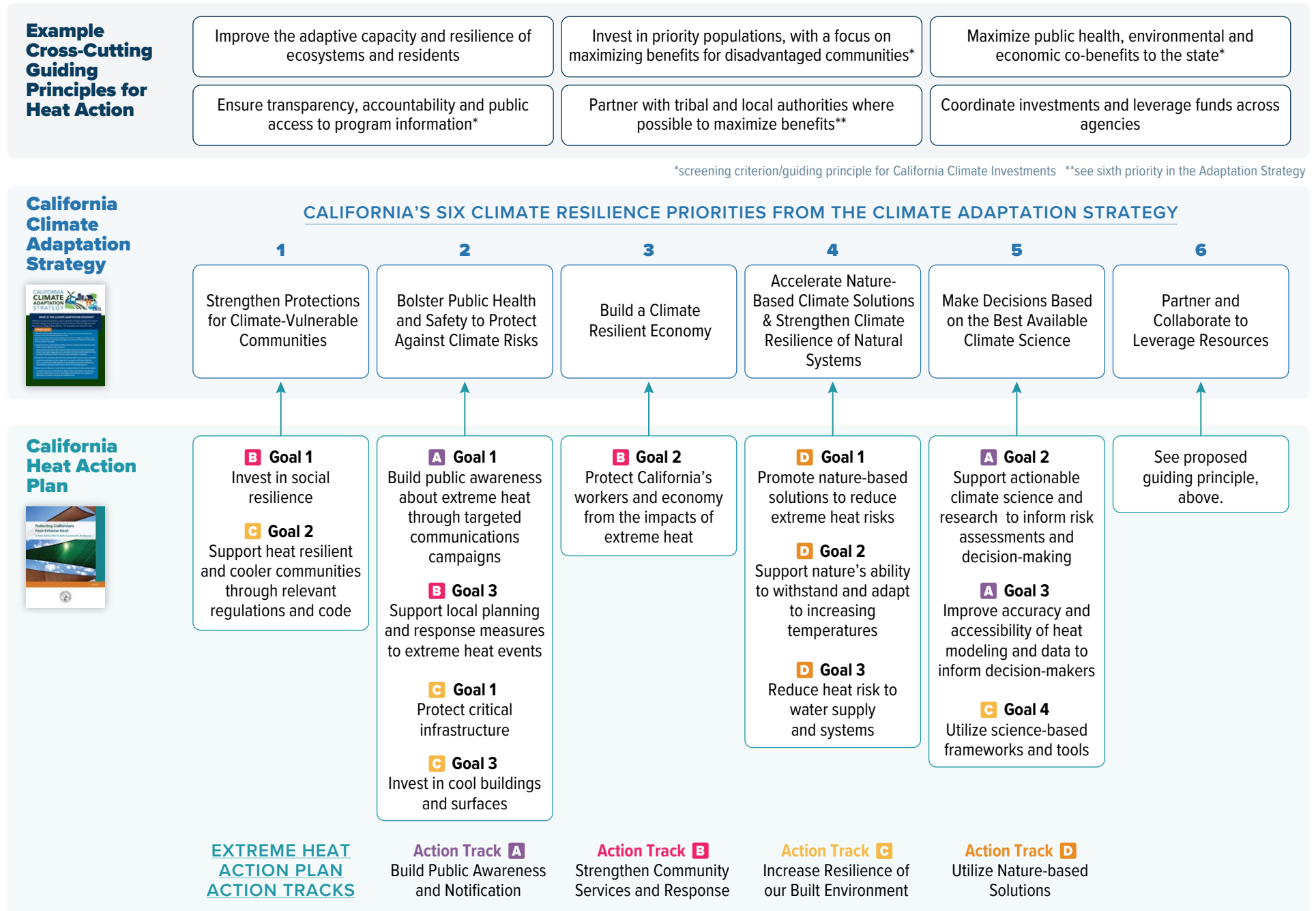
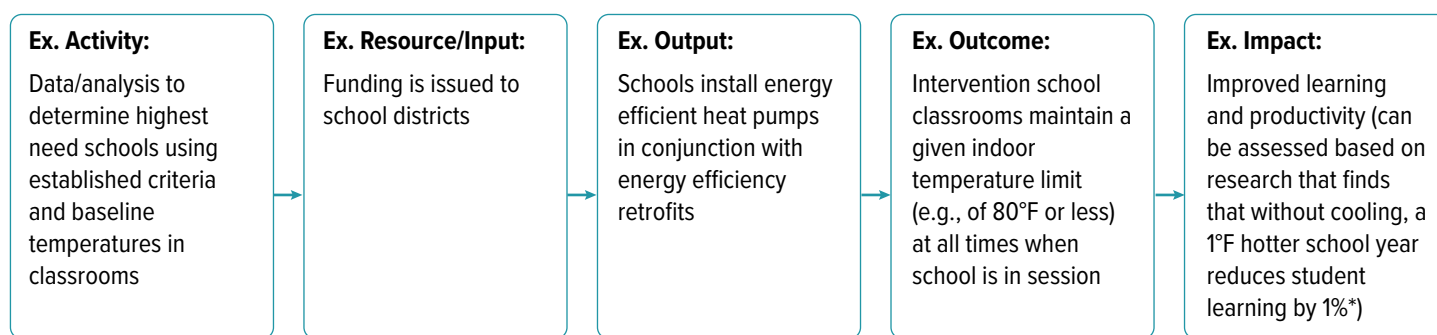


Figure 2. Example of how to report on progress and results of heat investments



* See this [Fact-Sheet.pdf \(ucla.edu\)](#) summarizing the study Heat and Learning, by R. Jisung Park, Joshua Goodman, Michael Hurwitz, and Jonathan Smith. Published in *American Economic Association*, May 2020.

RECOMMENDATION 2

Operationalize a performance management approach with research, reporting and transparency.

Status Quo: The current Extreme Heat Action Plan does well to assign responsible agencies for each established and recommended action. A next step would be to develop an approach for data gathering, reporting and learning from those actions. Time-bound success metrics for each action would provide a path for tracking progress toward stated goals and maintaining accountability.

Recommendations: We recommend that the state employ a performance management approach for heat action investments. In its heat adaptation efforts, the state should integrate evaluation of early interventions along with measurable performance benchmarks and accountability mechanisms to ensure that heat actions are achieving stated principles, goals and objectives.

For example, the [California Climate Investments Funding Guidelines](#) require administering agencies to track and document progress on GHG emission reductions, co-benefits and other goals by developing performance metrics, quantification tools and an annual reporting system. A similar approach to heat management could help operationalize the Extreme Heat Action Plan, provide clear guidance for administering agencies and allow them to learn from early actions to guide future investments.

The science of heat interventions is nascent, and it is thus important for the state to invest in researching and evaluating different strategies as well as tracking investment progress. The state should regularly assess progress and adjust strategies to incorporate evolving understanding of the science of heat impacts and the effectiveness of heat interventions. In Figure 2, above, we provide an example of the types of metrics that could be tracked for each action the state funds.

RECOMMENDATION 3

Take targeted action to protect vulnerable Californians where they are most exposed to extreme heat.

Status Quo: Historically, the state has invested in programs that treat heat mitigation as a co-benefit, but not a primary goal. As climate change leads to ever-rising temperatures, it is critical for the state to approach heat management directly and explicitly in the settings where consequential exposure occurs.¹⁰ By regularly updating the Extreme Heat Action Plan and tracking progress toward goals, the state can use evidence to ensure that programs and funding prioritize the most heat-exposed Californians in the settings where that consequential exposure occurs.

Recommendations: Our [2021 report](#) highlights the need for targeted heat risk management policies, programs and interventions in common exposure settings. Nearly all of the settings our report identified (see “A Setting-based Approach,” on the next page)

A Setting-based Approach

We identify seven settings where Californians face particularly high heat risk:



homes;



workplaces;



schools and child care facilities;



senior assisted living facilities;



prisons, jails, and correctional facilities;



public outdoor spaces; and



transit stops and other street locations.

Each of these settings represents a place where people — including those who are most vulnerable to heat, like children and the elderly — spend most of their time.

are included throughout the Extreme Heat Action Plan. But in the next iteration of the plan, we recommend organizing each action track's actions by setting, either in the main body of the plan or in an addendum.

The state aims to prioritize populations who face the greatest exposure to extreme heat. These communities often have the least ability to cope, due to factors ranging from income to impaired mobility to linguistic isolation. Designing, organizing and implementing heat interventions in the context of settings where heat-vulnerable people spend the most time can help agencies directly target heat where exposure is most consequential, including homes and schools that currently have no heat standards or policies limiting heat exposure.

Organizing the Extreme Heat Action Plan by setting would also allow stakeholders to easily find the information most pertinent to them. To facilitate such an approach, our researchers have identified seven settings where Californians face particularly high heat risk. Read more in the column to the left.

Assembly Bill 2597 and Senate Bill 1261

We flag two legislative proposals in 2022 that include setting-specific action on heat. **AB 2597** (Bloom) would update the California Code of Regulations to require homes to have the ability to maintain safe ambient indoor air temperatures. **SB 1261** (Stern) would develop a grant program to help low-income, heat-vulnerable residents mitigate extreme heat in their homes. These types of setting-specific, heat-targeted actions are important to human health, welfare and social equity.

Assembly Bill 2076

AB 2076 (Rivas) would establish the Extreme Heat and Health Reporting System to improve data on heat-related health impacts. This new data system would allow local governments, health departments and other stakeholders to more rapidly identify communities where heat illness and fatalities are happening most frequently. This is a prerequisite to achieve our third recommendation.

RECOMMENDATION 4

Establish a comprehensive and coordinated all-of-government approach supported by long-term funding.

Status Quo: Historically, California’s heat management approach consisted of a patchwork of regulations and funding sources. There hasn’t been a centrally responsible state authority to provide technical assistance, strategic funding direction or robust coordination to sister agencies to address the issue of heat.¹¹ Today, efforts and funding continue to be dispersed across many state agencies, but increasingly, the central Governor’s Office of Planning and Research (OPR) is playing more of a leadership and coordination role. OPR now administers the Integrated Climate Adaptation and Resiliency Program (ICARP) to coordinate regional and local efforts with state climate adaptation strategies to adapt to the impacts of climate change. The state can build upon this leadership.

Recommendations: A comprehensive, coordinated and adequately funded response across state departments is essential for advancing public health and reducing economic and health disparities associated with extreme heat. An all-of-government approach does not require the state to put all statutory authority for heat risk regulation into the hands of one agency or office, but it does call for centralized coordination.

We applaud the state for recently funding the first statewide heat program, per **SB 155** (section 54). Set to launch in the next year, such a program was initially proposed in **AB 585** (Rivas), and most recently in **AB 2076** (Rivas). We recommend the state provide sustainable funding for this program to house the efforts we call for in this brief — including the creation of an overarching framework, performance management approach, systematic coordination across state agencies and robust support for heat planning and action at the local level.

RECOMMENDATION 5

Increase financial and technical support for cities and communities to facilitate locally-led solutions.

Status Quo: Communities that face disproportionate effects of extreme heat — most often, low-income communities of color — best know their neighborhoods, but many lack the funds, technical capacity, and other support to plan and implement heat interventions. The result is that communities, particularly those less resourced, are unprepared for extreme heat. While a one-size-fits-all approach is not appropriate — the effects of extreme heat vary widely from region to region, not to mention between adjacent neighborhoods — the historical lack of heat action guidance and funding from the state to local governments and community-based organizations (CBOs) has hindered bold local action.

Fortunately, ICARP is developing **three new grant programs**, authorized in the **2021 State Climate Budget**, to fund local, regional and tribal climate adaptation and resilience efforts across the state, including a Community Resilience and Heat Grant Program.

Recommendations: The state should empower and build capacity in the most heat-burdened cities and communities by providing significant funding and technical support. This will enable both local governments and CBOs, independently and in collaboration, to implement heat reduction strategies that meet the needs of their communities. We support the state’s upcoming effort to do this via the Community Resilience and Heat Grant Program. The program should fund community-led pilot projects — such as shade structures, cool roofs and cool neighborhood strategies — coupled with investments in third-party evaluation, so that local lessons learned can inform potential scaling or improvements.

Community resilience centers are a particularly promising type of community-based pilot. These centers, whether newly constructed or leveraging existing facilities, are intended to serve as trusted spaces that

meet both daily and emergency needs of residents, such as access to air conditioning, backup power and other critical services. Community resilience centers can be designed and led by community-based organizations and residents with the support of local governments.

As part of the state's historic 2021-2022 State Climate Budget package, the Strategic Growth Council has received \$100 million over two years to develop and launch a new Community Resilience Centers Program.¹² We recommend coupling this initial investment and other future investments with evaluation, so that researchers can track results and best practices of community resilience centers to facilitate multiple benefits (e.g., providing a safe space where community members can gather; receive a range of normal services including internet access; and, during emergencies, access services such as cooling, shelter, and energy from an onsite microgrid).

In conclusion, California needs to advance an evidence-based, coordinated and well-funded approach to address heat.

Addressing heat is a critical public health, social equity and climate planning challenge. We hope that our recommendations can guide California policymakers as they continuously refine plans, policies and investment strategies to protect Californians from the impacts of chronic and extreme heat.

Authorship

This report was produced by the UCLA Luskin Center for Innovation and authored by the following researchers:

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Disclaimer

The views expressed herein are those of the authors and not necessarily those of the University of California, Los Angeles as a whole. The above listed names of advisors and reviewers does not imply endorsement of the content in this document, at an individual or organizational level.

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Notes

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- 12 [Announcement: SGC Launches Development of Community Resilience Centers Program. 2022.](#)



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