

---

**SENATE COMMITTEE ON ENVIRONMENTAL QUALITY**

**Senator Allen, Chair**

**2021 - 2022 Regular**

---

**Bill No:** AB 585  
**Author:** Luz Rivas  
**Version:** 6/30/2021  
**Urgency:** No  
**Consultant:** Rylie Ellison

**Hearing Date:** 7/12/2021  
**Fiscal:** Yes

**SUBJECT:** Climate change: Extreme Heat and Community Resilience Program

**DIGEST:** This bill establishes the Extreme Heat and Community Resilience Program (Program) through the Integrated Climate Adaptation and Resiliency Program (ICARP) to coordinate the state's efforts to address extreme heat and the urban heat island effect (UHIE) and to provide financial and technical assistance to local or regional entities for improving resilience to extreme heat and UHIE.

**ANALYSIS:**

Existing law:

- 1) Establishes the Office of Planning and Research (OPR) to serve the Governor and Cabinet as staff for long-range planning and research, with a focus on factors influencing the quality of the state's environment and declares that it is the intent of the Legislature: (Government Code (GOV) §65040)
  - a) To have one agency at the state level which is responsible for developing state land use policies, coordinating planning of all state agencies, and assisting and monitoring local and regional planning;
  - b) That OPR is the most appropriate state agency to carry out this statewide land use planning function; and,
  - c) To not vest in OPR any direct operating or regulatory powers over land use planning, public works, or other state, regional, or local project or programs. (GOV § 65035)
- 2) Requires OPR to adopt and periodically revise the State General Plan Guidelines for the preparation and content of general plans for all cities and counties in California, and: (GOV §65040.2)
  - a) Requires local jurisdictions to include climate vulnerability and adaptation considerations in their general plan updates. (GOV §65302)

- 3) Establishes a technical advisory council (TAC) to support OPR by providing scientific and technical support and to facilitate coordination among state, regional, and local agency efforts to adapt to the impacts of climate change. (Public Resources Code (PRC) §71358)
- 4) Establishes ICARP, administered by OPR, to coordinate regional and local efforts with state climate adaptation strategies to adapt to the impacts of climate change. Requires ICARP to: (PRC §71354)
  - a) Pursue an emphasis on climate equity across sectors and strategies that benefit both greenhouse gas (GHG) emissions reductions and adaptation efforts;
  - b) Work with and coordinate local and regional efforts for climate adaptation and resilience;
  - c) Assist the Office of Emergency Services (OES)—in coordination with California Natural Resources Agency (CNRA)—with coordinating regular reviews and updates to the Adaptation Planning Guide (APG); and,
  - d) Maintain a continued data clearinghouse on climate change and climate adaptation for the purposes of facilitating educated state and local policy decisions.
- 5) Requires CNRA to, by July 1, 2017 and every three years thereafter, update the Safeguarding California Plan, and as part of the update, to coordinate with other state agencies to identify a lead agency or group of agencies to lead adaptation efforts in each sector, and dictates that the updates include: (PRC §71153)
  - a) Vulnerabilities to climate change by sector, as identified by the lead agency or group of agencies, and regions, including, at a minimum, the following sectors: water, energy, transportation, public health, agriculture, emergency services, forestry, biodiversity and habitat, ocean and coastal resources; and,
  - b) Priority actions needed to reduce risks in those sectors, as identified by the lead agency or group of agencies.
- 6) Declares that it is the intent of the Legislature that the California Environmental Protection Agency (Cal EPA) develop heat reduction strategies, including urban forestry, cool roofs, and sustainable or cool pavements; develop a definition for UHIE and a UHIE index; and work with the Department of Transportation (CalTrans) and other stakeholders on sustainable or cool pavement technologies and research. (Health and Safety Code (HSC) §18941.9)

- 7) Establishes the Administrative Procedure Act, which lays out rulemaking procedures and standards for state agencies in California. (GOV §11340 et seq.)

This bill:

- 1) Defines “comprehensive heat action plan” as a community-driven multi-element plan adopted by a local or regional entity that addresses extreme heat and UHIE and includes two or more actions related to the following categories: natural infrastructure, built infrastructure, social infrastructure, communications, planning, and policy.
- 2) Defines “eligible entity” as a nonprofit organization, coalition of nonprofit organizations, community-based organization, community development corporation, community development financial institution, local government, regional agency, joint powers authority, or tribal government that demonstrates partnerships with multiple stakeholders in the development and implementation of a plan or project.
- 3) Establishes the Program within OPR, through ICARP, and requires ICARP to coordinate the state’s efforts and support local and regional efforts to mitigate the impacts of and reduce the public health risks of extreme heat and UHIE.
- 4) Requires OPR to coordinate the state’s efforts to address extreme heat and UHIE, which may include establishing a working group composed of state agencies that administer relevant programs to consider opportunities to improve the design of these programs to promote a more coordinated, effective approach to extreme heat and UHIE.
- 5) Requires OPR to provide financial and technical assistance to eligible entities to support local and regional efforts to mitigate the impacts of and reduce the public health risks of extreme heat and UHIE. Financial assistance may be provided for the following purposes:
  - a) To prepare or update a comprehensive heat action plan or component of another plan, including a general plan, local coastal program, and local hazard mitigation plan;
  - b) To implement projects to mitigate the impacts of extreme heat and UHIE, including:
    - i) Cool building materials and pavements;
    - ii) Projects that increase shade; and,

- iii) Projects to improve building siting and design to reduce heat, such as ventilation and air conditioning systems.
  - c) To implement projects to reduce the public health risks of and improve community resilience to extreme heat and UHIE, including:
    - i) The construction or retrofitting of facilities to serve as community resilience centers;
    - ii) Public education campaigns to increase awareness of the public health risks of extreme heat and UHIE, as well as the services available and further opportunities to reduce those risks.
- 6) Allows OPR to fund technical assistance providers to assist in the application development, project development, and implementation.
- 7) Requires OPR, by July 1, 2023, to submit a report to the Legislature that includes:
  - a) A summary of all actions taken over the previous year by all state agencies, departments, and programs to mitigate UHIE and the impacts of extreme heat events;
  - b) The cost, budget allocations, and staff dedicated to addressing extreme heat and UHIE; and,
  - c) A review of state programs that address extreme heat and the UHIE to identify potential gaps or unmet needs in the state's approach and includes recommendations on ways to improve policies, programs, and interagency coordination.
- 8) Requires OPR to, in administering the program, at a minimum, be informed by specified state research, reports, and resources on climate change and climate adaptation.
- 9) Requires OPR, in administering the program, to seek to minimize greenhouse gas emissions, avoid maladaptation, and maximize other co-benefits.
- 10) Requires OPR, before awarding grants under the Program, to adopt guidelines that include:
  - a) Criteria for eligibility, selection, and determining the amount of the grant to be awarded;
  - b) Provision of technical assistance to assist in application development, project development, and implementation;
  - c) Requirements for grant recipients to report on project progress and outcomes; and,

- d) Provision for the recovery of funds from an applicant that fails to complete the project for which financial assistance was awarded.
- 11) Requires OPR to seek input on the draft Program guidelines from:
    - a) The public, including eligible entities and populations and communities that could benefit from the Program; and,
    - b) To the extent feasible, the CNRA, the Department of Community Services and Development, other relevant state agencies, and local and public health agencies.
  - 12) Allows OPR to, in developing the Program guidelines, refer to guidelines adopted for other relevant funding programs.
  - 13) Requires OPR to give priority in awarding grants to projects that:
    - a) Serve vulnerable and disadvantaged communities, as well as those determined to be most vulnerable to the impacts of extreme heat;
    - b) Demonstrate participation in a regional climate collaborative program; and,
    - c) Are components of a comprehensive heat action plan.
  - 14) Requires all projects funded through this Program to consider and be informed by tools and data on current and future climate risk derived from the most recent California Climate Change Assessment.
  - 15) Exempts the development and adoption of the Program guidelines from the Administrative Procedure Act.
  - 16) Declares that it is the intent of the Legislature that OPR, through ICARP, coordinate with other state agencies that provide grants to address extreme heat and UHIE; seek to fund projects in categories not eligible for funding in any existing programs; and not diminish, reduce, or detract from existing grant programs administered under the CNRA.
  - 17) Establishes the Extreme Heat and Community Resilience Fund in the State Treasury.

## **Background**

- 1) *Extreme heat.* Despite California's ambitious climate change policies, our state is already warming as a consequence of climate change. Average temperatures in California have been increasing over the past century and heatwaves are

becoming more common. According to the Center for Disease Control (CDC), extreme heat conditions are defined as weather that is much hotter – and sometimes more humid – for a particular time and place. California defines extreme heat days as those above the 98<sup>th</sup> percentile of maximum temperatures based on 1961-1990 data for a given location's warmest months. For example, in San Francisco the extreme heat day threshold is 85 °F, whereas in Los Angeles, it is 91 °F.

Cal EPA's Climate Action Team (CAT) developed a report in 2013 called *Preparing California for Extreme Heat: Guidance and Recommendations* (Extreme Heat Report). The report looked at several scientific studies which purported that, in California, the statewide average temperature is predicted to increase 1.9 °F by 2025 and 4.6 °F by 2050. Historically, California experienced an average of four extreme heat days per year; by 2050, extreme heat days are projected to increase to 40-53 annually. Heat-Health Events (HHEs), or any heat event that generates public health impacts regardless of absolute temperature, better predict risk to populations vulnerable to heat. HHEs are expected to worsen drastically throughout the state: by midcentury, the Central Valley is projected to experience average HHEs that are two weeks longer, and HHEs could occur four to ten times more often in the Northern Sierra region.

- 2) *Where California is getting hotter.* While temperatures and the frequency of extreme heat events are increasing across the state, data collected by NASA between 1950 and 2000 shows that the biggest increases are observed in southern California, where average temperatures rose by greater than 2 °F.

An Office of Environmental Health and Hazard Assessment (OEHHA) report on extreme heat shows that nighttime increases in extreme heat trends are at least two times greater than daytime trends, especially along the central coast region as humidity, in part due to ocean warming, increases.

Furthermore, dense urban cores, especially in areas with limited tree vegetation, are hotter than coastal and rural areas. This is due to UHIE. Structures such as roads, pavement, and buildings absorb and re-emit more of the sun's heat than natural landscapes such as forests, parks, or bodies of water. Average daytime temperatures in urban areas are 1-6 °F warmer than surrounding areas, but at night that increases to as much as 22 °F as the heat is gradually released from buildings and paved surfaces.

- 3) *Impacts of rising temperatures.* The harmful effects of extreme heat on human health are well known. Even small increases in average temperature can have

dramatic impacts on fertility, learning outcomes, job performance, accident rates, quality of sleep, and overall health. Higher nighttime temperatures are particularly concerning because they inhibit people's ability to recover from daytime exposure to heat.

Heat causes the most weather-related deaths in the United States. Following a record-breaking 2006 California heat wave, over 16,000 emergency room visits, more than 1,100 hospitalizations, and at least 140 deaths were reported. The future increased temperatures are expected to translate to up to 4,300 excess deaths in 2025 and up to 11,300 in 2050 with associated economic costs of up to \$84.8 billion per year by 2050.

Many other impacts arise from extreme heat events. Increased demand for air conditioning can strain the power supply. Blackouts and power outages may result. Water demand also increases. Agricultural impacts include crop loss, reduced milk and egg production, and livestock illnesses and deaths. Fire risk increases as vegetation dries out. Damage to roadways, bridges and other transportation infrastructure may also occur.

In 2015, Cal EPA released an Urban Heat Island Report, which noted that as a result of UHIE, cooling energy demand increases, emissions of pollutants increase, the photochemical production of ozone accelerates, and air quality deteriorates further. UHIE increases the health risks associated with extreme heat for populations living in those areas.

- 4) *Who is at risk?* The populations most likely to suffer from acute illnesses and death during extreme heat exposure are young children, the elderly, persons with pre-existing chronic illnesses, pregnant women, those who are socially isolated, and those who have a disability. There are others who are likely to suffer from "exertional" heat-related illnesses (from engaging in vigorous physical activity), including workers (indoor and outdoor), outdoor athletes, and military personnel.

At the community level, disadvantaged communities in California are not only hotter because they have less access to green spaces, but are at greater risk of negative outcomes from extreme heat because they have less access to technologies such as air conditioning that can provide relief when temperatures are high.

Populations in cooler parts of the state, particularly along the coast, are generally at a greater risk for health-related illness because they are less acclimatized to heat, people may be less aware of behaviors to reduce

exposure, and the built environment is not designed for warmer temperatures.

- 5) *Strategies for mitigating extreme heat.* Last month, the California Council on Science and Technology (CCST) held an expert briefing on extreme heat that produced a one-pager called *Mitigating Extreme Heat in a Changing Climate*. They identified four ways to mitigate extreme heat:
- Increase access to air-conditioned spaces during both day and night;
  - Adjust schedules to reduce time spent outdoors when temperatures are highest;
  - Increase use of cool roofs and other building materials to lower indoor temperatures; and,
  - Increase vegetation coverage and green spaces in urban areas to lower local ambient temperatures.

The Extreme Heat Report details a number of recommendations in five categories for heat adaptation, as well as specific state agencies to lead in each effort. The categories are:

- Heat resilient and cooler communities;
- Preparedness and response to extreme heat events;
- Public health and health care sector readiness;
- Measures to protect workers at risk of extreme heat; and,
- Research needs.

## Comments

- 1) *Purpose of Bill.* According to the author, “Year after year, our state faces record-breaking heat waves that have left local governments to grapple with how best to protect residents from these life threatening weather events. Extreme heat is one of the deadliest natural hazards and causes more emergency room visits and deaths each year in the United States than any other weather-related disaster. Inaction will lead to unnecessary increases in negative health effects and additional hardships on local governments that are already struggling because of the economic impacts of COVID-19. AB 585 creates the Extreme Heat and Community Resilience Program, which requires statewide coordination to insure the state’s actions and expenditures promote cooling. The measure also establishes the guidelines for a competitive grant process that local entities will be able to utilize to protect themselves and vulnerable communities from the dangers of extreme heat.”
- 2) *Addressing the gaps in state planning.* Representatives of CNRA and OPR have identified extreme heat as one of the biggest gaps in the state’s climate adaptation strategy. It is also one of the most consequential as extreme heat is



responsible for the most weather-related deaths and often impacts the most vulnerable people and communities.

In addition to the grant program, this bill would require OPR to conduct a formal gap assessment to look at existing programs that contribute to heat and UHIE mitigation and see where improvements can be made.

Despite the comprehensive outline of recommendations laid out in CalEPA's Extreme Heat Report, extreme heat adaptation across state agencies remains piecemeal. Several programs and reports have been developed across various state agencies that could contribute to extreme heat and UHIE planning and resilience:

- a) CNRA's Urban Greening Grant Program to reduce GHG emissions, by storing carbon, reducing building energy use and reducing vehicle miles traveled by constructing bike and pedestrian routes.
- b) CalFire's Urban & Community Forestry Program to develop sustainable urban forests to conserve energy, improve public health, environmental quality, and more.
- c) The California Heat Assessment Tool (CHAT) was funded by CNRA as part of the state's Fourth Climate Change Assessment.
- d) Along with the Extreme Heat Report (2013), CalEPA has developed a UHIE interactive map and an Urban Heat Island Report (2015).
- e) The California Department of Health (CDPH) developed a report called *Preparing California for Extreme Heat: Guidance and Recommendations* (2013).
- f) AB 296 (Skinner, Chapter 667, Statutes of 2012) requires CalTrans to develop a standard specification for sustainable or cool pavements that can be used to reduce UHIE.

The reporting requirement in AB 585 can help to ascertain where these state resources and others can come together, as well as identify where the gaps still remain to determine where the grants administered through this program can help the most.

- 3) *The air conditioning dilemma.* Some extreme heat adaptations, including installing and using more air conditioning systems, will increase GHG emissions, which contribute to global warming through a negative feedback loop. Furthermore, during extreme heat events is when power shortages are more likely to occur. Excessive energy demand can and has resulted in rolling blackouts across the state. However, not taking these important measures to protect public health will cost lives.

In Los Angeles County, rising temperatures combined with population growth could crank up electricity demand during peak summertime hours as much as 51% by 2060 under a high-emissions scenario, according to a 2019 Applied Energy study by researchers at Arizona State and the University of California, Los Angeles.

Measures can be taken to improve passive cooling and reduce the burden on air conditioning. Many of these are already included in the bill, such as cool building and pavements, projects that increase shade, and building siting and design to reduce heat.

*In order to further ensure that that GHG emissions and electricity grid stress are minimized, the committee may wish to consider amending the bill to:*

- *Specify that financial assistance through the program can be used for building siting and design of new buildings or retrofitting of existing buildings to reduce unwanted heating, including passive or low energy cooling strategies;*
- *Specify that ventilation and air conditioning should be energy efficient; and,*
- *State that, in administering the program, OPR shall seek to minimize electricity grid stress.*

4) *Other amendments. To further clarify the purpose of the program, the committee may wish to consider amending the bill to:*

- *Add definitions of extreme heat and UHIE;*
- *Specify that projects implemented through this program can mitigate the impacts of extreme heat or UHIE, since every solution may not apply to both;*
- *Specify that community resilience centers can be constructed or retrofitted to serve the public during extreme heat events as well as other climate change related impacts and emergencies, like wildfire or flooding;*
- *Require OPR to consult with academic and technical experts on extreme heat and UHIE adaptation on draft program guidelines; and,*
- *Other technical or clarifying amendments to clarify how the program will be implemented.*

### **Related/Prior Legislation**

AB 1500 (E. Garcia, 2021) would, subject to approval by the voters in the November 8, 2022 general election, authorize a \$6.7 billion general obligation

bond to finance projects for safe drinking water, wildfire prevention, drought preparation, flood protection, extreme heat mitigation, sea level rise, and workforce development programs. AB 1500 is before the Senate Rules Committee.

AB 897 (Mullin 2021) would require OPR to facilitate the creation of regional climate networks and create standards for the development of a regional climate adaptation action plan to support the implementation of regional climate adaptation efforts. AB 897 is before the Senate Natural Resources and Water Committee.

AB 1384 (Gabriel, 2021) would require SGC to develop and coordinate a strategic resiliency framework that makes recommendations and identifies actions that are necessary to prepare the state for the most significant climate change impacts. AB 1384 is before the Senate Environmental Quality Committee.

AB 2371 (Friedman, 2020) would have established a climate science advisory team as a working group of ICARP, with specified duties including producing a list of recommended adaptation projects, and provide input to improve climate adaptation and hazard mitigation across state agencies. AB 2371 was held in the Senate Environmental Quality Committee, due to the COVID-19 pandemic.

AB 296 (Skinner, Chapter 667, Statutes of 2012) requires the Department of Transportation to develop a standard specification for sustainable or cool pavements that can be used to reduce UHIE.

**SOURCE:** Climate Resolve

**SUPPORT:**

AARP California  
American Planning Association California Chapter  
Asian Pacific Islander Forward Movement  
California Alliance of Nurses for Healthy Environments  
California Association of Recreation & Park Districts  
California Interfaith Power & Light  
California Interfaith Power and Light  
California League of Conservation Voters  
California Nevada Cement Association (CNCA)  
California Nurses Association  
California Solar & Storage Association  
California State Parks Foundation  
Central California Environmental Justice Network  
City of Long Beach  
City of Los Angeles

Clean Power Alliance of Southern California  
Climate Action Campaign  
Climate Resolve  
Community Nature Connection  
County Health Executives Association of California (CHEAC)  
Defenders of Wildlife  
Edison International and Affiliates, Including Southern California Edison  
Elders Climate Action, Norcal and Social Chapters  
Heal the Bay  
Kitchen Rainmakers  
League of California Cities  
Local Government Commission  
Los Angeles County Bicycle Coalition  
Los Angeles Neighborhood Initiative  
Los Angeles Neighborhood Land Trust  
National Nurses United  
Nature Conservancy; the  
Nature for All  
Pacific Gas and Electric Company  
Pacoima Beautiful  
People for Mobility Justice  
River LA  
Sierra Club California  
The Climate Center  
The Nature Conservancy  
Union of Concerned Scientists  
Urban Semillas  
Watershed

**OPPOSITION:**

California Asphalt Pavement Association

**ARGUMENTS IN SUPPORT:** A coalition letter of support, including the sponsor of this bill, Climate Resolve, states, “This landmark bill will coordinate and enhance the state’s existing efforts to effectively address extreme heat and create a platform to support efforts by local governments and stakeholders, protecting communities from this escalating climate hazard.”

**ARGUMENTS IN OPPOSITION:** In an “oppose unless amended” letter, the California Asphalt Pavement Association states, in regarding cool pavements, In the case of the ASU research, there were strong indications that sunlight reflected on nearby buildings can actually make them hotter and require more energy to cool

them down... Furthermore, there are already a number of other initiatives underway in California state government that seek to promote GHG-reducing strategies as they relate to pavements and the state's transportation system”

**-- END --**