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S. 2645

To reduce the health risks of heat by establishing the National Integrated Heat Health Information System within the National Oceanic and Atmospheric Administration and the National Integrated Heat Health Information System Interagency Committee to improve extreme heat preparedness, planning, and response, requiring a study, and establishing financial assistance programs to address heat effects, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JULY 27, 2023

Mr. MARKEY (for himself, Mr. PADILLA, Ms. SINEMA, Mr. WYDEN, Mr. BLUMENTHAL, Mr. SANDERS, and Mrs. FEINSTEIN) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

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A BILL

To reduce the health risks of heat by establishing the National Integrated Heat Health Information System within the National Oceanic and Atmospheric Administration and the National Integrated Heat Health Information System Interagency Committee to improve extreme heat preparedness, planning, and response, requiring a study, and establishing financial assistance programs to address heat effects, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Preventing Health Emergencies And Temperature-related Illness and Deaths Act of 2023'' or the ''Preventing HEAT Illness and Deaths Act of 2023''.

SEC. 2. DEFINITIONS.

In this Act:

(1) COMMUNITY WITH ENVIRONMENTAL JUSTICE CONCERNS.—The term ''community with environmental justice concerns'' means a community with significant representation of communities of color, low-income communities, or Tribal and indigenous communities, that experiences, or is at risk of experiencing, higher or more adverse human health or environmental effects, as compared to other communities.

(2) EXTREME HEAT.—The term ''extreme heat'' means heat that substantially exceeds local climatological norms in terms of any combination of the following:

(A) Duration.

(B) Intensity.

(C) Season length.

(D) Frequency.

(3) HEAT.—The term ''heat'' means any combination of the atmospheric parameters associated

with modulating human thermal regulation, such as air temperature, humidity, solar exposure, and wind speed.

(4) HEAT EVENT.—The term ''heat event'' means an occurrence of increased heat that may have heat-health implications.

(5) HEAT-HEALTH.—The term ''heat-health'' means health effects to humans from heat, during or outside of heat events, including from vulnerability and exposure, or the risk of such effects.

(6) PLANNING.—The term ''planning'' means activities performed across timescales (including days, weeks, months, years, and decades) with scenario-based, probabilistic or deterministic information to identify and take actions to proactively mitigate heat-health risks from increased frequency, duration, and intensity of heat waves and increased ambient temperature.

(7) PREPAREDNESS.—The term ''preparedness'' means activities performed across timescales (including days, weeks, months, years, and decades) with probabilistic or deterministic information to manage risk in advance of a heat event and increased ambient temperature.

(8) TRIBAL GOVERNMENT.—The term ''Tribal government'' means the recognized governing body of any Indian or Alaska Native tribe, band, nation, pueblo, village, community, component band, or component reservation, individually identified (including parenthetically) in the list published most recently as of the date of enactment of this Act pursuant to section 104 of the Federally Recognized Indian Tribe List Act of 1994 (25 U.S.C. 5131).

(9) URBAN HEAT ISLAND.—The term ''urban heat island'' means the phenomenon observed in urbanized areas in which heat is more extreme than in the surrounding exurban areas and heat is heterogeneously distributed within urbanized areas, due to factors including—

(A) low albedo and impervious surfaces;

(B) low vegetation coverage; and

(C) waste heat produced in urban areas.

SEC. 3. FINDINGS.

Congress makes the following findings:

(1) Extreme heat events have been the leading cause of weather-related death in the United States over the last 30 years, according to the Centers for Disease Control and Prevention and the National Weather Service.

(2) The fourth National Climate Assessment, mandated by the Global Change Research Act of 1990 (15 U.S.C. 2921 et seq.), finds that during the next few decades, annual average temperature over the contiguous United States is projected to increase by a further 2.2°F relative to current temperatures, regardless of future scenarios. The National Climate Assessment projects that the frequency and intensity of extreme heat events will increase in the future as global temperature increases.

(3) Exposure to extreme heat can cause acute heat-related illnesses, such as heat stroke, which already result in more than 65,000 emergency room visits each year and exacerbate respiratory and cardiovascular illnesses.

(4) Heat poses the greatest health risks for adults older than 65 years of age, pregnant people, young children, low-income communities, urban communities, communities with low air conditioning prevalence, socially isolated individuals, people with mental or physical disabilities, people with underlying medical conditions, agricultural or other outdoor workers, workers without sufficient access to cooling, athletes, incarcerated individuals, people experiencing homelessness, and military personnel.

(5) Extreme heat is significantly associated with serious adverse pregnancy outcomes across the United States. Those adverse pregnancy outcomes disproportionately impact Black mothers.

(6) Heat exposure is an issue of environmental justice, as people living in low-income communities, communities of color, and Tribal nations face a number of interacting factors that render them more vulnerable to extreme heat.

(7) The impacts of heat on human health are more severe in urban areas where land surface properties create an urban heat island, particularly in neighborhoods with limited availability of or access to green spaces, shade, and tree cover, due to higher density of building structures and more vehicular traffic.

(8) Limited availability of tree cover and higher temperatures are correlated with low-income neighborhoods in urban areas. In Richmond, Virginia, Baltimore, Maryland, and Washington, DC, researchers found that risk of exposure to extreme heat is disproportionately distributed to communities of color in patterns associated with segregation and redlining.

(9) Researchers have found that few communities in the United States have sufficient climate and health information, guidance, and resources for heat planning, preparedness, and response.

(10) The risks associated with extreme heat have complex interactions and impacts, and the management of those risks requires a transdisciplinary approach.

(11) Regions, communities, and populations that face the greatest health consequences of extreme heat often may experience the lowest heat risk perceptions, have limited incentives, or have access to the fewest resources for responding to extreme heat, and as such, may be less likely to take precautions.

(12) Research on the impacts of extreme heat on human health and the effectiveness of solutions under varying climate, social, and other contexts is stymied by a lack of access to reliable, timely health observations and surveillance due to proprietary data rights, expense, privacy and security concerns, inconsistent reporting of health outcomes and contributory factors, poor data integration and interoperability, few incentives and little systematic coordination to address those problems, and a lack of ade-

quate climate observation, modeling, and assessment in rural, urban, indoor, and occupational settings.

(13) Integrated climate and health research and information, when developed in a collaborative, transdisciplinary manner, can inform long- and medium-range scenario-based planning and decision making to protect vulnerable communities and populations from extreme heat, reduce exposure to extreme heat, and address factors that increase vulnerability.

(14) Increased heat can have cascading and compounding impacts across and among sectors including energy, food supply and quality, transportation, housing, infrastructure, hospital and healthcare delivery, and education, all of which affect health and well-being.

(15) Heat action plans and early warning systems can reduce heat-related morbidity and mortality by clearly identifying roles and responsibilities as well as evidence-based actions and thresholds to enhance preparedness, and by promoting behavior changes and actions taken by local governments, communities, and individuals through awareness and increased risk perception among those most vulnerable to the health impacts of heat.

SEC. 4. NATIONAL INTEGRATED HEAT HEALTH INFORMATION SYSTEM INTERAGENCY COMMITTEE.

(a) ESTABLISHMENT OF COMMITTEE.—There is established within the Office of Science and Technology Policy an interagency committee, to be known as the ''National Integrated Heat Health Information System Interagency Committee'' (in this section referred to as the ''Committee'').

(b) PURPOSE.—The Committee shall coordinate, plan, and direct agencies represented on the Committee to execute, as appropriate, activities across such agencies to ensure a united Federal approach to reducing health risks from heat across timescales (including days, weeks, months, years, and decades).

(c) MEMBERSHIP.—

(1) IN GENERAL.—In order to carry out and achieve the purpose described in subsection (b), the Committee shall include the following:

(A) The Director of the National Integrated Heat Health Information System.

(B) Not fewer than 1 representative from each of the following:

(i) From the Department of Commerce, the following:

(I) From the National Oceanic and Atmospheric Administration, the following:

(aa) The National Weather Service.

(bb) The Office of Oceanic and Atmospheric Research.

(cc) The National Environmental Satellite, Data, and Information Service.

(II) The National Institute of Standards and Technology.

(III) The Bureau of the Census.

(ii) From the Department of Health and Human Services, the following:

(I) The Centers for Disease Control and Prevention, including the National Institute for Occupational Safety and Health.

(II) The Office of the Assistant Secretary of Health and Human Services for Preparedness and Response.

(III) The Substance Abuse and Mental Health Services Administration.

(IV) The National Institutes of Health.

(V) The Indian Health Service.

(iii) From the Department of the Interior, the following:

(I) The Bureau of Indian Affairs.

(II) The Bureau of Land Management.

(III) The National Park Service.

(iv) From the Environmental Protection Agency, the following:

(I) The Office of Environmental Justice.

(II) The Office of Air and Radiation, if the Administrator of the Environmental Protection Agency determines appropriate.

(III) The Office of Research and Development, if the Administrator determines appropriate.

(IV) The Office of International and Tribal Affairs.

(v) The Federal Emergency Management Agency.

(vi) The Department of Defense.

(vii) The Department of Agriculture.

(viii) The Department of Housing and Urban Development.

(ix) The Department of Transportation.

(x) The Department of Energy.

(xi) The Department of Labor, including the Occupational Safety and Health Administration.

(xii) The Department of Veteran Affairs.

(xiii) Such other Federal agencies as the Director of the Office of Science and Technology Policy considers appropriate.

(2) SELECTION OF REPRESENTATIVES.—The head of an agency specified in paragraph (1)(B) shall, in appointing representatives of the agency to the Committee, select representatives who have expertise in areas relevant to the responsibilities of the Committee, such as weather and climate prediction, health impacts, environmental justice, behavioral science, public health hazard preparedness and response, or mental health services.

(3) CO-CHAIRS.—

(A) IN GENERAL.—The members of the Committee shall select 2 individuals from among such members to serve as co-chairs of the Committee, subject to the approval of the Director of the Office of Science and Technology Policy.

(B) SELECTION.—

(i) INITIAL SELECTION.—Of the co-chairs first selected, one co-chair shall be from the National Oceanic and Atmospheric Administration and one co-chair shall be from the Centers for Disease Control and Prevention.

(ii) SUBSEQUENT SELECTION.—Subsequent co-chairs shall be selected from among the members of the Committee.

(C) TERMS.—Each co-chair shall serve for a term of not more than 5 years.

(D) RESPONSIBILITIES OF CO-CHAIRS.—The co-chairs of the Committee shall work with the Director of the National Integrated Heat Health Information System—

(i) to determine the agenda of the Committee, in consultation with other members of the Committee;

(ii) to direct the work of the Committee; and

(iii) to convene meetings of the Committee not less frequently than once each fiscal quarter.

(d) RESPONSIBILITIES OF COMMITTEE.—The Committee shall promote an integrated, Federal Government-wide approach to reducing health risks and impacts of heat, including by—

(1) developing the strategic plan required by subsection (e);

(2) coordinating across Federal agencies on heat-health communication, research, service delivery, and workforce development; and

(3) building capacity and partnerships with Federal and non-Federal entities.

(e) STRATEGIC PLAN.—

(1) IN GENERAL.—Not later than 2 years after the date of the enactment of this Act, the Committee shall submit to Congress and make available on a public website a 5-year integrated strategic plan that outlines the goals and projects of the Committee, including how the Committee will improve coordination and integration of interagency Federal actions to address health risks of heat, including—

(A) a strategy for improving and coordinating existing Federal data collection and data management to include sharing of data and statistics on heat-related illnesses and mortalities and other impacts to inform heat-related activities;

(B) a strategy for improving and coordinating Federal activities to understand user gaps and needs, conduct research, foster innovative solutions, and provide actionable information and services; and

(C) mechanisms for financing heat preparedness within such agencies as the Committee considers appropriate.

(2) IMPLEMENTATION PLANS.—The head of an agency represented on the Committee may implement the portions of the strategic plan required by paragraph (1) that are relevant to that agency by developing and implementing a multi-year implementation plan.

(3) UPDATES.—Not later than 5 years after the submission of the strategic plan required by paragraph (1), and every 5 years thereafter, the Committee shall submit to Congress an update of the

plan, which shall include progress made toward goals outlined in the plan and new priorities that emerge.

(f) ADMINISTRATIVE SUPPORT.—The Administrator of the National Oceanic and Atmospheric Administration shall provide technical and administrative support to the Committee, using amounts authorized to be appropriated to the Administration.

(g) CONSULTATION.—In carrying out the responsibilities of the Committee, the Committee shall consult with relevant regional, State, Tribal, and local governments, international organizations and partners, research institutions, nongovernmental organizations and associations, and medical experts with expertise in emergency response, environmental health, economic or business development, or community engagement.

SEC. 5. NATIONAL INTEGRATED HEAT HEALTH INFORMATION SYSTEM.

(a) ESTABLISHMENT.—The Under Secretary of Commerce for Oceans and Atmosphere shall establish within the National Oceanic and Atmospheric Administration a system, to be known as the ''National Integrated Heat Health Information System'' (NIHHIS) (in this section referred to as the ''System'').

(b) PURPOSE.—The purpose of the System is to improve the capacity of weather, subseasonal, and seasonal

forecasts for the United States to allow the Federal Government and stakeholders to plan, prepare for, adapt to, and mitigate health risks of extreme heat across multiple timescales.

(c) DIRECTOR.—The System shall be headed by a Director.

(d) RESPONSIBILITIES.—In carrying out the purpose described in subsection (b), the Director shall—

(1) develop and sustain robust relationships with Federal and non-Federal partners and decision-makers—

(A) to respond to the demand for actionable weather- and climate-related information that reduces health risks on multiple timescales;

(B) to conduct research and scientific innovation; and

(C) to develop and deliver timely and accessible decision support services, solutions, tools, and information to inform planning, preparedness, and risk-reducing actions across timescales;

(2) coordinate and collaborate with the international community and global partners to conduct research and learn from, leverage, and contribute to

global knowledge as it pertains to predicting and preventing the impacts of increased heat;

(3) enhance observations, surveillance, monitoring, and analysis necessary for the activities described in paragraphs (1) and (2); and

(4) communicate, educate, and build awareness regarding the risks and impacts of increased heat and extreme heat events to communities, educational and economic sectors, Tribal governments, and other relevant stakeholders.

(e) DATA MANAGEMENT.—

(1) AVAILABILITY.—The Director shall coordinate with interagency partners to ensure that data and metadata associated with the System is fully and openly available, within the legal right to redistribute, in accordance with chapter 31 of title 44, United States Code (commonly known as the ''Federal Records Act of 1950''), and the Federal Evidence-Based Policymaking Act of 2018 (Public Law 115–435;132 Stat. 5529) and the amendments made by that Act, to maximize use of such data to support the goals of the System.

(2) NATIONAL CENTERS FOR ENVIRONMENTAL INFORMATION.—The Under Secretary of Commerce for Oceans and Atmosphere shall manage, maintain,

and steward archival data and metadata associated with the System within the National Centers for Environmental Information.

(f) RESEARCH PROGRAM.—The Director shall develop and implement a climate and health research grant program, in coordination with the financial assistance program under section 7 and other Federal programs—

(1) to improve understanding of—

(A) the climate epidemiology and social, behavioral, and economic drivers of heat-health vulnerability and risk;

(B) the drivers of climate variability, predictability, and changes in extreme heat; and

(C) the impacts of extreme heat, compound hazards, and cascading impacts across timescales;

(2) to investigate and evaluate the effectiveness of risk management actions, interventions, policies, standards, codes, and guidelines; and

(3) to address other topics as appropriate, including topics outlined in the strategic plan required by section 4(e)(1) and the financial assistance program under section 7.

(g) ADDITIONAL ACTIVITIES.—The Director shall carry out such other activities as the Committee considers appropriate.

SEC. 6. STUDY ON EXTREME HEAT INFORMATION AND RESPONSE.

(a) STUDY.—

(1) IN GENERAL.—Not later than 120 days after the date of the enactment of this Act, the Under Secretary of Commerce for Oceans and Atmosphere, in consultation with the National Integrated Heat Health Information System Interagency Committee and the individuals and entities described in section 4(g), shall seek to enter into an agreement with the National Academies of Sciences, Engineering, and Medicine to conduct a study on extreme heat information and response, to be completed not later than 3 years after such date of enactment.

(2) ELEMENTS.—The study described in paragraph (1) shall—

(A) identify policy and research gaps, which may include—

(i) regions of the United States with the largest gaps between awareness, preparedness, and capacity to address extreme heat; and

(ii) heat-related gaps in data, such as—

(I) the number of schools, prisons, and other public facilities that lack air conditioning;

(II) the demographic breakdown of people affected by heat events, including by race, age, gender, occupation, and income;

(III) medical coding in health care facilities (such as hospitals, emergency rooms, and health centers) that indicate heat-related illnesses (such as kidney failure, dehydration, and fainting spells); and

(IV) with respect to public policy at the State and community level that enhance vulnerabilities to extreme heat (such as outdoor working conditions and thresholds to protect workers, animals, and others susceptible to heat-related illness);

(B) provide recommendations for addressing gaps with respect to policy, research, operations, communications, and data, including the

gaps identified under subparagraph (A), affecting heat-health planning, preparedness, response, resilience, adaptation, and environmental justice and equity;

(C) provide such other recommendations as the Director considers appropriate, which may include strategies for—

(i) communicating warnings to and providing impact-based decision support to promote preparedness actions and resilience of populations vulnerable to extreme heat;

(ii) understanding compound and cascading risks, and implementing alternative heat-health risk reduction interventions to manage those risks collectively, such as reducing risk of the transmission of infectious diseases during heat waves by creating outdoor cooling locations or increasing ventilation and filtration in indoor cooling centers;

(iii) promoting community resilience to heat events and incorporating principles of environmental justice in community response to heat waves;

(iv) addressing the impacts of extreme heat on energy cost, affordability, and reliability for residential and commercial infrastructure (such as weatherization, energy costs, electric power systems, and water supply and treatment systems); and

(v) establishing labor and other standards for workers and heat; and

(D) consider such other subjects as the Committee considers appropriate, which may include—

(i) the feasibility of enhancing and standardizing existing nationwide data collection on heat-related illnesses and mortalities to improve and ensure consistent collection of national-level heat illness data across all 50 States, territories, and local jurisdictions of the United States;

(ii) mechanisms for financing heat preparedness; and

(iii) the effectiveness of county- or local-level heat awareness and communication approaches, heat action, and tools, preparedness plans, or mitigation.

(3) DEVELOPMENT OF DEFINITIONS.—Following the study described in paragraph (1), the Committee shall work with heat experts across disciplines to comprehensively identify impacts of increased heat to inform consistent and agreed upon definitions for heat events, heat waves, and other relevant terms.

(b) REPORT.—Not later than 90 days after completing the study described in subsection (a)(1), the Committee shall—

(1) make available to the public on a Federal internet website of the National Oceanic and Atmospheric Administration a report on the findings and conclusions of the study; and

(2) submit the report to—

(A) the Committee on Commerce, Science, and Transportation of the Senate;

(B) the Committee on Health, Education, Labor, and Pensions of the Senate;

(C) the Committee on Science, Space, and Technology of the House of Representatives;

(D) the Committee on Energy and Commerce of the House of Representatives; and

(E) the Committee on Education and Labor of the House of Representatives.

SEC. 7. FINANCIAL ASSISTANCE FOR RESILIENCE IN ADDRESSING EXTREME HEAT AND HEALTH RISKS.

(a) IN GENERAL.—

(1) ESTABLISHMENT.—Not later than 1 year after the date of the enactment of this Act, the Director of the National Integrated Heat Health Information System may, in coordination with the National Integrated Heat Health Information System Interagency Committee, establish and administer a community heat resilience program to provide financial assistance to eligible entities to carry out projects described in subsection (e) to ameliorate human health impacts of extreme heat events.

(2) REVISION.—Upon completion of the strategic plan required by section 4(e)(1), the Committee may revise the community heat resilience program to ensure the program aligns with the strategic plan and is administered in accordance with the plan.

(b) PURPOSE.—The purpose of the financial assistance provided under this section is to improve community resilience to heat and heat-health impacts and further scientific research to address adaptation gaps and priorities.

(c) FORMS OF ASSISTANCE.—Financial assistance provided under this section may be in the form of prizes, contracts, grants, or cooperative agreements.

(d) ELIGIBLE ENTITIES.—Entities eligible to receive financial assistance under this section to carry out projects described in subsection (e) include—

(1) nonprofit entities;

(2) States;

(3) Tribal governments;

(4) local governments;

(5) local workforce development boards; and

(6) academic institutions.

(e) ELIGIBLE PROJECTS.—Projects described in this subsection include the following:

(1) Projects to reduce heat-health risks, including sustainable heat reduction and mitigation solutions such as for cool roofs, cool pavements, urban forestry or tree plantings and maintenance, the provision of shade, cooling and resilience centers, retrofitting buildings for cooling, improving the resilience of the power grid to ensure reliable air conditioning, energy efficiency, acquisitions or upgrades of filtration systems or high-efficiency air conditioning systems, and strategies to improve community level response before and during a heat event.

(2) Training programs to support the development and integration of education and training programs for identifying and addressing risks associated with climate change for vulnerable individuals.

(3) Projects focusing on being responsive to heat-related needs from communities heard from engagements at different geographic scales (national to regional to local) including—

(A) to expand public awareness of heat risks;

(B) to conduct community-based climate and health observational campaigns;

(C) to conduct scientific research to assess gaps and priorities regarding the risks of extreme heat in communities;

(D) to communicate risks and warnings to isolated communities;

(E) to support the establishment of workplace policies and practices to reduce the risk of extreme heat illness among workers;

(F) to educate such communities about how to respond to extreme heat events; and

(G) to establish local, city, and county heat planning and heat-related emergency action plans.

(4) Other projects that the Director determines will achieve a significant reduction in heat exposure or increased resilience to increased heat or extreme heat events.

(f) PRIORITIES.—In selecting eligible entities to receive financial assistance under this section, the Director shall prioritize entities that will carry out projects that provide benefits for historically disadvantaged communities and communities with significant heat disparities associated with race, ethnicity, or income.

(g) DISTRIBUTION OF ASSISTANCE.—

(1) COMMUNITIES WITH ENVIRONMENTAL JUSTICE CONCERNS AND LOW INCOME COMMUNITIES.—Not less than 40 percent of the amount of financial assistance provided under this section in any fiscal year shall be provided to eligible entities to implement projects described in subsection (e) in communities with environmental justice concerns or low-income communities.

(2) EQUITABLE DISTRIBUTION.—The Director shall seek to equitably distribute financial assistance provided under this section based on geographic location or such other factors as the Director determines appropriate.

SEC. 8. AUTHORIZATION OF APPROPRIATIONS.

(a) NATIONAL INTEGRATED HEAT HEALTH INFORMATION SYSTEM INTERAGENCY COMMITTEE; NATIONAL INTEGRATED HEAT HEALTH INFORMATION SYSTEM.—There is authorized to be appropriated to the National Oceanic and Atmospheric Administration to carry out sections 4 and 5, including for any administrative costs for the National Integrated Heat Health Information System Interagency Committee and the National Integrated Heat Health Information System, the following:

(1) For fiscal year 2024, $20,000,000.

(2) For fiscal year 2025, $20,000,000.

(3) For fiscal year 2026, $20,000,000.

(4) For fiscal year 2027, $20,000,000.

(5) For fiscal year 2028, $20,000,000.

(b) STUDY ON EXTREME HEAT INFORMATION AND RESPONSE.—There is authorized to be appropriated to the National Oceanic and Atmospheric Administration to contract with the National Academies of Sciences, Engineering, and Medicine to carry out section 6 $500,000 for each of fiscal years 2024 through 2026.

(c) FINANCIAL ASSISTANCE FOR RESILIENCE IN ADDRESSING EXTREME HEAT AND HEALTH RISKS.—There is authorized to be appropriated to the National Oceanic and Atmospheric Administration to carry out section 7 the following:

(1) For fiscal year 2024, $10,000,000.

(2) For fiscal year 2025, $10,000,000.

(3) For fiscal year 2026, $20,000,000.

(4) For fiscal year 2027, $30,000,000.

(5) For fiscal year 2028, $30,000,000.

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