

Testimony in support of Senate Bill 54

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CAPA Strategies (CAPA) is a climate adaptation consultancy based in Portland, OR and working across the United States. Our team of social and environmental scientists integrates localized data, literature and best practices in the field, and planning principles to support community climate resilience. Over the past seven years, extreme heat has emerged as a central focus of our work. CAPA's clients, including governments and non-profit agencies, have struggled to protect the communities they serve from unprecedented extremes, such as the Pacific Northwest heat dome in 2021. In addition to such high profile emergencies, rising summer temperatures present a pervasive, daily disruption to well-being, particularly among populations that are isolated from resources, lack access to cool spaces, or are physically vulnerable to heat-related illness. In many parts of Oregon, where temperatures have historically been mild, local populations are not acclimatized to heat and the state sees multiple heat-related deaths each year. Heat that is not fatal may still cause those without cooling to lose sleep, become irritable, and struggle to focus at work or school, among other outcomes that impact physical health, mental health, and productivity.

Multi-family rental properties are known to be particularly vulnerable to heat for three primary reasons. First, renters have limited control over changes to their living environments that might aid in cooling. For example, renters are not able to plant shade trees, install central air conditioning, or meaningfully improve building insulation. Second, facilities that serve heat vulnerable populations – such as older adults, adults with disabilities, individuals in transition, and individuals or families with very low incomes – are often multi-family rentals. Third, large multi-family structures may become hotter on upper stories, may have windows that do not open fully, are often located in densely developed areas, and are more likely than single-family dwellings to be made of heat-retaining materials such as concrete and brick. Proper cooling options in multi-family housing, particularly for populations experiencing compounding physical or social risk factors, can be a life-saving resource.

Research findings in support for SB 54:

Heat exposure in residences is not well studied as the intimate setting poses a challenge for researchers. To fill this gap in our collective understanding, CAPA completed two years of summertime temperature monitoring (in 2022 and 2023) and resident engagement (surveys and workshops) across a total of six affordable, multi-family housing properties owned by Home Forward. This study was conducted in partnership with the Portland Bureau of Emergency Management and the Multnomah County Health Department. In most residences, indoor temperatures exceeded 80°F repeatedly throughout the summer in non-air conditioned units, with some apartments occasionally exceeding 85 and 90°F. Residents described conditions such as heat coming off of concrete walls into the evening, making sleep difficult; an inability to open windows for airflow due to air pollution, noise, and concerns of crime; and the need to

adapt with extreme measures such as lying still, turning off all electronics, wearing wet clothes, and putting homemade insulation in windows.

In the first year (2022), only 39% of participants had consistent access to a portable in-home air conditioner for the duration of the study, compared to 86% in the second year (2023). There were clear differences in participants' perceptions and feedback across the two years that were informed by access to effective cooling. For example, participants in year 1 relied often on burdensome methods to stay cool, while those in year 2 were more likely to report that they simply turned on their air conditioner. Year 1 participants in older buildings complained of poor insulation, hot air coming from doors and windows, and feelings of stress around heat. In contrast, year 2 residents in a newly remodeled building with widespread air conditioning expressed greater satisfaction with their living environments. Based on this study, CAPA concluded that indoor cooling can significantly improve indoor temperature conditions (heat safety) as well as quality of life and is particularly valuable for individuals who have limited resources to cope with heat. In the case of Home Forward, air conditioners were primarily provided by the property owners and would not typically have been affordable to very low-income residents.

During a separate study in 2022, CAPA conducted a "summer experiences" survey with low-income, primarily Latine families in Clackamas and Multnomah Counties serviced by the non-profit Northwest Family Services. Approximately 42% of respondents reportedly did not have an in-home air conditioner, and many reported experiencing symptoms of heat exposure including headache and dizziness. Of those without a residential air conditioner, 69% reported that they felt most exposed to heat in their home, as opposed to outdoors, at work, or in other non-residential locations. When asked what resources would help families deal with summer heat, nearly 60% of all respondents indicated that they would like help with "access to air conditioning, shades, or other cooling options for my home."

CAPA's work across the US has consistently shown that low-income communities struggle with in-home heat exposure due in part to the lack of mechanical cooling or passive cooling resources, inefficient building envelopes, or difficulty paying for cooling. Other notable barriers to cooling include an inability to properly install mechanical cooling devices, and lack of knowledge related to maintenance. In general, reliable access to cooling can reduce stress and health impacts associated with heat exposure.

Additional considerations for the implementation of SB 54:

While participants in CAPA studies have expressed appreciation for and an interest in air conditioning and other cooling methods, our findings also suggest that air conditioners alone are not necessarily sufficient to combat indoor heat. For example, in the first year of the Home Forward study, we found that portable air conditioners frequently could not keep up with very high outdoor temperatures; sunlight coming into the home unabated; and inefficient building

envelopes that allowed hot air in and cooled air out. Portable air conditioners were shown to be more effective in a year 2 property that had been recently renovated and reinsulated. Weatherization and whole-building improvements must be considered alongside any increase in cooling infrastructure. This will ensure that cooling devices are more effective and protective. Furthermore, a widespread increase in the use of mechanical cooling could amount to significantly greater energy consumption, emissions, strain on the power grid, and waste heat entering the outdoor environment. Reliance on inefficient mechanical cooling systems may be a short-term health strategy but does not build long-term resilience and will contribute to climate change. Addressing insulation and efficiency of mechanical cooling may help to offset unwanted consequences.

Energy burden is another important consideration that may prevent high-risk individuals from utilizing cooling resources provided by property owners. CAPA's research with low-income communities has repeatedly shown that even those with an air conditioner often cannot afford to run it. It is not uncommon for individuals to forgo other expenses such as food, gas, or recreation to cover the cost of electrical bills. This suggests that getting cooling resources into homes is only a first step, particularly for those with little disposable income.

Weatherization, efficiency gains, and passive cooling measures could all help to lessen reliance on unsustainable mechanical cooling systems that create environmental harm and may not serve the needs of those most at risk from heat exposure. While portable air conditioners may be the simplest or most appealing option for property owners, CAPA recognizes the necessity that owners be well informed about sustainable and passive solutions that comply with SB 54.