CLIMATE EMERGENCY MOBILIZATION OFFICE
CHIEF HEAT OFFICER

December 15, 2023

TO: The Honorable Katy Yaroslavsky, Chair
The Honorable Tim McOsker, Member
The Honorable Nithya Raman, Member
The Honorable Bob Blumenfield, Member
The Honorable Eunisses Hernandez, Member
The Honorable Members of the Energy and Environment Committee

℅ Eric Villanueva, Legislative Assistant
Office of the City Clerk
Room 395, City Hall
Los Angeles, CA 90012

SUBJECT: Climate Emergency Mobilization Office and Chief Heat Officer Report Relative to:
Council File No. 22-1064: Extreme Weather Events / Climate Change / Cooling Apparatus Requirement / Energy Bills / Residential Units / Low Income Neighborhoods / Funding Sources
Council File No. 23-0453-S1: Cooling Apparatus Requirement / Low-Income and Middle-Income Tenants / Funding Sources / Affordable Energy Consumption

---

BACKGROUND

Council File (CF) No. 22-1064[1]**:** On October 21, 2022, the City Council adopted the Housing Committee Report[2] from CF 22-1064, relative to options for code amendments to require sufficient cooling apparatuses in residential rental units, the impact of extreme weather and climate change on housing conditions, assisting tenants without access to functioning cooling apparatuses, and resources and programs to assist low-income households during extreme weather events.

The Housing Committee Report instructed the Los Angeles Housing Department (LAHD), Chief Heat Officer, and Climate Emergency Mobilization Office (CEMO), to report to the Council on ways that extreme weather events and climate change may impact housing conditions, especially in older units, and any necessary mitigations to ensure safe living conditions across the City's housing stock. The Housing Committee Report further instructed the Los Angeles Department of Building and Safety (LADBS), LAHD, Chief Heat Officer, and CEMO, to report to the Council on these instructions through their pending report back on CF 21-1463[3], for one consolidated report to the Council, separate from the new building decarbonization matter.

---

[1] See Council File (CF) No. 22-1064 for additional information on this matter.
[2] CF 22-1064: Housing Committee Report (October 12, 2022).
[3] See CF 21-1463 for additional information on this matter.

Council File No. 23-0453[4]: On May 31, 2023, the City Council adopted the Housing and Homelessness Committee Report[5] from CF 23-0453, relative to requiring cooling apparatus in all residential rental units; and potential programs to assist low-income and middle-income tenants with subsidies to offset increased and/or unaffordable energy consumption due to the installation and operation of a cooling apparatus; and potential funding sources for such programs.

The Housing and Homelessness Committee Report, as amended, requested the Los Angeles Department of Water and Power (LADWP), the City Administrative Officer (CAO), and LAHD, to report to Council on potential programs to assist low-income and middle-income tenants with subsidies to offset increased and/or unaffordable energy consumption due to the installation and operation of a cooling apparatus, as well as potential funding sources for such programs. The Report additionally requested that the LADWP report to Council regarding an estimate of the potential implications on the City's electrical grid if every residential unit in the City were equipped with a cooling system.

Council File No. 23-0453-S1[6]: On September 8, 2023, the Energy and Environment Committee considered the LADWP Report dated July 28, 2023[7], relative to a response to the Motion from CF 23-0453 requiring cooling apparatus in all residential rental units; and potential programs to assist low-income and middle income tenants. This LADWP Report was submitted to a sub-file to CF 23-0453, thus establishing CF 23-0453-S1.

On September 27, 2023, the City Council adopted the Energy and Environment Committee Report[8] from CF 23-0453-S1, relative to potential programs to assist low-income and middle-income tenants with subsidies to offset increased and/or unaffordable energy consumption due to the installation and operation of a cooling apparatus. The Energy and Environment Committee Report, as amended, instructed the CAO, LAHD, and CEMO to report back to the Energy and Environment Committee with an expansive response on this matter that includes consideration of building efficiency programs and heat pumps.

This Report provides a response to the Council's instructions in CF 22-1064 relative to ways that extreme weather events and climate change may impact housing conditions, especially in older units, and any necessary mitigations to ensure safe living conditions across the City's housing stock; and to the Council's instructions in CF 23-0453-S1, relative to potential programs to assist low-income and middle-income tenants with subsidies to offset increased and/or unaffordable energy consumption due to the installation and operation of a cooling apparatus, that includes consideration of building efficiency programs and heat pumps.

[4] See CF 23-0453 for additional information on this matter.
[5] CF 23-0453: Housing and Homelessness Committee Report (May 17, 2023).
[6] See CF 23-0453-S1 for additional information on this matter.
[7] CF 23-0453-S1: Report from Department of Water and Power (July 28, 2023).
[8] CF 23-0453-S1: Energy and Environment Committee Report (September 8, 2023).

SUMMARY OF POLICY RECOMMENDATIONS

1. **Recognize that extreme heat is the City's primary climate hazard, impacting public health, housing, and infrastructure with mounting costs and risks, and is most effectively addressed through a comprehensive climate equity lens.**
2. **Drive equitable climate, public health, and housing solutions to reduce the risks of extreme heat, with an equity lens that prioritizes low-income, dense, rental areas that have been historically disinvested, and embed policies for healthy, resilient homes.**
3. **Prioritize passive cooling approaches, equitable decarbonization of existing buildings, energy efficiency, and heat pumps, all which are evidence-based solutions for reducing heat-related health risk in homes; both City planning and design guidelines and revised building codes can achieve this goal.**
4. **Recognize that energy burden and emissions will continue to rise exponentially if the City relies on expanded air conditioning (AC) as the primary cooling strategy without a comprehensive approach.**

POLICY RECOMMENDATIONS

1. **Recognize that extreme heat is the City's primary climate hazard, impacting public health, housing, and infrastructure with mounting costs and risks, and is most effectively addressed through a comprehensive climate equity lens.**
   Extreme heat is now the greatest climate risk to the City and County of Los Angeles[9], and multiple geographic areas in the City of Los Angeles are increasingly at risk from the effects of extreme heat. As climate change continues to intensify extreme weather events, and also causes more frequent, higher temperature, and longer duration extreme heat waves, the City must invest in comprehensive and aligned actions to mitigate and prevent negative effects from these events to lives, public health, infrastructure, and the economy.

   Due to numerous factors, including geography, historic redlining, historical disinvestments that led to lack of tree canopy and shade equity, and other negative socioeconomic and health factors, far too many lower-income homes face higher risks of extreme heat and greater barriers such as lack of financing for retrofitting existing buildings into healthy resilient homes, and thermally comfortable homes that protect vulnerable communities from excess emergency room (ER) visits and hospitalizations[10].

   The solution is not as simple as a singular approach applied universally. Extreme heat must be dealt with in a comprehensive, multi-disciplinary, multi-pronged, and forward-thinking manner in order to prevent additional problems from surfacing in the wake of short-term "fixes" as recommended in CEMO's Report on Equitable Building Decarbonization[11], and by integrating passive cooling and nature-based solutions to the City's built environment.

---

[9] Los Angeles County Climate Vulnerability Assessment (CVA) (2021). Los Angeles County Chief Sustainability Office, Department of Regional Planning, and Department of Public Health. https://ceo.lacounty.gov/wp-content/uploads/2021/10/LA-County-Climate-Vulnerability-Assessment-1.pdf.

[10] UCLA Heat Maps (2022). UCLA Center for Healthy Climate Solutions and Center for Public Health and Disasters. https://uclaheatmaps.org.

[11] Prepared by French, E.M. (2022). Report on Equitable Building Decarbonization: Equity Focused Policy Recommendations for the City of Los Angeles. City of Los Angeles Climate Emergency Mobilization Office (CEMO), Board of Public Works. https://climate4la.org/Decarb-Report.

To evaluate and plan the most effective and equitable responses to reduce heat waste and the conditions that increase heat injury and risks Citywide, the City is currently in the process of developing a Heat Action and Resilience Plan (HARP)[12], and through it, must align across Departments and divisions, and employ a variety of metrics, tools, such as the City's Equity Index and Tool - Measure of Access, Disparity, and Equity (MADE)[13] and CEMO's Heat Vulnerability Maps[14], align with the City's HARP and Climate Vulnerability Assessment (CVA), and also include and combine passive cooling, energy efficiency, renewable energy targets, and financing for retrofits and infrastructure to create an affordable green transition for the City's buildings, energy, and transportation systems.

2. **Drive equitable climate, public health, and housing solutions to reduce the risks of extreme heat, with an equity lens that prioritizes low-income, dense, rental areas that have been historically disinvested, and embed policies for healthy, resilient homes.** In the City of Los Angeles, there are several low-income, frontline communities that disproportionately experience the negative impacts of extreme heat risk and these risks are not only based on the temperature of the heat waves. These disparities in vulnerability to extreme heat arise from the cumulative effects of pollution burden and exacerbated ground-level ozone formation due to extreme heat, excess chronic illness, lack of healthcare access, lack of in-home thermal cooling, lack of access to cooling and resilience centers, and scarcity of additional critical cooling and heat adaptation resources[15].

   Therefore, when assessing the risks of extreme heat, the City must consider these multiple factors, along with the baseline rates of ER visits and mortality during heat waves in these communities. The City of Los Angeles must drive equitable public health solutions by aligning with the Los Angeles County Department of Public Health's extreme heat-related ER and mortality data to measure frontline and historically disinvested community outcomes from long-term investments that address climate risks. The City must also direct no less than 40% of its investments towards environmental justice (EJ) communities, in alignment with the Federal Justice40 Initiative[16], for a comprehensive, equitable approach to creating resilient, healthy, decarbonized homes, and greening the built environment.

   A. Building Decarbonization

   i. The City has undertaken many notable efforts to equitably decarbonize residential, commercial, and municipal buildings[17], and therefore can expand access to available heat adaptation resources, both in homes and Citywide.

   ii. These decarbonization initiatives present an opportunity to reduce greenhouse gas (GHG) emissions, improve the living conditions, health, and safety of heat-vulnerable communities, and provide robust, equitably-distributed cooling resources in disproportionately-burdened communities.

---

[12] See CF 21-1277 for additional information on this matter.
[13] Measure of Access, Disparity, and Equity (MADE) - The Los Angeles Equity Index and Tool. Office of the City Administrative Officer (CAO), City of Los Angeles. https://lacity.shinyapps.io/MADE/.
[14] See Attachment 1: Heat Vulnerability Maps, Cooling Resource Gaps: A Heat Risk Analysis for the City of Los Angeles. City of Los Angeles Climate Emergency Mobilization Office (CEMO), Board of Public Works.
[15] See Attachment 1 (CEMO), CalEnviroScreen 4.0, and UCLA Heat Maps.
[16] Executive Order 14008: Tackling the Climate Crisis at Home and Abroad (January 27, 2021). Federal Register Volume 86, No. 19 (February 1, 2021). Section 223. Justice40 Initiative. EPA-HQ-OPPT-2021-0202-0012. https://www.regulations.gov/document/EPA-HQ-OPPT-2021-0202-0012.
[17] See CF 21-1039, CF 21-1463, and the related Council Files for additional information on this matter.

iii. In September 2022, the CEMO published the **Report on Equitable Building Decarbonization: Equity Focused Policy Recommendations for the City of Los Angeles**[18] to provide the City Council and City Department leadership with key recommendations and findings from the Climate Equity LA Series grassroots community engagement initiatives, conducted in Fiscal Year 2021-2022. The Report on Equitable Building Decarbonization recommends a systemic, collaborative approach to equitable building decarbonization, with the goal of advancing social and environmental justice, while addressing climate change and its impacts Citywide. The Report's high-level recommendations are summarized in **Table 1** below.

Table 1. Summary of Recommendations for City building decarbonization policies[19]

1	Include frontline communities in the design, implementation, and evaluation of all building decarbonization policies and programs
2	Leverage building decarbonization to improve public health and habitability
3	Embed tenant protections into building decarbonization policies and programs
4	Embed affordable housing protections into building decarbonization policies and programs
5	Embed worker protections and new job opportunities for frontline communities into building decarbonization policies and programs
6	Prioritize public funding for decarbonization of existing buildings in frontline communities
7	Expand education, outreach, and technical assistance related to building decarbonization
8	Leverage existing decarbonization efforts to gather data on the technical and financial requirements of building decarbonization
9	Design a flexible, equity-centered, multi-phased approach to building decarbonization
10	Identify all new and existing possible sources of public, private, and philanthropic funding to support equitable building decarbonization

B. Heat Vulnerability

i. The most heat-vulnerable areas of the City experience higher rates of excess ER visits and extreme heat-related morbidity and mortality on extreme heat days as compared to non-extreme heat days[20]. CEMO has also developed a spatial data mapping tool that shows the correlation between heat risk and health disparities across the City, which will be included in the forthcoming Heat Action and Resilience Plan (HARP).

[18] Prepared by French, E.M. (2022). Report on Equitable Building Decarbonization: Equity Focused Policy Recommendations for the City of Los Angeles. City of Los Angeles Climate Emergency Mobilization Office (CEMO), Board of Public Works. https://climate4la.org/Decarb-Report.
[19] Ibid.
[20] Riley, K., Wilhalme, H., Delp, L., and Eisenman, D. (2018). Mortality and Morbidity during Extreme Heat Events and Prevalence of Outdoor Work: An Analysis of Community-Level Data from Los Angeles County, California. International Journal of Environmental Research and Public Health, 15(4), 580. https://doi.org/10.3390/ijerph15040580

ii. The systemic injustices of historical policies like redlining have contributed to the historically inequitable distribution of the heat adaptation resources necessary for low-income communities to protect themselves against extreme heat. In June 2023, in collaboration with Master of Public Policy graduate students from the UCLA Luskin School of Public Affairs, the CEMO published a Report titled **Turning Down the Heat: Addressing Heat Inequities for Frontline Communities in Los Angeles**[21].

a. The experiences of grassroots, frontline community members with extreme heat, as gathered through community focus groups and surveys, informed the Report's key findings and policy recommendations.

b. The Report recommends that the City expand access to at-home heat adaptation resources, and invest equitably in long-term heat resilience strategies for vulnerable communities. The policy recommendations from the Report are summarized in **Table 2** below.

Table 2. Summary of Recommendations for equitable heat-related City policies[22]

1	Provide air conditioning, home weatherization, utility assistance, and grid reliability for frontline communities
2	Expand equitable access to green spaces for frontline communities
3	Improve the thermal comfort of pedestrians and transit users
4	Provide equitable access to water resources in frontline communities, such as hydration stations and other water distribution points, splash pads, and misting stations
5	Create meaningful pathways for frontline community empowerment in local heat adaptation policymaking processes
6	Create and publish heat health information that is readily accessible in the multiple languages that are commonly spoken by frontline communities in the City of Los Angeles
7	Increase the accessibility of workplace trainings against extreme heat
8	Expand the resilience center network as a complement to equally-funded at-home heat adaptation resources and interventions
9	Ensure that resilience centers include heat adaptation resources, general City resources, and activities for frontline community members
10	Provide resilience centers in areas with relatively large unhoused communities to specifically distribute resources based on the stated needs of unhoused people

C. Meaningful Progress

Both Reports mentioned above in 2(A) and 2(B) provide meaningful steps that the City can take to implement and expand equity within current and future initiatives related to building decarbonization, extreme heat/climate adaptation, and the built environment. A well-designed, comprehensive, collaborative, and community-informed approach is vital to maximizing the benefits and limiting the unintended negative consequences of these policies and programs.

[21] Abdelatty, H., English, D., Garcia, A., Melgoza, S. and Mendoza, A. (2023). Turning Down the Heat: Addressing Heat Inequities for Frontline Communities in Los Angeles. University of California, Los Angeles (UCLA) Luskin School of Public Affairs. https://climate4la.org/Heat-Inequities-Report.
[22] Ibid.

3. **Prioritize passive cooling approaches, equitable decarbonization of existing buildings, energy efficiency, and heat pumps, all which are evidence-based solutions for reducing heat-related health risk in homes; both City planning and design guidelines and revised building codes can achieve this goal.**
   To achieve equitable thermal cooling for tenants and homes, the City can create comprehensive solutions that integrate City planning and design guidelines for passive cooling, and align with the City's building codes and equitable existing building decarbonization policies.

   Thermal cooling - leading to healthy, resilient homes and people - is a priority outcome across the City of Los Angeles, and in particular for rental units in low-income areas that lack these amenities. The City can create solutions that work for tenants who currently lack access to thermal cooling, and increase access to healthy homes that reduce the risk of heat injury, while also considering the financing and investments needed to achieve equitable solutions that prevent displacement.

   Furthermore, the City should align its Building Performance Standards (BPS)[23] with its revised building codes to further reduce the emissions impact from thermal cooling of residential buildings. Both passive cooling and heat pumps represent two promising strategies for enhancing energy efficiency and reducing carbon emissions in housing overall. Implementing both of these strategies can significantly contribute to sustainable, long-term thermal cooling, while reducing energy cost burden for tenants. The Inflation Reduction Act (IRA) is one financing mechanism for reducing costs, which can be supplemented by local rebates from LADWP.

   A. Passive Cooling[24]: Passive cooling techniques involve design strategies and practices that minimize the need for mechanical cooling systems and technologies. These techniques can include proper insulation, natural ventilation, shading, and building orientation to reduce heat gain and promote natural cooling.

      i. In a City like Los Angeles with a warm climate, utilizing passive cooling can significantly reduce reliance on air conditioning systems, leading to lower energy consumption and cost savings for residents.

      ii. Passive cooling techniques can be integrated more efficiently and effectively into the City's building codes, BPS, and planning guidelines for future developments and retrofits of existing housing and buildings.

      iii. With consideration for local climate conditions, applying passive cooling strategies in residential buildings can improve thermal performance and reduce energy consumption, even in hot, arid climates like Dubai[25].

---

[23] United States Department of Energy (DOE), Office of Energy Efficiency and Renewable Energy (EERE) (2023). Building Energy Codes Program - Building Performance Standards. https://www.energycodes.gov/BPS.
[24] IEA (2022). Technology and Innovation Pathways for Zero-carbon-ready Buildings by 2030. https://www.iea.org/reports/renovation-of-near-20-of-existing-building-stock-to-zero-carbon-ready-by-2030-is-ambitious-but-necessary.
[25] Taleb, H. (2014). Using passive cooling strategies to improve thermal performance and reduce energy consumption of residential buildings in U.A.E. buildings. Frontiers of Architectural Research, 3(2), 154-165. https://doi.org/10.1016/j.foar.2014.01.002.

iv. Nature-based solutions, such as shade from trees and other green space cooling and strategies, can complement the other approaches, and can be the most cost-effective, beautifying, and environmentally-sound approaches to mitigating the negative effects of extreme heat[26].

B. Heat Pumps[27]: Heat pumps are highly efficient heating, ventilation, and air conditioning (HVAC) systems that can provide both heating and cooling by transferring heat from one place to another. In the context of housing in the City, where temperature control is essential throughout the year, heat pumps can offer efficient heating in cooler months and effective cooling during warmer periods, while minimizing environmental impact.

i. Heat pumps are highly effective.

a. A heat pump works by extracting heat from the source and transferring it to where it is needed. Compared to traditional heating and cooling systems, in heat pump systems, most of the heat is transferred (rather than generated), and are therefore more energy-efficient than traditional heating or cooling systems.

b. Current heat pump models are three (3) to five (5) times more energy-efficient than gas boilers[28]. Heat pumps can also be combined with other heating systems, such as gas and electric, to form hybrid systems.

ii. Some potential barriers to heat pump implementation can be overcome.

a. Higher costs: While heat pumps may have higher up front costs, funding sources such as the Inflation Reduction Act (IRA) can provide financial incentives, rebates, and tax credits to encourage both developers and homeowners to integrate more energy-efficient technologies for thermal cooling of homes.

b. Information barriers and lack of support[29]: There is a lack of information and understanding by consumers, with relatively few consumer technical assistance programs established through Federal and State government policies. According to a study[30] conducted by Columbia University Center for Global Energy Policy, except in California and a few states in the Northeast, there are no policies related to heat pumps, limited financial incentives for consumers, and often, minimal educational outreach to potential consumers, if any.

---

[26] U.S. Environmental Protection Agency (2008). “Chapter 2: Trees and Vegetation”. In Reducing Urban Heat Islands: Compendium of Strategies. Draft. https://www.epa.gov/heat-islands/heat-island-compendium.
[27] IEA (2022). The Future of Heat Pumps. https://www.iea.org/reports/the-future-of-heat-pumps.
[28] Ibid.
[29] Fialka, J. (2019). The U.S. Is Ignoring the Climate Benefits of Heat Pumps. Scientific American. https://www.scientificamerican.com/article/the-u-s-is-ignoring-the-climate-benefits-of-heat-pumps.
[30] Kaufman, N., Sandalow, D., Rossi di Schio, C., and Higdon, J. (2019). Decarbonizing Space Heating with Air Source Heat Pumps. https://energypolicy.columbia.edu/publications/decarbonizing-space-heating-air-source-heat-pumps.

4. Recognize that energy burden and emissions will continue to rise exponentially if the City relies on expanded air conditioning (AC) as the primary cooling strategy without a comprehensive approach.

The increased usage of any AC will contribute significantly to energy cost burden for individual households, communities, and the City overall[31]. The demand for AC will continue to grow with climate change, and thus contribute to this increased energy cost burden that will disparately impact low-income families.

A. Energy Consumption

i. Rising demand for cooling causes enormous strain on electricity systems.

a. Cooling is the main contributor to peak demand, currently accounting for about 10% of all global electricity consumption[32]. There are also more modest contributions from fans and pumps, lighting, plug and process loads, and major appliances.

b. Without action, the International Energy Agency (IEA) predicts[33] that energy demand will more than triple by 2050 (37%) and will become "one of the top drivers of global electricity demand".

c. AC units consume a substantial amount of electricity. The more frequently and longer these units run, the higher the energy consumption, which directly correlates to increased costs.

d. During hot weather, AC is used extensively, leading to spikes in electricity demand. This leads to increased strain on the electrical grid, and may necessitate the use of additional power plants or resources to meet this heightened demand[34]. Such peak demand can lead to higher electricity costs during those times.

ii. Increased AC demand and use strains grid resilience and efficiency.

a. Disadvantaged communities (DAC) experience more frequent power interruptions and power outages than non-DAC neighborhoods[35].

b. Efficient AC systems: The IEA[36] strongly recommends manufacturing and installing highly-efficient AC equipment, one of the easiest steps to cut emissions and reduce costs. However, relying solely on efficient AC system installation is problematic for a few reasons:

1. Many households are unable to install the most efficient AC systems, due to higher upfront costs and under-subsidized public programs that do not support newer, more-efficient models. The average efficiency of ACs being sold is only about half the recommended efficiency[37].
2. Focusing on a solution that relies on efficient AC systems largely ignores more sustainable and affordable alternative cooling strategies.

---

[31] IEA (2018). The Future of Cooling. https://www.iea.org/reports/the-future-of-cooling.
[32] Ibid.
[33] IEA (2018). Share of global electricity demand growth to 2050. https://www.iea.org/data-and-statistics/charts/share-of-global-electricity-demand-growth-to-2050.
[34] Ibid.
[35] Cochran, J. and Denholm, P. eds. (2021). "Chapter 3: Electricity Demand Projections." In The Los Angeles 100% Renewable Energy Study. Golden, CO: National Renewable Energy Laboratory (NREL). NREL/TP-6A20-79444-3. https://www.nrel.gov/docs/fy21osti/79444-3.pdf.
[36] IEA (2018). Share of global electricity demand growth to 2050.
[37] Ibid.

B. Energy Bill Affordability and Equity

i. Low-income households suffer from inequitable factors.

a. Thirteen percent (13%) of Los Angeles households are energy-burdened and extremely low-income[38].

b. The cost of increased AC use can be a significant burden. Higher electricity bills due to prolonged AC usage during hot seasons can strain household budgets, impacting other essential expenses.

c. Current LADWP and other low-income bill assistance programs have low participation, minimal outreach, and marginal bill discounts. This is a common problem found in many relief programs across the country.

1. Most low-income households, even with AC systems, opt out of AC use out of the fear of not being able to pay the bills.
2. Mark Wolfe, Executive Director of the National Energy Assistance Directors Association (NEADA), which represents state directors who manage federal aid dollars for home energy costs, calls it the "new economic problem"[39].

d. Property owners are not incentivized to invest in energy-saving upgrades when renters save money on bills. Renters face displacement if energy efficiency upgrade costs are recouped through rent increases[40].

C. Energy-Related Air Pollution and Environmental and Cost Impacts

i. Increased energy consumption, particularly from fossil fuel-based power sources, contributes to higher greenhouse gas emissions and exacerbates climate change.

ii. While detracting from overall climate goals for the City, this negative environmental impact also adds to the overall costs associated with energy use.

[38] Bowen, T., Simeone, C., Stenger, K. Lixi, L., Day, M., Sandoval, N., Panda, K., Zimny-Schmitt, D., and Reyna, J. (2023). "Chapter 5. Low-Income Energy Bill Equity and Affordability." In LA100 Equity Strategies, Anderson, K., Day, M., Romero-Lankao, P., Berdahl, S., and Rauser, C. Golden, CO: NREL. NREL/TP6A20-85952. https://www.nrel.gov/docs/fy24osti/85952.pdf.

[39] National Energy Assistance Directors Association (2023). Families to Spend More for Summer Cooling Cooling Bills Estimated to Increase by 11.7%. https://neada.org/wp-content/uploads/2023/07/summercoolingestPR.pdf.

[40] Anderson, K., Day, M., Romero-Lankao, P., Berdahl, S., and Rauser, C. (2023). LA100 Equity Strategies. Golden, CO: NREL. NREL/TP-5C00-85960. https://www.nrel.gov/docs/fy24osti/85960.pdf.

CONCLUSION

Simply requiring universal AC does not consider the necessary retrofit costs for most existing buildings to upgrade electrical wiring and implement weatherization. AC is also not a comprehensive, sustainable, long-term cooling solution that provides all of the repairs and retrofits needed for healthy, resilient homes in the City of Los Angeles. The City must identify funding sources and a long-term financing strategy that supports the transition for the most equitable, effective, or efficient approaches. Installing and relying upon significantly more AC units may hinder the City from reaching its housing and climate goals, while also potentially creating an unfunded mandate.

If the ultimate aim is creating a healthy, affordable, sustainable City for all Angelenos, the City must align the passive cooling policies being developed by the Department of City Planning and the forthcoming policy on existing building decarbonization with the City's building performance standards. This would offer a more holistic approach to sustainable, affordable, and safe housing, while reducing energy consumption and burden, minimizing environmental impact, and increasing community resilience. Ideally, the City should create an equitable building decarbonization policy that is financed by various sources, protects tenants' rights, and revises the City's building performance standards to include passive cooling, as will be outlined in the forthcoming Heat Action and Resilience Plan (HARP).

Sincerely,

MARTA A. SEGURA, M.P.H.
Chief Heat Officer and Director,
Climate Emergency Mobilization Office (CEMO)
Board of Public Works

ATTACHMENTS

Attachment 1: Heat Vulnerability Maps, Cooling Resource Gaps: A Heat Risk Analysis for the City of Los Angeles

cc: Deputy Mayor Nancy Sutley, Mayor's Office of Energy and Sustainability
Steve Baule, Executive Officer, Mayor's Office of Energy and Sustainability
Daniela Simunovic, Mayor's Office of Energy and Sustainability
Lizzeth Rosales, Mayor's Office of Energy and Sustainability
Deputy Mayor Randall Winston, Mayor's Office of City Infrastructure
Ryan Jackson, Mayor's Office of City Infrastructure
Anna Hovasapian, Deputy Chief of Staff, Council District 2
Patrick Ma, Council District 2
David Hirano, City Administrative Officer
General Manager Ann Sewill, Los Angeles Housing Department
Tricia Keane, Executive Officer, Los Angeles Housing Department
Assistant General Manager Anna Ortega, Los Angeles Housing Department
Greg Good, Los Angeles Housing Department
Robert Galardi, Los Angeles Housing Department
Brian Kirkness, Los Angeles Housing Department
Ariel Moreno, Los Angeles Housing Department
President Aura Garcia, Board of Public Works
Dr. Fernando Campos, Executive Officer, Board of Public Works
Amy Clarke, Climate Emergency Mobilization Office, Board of Public Works
Rebekah Guerra Day, Climate Emergency Mobilization Office, Board of Public Works
Christine Lee, Climate Emergency Mobilization Office, Board of Public Works

REFERENCES AND FURTHER READING

1. UCLA Heat Maps (2022). UCLA Center for Healthy Climate Solutions and UCLA Center for Public Health and Disasters. https://uclaheatmaps.org.

2. Prepared by French, E.M. (2022). Report on Equitable Building Decarbonization: Equity Focused Policy Recommendations for the City of Los Angeles. City of Los Angeles Climate Emergency Mobilization Office (CEMO), Board of Public Works. https://climate4la.org/Decarb-Report.

3. Abdelatty, H., English, D., Garcia, A., Melgoza, S. and Mendoza, A. (2023). Turning Down the Heat: Addressing Heat Inequities for Frontline Communities in Los Angeles. University of California, Los Angeles (UCLA) Luskin School of Public Affairs. https://climate4la.org/Heat-Inequities-Report.

4. Anderson, K., Day, M., Romero-Lankao, P., Berdahl, S., and Rauser, C. (2023). LA100 Equity Strategies. Golden, CO: National Renewable Energy Laboratory (NREL). NREL/TP-5C00-85960. https://www.nrel.gov/docs/fy24osti/85960.pdf.

5. Cochran, J. and Denholm, P., eds. (2021). The Los Angeles 100% Renewable Energy Study. Golden, CO: NREL. NREL/TP-6A20-79444. https://maps.nrel.gov/la100/.

6. Carpenter-Gold, D. (2023). Tenant-Friendly Building Decarbonization in Los Angeles: Maximizing the Benefits and Minimizing the Harms. University of California, Los Angeles (UCLA) School of Law, Emmett Institute on Climate Change and the Environment. https://law.ucla.edu/sites/default/files/PDFs/Publications/Emmett%20Institute/Tenant-Friendly%20Building%20Decarb%20in%20LA%20-%20Final%20Digital%206-14.pdf.

7. Kirk, C. (2021). Los Angeles Building Decarbonization: Tenant Impact and Recommendations. Strategic Actions for a Just Economy (SAJE). https://www.saje.net/wp-content/uploads/2021/12/LA-Building-Decarb_Tenant-Impact-and-Recommendations_SAJE_December-2021-1.pdf.

8. Kirk, C. (2023). Decarbonizing California Equitably: A Guide to Tenant Protections in Building Upgrades/Retrofits Throughout the State. Strategic Actions for a Just Economy (SAJE). https://www.saje.net/wp-content/uploads/2023/09/Decarbonizing-California-Equitably-Report-1.pdf.

9. Prepared by Arup (2021). Los Angeles Affordable Housing Decarbonization Study Phase 2. Prepared for: Natural Resources Defense Council (NRDC). https://www.nrdc.org/sites/default/files/la-affordable-housing-decarbonization-study-phase2-20211108.pdf.

10. Prepared by CAPA Strategies (2021). Los Angeles Urban Forestry Equity Assessment Report. City Plants, TreePeople, and the Los Angeles Urban Center for Natural Resource Sustainability. https://www.cityplants.org/wp-content/uploads/2021/02/LAUF-Equity-Assement-Report-February-2021.pdf.

11. Lamm, T., Blumberg, L., and Elkind, E.N. (2020). Insuring Extreme Heat Risks: Scoping the potential for insurance innovation to support heat mitigation and response. University of California, Berkeley School of Law, Center for Law, Energy, and the Environment (CLEE). https://www.law.berkeley.edu/wp-content/uploads/2020/11/Insuring-Extreme-Heat-Risks-Dec-2020.pdf.

12. Miller, C., Chen, S., Hu, L., and Sevier, I. (2019). Equitable Building Electrification: A Framework for Powering Resilient Communities. The Greenlining Institute. https://greenlining.org/wp-content/uploads/2019/10/Greenlining_EquitableElectrification_Report_2019_WEB.pdf.

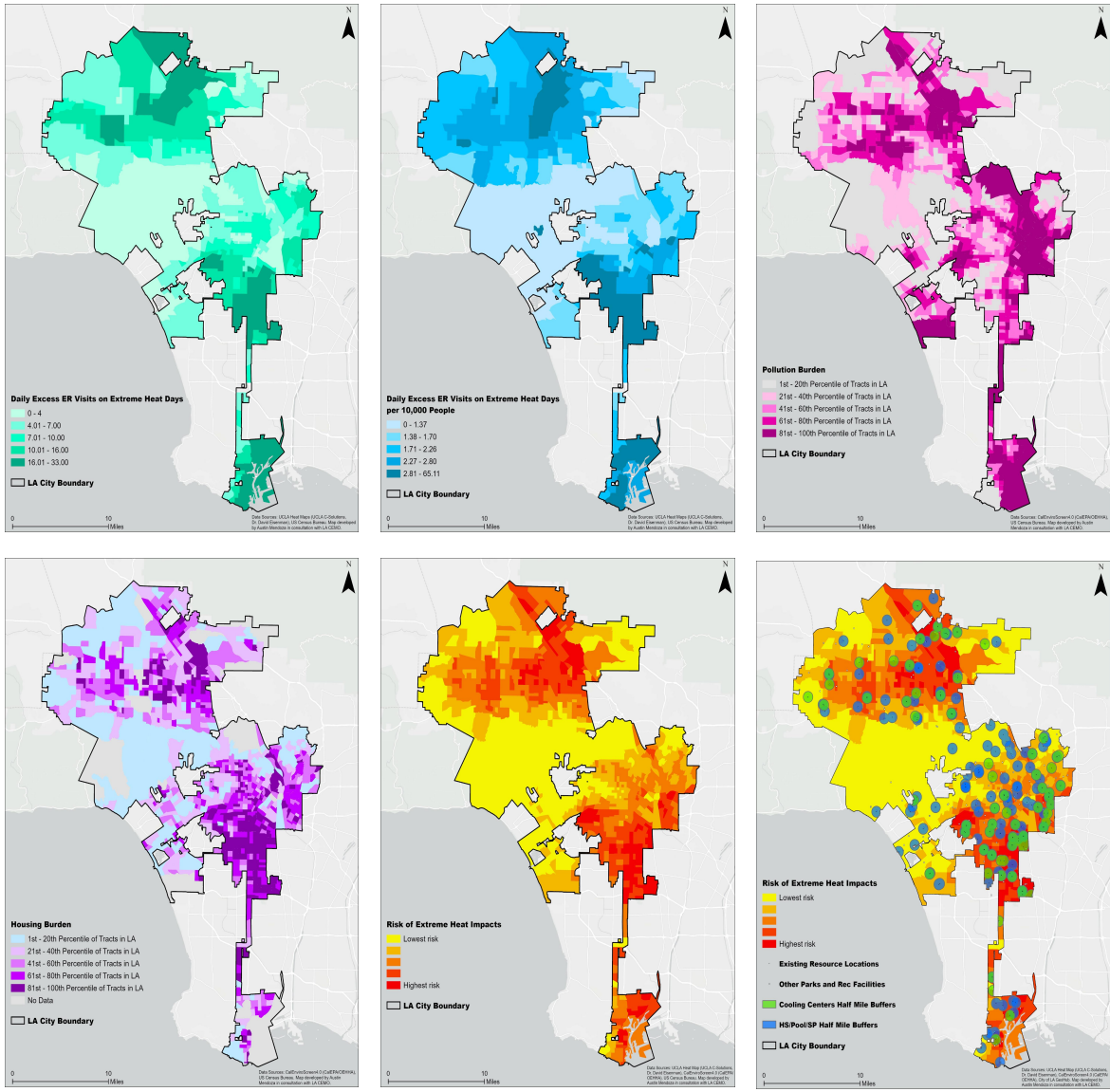
ATTACHMENT 1

Heat Vulnerability Maps, Cooling Resource Gaps:
A Heat Risk Analysis for the City of Los Angeles

Heat Vulnerability Maps, Cooling Resource Gaps:

A Heat Risk Analysis for the City of Los Angeles

CLIMATE EMERGENCY MOBILIZATION OFFICE
CHIEF HEAT OFFICER



Section 1: Heat Vulnerability

Mapping Heat Vulnerability based on:

- Emergency room data (UCLA Heat Maps)
- Pollution burden indicators (CalEnviroScreen 4.0)
- Housing burden indicators (CalEnviroScreen 4.0)

Excess ER Visits on Extreme Heat Days

Excess ER visits are the single most important heat risk indicator.

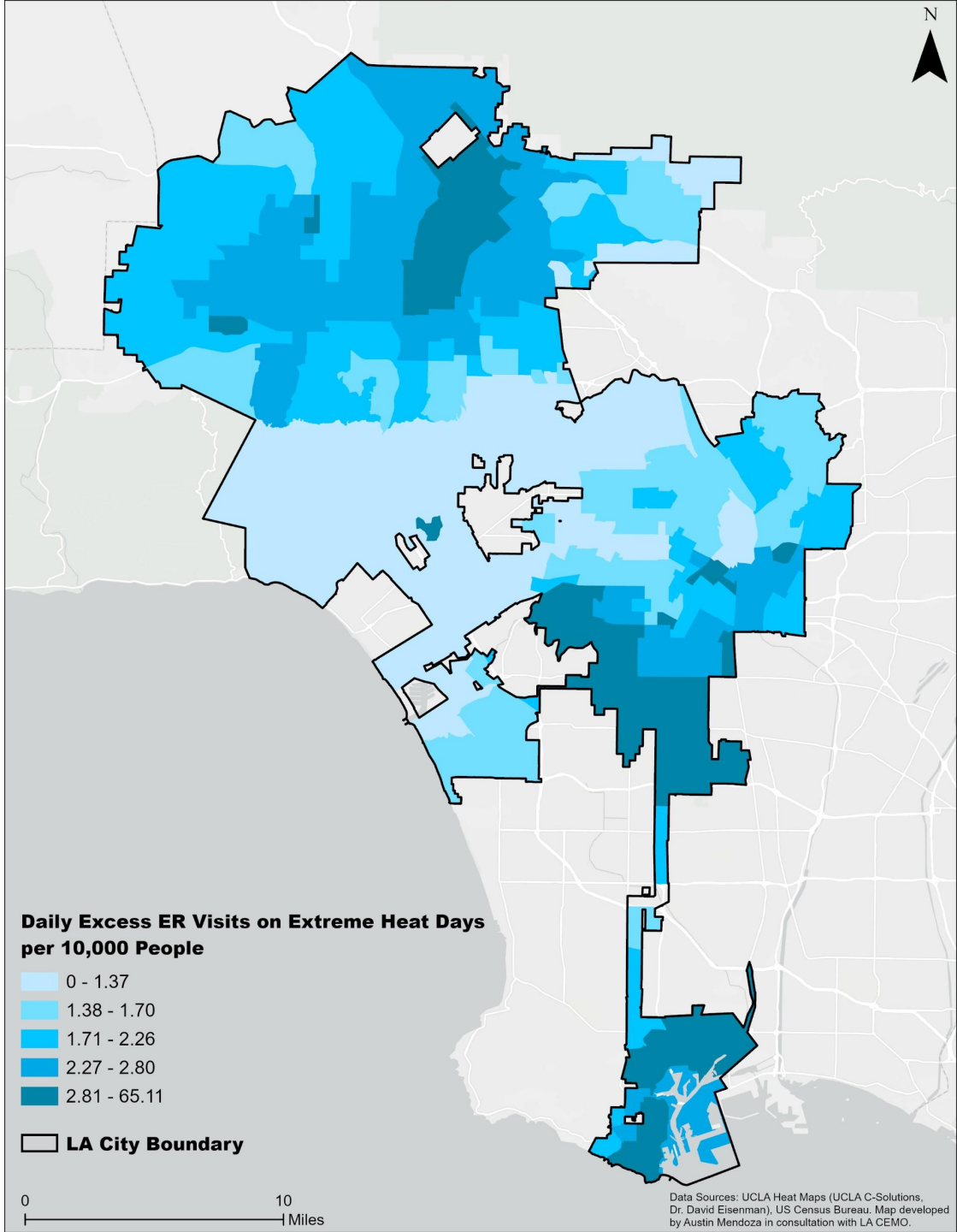
This map shows the number of daily excess ER visits on extreme heat days ***when compared to non-extreme heat days per 10,000 people***, by census tract.

The census tracts are color-coded by quintile, comparing the data among all census tracts.

The map shows the areas of the City that experience the highest rate of excess ER visits:

- Northern San Fernando Valley
- South Los Angeles
- East Los Angeles
- Wilmington/Harbor

The ER visit data was pulled from the UCLA Heat Maps.

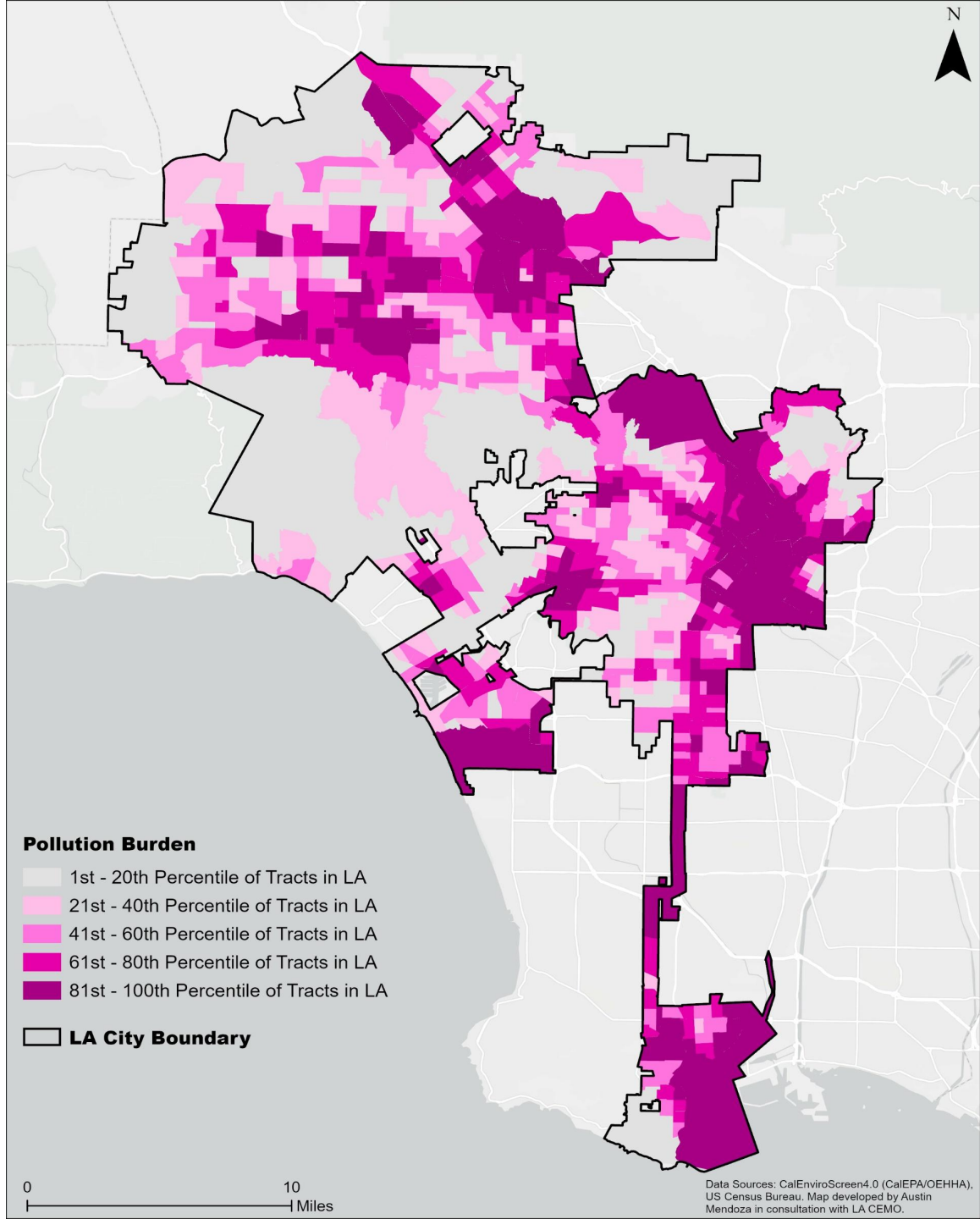


Pollution Burden

Extreme heat exacerbates ground-level ozone formation and worsens air quality for all.

This map shows the level of pollution burden by census tract. The census tracts are color-coded by quintile, comparing the data among all census tracts.

The pollution burden data was pulled from CalEnviroScreen 4.0.



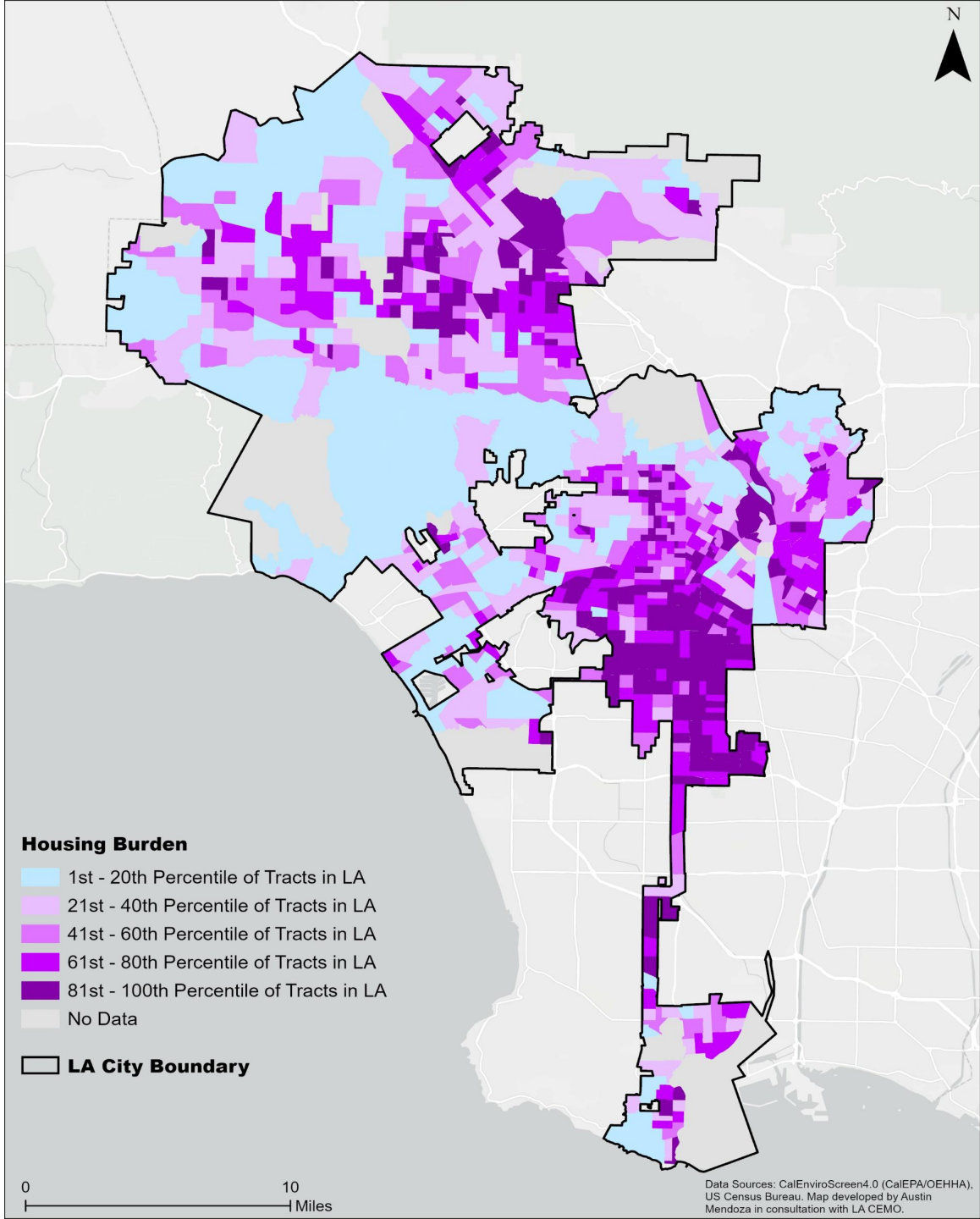
Housing Burden

This map shows the level of housing burden by census tract. The census tracts are color-coded by quintile, comparing the data among all census tracts.

Housing burden takes into account the percentage of households that are both low income and highly burdened by housing costs. The source data is from 2013-2017.

The map shows that census tracts in South Los Angeles, Downtown and Central Los Angeles, and parts of the San Fernando Valley experience the highest levels of housing burden.

The housing burden data was pulled from CalEnviroScreen 4.0.

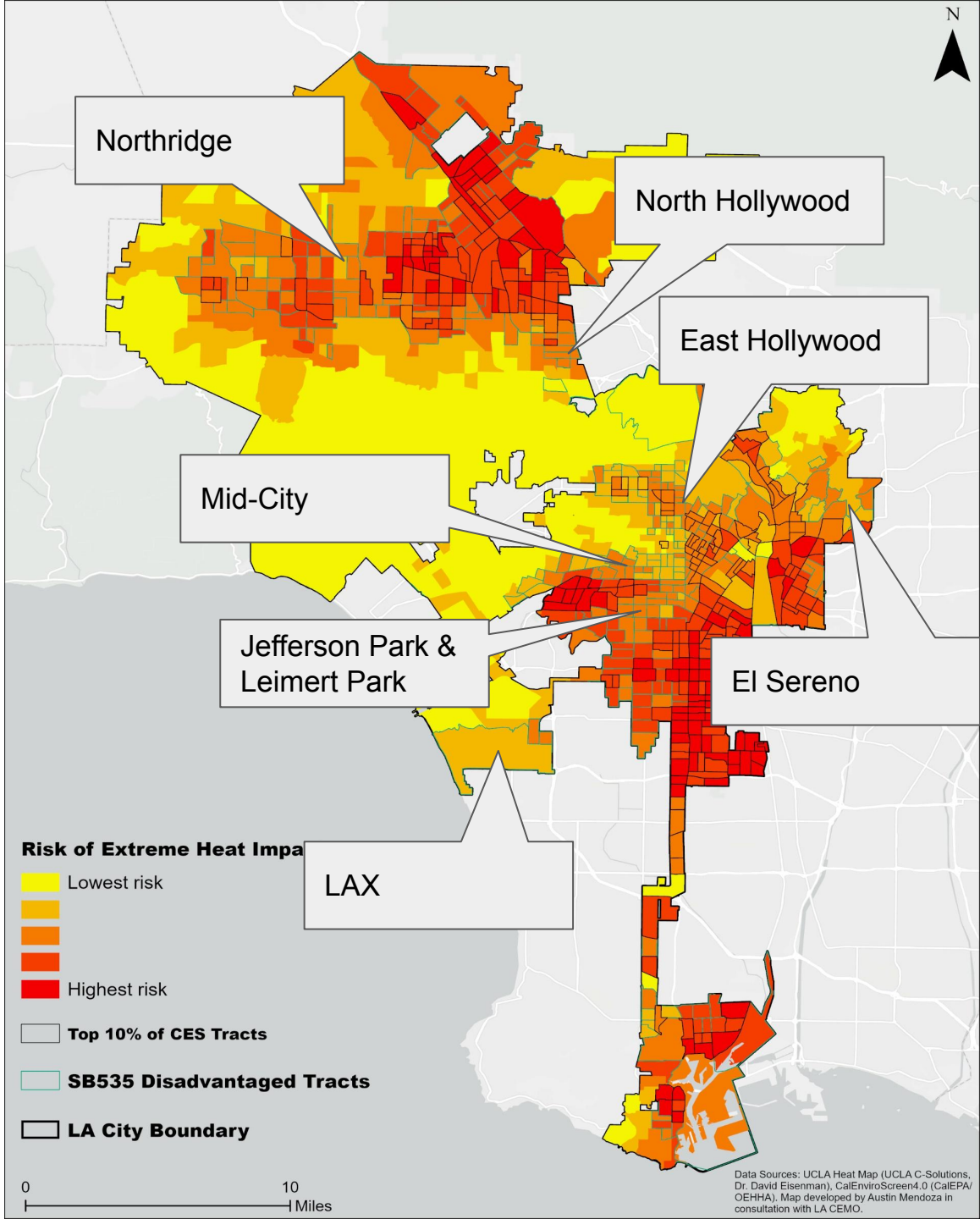


Heat Vulnerability Index

This map shows the combined vulnerability to extreme heat by census tract. The top 10% of tracts in the state by total CalEnviroScreen 4.0 scores are overlaid on the vulnerability index in black.

The map shows that the vulnerability index also mirrors the presence of “super-DACs” in an area of the City of Los Angeles relatively closely.

Nearly every tract designated as a super-DAC has a higher-than-average vulnerability to extreme heat, relative to other tracts in the City of Los Angeles.



Section 2: Heat Adaptation Resources

Are the currently-available heat adaptation resources spatially distributed in the areas of the City of Los Angeles most vulnerable to extreme heat impacts?

Existing Cooling Resources

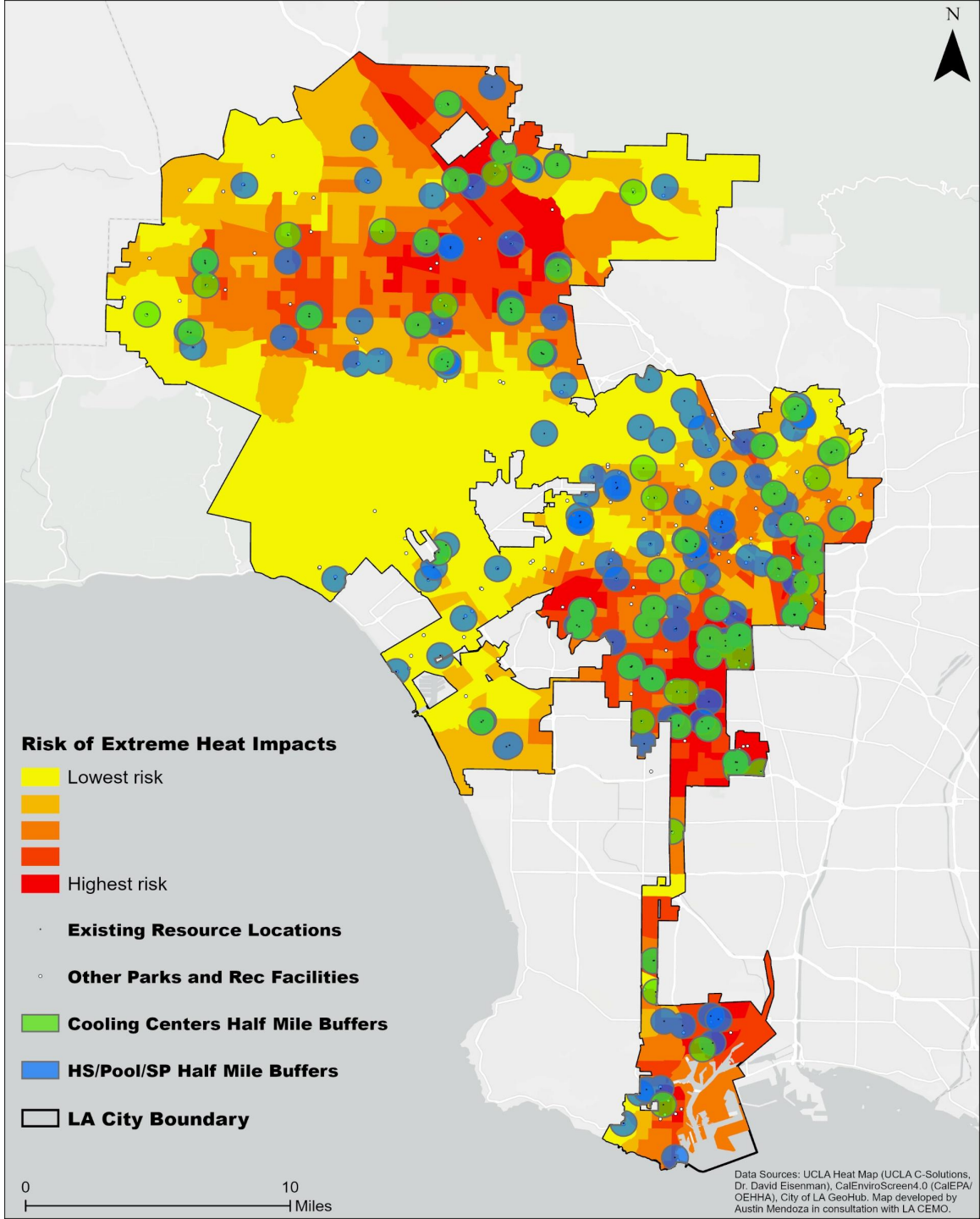
This map shows the locations of existing cooling resources in the City of Los Angeles, and areas within a half mile of each facility (“buffers”), overlaid on the tract-level heat risk map.

The map shows larger gaps in coverage when considering availability of resources at a half-mile distance. There are large gaps in geographic resource coverage within areas at high risk of extreme heat impacts in the San Fernando Valley, South LA, and the South Bay.

Quarter mile is the standard buffer for playgrounds and neighborhood parks and is appropriate for hydration stations.

Half mile is the standard buffer buffer for transit catchment areas and is appropriate for daily destinations such as cooling centers and libraries.

One mile is the buffer that is appropriate for high-value resources, such as pools and splash pads.

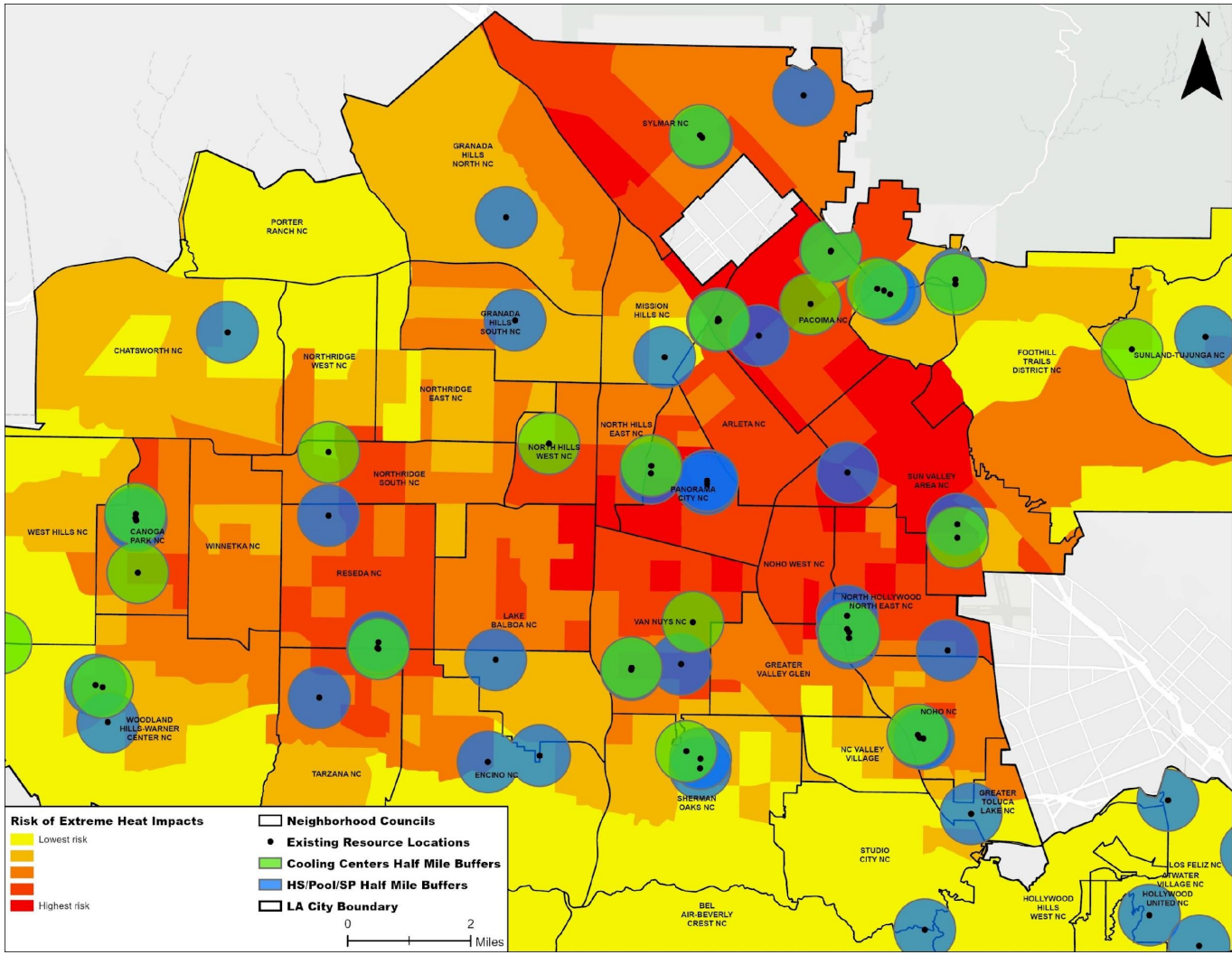


Example:
San Fernando Valley

This map shows the cooling resource gaps in the areas of greatest heat risk in the San Fernando Valley, with half-mile buffers, overlaid on the tract-level heat risk map.

The map shows gaps in coverage in Reseda, Van Nuys, Noho West, North Hollywood North East, Panorama City, Arleta, Sun Valley, Pacoima, and Sylmar.

All of these areas are in census tracts at high risk of extreme heat impacts, and that require the deployment of additional heat mitigation resources and emergency response.



Section 3: Public Amenities and Facilities

What existing City facilities could be used to fill gaps in the availability of heat resources at walking distance in heat-vulnerable areas of the City of Los Angeles?

Cool Spots LA App

Gaps in Augmented Cooling Centers

This map shows the locations of existing cooling resources in South LA. The map also shows areas within a quarter mile of each facility, considered to be at close walking distance for most individuals. The locations and buffers are overlaid on the tract-level heat risk map.

The map shows gaps in coverage in nearly all neighborhoods in the region within census tracts at high risk of extreme heat impacts. In particular, Voices NC (in the center of the map) has hardly any coverage of facilities at the quarter-mile distance.