Agenda Date: 7/16/25
Agenda Item: 8E

STATE OF NEW JERSEY
Board of Public Utilities
44 South Clinton Avenue, 1st Floor
Trenton, New Jersey 08625-0350
www.nj.gov/bpu/

DIVISION/OFFICE

IN THE MATTER OF THE ESTABLISHMENT OF AN URBAN HEAT ISLAND (UHI) MITIGATION PROGRAM	)	ORDER
	)	DOCKET NO. QO24100834

Parties of Record:

Brian O. Lipman, Esq., Director, New Jersey Division of Rate Counsel
Neil Hlawatsch, Esq., Atlantic City Electric Company
Margaret Comes, Esq., Rockland Electric Company
James Meehan, Esq., on behalf of Jersey Central Power & Light Company
Matthew M. Weissman, Esq., Public Service Electric and Gas Company

BY THE BOARD:

By this Order, the New Jersey Board of Public Utilities ("Board" or "BPU") considers Board Staff's ("Staff's") recommendations for establishing an Urban Heat Island ("UHI") grant program designed to address and mitigate extreme heat and the UHI effect impacting certain New Jersey residents.

BACKGROUND AND PROCEDURAL HISTORY

The BPU is launching its first comprehensive UHI Mitigation Program ("UHI Program") to alleviate extreme heat impacts and further enhance resiliency in NJ's overburdened communities ("OBCs").[1] The mitigation program will employ community proposed interventions supported by frameworks in the 2019 State Energy Master Plan ("EMP"),[2] Community Energy Plans,[3] NJ

[1] See "What are Overburdened Communities?", https://nj.gov/dep/ej/communities.html

[2] 2019 Energy Master Plan ("2019 NJ EMP"), https://nj.gov/bpu/pdf/publicnotice/NJBPU_EMP.pdf.

[3] See *Community Energy Plans*, https://www.njcleanenergy.com/CEP.

Extreme Heat Resilience Action Plan,[4] Priority Climate Action Plan ("PCAP"),[5] and the Regional Greenhouse Gas Initiative ("RGGI") Strategic Funding Plan.[6]

In 2024, New Jersey recorded its second-hottest June–July period on record, with eight of the warmest Julys occurring since 2010, based on records dating back to 1895.[7] New Jersey is also the fastest-warming state in the Northeast, driven in part by its dense urban development, which contributes to the UHI effect.[8] UHIs occur when built-up urban areas experience significantly higher temperatures than surrounding areas due to heat-absorbing surfaces like asphalt and concrete.[9] Extreme heat exacerbated by UHIs is the leading cause of weather-related death in the U.S., worsens health conditions, compromises air and water quality, and drives up energy bills.[10]

As climate change accelerates, OBCs experiencing the UHI effect face disproportionate exposure to extreme heat events. Decades of systemic inequities, including historic redlining and ongoing disinvestment, have left OBCs with minimal natural cooling infrastructure and a high concentration of impervious surfaces.[11] These conditions increase their exposure to extreme heat and drive up energy costs. Multiple OBCs are often located in municipalities that are classified as overburdened municipalities ("OBMs").[12] Several major NJ cities, which also qualify as OBMs, have less than 30% tree canopy coverage, Figure 1 of Appendix B; in these OBMs, residents experience an UHI index of 8 °F or higher.[13] Furthermore, these OBMs experience considerable

[4] New Jersey Extreme Heat Resilience Action Plan (2024), https://dep.nj.gov/wp-content/uploads/climatechange/extreme_heat_rap_071924-screen-version.pdf.

[5] New Jersey's Priority Climate Action Plan (2024), https://dep.nj.gov/wp-content/uploads/climatechange/nj_pcap_final-1.pdf.

[6] Regional Greenhouse Gas Initiative Strategic Funding Plan: Years 2023–2025, Version 2.0 (2024), https://nj.gov/rggi/docs/rggi-strategic-funding-plan.pdf.

[7] See *Combined, June and July were Second Hottest on Record in NJ: State Climatologist*, https://www.app.com/story/weather/2024/08/09/weather-in-new-jersey-june-july-2024-second-hottest-on-record/74719840007/.

[8] See *NJ is Warming at an Alarming Rate and It's Making Our Air Harder to Breathe*, https://www.climatecentral.org/partnership-journalism/n.j.-is-warming-at-an-alarming-rate-and-its-making-our-air-harder-to-breathe.

[9] See UHI definition and impacts at University of Michigan School for Environment and Sustainability, *Urban heat islands and a climate of inequities*, https://seas.umich.edu/news/urban-heat-islands-and-climate-inequities-0.

[10] See impacts of extreme heat at Massachusetts Institute of Technology Climate Portal, Extreme Heat, https://climate.mit.edu/explainers/extreme-heat#:~:text=It%20is%20the%20leading%20weather-related%20cause%20of%20death,contribute%20to%20natural%20disasters%20like%20droughts%20and%20wildfire.

[11] See UHI exposure linked to redlining and limited investment in green spaces at Scientific American and Nature, *Discrimination Has Trapped People of Color in Unhealthy Urban 'Heat Islands'*, https://www.nature.com/articles/d41586-023-02618-1.

[12] See list of OBMs and criteria for determining OBMs at *Community Energy Plans*, https://www.njcleanenergy.com/CEP.

[13] See UHI indexes in New Jersey cities at NJ.com, The strange but true reason this city is always hotter than everywhere else in N.J., https://www.nj.com/essex/2024/07/nj-is-one-of-the-fastest-warming-states-and-this-city-is-bearing-the-brunt-of-the-heat.html.

surface UHI intensities, with built-up urban areas having land surface temperatures 10°C (18°F) warmer than nearby forested areas. Figure 4 of Appendix B.

The high temperatures stemming from UHI effect and extreme heat places a strain on the electric grid due to ramped up building cooling loads and intensifies cooling needs during the night; eleven studies elucidating the impact of ambient temperature on the peak energy demand demonstrated that for every 1 °C increase in temperature, peak electricity load increased between 0.45% and 4.6%.[14] Increased energy demand imposes additional economic hardship on low-income residents in New Jersey's densely populated areas—those earning 0–200% of the Federal Poverty Level ("FPL")*—who already face high to severe energy burdens. A "high" energy burden exists when a household is spending 6% or more of its income on energy costs; a "severe" energy burden exists when a household is spending 10% or more of its income on energy costs (Figure 2 of Appendix B).[15] Residents in these OBMs are also predominantly renters, with rental occupancy rates ranging from 54% to 80% (Figure 3 of Appendix B). Therefore, they have limited control over building modifications and system or appliance reliability that could reduce indoor heat exposure. As a result, many residents face the difficult decision of limiting or foregoing air conditioning. According to the 2023–2024 Extreme Heat Survey, cooling costs are a top concern for NJ residents during extreme heat events.[16] Additionally, outdoor laborers who work in communities that face UHI effect, including utility workers, face prolonged exposure to high temperatures so that extreme heat is particularly dangerous for them. Addressing these vulnerabilities requires urgent intervention that expands public cooling infrastructure that is accessible to all community members and outdoor workers—such as fountains, green spaces, and built shade features—which can offer refuge from the heat and reduce energy costs. This cooling infrastructure has the additional benefit of promoting social and economic growth.[17]

In 2003, the BPU first addressed the UHI effect through the Cool Cities Program, an urban forest initiative aimed at lowering energy demand, which planted 3,000 trees in Trenton and Paterson.[18] In 2007, this initiative expanded under a Memorandum of Agreement with the New Jersey Department of Environmental Protection ("DEP"), with the goal of further reducing heat island

[14] It's Getting Hot in Here: A Roadmap for Stakeholder Involvement in Urban Heat Island Mitigation, Midwest Energy Efficiency Alliance (2023), https://www.mwalliance.org/sites/default/files/meea-research/its_getting_hot_in_here_a_roadmap_for_stakeholder_involvement_in_urban_heat_island_mitigation.pdf; Santamouris et al., *On the impact of urban heat island and global warming on the power demand and electricity consumption of buildings—A review* 98, 119–24 (2015), https://doi.org/10.1016/j.enbuild.2014.09.052.

[15] See energy burden data based on census tract for low-income communities (0-200% FPL) at United States Department of Energy, Low-Income Energy Affordability Data (LEAD) Tool, https://lead.openei.org/ *Note: low-income is defined as 0-200% FPL based on LEAD tool parameters and NJ state low-income energy efficiency programs income qualifications; see definition of energy burden at American Council for an Energy-Efficient Economy, *How High are Household Energy Burdens?* (2020), https://www.energy.gov/sites/default/files/2021-12/ACEEE%2C%20Household%20Enegy%20Burdens.pdf.

[16] *See* note 4.

[17] Yu Luo et al., *Cooling Benefits of Urban Cooling Infrastructures: A Review* 559, 441–55 (2025), https://link.springer.com/chapter/10.1007/978-981-97-8401-1_31.

[18] New Jersey Department of Environmental Protection, News Release, State to Plant 1,500 Trees in City of Trenton: DEP & BPU Kick-Off Cool Cities: an Urban Forest Energy Efficiency Initiative (Oct. 21, 2003), https://www.nj.gov/dep/newsrel/releases/03_0153.htm.

effect and energy consumption in the state's largest cities through tree planting.[19] A 2007 New Jersey Clean Energy Program report demonstrated that approximately 2,000 trees planted in 2006 through the Cool Cities Program resulted in an energy savings of 196 MWh.[20] More recent courses of action in NJ to address UHI effect include climate change-related hazard vulnerability assessments under the NJ Municipal Land Use Law,[21] air temperature and air quality monitoring in environmental justice ("EJ") communities,[22] tree planting initiatives,[23] an interactive cooling center map,[24] heat island assessment and planning incentivization,[25] and public engagement on extreme heat as part of the NJ Extreme Heat Resilience Action Plan. This UHI mitigation program aims to build on past and existing efforts by focusing on targeted interventions that prioritize urban revitalization through redeveloping public spaces, fortifying energy efficiency of cooling centers to increase access during heatwaves, enhancing urban forestry through sustained maintenance, and supporting community-based programs. These strategies are designed to reduce energy demand and improve community resilience during extreme heat.

Goal 6.1.1 within Strategy 6 of New Jersey's Energy Master Plan ("EMP") prioritizes the development of Community Energy Plans, which may incorporate community revitalization initiatives, such as enhancing connectivity and greening public spaces. [26] Trees and green spaces near buildings can be one redevelopment approach to decrease electricity use, among other strategies such as implementing energy efficiency incentives and programs. These measures may not only lower energy consumption but also positively impact the health and quality

[19] In re Comprehensive Energy Efficiency and Renewable Energy Resource Analysis for 2005-2008: 2007 Programs and Budgets: Compliance Filings, BPU Docket No. EX04040276, Order dated August 1, 2007.

[20] See energy savings generated by tree planting through the Cool Cities Program at BPU's 2007 NJ Clean Energy Program Report on page 28, https://njcleanenergy.com/files/file/BPURpt4Q06Final.pdf.

[21] See New Jersey Department of Environmental Protection, Strategies to Intersect Municipal Environmental Justice Efforts with Climate Change-related Hazard Vulnerability Assessment Requirements of the Municipal Land Use Law, https://dep.nj.gov/wp-content/uploads/municipal-ej-guidance/strategies-intersect-municipal-ej-efforts-w-c-change-hazard-10-1.pdf.

[22] See Heat Watch Jersey City, Newark, and Elizabeth (CAPA, NIHHIS), OSF | Heat Watch Jersey City Newark Elizabeth_Summary Report_101521.pdf; see Research with Rutgers, *Civic Innovation Challenge Full Award Track Smart Kids and Cool Seniors*, https://www.researchwithrutgers.com/en/projects/civic-fa-track-a-smart-kids-and-cool-seniors; see New Jersey EJ communities definition at NJDEP, https://dep.nj.gov/ej/communities-location/.

[23] See NJDEP, News Release, Murphy Administration Awards $24.3 Million Through Its Natural Climate Solutions Grant Program (Jan. 18, 2023), https://dep.nj.gov/newsrel/23_0003/.

[24] See Heat Hub NJ, Chill Out NJ, https://heat-hub-new-jersey-njdep.hub.arcgis.com/pages/chill-out-nj-nearby-app.

[25] See Sustainable Jersey, *Heat Island Assessment & Mitigation Plan*, https://www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Heat_Island_Assessment_and_Mitigation/HIAMPAction_Dec20_2017B_Appendix.pdf; see Sustainable Jersey, Guide to Local Climate Change Adaptation Planning: The Model Climate Change-Related Hazard Vulnerability Assessment for New Jersey Municipalities, https://www.sustainablejersey.com/fileadmin/media/Grants_and_Resources/Technical_Assistance/CCRHVA_Technical_Assistance/Model_CCRHVA_for_NJ_Municipalities.pdf.

[26] See note 2.

of life for residents, as well as the economy.[27] The NJ Extreme Heat Resilience Action Plan, cited above, also states that multiple strategies –such as green infrastructure, cool roof and pavement coatings, urban forestry, shade structures, public water fountains, and low-to-no cost heat pumps for community centers –reduce the UHI effect and create more livable cities.[28] This UHI program aligns with these EMP and NJ Extreme Heat Resilience Action Plan strategies by providing funding for urban revitalization projects with a focus on public spaces, both addressing cooling needs and providing long-term investment returns. Among those returns are lower utility costs, regional economic development, and climate resilience.

The foundation for this UHI Program was laid in the Fiscal Year 2023 Division of Clean Energy Filing, which allocated $2.5M toward an interagency initiative offering incentives to address the underlying factors contributing to UHI while promoting EE and resilience.[29] The Office of Clean Energy Equity ("OCEE") now proposes an updated holistic UHI mitigation program focused on funding a diverse range of cooling strategies that complement existing efforts and are implemented in consultation with the DEP. The proposed total UHI Program budget is $5M. In addition to the $2.5M identified above, $2.5M has been allocated from the remaining funds of OCEE's Community Energy Plan Program.[30]

Comments and Written Responses

On March 17, 2025, Staff released a Request for Comment ("RFC") on the UHI Mitigation Program Proposal, Staff received sixteen (16) comments, representing 13 entities from a range of stakeholders. Commenters provided thoughtful and insightful comments related to various UHI Mitigation strategies for consideration, the program structure, and meaningful community stakeholder inclusion. Each commenter's suggestions and concerns are part of the record reviewed by the Board.

Staff recognizes and appreciates the helpful feedback filed by stakeholders in response to the proposed UHI Mitigation Program and funding structure; the commenter's insights will contribute to a more impactful program. All the comments are available through the Board's website, via the Public Access System.[31] In addition, comment summaries and their corresponding respective responses appear in Appendix A to this Order.

---

[27] McDonald et al., *Current inequality and future potential of US urban tree cover for reducing heat-related health impacts* 4, 18 (2024), https://doi.org/10.1038/s42949-024-00150-3.

[28] See note 4.

[29] In re the Clean Energy Programs and Budget for Fiscal Year 2023, BPU Docket No. QO22020113, Order dated June 29, 2022 ("June 2022 Order").

[30] See FY24 Carryforward Funds from Community Energy Plan Grants and FY25 budget, https://www.njcleanenergy.com/files/file/BPU/FY25/4.pdf; see original funding amount set aside for Community Energy Plan Grants, In re New Jersey Clean Energy Program Fiscal Year 2024 Community Energy Plan Grant Program, BPU Docket No. QO23090714, Order dated November 17, 2023 ("November 2023 Order").

[31] Board of Public Utilities, Public Document Search, Docket No. QO24100834, https://publicaccess.bpu.state.nj.us/CaseSummary.aspx?case_id=2113430 (March 17, 2025).

STAFF RECOMMENDATIONS

Staff proposes to use $5M in funding from the NJ Clean Energy Fund for the purpose of providing grants to eligible entities. The structure is similar to that used in the Community Energy Planning Grant ("CEPG") and Community Energy Plan Implementation ("CEPI") grant programs. These programs support municipal efforts to align with the EMP by facilitating the planning and implementation of local initiatives that reduce emissions and enhance EE, in response to climate change and extreme heat.

Staff recommends that the UHI Program be available only to OBMs and structured so that grants are available in three main categories: Comprehensive UHI Interventions, Cooling the Built Environment, and Urban Microclimate Interventions, as identified below in Table 1. To ensure projects are responsive to community needs, municipalities are strongly encouraged to partner with community-based organizations ("CBOs") during both the application and implementation process. CBOs may include local nonprofits, non-governmental organizations ("NGOs"), grassroots groups, and coalitions. For Categories 1 and 2, municipalities must serve as the lead applicant to support project longevity. For Category 3, CBOs are eligible to apply with support from the mayor and/or an elected municipal leader.

Table 1: UHI Program Categories and Scope

Category #	1.	2.	3.
Mitigation Category	Comprehensive Public Space UHI Interventions	Cooling the Built Environment	Urban Microclimate Interventions
Number of Grants	Two	Four	Twenty
Scope	Grants of up to $1M each will be awarded to major community revitalization projects that focus on the improvement of public spaces and parks development via a "whole neighborhood approach," in which, relevant community stakeholders, including but not limited to residents, local organizations, etc., who would be directly impacted by these renovations, have a say in the process. It is critical that the municipal applicant consults community members in the planning process and ensures the implementation is aligned with what the community wants.	Grants of up to $500,000 each will be awarded to projects focusing on public cooling center fortification and implementing measures for public buildings that promote cooling and energy efficiency to form resilience hubs.	Grants of up to $50,000 will be awarded for small-scale, localized community projects that mitigate the UHI effect based on interventions identified by CBOs.

1. Comprehensive UHI Interventions

Applicants will be able to receive up to $1M in funding for proposals aimed at revitalizing public spaces and parks through an integrated, whole neighborhood approach. These projects should include capital investments meant either to address infrastructure-related conditions that exacerbate the UHI effect or to help build community resiliency against the UHI effect. As urban design and heavily developed land are the primary drivers of UHIs, increasing vegetative cover and implementing smart growth development strategies directly reduce heat island effect.[32] Expanding urban canopy cover can lower surface temperatures by 20–45 °F compared to unshaded areas and reduce indoor cooling energy demand by up to 90%.[33] Tree planting also yields significant cost savings. A 2007 New York City Municipal Forest Resource Analysis Report found that tree cover contributed to savings of 45,609 MWh of electricity ($6.9M), and 16.3M therms of natural gas ($20.8M) annually, for total energy cost savings of $27.8M.[34] Strategic planting and maintenance of shade trees are critical for maximizing these benefits, and can result in reducing air-conditioning costs by 30%.[35] For example, the Sacramento Municipal Utility District established a Shade Tree Program in 1990, and an analysis of 22 years of tree planting found that each property saved an average of 107 kWh in annual cooling energy; however, the analysis also revealed that improved tree survivability through routine maintenance could have quadrupled these energy savings.[36]

Green infrastructure—including tree canopies, street trees, stormwater or community gardens, green roofs, and natural open spaces—reduces energy use and provides cooling through two key mechanisms: (i) shading, which blocks solar heat from windows, walls, and roofs, directly lowering energy consumption and emissions; and (ii) evaporative cooling from natural land covers enables heat energy to be transferred away from the land surface reducing UHI effect and the associated energy demand.[37] Implementing passive cooling interventions such as vegetation and radiative cooling technologies inspired by natural environmental processes (e.g., polymeric films, photochromic coatings, aerogels, and water harvesting materials) in areas with vulnerable

---

[32] See smart growth development strategies in addressing UHI at United States Environmental Protection Agency, *Smart Growth and Heat Islands*, https://www.epa.gov/heatislands/smart-growth-and-heat-islands.

[33] See tree canopy cover for UHI mitigation at United States Environmental Protection Agency, *Using Trees and Vegetation to Reduce Heat Islands*, https://19january2017snapshot.epa.gov/heat-islands/using-trees-and-vegetation-reduce-heat-islands_.html; and Yekang Ko, *Trees and vegetation for residential energy conservation: A critical review for evidence-based urban greening in North America*, 34 Urban Forestry & Urban Greening 318–335 (Aug. 2018), https://doi.org/10.1016/j.ufug.2018.07.021.

[34] See energy and associated cost savings from trees at Center for Urban Forest Research, *CITY OF NEW YORK, NEW YORK MUNICIPAL FOREST RESOURCE ANALYSIS*, https://www.fs.usda.gov/psw/topics/urban_forestry/products/2/psw_cufr687_NYC_MFRA.pdf.

[35] See energy saving benefits of trees at American Forests, *The Energy Savings of Trees*,https://www.americanforests.org/article/the-energy-savings-of-trees/.

[36] Ko et al., *Does Tree Planting Pay Us Back? Lessons from Sacramento, CA*, https://www.fs.usda.gov/nrs/pubs/jrnl/2016/nrs_2016_ko_001.pdf.

[37] See drivers of climate change and UHI effect in cities at Urban Climate Lab at the Georgia Institute of Technology and The Trust for Public Land, *The benefits of green infrastructure for heat mitigation and emissions reductions in cities*, https://www.tpl.org/wp-content/uploads/2023/05/Benefits-of-Green-Infrastructure.pdf.

populations, can substantially reduce heat-related morbidity and mortality without reliance on electricity.[38] Therefore, investments in large continuous natural and built cooling infrastructure such as urban parks, permeable pavements, smart-misting systems, and shade structures (e.g., pavilions, canopies, shade sails, awnings, fractal shading, and open-air cooling shelters) are among the most effective strategies to cool vulnerable neighborhoods and enhance energy efficiency through reducing solar heat gain by the built environment.[39]

This is a revitalization approach that aligns with Goal 6.1.1 of Strategy 6 within the EMP. This goal calls for the development of a holistic Community Energy Plan Program that works to identify local energy needs and establish ways to participate in and benefit from the clean energy transition, with prioritization in EJ communities.[40] The EMP and PCAP highlight that comprehensive community redevelopment mechanisms—such as expanding outdoor cooling spaces or urban oases, improving connectivity and equitable transportation, and greening the neighborhood—offer significant co-benefits in addition to lowering energy demand.[41] Interventions such as cool pavement coatings, green spaces, and accessible restrooms can transform public spaces into more comfortable and inviting environments that support community renovations and promote local economic activity (e.g., open-air markets and small businesses).[42]

The 2023–2024 Extreme Heat Survey referenced in the NJ Extreme Heat Resilience Action Plan identified the amenities prioritized by New Jersey residents; these included shade structures, trees in parks and playgrounds, street trees, free water stations, and public water features (e.g., fountains and splash pads). Residents also emphasized the importance of locating these community facilities near mass transit to enhance community accessibility.[43] Staff recommends funding the expansion and further development of such amenities to mitigate UHIs at a larger

---

[38] Xinjie Huang et al., *Urban heat mitigation through misting, and its role in broader blue infrastructure portfolios* 256, 105290 (2025); Rong Liu et al., *Materials in Radiative Cooling Technologies*, https://pmc.ncbi.nlm.nih.gov/articles/PMC11733833/; see for cooling interventions at the Trust for Public Land, *The benefits of green infrastructure for heat mitigation and emissions reductions in cities* (2016), https://www.tpl.org/wp-content/uploads/2023/05/Benefits-of-Green-Infrastructure.pdf. https://www.sciencedirect.com/science/article/pii/S0169204624002895#:~:text=In%20addition%20to%20experimental%20studies,benefits%20while%20minimizing%20water%20use; Rong Liu et al. *Materials in Radiative Cooling Technologies*, https://pmc.ncbi.nlm.nih.gov/articles/PMC11733833/; see for cooling interventions at the Trust for Public Land, *The benefits of green infrastructure for heat mitigation and emissions reductions in cities* (2016), https://www.tpl.org/wp-content/uploads/2023/05/Benefits-of-Green-Infrastructure.pdf.

[39] Pinar Pamukcu-Albers et al., *Building green infrastructure to enhance urban resilience to climate change and pandemics* 36, 665–673 (2021), https://link.springer.com/article/10.1007/s10980-021-01212-y; Hanan M. Taleb, *Using passive cooling strategies to improve thermal performance and reduce energy consumption of residential buildings in U.A.E. buildings* 3, 2 (2014), https://www.sciencedirect.com/science/article/pii/S209526351400003X#:~:text=Consequently%2C%20this%20has%20helped%20in,reduce%20thermal%20load%20of%20buildings.

[40] See note 2.

[41] See notes 2 and 5.

[42] Ahmed et al., *Optimizing Human Thermal Comfort and Mitigating the Urban Heat Island Effect on Public Open Spaces in Rome, Italy through Sustainable Design Strategies* 14, 19931 (2024), https://doi.org/10.1038/s41598-024-65794-8.

[43] See note 4.

scale in OBCs within OBMs, aligning with the goals of CEPI to support municipalities in implementing high-priority and impactful projects that enhance climate and energy resilience.

Examples of large-scale revitalization projects to expand public cooling infrastructure:
Bronx, NY: Greening the Bronx – The New York State Energy Research and Development Authority ("NYSERDA") and New York City partnered with horticulture students to institute a borough-wide tree planting program. NYSERDA led research and a portion of the planting demonstration to identify tree species and site selection that would maximize the ability to decrease electricity needs throughout the Bronx.[44] This large-scale urban reforestation program was informed by the "New York City Regional Heat Island Initiative" report, that included findings on modeled urban forestry scenarios that resulted in a decrease summer peak demand by ~2–3% (MW). The study also reported that street trees scenarios provide cost-effective energy reduction and have the greatest temperature impact per unit area, followed by living roofs, light-colored surfaces, and open space planting. The average simulated near-surface air temperature difference between areas with curbside planting and impervious surfaces was ~4 °F.[45]

East Newark Borough, NJ: $1M project for hiring a professional urban arborist to maintain the East Newark Riverfront Park, provide educational and inclusive programming for the community, and train the next generation of urban arborists.[46]

Milwaukee, WI: The Milwaukee Recreation Department provided funding to transform Southgate Playfield from a 1.9-acre expanse that was predominantly weathered blacktop into an urban oasis. The project reduced asphalt coverage by 77%, replacing it with green infrastructure, a splash pad, shade structures, and basketball courts were resurfaced with cool pavement coatings.[47]

Savannah, GA: Forsyth Park contributes to UHI mitigation through extensive tree cover, shade structures (e.g., Forsyth Park Band Shell), splash pads, and fountains. The outdoor space is free and accessible to the public and offers other amenities such as public restrooms and concessions, making it an inviting refuge during extreme heat events.[48]

---

[44] See Heat Island Community Actions Database at EPA, https://www.epa.gov/heatislands/heat-island-community-actions-database. See Greening the Bronx: Urban Heat Island Mitigation Project (2018), https://portal.nyserda.ny.gov/servlet/servlet.FileDownload?file=00Pt0000005vuDZEAY

[45] See tree planting impacts on energy demand at report prepared by Columbia University, NASA/Goddard Institute for Space Studies, and Hunter College CUNY, and SAIC for NYSERDA, MITIGATING NEW YORK CITY'S HEAT ISLAND WITH URBAN FORESTRY, LIVING ROOFS, AND LIGHT SURFACES-New York City Regional Heat Island Initiative (2006), https://www.coolrooftoolkit.org/wp-content/uploads/2012/04/Mitigating-New-York-Citys-Heat-Island-with-Urban-Forestry-Living-Roofs-and-Light-Surfaces.pdf.

[46] Jay Watson, *Cities facing record heat to get cooling help from trees* (2023), https://www.njconservation.org/cities-facing-record-heat-to-get-cooling-help-from-trees/.

[47] See Southgate Playfield Revitalization Project at the Trust for Public Land, https://www.tpl.org/parks-and-an-equitable-recovery-parkscore-report

[48] See Forsyth Park as a model for fighting heat islands at Savannah Morning News, *Urban heat islands roast Savannah each summer. What can be done to stop it?*; see Forsyth Park amenities at Spacious Skies Savannah, GA, *Fun for Kids at Forsyth Park: Hidden Spots and Play Areas in Savannah*, https://spaciousskiescampgrounds.com/blog/savannah-oaks/family-activities-savannah-oaks/fun-for-kids-

Researchers from the University at Georgia corroborated that the neighboring tree-covered squares in the Forsyth Park area of Savannah, are a model for fighting heat impacts, since it reduces the contiguity of the high-intensity urban development. The researchers found that increasing the contiguity of urban parcel development by 10% could intensify the UHI effect between 0.3–0.4 °C. This study out of University of Georgia demonstrated that strategic placement of a network comprised of heavily vegetated parcels and tree-lined streets moderate UHI intensity, while preserving the broader benefits of urbanized areas.[49]

2. Cooling the Built Environment

According to the NJ Extreme Heat Resilience Action Plan, activating cooling centers that serve as publicly available spaces, such as libraries, schools, and community centers, is a cost-effective response strategy to extreme heat; it requires fewer resources and less staffing than operating an official cooling center. Additionally, in the 2023–2024 Extreme Heat Survey, respondents identified free, air-conditioned spaces as one of the most valuable amenities for relief during extreme heat.[50] Residents also highlighted free Wi-Fi and electricity access as desirable features in public spaces serving as cooling centers. Staff proposes prioritizing funding of up to $500,000, to improve cooling efficiency in public buildings through upgrades such as cool roofs and green roofs, geothermal heat pump installation, and weatherization. In tandem with these improvements and in response to residents' expressed preferences, Staff recommends funding reliable power sources in publicly accessible buildings by funding on-site and mobile energy storage systems (ESS), specifically battery storage systems.

Targeted funding of public buildings is particularly appropriate in these communities as a majority of low-income residents in OBMs are renters, as shown in Figure 3 and Table 1 of Appendix B, and may not be able to upgrade their residences. Investing in well-established, community-managed facilities as resilience hubs offers long-term returns. Beyond providing cooling relief, these hubs are critical community infrastructure investments and multifunctional spaces, that operate year-round, often incorporating clean energy systems designed around solar power and energy storage.[51] A resilience hub's energy system is critical to the operations and services that are provided; if the grid goes down ESS will restore power so that the site can still power medical devices, charging stations, and heating, ventilation, and air conditioning ("HVAC") systems to

---

at-forsyth-park-hidden-spots-and-play-areas-in-savannah/#:~:text=Key%20Takeaways,clean%20restrooms%20and%20water%20fountains, https://www.savannahnow.com/story/news/environment/2022/08/04/savannah-weather-heat-islands-boost-temperatures-under-summer-sun/10200225002/; see Forsyth Park amenities at Spacious Skies Savannah, GA, *Fun for Kids at Forsyth Park: Hidden Spots and Play Areas in Savannah*, .https://spaciousskiescampgrounds.com/blog/savannah-oaks/family-activities-savannah-oaks/fun-for-kids-at-forsyth-park-hidden-spots-and-play-areas-in-savannah/#:~:text=Key%20Takeaways,clean%20restrooms%20and%20water%20fountains.

[49] N. Debage, J. Marshall Shepard, *The urban heat island effect and city contiguity* 54, 181-194 (2015), https://doi.org/10.1016/j.compenvurbsys.2015.08.002

[50] See note 4.

[51] See *Protecting and Empowering Communities during Disasters-Local Texas governments can show the way through the use of community resilience hubs*, https://rmi.org/community-resilience-hubs/

meet residents' needs.[52] Combining renewable energy such as solar with energy storage as a power source for resilience hubs will promote decarbonization and demand management—while serving as a microgrid during outages and extreme weather events, without the air quality and reliability issues that come from using diesel generators.[53] Moreover, resilience hubs reduce the burden of emergency services, improve public health outcomes, enhance grid resilience, and generate cost savings.[54]

Given the importance of renewable energy sources for resilience hub activation, Staff recommends leveraging existing BPU solar programs, particularly community solar.[55] Staff further recommends pursuing funding through NJ's Economic Development Authority's ("NJEDA") NJ Cool Program,[56] for on-site renewables and cooling efficiency upgrades specific to buildings in Newark, Edison, and Atlantic City. Additional resources for solar and storage assessment and deployment in historically marginalized communities are available through the Clean Energy Group's Technical Assistance Fund and Resilient Power Project.[57] Further information and suggestions for cooling efficiency measures and resilience hub development are provided in Table 2 of Appendix B.

Examples of Resilience Hub Projects:
Atlanta: The Atlanta Metro Library serves as the Fulton County Resilience Hub and received a $300,000 grant to upgrade an existing solar power system with battery storage to enable reliable clean power generation during day-to-day operations and extreme weather events.[58]

Minneapolis: Sabathani Community Center incorporates a geothermal HVAC system and microgrid technology for resilient power throughout the year and provides a community workforce development program that ensures job placement in the renewable energy sector.[59] For a breakdown of costs and budget information please refer to Footnote 59.

---

[52] See *Lighthouse network expands, as St. John Parish opens Louisiana's largest resilience hub for solar energy and storage,* https://thelensnola.org/2023/11/17/lighthouse-network-expands-as-st-john-parish-opens-louisianas-largest-resilience-hub-for-solar-energy-and-storage/

[53] *RESILIENT SOLAR AND BATTERY STORAGE FOR COOLING CENTERS-Mitigating the Impacts of Extreme Heat on Vulnerable Populations* (2022), https://www.cleanegroup.org/wp-content/uploads/Resilient-Solar-and-Battery-Storage-for-Cooling-Centers.pdf

[54] See Urban Sustainability Directors Network, Guide to Developing Resilience Hubs (2019), https://resilience-hub.org/wp-content/uploads/2019/10/USDN_ResilienceHubsGuidance-1.pdf.

[55] See Community Solar Energy Program at BPU Division of Clean Energy, https://www.njcleanenergy.com/renewable-energy/programs/susi-program/csep.

[56] See NJ Cool Program at NJEDA, https://www.njeda.gov/njcool/.

[57] See Technical Assistance Fund at Clean Energy Group; see Resilient Power Project at Clean Energy Group, https://www.cleanegroup.org/initiatives/resilient-power-project/. https://www.cleanegroup.org/initiatives/technical-assistance-fund/; see Resilient Power Project at Clean Energy Group, https://www.cleanegroup.org/initiatives/resilient-power-project/.

[58] See Fulton County's Metropolitan Library Atlanta, GA resilience hub project at Cherry Street Energy, *Fulton County Unanimously Approves Battery Storage Resilience Hub* (2024), https://www.cherrystreet.com/press-releases/fulton-county-solar-battery-storage.

[59] See Sabathani's Community Energy Project, https://sabathani.org/energy-project/.

Washington D.C.: Faunteroy Community Center received a $540,000 grant for the development of a microgrid to support the Center's role as a resilience hub. The center offers programming that enhances community resilience such as youth programming, environmental education, and workforce development.[60]

Oakland, CA: The West Oakland Public Library became the first vehicle-to-building resilience hub, through bidirectional charging. This initiative leverages stored energy from zero-emission transit vehicles, i.e., buses, to provide filtered air conditioning in harmful heat and smoke conditions.[61]

3. Urban Microclimate Interventions

CBO applicants will be able to receive up to $50,000 in funding for smaller scale interventions for addressing UHI effect that have been identified at the community level. These applicants should have a letter of support from the mayor and/or any relevant elected municipal leader, in the respective municipality where the work will take place.[62] Examples include but are not limited to establishing or expanding community gardens; improving bus stop cooling infrastructure; installing park benches with shading; beautifying spaces through greenery and creative place making; and implementing water stations. Projects such as these have small-scale but direct cooling impacts; they create microclimates that draw in cooler air, provide shading, and lower surface temperatures, which reduces the energy needed to cool surrounding buildings.[63] As an example, community gardens help lower energy consumption and reduce emissions through several direct and indirect mechanisms: (i) they can decrease temperatures associated with the urban heat island (UHI) effect by up to 10%; (ii) they support stormwater management, which conserves water and recharges aquifers, lowering both municipal and household energy use; and (iii) by improving local food access, community gardens translate to decreased reliance on long-distance food transportation and less energy spent storing and cooling produce for long distances.[64]

---

[60] See Faunteroy Community Center Resilience Hub at EINPRESSWIRE, *DOEE Awards $540,000 for Resilient Energy Technology to the F.H. Faunteroy Community Enrichment Center Resilience Hub* (2024), https://www.einpresswire.com/article/695792512/doee-awards-540-000-for-resilient-energy-technology-to-the-f-h-faunteroy-community-enrichment-center-resilience-hub.

[61] See vehicle to building resilience hub in Oakland, CA at PR Newswire and Schneider Electric, *Schneider Electric Announces First-of-its-Kind Vehicle-to-Building Resilience Hub Powered by Transit Buses* (2022), https://www.prnewswire.com/news-releases/schneider-electric-announces-first-of-its-kind-vehicle-to-building-resilience-hub-powered-by-transit-buses-301645606.html.

[62] Staff recommends that the municipality should be made aware of any CBO projects.

[63] Vasiliki Tsilini et al., *Urban gardens as a solution to energy poverty and urban heat island* 14, 323-333 (Feb. 2015), https://doi.org/10.1016/j.scs.2014.08.006.

[64] See for energy savings, stormwater management, and temperature reduction associated with community gardens at MOST Policy Initiative, *Community Gardens in City Parks* (2024), https://mostpolicyinitiative.org/community-science-no/community-gardens-in-city-parks/#:~:text=Urban%20green%20space%2C%20including%20parks,Okvat%20and%20Zautra%2C%202011; see for how stormwater management by green spaces translates to energy savings at EPA, *Using Green Infrastructure to Spend Less Energy Managing Water*, https://www.epa.gov/green-infrastructure/spend-less-energy-managing-water#:~:text=Manage%20Stormwater%20More%20Efficiently,municipal%20and%20domestic%20energy%20use.

Staff will prioritize funding community programs that, in addition to providing direct cooling, also provide the co-benefits of climate resilience, recreation, youth engagement, and community-building. These benefits were identified as priorities by Extreme Heat Survey respondents and play an important role in heat resilience, as explained further below.[65] Activities and community spaces that strengthen social cohesion and foster support networks enhance community well-being and have been shown to bolster resilience by reducing vulnerability to extreme heat, severe weather, and climate displacement.[66] Further information on green space development and maintenance and community programming is provided in Table 2 of Appendix B.

Examples of Community Gardens and Programming:
Sydney, Australia: Youth Community Greening Program supports disadvantaged students from all education levels to establish productive community gardens and green landscapes. The program also incorporates an environmental classroom syllabus for schools.[67]

Boston, MA: OASIS on Ballou Farm is an urban agriculture initiative that transformed a vacant lot into a community garden that offers green job training, an outdoor classroom, and affordable food access in addition to providing refuge from the heat.[68]

Pacoima, Los Angeles, CA: The Cool Community Project employed cool pavement coatings that provided significant cooling to a neighborhood in LA experiencing heat island effect, through reducing surface temperatures on average by 10 °F during the daytime on sunny days. In addition to the heat island effect reduction, the project was a community driven initiative that enabled revitalization through mural development and creative placemaking with the pavement coatings.[69]

[65] See note 4.

[66] See benefits of community cohesion in addressing extreme heat at Center for American Progress, *Social Cohesion: The Secret Weapon in the Fight for Equitable Climate Resilience* (2015), https://cdn.americanprogress.org/wp-content/uploads/2015/05/SocialCohesion-report2.pdf.

[67] See Youth Community Greening (YCG) Program at Botanic Gardens of Sydney, *Youth Community Greening*, https://www.botanicgardens.org.au/get-involved/community-engagement/community-greening/youth-community-greening; see for more Community Gardens related to YCG at Botanic Gardens of Sydney, *The Rise in Gardening to Heal Communities* (2023), https://www.botanicgardens.org.au/discover-and-learn/watch-listen-read/rise-gardening-heal-communities.

[68] See OASIS on Ballou Farm at Codman Square Neighborhood Development Corp., https://www.csndc.com/sustainability/environmental-stewardship/#oasis-on-ballou-farm.

[69] See for Cool Community Project: Pacoima, CA outcomes, Cool Community Pacoima Playbook(2023), Cool-Community-Pacoima-Playbook-041323.pdf; see for guidance on selecting reflective pavement coatings (e.g. solar reflectance < 50%), Florian A. Schneider et al., *Evidence-based guidance on reflective pavement for urban heat mitigation in Arizona* 14, 1467 (Mar. 2023), https://www.nature.com/articles/s41467-023-36972-5.

Additional UHI Program Elements

Requirements and Recommendations for Tree Canopy and Land Use Related Projects

- For any projects involving tree canopy expansion, maintenance, and removal of obsolete or damaged infrastructure in the right of way, awardees must coordinate with utility companies operating in the relevant service territories to ensure alignment with infrastructure needs. Additionally, projects requiring concrete removal from the sidewalk or right of way, to promote tree growth, must coordinate with the municipal government or relevant property owner(s) responsible for sidewalk maintenance and follow all permit requirements. If a tree planting and management project is on land that is state-owned (e.g., state park), the respective municipality and/or CBO should coordinate with the NJ Division of Parks and Forestry. Staff also recommends that municipalities consult the Community Forestry Management Plan ("CFMP") guidelines to support sustainable and long-term tree canopy management.[70] In relation to a CFMP, the NJ Urban & Community Forestry Program ("NJUCF") provides technical assistance and support for local stewardship and tree canopy management initiatives, as referenced in Table 2 of Appendix B.
- Staff also recommends planning for tree planting and maintenance during drought conditions, as it is becoming more common in NJ. Considerations could include planting native trees and plants that use less water, deep water soil storage systems for stormwater optimization, and irrigation zoning.[71]
- Awardees are required to implement projects on public land such as a park, land that is currently or will be put under a deed restriction (e.g., Green Acres Program), a public building, and/or a privately owned space that is accessible such that the public may assemble there.

Timeline

Staff recommends opening grant applications in September 2025 and closing the application period on or around December 5, 2025, at 5:00 p.m. EST. Staff recommends a grant term of three years for completion for $1M and $500,000 awards, and a grant term of two years for $50,000 awards; each grant term includes a year for reporting and monitoring purposes.

Evaluation Criteria

Selection for participation in the UHI Program will be based on the recommendations of a Review Committee comprised of at least four Staff members. The Review Committee will

[70] See Community Forest Management Plan at Sustainable Jersey, *Community Forestry Management Plan & NJUCF Accreditation* (May 2024), https://www.sustainablejersey.com/actions/?type=1336777436&tx_sjcert_action%5BactionObject%5D=66&tx_sjcert_action%5Baction%5D=getPDF&tx_sjcert_action%5Bcontroller%5D=Action&cHash=db92c98d6b483b920d782c77cca70ed1.

[71] See NJ Drought Information at NJDEP, https://dep.nj.gov/drought/; see recommendations for tree maintenance during drought conditions, Symes and Connellan, *Water Management Strategies for Urban Trees in Dry Environments: Lessons for the Future* 39, 116–124 (2013), https://auf.isa-arbor.com/content/isa/39/3/116.full.pdf.

evaluate and score each application based on the responses provided in the application form. Applications will be evaluated on the following weighted criteria:

1. Projected Cooling Efficiency (Lowering Energy Consumption and Energy Savings) and Co-benefit Outcomes (benefits in addition to heat reduction: e.g., human health benefits, economic improvements, and environmental impacts) **25%**
2. Project Preparedness (i.e., solid groundwork or plan including a proposed budget, resources mapped out for project implementation, and project monitoring of heat impacts) **10%**
3. Project Sustainability (i.e., well-defined long term project management plan) **10%**
4. Likelihood of success (based on capacity to implement the project and the strength of stakeholder involvement through established relationships with OBCs) **15%**
5. Alignment with the following state plans: Energy Master Plan, Community Energy Plans, NJ Priority Climate Action Plan, NJ Extreme Heat Resilience Action Plan, and RGGI Strategic Funding Plan **10%**

The remaining **30%** will be equally distributed to municipal-level and community-level evaluation based on (i) municipal revitalization index ("MRI") distress score,[72] (ii) OBC status and/or reported tree equity score based on census block group data,[73] and (iii) reported energy burden based on census tract for low-income communities.[74]

OBMs and CBOs applying for this grant must submit an administratively complete application in order to be considered for funding. In the event that BPU receives more administratively complete applications than there is funding available, the following factors will be considered in funding determinations:

1) Equitable distribution across all regions of the state.

2) Municipalities who have not yet participated in the CEPG and/or CEPI programs.

Reporting and Project Requirements

The evaluation criterion "Project Preparedness" includes scoring a project monitoring plan. A guidance packet with more detailed reporting instructions will be provided for successful awardees. Awardees will be encouraged to leverage resources from CBOs, academic partners, and government agencies in NJ that may have relevant scientific experts and research analysts on staff. Including citizen and community science programs related to UHI education and project monitoring will also be strongly encouraged. Scoring of a project monitoring plan is also reflected

[72] See MRI distress score definition and assessment (the higher the score the higher the municipal distress) at Department of Community Affairs ("DCA"), https://www.nj.gov/dca/home/MuniRevitIndex.shtml.

[73] See Tree Equity Score Tool, https://www.treeequityscore.org/; see Tree Equity Score Priorities: Highest (0-69), High (70-79), Moderate (80-89), Low (90-99), None (100), https://www.treeequityscore.org/methodology?tab=faqs.

[74] See Energy Burden Data based on census tract for low-income communities (0-200% FPL), https://lead.openei.org/.

in the evaluation criterion "Project Preparedness". The following is a summary of awardee reporting obligations throughout the grant term and upon project completion:

- Final Performance Report:

All awardees are required to submit one (1) final performance report as part of the close out of the grant, i.e., at the end of the 2-year or 3-year grant period. This report must include:

  - Required: Tracking community engagement and social impact by reporting the number of community members served, details on media that was used to get the word out through outreach campaigns (i.e. emails, flyers, and social media), gathering survey responses to get feedback from the community, and assessing the reach of outreach campaigns.
  - Required: Completion status of interventions that were originally proposed in the grant proposal and the projected long-term benefits, i.e., project sustainability and co-benefit outputs. For example, plans for long-term tree canopy maintenance to promote higher tree survivability for improved energy savings outcomes and maximized benefits.[75]
  - Required: Estimated data, through modeling or direct measurements, on the efficacy of cooling measures (e.g., temperature difference measurements before and after cooling modifications are implemented such as cool pavements or shading).
  - Only for Category 2-Cooling the Built Environment Required: Details of energy savings or the change in utility costs for the resilience hub site from resilience upgrades through compiled data from over the course of a year and the number of days the resilience hub was in use in response to extreme heat events.

- Financial reporting depends on the grant term:
  - Categories 1 and 2 or awards of up to $1M or $500,000 are required to:
    - Submit quarterly financial reports for each grant year — a total of eleven (11) quarterly reports.
    - Submit one (1) final expenditure report at the end of the grant term (3 years).
  - Category 3 awards or awards of up to $50,000 are required to:
    - Submit quarterly financial reports for each grant year — a total of seven (7) quarterly reports.
    - Submit one (1) final expenditure report at the end of the grant term (2 years).

Financial reporting begins three (3) months after the grant award and must adhere to the requirements of financial reporting software as may be required.

[75] See notes 33 and 36.

DISCUSSION AND FINDINGS

The Board first supported UHI mitigation efforts with the 2003 Cool Cities Initiative. In the intervening years, extreme heat events have become more intense and frequent. The disproportionate impact of these events on communities that have experienced historic redlining and ongoing disinvestment is well documented. The Board **HEREBY FINDS** there is an urgent need to provide energy efficient cooling and fortify climate resilience in heat vulnerable and overburdened communities. The Board **FURTHER FINDS** that the interventions in the above referenced studies have proven to be effective in mitigating extreme heat and the heat island effect. The Board anticipates that the measures implemented with the use of UHI Mitigation Program funds will offer relief from heat, reduce utility costs, and bolster communities through public space revitalization, resilience hub establishment, and community programming.

In its budget and programs order for Fiscal Year 2023,[76] the Board allocated $2.5M in dedicated funding for UHI interventions, and an additional $2.5M had been added to the budget for Fiscal Year 2025 from the remaining funds of OCEE's Community Energy Plan Program.[77] The Board **HEREBY AUTHORIZES** Staff to establish the UHI Mitigation Program and to take all necessary and appropriate steps to implement it pursuant to the recommendations made herein.

[76] See June 2022 Order at 4-6.

[77] See November 2023 Order; In re the Clean Energy Programs and Budget for Fiscal Year 2025, BPU Docket No. QO24040224, Order dated June 27, 2024, at 4-5.

The Board **HEREBY DIRECTS** Staff to issue a Notice of Funding Availability ("NOFA"), and the NOFA will be posted to the NJ Register upon approval of the program. The Board **FURTHER DIRECTS** Staff to open the application window for the Program in September 2025 and accept applications until on or around December 5, 2025, and provide recommendations for grant awards in Spring 2026.

DATED: July 16, 2025

BOARD OF PUBLIC UTILITIES
BY:

CHRISTINE GUHL-SADOVY
PRESIDENT

DR. ZENON CHRISTODOULOU
COMMISSIONER

MARIAN ABDOU
COMMISSIONER

MICHAEL BANGE
COMMISSIONER

ATTEST:

SHERRI L. LEWIS
BOARD SECRETARY

I HEREBY CERTIFY that the within document is a true copy of the original in the files of the Board of Public Utilities.

IN THE MATTER OF THE ESTABLISHMENT OF AN URBAN HEAT ISLAND (UHI) MITIGATION PROGRAM
DOCKET NO. QO24100834

SERVICE LIST

New Jersey Division of Rate Counsel

Brian O. Lipman, Esq., Director
Division of Rate Counsel
140 East Front Street, 4th Floor
Trenton, NJ 08625-0003
blipman@rpa.nj.gov

New Jersey Board of Public Utilities

44 South Clinton Avenue, 1st Floor
P.O. Box 350
Trenton, NJ 08625-0350

Sherri L. Golden, Board Secretary
board.secretary@bpu.nj.gov

Bob Brabston, Esq., Executive Director
robert.brabston@bpu.nj.gov

Stacy Peterson, Deputy Executive Director
stacy.peterson@bpu.nj.gov

Taryn Boland, Chief of Staff
taryn.boland@bpu.nj.gov

Henry Gajda, Deputy Chief of Staff
henry.gajda@bpu.nj.gov

General Counsel's Office

Elspeth Hans, Deputy General Counsel
elspeth.hans@nj.bpu.gov

Rachel Boylan, Legal Specialist
mailto:rachel.boylan@nj.bpu.gov

Public Service Electric and Gas Company
80 Park Plaza, T10
P.O. Box 570
Newark, New Jersey 07102

Stacey M. Mickles, Associate Counsel -

NJBPU, cont'd

Division of Clean Energy

Véronique Oomen, Director
veronique.oomen@bpu.nj.gov

Stacy Ho Richardson, Deputy Director
stacy.richardson@bpu.nj.gov

Jonathan Gordon, Deputy Director
jonathan.gordon@bpu.nj.gov

Dr. Aileen Eagleton, Eagleton Science Fellow
aileen.eagleton@bpu.nj.gov

David Titus, Program Specialist Clean Energy Equity
david.titus@bpu.nj.gov

Danie Luczak, Program Specialist Clean Energy Equity
danie.luczak@bpu.nj.gov

Earl Thomas Pierce, Administrative Analyst
earl.pierce@bpu.nj.gov

Regulatory
stacey.mickles@pseg.com

Joseph Accardo
josephjr.accardo@pseg.com

Aaron I. Karp Esq.
aaron.karp@pseg.com

Katherine Smith, Esq.
katherine.smith@pseg.com

Bernard Smalls
bernard.smalls@pseg.com

Caitlyn White
caitlyn.white@pseg.com

Maria Barling
maria.barling@pseg.com

Matthew Weissman, Esq.,
General State Regulatory Counsel
matthew.weissman@pseg.com

Atlantic City Electric Company
92DC42 500 North Wakefield Drive Newark,
DE 19702

Neil Hlawatsch, Assistant General Counsel
neil.hlawatsch@exeloncorp.com

Heather Hall, Manager New Jersey
Regulatory Affairs
heather.hall@pepcoholdings.com

Rockland Electric Company

Margaret Comes, Associate Counsel
4 Irving Place Suite 1815-S New York, New
York 10003
comesm@coned.com

Jersey Central Power & Light
300 Madison Avenue
Morristown, NJ 07962

Tori L. Giesler, Managing Counsel
tgiesler@firstenergycorp.com

James A. Meehan, Counsel
mailto:jameehan@firstenergycorp.com

Michael J. Martelo, Counsel
mmartelo@firstenergycorp.com

Appendix A Stakeholder Comments and Responses

NOTICE OF REQUEST FOR COMMENTS- ESTABLISHMENT OF AN URBAN HEAT ISLAND ("UHI") MITIGATION PROGRAM[78]

Comments were received from:

1. New Jersey Division of Rate Counsel ("Rate Counsel")

Nonprofits & Local Community Organizations
2. Tobias A. Fox, Newark Science and Sustainability Inc. ("Newark SaS")
3. Roger Heitmann, FRIENDS OF RIVERVIEW FISK PARK INC ("Friends of Riverview")
4. New Jersey Environmental Justice Alliance ("NJEJA")
5. Rebecca Hilbert and Eric Olsen, The Nature Conservancy of New Jersey ("TNC-NJ")
6. Pam Zipse, New Jersey Tree Foundation
7. Elena Messina, New Jersey Tree Foundation
8. New Jersey League of Conservation Voters ("NJLCV")
9. Jay Watson, New Jersey Conservation Foundation ("NJCF")
10. Ben Haygood, Isles, Inc. ("Isles")

Academic Institutions
11. Michel Boufadel, New Jersey Institute of Technology ("NJIT")
12. Elie Bou-Zeid, Princeton University

Municipal Office(s)
13. Nicole Hewitt-Cabral, City of Newark, Office of Sustainability ("Newark OoS")

Members of the General Public
14. Lee Widman
15. Collette Crescas
16. Alejandro Meseguer

Stakeholder comments are grouped by topic based on (i) General Comments and Program Intent, (ii) Program Structure and Timeline, and (iii) Evaluation Criteria, Application Process, and Project Monitoring & Reporting.

General Comments and Program Intent

Comment(s): Newark SaS, TNC-NJ, NJ Tree Foundation, NJLCV, NJCF, Isles, NJIT, Princeton University, Newark OoS, Collette Crescas, and Alejandro Meseguer voiced support for the program.

More specific support and comments on program intent from the commenters are listed below:

[78] Board of Public Utilities, Public Document Search, Docket No. QO24100834, https://publicaccess.bpu.state.nj.us/CaseSummary.aspx?case_id=2113430 (March 17, 2025)

- Newark SaS commented on the urgency to address the ramifications of extreme heat and climate change in underserved communities. The commenter also emphasized the immediate need for launching community-based green development initiatives that integrate sustainable agriculture, clean technology, and ecological infrastructure to deliver maximum co-benefits.
- NJCF, Collette Crescas, and Alejandro Meseguer expressed that they want the program to move forward and receive approval to get the funding out as soon as possible.
- NJCF also commented that the program is a necessary initiative for improving the quality of life for residents who do not have access to sufficient tree canopy coverage or air conditioning.
- NJLCV commended the BPU for doubling its funding to $5M.
- Isles expressed excitement for the aims of the UHI Mitigation Program and provided background information on Isles capacity to support and collaborate on local community-driven UHI interventions.
- Princeton University expressed that the program is much needed and timely due to funding cuts at the federal level.

Response: Staff thanks the commenters for their support and agrees that there is an urgent need to provide funding for extreme heat interventions in NJ's underserved communities that disproportionately experience climate impacts, especially given the state's status as the fastest warming in the Northeast and recent federal funding cuts. This program enables New Jersey to be a leader in statewide UHI mitigation by funding a range of community-driven strategies.

Comment(s): Friends of Riverview stated that it is based out of Jersey City, which experiences the heat island effect due to low tree canopy coverage. Friends of Riverview stated that they are interested in applying for funding category 3 (Urban Microclimate Interventions).

Response: Staff recognizes that Jersey City is an OBM that experiences intensified extreme heat, in part due to limited tree canopy cover. Staff thanks the commenter for their interest in applying and refers them to the details on application guidelines that are provided above in *Evaluation Criteria*.

Program Structure and Timeline

Comment(s): Rate Counsel expressed caution about funding UHI mitigation interventions that lack a direct link to reduced energy consumption. They recommended decreasing funding for the first category (Comprehensive UHI Interventions) to allocate more to the second (Cooling the Built Environment), and eliminating funding for the third category entirely, citing concerns that categories 1 and 3 have limited or tenuous connections to energy use.

Response: Staff appreciates Rate Counsel's feedback and in response Staff strengthened the ties between the funding mechanisms and energy consumption. Staff believes that the Order contains sufficient rationale for the mechanisms through which green infrastructure contributes to cooling surrounding buildings, thereby lowering air conditioning use and energy costs. The scientific literature referenced demonstrates that shading and evapotranspiration from natural cooling infrastructure results in measurable energy savings.

The BPU, in partnership with the DEP, previously launched the Cool Cities Program to increase shading of residential buildings through tree canopy expansion and demonstrated quantifiable energy savings, cited above. The proposed UHI Mitigation Program funding would build upon

and expand these efforts.

As referenced above, NYSERDA implemented a similar urban forestry initiative in the Bronx to promote cooling and energy efficiency. Other examples of utility-sponsored tree planting programs include the Sacramento Municipal Utility District's ("SMUD") Shade Tree Program and the New York Power Authority's ("NYPA") Tree Power 2.0 Program, both of which aim to provide cooling benefits and reduce air pollution.[79] Further, the PSEG Foundation has an established partnership with TNC through the Greening Our Cities Program, which supports UHI mitigation efforts, and backs the Arbor Day Foundation's Energy-Saving Trees Program to advance urban forestry initiatives in communities across New Jersey.[80]

While urban forestry and community green spaces may not seem directly related to energy use, they address a key driver of the UHI effect—lack of tree canopy coverage and natural cooling resources. Due to the body of evidence that supports the direct links between green spaces and outdoor cooling infrastructure to reduced energy consumption, Staff intend to maintain the tiered funding as listed in the RFC.

Comment(s): NJEJA summarized its understanding of the cause and effect of UHIs and the resulting disproportionate health outcomes. NJEJA also provided feedback on each funding category:

(i) *Comprehensive UHI Interventions*: NJEJA interjected that the phrase "whole neighborhood approach" should be defined to ensure that communities are a guaranteed stakeholder in project planning and implementation and hold equal weight to the municipal applicant. NJEJA further emphasized the importance of community input, stating that the community's views should have equal weight with those of the municipality, since communities who are most impacted by the UHI effect have first-hand knowledge of what interventions will work best for them.

(ii) *Cooling the Built Environment*: NJEJA encouraged the BPU to emphasize the importance of building decarbonization and EE plans, by making these strategies a requirement for the resilience hub grant. They also advocated CBO eligibility for this funding category as CBOs often have locations that serve as coordination hubs for community members.

(iii) *Urban Microclimate Interventions:* NJEJA expressed their strong support for providing resources to such interventions, stating that these strategies are often overlooked in other funding opportunities and they provide co-benefits in addition to extreme heat adaptation. NJEJA recommended that CBOs should not be required to receive direct mayoral support and asserted that allowing for correspondence with any relevant municipal official would lower barriers in the application process.

Response: Staff appreciates NJEJA's recommendations which have improved the strength of

---

[79] See SMUD Shade Tree Program at Shading Sacramento, https://www.smud.org/Going-Green/Free-Shade-Trees; and see NYPA Tree Power 2.0 Program at NYPA's 2022 Arbor Day Press Release, https://www.nypa.gov/news/press-releases/2022/20220429-on-arbor-day.

[80] See PSEG's involvement in tree planting and vegetation management services for enhanced energy efficiency and utility service, *PSEG Sustainability Report 2023*, https://poweringprogress.pseg.com/wp-content/uploads/2023/11/2023-Sustainability-Report-Final.pdf.

the program; a point-by-point response is provided below.

(i) Staff provided a definition of a whole neighborhood approach that is aligned with centering community stakeholders in the planning and implementation of projects.

(ii) Staff agrees with NJEJA's emphasis on building decarbonization and energy efficiency plans for resilience hub activation. Within this grant category, funding will be provided for EE upgrades and microgrid development that will promote lowered emissions and energy savings. Municipalities will be the lead applicant for this funding category for project longevity and continuity purposes; however, Staff strongly encourages municipal applicants to partner with CBOs.

(iii) Staff agrees with NJEJA's insights and has removed the requirement for a letter from the mayor. Staff updated eligibility in which written support from any relevant municipal official will suffice.

Comment(s): TNC-NJ provided various feedback on the program structure:

(i) Need for continued funding for the UHI Mitigation Program to promote a project pipeline and ensure longevity of grant funding to facilitate better project planning by applicants.

(ii) Recommendations to further explain eligible entities and to define CBOs.

(iii) Provide more clarity on specific types of eligible activities, provide, and clarify whether the examples provided in the RFC are intended as an exhaustive list or simply examples.

(iv) Provide more details on timeline expectations.

Response: Staff thanks TNC-NJ for their feedback and a point-by-point response is provided below.

(i) Staff acknowledges the importance of continuing budget allocations for the UHI Mitigation Program and plan to support a project pipeline through requesting continued grant funding for subsequent program year(s) in the future.

(ii) Municipalities are eligible for the first two funding tiers and Staff encourages municipal entities to partner with CBOs on the grant application and project implementation. CBOs are eligible for the third funding tier and Staff defined a CBO in the Board Order for more clarity and NGOs are included in this definition.

(iii) Staff notes that the RFC did provide some demonstrations of the types of eligible projects in each grant category; however, Staff incorporated more specific and real-world examples in the Board Order. Staff clarifies that these are examples only and encourages applicants to propose other creative and innovative solutions that align with the funding guidelines.

(iv) Staff provided details on the timeline and project duration in the *Timeline* section of the Board Order.

Comment(s): Pam Zipse and Elena Messina from the NJ Tree Foundation commented on the need to prioritize tree planting, including street trees, as an effective method for reducing the UHI effect and energy use. They advised allowing funding for concrete removal as part of tree planting efforts. Pam Zipse also recommended funding provisions for community outreach and education.

Response: Staff thanks the commenters for their expert advice on tree planting. Staff agrees with the critical need to fund tree planting and included a reference to NJDEP's 2023–2024 Extreme Heat Survey, in which residents identified street trees as a priority amenity. Examples of tree canopy expansion in urban parks and along streets are included in the first grant category; additionally, concrete removal for promoting tree growth is referenced in the *Tree Canopy and Land Use Related Projects* section and has been supported by the BPU in the past, during the Cool Cities Program.[81] Staff also supports funding for community programming related to building climate and energy resilience as a part of this initiative.

Comment(s): NJLCV underscored the urgency of addressing extreme heat in overburdened communities, particularly in urban centers like Newark, one of the worst UHIs in the nation. NJLCV commented on the importance of green infrastructure and environmental technologies (e.g., solar roofs, cool roofs, cool pavements, and permeable surfaces) for reducing air and surface temperatures, enhancing climate resilience, improving air and water quality, and supporting the goals of the state's Energy Master Plan. They urge swift approval and implementation of the program, and recommend a policy framework that prioritizes equitable, community-based, and climate-resilient investments.

Response: Staff thanks NJLCV for its recommendations. Staff agrees that the UHI Program should fund green infrastructure and clean technological solutions; however, solar roofs are not eligible for funding through the UHI Mitigation Program. Staff recommends applicants consider existing BPU solar programs and other solar resources outlined in the *Cooling the Built Environment* section. Additionally, Staff concurs with the need for a policy framework that centers equity and community-driven interventions that build energy and climate resilience. Therefore, the program includes stipulations and recommendations for community and CBO involvement throughout the design and implementation phase of projects.

Comment(s): NJCF advised including funding for accessible watering systems for tree growth and trees along streets, sidewalks, and parking lots in addition to parks and open spaces. The commenter emphasized the need for tree canopy maintenance which must include professional expertise and/or developing a workforce within the community, as well as community input. As part of this maintenance, NJCF mentioned considerations for Ash tree and other tree removals, support for sidewalk repairs, and concrete removal.

Response: Staff thanks the commenter for sharing their expertise in tree planting and maintenance. Funding will be provided for tree planting and maintenance in public spaces including along streets, sidewalks or the right of way, and parking lots. Staff agrees with the necessity for community input in tree canopy expansion and maintenance efforts and outlined a "whole neighborhood approach" that calls for involving community members that will be affected in the design and implementation of projects.

Comment(s): Princeton University suggested that while the program aptly includes multiple mitigation pathways that mostly focus on conventional solutions (e.g., green infrastructure, cool

[81] *See* note 20.

roofs, and cooling centers), it is important to also support novel and emerging technologies such as radiative cooling materials, smart misting, electric vehicles ("EVs"), pervious pavements, and novel shade structures. The commenter also mentioned that some of the most vulnerable individuals may not be able to access cooling centers if they are unable or have limited capacity to leave their residence.

Response: Staff appreciates the commenter's recommendations on encouraging proposals that include synergy between conventional solutions and innovative technologies; those recommendations were incorporated into the first funding category. In terms of including EVs as a strategy, mobile storage in the form of larger scale EVs is eligible for funding to support resilience hub activation. Funding for standard EVs and charging infrastructure is already available through BPU's EV Incentive Programs.[82]

Direct funding for residential buildings and homes of vulnerable residents who may not be able to access cooling centers due to issues such as mobility challenges is beyond the scope of this program. However, Staff encourages applicants and community members to explore existing funding opportunities in NJ, that support energy efficiency and resilience upgrades for the homes of elderly, differently abled, and low-income residents, such as Comfort Partners and the Weatherization Assistance Program ("WAP") offered by the Department of Community Affairs ("DCA") and the Native American Advancement Corporation ("NAAC").[83]

Comment(s): Newark OoS stressed that cities like Newark are already experiencing severe impacts from extreme heat. The commenter also noted that funding structures tend to favor larger organizations that have more capacity and often overlook local organizations that may not have as many resources but are well-trusted in their communities. The commenter made several recommendations regarding equity: (i) making provisions and requirements for strong community engagement; (ii) setting aside funds for third-party partners to provide technical assistance to underrepresented local community organizations; and (iii) ensuring unhoused populations have a voice in extreme heat mitigation strategies.

Response: Staff thanks the commenter for their feedback. In their recommendations, Staff has included the need for community input throughout each stage of the project and pointed out other funding and third-party technical assistance resources in Table 2 of Appendix B. Staff also encourages inclusive stakeholder engagement that proactively reaches vulnerable populations, including unhoused individuals. Resources that include support for vulnerable populations during extreme heat events can be found on Heat Hub NJ.[84]

Comment(s): Lee Widman recommended including funding support for obsolete overhead

---

[82] See EV Incentive Programs at BPU, https://njcleanenergy.com/residential/programs/electric-vehicle-incentive-programs.

[83] See NJ Comfort Partners offerings and eligibility criteria for low-income residents at BPU, https://www.njcleanenergy.com/residential/cp#:~:text=Through%20Comfort%20Partners%2C%20the%20New%20Jersey%20Board%20of,increase%20the%20health%20and%20safety%20of%20your%20home; see WAP description https://www.nj.gov/dca/dhcr/offices/wap.shtml and how to apply Updated New Jersey Weatherization and Energy Assistance Toolkit V1.3 (1).pdf; see WAP led by NAAC which prioritizes upgrades and education services for vulnerable communities in Atlantic and Cape May counties, https://www.nativeadvancement.org/.

[84] See Extreme Heat and Vulnerable Populations at Heat Hub NJ, https://heat-hub-new-jersey-njdep.hub.arcgis.com/pages/extreme-heat-and-vulnerable-populations.

wiring and/or utility pole removal to enable more tree growth.

Response: Staff thanks the commenter for their recommendations. Staff stipulated that tree canopy maintenance and removal of obsolete or damaged infrastructure in the right of way must be done in coordination with utilities. This part of the UHI Program is referenced in the *Tree Canopy and Land Use Related Projects* section.

Evaluation Criteria, Application Process, and Project Monitoring & Reporting

Comment(s): NJIT commented that assessment before and after UHI mitigation interventions are adopted would corroborate the Return of Investment of these strategies. NJIT also commented that monitoring and providing tangible and measurable results would position NJ as a leader in UHI abatement.

Response: Staff appreciates the commenter's feedback and incorporated monitoring impacts before and after UHI mitigation project implementation, as a reporting requirement. Staff agrees that this program would position NJ as a leader in UHI abatement and pave the way for other statewide programs.

Comment(s): Rate Counsel expressed concerns over lack of focus on OBCs and proposed expanding the "Municipal Level and Community-Level Evaluation" criterion to include OBC status and increasing the weight of this criterion to ensure funding is going to the communities that need it the most. Rate Counsel also advised that evaluation criteria and program reporting requirements should be more detailed, to promote a higher success rate for applicants and project implementation.

Response: Staff acknowledges that Rate Counsel's concern is valid and has accordingly increased the weight of the "Municipal Level and Community-Level Evaluation" criterion. This evaluation criterion now incorporates OBC status and Tree Equity Score, as both are measured at the census block level. The criterion also includes the MRI distress score to assess social, economic, educational, and fiscal distress at the municipal level. Only OBMs are eligible to apply, in alignment with BPU's emphasis on prioritizing support for municipalities where the majority of residents live in OBCs. Municipalities without a majority overburdened population typically have greater capacity and resources to support any OBCs within their jurisdiction. By having funding only available to OBMs, Staff aims to promote a more equitable application process, while ensuring that implemented UHI interventions deliver direct benefits to OBCs.

The Order contains more details on evaluation criteria and reporting requirement expectations.

Comment(s): NJEJA encouraged the BPU to increase the weight of "Municipal Level and Community-Level Evaluation" since OBMs are disproportionately impacted by UHI effect. The commenter also suggested the BPU requires municipal applicants to have a co-signatory on the application by a CBO that supports and intends to lead the project.

Response: Staff thanks NJEJA for their suggestions on the evaluation criteria. Staff has doubled the weight of "Municipal Level and Community-Level Evaluation" from 15% to 30%. Staff agrees with NJEJA's assessment that municipal applications would be stronger with CBO support and community input; while the BPU is not making it a requirement for municipal applicants to have a CBO co-signatory on the application, municipalities will receive higher scores on their proposals if they include stakeholder feedback and CBO support through the "Likelihood of Success" evaluation criterion.

Comment(s): NJLCV suggested that the weight of "Projected Co-benefit Outcomes" criterion and the weight of "Alignment with Relevant State Plans" be increased to promote multi-benefit projects and reflect stronger alignment between local actions and NJ's statewide climate goals. The commenter also recommended providing more clarity on "Project Preparedness" evaluation criterion.

Response: Staff thanks the commenter for their recommendations and agrees that projects that bring multiple benefits are more impactful. To increase the weight of "Municipal Level and Community-Level Evaluation" to 30%, "Projected Co-benefit Outcomes", "Project Preparedness" and "Project Sustainability" were each decreased by 5%. As "Municipal Level and Community-Level Evaluation" is the most important criterion for making sure that communities that need UHI abatement the most get priority funding, Staff believes this shift in weighting was appropriate. "Projected Co-benefit Outcomes" is still heavily weighted and now includes considerations for energy savings, in addition to ancillary benefits. Staff agrees with NJLCV's assessment on the importance for alignment of local investments with state goals and resources, as this will enhance partnerships between the state and local governments and organizations. However, Staff has decided to maintain the current weighting, as the "Likelihood for Success" criterion puts emphasis on local stakeholders and community input.

Comment(s): Princeton University commented that the program should promote teaming with higher education institutions within the state where there is extensive knowledge and experience in researching, monitoring, and analyzing impacts of extreme heat mitigation.

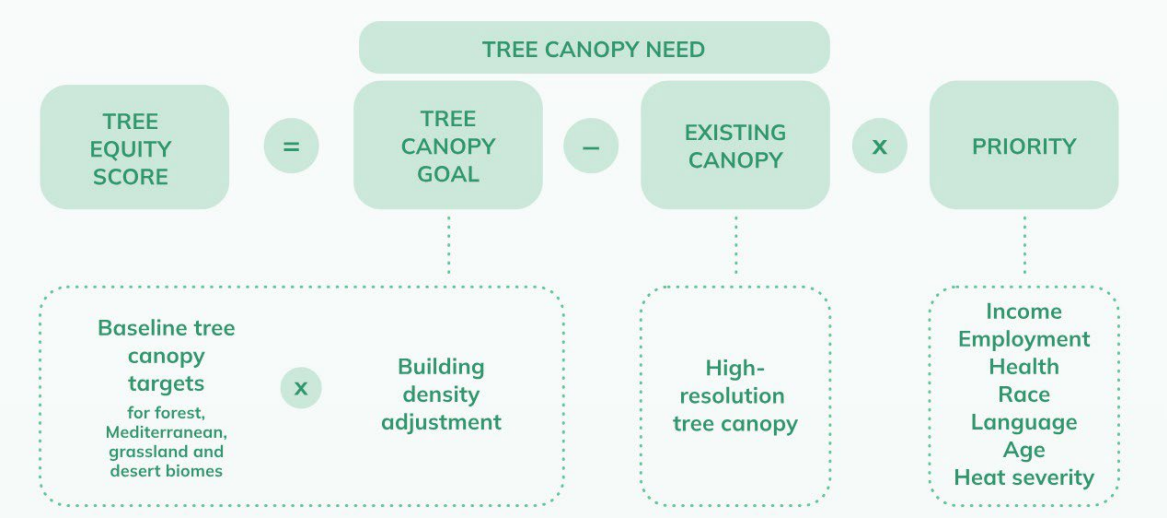
Response: Staff appreciates the commenter's suggestion and agrees with the need to encourage applicants to partner with NJ's research universities and experts in research and analysis of extreme heat mitigation. Staff does encourage applicants to partner with NJ's universities and to leverage resources from other programs and organizations, provided in Table 2 of Appendix B. Staff's aim is to foster an autonomous process in which organizations can partner with experts of their choice and encourage inclusion of community members with direct lived experience in the research and data-driven decision-making process.

Comment(s): Newark OoS suggested incorporating vulnerability indices into evaluation considerations such as land surface temperature, tree canopy coverage, asthma prevalence, energy burden, proximity to pollution sources, and other environmental health factors.

Response: Staff appreciates the commenter's suggestions to incorporate additional vulnerability factors into the evaluation criteria. To address equity and vulnerability considerations, Staff included the following criteria: (i) MRI distress score, (ii) OBC status and/or reported tree equity score based on census block group data and (iii) reported energy burden based on census tract for low-income communities. Tree canopy coverage is a strong indicator for multiple environmental conditions, including air quality, urban flooding, and heat impacts —all of which influence health outcomes such as asthma prevalence, human comfort, and energy consumption.[85] While land surface temperature ("LST") is a valuable metric, it requires satellite-derived data and mapping tools that are not currently available in an up-to-date or dynamic format at the municipal level. As such, Staff utilized composite LST data from 2013–2022 to develop heat maps for representative OBMs (Figure 4 of Appendix B), highlighting extreme heat disparities

[85] Yuanzheng Li et al., *A systematic review of studies involving canopy layer urban heat island: Monitoring and associated factors* 158, 111424 (2024) https://www.sciencedirect.com/science/article/pii/S1470160X23015662

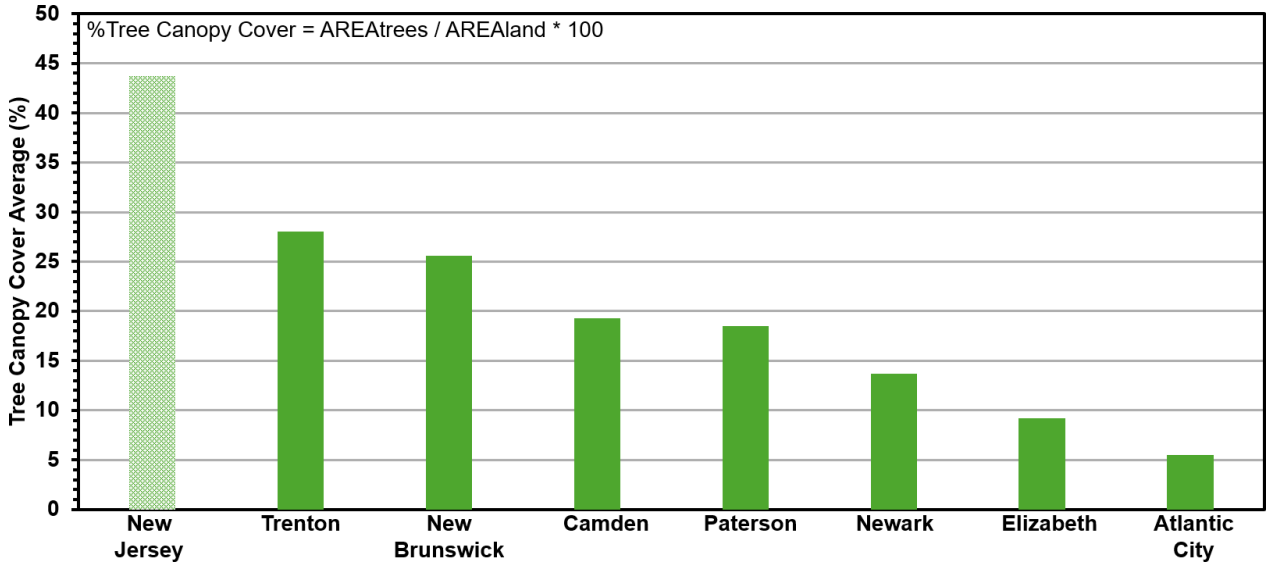
in urban centers across the state. In the absence of a practical LST tool, the tree equity score will serve as an effective index for assessing localized heat impacts, since it factors in tree canopy need, heat severity based on LST data, health impacts, as well as socioeconomic and demographic information.



Graphic obtained from https://www.treeequityscore.org/methodology.

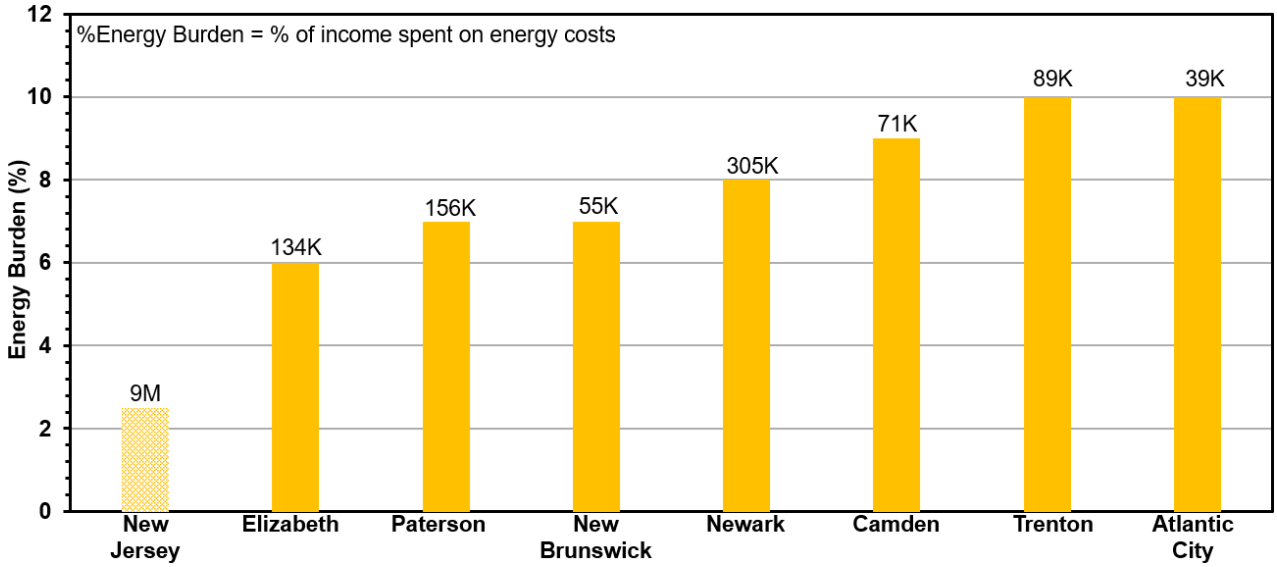
APPENDIX B

Figure 1. Comparison of Tree Canopy Cover in Representative OBMs and NJ



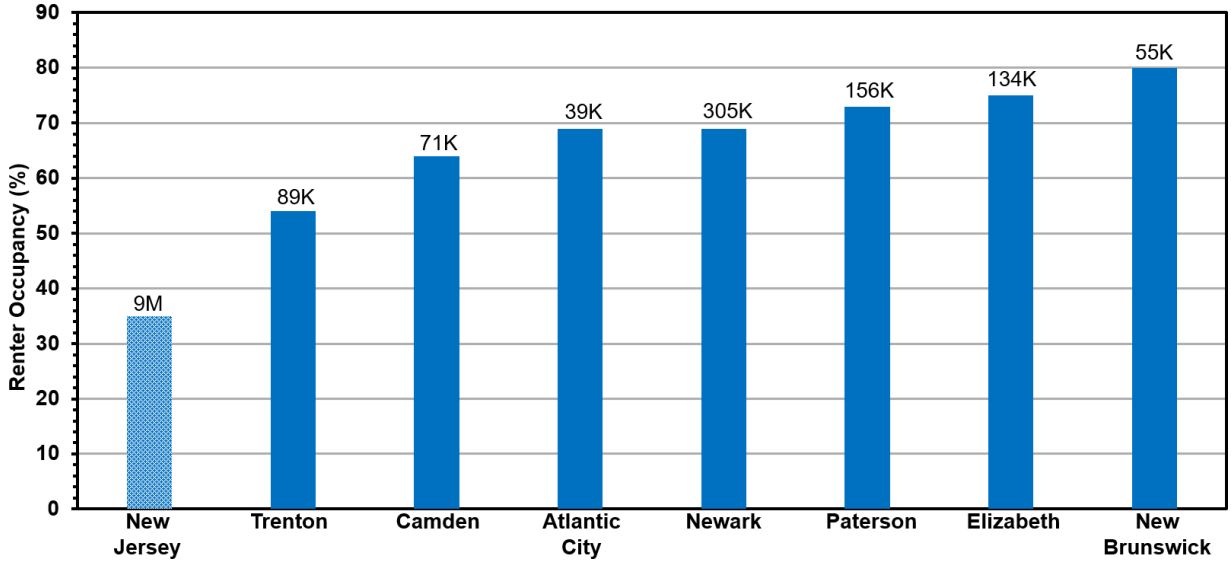
The Tree Canopy Cover Average was obtained from treeequityscore.org. The Tree Canopy Cover Average (%) is lower for the representative OBMs when compared to NJ.

Figure 2. Comparison of Energy Burden (%) in Representative OBMs and NJ



Energy Burdens of representative NJ OBMs which were obtained using the DOE LEAD Tool and determined for low-income populations [0-200% Federal Poverty Level (FPL)] in each city. The average energy burden value for NJ was determined from Aspects of Energy Inequity in New Jersey – New Jersey State Policy Lab. The energy burden values for low-income households in each of the representative OBMs are significantly higher when compared to the average energy burden of NJ. Note: The numbers on top of each bar in the bar graph represent the total population of each representative OBM, and for NJ, the total population of the state.

Figure 3. Comparison of Renter Occupancy (%) in Representative OBMs and NJ



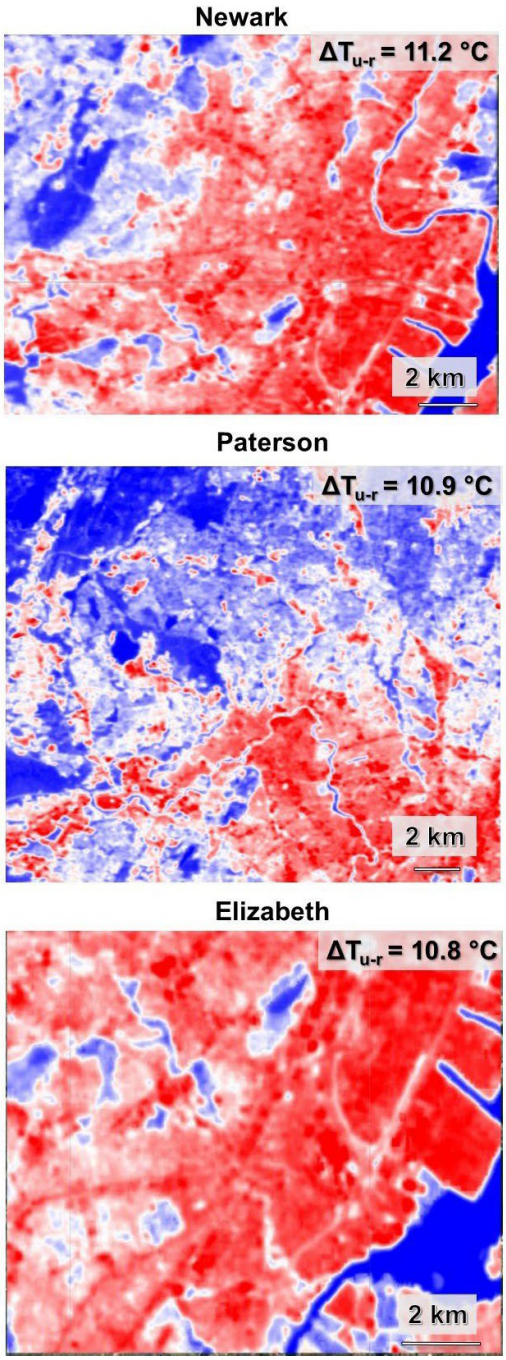
Renter Occupancy (%) in representative OBMs and NJ determined from Census Reporter which uses updated data from the 2022 American Community Survey 5-year data. The Renter Occupancy (%) is higher in the representative OBMs when compared to NJ. Note: The numbers on top of each bar in the bar graph represent the total population of each representative OBM, and for NJ, the total population of the state.

Table 1. NJ OBMs (A.) Tree Canopy Cover Average (%), (B.) Renter Occupancy (%), (C.) Energy Burden (%) for 0-200% FPL and (D.) MRI distress score based on 2023 data[1]

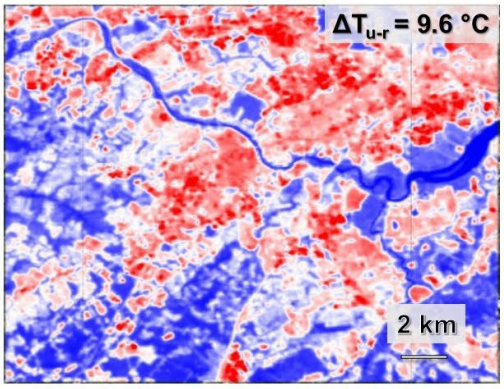
Municipality	A.	B.	C.	D.	Municipality	A.	B.	C.	D.	Municipality	A.	B.	C.	D.
Asbury Park City	20%	69%	14%	51.4	Gloucester City	21%	40%	8%	50.4	Perth Amboy City	14%	65%	7%	59.6
Atlantic City	6%	69%	10%	80.9	Guttenberg Town	10%	59%	6%	43.4	Phillipsburg Town	28%	41%	10%	51.4
Bayonne City	10%	62%	6%	43.7	Haledon Boro	39%	50%	7%	43.0	Pine Hill Boro	64%	39%	10%	46.8
Beverly City	36%	22%	-	43.6	Hamilton Twp	46%	28%	-	30.6	Plainfield City	35%	56%	5%	52.4
Bridgeton City	42%	62%	14%	76.7	Hi-nella Boro	-	66%	-	35.6	Pleasantville City	25%	55%	11%	69.5
Brooklawn Boro	21%	20%	-	54.2	Irvington Twp	19%	70%	-	53.8	Prospect Park Boro	27%	63%	9%	53.4
Burlington City	36%	36%	9%	44.5	Jersey City	15%	70%	6%	43.2	Riverside Twp	24%	46%	-	46.6
Camden City	19%	64%	9%	100.0	Keansburg Boro	11%	49%	10%	53.6	Roselle Boro	28%	47%	6%	40.7
Cape May City	24%	42%	10%	43.0	Kearny Town	17%	53%	7%	42.2	Salem City	30%	66%	17%	95.5
Chesilhurst Boro	77%	13%	-	51.0	Lakewood Twp	43%	52%	-	40.8	Seaside Heights Boro	3%	62%	23%	89.2
City of Orange Twp	24%	78%	-	57.2	Lawnside Boro	43%	32%	9%	46.7	So. Toms River Boro	44%	18%	9%	39.5
Clayton Boro	45%	26%	13%	37.0	Lindenwold Boro	49%	64%	10%	54.2	Sussex Boro	-	55%	-	43.1
Clementon Boro	64%	50%	10%	51.1	Lodi Boro	16%	56%	7%	43.1	Teterboro Boro	6%	100%	-	78.5
Commercial Twp	-	31%	-	55.3	Long Branch City	21%	57%	11%	43.2	Trenton City	28%	54%	10%	72.7
Deerfield Twp	-	16%	-	34.7	Maurice River Twp	-	23%	-	52.1	Union City	11%	79%	5%	56.8
Dover Town	39%	56%	8%	44.7	Millville City	49%	34%	15%	50.8	Upper Deerfield Twp	53%	33%	-	44.9
East Newark Boro	8%	67%	7%	53.3	Mount Holly Twp	35%	38%	-	52.2	Victory Gardens Boro	33%	65%	-	50.1
East Orange City	23%	73%	7%	55.5	New Brunswick City	26%	80%	7%	62.1	Vineland City	45%	31%	12%	50.3
Egg Harbor City	39%	48%	12%	68.0	Newark City	14%	70%	8%	64.0	West New York Town	13%	76%	5%	52.3
Elizabeth City	9%	75%	6%	53.1	North Bergen Twp	15%	57%	-	44.8	West Wildwood Boro	8%	17%	-	54.6
Fairfield Twp	42%	18%	-	51.1	Passaic City	17%	78%	5%	68.4	Westville Boro	27%	41%	10%	49.8
Fairview Boro	13%	67%	6%	46.0	Paterson City	19%	73%	7%	72.3	Wildwood City	3%	53%	11%	69.6
Flemington Boro	27%	64%	10%	42.1	Paulsboro Boro	20%	28%	11%	54.7	Woodbine Boro	-	39%	-	70.5
Freehold Boro	18%	49%	-	45.2	Pemberton Twp	51%	27%	-	44.7	Woodbury City	33%	34%	8%	46.7
Garfield City	15%	53%	8%	45.4	Penns Grove Boro	28%	70%	17%	91.8	Woodlynne Boro	27%	48%	-	68.0
Glassboro Boro	38%	39%	12%	41.1	Pennsauken Twp	27%	26%	-	47.2	Wrightstown Boro	21%	55%	-	48.9

[1] See 2023 Municipal Revitalization Index ("MRI") Table and Ranking at Department of Community Affairs, https://www.nj.gov/dca/home/MuniRevitIndex.shtml

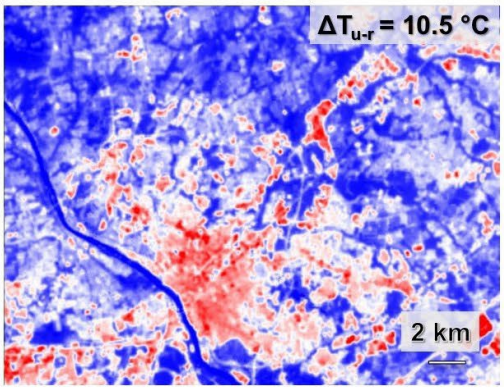
Figure 4. Land Surface Temperature Mapping of Representative NJ OBMs



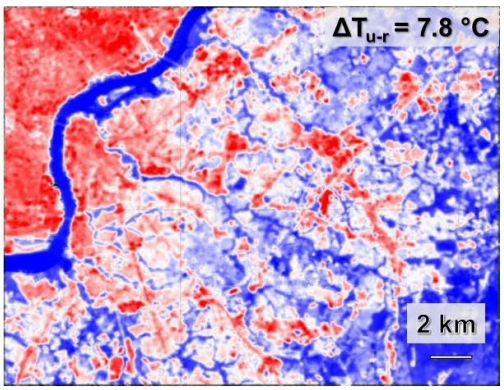
New Brunswick



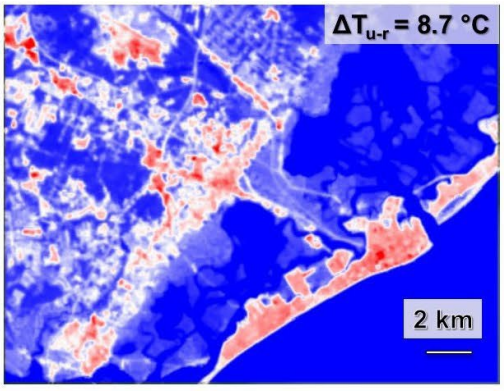
Trenton



Camden



Atlantic City and Pleasantville



Time Series Conditions: The heat maps display land surface temperatures from 2013-2022 during July 1- August 31 of several representative NJ cities (red denotes warmer temperatures, blue denotes cooler temperatures). The surface UHI intensity value was calculated by taking the difference in temperature between built up urban areas and surrounding forested areas (ΔT_{u-r}), the average surface UHI intensity is 10 °C. The calculation was done in Google Earth Engine and the code was obtained from ARSET - Satellite Remote Sensing for Measuring Urban Heat Islands and Constructing Heat Vulnerability Indices | NASA Applied Sciences (2022).

Table 2: Third-Party Resources for Urban Heat Island Interventions

Grant Category 1.: Comprehensive UHI Interventions: Larger Scale Urban Cooling	Urban Cooling Toolbox by C40 Cities Smart Growth and Heat Islands | US EPA Optimizing human thermal comfort and mitigating the urban heat island effect on public open spaces | Scientific Reports Heat Island Reduction ToolKit-Long Beach
Grant Category 2.: Cooling the Built Environment: Resilience Hub Development and Cooling Efficiency Upgrades	Weathering Climate Disasters with Resilience Hubs - RMI USDN_ResilienceHubsGuidance.pdf Using Cool Roofs to Reduce Heat Islands | US EPA Using Green Roofs to Reduce Heat Islands | US EPA Geothermal Heat Pumps | Department of Energy Benchmarking Resilience Hub Site: Benchmark Your Building With Portfolio Manager | ENERGY STAR Video Series: Resilient Solar+Storage for Community Facilities - Clean Energy Group Understanding-Solar-Storage.pdf
Grant Category 3.: Urban Microclimate Interventions-Smaller Scale Community Projects	Community-Gardening-Toolkit.pdf Building community heat action plans story by story - ScienceDirect Urban Cooling Strategies | Climate Resilience Project
Technical Assistance and Support for local CBOs and governments	Participate in a Green Team or Hub - Sustainable Jersey NJDEP | Urban & Community Forestry Home | New Jersey Forest Service Vibrant Communities Initiative Transit Village Initiative, Community Programs Complete Streets | NJTPA | North Jersey Transportation Planning Authority

	NJ Local Technical Assistance Program (NJLTAP) - Rutgers Center for Advanced Infrastructure and Transportation (CAIT) Resilient Power Project - Clean Energy Group Technical Assistance Fund - Clean Energy Group Solar+Storage Financing Options for Nonprofits - Clean Energy Group Technical Assistance – WE ACT TCTAC