

May 5, 2025

ACKNOWLEDGEMENTS

Special thanks to the panelists **Jane Gilbert** (Chief Heat Officer, Miami-Dade County, Florida), **Eleni** (Lenio) Myrivili (UN Global Chief Heat Officer and Senior Advisor at the Atlantic Council's Climate Resilience Center, Athens, Greece), and **Brian Swett** (Chief Climate Officer, City of Boston)!

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Project website: oregonmetro.gov/coolingcorridors

Overview

Meeting Details

The expert panel was held on Monday, May 5, 2025, from 8 to 10 AM (PST) on Zoom.

Participants

Moderator and Presenters

- Malu Wilkinson, Deputy Director, Metro Planning, Development and Research
- Joe Gordon, Principal Researcher, Metro
- André Lightsey-Walker, Senior Transportation Planner, Metro

Panelists

- Jane Gilbert, Chief Heat Officer, Miami-Dade County, Florida
- **Eleni (Lenio) Myrivili**, UN Global Chief Heat Officer and Senior Advisor at the Atlantic Council's Climate Resilience Center, Athens, Greece
- Brian Swett, Chief Climate Officer, City of Boston

Metro Council Members Present

• Christine Lewis, Metro Councilor for District 2

Summary of Discussion

Panelist Discussion

Malu Wilkinson welcomed the group and introduced the panelists. She asked panelists to share their names, titles, and who they represent as well as a brief background on their work.

Panelist Introductions

Jane Gilbert was appointed as Chief Heat Officer for Miami-Dade County by the Mayor for the City of Miami four years ago to address extreme health risks related to heat. She was the first Chief Resilience Officer for the City of Miami, and the first Chief Heat Officer in Miami-Dade County and the world. Miami-Dade County is a large regional government serving 34 municipalities and a population of 2.7 million residents. She shared that prior to her appointment, extreme heat had not been addressed in her region in a significant way. Heat impacts are significantly impacting the community, both financially and their day to day.

Eleni Myrivili currently serves as the Global Chief Heat Officer for United Nations (UN) Habitat. Prior to this role, she was elected as Chief Resilience Officer for the City of Athens while also serving as the Deputy Mayor for Urban Nature, Urban Resilience, and Climate Adaptation for the city. At that time, though not yet on policy makers' minds, people living in Athens, especially the most vulnerable community members, made it clear that extreme heat is hurting them and something for the government to address. She asked to be the Deputy Mayor to connect the ideas of urban nature, urban resilience, and climate adaptation and find solutions to climate issues. In 2022, she developed a memorandum of understanding with UN Habitat to work with UN agencies to raise the issue of extreme heat. She works with UN Habitat to address heat as a long-term reality that needs responsive nature-based planning.

Brian Swett was appointed as Chief Climate Officer by Mayor Michelle Wu for the City of Boston. He assumed the role of Chief Environment, Energy, and Open Space in June 2024 overseeing 5 different city offices. He helped establish the Office of Climate Resilience in September 2024. Brian's prior background was in real estate development and working for the firm ARUP. Boston is part of the second class of the 100 Resilient Cities network, an initiative which enabled cities to hire a Chief Resilience Officer, develop a resilience strategy, access pro bono services from private sector and NGO partners, and share ideas, innovation and knowledge through the global network of officers. Super Storm Sandy was the impetus for climate resilience planning in the city. Boston is anticipating feeling more like Baltimore by midcentury and like Mobile, Alabama by the end of the century. Lots of residential buildings in Boston currently lack air conditioning, making urban heat a priority for the city, after six days in a row reached temperatures above 95 degrees last June. He noted that extreme heat is not often addressed with the same response as storms.

Strategies for Urban Heat Adaptation

Joe Gordon took over moderation of the discussion. He introduced himself, his role at Metro, and his role on the Cooling Corridors study. Joe asked the following questions to panelists: What are your priorities in the short-term? What are your long-term goals? What are the strategies that have had the most impact? How are these strategies being funded?

Jane Gilbert shared a number of strategies that Miami-Dade County has implemented over the past four years. Her team wanted to first understand who is most impacted by heat and where people are experiencing the most heat risks. They used hospitalization records by ZIP code to evaluate which areas in the region most people are making emergency department visits or other hospital visits for heat-related illness. They discovered that areas with high concentrations of poverty and high numbers of outdoor workers correlated with high land

surface temperatures. This evaluation was done to help design where to target heat interventions.

Last year, the region had 60 days with a high heat index of 100 degrees or more, prompting the city to designate May 1 – October 31 as the heat season. The team has worked to raise public awareness to the same level as hurricane awareness by placing signage everywhere and creating messaging for bus stops, radio, TV, and social media, intentionally targeting heat vulnerable communities most to help them understand how to access local resources. Additionally, the National Weather Service lowered its heat advisory thresholds for the county.

The county has also developed heat safety training programs for heat personnel, such as outreach staff for unhoused residents, Parks and Nature staff, and health care practitioners. The county has also started to provide incentives and education opportunities for employers, including a small grant program to help small businesses access hydration equipment. The county has built air conditioning units in public housing and tripled the amount of weatherization in homes. The county provides funding to rehab naturally occurring affordable housing. Lastly, the county has doubled the number of trees planted in urban heat island areas and given away 10,000 trees a year.

Her long-term goals are to create sustainable avenues for health services initiatives and longterm financing with utilities. Miami-Dade County plans to enforce landscape and tree protection codes requiring greater canopy on commercial sites or mitigation fees. The Department of Transportation and Department of Public Works plan to update how the county approaches design processes and protocols to better accommodate existing trees and plans for managing trees.

In Athens, Greece, **Eleni Myrivili** shared three main buckets of initiatives the city is focusing on in the short term:

- 1. **Raising awareness** through the dissemination of information to change behavior. As part of this initiative, the city categorized heatwaves, linking types of temperature and the number of deaths to early warning systems and policies. Each category predicts the number of possible deaths.
- 2. **Preparedness** actions for the city to take during heat waves to prevent heat-related deaths. These actions included heat-specific training for nurses and doctors in hospitals, the creation of a hotline, the opening of cooling centers, and mapping vulnerable populations. To take these actions, the city strategically partnered with the Red Cross because of how well trusted the agency is by community members.
- 3. *Re-designing* the urban landscape by greening the city and figuring out how to prepare buildings for extreme heat. The city focused on nature-based solutions and

enhancing or building blue and green infrastructure. Green corridors are one of the most effective actions a city can take, particularly if the corridors are long and robust and link existing green or blue areas, which can significantly lower temperatures.

Eleni shared an example of a preparedness action that India is taking. The county is partnering with the Atlantic Council to collaborate with the insurance sector to provide parametric insurance, a program that releases funding at certain thresholds leading up to major events.

Looking long term, she shared that she is worried that trees are being stressed in urban settings because of extreme heat, drought, and wildfires, and that there is little understanding of how effective urban trees will be in long stretches of heat. Cities and universities should continue to study which trees are most able to withstand dry and hot conditions. She added that it is important to focus on building water resilience. This can be done by creating a better understanding of nature-based solutions and using strategic partnering to focus on building water capacity by recycling water or other means.

In Boston, **Brian Swett** shared that the city's short-term goals are to provide active solutions to allow people to continue to have outdoor events. He provided splash pads and deployable misting tents as examples of these solutions. As part of this work, the city is working closely with emergency response workers to prepare for extreme heat events, including building understanding of the difference between heat stress and heat shock.

In the medium to long-term, Boston is looking at using more heat-resistant building materials, such as reflective roofing or green roofing, and increasing tree canopy coverage. The city has a strong park system but finds street tree planting challenging. Currently, Boston's Parks and Recreation department is responsible for the care of all street trees. The city is considering a dedicated street tree care team that would be responsible for pruning and other maintenance and upkeep needs.

The city is strategically connecting heat resilience efforts to other issues and existing resources. For example, he is tying urban heat solutions to energy efficiency programs and greenhouse gas emission mitigation programs. These types of programs often install heat pumps in buildings to help residents save money, but importantly, heat pumps also provide air conditioning, which can save lives in the event of extreme heat.

Lastly, he emphasized that cities need to change the collective mindset of community members to give heat risk more attention, and make sure the general population, including first responders, understand extreme heat and check on the most vulnerable. He explained that Bostonians know how to prepare for a major snowstorm, but there is less understanding of the ways to prepare for extreme heat events.

Partnerships and Collaboration

André Lightsey-Walker took over moderation of the discussion. To stress the importance of partnerships, he gave background on Metro, sharing that the agency serves 24 cities, three counties, and countless community-based organizations. He asked panelists: What types of organizational or community-based partnerships has your agency developed to address extreme heat, and what lessons can be learned from these?

Like Metro, Jane Gilbert said that collective action is integral to the work Miami-Dade County does. The county develops plans with collective action in mind and several partners are leading some of the actions. She shared several examples. A nonprofit has assumed responsibility for heat safety training and expanded the training to include extreme weather training for disasters like floods and hurricanes. Another organization in the local healthcare system started continuing education training related to heat illnesses and reached out directly to health care clinics. Houseless outreach team providers plan to expand the network of cooling sites in the county. The County worked with a local nonprofit to create a program to educate low-income homeowners about energy efficient and low-cost cooling solutions at home. The County has also created a tree ambassador program that oversees tree planting and organizes outreach events at schools and faith-based organizations with tree planting potential (i.e., low canopy coverage). Miami-Dade County also depends on university partnerships and citizen science. The County's partnerships with healthcare workers have been considered the most trusted. The County has included research on brochures and posters for waiting rooms in healthcare clinics, which have been effective at educating patients at these clinics about the physical effects of heat.

Brian Swett shared the importance of building trust with the community, specifically those in the most heat impacted communities, through creating formal partnerships with local environmental groups to engage the community. For example, he highlighted leveraging Boston's partnerships with local environmental groups and funding them to engage and encourage private developers and property owners to plant trees on new commercial and residential development and existing private property. The city has also been leaning on medical and educational institutions to explore the most effective solutions. Brian also emphasized their region's desire to expand upon their green infrastructure workforce, particularly creating a climate resilience jobs program called Power Corps. He included that local unions should be involved in the planning and implementation of these investments in a green workforce. Lastly, Brian shared through strong partnerships with architectural firms, Boston was able to pilot their bus station retrofit program. Brian recommended piloting projects as a way to experiment with innovative strategies, their scalability and effectiveness, all while managing financial risk.

Eleni Myrivili emphasized the importance of partnerships with community groups and codesigning projects with these groups as early on in projects as possible. She has found that giving ownership to community groups helps guarantee success. When building early warning systems or other outreach, it is important for public agencies to meet with different communities to understand their daily lives, who they regularly communicate with, and how they receive information. Communication channels must be trusted channels. In Athens, she collaborated with the Red Cross because the organization is an extremely trusted partner in the city. Other trust partners may be other nongovernmental organizations and care providers.

Building on the last question, **André Lightsey-Walker** asked the panelists: Were there any partnerships that emerged that you weren't expecting?

Jane Gilbert answered that partnerships with local universities are crucial in deepening their understanding of extreme heat effects in their region. Through those partnerships, researchers were able to help deploy temperature sensors throughout the county to collect shade & date information. This study produced a key finding that bus stop shelters do not provide the same level of cooling as tree canopy. Maintaining strong relationships with universities allows for similar research collaboration in the future. Jane shared about the healthcare community (e.g., doctors, nurses, and other professionals) being another unexpected partnership that emerged over time. She mentioned the ability to spread educational information to the community through placing brochures and handouts in medical office waiting rooms as a key benefit from these partnerships.

Brian Swett reiterated the great benefit of forming strong university partnerships. Specifically, he mentioned the ability for universities to acquire their own funding sources to further student urban heat islands and temperature sensing. In collaboration with the universities, Boston provided access to street poles to place sensors for their studies which looked at promoting neighborhood-scale solutions where people congregate the most. Brian stressed that heat is about what people experience, not only the temperature the weather app says.

Eleni Myrivili highlighted partnerships with young people. She shared that in Rotterdam, Netherlands once a year the city government invites young people interested in programming, design, and/or digital tools to participate in a three-day design sprint. During these events, the city opens their data to allow for the youth to create new tools and products.

Challenges

Joe Gordon took over moderation of the discussion. He asked the panelists: What barriers have you faced planning and implementing heat mitigation or adaptation strategies? How did you overcome them?

Jane Gilbert shared that Miami-Dade County has found it difficult to site trees without conflicting with infrastructure and have had issues planting trees that have died within five years. Their challenge is to make sure that they invest the true cost to plant trees upfront and ensure they thrive. This requires foresight and anticipating design needs as early in the process as possible, like redesigning the right-of-way and easements and including landscape architects and arborists when designing programs. Investing in tree care upfront pays off in the long run because the trees are more likely to survive and not need to be replanted. In addition to trees, she discussed building codes. Building codes have minimum heat standards but no cooling standards. The county is working with International Code Standards to implement cooling standards.

Brian Swett cited the following as challenges for Boston: enforcing heat protection ordinances for workers, protecting existing canopy coverage when updating streets, and encouraging residents to plant trees despite reluctance to care for them long term. He also recognized that addressing heat requires disaggregated solutions needing significant investments, which is made more difficult since heatwaves are less obvious health threats than other disasters, making it more difficult to fundraise or garner political support. To overcome some of these challenges, Boston is incorporating green infrastructure into design standards and building codes. However, codes focus more on preventing short-term issues and not long-term issues. He recognized that zoning is a good way to address long-term thinking and build political momentum.

Eleni Myrivili reflected on how agencies should measure how much heat reduction results from cooling strategies and whether this should be standardized. For example, some agencies measure air temperature while others measure land temperature. She also highlighted the challenge of raising capital without good ways of assessing the effectiveness of strategies. To overcome challenges, she has partnered with universities to build institutional capacity. She finds that landscape architects can be helpful because they understand thermal dynamics, however, she recognizes that not all cities have access to people with that background or understanding. Another challenge is convincing people of the importance of heat mitigation or heat adaptation projects and building collective support for these types of projects. Agencies need to reframe climate adaptation narratives to demonstrate the importance of this work to their health and finances.

Joe Gordon asked the following: What do you think are the key challenges in ensuring that heat-related interventions are equitably distributed, particularly in underserved or vulnerable communities? How did you address these challenges?

In Boston, **Brian Swett** shared that using objective data often results in the same outcomes that focusing on climate justice neighborhoods may have. For example, Boston's Urban Forestry Plan has a number of criteria for targeting neighborhoods that need it the most that result in climate justice neighborhoods being targeted.

Eleni Myrivili emphasized that certain communities may not want heat-solutions because of a fear of gentrification, so it is important to deal with these issues in advance. Agencies must address peoples' fears and find solutions before they grow out of control. An example of a non-heat related solution is enforcing rent stabilization to keep people in their homes and prevent them from being priced out.

Jane Gilbert discussed criteria for their interventions. Miami-Dade County is focusing 90% of the county's tree planting budget on areas with less than 20% tree canopy coverage and greater than 20% poverty rates. The county is avoiding putting the burden of maintenance on vulnerable community members by involving community members from the beginning, asking where trees are wanted and identifying who will be responsible for maintenance of trees planted by the county.

Facilitated Q&A with Panelists, Metro Leadership, and Metro Staff

Malu Wilkinson took over moderation of the discussion and fielded questions from Metro leadership and staff. She asked Councilor Lewis and Chief Operating Officer Marissa Madrigal if they had any questions. Councilor Lewis thanked everyone for joining and highlighted how inspiring the work is.

Balancing Short-Term Emergency Response and Long-Term Heat Mitigation

Marissa Madrigal asked how the panelists considered short-term emergency response and preparedness versus long-term heat mitigation and whether each place had a prioritization framework. Do you have any advice as we think about our framework moving forward and define what is urgent and what is longer-term work?

Brian Swett highlighted two approaches. The first is to engage with emergency managers. The City of Boston turned planning for extreme heat events into a tabletop exercise to understand how emergency responders would act during extreme heat events. The second is to reconsider existing assets, such as splash pads and pools, as emergency response assets and resource them as critical rather than superfluous. Boston opened 90% of the city's splashpads by Memorial Day.

Eleni Myrivili recognized a recent effort in New York where different organizations started to claim parks as "resilient infrastructure" for flooding and heat instead of green spaces. This action helps the city prioritize funding in the short term. When considering how to approach extreme heat in the long term, it is imperative to consider how different systems influence each other. For example, rising temperatures may affect water access, which may force places to prepare for possible water scarcity issues. To raise awareness, different types of educational materials and information are needed to persuade people in the long-term versus the short-term. Different budgets are needed for the different temporal scales.

Jane Gilbert shared that it is important to prioritize education and outreach to build political buy-in for other actions. For example, table-top exercises were very effective in getting emergency managers and other partners on board. The county's Public Works manual needs to be updated to set up capital improvement projects to address extreme heat and connect the dots between short-term response and long-term needs.

Effects of Federal Government on Climate Work

Hau Hagedorn asked in the chat: Probably more relevant for Miami and Boston, but how are you approaching your work now that climate, equity and justice are under scrutiny at the federal level? Are you impacted by the federal landscape?

In Miami-Dade County, **Jane Gilbert** remarked that the federal government is no longer providing maps for climate justice communities, but fortunately the county documented these maps internally. Her team is adjusting language as needed to maintain their desired outcomes as well as access to federal funding.

Similarly, **Brian Swett** said that the City of Boston is not changing its climate responsive actions but changing the language behind how the city frames the benefits of their actions. They gear their rationale towards economic benefits rather than racial and social equity benefits. Brian explained that even when taking the economic rationale approach, similar conclusions are drawn regarding which neighborhoods to invest in. Also, framing extreme heat and weather as expected costly event(s), there is further justification for Boston to create job opportunities and green infrastructure investments that will save them money in the long run.

Community Resilience Hubs

Yohannes Wolday asked in the chat: We are seeing growing interest from CBOs in our region in establishing community resilience hubs—spaces that serve as cooling and heating centers, while also offering critical resources and information to residents. Have similar initiatives been developed in your region? If so, could you share any insights on successes, challenges, or lessons learned from those efforts.

Programming occurs year-round in Miami-Dade County, according to **Jane Gilbert**, and capital improvements have been made over time. The county is in the process of developing frameworks for resilience hubs, providing models for nonprofits, municipalities, and county facilities. Libraries have been successful resilience hubs because there are activities for people to do.

Brian Swett suggested that it is easy to implement cooling centers yet difficult to mobilize and encourage people to use them. Programs are necessary because community members do not want to sit in an empty room with nothing to do. The entire user experience is important to consider.

Eleni Myrivili agreed that there is a stigma around cooling centers. Cities need to make cooling centers appealing while considering different mobility issues that may prevent people from accessing these centers. For example, the cooling center may be surrounded by poor or missing pedestrian or bicycle infrastructure or no shade, making it difficult for people to travel to the center safely.

Native Tree Species

Lori Hennings asked in the chat: One major challenge we are recognizing, which I have heard a couple of our guest speakers mention, is the likelihood of persistence of currently "native" tree species on the landscape. How are you looking at what species will work in your cities in the future?

Jane Gilbert stated that university partnerships have been very helpful with the assessment of temperature changes and groundwater levels in Miami-Dade County. The county is starting to recommend and treat tree species that are native to the Caribbean since the area's native species, such as live oak, are becoming increasingly vulnerable. Because of this, the county recommends that people only plant a certain number of a species on a site to avoid blight.

Similarly in Boston, **Brian Swett** said the city is researching tree species that are more resilient to dynamic climates and planting a diverse array of climate-resilience species along streets to avoid the pitfalls of monocultures.

Eleni Myrivili suggested the importance of planting several levels of vegetation instead of relying solely on trees.

Chronic Heat Exposure Training

Melissa Ashbaugh asked: Chronic heat exposure often gets missed in data and discussion around the risks of extreme heat, so I am excited that Miami-Dade is working to train on that topic. After doing that training, were there any interesting findings? Did it change any prioritization of resilience strategies?

Jane Gilbert shared that Miami-Dade County's training courses were popular and well received, resulting in people wanting an expansion of the training. The county conducted an excess heat mortality study of worker's compensation claims for the county. It found that extreme heat-related claims were very low. However, it is notable that overall claims increase by 30% during May through September, the county's hottest months, implying that heat illness is likely underreported.

Brian Swett emphasized that measuring chronic stress is important. He added that public schools and community centers are good places to teach the community about the dangers of heat.

Lessons Learned from Medellin's Green Corridors

Marissa Madrigal asked Eleni Myrivili: Can you tell us about your trip to Medellin and any observations you may have had?

Eleni Myrivili shared that Medellin originally created 30 corridors, but once the program gained international recognition, the city created a more robust program in response. Naturally, Medellin has lots of water and fertile soil, which enhances its ability to create green spaces. On certain corridors, the city limited the number of car lanes and replaced them with greenspace, and trees and other greenery were enhanced on either side of existing waterways. Three design principles guided the city's program: heat (i.e., making sure people can walk more while maintaining thermal comfort), biodiversity (i.e., supporting ecosystems), and joy (i.e., creating joyful spaces for people to move in). Now, Medellin has moved from green corridors to "re-naturing" the city and creating pockets of biodiversity that connect to the green corridors.

Building and Operating Bus Shelters

Tom Kloster shared the following in the chat: Brian mentioned "shelter contractors" earlier and I'm interested to hear from all three panelists how they have managed bus shelters. For context, our primary transit provider has gradually removed hundreds of shelters over the past few decades due to the costs of maintaining them — an expense that directly competes with operating buses and trains and therefore becomes a lower priority. Are there better examples of how to build and operate shelters?

Brian Swett said that the City of Boston shares capital costs with the transit shelter provider while advertising at the bus shelters generates revenue for the city. The city first tested the ability of bus shelters with green roofs to hold water before widespread implementation. He stressed that cities need to prioritize transit and make transit options more comfortable to use because they are a necessity. If cities do not invest in bus shelters, they cannot expect community members to use transit.

Jane Gilbert added that Miami-Dade County was able to fund shelters at all bus stops because of advertising revenue that the shelters generate. Solar panels are needed on top of shelters to light them, necessitating a need to site trees at a distance so that shade does not affect the panels' ability to capture solar energy.

Closing

Malu Wilkinson concluded the conversation, emphasizing the need for a systems approach in our region. She said that the project team will share a summary and recording with everyone after the meeting.