

SMART SURFACES

HOT SHEET

summer 2025

Extreme heat and climate-related flooding pose significant threats to public health. Heat is the leading weather-related cause of death in the US. In Columbia, SC, the South Carolina Public Health Association (SCPHA) Smart Surfaces Team has worked diligently to combat this issue through advocacy, community outreach, sponsorships, and education.



Photo Credit: Keisha Long. 2024 SCPHA Annual Conference. Myrtle Beach, SC.



Photo Credit: Beata Dewitt. 2025 Earth Day Climate Action Fair. Columbia SC.



Photo Credit: Bailey Parker. 2025 Rain Garden Workshop. Gills Creek Watershed Association. Columbia, SC.

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What Are Smart Surfaces?

Infrastructure strategies that cost-effectively manage urban heat and stormwater while maximizing health, climate, and equity co-benefits

Cool Roofs



Green Roofs



Porous + Permeable Pavements



Solar Photovoltaics



Cool Pavements



Trees and Rain Gardens



Low- and Zero-Carbon Concrete



Combined Surfaces



Source: [Smart Surfaces Coalition & Carnegie Mellon University](#)

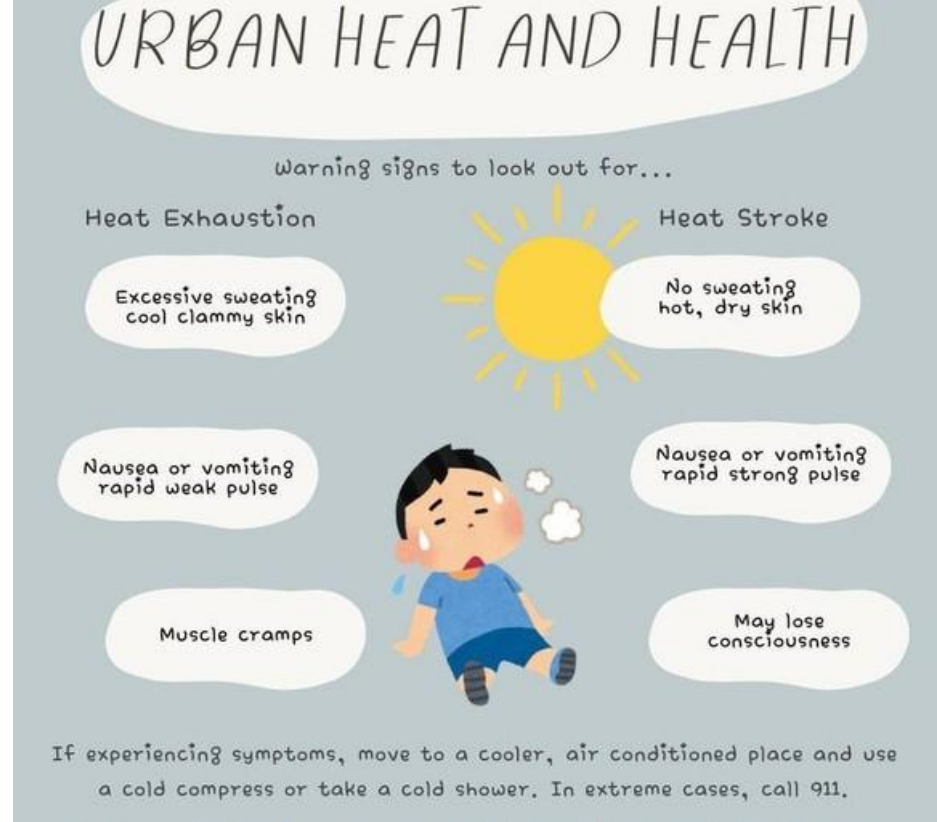
e.g., Green Roof + Solar PV



To combat higher surface temperatures, some cities have planned initiatives to plant more trees and increase shade in city centers. However, additional efforts are needed. In low-income areas, many individuals struggle to pay high costs for air conditioning and transport to cooling centers.

The American Public Health Association (APHA) is collaborating with the Smart Surfaces Coalition, National League of Cities, Metropolitan AME Church, and others to accelerate the implementation of smart surfaces in major cities. APHA invited its affiliates, including SCPHA, to join efforts in promoting the adoption of smart surfaces, offering grant opportunities to accelerate their implementation, and address the health impacts of climate change.

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Why Should I Care About the Heat?

Citizen science efforts performed in 2022 found Downtown Columbia as much as 18 degrees Fahrenheit hotter than the suburban areas of Richland County.

As the city continues to grow, green and porous surfaces have been replaced with dark and impervious ones, leading to higher surface temperatures. These higher temperatures impact public and environmental health.

The SC Department of Public Health documented 1,828 heat related emergency room visits and 224 hospitalizations in 2023 ([Heat Related Illness Dashboard](#)). The SC Department of Environmental Services notes that high concentrations of ground-level ozone occur on hot, sunny days and can create breathing problems -- especially for children, people with asthma or other respiratory problems, and adults who work or exercise outdoors.

As temperatures rise, South Carolina will face higher temperatures, higher power bills, more extreme flooding, and an increase in heat-related illnesses.



Photo Credit: BeataDewitt. 26 April 2025 Earth Day Climate Action Fair. Columbia, SC.

Who's Hot on Smart Surfaces?

- SCPHA hosted five focus groups in Columbia to understand residents' views on extreme heat, revealing themes like heat concerns, vulnerable populations, cooling strategies, health impacts, and resource considerations. These insights were included in educational outreach materials and our [SCPHA Smart Surfaces Action Report](#).
- The [Gills Creek Watershed Association](#) is working on restoration initiatives such as rain garden workshops. SCPHA looks forward to partnering with the Gills Creek Watershed Association to facilitate incorporating nature-based solutions in Columbia.
- [Columbia Green](#) launched the "Beat the Heat: Plant a Tree Initiative," which addresses urban heat by encouraging homeowners to plant trees that improve air quality and overall well-being.
- The [Central Midlands Council of Governments](#) (CMCOG) received the Climate Pollution Reduction Grant to support projects aimed at reducing greenhouse gas emissions and benefiting disadvantaged communities. SCPHA plans to collaborate with CMCOG to work with counties including Newberry, Fairfield, Lexington, and Richland, as well as other counties across the state. The goal is to educate the community about the environmental benefits of smart surfaces and support strategies for their implementation.



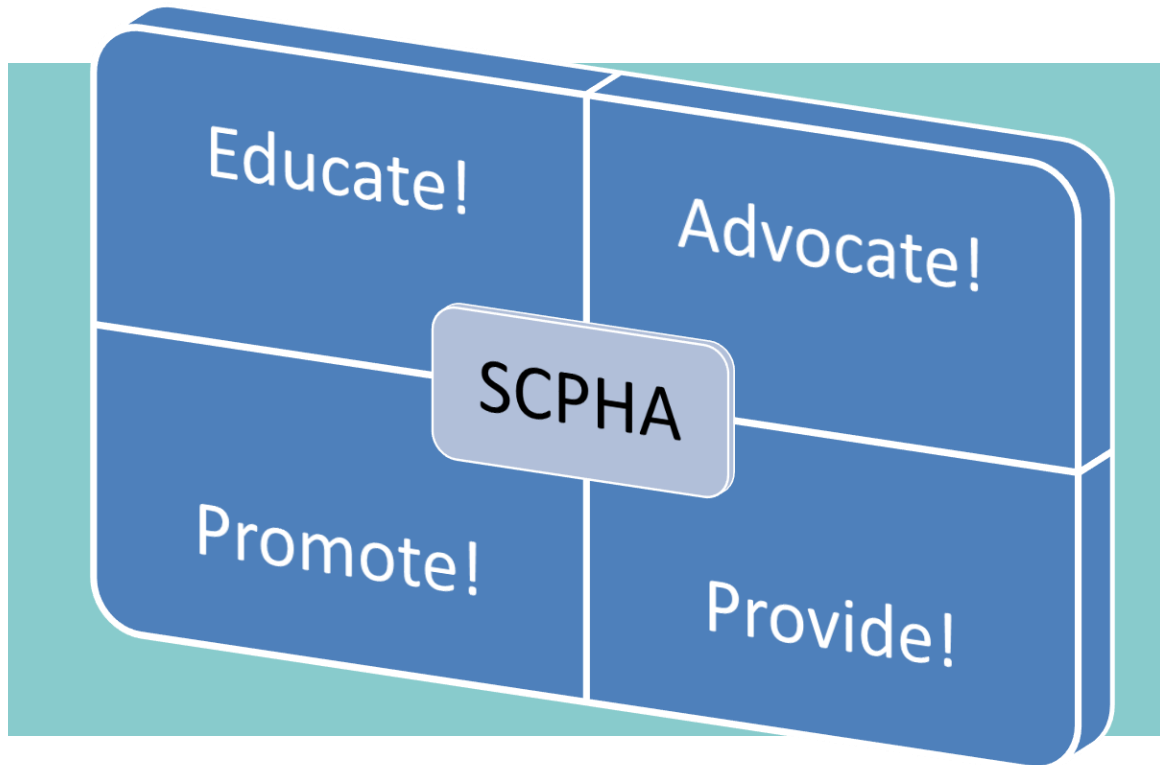
Photo Credit: Weston?, 5 November 2024, Tree Planting in MLK Park, Columbia, SC

Who's Hot on Smart Surfaces?

- The City of Columbia joined Bloomberg Philanthropies' new [Youth Climate Action Fund](#) which provides technical assistance and funding for 100 mayors to activate tens of thousands of young people ages 15 - 24 to design, produce, and govern urgent climate solutions in cities across the globe.
- The [Climate for Health Training](#) is a free, self-paced online program that equips health professionals with the knowledge, hands-on experience, and resources needed to address climate change in their homes, neighborhoods, workplaces, and communities.
- Use the [Extreme Heat Resource Hub](#) to discover actionable steps you can take to address the challenges of extreme heat -- from raising public awareness and strengthening healthcare system preparedness to advocating for heat-resilient communities.
- The [Smart Surfaces Coalition](#) helps cities make "smart" surface decisions by demonstrating the value of surfaces that manage the sun and rain. By using Smart Surfaces where appropriate, cities around the world can reduce extreme summer heat, minimize flooding, improve public health, create jobs, and advance equity—all while saving money.
- The SCPHA mini-grant program has funded various community projects, including rain gardens, cool pavement coatings, low-thermal paint murals with vegetation, and mapping and outreach projects that focus on extreme heat and the impacts of climate change.
- SCPHA has launched the Smart Surfaces Partnership Coalition, which includes organizations such as Columbia Green, Gills Creek Watershed Association, Solar United National, the University of South Carolina, the City of Columbia, and recipients of the mini-grant program. The Smart Surfaces Partnership Coalition aims to provide a forum for organizations to collaborate on addressing environmental and public health concerns related to water and air quality, energy efficiency, access to green space and vegetation, and local policy efforts.

Teamwork Makes the Dream Work - John Maxwell

What Can I Do?



Educate! Learn all you can about extreme heat and smart surfaces then share your knowledge. Some useful resources include:

- www.scpha.com/smart-surfaces
- smartsurfacescoalition.org
- www.apha.org/topics-and-issues/climate-health-and-equity/extreme-heat

Advocate! Talk about smart surfaces and energy burden with the public sector, private sector, and lawmakers, keeping populations particularly vulnerable to the impacts of extreme heat top of mind. Join a local nonprofit working on heat impacts.

Promote! Follow us on social media and share info with your friends:

- [linkedin.com/company/scpublichealthassociation](https://www.linkedin.com/company/scpublichealthassociation)
- linktr.ee/scsmartsurfaces
- [The Heat Rx podcast](#)

Provide! Be the example! You can start with the City of Columbia 'Beat the Heat - Plant a Tree' initiative. Learn more at <https://columbiagreen.org/beattheheat>.

Acknowledgements



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An extra, special thank you to our SCPHA Smart Surfaces Team. This initiative would not be possible without your dedication!

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About

Founded in 1921, South Carolina Public Health Association (SCPHA) is a statewide non-profit organization aimed at advancing the profession by serving Public Health Professionals who endeavor to improve population health.

Vision

To be the premier Public Health Organization for high quality professional development, advocacy, and networking opportunities.

Mission

- Enhance member benefits through the promotion of educational, mentoring, and networking opportunities;
- Provide a forum to convene our partners; and
- Advocate for healthy people and healthy communities.

