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New Report Finds Cool Roofs and Green Space Can Save Lives During Heat Waves in Washington, DC

Washington, DC– Reflective roofs and vegetation have long been known to improve energy efficiency, manage storm water runoff, and make buildings more comfortable. A new study by the Global Cool Cities Alliance, funded by a grant from the District Department of the Environment and the Department of Consumer and Regulatory Affairs, has identified a new benefit – saving lives during heat waves by keeping the District cooler.

Annually, heat kills more than 1500 people in the United States, more than any other natural disaster in an average year. The District is particularly susceptible to extreme heat events because its downtown is sometimes 10–15 degrees hotter on summer afternoons and stays warmer at night than surrounding rural areas. This so-called "urban heat island" effect is caused by the fact that cities tend to have more hot dark roofs, less vegetation, and more heat-generating human activity than rural areas.

In the 20 years between 1990 and 2009, the District experienced about 14 dangerously hot summer days each year. The District has experienced a marked increase in such days during the last three years, with 33 days in 2010, 28 days in 2011, and 27 days in 2012.

The District experienced its hottest month on record in July 2011, including a record 25 days above 90 degrees Fahrenheit. Extreme heat takes a disproportionate toll on people of color and low-income urban populations that often live in neighborhoods that have older, lower quality building stock, less tree cover, and fewer buildings with air conditioning.

"The health of our city's residents is a cornerstone of the Sustainable DC plan," said Bill Updike of the District Department of Environment. "This study shows that we can actually save the lives of our city's most vulnerable populations by also doing what is right for the planet."

The study found that installing more reflective and green roofs and planting more vegetation would have reduced the number of deaths by 6% to 7% during four local heat waves. Over the next decade, these cooling measures could save the lives of at least 20 District residents.

"We found that even seemingly small changes in temperature and humidity could shift weather conditions into less dangerous, more manageable types. For vulnerable populations like the elderly and sick, a little cooling can make a big

difference." said Dr. Laurence Kalkstein, President of Applied Climatologist Inc., professor at the Miller School of Medicine at the University of Miami and lead author of the report.

"The District continues to be a leader in addressing its urban heat island including a cool roof requirement in its energy code. Our study shows, though, that urban heat island reduction is truly a regional issue. We found that the District's cooling strategy actually helped Prince George's County stay cooler during extreme heat waves. Likewise, Arlington County's policies will affect District conditions. Regional collaboration is key," said Kurt Shickman, Executive Director of the Global Cool Cities Alliance.