

Keeping Your Cool: How Communities Across the Country are Reducing the Heat Island Effect

Thank you for joining us. We will start in a few minutes.

Please call in for audio: 855-210-5748



Keeping Your Cool: How Communities Across the Country are Reducing the Heat Island Effect

June 26, 2014

Hosted by:

U.S. EPA Heat Island Reduction Program



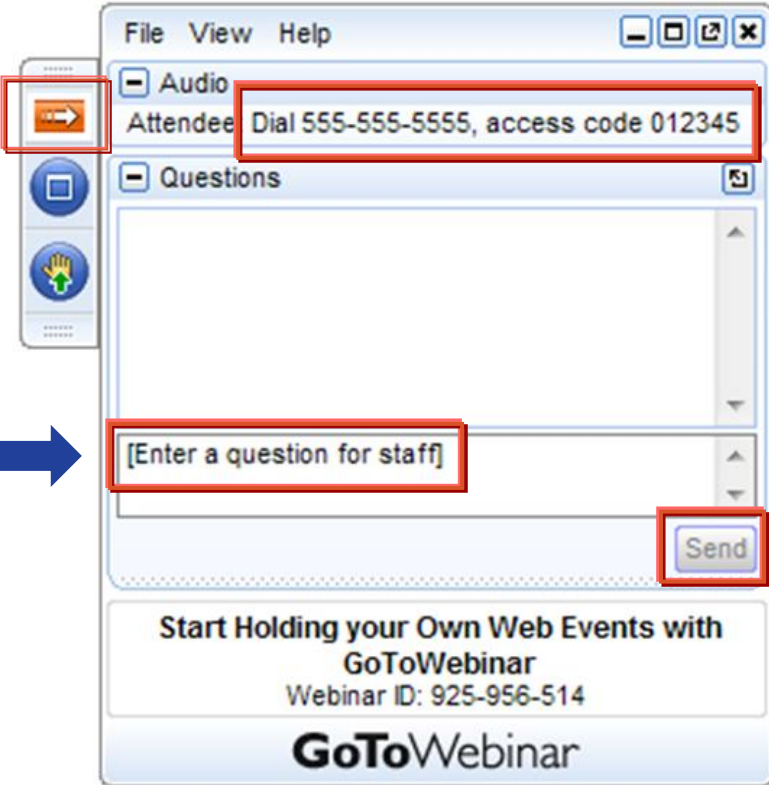
Webcast Agenda



- **Welcome and Introduction to Heat Islands**
Victoria Ludwig, EPA
- **Louisville Metro Government Office of Sustainability**
Urban Heat Island Reduction
Maria Koetter, Louisville, KY
- **UHI Mitigation: The Tucson Story**
Irene Ogata, Tucson, AZ
- **Hot City, Cool Surfaces**
David Fink, Climate Resolve, Los Angeles, CA
- **Q&A Session**

How to Participate Today

Open and close
your control
panel



Audio is only available
by telephone
Dial: 855-210-5748

Participants are on mute
Type in your questions
and indicate the speakers

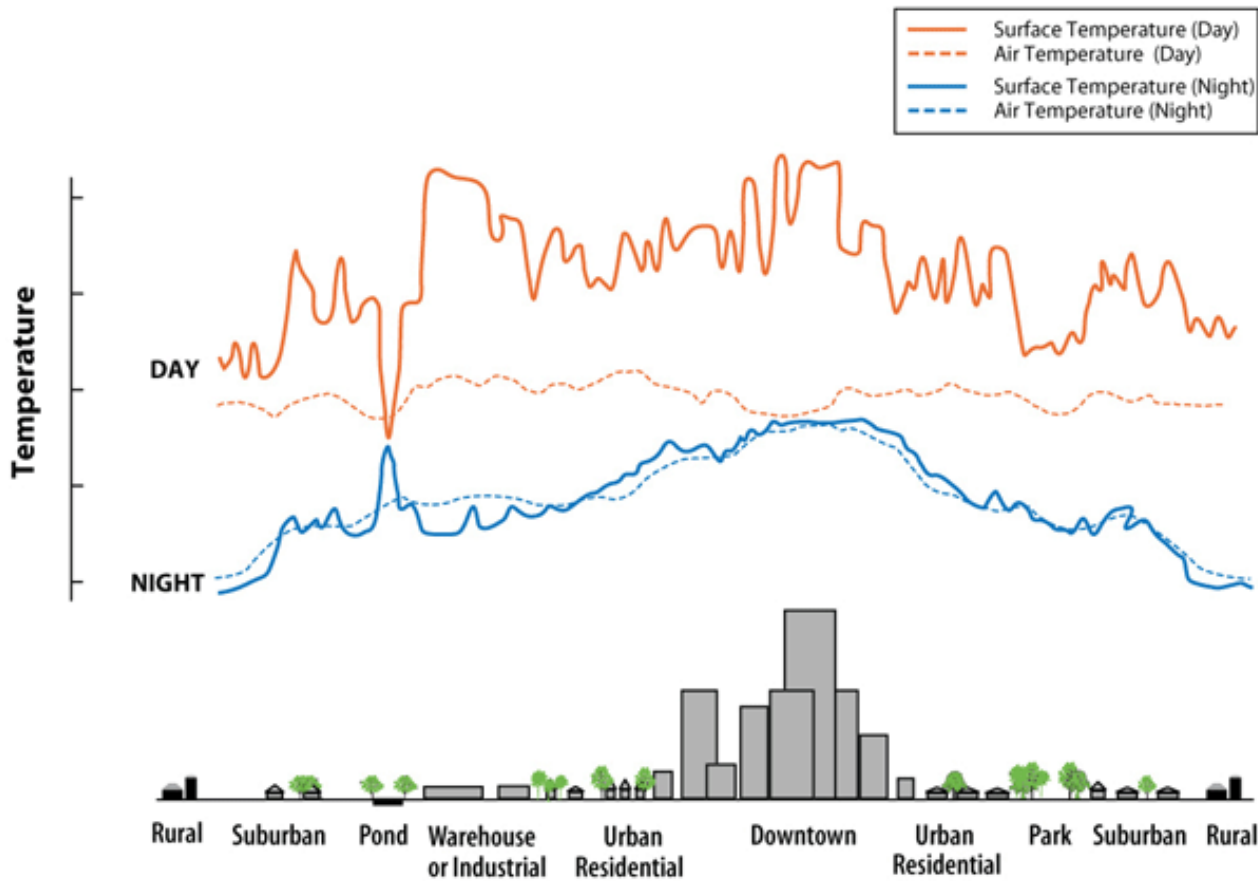


Hit "send" to
submit your
questions

If you experience technical difficulties, please contact
Wendy Jaglom at: Wendy.Jaglom@icfi.com

What is the Heat Island Effect?

- Micro-scale temperature differences between urban and rural areas
- Urban areas can be 2 – 22 ° F higher than rural areas



What Causes the Heat Island to Form?

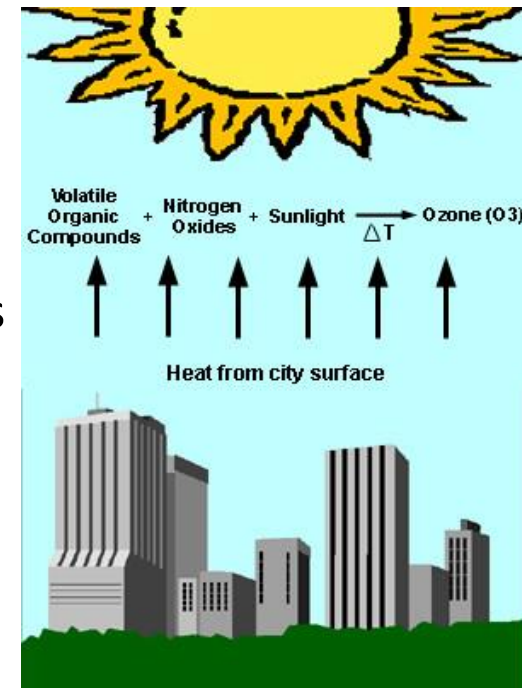


- **Reduced vegetation**
- **Materials used to build urban infrastructure**
- **Urban geometry**
- **Generation of waste heat (e.g., air conditioners, engines)**



Heat Island Impacts

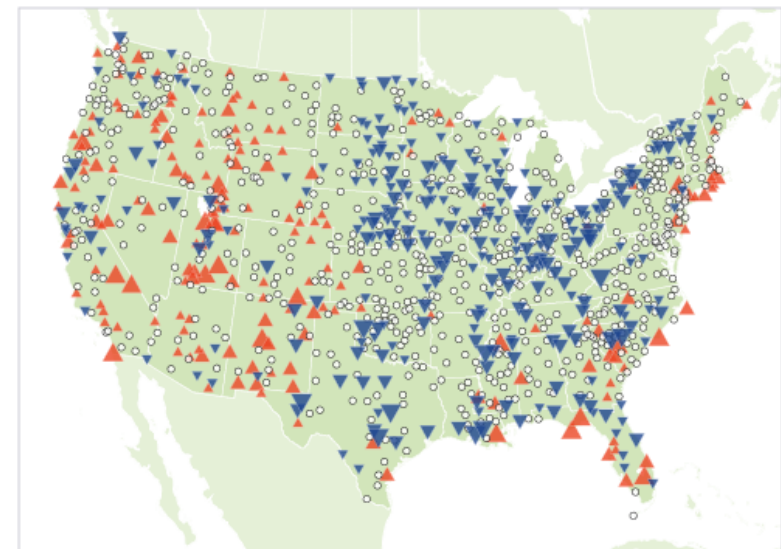
- **Increased energy use**
 - 5 – 10 % of summertime electricity demand cools heat islands
 - 1.5 – 2.0% E demand ↑ for every 1 °F ↑ in the summer
 - Longer peak periods; pressure on E grid; brownouts, blackouts
- **Air quality and greenhouse gas (GHG) emissions**
 - Increased GHG emissions
 - Increased air pollution
 - Increased ground-level ozone formation
- **Water quality**
 - Warmer water runoff = ecological shock in waterways
- **Human health**
 - Respiratory difficulties
 - Heat cramps, heat exhaustion
 - Non-fatal heat stroke/sun stroke
 - Heat related mortality



Climate Change and Heat Islands

- Climate models project increases in the frequency, intensity, and duration of extreme heat events in the decades ahead.
- Reducing the heat island effect today can help minimize impacts in the future:
 - health risks
 - energy demand
 - energy costs
 - air quality

Figure 4. Change in Unusually Hot Temperatures in the Contiguous 48 States, 1948–2013



Mitigation Strategies

- **Communities can reduce ambient air and surface temperatures while achieving many other environmental benefits by taking these common sense actions:**
 - **Trees and Vegetation**
 - **Green Roofs**
 - **Cool Roofs**
 - **Cool Pavements**



**HEAT ISLAND
REDUCTION
PROGRAM**

Benefits of Mitigation Strategies

- **Each mitigation strategy provides multiple benefits**
 - Heat island reduction
 - Reduced energy use
 - Reduced greenhouse gas emissions
- **Individual strategies provide additional benefits**
 - *Trees and Vegetation*: Stormwater benefits, reduced pavement maintenance (due to shading), quality of life benefits
 - *Green Roofs*: Improved comfort for occupants, stormwater benefits, quality of life benefits
 - *Cool Roofs*: Improved comfort for occupants
 - *Cool Pavements*: Stormwater benefits, public safety benefits, reduced tire noise



**HEAT ISLAND
REDUCTION
PROGRAM**

EPA's Heat Island Program



Program Overview



- **Mission**

The EPA Heat Island Reduction Program increases the number of programs and policies that include heat island mitigation measures to create comfortable and sustainable communities.

- **Heat Island Community**

- Policymakers, program designers
- Academia/researchers
- Industry
- General public
- Media
- Other Federal Agencies

Heat Island Program Resources

- **Website**, features include basic information on heat island topics, *calendar of events*, *heat island newsroom*, science corner and a variety of resources, <http://www.epa.gov/heatislands/>
- **Examples**, database provides info on more than 75 local and statewide initiatives to reduce heat islands and achieve related benefits, http://yosemite.epa.gov/gw/statepolicyactions.nsf/webpages/HIRI_Initiative_s.htm
- **Compendium of Strategies: Reducing Urban Heat Islands**, provides scientific background, mitigation strategies, case studies, and recommendations for additional resources, www.epa.gov/heatisland/resources/compendium.htm
 - » Heat Island Basics
 - » Trees and Vegetation
 - » Green Roofs
 - » Cool Roofs
 - » Cool Pavements
 - » Heat Island Reduction Activities
- **Webcasts**, online meetings based on request that cover topics such as local/regional urban heat island programs, new scientific findings, and upcoming meetings www.epa.gov/heatislands/resources/webcasts.htm
- **Newsletter**, to sign up, visit <http://www.epa.gov/heatisland/admin/listserv.htm>

EPA Contact Info



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EPA Heat Island Newsletter sign-up:

<http://www.epa.gov/heatisland/admin/listserv.htm>