

**U.S. EPA's State and Local Climate and Energy Webcast Series
Presents:**

**Improving Heat Health Resilience through Urban
Infrastructure Planning & Design**

Telephone call-in number: (855) 210-5748

Conference ID: 91339917

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



**State and Local
Climate and Energy Program**





**State and Local
Climate and Energy Program**

Improving Heat Health Resilience through Urban Infrastructure Planning & Design

August 19, 2015

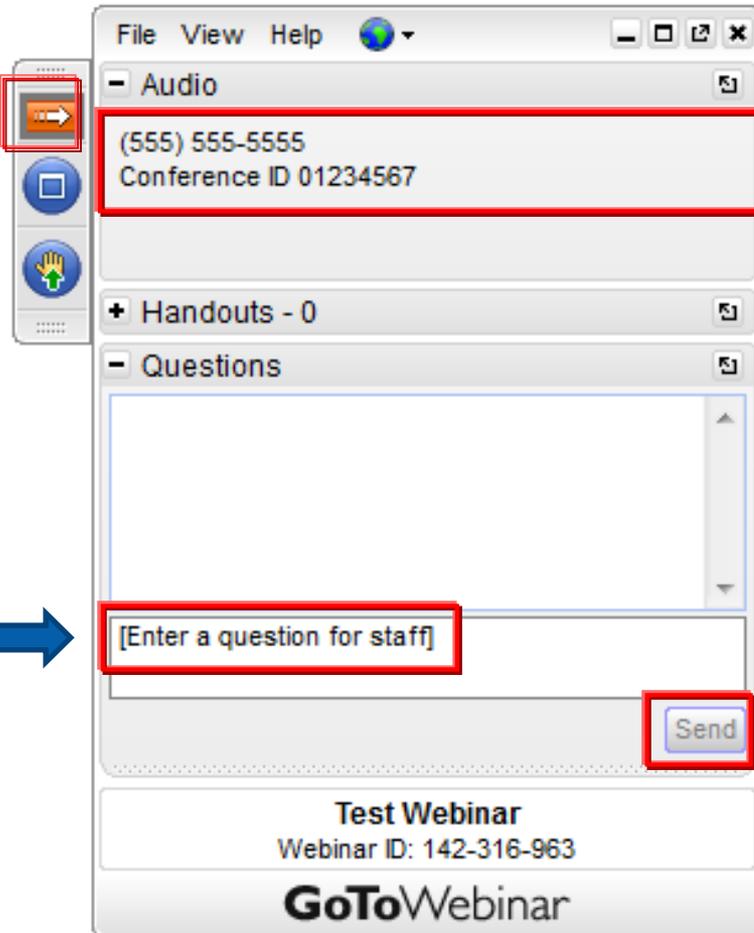
2:00 PM – 3:30 PM (EST)

Telephone call-in number: (855) 210-5748

Conference ID: 91339917

How to Participate Today

Open and close
your control
panel



Audio is only
available by
telephone

Dial: (855) 210-5748
Conf. ID: 91339917

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

Two-part webcast series

Part 1: Communicating the Connection between Climate Change and Heat Health

July 22, 2015

* Recordings and presentations are available now.

Part 2: Improving Heat Health Resilience through Urban Infrastructure Planning and Design

- **Audio recordings and files of all webcasts can be found at:**
epa.gov/statelocalclimate/web-podcasts/index.html

Webcast Agenda



- **Welcome and Introduction**
Victoria Ludwig, U.S. EPA State and Local Climate and Energy Program
- **Heat Islands, Public Health, and Urban Design: Connecting the Dots**
Victoria Ludwig, U.S. EPA State and Local Climate and Energy Program
- **Urban Warming and Health**
Jason Vargo, Ph.D.
Global Health Institute, University of Wisconsin-Madison
- **Urban Cool Islands for Public Health**
Pierre Gosselin, MD MPH
Quebec Public Health Institute
- **Q&A Session, Optional Feedback**

Files and audio recordings of today's webcast will be available at:
www.epa.gov/statelocalclimate/web-podcasts/index.html

Heat Islands, Public Health, and Urban Design: Connecting the Dots

Victoria Ludwig

**U.S. EPA State & Local Climate and Energy Program/
Heat Island Reduction Program**

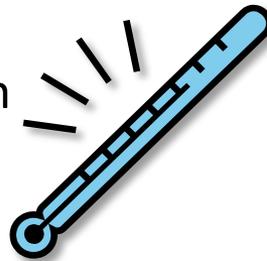


What Causes Heat Islands?



- Reduced evapotranspiration (= Dry)
- Thermal storage
- Urban canyons
- Waste heat

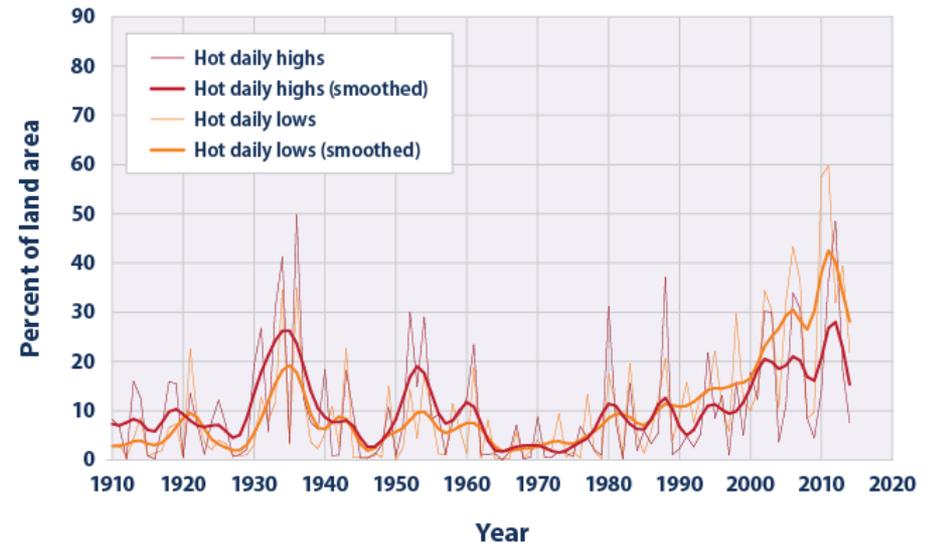
- High evapotranspiration
- Shade



Climate Change and Heat Islands

- Nationwide, unusually hot summer days (highs) have become more common over the last few decades
↓
- The occurrence of unusually hot summer nights (lows) has increased at an even faster rate. This trend indicates less “cooling off” at night
↓
- Climate models project increases in the frequency, intensity, and duration of extreme heat events in the decades ahead
↓
- Heat islands amplify extreme heat events

Area of the Contiguous 48 States with Unusually Hot Summer Temperatures, 1910–2014



Data source: NOAA (National Oceanic and Atmospheric Administration). 2015. U.S. Climate Extremes Index. Accessed March 2015. www.ncdc.noaa.gov/extremes/cei.

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climatechange/indicators.

Extreme Heat and Public Health

- **Heat is a serious danger:**
 - Respiratory problems
 - Heat cramps, heat exhaustion
 - Non-fatal heat stroke/sun stroke
 - Heat-related mortality
- **Extreme heat is often the most deadly weather-related event in a given year (compared to hurricanes, lightning, tornadoes, earthquakes, etc.).**
- **Overall, nearly 8,000 Americans suffered heat-related deaths since 1979**
 - Peaked in 2006, a year that was the second-hottest year on record in the U.S.

- *Few Americans have thought much about the health consequences of global warming*
- *Few Americans are aware of the current or projected future health impacts of global warming [for the U.S. or worldwide].*

Public Perceptions of the Health Consequences of Global Warming, Yale Project on Climate Change Communication

Who is the Most Vulnerable?

Reducing heat islands helps protect public health...now and in the future

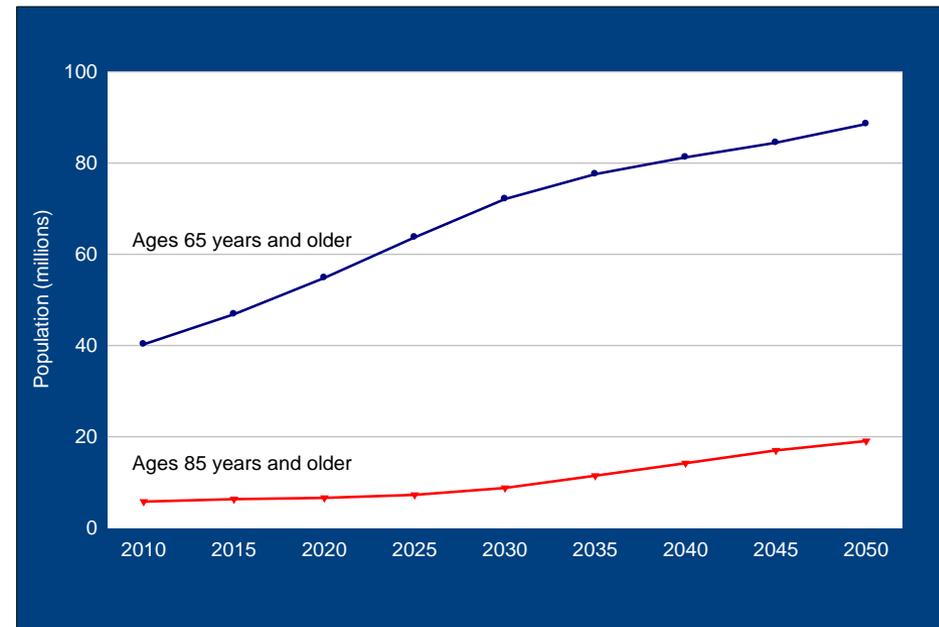
- Lower temperatures provide direct benefits to **vulnerable populations**:
 - Older adults,
 - Young children,
 - People with lower incomes
 - Outdoor workers
 - People with compromised health
- Indirect health benefits include **better air quality** due to reduced ozone formation
 - More than 9% of U.S. children and nearly 8% of older adults aged 65-75 currently have asthma. Exposure to ozone can exacerbate asthma.



Older Adults



- Older adults account for the majority of deaths from extreme heat events
- The population of older adults is growing
- 81% of older Americans live in metropolitan areas



Projected U.S. population of older adults, 2010-2050.

Infrastructure Planning Can Increase Resilience



- **Incorporating heat island mitigation measures in urban planning & design offers an opportunity to improve public health AND MORE:**
 - *Trees and Vegetation:* Better air quality, carbon storage
 - *Green Roofs:* Stormwater benefits, improved human comfort
 - *Cool Roofs:* Increased grid reliability, energy savings
 - *Cool Pavements:* Lower air temperatures, public safety benefits
 - *Smart Growth:* More vegetation, less paved areas



EPA's Heat Island Program



Program Overview



- **Mission**

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

- **Heat Island Community**

- Local and state policymakers/program designers
- Academia/researchers
- Other federal agencies
- Non-profit organizations
- Industry



Heat Island Program Resources

- **Website:** Basic information on heat island topics, *calendar of events*, *heat island newsroom*, science corner and more <http://www.epa.gov/heatislands/>
- **Examples:** Database of info on more than 75 local and state initiatives to reduce heat islands and achieve related benefits, [http://yosemite.epa.gov/gw/statepolicyactions.nsf/webpages/HIRI Initiative s.htm](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 links to other 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:** Cover topics such as local/regional urban heat island case studies, new scientific findings, and specific mitigation strategies, www.epa.gov/heatislands/resources/webcasts.htm
- **Newsletter:** To sign up, visit <http://www.epa.gov/heatisland/admin/listserv.htm>

EPA's State and Local Climate and Energy Program

Helping local local governments reduce GHGs and adapt to climate change

Key Guidance and Tools epa.gov/statelocalclimate

- Comprehensive Local Climate and Energy Website
- Local Government Climate and Energy Strategy Series on EE, RE, transportation, waste management, and community design topics
- Local Climate Action Framework:
 - A Step-by-Step Implementation Guide
- Effective Practices Tip Sheets
- Program Model Design Guide
- Webcasts and newsletter

Contact Information



Victoria Ludwig

U.S. Environmental Protection Agency
State and Local Climate and Energy Program

ludwig.victoria@epa.gov

Websites: epa.gov/statelocalclimate

epa.gov/heatisland

Heat Island Newsletter Sign-Up:

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

Webcast Agenda



- **Welcome and Introduction**
Victoria Ludwig, U.S. EPA State and Local Climate and Energy Program
- **Heat Islands, Public Health, and Urban Design: Connecting the Dots**
Victoria Ludwig, U.S. EPA State and Local Climate and Energy Program
- **Urban Warming and Health**
Jason Vargo, Ph.D.
Global Health Institute, University of Wisconsin-Madison
- **Urban Cool Islands for Public Health**
Pierre Gosselin, MD MPH
Quebec Public Health Institute
- **Q&A Session, Optional Feedback**

Files and audio recordings of today's webcast will be available at:

www.epa.gov/statelocalclimate/web-podcasts/index.html



Two-part webcast series

Part 1: Communicating the Connection between Climate Change and Heat Health

July 22, 2015, 2:00-3:30 PM

* Recordings and presentations are available now.

Part 2: Improving Heat Health Resilience through Urban Infrastructure Planning and Design

- **Audio recordings and files of all webcasts can be found at:**
epa.gov/statelocalclimate/web-podcasts/index.html