Welcome to the LIFE Webinar Series.
We will be starting soon.
Preparing for Heat Events in New York State

Neil Muscatiello
New York State Department of Health

August 21, 2019
1:30 p.m. – 2:30 p.m. ET
LIFE, the Low-Income Forum on Energy, is a unique statewide dialogue that brings together organizations and individuals committed to addressing the challenges and opportunities facing low-income New Yorkers as they seek safe, affordable and reliable energy.

Supported by the New York State Public Service Commission and the New York State Energy Research and Development Authority (NYSERDA), the LIFE dialogue encourages an interactive exchange of information and collaboration among the programs and resources that assist low-income energy consumers.
Monthly webinars

Thursday, September 19, 2019, 1:30 - 2:30 p.m. ET
Connecting People to Services – Using myBenefits.ny.gov as a Resource

Wednesday, October 16, 2019, 1:00 - 3:00 p.m. ET
HEAP Updates for the 2019-2020 Heating Season

Monthly email newsletter

Sign up at nyserda.ny.gov/LIFE – “Join the email list.”

Social media

LinkedIn: Low-Income Forum on Energy
Twitter: @LIFEnys
Find more information on the website
nyserda.ny.gov/LIFE

Join the mailing list
nyserda.ny.gov/LIFE – “Join the email list.”

Newsletter suggestions, webinar ideas, event announcements
LIFE@nyserda.ny.gov

Contact LIFE
Phone: 866-697-3732 – Request “Low-Income Forum on Energy”
Email: LIFE@nyserda.ny.gov
Click on the small arrow to the left of “Q&A” to open the text field. Type your question into the text field and click “send.”
1. Click on the “Chat” icon on the bottom menu to activate the chat function.
2. The chat function will appear in the middle right portion of your screen.
Preparing for Heat Events in New York State

Neil Muscatiello
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LIFE Webinar Series
August 21, 2019
ClimAID Technical Report

- Heat waves more frequent, intense and longer in duration
- Likely increases in precipitation overall, as well as brief, intense storms
- Rising sea levels “extremely” likely
NYS Temperature and Precipitation Projections* (NYS ClimAID, 2014)

Region 1: Western New York Great Lakes Plain

<table>
<thead>
<tr>
<th>Region</th>
<th>Baseline</th>
<th>2020s</th>
<th>2100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp.</td>
<td>47.7 °F</td>
<td>+1.8 to 4.0 °F</td>
<td>+4.6 to 13.8 °F</td>
</tr>
<tr>
<td>Precip.</td>
<td>34.0 in</td>
<td>0 to +8%</td>
<td>-3 to +24%</td>
</tr>
</tbody>
</table>

Region 2: Catskill Mountains and West Hudson River Valley

<table>
<thead>
<tr>
<th>Region</th>
<th>Baseline</th>
<th>2020s</th>
<th>2100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp.</td>
<td>50.0 °F</td>
<td>+1.6 to 3.5 °F</td>
<td>+4.3 to 12.6 °F</td>
</tr>
<tr>
<td>Precip.</td>
<td>46.0 in</td>
<td>-1 to +10%</td>
<td>-6 to +24%</td>
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</table>

Region 3: Southern Tier

<table>
<thead>
<tr>
<th>Region</th>
<th>Baseline</th>
<th>2020s</th>
<th>2100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp.</td>
<td>47.5 °F</td>
<td>+1.8 to 3.8 °F</td>
<td>+4.5 to 13.8 °F</td>
</tr>
<tr>
<td>Precip.</td>
<td>35.0 in</td>
<td>-4 to +9%</td>
<td>-2 to +26%</td>
</tr>
</tbody>
</table>

Region 4: NYC and Long Island

<table>
<thead>
<tr>
<th>Region</th>
<th>Baseline</th>
<th>2020s</th>
<th>2100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp.</td>
<td>54.6 °F</td>
<td>+1.5 to 3.2 °F</td>
<td>+4.2 to 12.1 °F</td>
</tr>
<tr>
<td>Precip.</td>
<td>49.7 in</td>
<td>-1 to +10%</td>
<td>-6 to +25%</td>
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</table>

Region 5: East Hudson and Mohawk River Valleys

<table>
<thead>
<tr>
<th>Region</th>
<th>Baseline</th>
<th>2020s</th>
<th>2100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp.</td>
<td>47.6 °F</td>
<td>+1.7 to 3.7 °F</td>
<td>+4.4 to 13.6 °F</td>
</tr>
<tr>
<td>Precip.</td>
<td>38.6 in</td>
<td>-1 to +10%</td>
<td>-1 to +26%</td>
</tr>
</tbody>
</table>

Region 6: Tug Hill Plateau

<table>
<thead>
<tr>
<th>Region</th>
<th>Baseline</th>
<th>2020s</th>
<th>2100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp.</td>
<td>45.4 °F</td>
<td>+1.9 to 3.9 °F</td>
<td>+4.5 to 13.9 °F</td>
</tr>
<tr>
<td>Precip.</td>
<td>42.6 in</td>
<td>0 to +8%</td>
<td>+1 to 26%</td>
</tr>
</tbody>
</table>

Region 7: Adirondack Mountains

<table>
<thead>
<tr>
<th>Region</th>
<th>Baseline</th>
<th>2020s</th>
<th>2100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp.</td>
<td>39.9 °F</td>
<td>+1.8 to 3.8 °F</td>
<td>+4.4 to 13.9 °F</td>
</tr>
<tr>
<td>Precip.</td>
<td>40.8 in</td>
<td>0 to +9%</td>
<td>-2 to +26%</td>
</tr>
</tbody>
</table>

* Compared to baseline time period – 1971-2000
Impact of Climate Change on Human Health

- Heat-related illness and death, cardiovascular failure
- Injuries, fatalities, mental health impacts
- Asthma, cardiovascular disease
- Severe Weather
- Air Pollution
- Malaria, dengue, encephalitis, hantavirus, Rift Valley fever, Lyme disease, chikungunya, West Nile virus
- More Extreme Weather
- Changes in Vector Ecology
- Extreme Heat
- Respiratory allergies, asthma
- Forced migration, civil conflict, mental health impacts
- Environment Degradation
- Increasing Allergens
- Water and Food Supply Impacts
- Malnutrition, diarrheal disease
- Water Quality Impacts
- Cholera, cryptosporidiosis, campylobacter, leptospirosis, harmful algal blooms

Source: CDC
Funding

- Assess health risks of climate change
- Identify vulnerable populations
- Implement adaptations and interventions to minimize health risks
- Explore heat-health associations
- Use novel sources (i.e., remote sensing) of data for enhanced exposure assessment
- Communicate information

- Heat vulnerability
- Cooling centers
- Also, health impacts of extreme weather (e.g., hurricanes)
- Communicate information

- Enhance environmental health surveillance capacity
- Track environmentally-related health outcomes, exposures, hazards
- Communicate information
Extreme Heat in New York State

• Annual average temperatures have increased by over 2°F since 1970

• Over the next century, average summertime (June-August) temperatures in NYS are projected to increase between 3.6 to 10.8°F

Temperature anomaly is a departure from the 30-year average for the base-period (1980-2010). Green is cooler than the norm while red is warmer than the norm.
Heat & Health
Impacts and Heat Vulnerability
NYS EPHT Portal

Available at: https://www.health.ny.gov/environmental/public_health_tracking/
Heat stress tends to occur most often during the warmest months of the year.
Risk of Hospitalizations/Emergency Department Visits in NYS 2008-2012

Why Identify Vulnerability to Heat?

• All at risk, but some more vulnerable

• Plan targeted interventions and provide sufficient adaptation resources

• Impacts largely preventable: adaptive measures or behavior modifications
Identifying Heat Vulnerability in NYS

• Part of a NYSERDA-funded grant

• Goals:
  – Identify community level factors that may contribute to heat vulnerability
  – Develop a heat vulnerability index (HVI) based on these factors

• Evaluate spatial patterns in socio-demographic and land use variables associated with heat-related illness in previous studies

• Assist in identifying areas with populations that may be at increased risk of heat-related illness
Heat Vulnerability Index: NYS
Heat Adaptations – Resources and Partnerships
NYSDOH Webpage Resources

• Climate, Weather and Health
  https://www.health.ny.gov/environmental/weather/

• Extreme Heat
  https://www.health.ny.gov/environmental/emergency/weather/hot/

• County Heat and Health Profiles
  https://www.health.ny.gov/environmental/weather/profiles/

• Other resources related to the public health impacts of weather on health
County Heat and Health Profile Reports

Local health departments, county emergency planning offices and local governments can use this information to support efforts toward mitigating the impacts of extreme heat. The county profiles provide a picture of temperature trends and future projections, heat-related health effects, population and environmental vulnerability, and availability of adaptation resources for each county, including New York City.

Questions or comments: exta@health.ny.gov

Department of Health
County Heat and Health Profiles

Exposure: Heat

Sensitivity: Health

Figure 1b. Summer Temperature Anomalies in Cortland County, 1979 to 2016

A temperature anomaly is a departure from a reference value or long-term average. Reference value used is a 30-year norm (1983-2012). A positive anomaly indicates that the observed temperature was warmer than the reference value, while a negative anomaly indicates that the observed temperature was cooler than the reference value.

Figure 2a. Heat Related Illness Hospitalizations & ED Visit rates, Cortland County, May to Sep. 2008-2012

Rate per 100,000 Persons

Maximum Temperature (°F)
County Heat and Health Profiles

Vulnerability: Community

Adaptive Capacity: What to Do
Cooling Centers

https://www.health.ny.gov/environmental/weather/cooling/

New York’s Environmental Public Health Tracking (EPHT) Program focuses on tracking environmental and health patterns and trends. Environmental Public Health Tracking is a national program led by the Centers for Disease Control and Prevention. It is intended to improve access to environmental health information and support research, programs and policies that may help protect our communities.

https://www.health.ny.gov/environmental/public_health_tracking/
Threshold Analysis

At the pre-existing NWS threshold of 100°F (37.8°C), the risk ratio for heat stress was 3.727 while the risk ratio for other health outcomes ranged from 1.727 for dehydration, 1.534 for AKF and 1.412 for CVD.

In contrast, at a reduced heat advisory criterion of 95°F (35°C), the risk ratio for heat stress is 1.927 and ranges from 1.436 for dehydration, 1.329 for AKF and 1.290 for CVD.
Office of Temporary and Disability Assistance
Home Energy Assistance Program

Distribution of HEAP Benefits and Illness

NYS Cold vs. Heat-Related Hospitalizations, 2012-16

Cold-Related Hospitalizations: 6851
Heat-Related Hospitalizations: 7055

% Average Total Benefits, 2015-16

Heating Benefits: 99.41%
Cooling Benefits: 0.59%
**HEAP Year-to-Year Cooling Benefit Comparison**

<table>
<thead>
<tr>
<th>Year</th>
<th>Funding Requested</th>
<th>Benefits</th>
<th>Obligations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-2017</td>
<td>~$3,000,000</td>
<td>4,079</td>
<td>$2,803,696</td>
</tr>
<tr>
<td>2017-2018</td>
<td>~$3,000,000 (plus addl. ~$2.4 mil)</td>
<td>8,039</td>
<td>$5,490,075</td>
</tr>
<tr>
<td>% Increase</td>
<td>----</td>
<td>49.3%¹</td>
<td>48.9%¹</td>
</tr>
<tr>
<td>2018-2019</td>
<td>~$6,000,000</td>
<td>?</td>
<td>?</td>
</tr>
</tbody>
</table>

¹ Reflects increase in benefits provided and funding used from 2016-2017 to 2017-2018
NYSDEC Climate Smart Communities

- **275 Registered** (since 2009)
  - ~7.9 million people live in these “pledged” communities

- **24 Certified** (since 2014)
  - Leaders who have documented progress
  - 885 certification actions approved
Public Health Live - Webinars

• Monthly webcast providing FREE continuing education credits on current public health issues. Webcasts are available to public health and health care professionals interested in furthering their knowledge of public health.

• Two to date
  – Preparing for Extreme Heat in New York State (June 15, 2017)
  – Climate Smart Communities: Connections with Public Health (May 16, 2019)

https://www.albany.edu/sph/cphce/phl.shtml
Acknowledgments

• CEH staff and students and other DOH staff

• Federal, state and local external partners and funders
Questions or Comments?

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Save the Date:

May 19-20, 2020
LIFE 2020 Statewide Conference
Albany NY

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