



National Institute of Environmental Health Sciences  
*Your Environment. Your Health.*

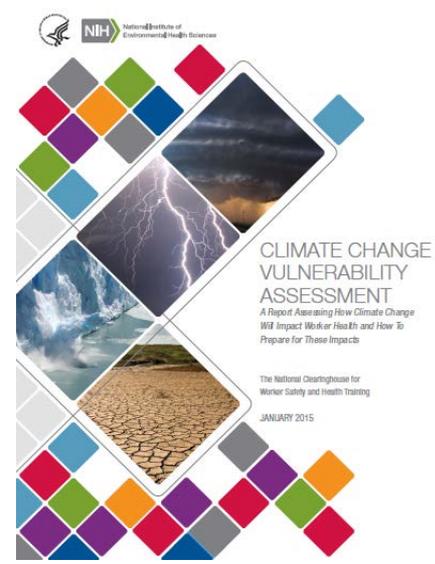
# Climate Justice and Public Health: Update on data and tools for communities

*John M. Balbus, M.D., M.P.H.  
National Institute of Environmental Health Sciences*

HHS Climate Justice Meeting  
8 June, 2015

## What we have heard....

- 2012 EJ workshop, NIEHS
  - Health in all policies, HIA
  - Outreach to historically black colleges to partner with local PH departments
  - Identify most vulnerable communities
  - Address infrastructure inadequacies
- 2014 healthcare facilities workshop, DC
  - Link to ACA and community benefits
  - Include risks from Superfund and Brownfields sites
- 2014 WTP Climate Change workshop
  - Training needs for exposed workers
  - Balance individual and community resiliency



## Stakeholders are increasing demands for climate and health research and decision support

- Extensive stakeholder input over five years has identified need for dataset access, dedicated research funding, public health and medical capacity building and training
- State, Local and Tribal Leaders Task Force on Climate Preparedness and Resilience
  - 2014 Report calls for data, tools, decision support for public health
- 2015 Dean's Roundtable- call for improved access to relevant data; dedicated research and training funding

**CONCERN: Low public awareness of the health implications of climate change**

## National Public Health Week Focus for 2015: Climate Change

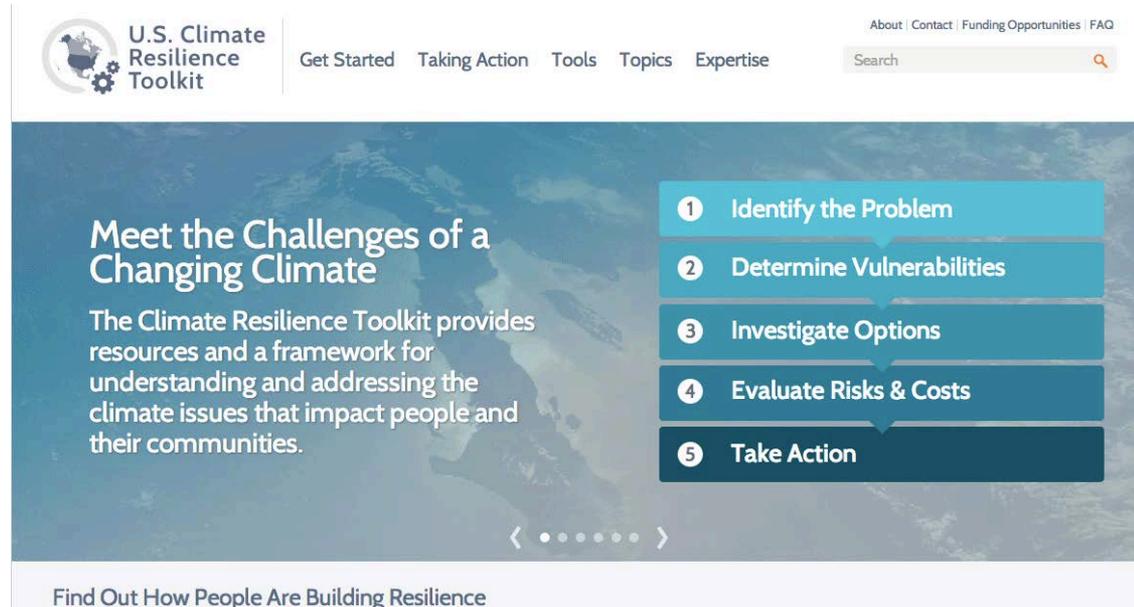
- Release of Draft Climate Health Assessment
- 20 health resilience tools on WH Climate Resilience website
- Sustainable and Climate Resilient Health Care Facilities Toolkit
- 150 health-related datasets on [climate.data.gov](http://climate.data.gov)
- 14 commitments from private sector, including Google, Microsoft, Esri, 427.org
- Roundtable and commitments: Deans of Medical, Nursing, Public Health Schools



*A “C” change....*

# The U.S. Climate Resilience Toolkit

- Toolkit.climate.gov
- Health sector launched during National Public Health Week, now with 30 tools



- Organized by health topic (heat, infectious diseases, etc.)
- Selected tools highlighted for each health topic
- Continuous development

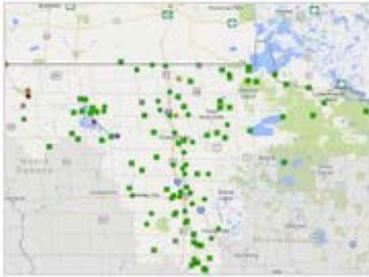
# Tools

Clear Filters

Filter by parent topic: ▼

Filter by functionality: ▼

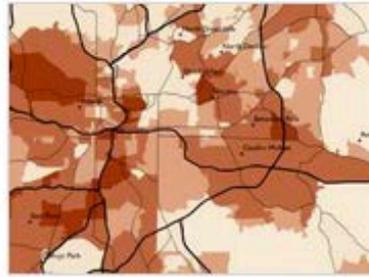
Tools are available to help you manage your climate-related risks and opportunities, and to help guide you in building resilience to extreme events. Browse the list below, or filter by topic and/or tool functionality in the boxes above. To expand your results, click the Clear Filters link.



## Advanced Hydrologic Prediction Service

This comprehensive suite of graphical forecast products shows a range of information on current and projected river levels for almost 4,000 stations in the contiguous United States.

[Read more >](#)



## Assessing Health Vulnerability to Climate Change: A Guide for Health Departments

Health departments can consult this document for guidance on conducting climate and health vulnerability assessments.

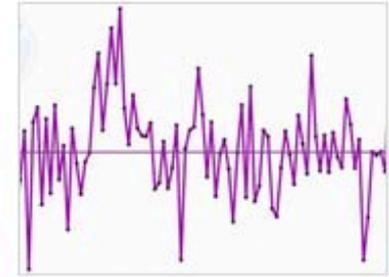
[Read more >](#)



## Benefits Mapping and Analysis Program—Community Edition (BenMAP-CE)

Users can download and use this computer program to estimate the health impacts and economic value of changes in air quality.

[Read more >](#)



## Climate at a Glance

Generate graphs and maps of monthly temperature and precipitation values, ranks, and anomalies for the globe, contiguous U.S., states, climate divisions, and selected cities.

[Read more >](#)



## Coastal Change Analysis Program (C-CAP) Land Cover Atlas



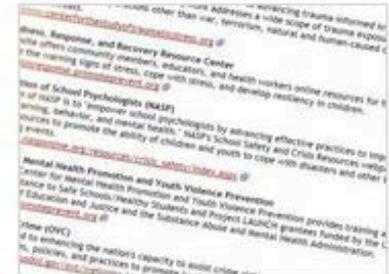
## Community Health Resilience Guide and Toolset

Communities can use this site to

Facility Name	Five Star Date
PFC WEST MOBILE	01/01/2010-12/31/2013
RCO PRINCETON	01/01/2010-12/31/2013
OO ENTERPRISE	01/01/2010-12/31/2013
PFC DANABA VALLEY	01/01/2010-12/31/2013
FLORENCE DIALYSIS	01/01/2010-12/31/2013
AN EAST 17TH ST ANGLSTON	01/01/2010-12/31/2013
PFC JACKSON/TOWNSHIP	01/01/2010-12/31/2013
OO SUFALLA	01/01/2010-12/31/2013
VALKER COUNTY DIALYSIS	01/01/2010-12/31/2013
BEESDORF/KOENIG CENTER	01/01/2010-12/31/2013
PCO PRATTVILLE	01/01/2010-12/31/2013
PFC MONTGOMERY	01/01/2010-12/31/2013
PFC PRICHARD	01/01/2010-12/31/2013
RCO MOBILE	01/01/2010-12/31/2013

## Dialysis Facility Comparison

Users can search a list of all dialysis facilities registered with Medicare to



## Disaster Behavioral Health Information Series

Links to resources and



Topics > Human Health > Increased Levels of Air Pollutants >



## Increased Levels of Air Pollutants

Climate variability and change contribute to many negative changes in air quality, including increased ground-level ozone (also known as smog) and higher concentrations of small particulate matter that can reach the deepest parts of the lung.<sup>1</sup> Such pollution has been linked to cancer, asthma, allergies, impaired lung development in children, and other health impacts. Warmer and drier conditions associated with climate change can increase the range and severity of wildfires.<sup>1</sup> Wildfire smoke contains particulate matter, carbon monoxide, and other harmful emissions that significantly reduce air quality both locally and in areas downwind of fires. Climate change can also lead to higher pollen counts and longer pollen seasons.<sup>1</sup>

### Air pollutant-related health effects

Ground-level ozone and particulate matter are associated with many health problems, such as diminished lung function, more frequent hospital admissions and emergency department visits for asthma, and increases in premature deaths.<sup>1</sup>

Wildfire Smoke has Widespread Health Effects



This satellite image shows smoke from forest fires in Quebec, Canada, during July 2002 (red circles). The fires resulted in up to a 30-fold increase in the concentration of fine particles in the air in Baltimore, Maryland, a city nearly a thousand miles downwind. These fine particles—which are extremely harmful to human health—not only affect outdoor air quality, but also penetrate indoors, increasing the long-distance effects of fires on health.

### Browse Topics

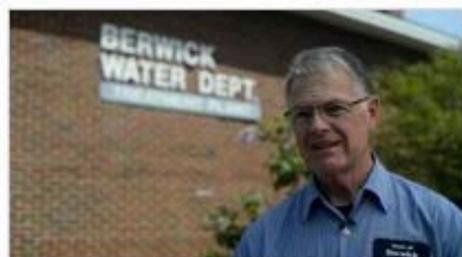
- > Coastal Flood Risk
- > Ecosystem Vulnerability
- > Food Resilience
- ▼ Human Health
  - Extreme Heat
  - Extreme Events
  - [Increased Levels of Air Pollutants](#)
  - Food- and Water-Related Threats
  - Changing Ecosystems and Infectious Diseases
- + Building Health Care Sector Resilience
- > Water Resources

### Tools:

- [Energy Savings Plus Health: Indoor Air Quality Guidelines for School Building Upgrades](#) >
- [Benefits Mapping and Analysis Program—Community Edition \(BenMAP-CE\)](#) >
- [Urban Tree Canopy Assessment](#) >

## Small Water Utility Builds Flood Resilience

Based on their locations, many water and wastewater utilities face an inherent risk of flooding. Here's how a small drinking water utility recognized its risk and took steps to reduce it.



Chris Weismann, Chief Operator of the Water Department in Berwick, Maine.

### Ask the tough question

By design, water and wastewater utilities are often located near rivers and in flood-prone areas. Chris Weismann of the Berwick, Maine, Water Department was worried. As chief operator, Weismann had seen two previous storms threaten his utility's ability to provide drinking water to his town of 1,000 residents. "When you realize that a flood could come and bring your utility to an end in a couple of hours, and you'd be down for potentially weeks, that makes you want to know, what can I do to avoid this?," Weismann asked. Although

concerned, Weismann was also bold. He posed this question to the U.S. Environmental Protection Agency (EPA), and the result was a Berwick/EPA pilot project to help the utility face and address its flooding risk.

### Steps to Resilience:

Step 1: Identify the Problem

Step 2: Determine Vulnerabilities

Step 3: Investigate Options

Step 4: Evaluate Risks & Costs

Step 5: Take Action

### Tools:

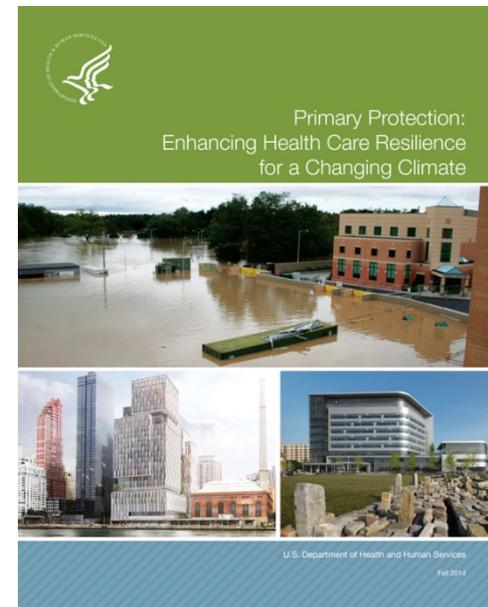
[Flood Resilience: A Basic Guide for Water and Wastewater Utilities](#) >

### Topic:

[Coastal Flood Risk](#) > [Sea Level Rise](#) >

# Sustainable and Climate Resilient Health Care Facilities Initiative

- 3 Part Background “Guide”
- 5 Element Framework for Healthcare Facility Resilience
  - Checklists and resources
- Compendium of Resources
- Case Studies
- Bibliography
- Available at [toolkit.climate.gov](http://toolkit.climate.gov)





Home > Human Health > Building Health Care Sector Resilience >

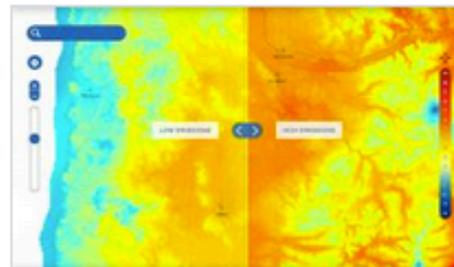
## Element 1: Climate Risks and Community Vulnerabilities Assessment

### Tasks for Element 1:

- *Maintain up-to-date data on climate hazards and community climate and health vulnerabilities, and use hazard vulnerability analyses to inform health services and infrastructure planning today and for the future (out to 20–50 years).*
- *Develop a comprehensive understanding of the role of the hospital, long-term care, and ambulatory settings within the community during and after identified extreme weather events, and use this knowledge to inform resilience strategies.*

### Recognize your climate risks

Identifying climate risks and community vulnerabilities is an important step in defining health care delivery system resilience. Health care organizations are encouraged to conduct a climate risk assessment so that they may better understand and catalog present and future extreme weather risks. Hospital and health systems that operate multiple campuses (in many instances across varying climate zones) should complete climate risk assessments for each of their sites. Hospital systems should carefully consider how each campus interacts with its community, as well as how



ClimateData.us gives users a way to check temperatures projected for cities in the contiguous United States in coming decades.

### Browse Topics

- › Coastal Flood Risk
- › Ecosystem Vulnerability
- › Food Resilience
- ▼ Human Health
  - Extreme Heat
  - Extreme Events
  - Increased Levels of Air Pollutants
  - Food- and Water-Related Threats
  - Changing Ecosystems and Infectious Diseases
  - Building Health Care Sector Resilience
    - **Element 1: Climate Risks and Community Vulnerabilities Assessment**
    - Element 2: Land Use, Building Design, and Regulatory Frameworks
    - Element 3: Infrastructure Protection and Resilience
    - Element 4: Essential Clinical Care Service Delivery Planning



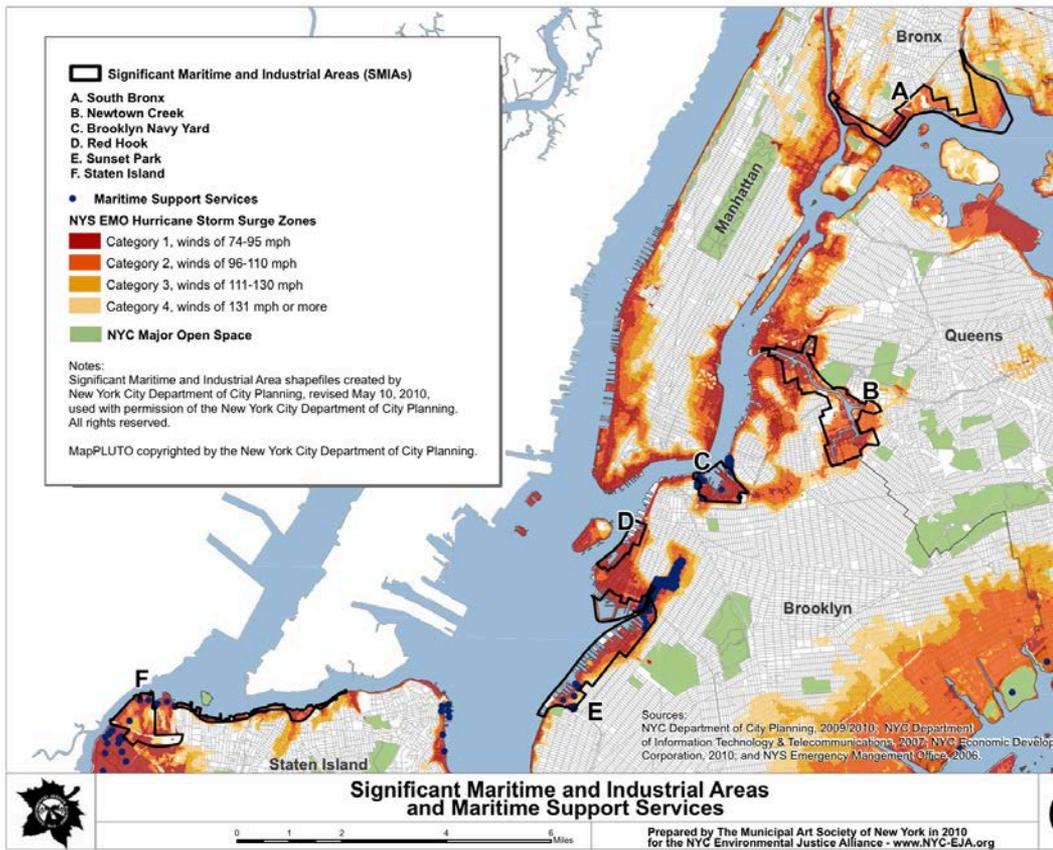
# Climate and Health Data Innovation Challenge Series

- Sponsored by HHS, NIH, Esri
- Organized around four core information needs:
  - Climate impact and co-benefit research questions
  - Tools to support individual and community vulnerability analyses
  - Apps and tools to show benefits of sustainable and healthy behaviors
  - Apps and tools to support clinical and biomedical research facility climate resilience

## Proposed NIEHS Climate and Health Challenge

- Focus on federal datasets as basis for challenge
  - Historical and projected climate, health surveillance, utilization, etc.
- Invite private sector to include additional datasets
- Visualize vulnerability from interactions between climate change (i.e., sea level rise, extreme events) and toxic exposures
  - Hazardous waste sites and brownfields
  - Pesticides
  - Air pollutants
  - Harmful algal blooms

# Vulnerability of NYC neighborhoods to chemical hazards and extreme events



**Green**  
Energy, the Environment and the Bottom Line

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## As Floods Recede, Superfund Neighborhoods Fear Contamination

By MIREYA NAVARRO NOVEMBER 13, 2012 5:23 PM

Davis & Warshaw The flooded loading bay at Davis & Warshaw, a plumbing supply business in Maspeth, Queens. Workers are handling the cleanup as if the site w

## Summary

- New web pages provide easier access and use of federal datasets and new tools
- Innovation challenge may add additional capacity and resources
- Maps and visualization tools can help communities and policy makers better understand vulnerabilities, risks and benefits of interventions

[Toolkit.climate.gov](http://www.toolkit.climate.gov)

<http://www.esri.com/landing-pages/industries/health/climate-change-app-challenge>



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# ***THANK YOU!***

## **Questions?**



National Institute of  
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National Toxicology Program  
U.S. Department of Health and Human Services

