



# HHS Climate Adaptation Plan

2014

# HHS Climate Adaptation Plan

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## 1.0 Policy Statement Affirming HHS's Commitment

When President Obama signed [Executive Order 13653](#), he committed “to prepare the nation for the impacts of climate change by undertaking actions to enhance climate preparedness and resilience.” Given our mission to protect the nation’s health and well-being, the [U.S. Department of Health and Human Services](#) (HHS) considers climate change to be one of the top public health challenges of our time.

HHS’s responsibility is to protect the health of all Americans and provide essential human services, especially for those who are least able to help themselves. Recent reports from [the U.S. Global Change Research Program](#) (USGCRP) and [Intergovernmental Panel on Climate Change](#) (IPCC) indicate that climate change is already negatively affecting human health in the United States, and it is likely to have greater harmful effects on human health in the future. Hazards linked to climate change include more frequent and severe heat waves, droughts, wildfires, heavy rainfall, and flooding; changes in the rates and ranges of infectious diseases and allergens; and threats to communities from rising sea levels and coastal erosion. Although climate change may reduce certain health risks, it will likely worsen many existing health threats while also introducing new problems. Individuals and communities with underlying vulnerabilities such as being impoverished, experiencing disproportionate and adverse environmental exposures, having pre-existing physical and behavioral health conditions, being very young or old, or living in geographically vulnerable areas, will be at the greatest risk of harm.

Because Green House Gas emissions are the primary driver to climate change, HHS has a critical role to play in reducing our own emissions, while also providing tools and technical assistance to prepare for and adapt to climate change to ensure our ability to sustain HHS operations. The [HHS Strategic Plan](#) includes a goal to improve environmental, energy, and economic performance to promote sustainability. Our [Strategic Sustainability Performance Plan](#) operationalizes this goal by demonstrating the actions HHS plans to take to promote sustainability across our Department and our accomplishments in the past fiscal year. In addition, HHS sponsors activities in the [President’s Climate Change Action Plan](#) to promote state and local health department adaptation planning and to provide resource packet for health care providers. Through these actions, HHS will set the example of responsible stewardship and improve individual and community resilience to support a healthier future for the American people.

This Adaptation Plan confirms HHS’s commitment to preparing for the challenges posed by climate change. HHS is committed to leading the way on implementation of sustainable operations, promoting climate-resilient health and human services, and supporting scientific research focused on the effects of climate change on human health and well-being, as well as effective risk reduction and adaptation measures.

HHS understands that the health and well-being of people depends in part on healthy and sustainable environments, both natural and man-made. HHS is committed to taking a leadership role in researching and communicating the relationship between the health of our citizens and the health of our environment. Through our past accomplishments and future commitments, the U.S. Department of Health and Human Services will lead the way toward a healthy future for all Americans.

Sylvia M. Burwell  
Secretary, U.S. Department of Health and Human Services

## 2.0 Assessment of Risks to HHS Mission

The mission of the U.S. Department of Health and Human Services (HHS) is to enhance the health and well-being of Americans by providing for health and human services and by fostering sound, sustained advances in the sciences underlying medicine, public health, and social services. HHS accomplishes its mission through several hundred programs and initiatives that cover a wide spectrum of activities, serving the American public at every stage of life.

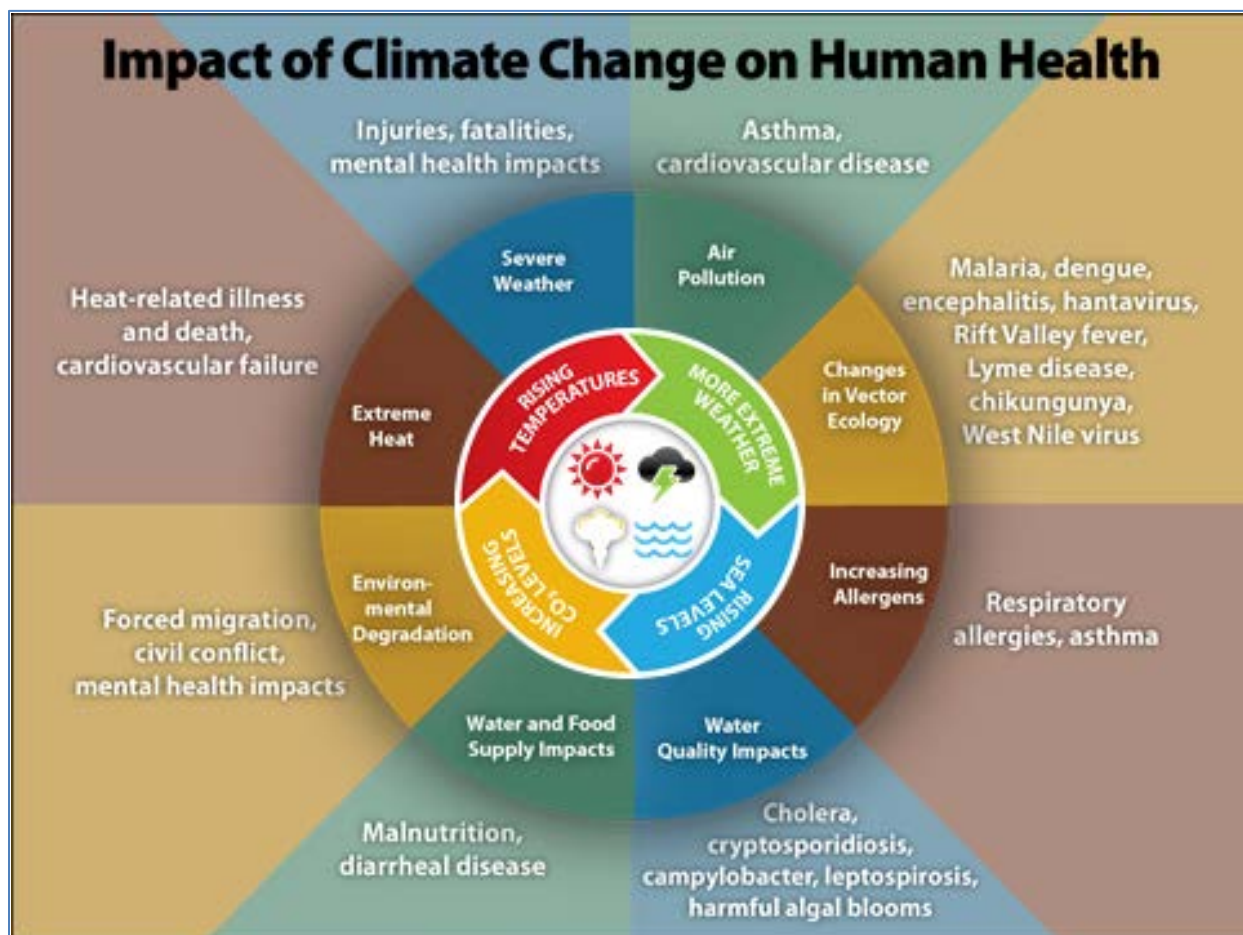
Climate change and societal responses to its diverse challenges permeate all aspects of the HHS mission. Climate change is predicted to have greater impacts in the decades ahead, altering or increasing the risks of certain diseases, conditions, injuries and other threats to human well-being. In addition, increases in the frequency and severity of heat waves, storms, floods, and other extreme weather events, which are associated with climate change, also present challenges to the provision of health care and human services to individuals and communities. As a result, assessments in this section focus on climate change-related risks to populations as well as risks to the provision of health and human services.

### 2.1 Assessment of Risks to Populations

Climate change poses current and increasing threats to human health. The [National Climate Assessment](#) outlines these climate-related health risks that threaten the United States population.

- Respiratory Stress from Poor Air Quality
  - Increased ground-level ozone and/or particulate matter in some areas
    - Diminished lung function
    - Increased risk of asthma
    - Increases in premature deaths
  - Increased wildfires and smoke thus an increase in airborne fine particle concentrations covering large areas
    - Increased respiratory and cardiovascular problems
    - Asthma, bronchitis, chest pain
- Allergies and Asthma
  - Increased production of plant-based allergens
    - Increased allergic sensitizations and asthma episodes, diminishing productive work and school days
  - Increased exposure to toxic air pollutants
    - Can increase allergic responses
  - Increased extreme rainfall and rising temperatures foster indoor air quality problems, including the growth of indoor fungi and molds
    - Increases in respiratory and asthma-related conditions
- Food and Waterborne Diarrheal Disease
  - Altered disease transmission due to air and water temperatures, precipitation patterns, extreme rainfall events, and seasonal variations
  - Sporadic increases in stream-flow rates, often preceded by rapid snowmelt and changes in water treatment have shown to precede outbreaks
- Extreme Heat
  - Increased extreme heat events, the leading weather-related cause of death in the U.S.

- Increases in heat stroke, cardiovascular disease, respiratory disease, cerebrovascular disease, and kidney disorders
  - Extreme weather events
    - Increased extreme weather events
      - often lead to fatalities
      - lead to a variety of health impacts on vulnerable populations, including increases in behavioral health issues, such as anxiety, substance abuse, suicide, and post-traumatic stress disorder
  - Vector-Borne Diseases
    - Influences distribution and outbreak potential for Lyme disease, dengue fever, West Nile virus, Rocky Mountain spotted fever, plague, and tularemia, chikungunya, Chagas disease, and Rift Valley fever



SOURCE: Climate and Health Program, CDC, 2014

Climate change is anticipated to have its greatest impact on people whose health status is already at risk and who have the fewest resources to address or adapt to climate change risks. Children are both physiologically and behaviorally more vulnerable to heat waves, extreme weather events, asthma, and many infectious diseases. Seniors are susceptible to extreme heat waves and may have underlying diseases that increase health risks and morbidity. People with impaired mobility may be challenged to quickly escape weather threats. Discrete and continuous stress resulting from climate change may

result in behavioral health outcomes of stress disorders and increased substance abuse as well as personal and interpersonal violence. Lower-income and minority communities often experience higher rates of asthma, diabetes, and other chronic diseases that place them at higher risk of complications from extreme heat and other extreme weather. In addition, these communities may be geographically vulnerable to climate change from being at a low elevation near coastal areas and rivers or being situated within urban “heat islands.” Social and economic factors (e.g., economic status, race, ethnicity, age, gender, and education) can significantly affect people’s exposure and sensitivity to the effects of climate change as well.

## 2.2 Assessment of Risks to the Provision of Health and Human Services

HHS works to address the health and well-being of people by providing awareness of and access to health care and preventive services and by strengthening the healthcare workforce to meet the nation’s health needs. Health and human services address a wide array of life-sustaining and critical human needs such as medical care, mental and behavioral health care, health surveillance, child care, elder care, home energy assistance, and other basic support services. This web of services creates a safety net to protect the public’s health and well-being. HHS collaborates with state, local, tribal, territorial, federal, nongovernmental, and private sector partners to sustain this safety net of services, promote emotional health and resilience in the face of adversity or trauma, and ensure health at every stage of life. Displaced and vulnerable populations—particularly children, seniors, and people with disabilities—require continuity of care and access to services. Any gaps or delays in these services destabilize their health, safety, and well-being.

Over the last decade, several reports from the Government Accountability Office and the HHS Office of the Inspector General have cited the need for more resilient health and human service providers. Although each report focuses on different disasters and different service providers, the challenges and recommendations are similar.

- Improve community-wide coordination among local health care providers
- Expand comprehensive and collaborative emergency planning among service providers
- Anticipate and plan for infrastructure breakdowns, such as power and communication failures
- Enhance community coordination of limited resources, such as fuel and transportation needs
- Improve coordination of discharge planning among health care providers as well as medical and non-medical shelters.

In every region of the country, extreme weather events, some of them unprecedented—from severe hurricanes to coastal storm surges, extreme rain to prolonged drought, wildfires and heat waves—test the fragility and vulnerability of America’s health and human services infrastructure. Disruptions in continuity of care reveal not only the vulnerability of hospital infrastructure, but the broader continuum of health and human services. These risks are both on the supply side, as extreme weather or other climate change-exacerbated events may disrupt the infrastructure required to sustain continuity of care, and on the demand side, as climate-related impacts increase the number of people needing essential health and human services.

The potential for increased frequency and severity of extreme weather incidents due to climate change presents a significant and growing risk to continuity of care. Scientific observations over the past several decades documented increasing variability and in many cases, severity of climate and extreme weather

phenomena. As a result, it is crucial that preparedness and resilience measures for the systems and infrastructure that provide health and human services are adequate not only for historical severity of climate and extreme weather hazards, but for increased severity, frequency, or geographic location of severe climate and extreme weather phenomena projected for the future. The increased risk of extremes of weather due to climate change will have to be addressed in order to provide continuity of care to protect the health and well-being of Americans consistent with the mission of HHS.

### 3.0 Description of Current and Future Activities

The Office of the Assistant Secretary for Health (OASH) plays a leading role in coordinating climate change activities within HHS. The Assistant Secretary for Health represents HHS on the White House's Council on Climate Adaptation and Resilience. OASH collaborates closely with the Office of the Assistant Secretary for Administration (ASA), Office of the Assistant Secretary for Preparedness and Response (ASPR), Centers for Disease Control and Prevention (CDC), and the National Institutes of Health (NIH). Each has essential roles in climate adaptation, preparedness, and resilience.

- ASA is the HHS lead for establishing climate resilient facility policies in collaboration with GSA. ASA coordinates with agency chief sustainability officers and sponsors sustainability activities – e.g., [HHS Go Green Get Healthy](#). ASA also annually drafts the Strategic Sustainability Performance Plan.
- ASPR is the HHS lead for emergency preparedness and HHS-wide continuity of operations planning. ASPR leads the nation in preventing, preparing for, and responding to the adverse health effects of public health emergencies and disasters. ASPR focuses on preparedness planning and response; building federal emergency medical operational capabilities; countermeasures research, advance development, and procurement; and grants to strengthen the capabilities of hospitals and health care systems in public health emergencies and medical disasters. The office provides federal support, including medical professionals through ASPR's National Disaster Medical System, to augment state and local capabilities during an emergency or disaster. ASPR coordinates activities among Federal agencies and supports activities at the state, tribal, and local levels to ensure the protection of the civilian population from disasters and public health emergencies that result from climate change and other causes. ASPR has a major role in identifying communities and at-risk individuals most vulnerable to disasters as climate change progresses. ASPR will promote public health, well-being, and resilience by implementing preparedness programs and leveraging partnerships with owners and operators of healthcare and public health sector critical infrastructure.
- CDC and NIH support two major climate change efforts. CDC, through its National Center for Environmental Health, supports development of data and mapping tools, as well as assistance to state and local public health departments in planning for climate change. NIH, particularly the National Institute of Environmental Health Sciences, supports research on the health-related impacts of climate change. Staff from both components serve as climate change and health subject matter experts and played a lead role in drafting the health chapter in the Third National Climate Assessment.



- Staffs from CDC, NIH, and NOAA lead the Interagency Crosscutting Group on Climate Change and Human Health (CCHHG). It is charged by the U.S. Global Change Research Program (USGCRP) with planning, coordinating, implementing, evaluating, and reporting on federal research and related scientific activities on the human health impacts of global environmental change. The CCHHG integrates relevant science and technology programs and capabilities through interagency, interdisciplinary, and intergovernmental collaborations spanning basic research to decision making to application. The ultimate goal of the CCHHG is to build communities that are healthy and resilient to climate change impacts.

Per [Executive Order 13514](#) requirements, HHS also selected climate change strategies for the Strategic Sustainability Performance Plan.

- Update agency external programs and policies (including grants, loans, technical assistance, etc.) to incentivize planning for, and addressing the impacts of, climate change.
- Ensure agency principals demonstrate commitment to adaptation efforts through internal communications and policies.
- Identify vulnerable communities that are served by agency mission and are potentially affected by climate change and identify measures to address those vulnerabilities where possible.
- Ensure that agency climate adaptation and resilience policies and programs reflect best available current climate change science, updated as necessary.
- Design and construct new or modify/manage existing agency facilities and/or infrastructure to account for the potential impacts of projected climate change.

In support of these strategies, HHS planned several climate change efforts for 2014-2015.

HHS will hold a Department-wide briefing on climate change and health in 2014. The top climate change experts from CDC and NIH will present the latest scientific findings from the National Climate Assessment. It will include climate change projections for the country as well as regional snapshots. It will be a live webcast for regional offices to participate and ask questions. This webcast will also be archived for future viewing, and the webcast link could be disseminated more broadly to other stakeholders.

HHS will also host an Adaptation Planning Workshop to teach HHS Operating Divisions and Staff Divisions (OpDivs/StaffDivs) about adaptation planning activities in 2014. This first-of-its-kind workshop will bring together climate change adaptation experts with mission-related program planners, emergency preparedness coordinators, chief sustainability officers, continuity of operations planners, and occupant emergency planners from each OpDiv/StaffDiv to catalyze adaptation planning activities.

The OASH Office of Communications will develop a climate change communication and outreach strategy to promote outreach and awareness among its stakeholders about climate change; its impact on public health; and mitigation and adaptation measures. It will be activated as scientific studies and guidance are released on a rolling basis. HHS will leverage its comprehensive network of stakeholders involved in the receipt or delivery of health and human services to disseminate climate change and



health information. Outreach and communication for at-risk populations will be a significant part of this strategy.

As required by Executive Orders 13653 and 13514, progress on each of these strategies and related activities will be reported annually through the [Strategic Sustainability Performance Plan](#).

## 3.1 Activities on Risk to Populations

### 3.1.1 Interagency Special Report on the Impacts of Climate Change on Human Health

One of the most significant research needs is a more robust assessment of future health risks to the population. Because the effects of climate change on health are complex and often dependent on multiple confounding socioeconomic and environmental factors, the methodology for developing appropriate climate and health indicators is challenging and still emerging. As a result, the CCHHG and a subset of the Interagency National Climate Assessment (INCA) working group initiated an Interagency Special Report on the Impacts of Climate Change on Human Health in the United States. This data-driven technical synthesis and assessment will be an interagency product of the USGCRP, organized by CCHHG. The lead and coordinating federal agencies for the Special Report are CDC, NIH, the National Oceanic and Atmospheric Administration (NOAA), and the Environmental Protection Agency (EPA).

The Special Report will be an evidence-based, quantitative assessment of observed and projected climate change impacts on human health in the United States. Development of the report will leverage existing activities of CCHHG and INCA members, aggregate and assess current quantitative research on human health impacts of climate change, and summarize the current state of the science. As a technical scientific assessment, the Special Report will extend the work begun under the *2008 Synthesis and Assessment Product 4.6: Analyses of the Effects of Global Change on Human Health and Welfare and Human Systems* and the latest NCA by using modeling and analysis tools to quantify, where possible, projected national-scale impacts of climate change to human health. Such analyses will attempt to identify and bound impact uncertainties, as well as better define changes in attributable epidemiological risks - particularly for vulnerable populations - with the goal of informing public health authorities and other public planning and resource management entities. Where possible, the Special Report will identify relationships between global, national, and regional climate changes and associated impacts on human health in the United States over the last century.

The Special Report is an interim report, designed to be released after the third and before the fourth National Climate Assessments. A draft of the Special Report is expected to be made available for public comment early in 2015, with final publication expected in late 2015. The [Federal Register Notice](#) provides more details about this report.

### 3.1.2 Children

The HHS Secretary and the EPA Administrator co-chair the President's Task Force on Environmental Health Risks and Safety Risks to Children. The Senior Staff Steering Committee of

the Task Force established a working group in spring 2014 to identify the effects of climate change on children's health. In addition, the working group is taking action to promote consideration of children's issues in the Interagency Special Report on the Impacts of Climate Change on Human Health in the United States, described in 3.1.1. The working group plans to sponsor expert consultation of children's health subject matter experts to discuss peer-reviewed literature and to provide information on children's health outcomes related to climate change. This input would then inform the Special Report.

### 3.1.3 NIH Efforts on Identifying and Protecting Vulnerable Populations

As part of its extramural research program on Climate Change and Human Health, NIH's National Institute of Health of Environmental Health Science (NIEHS) led the development of a targeted funding opportunity entitled, *Climate Change and Health: Assessing and Modeling Population Vulnerability to Climate Change (PAR-10-235)*. The ultimate goal of this research program has been to help inform climate change adaptation and public health interventions to reduce current and future vulnerability of various populations to the health effects of climate change. A total of twenty developmental (R-21) research grants have been funded, 17 by NIEHS, one co-funded by Fogarty International Center (FIC) and NIEHS, and one each funded by FIC and the National Institute on Aging. Grantees have published over twenty peer-reviewed studies to date.

To help foster the translation of research findings to public health interventions, NIH and CDC partnered with the National Association of City and County Health Officials (NACCHO) and the Association of State and Territorial Health Officials (ASTHO) for a first-ever convening of NIH and CDC climate change and health grantees. The meeting, "Extreme Weather, Climate, and Health: Putting Science Into Practice," was held January, 2013 in Washington, DC, and offered the grantees a unique opportunity to share their research findings and discuss practical strategies for implementing this knowledge. A total of six panels discussed issues ranging from the identifying vulnerable populations and building critical partnerships and consortia to translating science and practice for decision makers.

### 3.1.4 CDC Climate Ready States and Cities Initiative

Through its [Climate Ready States and Cities Initiative](#) as cited in the President's Climate Action Plan, CDC is providing cooperative agreements, guidance, and technical support to 16 states and 2 city health departments to implement, evaluate, and document their experience with implementing the climate adaptation framework, Building Resilience Against Climate Effects (BRACE). The BRACE framework provides state and local health departments with a process for integrating the best available atmospheric science into its planning and response activities, and supports the development and implementation of a unified climate and health adaptation strategy for a jurisdiction.

There are five sequential steps in the BRACE Framework:

- Step 1: Forecasting Climate Impacts and Assessing Vulnerabilities
- Step 2: Projecting the Disease Burden
- Step 3: Assessing Public Health Interventions

Step 4: Developing and Implementing a Climate and Health Adaptation Plan  
Step 5: Evaluating Impact and Improving Quality of Activities

CDC will continue to develop and disseminate best practices to assess and communicate climate change risks and resilience measures to ensure public health professionals, physicians, and clinical health care providers have the tools they need to prepare their communities for the health consequences of climate change.

CDC released the following guidance documents:

- Applying the Best Science for Adapting to Climate Change: The Principles of Evidence Based Public Health
- Key Elements and Considerations for Preparing a Climate and Health Profile
- Assessing Health Vulnerability to Climate Change: A Guide for Health Departments
- Climate Models and Use of Climate Projections: A Guide for Health Departments

Later in 2014, CDC will release the following guidance documents:

- Determining climate change relevant exposure-response relationships
- Projecting the magnitude of climate-sensitive diseases

In 2015, CDC will release case studies from state and city health departments that have conducted vulnerability assessments for the changing climate.

### **3.1.5 CDC National Surveillance for Infectious Diseases**

CDC's National Center for Emerging and Zoonotic Infectious Diseases (NCEZID) maintains national surveillance for numerous infectious diseases and conditions that have links to the environment and are potentially impacted by climate change. These include vector-borne, zoonotic, food-borne, water-borne, soil-associated diseases, and respiratory infections. The information gained from these surveillance programs is critical for recognizing changing patterns in disease incidence and distribution due to climatic changes and preparing for future outcomes. NCEZID works closely with state health departments through programs such as the Epidemiology and Laboratory Capacity program that supports states in their efforts to detect and diagnose endemic diseases as well as novel exotic diseases that may be introduced and established due to climate change. In addition, NCEZID's Arctic Investigations Program conducts research evaluating the impact of climate change on the health of Arctic populations. NCEZID also conducts research to determine the potential the effects of weather patterns and climate on outbreaks of environmentally-sensitive infectious diseases such as Lyme disease and West Nile virus infection.

### **3.1.6 Occupational Safety and Health**

#### **3.1.6.1 Health and Safety Education for Employers and Workers**

NIH/NIEHS's Worker Education and Training Program (WETP) embarked on a series of exploratory projects to identify the impacts of climate change on the health and safety of workers, both physically and mentally, and the potential for health and safety training to prepare workers and their communities. Current training provided by the WETP

awardees through a cooperative agreement is being assessed for its relevance in improving workers' resilience to the changing environmental impacts and severe weather as a result of climate change. Some of these activities include working with the vulnerable worker populations following Super Storm Sandy through health and safety training focusing on recovery work and preparing them for future severe weather events. In addition, in collaboration with the Substance Abuse and Mental Health Services Administration (SAMHSA), WETP is piloting mental health resiliency training programs through community resources to reach local workers, supervisors, and health providers, with the purpose of improving awareness of mental health stressors and their physical symptoms associated with living and working in an environment impacted by climate change.

#### 3.1.6.2 Climate Change and Occupational Safety and Health

CDC's National Institute for Occupational Safety and Health (NIOSH) conducts research and makes recommendations to prevent worker injury and illness. NIOSH provides the only dedicated federal investment for research needed to prevent the societal cost of work-related fatalities, injuries, and illnesses in the United States. NIOSH has established an internal multidisciplinary work group to investigate the occupational safety and health implications of climate change. This work group's purpose is to ensure current, emerging, and anticipated worker safety and health issues associated with climate change are appropriately identified and prioritized. This work group will characterize worker safety and health issues, identify gaps in worker protection, and make recommendations for worker safety and health improvements. Other related activities include maintaining an inventory of NIOSH activities relevant to climate change; developing a research agenda to address identified gaps and emerging issues; establishing and maintaining a reference database; identifying, developing and disseminating communications products; and, participating on Federal, State, and other initiatives as appropriate to ensure occupational safety and health is included as a core component of public health. One of the products from the work group will be a report describing how NIOSH is currently addressing the health and safety research needs related to climate change, and make recommendations for future direction in the area of climate change. The report will include priority research areas, options, anticipated resource needs, and program sustainability. It is expected to be released by the end of 2014.

#### 3.1.7 Behavioral Health

SAMHSA established the Disaster Technical Assistance Center (DTAC) to support all-hazards disaster behavioral health preparedness, response, and recovery of states, territories, tribes, and local entities through informed, targeted technical assistance. DTAC's primary functions include:

- Sharing of information and best practices with the disaster behavioral health field
- Reviewing disaster mental health and substance abuse plans
- Sponsoring disaster behavioral health trainings or consultations

One way DTAC shares information with constituents is through the Disaster Behavioral Health Information Series, which contains resource collections and toolkits pertinent to disaster behavioral health targeting target specific populations, specific types of disasters, and other topics related to all-hazards disaster behavioral health preparedness and response. SAMHSA may engage DTAC in collecting and disseminating information, tools, and resources relevant to extreme heat incidents via this tool.

### 3.1.8 Environmental Justice Communities

Climate change may disproportionately affect certain populations, including those living in poverty, some minority groups, and those already experiencing effects of adverse environmental conditions. HHS is a signatory agency of the Memorandum of Understanding (MOU) on Environmental Justice and Executive Order 12898, which requires each covered agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations and on Native American programs. HHS is participating in the efforts of the Environmental Justice Interagency Working Group to develop an interdepartmental approach to climate change adaptation in environmental justice communities. The MOU identifies climate change as an area of focus for agency Environmental Justice strategies and implementation activities. The 2012 HHS Environmental Justice Strategy includes actions related to addressing the needs of vulnerable populations relative to climate change that are being implemented by the HHS agencies, such as:

- CDC is developing guidance documents to assist state, local, territorial and tribal health departments prepare for climate change. The guidance includes identifying and minimizing climate-related health impacts among vulnerable populations. One such document, “Assessing Health Related Vulnerabilities,” was released in 2014.
- NIH supports research on the potential health impacts of climate change, including the effects of climate mitigation and adaptation measures that include methodologies, such as community-based participatory research and incorporates environmental justice principles.

More examples are cited in the annual [HHS Environmental Justice Implementation Progress Report](#).

### 3.1.9 National and Regional Outreach

The Office of the Assistant Secretary for Health (OASH) has programmatic and regional offices responsible, in part, for disseminating public health information to traditionally underserved populations.

#### 3.1.9.1 Regional Health Administrators

As the senior federal public health official in the region, the [Regional Health Administrator](#) (RHA) performs essential functions for the Department in three major

areas: prevention, preparedness, and agency-wide coordination. With [10 HHS regional offices](#), their unique position in the field allows RHAs to serve as effective, high-level liaisons throughout the country with federal, state, local, and tribal health officials on all matters of public health and prevention. Perhaps the most important role of the RHAs is their coordination to maximize the effectiveness of HHS agencies in their overall mission, as well as the effectiveness of the various individual programs. RHA's mission-critical task in this regard is to help ensure that efforts to promote health are well-aligned in the field – catalyzing collaboration where appropriate, minimizing redundancy, and providing feedback to the agencies and the Secretary to maximize programmatic effectiveness and to ensure a well-integrated effort for the Department overall. In each region, the RHA is uniquely situated to provide support to various initiatives of all OpDiv health missions, especially those activities which cross functional program lines - like climate change.

- Promote and disseminate the latest climate change and health information to stakeholders on a rolling basis
- Collaborate with EPA and other federal partners in the region to promote climate change education and awareness

#### 3.1.9.2 Minority Health

The mission of the [Office of Minority Health](#) (OMH) is to improve the health of racial and ethnic minority populations through the development of health policies and programs that will help eliminate health disparities. Poor health outcomes for Blacks/African Americans, Hispanics/Latinos, American Indians/Alaska Natives, Asian Americans, Native Hawaiians, and Pacific Islanders are apparent when comparing their health indicators against those of the rest of the U.S. population. Racial and ethnic minorities experience higher rates of illness and death from health conditions such as heart disease, stroke, specific cancers, diabetes, HIV/AIDS, asthma, hepatitis B, and overweight and obesity. OMH works in partnership with communities and organizations in the public and private sectors. These collaborations support a systems approach for eliminating health disparities, national planning to identify priorities, and coordinated responses through focused initiatives. OMH will support, through its community, regional and national outreach, the dissemination of webinars and educational materials regarding the effects of climate change on human health, in particular tailored-information that increases awareness and preparation for populations that are most vulnerable, including racial and ethnic minorities.

#### 3.1.9.3 Women's Health

The [Office on Women's Health](#) (OWH) is the nation's leader in promoting the health of women and girls. The Office serves as the focal point for women's health activities within and across HHS through our leadership and collaboration efforts. Through grants and contracts, OWH funds a wide spectrum of activities and programs in support of its mission. OWH works with many partners, including federal government agencies, nonprofit organizations, consumer groups, associations of health care professionals, tribal organizations, and state, county, and local governments. OWH plans to disseminate webinars and other related educational materials regarding the effect of climate change and health via the HHS Coordinating Committee for Women's Health, HHS regional offices, and other key partners on a rolling basis.

## 3.2 Activities on Risks to the Provision of Health and Human Services

### 3.2.1 Sustainable and Climate Resilient Healthcare Facilities Initiative

As part of the [President's Climate Action Plan](#), HHS initiated a public-private partnership to develop specific tools and information related to resilience of health care facilities in a context of climate change-exacerbated stressors. The initiative consists of three parts: an informational resource packet, a public-private partnership to advance the concept of sustainable and resilient healthcare facilities, and collaborations with federal partners who also are responsible for health care facilities. The Resource Packet includes an overview guide, a catalog of existing resources, checklists, a database of relevant case studies organized by type of hazard, type of facility, and location, and additional briefing documents. NIEHS and ASPR's Critical Infrastructure Protection Program are coordinating the public and private sector review of these materials through the Healthcare and Public Health Sector Government Coordinating Council and Sector Coordinating Council. Coordinating Councils are reviewing this resource packet. These Councils include representatives from major trade associations, such as the American Hospital Association and the American Society for Hospital Engineering. As potential users of the product, feedback on the draft from this group is critical in its further development over the next several months. In addition, the Institute of Medicine is also involved in its review. By fall 2014, HHS/ASPR's Critical Infrastructure Protection Program's Coordinating Councils will assist with the dissemination of the revised resource packet. It will also be posted on the [Centers for Medicare and Medicaid Services \(CMS\) website](#) for all health care providers. This resource packet provides an opportunity to encourage smarter, more climate resilient investment decisions by the healthcare industry. HHS will continue to refine the product throughout 2014 and into 2015.

In addition, HHS is seeking to collaborate with the [Healthier Hospitals Initiative](#) (HHI). Twelve health systems, comprising over 490 hospitals, created HHI. It is an invitation for healthcare organizations across the country to join the shift to a more sustainable business model and a call-to-action to address their health and environmental impacts. HHS is also exploring stronger partnerships with other federal and non-federal partners, particularly the Department of Veterans Affairs.

### 3.2.2 Proposed Emergency Preparedness Rule

Over the past several years, the United States has been challenged by several natural and man-made disasters, and readiness for public health emergencies has been put on the national agenda. Upon review of the current Medicare emergency preparedness requirements for both providers and suppliers, CMS [found](#) that regulatory requirements were not comprehensive enough to address the complexities of emergency preparedness. So, CMS issued a [proposed rule](#) in December 2013 to establish consistent emergency preparedness requirements for health care providers participating in Medicare and Medicaid, increase patient safety during emergencies, and establish a more coordinated response to natural and man-made disasters. The proposed rule specifically mentioned climate change, stating that "35 states and Washington DC do not currently have complete climate change adaption plans, which include planning for health threats posed by extreme weather events." This notice of proposed rulemaking would establish national emergency preparedness requirements to ensure that



health care facilities adequately plan for disasters and coordinate with federal, state, tribal, regional, and local emergency preparedness systems to make sure those providers and suppliers are adequately prepared to meet the needs of patients during disasters and emergency situations. In consultation with experts in emergency response and health care facilities, CMS identified four specific areas that are central to an effective system. The proposed rule would require participating providers and suppliers to meet these four standards:

1. Emergency plan -- Based on a risk assessment, develop an emergency plan using an all-hazards approach focusing on capacities and capabilities.
2. Policies and procedures — Develop and implement policies and procedures based on the plan and risk assessment.
3. Communication plan — Develop and maintain a communication plan that complies with both federal and state law. Patient care must be well-coordinated within the facility, across health care providers, and with state and local public health departments and emergency systems.
4. Training and testing program — Develop and maintain training and testing programs, including initial and annual trainings, conducting drills and exercises or participating in an actual incident that tests the plan.

These standards reflect the best practices already known to hospitals and other health care providers. Adoption of these standards will establish those best practices for all patients receiving care from Medicare- and Medicaid-participating providers. The comment period for these proposed regulations closed in February 2014. A final publication date has not been set yet.

Upon implementation, this rule would play a critical role in modernizing federal regulations to support the nation's public health and medical preparedness and response capabilities for emergencies, whether deliberate, accidental, or natural. It seeks to encourage resiliency of the emergency preparedness framework through the development of core requirements central to an effective emergency preparedness program.

### 3.2.3 Health Care Coalitions

In addition to individual healthcare organizations, HHS/ASPR encourages preparedness and resilience of health care coalitions in communities. HHS/ASPR's Hospital Preparedness Program defines a Health Care Coalition (HCC) as a formal collaboration among health care organizations and public and private sector partners that is organized to prepare for and respond to an emergency, mass casualty or catastrophic health event. HCCs can include hospitals, public health departments, emergency management and response agencies, and other types of health care organizations. The multi-agency coordinating body assists with mitigation, preparedness, response, and recovery activities related to disaster operations. For additional guidance on health care coalitions and comprehensive health care capabilities development, visit the ASPR publication, [Healthcare Preparedness Capabilities: National Guidance for Healthcare System Preparedness](#). Grant awards assist state and local governments, health care coalitions, and ESF #8 planners identify gaps in preparedness, determine specific priorities, and develop plans for building and sustaining the 8 national stakeholder-created and vetted health care-specific capabilities, to build community preparedness and resilient health care systems.

As an additional reference, HHS/ASPR funded the publication, [Medical Surge Capacity and Capability Handbook – The Healthcare Coalition for Emergency Response and Recovery](#).

The MSCC Handbook also encourages detailed [Hazard Vulnerability Assessments of the Healthcare Coalition](#). Although hazards to individual health care organizations are considered, health care coalition assessments are much broader and consider risk to the health care system serving the affected community. It includes all phases of Comprehensive Emergency Management – mitigation, preparedness, response, and recovery. Some characteristics relevant to health care coalition operations include sudden versus slow onset, insidious versus obvious onset, short duration versus prolonged incidents, and terrorism and other fear generating hazards. Climate change-exacerbated risks – e.g., heat waves and floods – are specifically mentioned.

### 3.2.4 Medical Provider Preparedness

The [Medical Reserve Corps](#) (MRC) is a national network of over 200,000 volunteers, organized in almost 1,000 local units, that are committed to strengthening public health, reducing vulnerabilities, improving local preparedness, response and recovery capabilities, and building community resilience. MRC volunteers include medical and public health professionals, as well as non-medical volunteers who are interested in strengthening and improving the capabilities of their local jurisdictions. The Division of the Civilian Volunteer Medical Reserve Corps (DCVMRC), which is headquartered in the Office of the U.S. Surgeon General, coordinates support for the MRC network, and provides technical assistance and guidance to help communities establish, implement, and sustain local MRC units nationwide. DCVMRC will disseminate webinar announcements and other related educational materials regarding the results of climate change and health to the MRC network on a rolling basis.

The [Emergency System for Advance Registration of Volunteer Health Professionals](#) (ESAR-VHP) is a national network of state-based programs for pre-registration of volunteer health professionals to respond to disasters and public health and medical emergencies. Volunteer health professionals include doctors, veterinarians, dentists, nurses, physician assistants, technicians, technologists, social workers, veterinarians, and medical records professionals. There are over 262,000 registered volunteers. ESAR-VHP plans to share climate change educational materials with state ESAR-VHP programs and volunteers via e-mail, Listserv, and the ASPR ESAR-VHP website on a rolling basis.

### 3.2.5 Other Resiliency Efforts

As climate change causes natural disasters to occur with increasing frequency and severity, the ramifications are felt across many sectors. These risks require a preparedness approach that can amplify efforts across multiple sectors to achieve a common goal. Community resilience provides an organizing framework to address disaster preparedness, response, and recovery in a sustainable and holistic manner. HHS leads work in the resilience space concerning health, behavioral health, and societal wellbeing.

- The [National Health Security Strategy](#) is the Nation’s comprehensive strategy focused on protecting people’s health in case of an emergency. A working group and stakeholder focus group process is in place to develop the 2014 National Health Security’s Strategic Objective 1: Build Health Resilience.
- The [National Biodefense Science Board](#) (NBSB) recommended actions to modernize and enhance our Nation’s Biosurveillance Capabilities. It [recommended](#) that the HHS Secretary designate a central situational awareness authority for coordinating all public health and healthcare situational awareness data from respective agencies on a national level and to integrate this information into a nationwide biosurveillance system that provides continuous and accessible situational awareness to decision-makers at all levels. NBSB also established a Community Health Resilience Working Group to explore the concepts and issues concerning community health resilience. It identified climate change as one of many threats to national health security. It made [recommendations](#) regarding actions that the federal government, HHS, and ASPR in particular can take to forward health resilience.
- ASPR’s Critical Infrastructure Protection Program includes climate risks in the development and updating of the risk profile for the Health Care and Public Health Sector. The risk profile is included in the Sector-Specific Plan and Sector Annual Report as required by Presidential Policy Directive 21 and the National Infrastructure Protection Plan.
- The Research Grantee Community Resilience Coalition is a new recurring teleconference forum for science investigators representing public health emergency and disaster preparedness, response, or recovery research grants that are sponsored by HHS. The purpose of the Coalition is to discuss community resilience science as it relates to health and well-being, hear from thought leaders in the field, share information among grantees, and explore opportunities for synergy and collaboration. The Coalition is hosted by ASPR, which convened the first collaboration meeting in April 2014.
- The Federal Community Health Resilience Coalition provides an ongoing venue for federal stakeholders to share information and promising practices and develop collaborative opportunities to forward our goals to assist communities to build resilience—particularly as this involves health, behavioral health, social connectedness, and well-being. The group began meeting in 2013 and continues to meet at least quarterly.

### 3.3 Activities to Assess Risk via Data and Research Initiatives

#### 3.3.1 Climate Data Initiative

The Climate Data Initiative is a broad effort to leverage the federal government’s freely-available, climate-relevant data resources to stimulate innovation and private-sector entrepreneurship in support of national climate-change preparedness. Under the federal government’s open data platform, <http://www.data.gov/>, the Administration recently launched a climate-focused section. This website, <http://www.data.gov/climate/>, currently offers

resources on coastal flooding and sea level rise, and will encompass other factors affected by climate change including human health, the food supply, and energy infrastructure. HHS staff are leading and participating in the interdepartmental Human Health group of the Council on Climate Preparedness and Resilience's Data and Tools working group that is developing health data and tools for this website. Along with our federal agency partners, we continue progress toward providing climate change and human health data resources and tools.

### 3.3.2 CDC Tracking Network

Environmental causes of diseases are hard to identify. Measuring amounts of hazardous substances in our environment in a standard way, tracing the spread of these over time and area, seeing how they show up in human tissues, and understanding how they may cause illness is critical. CDC's National Environmental Public Health Tracking Network is the start of that system.

The purpose of the Tracking Network is to provide information from a nationwide network of integrated health and environmental data that drives actions to improve the health of communities. This national network will integrate three distinct components: hazard monitoring, exposure surveillance, and health-effects surveillance. CDC established this network by drawing on a wide range of expertise from federal agencies, state and local health and environmental agencies, non-governmental organizations, state public health and environmental laboratories, and applicable Schools of Public Health.

CDC's Tracking Network uses data from many sources to track the effects of climate change. While there are a number of indicators related to climate change, the Tracking Network focuses on extreme heat to better evaluate the number of heat-related deaths at the national level, while allowing for comparisons across states. These comparisons can help local communities design interventions and better understand the possible health effects and risks to specific groups of people.

In spring 2014, CDC released the following [climate change indicators](#) that combine weather and health data to identify patterns in extreme heat and their associated health effects. These indicators use data from the past to identify extreme temperatures, extreme heat days and events, deaths that might be related to heat, and conditions that make people vulnerable to heat.

[Extreme Heat Days and Events](#) - This indicator allows a user to identify extremely hot days or extreme heat events in a county of interest by combining data on daily maximum temperature or heat index, relative or absolute thresholds and duration using modeled data during May-September of each year.

[Heat Stress Emergency Department Visits](#) - This indicator estimates the number and rate of emergency department visits for heat stress. It includes all cases where heat stress is listed as a primary or other diagnosis. These data come from hospital records and may not capture the full range of heat-related illness if exposure to excess heat is not explicitly documented. These data can be used to document changes over place and

time, monitor vulnerable areas, and evaluate the results of local climate-adaptation strategies.

[Heat Stress Hospitalizations](#) - This indicator estimates the number and rate of hospitalizations for heat stress. It includes all cases where heat stress is listed as a primary or other diagnosis. These data come from hospital records and may not capture the full range of heat-related illness if exposure to excess heat is not explicitly documented. These data can be used to document changes over place and time, monitor vulnerable areas, and evaluate the results of local climate-adaptation strategies.

[Heat Vulnerability](#) - This indicator includes measures that may make people at greater risk for heat-related health effects. These measures are diabetes, heart disease, poverty, race, advanced age, social isolation, disabilities, population density, forest canopy, developed land use, and cultivated crop land use.

[Heat-Related Mortality](#) - This indicator is based on data from death certificates to evaluate deaths that have identified heat as an underlying or contributing cause.

[Temperature Distribution](#) - This indicator allows you to look at daily temperature and heat index using modeled data by county during May-September of each year.

In late 2014, CDC's Tracking Network will add county level information on future climate projections derived from the climate model outputs developed for the third National Climate Assessment.

### 3.3.3 MATCH Portal

The Metadata Access Tool for Climate and Health (MATCH) is a searchable clearinghouse of publicly available federal metadata and links to datasets related to climate change and health. MATCH improves accessibility to federal data sources and enhances the ability for researchers to quickly find and review metadata from health, environment, and climate science datasets.

Access to metadata for more than 9,000 datasets available through MATCH encourages the application of research to further understand, mitigate, and adapt to the health effects of climate change. MATCH also aims to assist in the identification of research gaps, improve the quality of research by providing contextual information on datasets, and encourage collaboration among researchers. Resources available through MATCH include geospatial datasets ranging from local to global scales, early warning systems, and tools for characterizing the health effects of climate change.

The MATCH clearinghouse portal is an ongoing effort of CCHHG, one of the thirteen interagency working groups of the USGCRP. Two of the three co-chairs of the CCHHG are HHS staff, and the department has provided metadata on essential health datasets for the geo-portal.

### 3.3.4 HHS Health Data Initiative

The HHS Office of the Secretary recently approved a charter for the HHS Health Data Initiative. HHS will be exploring ways to set up a section of the HealthData.gov platform to coincide with the Data.gov climate-focused section of that platform in order to make a cohesive presentation of climate related data on both platforms. The HealthData.gov platform would only highlight the HHS data assets that are part of the climate data initiative, while Data.gov would have catalog entries for climate related data from across all federal agencies thereby representing the broader initiative. The HHS Chief Technology Officer could potentially support this coordination effort with the help of Health Data Leads as liaisons for similar data initiatives.

### 3.3.5 NIH's Research Initiatives

A better understanding of how climate change will alter human health risks and who is most vulnerable to those health risks is essential for preventing climate-related morbidity and mortality. The National Institute for Environmental Health Science (NIH/NIEHS) led an ad hoc interagency working group in developing a [white paper](#) that outlined research needs for eleven categories of consequences of climate change for human health, including asthma and respiratory disease, cancer, cardiovascular disease and stroke, foodborne diseases and nutrition, human developmental effects, mental health and stress-related disorders, neurological diseases, vector-borne and zoonotic diseases, waterborne diseases, and weather-related morbidity and mortality. Published in 2010, *A Human Health Perspective on Climate Change* informed subsequent research endeavors.

NIH supports a variety of human health and climate change related research and training through its intramural and extramural programs. NIH-funded researchers are studying why some elderly populations are more at risk for negative health effects from climate change and are examining the association between air pollutants and pediatric asthma. Other grantees are using methodological approaches to analyze models that predict health vulnerabilities to climate change and are developing models to quantify the possible health impacts of exposure to higher levels of air pollution coming from power plant emissions as hotter summers increase electricity demand. This research will help identify populations who are vulnerable to climate change, produce methods and models for studying climate change, and advance knowledge about how to best provide communication and education about risks tied to climate change.

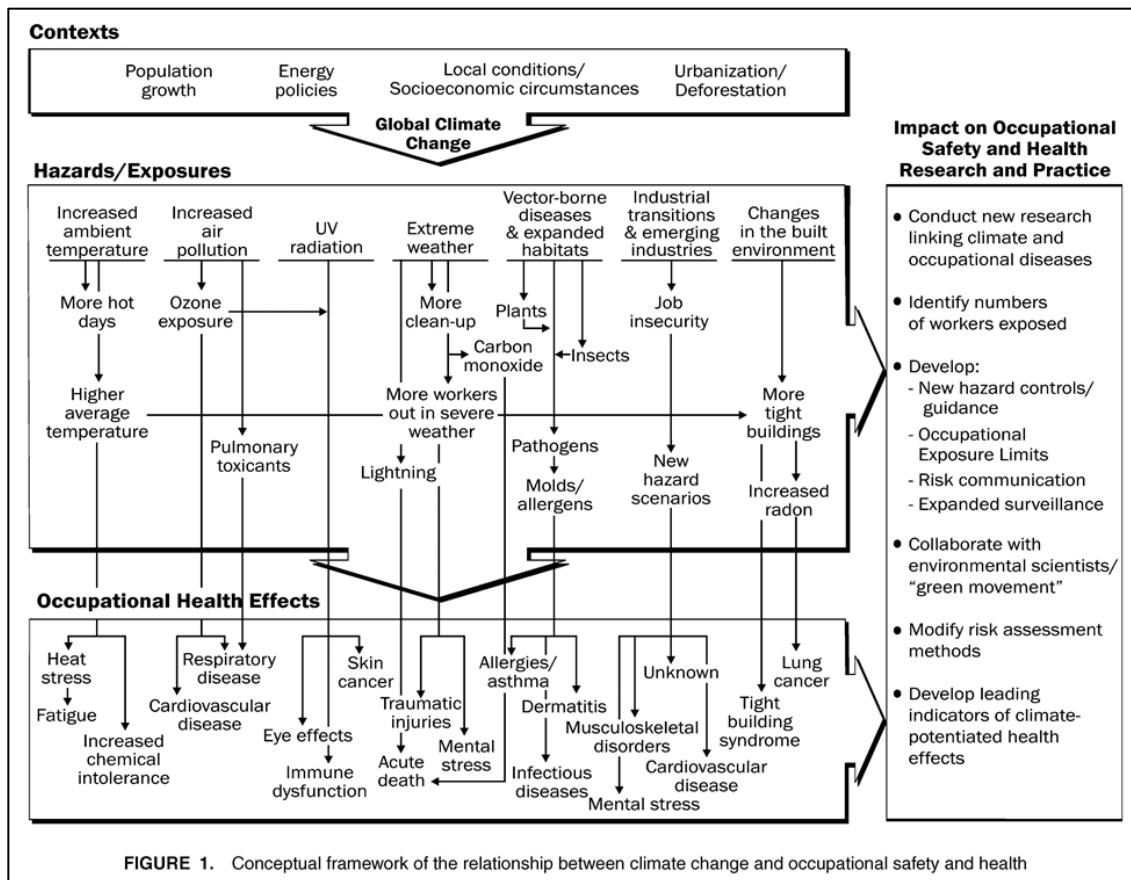
Ongoing research and training on the health implications of climate change will be funded through standard NIH investigator-initiated grants. The current listing of FY2013 NIH climate change and health grants are posted on NIH's [website](#).

NIH and NIOSH have initiated the Global Environmental and Occupational Health (GEOHealth) program to support and catalyze a multi-national network of regional hubs led by one Low or Middle Income Country institution and one U.S. institution. The purpose of the hubs is to conduct research and research training, develop relevant curricula, and support the science needed to inform nationally-relevant policy development. Currently, the program supports 6-paired planning grants that have identified climate change as a focal area. A competition for full 5-year GEOHealth Hub awards is intended in FY 2015.

### 3.3.6 CDC/NIOSH Occupational Safety and Health Research Initiatives

CDC/NIOSH research works to improve workplace safety and health through safe practices, policies, and procedures. Climate change is a NIOSH emphasis area, and NIOSH has formed an interdisciplinary work group to guide research on this subject. NIOSH established a conceptual framework of the relationship between climate change and occupational safety and health. This framework serves as an outline to guide our investigation of research gaps.

1. Determining if there are links between climate and occupational diseases
2. Identifying the number of workers affected by direct effects of climate change and/or OSH issues related to climate change response
3. Developing
  - a. New hazard controls/guidance
  - b. Occupational exposure limits
  - c. Risk communication
  - d. Expanded surveillance
4. Collaborating with environmental scientists
5. Modifying risk assessment methods
6. Developing leading indicators of climate-potentiated health effects



SOURCE: Climate Change and Occupational Safety and Health: Establishing a Preliminary Framework. Journal of Occupational and Environmental Hygiene, Sept 2009.



In 2014, NIOSH funded an intramural research project specifically for climate change and occupational safety and health, *Identifying Workers and Facilities to be Impacted by Severe Weather Events due to Climate Change*. The primary goal of this project is to minimize the health effects to workers due to severe weather events resulting from global climate change. This project will identify specific communities, industries, occupations, companies and facilities that are likely to be affected by severe heat events, hurricanes, and tornadoes and then work with external partners to enable them to target outreach and interventions for primary and secondary prevention. By providing information at the community, company, and facility level on high-risk working populations, existing federal and state occupational safety and health programs will have the information they need to minimize the potentially harmful and sometimes fatal health effects of these severe weather events.

## 3.4 Other Cross-Cutting Initiatives

### 3.4.1 Research in Support of Recovery from Super Storm Sandy

ASPR awarded more than \$8 million in grants through the Disaster Relief Appropriations Act of 2013 to support research to aid long-term recovery in areas hit by Super Storm Sandy. The grants are being coordinated with others administered by CDC. The grants represent the first time HHS has funded research to support long-term recovery and resilience efforts. The funded research focuses on physical and behavioral health aspects of recovery including community resilience, risk communication and the use of social media, health system response and health care access, evacuation and policy decision making, and mental health. The grants require researchers to share their findings with each other and the affected communities. This approach will bring together networks of community members and organizations needed to foster a strong recovery and to improve resilience as affected communities continue to move forward rebuilding. Research will conclude for most projects by September 2015 with publications and other related deliverables disseminated subsequently on a rolling basis.

### 3.4.2 NIH's Disaster Research Response Project

In response to recent disasters, NIH committed to fund the Disaster Research Response Project. This pilot project, developed by NIEHS in collaboration with the National Library of Medicine NLM, aims to create a disaster research system consisting of coordinated environmental health disaster research data collection tools and a network of trained research responders. Elements of the system include epidemiologic questionnaires and clinical protocols, specially trained disaster researchers, environmental health disaster research networks, a reach-back roster of subject matter experts, and a support infrastructure that can be activated and deployed during public health emergencies and declared disasters. NIEHS will build on its extensive program capabilities, research networks, and field experience in leading this pilot. As an initial step in building science preparedness capacity, NIH convened federal scientists, community leaders, and state and local health organizations for a science response training exercise in April 2014 to practice incorporating health researchers into immediate response and recovery efforts. Numerous lessons learned were generated that will assist in improving public health research response capacity in large scale climate-exacerbated disasters.

### 3.4.3 Energy Insecurity

ACF's Office of Human Services Emergency Preparedness and Response (OHSEPR) continually undertakes capacity building and planning for response and recovery to an increased number of severe weather events each year, including tropical storm events and flooding events. ACF/OHSEPR, in collaboration with ACF's Office of Community Services, Division of Energy Assistance, has been conducting planning and process improvement to enhance OHSEPR's capability to deliver subject matter expertise and technical assistance regarding human services implications of energy insecurity in severe weather events. This includes the ongoing development of a Low Income Home Energy Assistance Program (LIHEAP) disaster information collection plan and stronger support for emergency post-disaster technical assistance to LIHEAP grantees.

## 4.0 HHS Operations

### 4.1 Sustainable Building and Energy Efforts

The [HHS Strategic Plan](#) includes an objective to improve environmental, energy, and economic performance to promote sustainability under [Goal 4](#). Our Strategic Sustainability Performance Plan (SSPP) operationalizes this goal by demonstrating the actions HHS plans to take to promote sustainability across the Department and our accomplishments in the past fiscal year. HHS's progress towards meeting this objective is updated annually with references to the Annual Performance Plan, HHS Strategic Sustainability Performance Plan, and HHS Climate Adaptation Plan. This tool keeps HHS Senior Management informed on the HHS Sustainability and Climate Adaptation Resilience accomplishments and planned activities in these areas for the upcoming year.

The Office of the Assistant Secretary for Administration (ASA), acting as the HHS Senior Sustainability Officer under Executive Order 13514, oversees the HHS Strategic Sustainability Performance Plan. ASA established several workgroups consisting of Chief Sustainability Officers to focus on reducing Green House Gas emissions, increasing renewable energy use, petroleum reduction, water conservation, sustainable acquisitions, pollution prevention and waste reduction, electronic stewardship, sustainable buildings, and energy-savings performance contracting. Details from these work groups are captured in the latest Strategic Sustainability Performance Plan. However, there are some cross-references with our Climate Adaptation Plan highlighted below.

HHS conducted a Sustainability Audit on the majority of the HHS facilities to help focus future HHS sustainability efforts. Criteria includes integrating design principles, optimizing energy performance, protecting and conserving water, enhancing indoor environmental quality, and reducing environmental effects on materials. Energy audits have also been conducted on the majority of HHS facilities to help focus future HHS sustainability efforts.

Energy Accomplishments:

- HHS is on track to meet the energy use intensity reduction of 30% by FY 2015. As of FY 2013, HHS reduced energy use intensity by 19.6% compared to FY 2003.

- CDC's latest Leadership in Environmental Design (LEED)-certified project is Building 107 on the Chamblee campus, which is LEED Gold. CDC now has five LEED-certified buildings. Based on Gross Square Footage, over 23% of CDC buildings meet or exceed the Sustainability Building Guiding Principles.
- NIH's new Porter Neuroscience Research Center, Phase II, is pending LEED Gold certification. The building was certified by Green Globes at the 3 Globes level.
- HHS is on track to meet the 7.5% Renewable Energy goals established in the Energy Policy Act, with 10.9% of its electricity consumed coming from renewable electricity sources, including 3.75% from new sources (thermal, mechanical, or electric). This result exceeded the FY 2013 goal of 7.5%. Most of the HHS renewable energy is obtained through the purchase of Green power or Renewable Energy Credits (RECs), but on-site applications are utilized wherever possible. For example, HHS will complete two hybrid systems consisting of a 50-kW wind generator and 10-kw photovoltaic system at the Pine Ridge and Rosebud Hospitals in FY 2014. In FY 2014, FDA will install a 130-kW roof mounted PV Power Generation System at the Irvine laboratory.
- As of FY 2013, HHS petroleum fuel use decreased by 42% as compared to the FY 2005 baseline, an achievement better than the 30% required reduction by FY 2020. HHS alternative fuel consumption has increased by 328% above the 2005 baseline, well above the 159.4% increase required by FY 2015.

As part of the [HHS Go Green Get Healthy Initiative](#), HHS recognizes the outstanding sustainability efforts and best practices of HHS individual employees, small groups, and organizations through the annual HHS Green Champion awards. HHS recently awarded 34 Green Champion Awards that included projects in a wide range of sustainability areas such as the Indian Health Services working to partner with local communities and tribal health corporations in Alaska to develop and implement

energy efficiency retrofits at 18 rural health clinics and CDC outstanding efforts in planning, designing, building, and delivering a state of the art sustainable Building 107 at the Atlanta/Chamblee campus. NIH's Health in Buildings Roundtable Conference is featured as a spotlight.

## HHS Green Champion

The NIH Division of Environmental Protection, in collaboration with the American College of Sports Medicine, hosted a unique and innovative conference entitled the Health in Buildings Roundtable Conference. In response to a national need to investigate the link between the built environment and human health, the conference was the first of its kind and was created to educate, incorporate, and introduce ways to create healthier buildings, healthier employees, and healthier communities not only at NIH, but across the nation. NIH collaborated with local and regional communities, private corporations and consulting companies, non-governmental organizations, various governmental agencies, and other industry experts to create a foundation for the establishment of a National agenda for public health research and policy in order to further support healthy buildings and healthy communities to include General Services Administration, American College of Sports Medicine, Cannon, Perkins and Wills, U.S. Green Building Council, University of Virginia, Virginia Technical University, University of Denver, and Google Incorporated. Conference sessions focused on the increased use of natural lighting in buildings, interior environmentally-friendly furnishings, and surrounding environmental landscape options in an effort to support sustainable communities.

## 4.2 Sustainable Acquisition, Procurement, and Contracts

As part of the SSPP, the Office of the Assistant Secretary for Financial Resources (ASFR) is the lead for Goal 6's Sustainable Acquisition. ASFR oversees agency procurement policies to ensure federally mandated designated sustainable products are included in all relevant procurements and services. In addition, ASFR leads the HHS Sustainable Acquisitions Work Group, comprised of procurement professionals from all OpDiv/StaffDivs, that is currently disseminating the White House Council on Environmental Quality's best practices on sustainability and climate adaptation acquisitions including how to include climate adaptation planning, training, and practices in HHS grants and contracts. HHS is on track to meet the FY 2014 95% compliance goal of new contract actions meeting sustainable acquisition requirements. In FY 2013, HHS was at 92% compliance.

OpDiv/StaffDivs are also encouraged to consider whether climate change will affect their ability to procure critical materials or inputs and seek to address those challenges.

OpDiv/StaffDivs are encouraged to identify criteria for deciding which programs to target and how those criteria were identified as relevant and necessary. OpDiv/StaffDivs are also encouraged to consider how this criterion will inform their decisions, such as through requirements for vulnerability assessments of potential buildings to lease, criteria for climate preparedness in contracts, or diversifying supply chains.

Per the December 2011 Presidential Memorandum, "Implementation of Energy Savings Projects and Performance-Based Contracting for Energy Savings," HHS committed to an estimated \$59.6M of alternative financing contracts. To date, \$40.9M has been awarded with another \$24M in the pipeline. With the extension of the President's Performance Contracting Challenge for another three years into 2016, HHS committed an additional \$27.8M in performance contracts. This will yield a total of \$92.7M of performance contracts implemented in six years.

### National Institutes of Health

NIH is executing design and construction projects that will dramatically improve the resiliency and sustainability of the Central Utility Plants.

At its Bethesda campus, NIH will soon construct an industrial water storage tank that will let NIH generate steam and chilled water during a water outage or shortage, thus preserving the safety of patients, animals and precious biospecimens located in freezers. NIH will also construct a thermal energy storage tank to improve NIH's resiliency by acting as a buffer in the event of power outages or brownouts.

At Research Triangle Park in North Carolina, NIH conducted planning for a near net-zero warehouse for critical supplies. The new facility will be constructed to achieve LEED certification, will be a near Net-Zero Energy Building, and will comply with the Interagency Security Committee in accordance with Executive Order 12977. It will be modern, secure, and built to be expandable to meet future needs of NIH or other federal agencies in the area. Utility costs will be minimal due to sustainable design considerations made during development of the bridging documentation including installing a photovoltaic system, occupancy sensors, vaulted skylights, and a variable refrigerant flow HVAC system. While projected savings are estimated to be approximately \$100,000 per year, construction costs for this project are currently unfunded.

NIH's Division of Environmental Protection of the Office of Research Facilities conceived and is leading development of sustainable acquisition innovation initiatives to concomitantly meet the health goals of the HHS Secretary's Strategic Plan and Priorities as well as the directives of Executive Order 13514 for federal agencies to apply their purchasing power to create markets for sustainable products and services. These ambitious, long term initiatives focus on two aspects of procurement policy and practice that were largely undeveloped: provisions for identifying and reducing procurement of products containing toxic, hazardous, polluting or unrenowable chemicals, referred to in our reduction initiative as Substances of Concern (SoC), and addressing unmet government-wide needs for user friendly, automated tools and systems to facilitate purchasing of healthier, more sustainable products, including those posing reduced chemical risks associated with SoCs. These efforts are being carried out by small interagency teams of NIH employees working closely with their counterparts in the General Services Administration (GSA). While these initiatives are only in their earliest phases of implementation, the unprecedented levels of collaboration established between the NIH and GSA teams already produced a remarkable number of innovative sustainable acquisition tools that are now available for government-wide use.

Additional details about these activities are in the [SSPP](#).

### 4.3 Risk and Climate Resilience of HHS Facilities

The HHS Facilities Program Manual will incorporate climate risk impacts once guidance is received from the Council on Environmental Quality (CEQ) Federal Adaptation Community of Practice (COP).

The Office of the Assistant Secretary for Administration will review the [HHS Real Property Asset Management Plan](#), the [HHS Sustainable Buildings Plan](#), and the HHS Facility Program Manual ([Volume 1](#)) ([Volume 2](#)) for opportunities to incorporate Climate Change Resilience considerations. Anticipated Changes to HHS Facilities Program Manual are outlined below.

HHS Facilities Program Manual Volume 1:  
CHAPTER 2 PROJECT PLANNING AND APPROVAL

### Centers for Disease Control and Prevention

CDC's Quality and Sustainability Office has begun the process of educating employees and CDC leadership regarding the effects of climate change through the following:

- CDC-wide blog related to climate change and its potential effects on our mission; designed to assess employee knowledge and level of acceptance of research
- December 2013 CDC Sustainability Review newsletter dedicated to climate change adaptation and mitigation; included basics of climate change effects released by the White House as well as resources for office adaptation plan creation from FedCenter Follow-up issue planned for later in 2014.
- December 2013 Sustainability Star article, highlighting National Center for Environmental Health (NCEH) work with climate change mitigation and adaptation in cities and states
- Presentation and Q&A session with NCEH staff at quarterly HHS SSPP Goal Manager meeting, to agency Goal Managers, stakeholders and their leadership, to foster understanding of climate change research and potential effects on CDC mission and operations.

- Section 2-1: [Funding Sources for Facilities Projects](#), 2-1-10 PROCEDURES, B. FACILITY PROJECT BUDGETS, 2. Planning Phase – Currently under review to add climate change resilience under special studies and pre-project planning.
- Section 2-3: [HHS Facility Project Approval Agreements](#), Exhibit X2-3-B, 9. Facility Cost Estimate (\$M) and 10. Related Cost Estimate (\$M) – Items under Related Cost Estimate – Under review to add climate change resilience under special studies and pre-project planning.
- Section 2-6: [Site Selection](#), 2-6-20 GUIDANCE AND INFORMATION, A. LAWS, REGULATIONS AND EXECUTIVE ORDERS - add CCR EO 13653. Section B. SITE SELECTION CRITERIA – Under review to add climate change resilience to Item 8.

#### CHAPTER 3 PLANNING AND DESIGN CONSIDERATIONS

- Section 3-1: [Facility Master Planning](#), 3-1-20 GUIDANCE AND INFORMATION, A. LAWS, REGULATIONS AND EXECUTIVE ORDERS - add CCR EO 13653. Section C. Contents Of Master Plans, 2. Master Plan Requirements, add climate change resilience to item q.
- Section 3-2: [Environmental Impact Analysis Procedures](#), 3-2-20 GUIDANCE AND INFORMATION, A. ENVIRONMENTAL LAWS AND EXECUTIVE ORDERS - add EO 13653.
- Section 3-4: [Design Guidelines](#), 3-4-20 GUIDANCE AND INFORMATION, A. ENVIRONMENTAL AND FUNCTIONAL NEEDS - add CCR EO 13653. Section B. SAFETY, HEALTH AND SECURITY – Item 2. Protection against disaster- consider adding climate change resilience.
- Section 3-5: [Sustainable Design](#), 3-5-10 PROCEDURES - add CCR EO 13653. Section 3-5-20 GUIDANCE AND INFORMATION, A. GOALS – Currently under review to add climate change resilience to Item 11.
- Section 3-11: [Feasibility and Other Facilities Studies](#), B. EXAMPLES OF FACILITY STUDIES, 2. PRE-DESIGN AND PRE-TRANSFER STUDIES – consider adding climate change resilience to Item c.

#### CHAPTER 4 PROJECT DELIVERY

- Section 4-5: [Design-Build](#), Exhibit X4-5-B SAMPLE PHASE TWO DESIGN-BUILD PROPOSAL SELECTION CRITERIA, A. Building Project – consider adding climate change resilience to Item 11.
- Section 4-6: [Design-Bid-Build](#), 4-6-20 GUIDANCE AND INFORMATION, C. CODES & STANDARDS – add EO 13653.
- Section 4-7: [Lease Acquisition](#), 4-7-20 GUIDANCE AND INFORMATION, A. INTERNET REFERENCE INFORMATION – currently under review to add EO 13653.

#### HHS Facilities Program Manual Volume 2:

##### CHAPTER 2 REAL PROPERTY ASSET MANAGEMENT Program

- Section 2-3: [Facility Conditions Assessments](#), Exhibit X2-3, 3.0 Assessment Scope, 3.2 Scope Elements- ask FRPC to provide guidance for incorporating climate resilience into facility condition assessments.

HHS has not yet conducted a formal climate adaptation risk assessment on all of the HHS facilities. In general, for HHS Facilities leased from or through GSA, HHS intends to partner directly with GSA to address the vulnerabilities of these sites and facilities to incremental climate change and variability. For



HHS Directly-Leased Facilities, each OpDiv with leasing authority will need assistance to address site/facility vulnerabilities to incremental climate change and variability. OpDiv/StaffDivs are encouraged to assess facilities as follows:

- Facilities Leased from or through GSA:
  - HHS has 217 mission-critical sites/facilities leased from or through GSA. GSA intends to partner directly with OpDiv/StaffDivs to address the vulnerabilities of these sites and facilities to incremental climate change and variability.
  - HHS has 519 mission-dependent sites/facilities leased from or through GSA. GSA intends to partner directly with OpDiv/StaffDivs to address the vulnerabilities of these sites and facilities to incremental climate change and variability.
  
- Facilities Leased from or through Agencies other than GSA:
  - HHS has 9 mission critical sites/facilities leased through Inter-Agency Agreements. OpDiv/StaffDivs are encouraged to partner directly with Agency leasing offices and obtain other assistance to address the vulnerabilities of these sites and facilities to incremental climate change and variability.
  - HHS has 7 mission-dependent sites/facilities leased through Inter-Agency Agreements. OpDiv/StaffDivs are encouraged to partner directly with Agency leasing offices and obtain other assistance to address the vulnerabilities of these sites and facilities to incremental climate change and variability.
  
- Facilities directly owned or leased:
  - HHS has 2,579 mission-critical directly owned or leased sites/facilities. OpDiv/StaffDivs are encouraged to partner directly with regional authorities and local GSA offices and obtain other assistance to address the vulnerabilities of these sites and facilities to incremental climate change and variability.
  - HHS has 633 mission-dependent directly owned or leased sites/facilities. OpDiv/StaffDivs are encouraged to partner directly with regional authorities and local GSA offices and obtain other assistance to address the vulnerabilities of these sites and facilities to incremental climate change and variability.

#### 4.4 HHS Continuity of Operations

Through continuity of operations planning, HHS under the leadership of ASPR continues to strengthen the nation's ability to prepare for, protect against, respond to, and recover from a wide range of catastrophic possibilities, including those that are potentially related to climate change. HHS considers the impact and risk of climate change on HHS essential functions as part of all-hazards continuity of operations planning in accordance with the National Continuity Policy. The National Continuity Policy establishes that the goal of all federal continuity planning is to ensure the sustainment of National Essential Functions (NEFs) under all conditions. NEFs are executive branch functions which are necessary to lead and sustain the nation during a catastrophic emergency and to preserve our form of government under the U.S. Constitution.

Supporting documents and directives to the National Continuity Policy include the National Continuity Policy Implementation Plan and Federal Continuity Directives 1 and 2. These coordinating documents are signed by the President and managed through the National Continuity Program to provide



standardized direction and requirements related to individual federal departments and agencies (D/A) continuity programs.

Federal D/A continuity programs are instructed by the National Continuity Policy and supporting directives to focus planning efforts and capabilities on the sustainment of Primary Mission Essential Functions (PMEFs). PMEFs represent the most critical and time sensitive functions of a federal D/A which cannot be interrupted for more than 12 hours without causing degradation and/or failure of one or more NEFs.

HHS PMEFs are generally focused on the prevention, detection, mitigation, response to, and recovery from public health and medical health emergencies; the safety of procedures and products intended for human and animal use or consumption; and measures related authorized critical medical care and public health services. Actual PMEF language, content, or emphasis may vary with annual updates due to changes in federal statute, requirements, and/or national and departmental leadership priorities.

HHS approved a Continuity of Operations Program Policy in May 2012. This Policy provides an overview of the Department's approach to continuity planning and formally outlines measures required to sustain PMEFs. A Continuity of Operations Framework was also developed, in accordance with the Policy, to serve as the Department's overarching continuity plan and provide standardized planning and capabilities requirements for OpDiv, StaffDiv and regional components. A 'Framework' approach was chosen within HHS in recognition that OpDiv, StaffDiv, and regional essential functions; collectively referred to as Component Mission Essential Functions (CMEFs); jointly enable or implement HHS PMEFs. This type of planning organization allows for an ideal balance of centralized coordination and decentralized implementation which can be scaled depending on the actual or potential location, type, and impact of a disruptive event.

Application of the HHS Continuity Policy and Framework provide structure for the development and coordinated implementation of operational capabilities across the Department. To ensure the sufficiency of these capabilities, a number of overarching continuity readiness initiatives have been implemented by the ASPR, through the Departmental COOP Program. Some of these initiatives include but are not limited to; tests, training and exercises; evaluations and assessments; and a corrective action process to consolidate lessons learned and best practices following a real-world or simulated disruptive event. This information translates into improved continuity planning guidance, practices, and procedures which are regularly coordinated across the Department to further enhance readiness and ensure the continuance of essential functions under all conditions – including climate change-exacerbated disasters.

OpDiv/StaffDivs and regional offices are responsible for the creation and continued maintenance of continuity plans and capabilities necessary to support essential functions before, during, and after any disruptive event which could incapacitate facilities and/or personnel. Component and regional continuity plans are evaluated every two years, updated as necessary, and are regularly exercised through internal and external test, training, and exercise venues.

Component Mission Essential Functions (CMEFs) are component-level functions that collectively support the HHS mission Department's ability to continue MEFs and PMEFs. Each component includes a list and description of its CMEFs in its individual component continuity plan. CMEFs represent the most important missions of any given HHS component. Components annually review and verify their CMEFs, as unidentified or unsupported CMEFs may result in the failure of one or more HHS PMEFs during a

continuity situation. CMEFs are evaluated on an annual basis to ensure proper identification and application of continuity resources to support the most critical functions at all levels of the Department.

## 4.5 Conclusion

This Adaptation Plan confirms HHS's commitment to preparing for the challenges posed by climate change. HHS is committed to leading the way on implementation of sustainable operations, promoting climate-resilient health and human services, and supporting scientific research focused on the effects of climate change on human health and well-being, as well as effective risk reduction and adaptation measures. As required by Executive Order 13653, progress on these activities will be reported annually through the Strategic Sustainability Performance Plan.