

ELEMENT 1 RESOURCES

CLIMATE RISKS AND COMMUNITY VULNERABILITIES ASSESSMENT

STEP 1: Climate Risk Assessment

KEY RESOURCES FOR CLIMATE PROJECTIONS

[*Climate Inspector*](#)

U.S. Climate Resilience Toolkit

This website allows the user to review four different climate projections for any given location. Explore projected changes in temperature or precipitation, and download maps, trend data, or projected annual cycle data. This requires some understanding of the variation between climate models.

[*NOAA Climate Change Portal*](#)

National Oceanic and Atmospheric Administration (NOAA)

This website allows the user to display or download climate projection output from the Coupled Model Intercomparison Project (CMIP5) that informed the IPCC Fifth Assessment Report. It contains user-friendly drop-down menus of models, atmospheric fields, and time.

KEY RESOURCES FOR MAPPING GRAPHICS

[*CanVis*](#)

U.S. Climate Resilience Toolkit

This tool allows the user to apply a map of a campus or facility to better visualize sea level rise projection impacts. This downloadable photo-editing program (software download required) gives you the power to generate “after” pictures illustrating possible futures. Use it to show how sea level rise might change a familiar scene, or to help stakeholders develop a shared vision of the end state of a building project.

[*ClimateData.us*](#)

U.S. Climate Resilience Toolkit

This website allows the user to zoom to any location in the contiguous United States and move a slider across the map to compare projected changes in temperature and precipitation. It also allows the user to compare conditions by decade under a mitigation scenario (reduced emissions) and a high-emissions scenario.

[*Climate Outlooks*](#)

U.S. Climate Resilience Toolkit

This website allows the user to access outlook maps showing experts’ judgments regarding changes for above-, below-, or near-average temperature and precipitation, as well as potential hazards and drought conditions, with timescales ranging from weeks to years.

[*Coastal Change Analysis Program \(C-CAP\) Land Cover Atlas*](#)

U.S. Climate Resilience Toolkit

This online data viewer provides user-friendly access to regional land cover and land cover change information developed through the National Oceanic and Atmospheric Administration (NOAA) Coastal Change Analysis Program (C-CAP). The Land Cover Atlas eliminates the need for desktop geographic information system software, or advanced technical expertise, by processing C-CAP data for the user and providing easy access to that distilled information. The tool summarizes general change trends (such as forest losses or new development) and can highlight specific changes of interest (salt marsh losses to open water, or evergreen forest losses to development, for instance).

[*Coastal Flood Exposure Mapper*](#)

National Oceanic and Atmospheric Administration

This website allows the user to overlay risk maps and produce a unified image. It provides local maps to stimulate discussions about the people, places, and natural resources exposed to coastal flooding. Users create a collection of maps showing risk from various hazards.

[*FEMA Flood Map Center*](#)

Federal Emergency Management Agency (FEMA)

On this website, users can find, view, analyze, and print flood hazard maps from FEMA for a specific facility or larger community to identify threats and risks. It provides user-friendly flood risk mapping for a specific location or facility.

[Hazus](#)

U.S. Climate Resilience Toolkit

This website allows planners and emergency managers to access Federal Emergency Management Agency (FEMA) models that estimate potential losses from earthquakes, floods, and hurricanes, and also evaluate costs and benefits of mitigation options. It requires software download. These FEMA models in Hazus can estimate physical, economic, and social impacts of disasters.

[U.S. Drought Portal](#)

U.S. Climate Resilience Toolkit

This website allows users to access a range of information and services related to drought including early warnings, climate data, and decision support services. It offers a simplified view of drought risks and projections.

STEP 2: Community Vulnerabilities and Preparedness

[Assessing Health Vulnerability to Climate Change: A Guide for Health Departments](#)

U.S. Climate Resilience Toolkit

This document helps health departments assess local vulnerabilities to the health hazards associated with climate change. By conducting a climate and health vulnerability assessment, a health department can better identify which people and places in their jurisdiction are more vulnerable to particular human health effects that can result from climate change. Such an assessment can then be used to implement targeted public health interventions to reduce negative public health impacts.

[Climate Change](#)

U.S. Environmental Protection Agency (EPA)

Learn more about how the U.S. climate is changing. EPA's updated "[**Climate Change Indicators in the United States, 2014**](#)" report presents evidence that climate change is already affecting our atmosphere, weather, oceans, ecosystems, and society. The accompanying website includes a suite of tools and resources, searchable by region or climate issue.

[Dialysis Facility Comparison](#)

U.S. Climate Resilience Toolkit

Extreme weather events can damage or otherwise incapacitate dialysis facilities, endangering the individuals who rely on that treatment. The dialysis facility comparison tool allows users to search a list of all dialysis facilities registered with Medicare. Users can search by city, zip code, state, or facility name, and results include the addresses and phone numbers of the facilities. The tool also provides information about the services and quality of care provided by each facility.

[Equity in Building Resilience in Adaptation Planning](#)

National Association for the Advancement of Colored People

This document addresses strengthening resilience through equitable adaptation planning as well as how we assess the context comprehensively so that effective adaptation methods are designed. To be able to declare that community resilience has been achieved, we must develop systems that address the needs and provide protection for the most vulnerable and marginalized.

[Metadata Access Tool for Climate and Health \(MATCH\)](#)

U.S. Climate Resilience Toolkit

The Metadata Access Tool for Climate and Health, known as MATCH, is a searchable clearinghouse of publicly available federal metadata—or data about data. It provides links to datasets on both climate and health that are relevant to understanding the effects of climate change on human health. 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.

[Social Vulnerability Index](#)

U.S. Climate Resilience Toolkit

Social vulnerability is a term describing how resilient a community is when confronted by external stresses on human health. These stresses can range from natural or human-caused disasters to disease outbreaks. By reducing social vulnerability, we can decrease both human suffering and economic losses.

The Social Vulnerability Index (SVI) employs U.S. Census Bureau variables to help users identify communities that may need support in preparing for hazards or recovering from disasters. The SVI tool is particularly useful for emergency response planners and public health officials, as it can identify and map the communities that are most likely to need support before, during, and after a hazardous event.

[Under the Weather: Environmental Extremes and Health Care Delivery](#)

American Meteorological Society Policy Program (October 2010)

This report spotlights severe weather vulnerabilities (i.e., storms) to hospitals and to healthcare continuity. It discusses the three main policy problems that are barriers to preparedness for hospitals and the continuity of healthcare delivery: 1) there is a general lack of awareness of environmental vulnerabilities on the part of local decision makers, 2) the absence of coordination and communication across federal agencies, and 3) a paucity of financial resources or incentives that could encourage needed structural mitigation or adaptation for current and projected weather risks.

[Winter Storms: The Deceptive Killers. A Preparedness Guide](#)

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, and National Weather Service (2008)

This preparedness guide explains the dangers of winter weather and suggests life-saving action you can take. With this information, you can recognize winter weather threats, develop an action plan, and be ready when severe weather threatens.

STEPS 3 & 4: Risk and Vulnerability Analysis

[American Society for Healthcare Engineering](#)

Two tools that can be used to help hospitals assess and weigh potential hazards and their effects are now available for American Society of Healthcare Engineering (ASHE) members. The new Hazard Vulnerability Analysis (HVA) and Community Hazard Vulnerability Analysis (CHVA) tools available to ASHE members are Excel spreadsheets that can be used to evaluate potential hazards and guide risk mitigation efforts. You can ***access the tools*** and determine whether one of them is a good fit for your facility's emergency planning efforts.

[Kaiser Permanente Hazard Vulnerability Analysis Tool](#)

Hospitals are required to conduct and annually review their Hazard Vulnerability Analysis (HVA). The HVA provides a systematic approach to recognizing hazards that may affect demand for the hospital's services or its ability to provide those services. The risks associated with each hazard are analyzed to prioritize planning, mitigation, response, and recovery activities. The HVA serves as a needs assessment for the Emergency Management program. This process should involve community partners and be communicated to community emergency response agencies. This downloadable tool, developed by Kaiser Permanente, is a sample format for preparing an HVA.

This resource guide is one component of a five element framework and toolkit for improving healthcare facility climate resilience. The full set of checklists, companion resources and case studies are available at [toolkit.climate.gov](https://www.toolkit.climate.gov). This document is provided to the public for informational purposes and voluntary use. It does not represent official HHS policy.