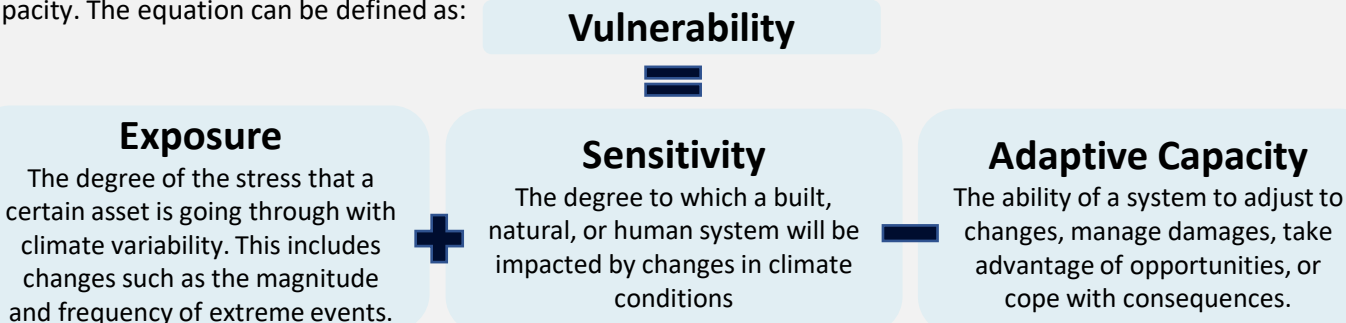


Climate Change Vulnerability Index (CCVI)

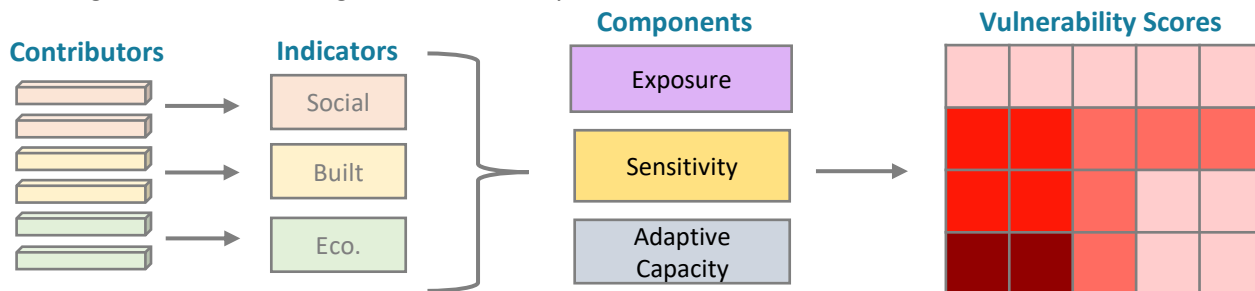
1 What is the CCVI?

An index-based spatial model that identifies community vulnerability to flood, wind, and heat-related impacts of climate change. The CCVI characterizes areas based on an equation using sensitivity plus exposure, minus adaptive capacity. The equation can be defined as:



2 How does it work?

The CCVI process is based on combinations of exposure, sensitivity, and adaptive capacity applied to thousands of grid cells. For example, the sensitivity component includes many different contributors that fall under three different indicators – social, built, and ecological. Each indicator has its own final “score” based on the average of the contributors. The average of the 3 indicators represents a score of sensitivity for one grid cell. This sensitivity score, along with final exposure and adaptive capacity scores, is used to calculate the vulnerability score, leading to many different gridded scores throughout a community. A list of flood and heat contributors can be found on the back.



3 What might this tool mean for municipalities?

In addition to other planning tools, the CCVI can be used to make educated decisions on future development and infrastructure investments. The tool will also help identify potential *Resilient Connecticut* pilot projects.

4 How can you play a role in developing the CCVI?

Stakeholders will be involved throughout the *Resilient Connecticut* project, and are encouraged to provide CIRCA feedback on this and other *Resilient Connecticut* tools. Visit the Story Map’s “Provide Input” tab or view the CCVI web page to demo the tool and fill out a map feedback form: <https://resilientconnecticut.uconn.edu/resources/>

Flood Contributors

Sensitivity

Social

Median Income
Older than 5 with a Disability
Percent below Poverty Level
Average no. Per Household
Lack of Vehicle
Percent Population over 65
Percent Population under 5
Speaks English less than well/not at all
Population Density
Race and Ethnicity
Percent Population Unemployed
Percent Population over 25 without a HS Diploma

Built

Building Density
Median Structure Age
Critical Facilities
Railways in SFHA
Streets in SFHA
Private Wells
Historic Resources
Brownfields
Septic Areas
Bus Terminals
Railroad Stations

Eco.

Critical Habitat
Land Cover
Natural Diversity Data Base (NDDB)

Exposure

Climate

FEMA Flood Zones
Sea Level Rise
Tidal Range
Storm Surge

Physical

Elevation (Pooling areas)
Erosion Susceptibility
Impervious Surfaces
Shoreline Change Rate
Soil Drainage Properties
North Atlantic Aquatic Connectivity Collaborative (NAACC)
Stream Crossings

Social

High Owner-Occupied Housing
Disposable Income
NFIPs in Force
Compared to # of Structures in SFHA

Built

Distance to Hospitals
Distance to Shelters
Coastal Structures and Flood Protection
Riverine Flood Protection Systems
Water and Sewer Service Areas
Open Space in SFHA
Proximity to Highway Access
Regulatory Standards

Eco.

Marsh Migration
Resilient Landscapes (Eco Regions)

Heat Contributors

Sensitivity

Social

Asthma Related Emergency Visits
Median Income
Older than 5 with a Disability
Percent below Poverty Level
Average no. Per Household
Lack of Vehicle
Percent Population over 65
Percent Population under 5
Speaks English less than well/not at all
Percent Population

Unemployed
Population Density
Race and Ethnicity
Percent Population over 25 without a HS Diploma

Built

Building Density
Median Structure Age
Private Wells

Exposure

Climate

Air Quality (PM 2.5)
Maximum Surface Temperatures

Physical

Impervious Surfaces
Emissivity

Social

Percent population with Health Insurance
High Owner-Occupied Housing

Built

Distance to Hospitals
Distance to Shelters

Eco.

Normalized Difference Vegetation Index (NDVI)
Percent Mixed Forest Cover
Albedo