

SAHF's Process for:

ASSESSING CLIMATE RISK

for Individual Properties and Small Portfolios



PROCESS

This process can be used to replicate the process SAHF utilized to create the [SAHF Portfolio Climate Risk Assessment]. This step-by-step process produces an assessment for an individual property or a small group of properties (20 or fewer). The tools listed below are free to access and provide information at the census tract level. This information can be compiled to better understand overall climate risk, individual natural hazard risk and projected risk.



[Click here for a free template](#) to record property-level information as you complete each step

TOOLS YOU'LL NEED

STEP 1: FEMA NRI

STEP 2: EDF CVI

STEP 3: Combined Risk Score

STEP 4: FEMA NRI Natural Hazard Risk Rating

STEP 5: FEMA Flood Map

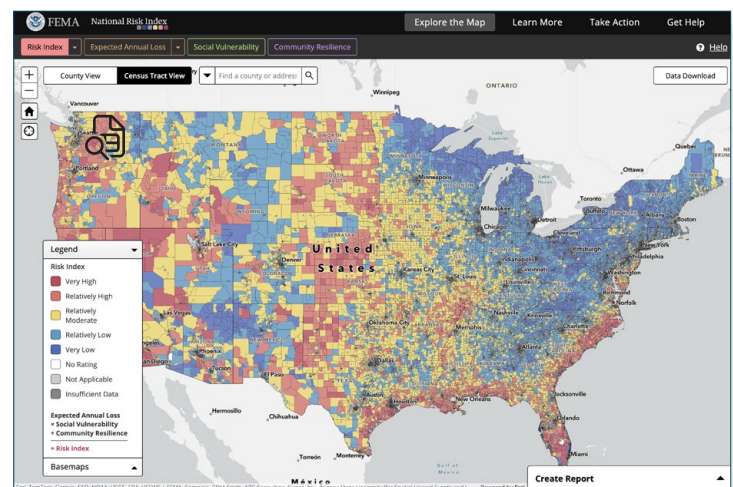
STEP 6: NOAA CMRA

STEP 1 FEMA NRI

1. Visit <https://hazards.fema.gov/nri/map>, toggle to "Census Tract View" in the upper left corner and the search for the address of the property.
2. The tool will then zoom to the location, and display the overall risk index for the census track where the property is located.
3. Convert your risk index result to a numerical scale. SAHF converted the FEMA NRI risk index to a 1-5 scale where:

Very Low = 1
Moderate = 3
Very High = 5

Relatively Low = 2
Relatively High = 4

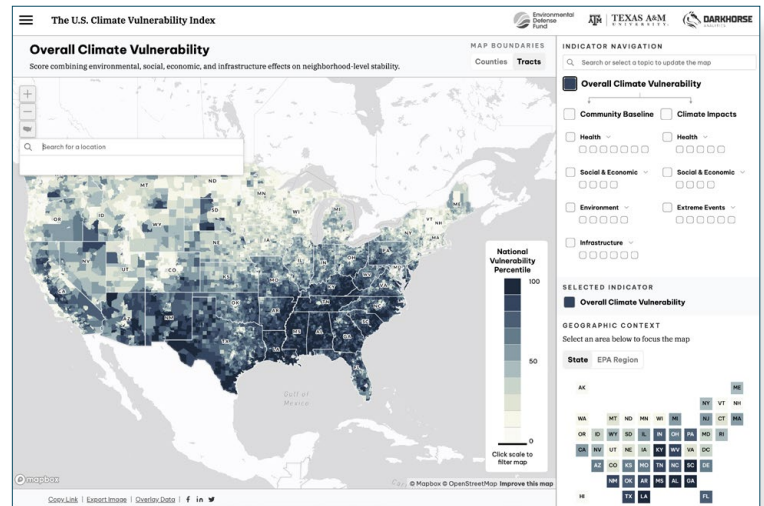


If your portfolio includes more than 20 properties, we recommend downloading each tool's publicly-available datasets and combining and sorting via a spreadsheet or other database tool. For additional information on the process that SAHF used to complete this data consolidation, please contact the SAHF Energy & Sustainability team.

STEP 2 EDF CVI

1. Visit <https://map.climatevulnerabilityindex.org/> and search by property address. Click on "View Report" in the lower right corner of the map.
2. The tool will create a report of the census tract and provide the overall climate vulnerability of the location.
3. Convert the overall climate vulnerability result to a numerical scale. SAHF converted the EDF CVI results to a 1-5 scale where:

Lowest Vulnerability = 1	Highest Vulnerability = 4
Lower Vulnerability = 2	Highest Vulnerability = 5
Average Vulnerability = 3	

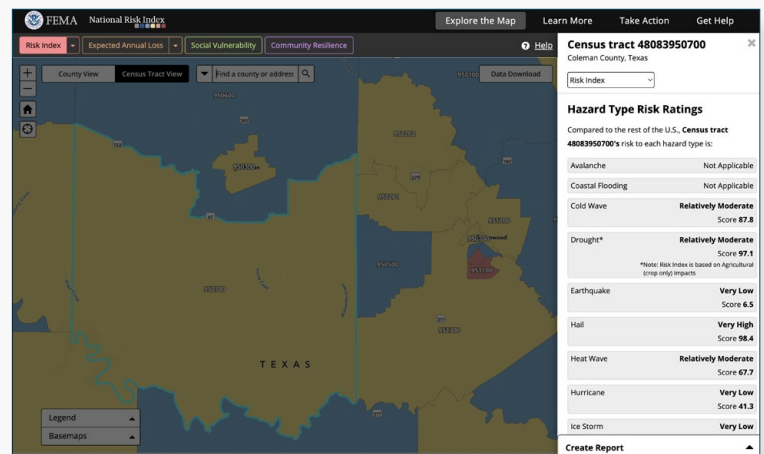


STEP 3 Combine FEMA NRI and EDF CVI Scores

1. **Combine the scores.** The greater the score (with 10 being the highest score), the higher the risk to both the property and residents.

STEP 4 FEMA NRI Natural Hazard

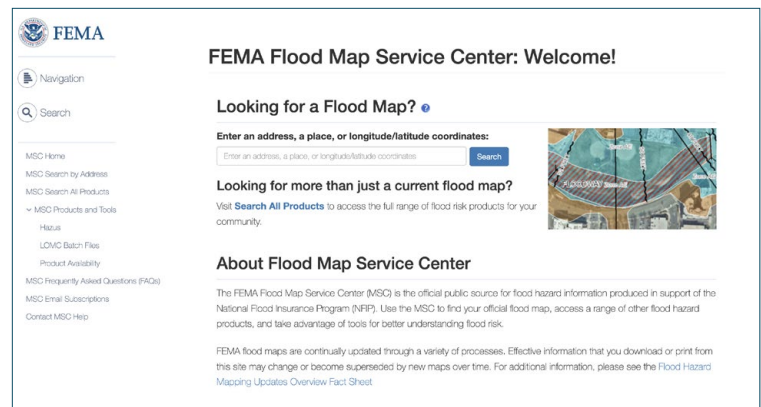
1. In addition to determining the overall risk index, SAHF recommends reviewing the individual hazard risks that could impact the property. FEMA NRI reports on 18 different risks, e.g. Earthquake, Heat Wave, Riverine Flooding.
2. Record any hazards that have a risk index of relatively or very high risk. Tracking this information is useful across multiple properties, especially if there are the same hazards with relatively or very high risk across multiple properties.



3. (Optional) Note the property's current risk rating for "Heat Wave", as this can be used for comparison when reviewing projected risks.

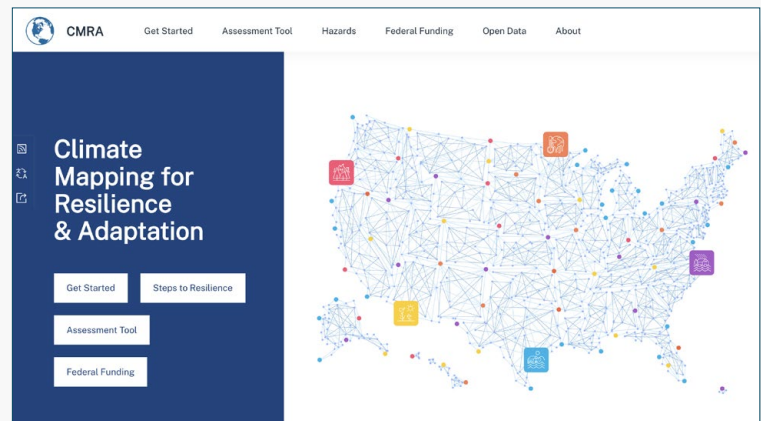
STEP 5 FEMA Flood Map

1. Visit <https://msc.fema.gov/portal/home> and search for the property address.
2. Determine if the property is located within the Special Flood Hazard Area or the other areas of flood hazard.
3. This map will provide more accurate information on flood risk than the FEMA NRI.



STEP 6 NOAA CMRA

1. Visit <https://resilience.climate.gov/> and click on **Assessment Tool**. Once at the Assessment Tool, search for the property address.
2. The tool will provide a map view with data below. At the top left corner of the map, select census tract.
3. The tool defaults the climate projections to **Early Century (2015-2044)** SAHF recommends using this timeframe to align with the financial cycle of affordable housing.
4. **SAHF recommends recording the higher emissions numbers and the rate of change from 1976-2005 (located directly below the projections)**. These individual climate projections are useful to consider alongside other current risk data:
5. *(Optional) The Map Projection tab can be used to understand how each individual projection for that location compares to other part of the country.*



Extreme Heat:

- Annual days with maximum temperature > 90 degrees F
- Annual single highest maximum temperature
- Annual highest maximum temperature averaged over a 5-day period
- Cooling-degree days (CDD) – this number is used when determining the amount of cooling (i.e. air conditioning) needed.

Flooding:

- If a property has risk of flooding, SAHF recommends reviewing the Flooding section to determine the rate of change for key climate projections.



Property Climate Risk Summary

After these data points are collected, this information can be compiled and used to better understand risk across multiple climate hazards, and as well as what may be important to prioritize. This process can be used for multiple properties to create comparisons and determine trends.

Climate Risk Summary		
Property Name & Address		
Overall Climate Risk		
FEMA NRI Overall Score (1-5 score)		
EDF CVI Score (1-5 score)		
Combined Risk Score (0-10 scale)		
Individual Natural Hazards		
Natural Hazards (with relatively or very high risk)		
FEMA Flood Map		
Projected Climate Risk (NOAA CMRA)		
Extreme Heat	Current	2015-2044
Annual days with maximum temperature > 90 degrees F		
Annual single highest maximum temperature		
Annual highest maximum temperature averaged over a 5-day period		
Cooling-degree days (CDD)		
Flooding	Current	2015-2044
Maximum number of consecutive wet days		
Annual days with total precipitation > 1 inch		
Annual days with total precipitation > 2 inches		
Annual days with total precipitation > 3 inches		
Annual days that exceed 99th percentile precipitation		

In addition to documenting the risk associated with individual properties and small portfolios, it is valuable to consider how risk will be addressed. SAHF recommends using the following template as a starting point, and provides examples of information that may be relevant to collect and document:

Prevalent Individual Hazards	New Construction	Rehabilitation	Existing Property Operations	Resident Engagement
[Add Individual Hazard Here]	[Example: relevant QAP requirements or incentives, state and/or local code requirements]	[Example: relevant QAP requirements, utility programs or local jurisdiction regulations]	[Example: checklists, property emergency manuals or other resources to address property operations]	[Example: energy bill payment resources, like LIHEAP, manuals and other preparedness resources for resident engagement]



See it in action Example: Assessing Climate Risk of an Individual Property