Hurricane Hazard Import Tool

The Hurricane Hazard Import Tool is an open-source tool that allows Hazus users to quickly search, download, and prepare publicly available hurricane hazard data from HURREVAC for import into a Hazus Hurricane Study Region.

About Hazus

Hazus is a nationally standardized risk modeling methodology that combines expertise from many disciplines to create actionable risk information that increases community resilience. It is distributed as free GIS-based desktop software with a collection of inventory databases for every U.S. state and territory. Hazus identifies areas with high risk for natural hazards and estimates physical, economic, and social impacts of earthquakes, hurricanes, floods, and tsunamis.

The Hazus Program, managed by FEMA's Natural Hazards Risk Assessment Program (NHRAP), partners with other federal agencies, research institutions, and regional planning authorities to ensure Hazus resources incorporate the latest scientific and technological approaches and meet the emergency management community's needs.

The Hurricane Hazard Import Tool (HHIT)

Accurate risk assessments depend on access to reliable hazard information produced by experts in each hazard scientific community. The Hazus Team works to provide users with easily accessible hazard data. FEMA developed the tool as an open-source tool that allows users to rapidly access and incorporate publicly available hurricane hazard data from HURREVAC for a Hazus hurricane analysis (Figure 1).

The tool provides an efficient and improved interface to rapidly integrate official forecast advisory data by leveraging the parsing and formatting provided by HURREVAC. HURREVAC data is categorized by Storm Type, Basin, Year, and Name. FEMA updated the new interface with several improvements over the HURREVAC Hazus Desktop interface. The tool includes the new (2020) 60 hour forecast advisory point from the National Hurricane Center, a more sophisticated treatment of the first inland observation/forecast point if the storm is still primarily over water and intensifying. This was a key improvement for storms such as Hurricane Michael from 2018), and more accurate conversions between nautical miles and miles for speed and distance. The tool aims to equip communities with accessible solutions to meet their risk assessment needs by providing reliable hazard information.

Learn more about HHIT

- Check out our HHIT YouTube Training video, then watch a webinar recording of a Live Hazus Walkthrough of HHIT here.

What is HURREVAC?

HURREVAC is a storm tracking decision support tool jointly developed by FEMA, the U.S. Army Corps of Engineers (USACE), and the National Oceanic and Atmospheric Administration (NOAA). HURREVAC storm data includes the location, direction, and speed of tropical storm winds for previous, current, and forecasted storm information produced by NOAA's National Hurricane Center advisories.

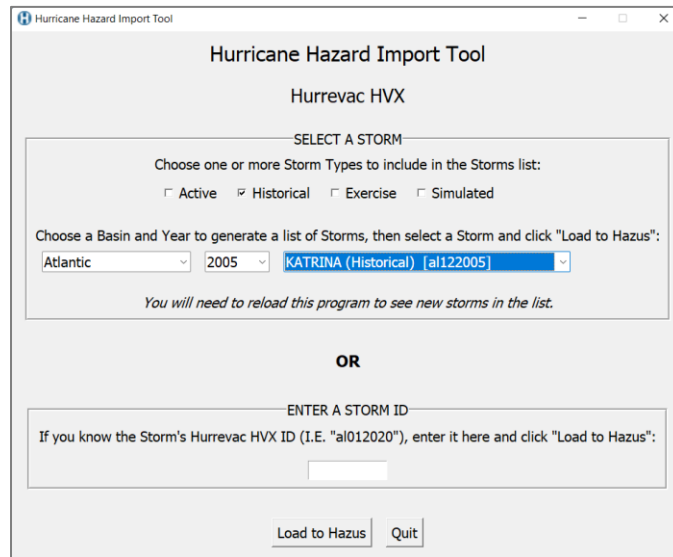To learn more about HURREVAC, check out the HURREVAC Homepage.

Figure 1. Hurricane Hazard Import Tool interface as it accesses HURREVAC storm track and wind speed data for historic storm Katrina.

Getting Started with HHIT

- Visit FEMA's Map Service Center Hazus Page under the "Hazus Program Data Updates and Open Source Tools" tab to download the tool and access documentation.
  Please Note: the tool requires Hazus, ArcGIS Desktop, and Miniforge to be installed on your computer.

- Open the ReadMe.pdf file to learn more about installation and using the tool.

- Once installed, double-click on the hurricane-hazard-import-tool.py file to open the tool.
  Please Note: the tool requires internet access to run.

- Select the Storm Type(s) to include in the storm list.

- Select the Basin and Year to include in the storm list.

- Select the Storm for analysis from the storm list generated.
  Please Note: A second alternative allows users to manually enter a HURREVAC HVX ID.

- Select Load to Hazus.
  Please Note: A second window will appear once the HURREVAC storm track and wind speed data is successfully prepared and imported indicating the users next steps in Hazus.

Hurricane Hazard Import Tool Data in Hazus

The tool allows users to import reliable hazard data for a Hazus hurricane analysis quickly and efficiently. After running HHIT, the HURREVAC storm track data can be accessed from the Hurricane Scenario Wizard in Hazus (Figure 2). Users must validate the new hazard data before they can activate the storm and run the analysis. Detailed steps are listed in the tool documentation and the 'Import a Hurrevac Storm Advisory' section of the Hazus Hurricane User Manual. Once the storm is active users can run the analysis and interpret results.

The goal of the tool is to increase community resilience by providing the risk assessment community with a simple solution for running improved risk assessments using reliable hazard data.
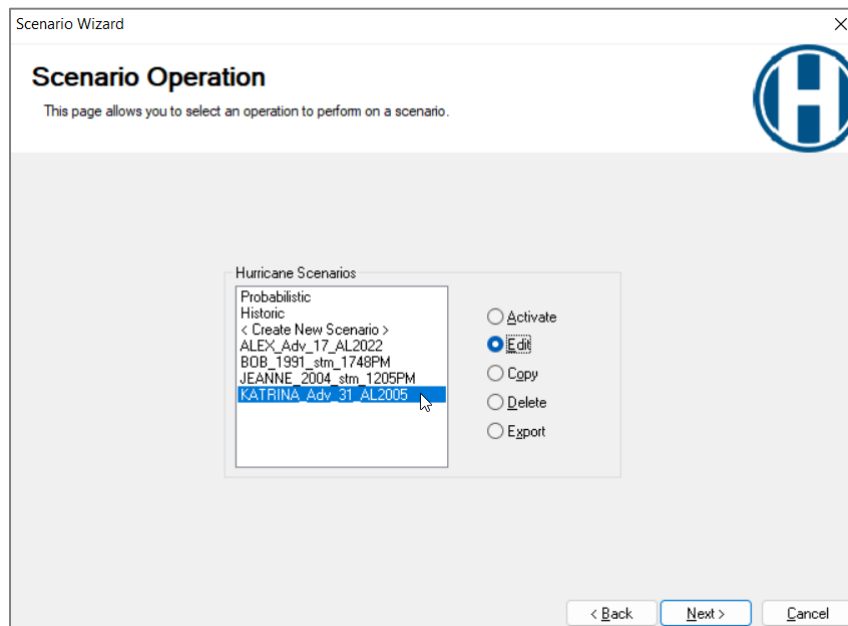

Figure 2. The storm selected in the tool will appear in the Hurricane Scenario Wizard interface in Hazus, like shown above. Read more about running a Hazus hurricane analysis in the 'Import a Hurrevac Storm Advisory' section of the Hazus Hurricane User Manual.

Hazus Resources

The Hazus Program offers technical guidance, training, and information about ongoing and recent projects to help stakeholders complete successful risk assessments. Please review the resources listed below for assistance using Hazus and reach out to the Hazus Team with questions.

Self-Guided Course Materials

Sign up for Risk Assessment Guidance

User & Technical Manuals

YouTube Videos

Visit the Hazus Loss Library

Contact the Hazus Team