National Structure Inventory
26 January 2023
Q&A Session

This webinar, presented by Nick Lutz (Economist, Hydrologic Engineering Center)and Alex Ryan (Economist, Planning Center of Expertise for Inland Navigation), provided an overview of the National Structure Inventory (NSI) and its potential application in supporting flood risk management studies. The presenters discussed the most recent update to the NSI, which includes new data inputs for improved nationwide estimates of structure locations, structure characteristics, and population at risk estimates, which are often necessary for economic and life safety studies. This presentation the NSI's limitations and methods to improve the tool for planning efforts through the newly developed NSI Survey Tool.

For additional NSI resources:

- NSI Application Programming Interface (API) Reference Guide: https://www.hec.usace.army.mil/confluence/nsi/technicalreferences/latest/api-reference-guide
- NSI Survey Tool: https://apps.rsgis.dev/nsi-survey2
- Contact information for reporting NSI issues: https://www.hec.usace.army.mil/confluence/nsi/nsio/contact-us

This summary of the Question / Answer session of the webinar is not a transcription; questions and responses have been edited and reordered for clarity.

Does the NSI have data for Alaska, Hawaii, or the U.S. Territories (i.e., Pacific Ocean Division's area of responsibility)?
Data is available for Alaska and Hawaii, though there are some limitations, as there are for many locations. Use of the NSI is not currently available for all U.S. Territories due to limited data availability. The NSI development team is working to add data for these places and is open to partnership ideas to help bridge data gaps.

Can data for specific locations be downloaded from the NSI?
Data in GeoPackage format for an entire state can be downloaded from the NSI here. Data in GeoJSON format for individual counties or within a particular "bounding box" may be downloaded through the NSI's API.

The USACE Modeling, Mapping, and Consequence (MMC) Production Center has created a Python-based toolbox that facilitates the use of the API. By providing a study area polygon, the tool will download and clip the data that study teams are most interested in. The tool is currently available for USACE personnel here.

Have users experienced any issues related to potential conflicts between the NSI tool's use of depreciated property values and the typical use of fair market values in feasibility studies?
By guidance, study teams must use the depreciated replacement value of a structure to the extent possible; fair market values may be used if a team can make a reasonable case that they approximate the depreciated replacement value. However, the NSI team would caution that it is extremely difficult to separate the land value of a particular property from the value of the home or structure. While land vs. structure estimates are sometimes available, there are many assumptions that go into them and they should be used with care.

Is there a process in place to update the NSI attributes after verifying them in the NSI survey tool?
The NSI development team is working to develop policies for this process. The technical challenge is to ensure the NSI uniquely identifies structures across time, which results in the policy challenge of determining how to handle all of the cases in which this can happen.

The NSI development team recommends users manually update their own structure inventory data after using the NSI Survey Tool. The NSI hopes to develop the infrastructure that would allow study teams to upload their structure inventories to be stored on the NSI database in the future.

In light of comprehensive benefits and social and environmental justice considerations, how should study teams consider historical structures (i.e., those eligible for the National Register of Historic Places) when assigning a value to those structures in the NSI?
Property value in the context of National Economic Development (NED) analysis is typically estimated by using a depreciated dollar per square footage-based replacement cost, which does not capture historical preservation and/or cultural resources value – both of which may be relevant. There are certain attributes within the NSI that may help teams screen any structures that may need to be looked at more carefully (e.g., year the property was built); however, historical preservation and cultural resource values are typically best captured more qualitatively in an Other Social Effects (OSE) analysis. If teams have any suggestions for additional fields that they feel would be beneficial to add to the NSI, they can always send them to the NSI team.