

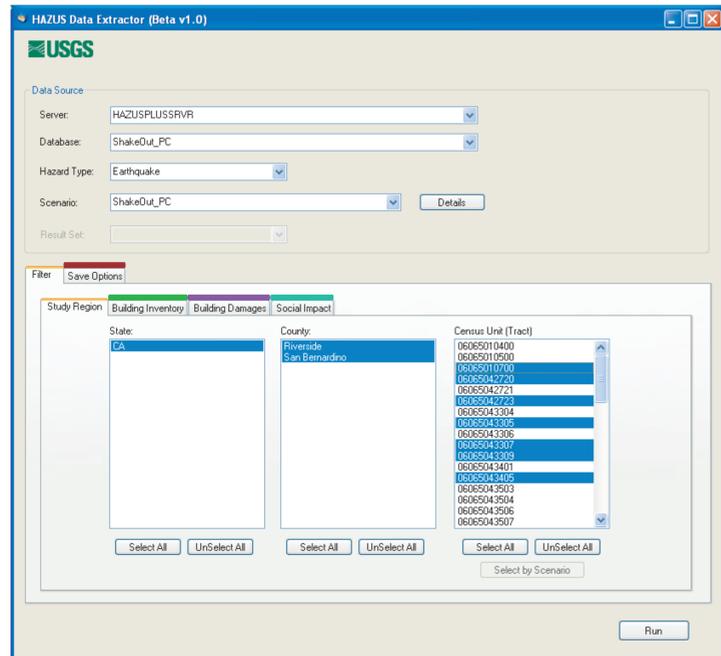
# HAZUS-MH Data Extractor (Beta v1.0)



Jeff Peters, Peter Ng

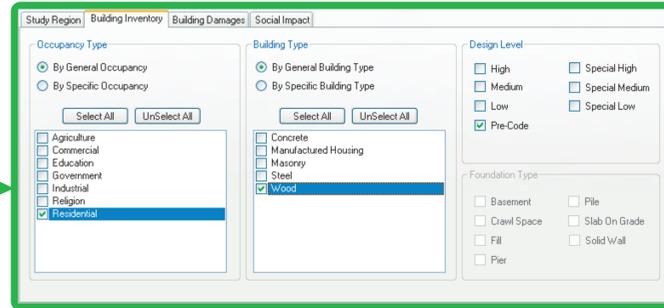
The HAZUS-MH Data Extractor tool is a software application developed by the U.S. Geological Survey, Western Geographic Science Center for extracting data from HAZUS-MH Microsoft SQL Server databases and ESRI geodatabases. The tool is a Windows desktop application that supports the extraction of earthquake and flood hazard model results from HAZUS-MH for a selected study region and hazard or a result set (flood hazards only). The data available for extraction include general building stock inventory, general building stock damages and related economic losses, social impact (i.e., casualties and shelter requirements), and induced damages (i.e., debris and fire). Detailed data are stratified by a specific set of column attributes, which vary by hazard type. For earthquakes, this set includes census tract, specific occupancy type, specific building type, and design level. For floods, the set includes census block, specific occupancy type, building material, and foundation type. Extracted information can be saved in an ESRI geodatabase as detailed or aggregated data.

The window below appears when the tool is opened. In the *Data Source* portion, the drop-down lists select the HAZUS study region. The HAZUS SQL Server, typically called 'HAZUSPLUSRVR,' is created when the software is installed. To run the tool select the HAZUS server from the *Server* drop-down list. Next select a *Database* or HAZUS study region to extract data from. From the *Hazard Type* drop-down list choose a hazard. Choose which *Scenario* to extract the results for. Click the *Details* button for more information about the specific scenario. If a flood is chosen for *Hazard Type*, the program will prompt for a *Results Set*.

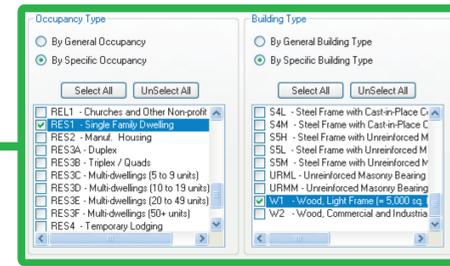


The *Filter* tab contains several other tabs for limiting the data to be extracted.

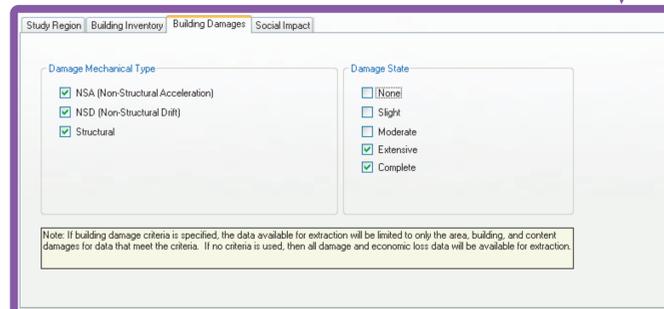
The *Study Region* tab controls the selection of data by state, county, or census unit. For an earthquake, the data source is fully specified by selecting a scenario. For a flood, the data source is fully specified by selecting both a scenario and a result set. Selecting one or more items from *State* will populate the *County* list. Selecting one or more counties will populate the *Census Unit* list. The data are aggregated at the census tract level for earthquakes and at the census block level for floods. Setting criteria in the *Study Region* tab is optional. By default, all data pertaining to the specified data source will qualify for extraction, if no study region criteria are set.



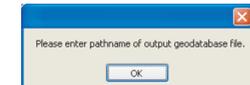
The *Building Inventory* tab specifies criteria to limit the selection of building inventory data. The options on this tab depend on the selected hazard type. This example shows data selected by *General Occupancy* and *Building Type*. The *Design Level* option is specific to earthquakes and includes a list of building codes defined in HAZUS. The *Foundation Type* option is specific to floods.



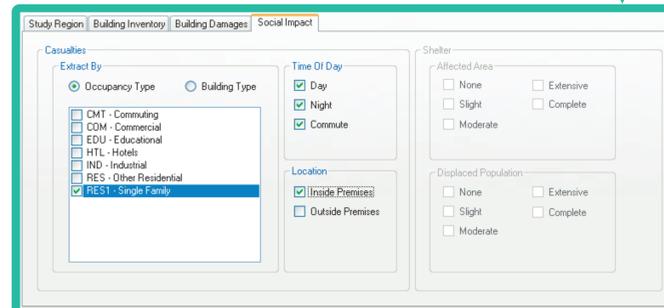
With *Specific Occupancy* and *Building Type* selected, the data to be extracted is further limited. *Specific Building Type* is disabled for floods.



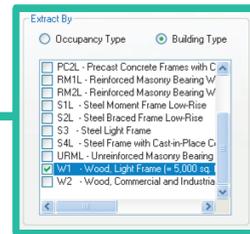
The *Building Damages* tab applies only to earthquakes and allows selection of data by damage mechanical type or damage state.



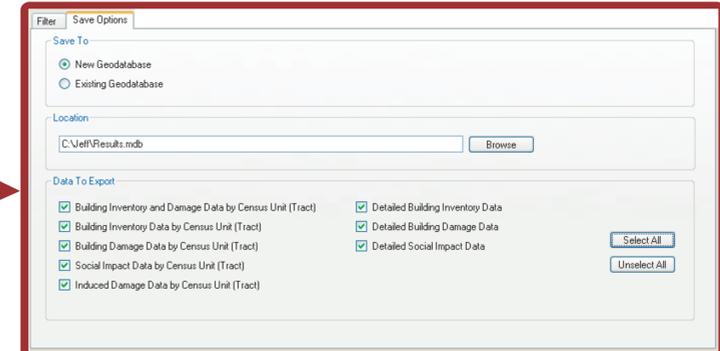
A warning indicates pressing run before proceeding to the *Save Options* tab.



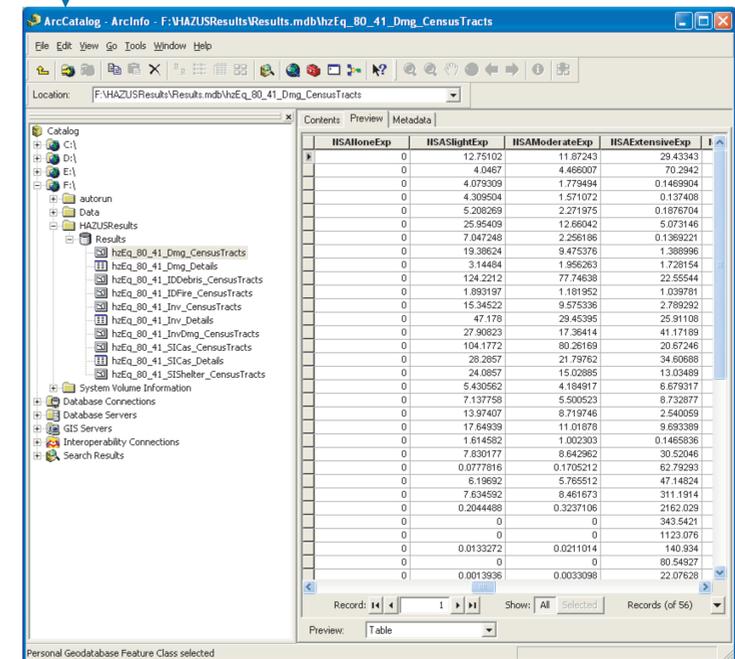
The *Social Impact* tab selects social impact data, the availability of which depends on the hazard type. Social impact data consists of casualty data for earthquakes and shelter requirements for floods. Casualty data are based on time of day or location. Shelter requirements are based on the affected area or displaced population. By default all social impact data will be extracted, if no selection is made.



Casualty data can be extracted by occupancy or building type.



The *Save Options* tab specifies 1) the location of the geodatabase for storing the extracted data and 2) the extracted data set to save. Extracted data can be stored in an existing or new geodatabase. Extracted data choices can be a feature class or detailed data. Feature class data are stratified by census unit and can be subsequently used to create map layers in ArcMap. Detailed data vary by hazard type. For earthquakes, all data extract choices are available. For floods, all but the building inventory and damages by census unit and the detailed social impact data are available.



Click the run button in the lower right hand corner. In ArcCatalog (above) the selected tables and feature classes are shown. An example attribute table populated with HAZUS damage estimates is also shown. Since the extracted data is saved in a personal geodatabase (.mdb), they can also be viewed using Microsoft Access.