Graphic Detail

Geographic Information Systems (GIS) organize and clarify the patterns of human activities on the Earth's surface and their interaction with each other. GIS data, in the form of maps, can quickly and powerfully convey relationships to policymakers and the public. This department of Cityscape includes maps that convey important housing or community development policy issues or solutions. If you have made such a map and are willing to share it in a future issue of Cityscape, please contact alexander.m.din@hud.gov.

FEMA Puts New Data on the Map for Policymakers

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From record-breaking river levels that lasted for months in the Midwest to Tropical Depression Imelda, which produced torrential rains in Texas, 2019 was a major year for flooding across the United States. The year also marked a milestone in the availability of data on flood damages, when the Federal Emergency Management Agency (FEMA) released two large National Flood Insurance Program (NFIP) data sets on June 11.

Created by Congress through the National Flood Insurance Act of 1968, the NFIP currently insures some 5 million properties in more than 22,000 communities in the United States (Horn, 2019). The FEMA June 2019 data release is the first time that the public has been able to access NFIP data at an individual claim level (see exhibit 1). The claim data set (FEMA, 2019a) includes approximately 2.4 million records dating back to the program's creation; these records include payment amounts, dates, and building characteristics. FEMA also released a policy data set with 10 years of policy transaction details (FEMA, 2019b).

Exhibit 1

Cumulative NFIP Claims per Census Tract in the Contiguous United States, as of March 31, 2019

National Flood Insurance Program Claims per Census Tract

1   6,616
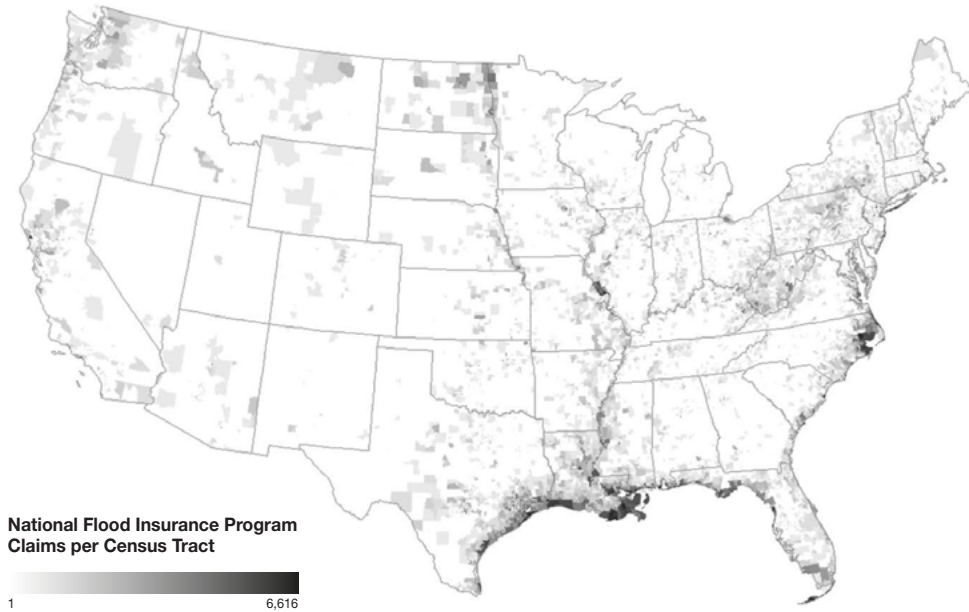
Source: FEMA, 2019a

Historically, such detailed NFIP data was unavailable to the public. FEMA has made summary statistics available (aggregated by county, state, or year), and the public is able to access the locations of designated flood zones via print or digital maps. The newly released data sets, however, go beyond the previously available information, providing claim dates, payment amounts, policy fees and coverage, FEMA-designated flood zones, and other characteristics of insured buildings and flood losses. For the first time, policymakers and other interested parties can, for example, easily access the data necessary to identify the areas of a state with concentrations of NFIP claims (see exhibit 2). This can be considered along with demographic data, disaster assistance data, or other information to assess where and why flood claims have been made and can contribute to a general understanding of flood risk and resilience.

Exhibit 2

Cumulative NFIP Claims per Census Tract in Virginia, as of March 31, 2019
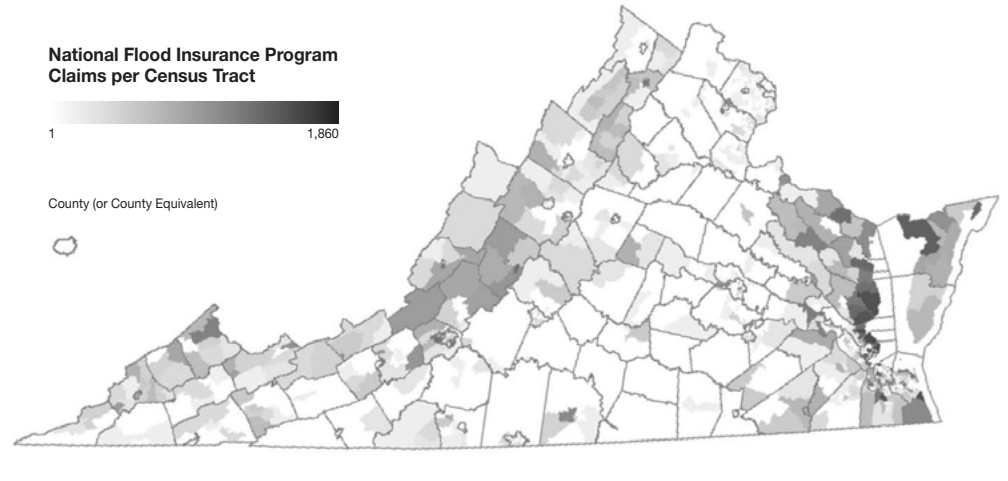
Source: FEMA, 2019a

To protect the privacy of policyholders, FEMA redacted certain geographic information before publishing the data. Claims can be identified geographically by Census tract or ZIP Code, but not by block or address. Although the claims data set does include latitude and longitude, the coordinates are truncated to one tenth of a decimal degree—a relatively low level of precision that means that many claims in a particular municipality can share the same coordinates. As a result, the FEMA data sets are primarily useful for analysis at the national, state, or regional scale, but not at a local or sub-local scale. Even in urban areas, where Census tracts have relatively small geographic footprints (such as in Hampton, VA, shown in exhibit 3), the FEMA data are likely not sufficient for local mitigation planning or individual decisionmaking. In addition, the FEMA

Exhibit 3

Cumulative NFIP Claims per Census Tract in the City of Hampton, VA, as of March 31, 2019

**National Flood Insurance Program
Claims per Census Tract**

1   1,294

data sets do not provide any way to link claims together (for example, to identify repeatedly flooded properties) or to link policies to claims. Also, the scope of NFIP data does not include other important flood-related information, such as flood damages on uninsured properties or on properties insured by private, non-NFIP policies. Finally, individual renters or homeowners cannot access their own home's claim history unless they are current NFIP policyholders.

The newly released data sets allow researchers, local officials, and the public to access important information about flood risk and damages. FEMA is committed to releasing updates on a regular basis and has in fact already released additional data as of mid-September 2019 (FEMA, 2019a; 2019b). The NFIP claim and policy records make up only part of the larger flooding story, however. Additional data from FEMA and other sources are necessary to make the most informed decisions possible about reducing future flood risk.

Author

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