GEOGRAPHIC CROSSWALKS

NHGIS geographic crosswalk files describe how U.S. census geographic units from one census year correspond to units from another year. Currently, NHGIS provides crosswalks for two settings: **2000 blocks to 2010 blocks** and **1990 blocks to 2010 blocks**.

OVERVIEW

NHGIS crosswalks are similar to the U.S. Census Bureau's Relationship Files , but NHGIS crosswalks include interpolation weights, derived from advanced models, to support the allocation of summary data from one census's units (the "source zones") to another (the "target zones"). Each interpolation weight indicates the approximate proportion of a source zone's characteristics that should be allocated to a given target zone.

For example, in the crosswalk from 1990 blocks to 2010 blocks, each record identifies a possible intersection between a single 1990 block and 2010 block, along with an interpolation weight (ranging between 0 and 1) identifying *approximately* what portion of the 1990 block's population and housing units were located in the intersection. To interpolate count data from 1990 to 2010 blocks using this crosswalk, first join the crosswalk to 1990 block data of interest; then multiply the 1990 block counts by the crosswalk's interpolation weights, which gives estimated counts for all 1990-2010 block *intersections*; then sum these intersection counts for each 2010 block.

Since 1990, all census geographic units (tracts, places, urban areas, etc.) correspond exactly to a set of blocks from the same census year. Therefore, the NHGIS block-to-block crosswalks can be used to allocate block data from 1990 or 2000 to *any* 2010 census units, not just to blocks. For example, to compute 2000 counts for 2010 school districts, first use the 2000-to-2010 block crosswalk to allocate 2000 block counts to 2010 blocks; then sum the allocated counts for all blocks in each 2010 school district. (One can determine the relationships between 2010 blocks and any other 2010 census units from a 2010 block-level data table obtained via the NHGIS Data Finder . NHGIS block data tables include codes for all 2010 census units.)

The interpolation weights given in the crosswalks are the same weights that NHGIS uses to produce geographically standardized time series tables.

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TECHNICAL DETAILS

The crosswalks are provided through the links below as comma-separated values (CSV) files within Zip archives.

Each Zip file includes a "README" text file that describes the content of the crosswalk file and the general approach used to generate the interpolation weights.

Complete details on the interpolation models are provided in NHGIS time series documentation pages:

- 2000 Block Data Standardized to 2010 Geography
- 1990 Block Data Standardized to 2010 Geography

Each crosswalk file is complete for the entire U.S. and includes many millions of records. They are therefore unsuitable for use within standard text editing or spreadsheet applications (e.g., Microsoft Excel).

There are two types of block crosswalk files, differing in the codes they use to identify blocks:

- **GISJOIN identifiers** match the identifiers used in NHGIS data tables and boundary files. A block GISJOIN concatenates these codes:

Component	Notes
"G" prefix	This prevents applications from automatically reading the identifier as a number and, in effect, dropping important leading zeros
State NHGIS code	3 digits (FIPS + "0"). NHGIS adds a zero to state FIPS codes to differentiate current states from historical territories.
County NHGIS code	4 digits (FIPS + "0"). NHGIS adds a zero to county FIPS codes to differentiate current counties from historical counties.
Census tract code	6 digits for 2000 and 2010 tracts. 1990 tract codes use either 4 or 6 digits.
Census block code	4 digits for 2000 and 2010 blocks. 1990 block codes use either 3 or 4 digits.

- **GEOID identifiers** correspond to the codes used in most current Census sources (American FactFinder, TIGER/Line, Relationship Files, etc.). A block GEOID concatenates these codes:

Component	Notes
State FIPS code	2 digits
County FIPS code	3 digits
Census tract code	6 digits. 1990 tract codes that were originally 4 digits (as in NHGIS files) are extended to 6 with an appended "00" (as in Census Relationship Files).
Census block code	4 digits for 2000 and 2010 blocks. 1990 block codes use either 3 or 4 digits.

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DOWNLOAD

Crosswalks with GISJOIN identifiers:

- 2000 blocks to 2010 blocks (130 MB zipped)
- 1990 blocks to 2010 blocks (241 MB zipped)

Crosswalks with GEOID identifiers:

- 2000 blocks to 2010 blocks (130 MB zipped)

- 1990 blocks to 2010 blocks (239 MB zipped)

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CITATION AND USE

Use of NHGIS crosswalks is subject to the same conditions as for all NHGIS data. See NHGIS Citation and Use.

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