

Community Areas and Census Data

CS 579 Online Social Network Analysis

Dr. Cindy Hood
9/30/25

Homework Assignments

- ▶ HW #3 - Network Metrics
 - ▶ Assigned- due by midnight 10/3, no submissions accepted after 5pm 10/6
 - ▶ Good prep for Exam 1
- ▶ HW #4 - Chicago Community Areas + Census Data
 - ▶ You may work in groups up to 4 students (no exceptions) on this hw
 - ▶ Posted by tomorrow
- ▶ Please contact TAs with questions

Exams and Final Project Poster Presentation

- ▶ Exam 1 - Oct 9 in class
- ▶ Exam 2 - Dec 2 in class
- ▶ Final Project Poster Session - Dec 4 in class
- ▶ Online students (sections 2 and 3) will have remote options

HW #4 - Using Census Data to Explore Chicago Community Areas

- ▶ Each student will be assigned a Community Area (1-77) to explore. You will use data primarily from census.gov to answer provide a characterization and make the case as to whether your given community area should currently be considered a community or not. You will also provide some history of your community.
 - ▶ You will provide a data-based look at the recent history of your community area
 - ▶ Back to at least 2010
 - ▶ You will provide data-based arguments for why it is a community
 - ▶ You will provide data-based arguments for why it is not a community
 - ▶ If this is the case, you will propose a different community based on your data analysis

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Dictionary

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community noun

com·mu·ni·ty (kə-'myŭ-nə-tē)

plural **communities**

often attributive

[Synonyms of community >](#)

1 : a unified body of individuals: such as

- a** : the people with **common** interests living in a particular area
broadly : the area itself
| the problems of a large *community*
- b** : a group of people with a common characteristic or interest living together within a larger society
| a *community* of retired persons
| a monastic *community*
- c** : a body of persons of common and especially professional interests scattered through a larger society
| the academic *community*
| the scientific *community*
- d** : a body of persons or nations having a common history or common social, economic, and political interests
| the international *community*
- e** : a group linked by a common policy
- f** : an interacting population of various kinds of individuals (such as species) in a common location
- g** : **STATE, COMMONWEALTH**

<https://www.merriam-webster.com/dictionary/community>

Chicago Community Areas





Community Data Snapshots



Home • Data • Community Data Snapshots

The Chicago Metropolitan Agency for Planning's (CMAP) Community Data Snapshots summarize demographic, housing, employment, transportation, land use, revenue, and water data in northeastern Illinois. Each year, CMAP updates these snapshots for the region's 7 counties (Cook, DuPage, Kane, Kendall, Lake, McHenry, and Will), 284 communities, and 77 Chicago community areas. Explore some of your community's data in the dashboard below, or view a PDF of the entire snapshot. You also can download the original files from the [CMAP Data Hub](https://cmap.illinois.gov/data/community-data-snapshots/).

<https://cmap.illinois.gov/data/community-data-snapshots/>

Chicago Metropolitan Agency for Planning

Each year, CMAP updates the Community Data Snapshots for the region's 7 counties – Cook, DuPage, Kane, Kendall, Lake, McHenry, and Will – 284 communities, and 77 Chicago community areas. This viewer shows only some of the data available in the snapshots. Please download the full PDF for more detailed data.

Most data comes from the American Community Survey (2019-2023), a sample-based data product. Exercise caution when using data from low-population communities, since the margins of error are often large compared to the estimates.

You can open and close this box by clicking the arrow at right.

Census data

- ▶ Available at data.census.gov

Recall

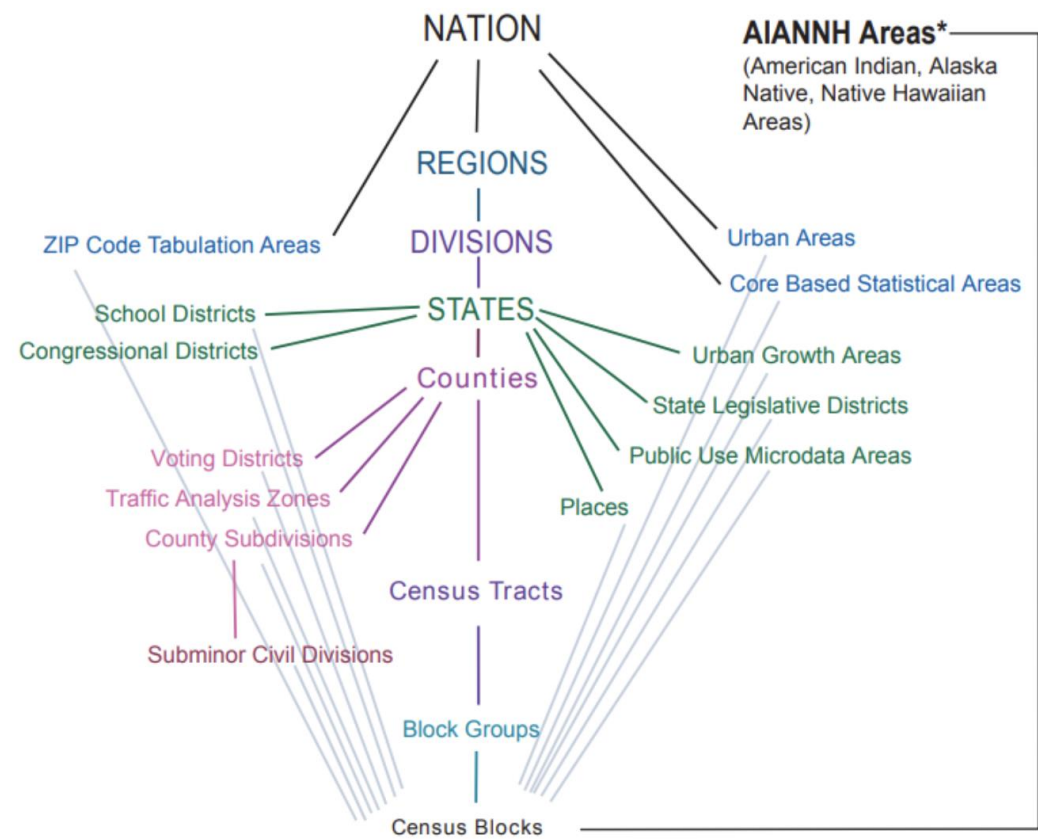


Figure 1.1: Census hierarchy of enumeration units

Hierarchy of Select Geographic Entities in the American Community Survey

Nation

- Regions
 - Divisions
 - States
 - ZIP Code Tabulation Areas (ZCTA)**
 - School Districts
 - Congressional Districts
 - Counties
 - County Subdivisions
 - Places
 - Public Use Microdata Areas
 - Alaska Native Regional Areas
 - State Legislative Districts*
 - Urban Areas
 - Metropolitan and Micropolitan Areas
 - Census Tracts*
 - Block Groups*
- American Indian Areas/ Alaska Native Areas/ Hawaiian Home Lands

Notes:

- * 5-year estimates only
- ** 5-year estimates only, first release in 2012 for the 2007–2011 5-year estimates

This graphic does not represent the full set of entities for which the ACS publishes data.

This geographic hierarchy influences how the Census Bureau identifies geographic areas. A system of geocodes - numeric or alphanumeric codes - are used to represent specific geographic areas.

Census Tract

Census Tracts are small, relatively permanent statistical subdivisions of a county or statistically equivalent entity that can be updated by local participants prior to each decennial census as part of the Census Bureau's Participant Statistical Areas Program (PSAP). The Census Bureau delineates census tracts in situations where no local participant responded or where state, local, or tribal governments declined to participate. The primary purpose of census tracts is to provide a stable set of geographic units for the presentation of statistical data.

Census tracts generally have a population size between 1,200 and 8,000 people, with an optimum size of 4,000 people. A census tract usually covers a contiguous area; however, the spatial size of census tracts varies widely depending on the density of settlement. Census tract boundaries are delineated with the intention of being maintained over a long time so that statistical comparisons can be made from census to census. Census tracts occasionally are split due to population growth or merged as a result of substantial population decline.

Census tract boundaries generally follow visible and identifiable features. They may follow nonvisible legal boundaries, such as minor civil division (MCD) or incorporated place boundaries in some states and situations, to allow for census tract-to-governmental unit relationships where the governmental boundaries tend to remain unchanged between censuses. State and county boundaries always are census tract boundaries in the standard census geographic hierarchy. Tribal census tracts are a unique geographic entity defined within federally recognized American Indian reservations and off-reservation trust lands and can cross state and county boundaries. The tribal census tracts may be completely different from the standard county-based census tracts defined for the same area. (see "Tribal Census Tract").

Block Group

Block Groups (BGs) are statistical divisions of census tracts, are generally defined to contain between 600 and 3,000 people, and are used to present data and control block numbering. A block group consists of clusters of blocks within the same census tract that have the same first digit of their four-digit census block number. For example, blocks 3001, 3002, 3003, . . . , 3999 in census tract 1210.02 belong to BG 3 in that census tract. Most BGs were delineated by local participants in the Census Bureau's Participant Statistical Areas Program (PSAP). The Census Bureau delineated BGs only where a local or tribal government declined to participate in PSAP, and a regional organization or the State Data Center was not available to participate. A BG usually covers a contiguous area. Each census tract contains at least one BG, and BGs are uniquely numbered within the census tract. Within the standard census geographic hierarchy, BGs never cross state, county, or census tract boundaries, but may cross the boundaries of any other geographic entity. Tribal census tracts and tribal BGs are separate and unique geographic areas defined within federally recognized American Indian reservations and can cross state and county boundaries (see "Tribal Census Tract" and "Tribal Block Group"). The tribal census tracts and tribal block groups may be completely different from the standard county-based census tracts and block groups defined for the same area.

GEOID Structure for Geographic Areas

The Standard Hierarchy of Census Geographic Entities diagram illustrates the hierarchal relationship of different geographic areas to one another. This diagram is a great tool for understanding how GEOIDs are concatenated for geographic areas that nest within other geographic areas. The table below shows the GEOID structure in TIGER/Line Shapefiles for some of the most common legal and statistical geographies, as well as example GEOIDs for different geographic areas.

Hierarchy Diagrams

Diagrams showing how levels of geography relate to one another.



Area Type	GEOID Structure	Number of Digits	Example Geographic Area	Example GEOID
State	STATE	2	Texas	48
County	STATE+COUNTY	2+3=5	Harris County, TX	48201
County Subdivision	STATE+COUNTY+COUNTY SUB	2+3+5=10	Pasadena CCD, Harris County, TX	4820192975
Places	STATE+PLACE	2+5=7	Houston, TX	4835000
Census Tract	STATE+COUNTY+TRACT	2+3+6=11	Census Tract 2231 in Harris County, TX	48201223100
Block Group	STATE+COUNTY+TRACT+BLOCK GROUP	2+3+6+1=12	Block Group 1 in Census Tract 2231 in Harris County, TX	482012231001

Mapping Census Tracts to Community Areas

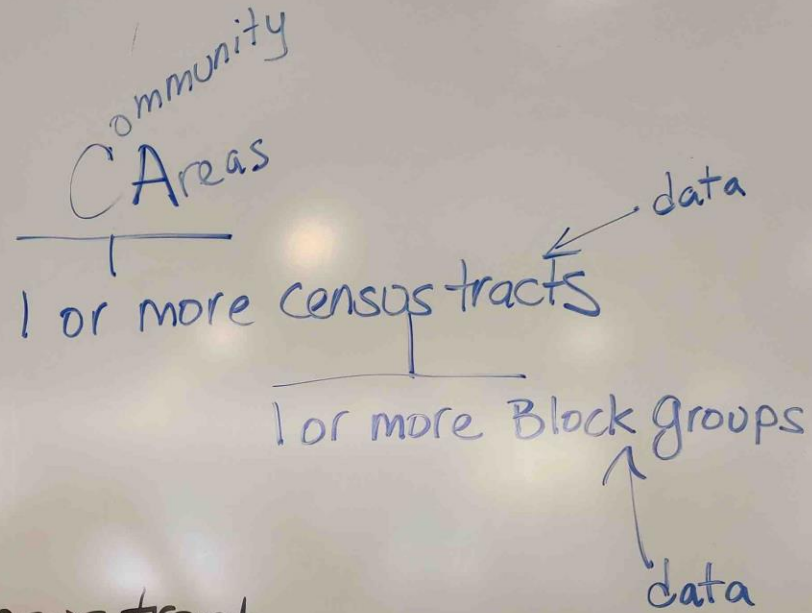
- ▶ 2020 Decennial Census
 - ▶ <http://robparal.blogspot.com>
- ▶ 2010 Decennial Census
 - ▶ <http://robparal.blogspot.com/2012/04/census-tracts-in-chicago-community.html>

Where to start?



2020 Census Tract
→ CA

Each geoid = 1 census tract



CA

Choose data (how?)

- Occupation data

② Look at surrounding geographies

① Mapping Census data to community Area

- Census Tract → CA (links that I provided)

Chicago data guy

Block groups in Census tracts

lowest level data

What kind of data
is census data?

* Summary statistic
over census geography