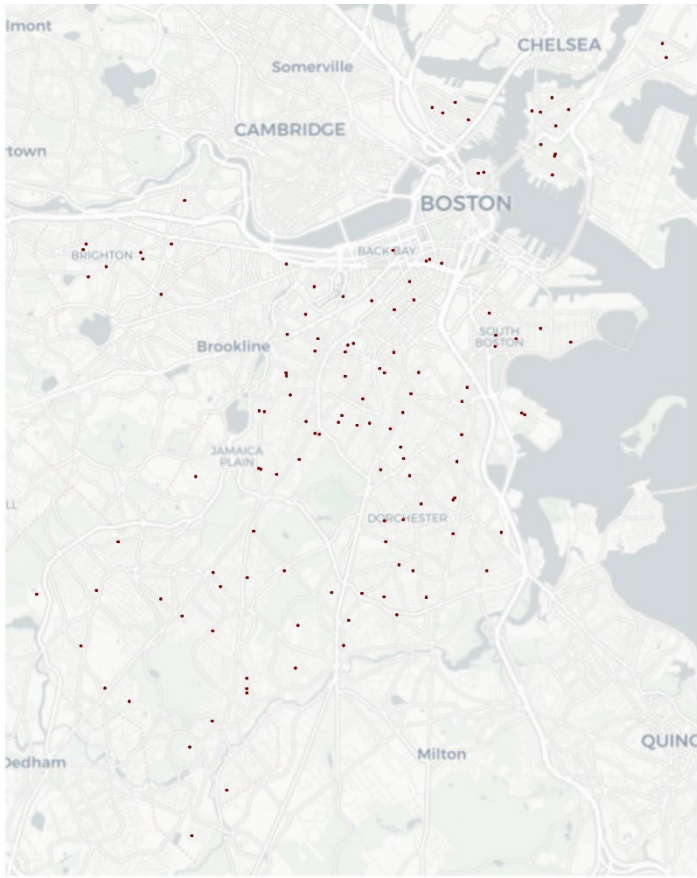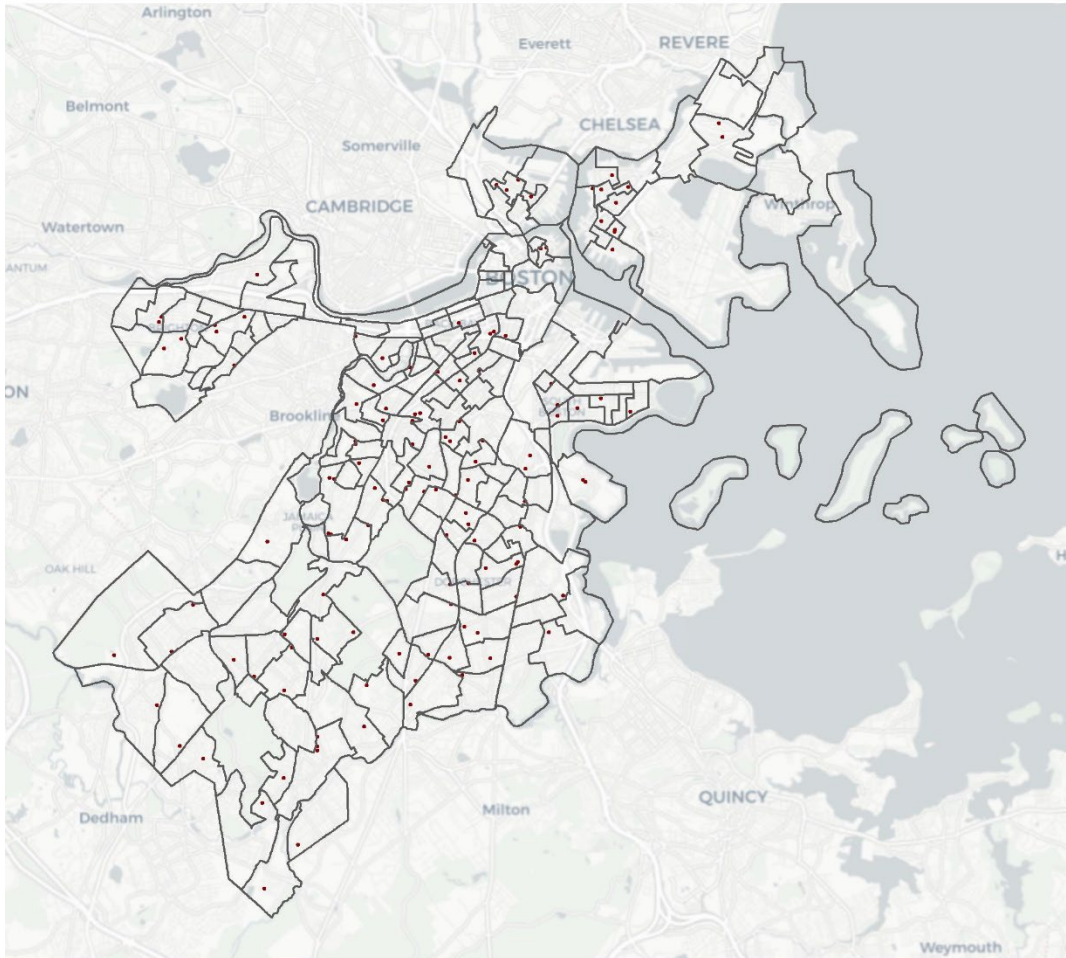# Areas and densities

Density definition

The quantity of something (e.g. number of points, length of lines) per unit of area.

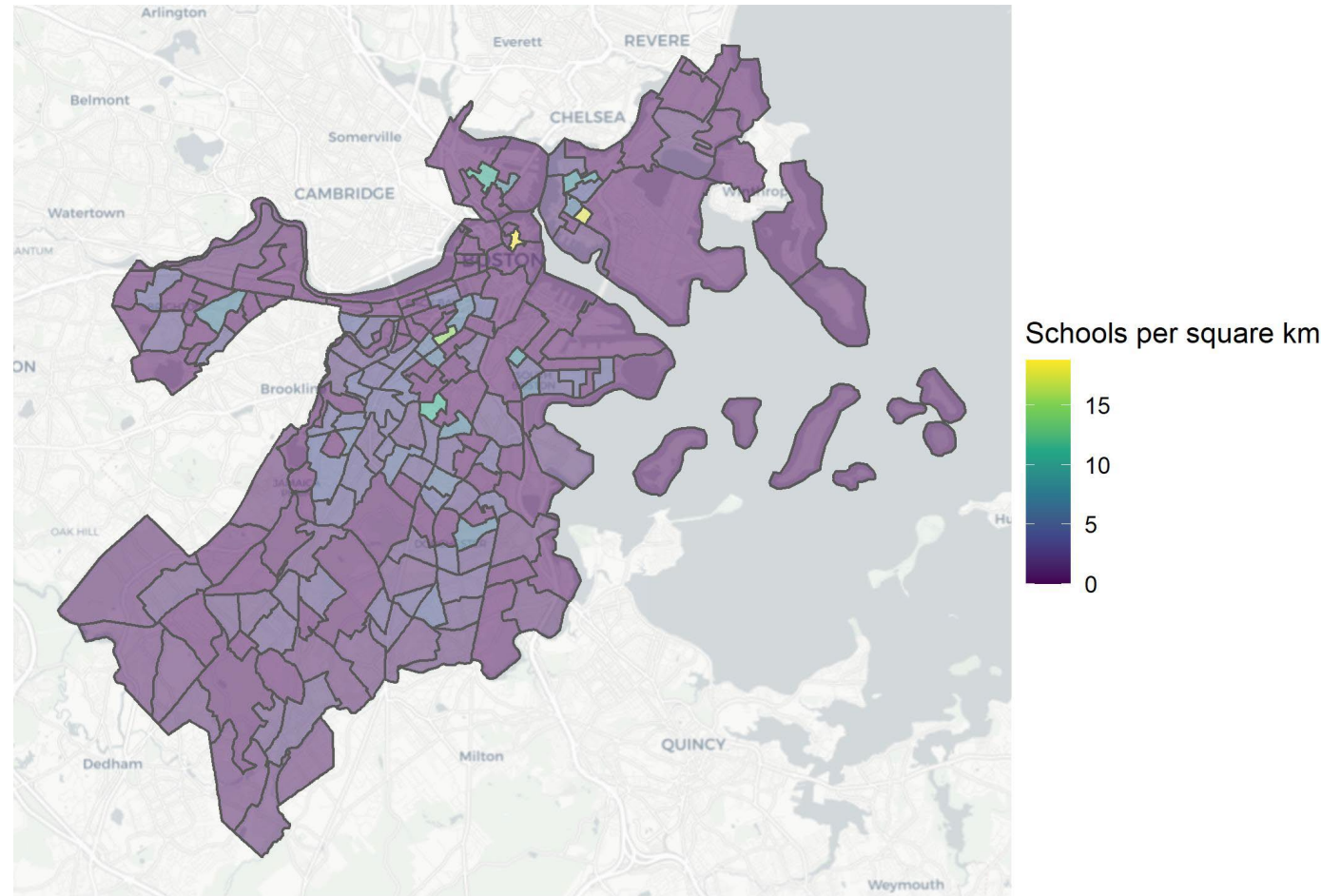# Disaggregated

Map tiles and data by OpenStreetMap
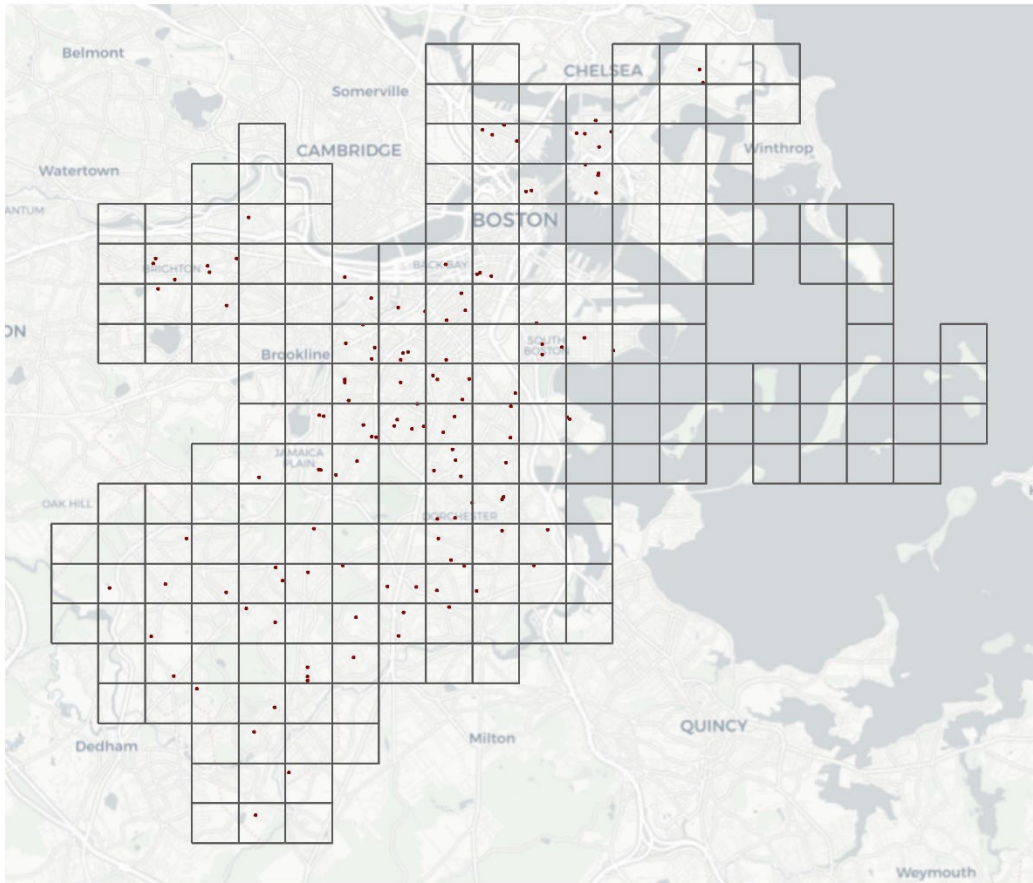
Aggregated to census tracts

Schools per square km

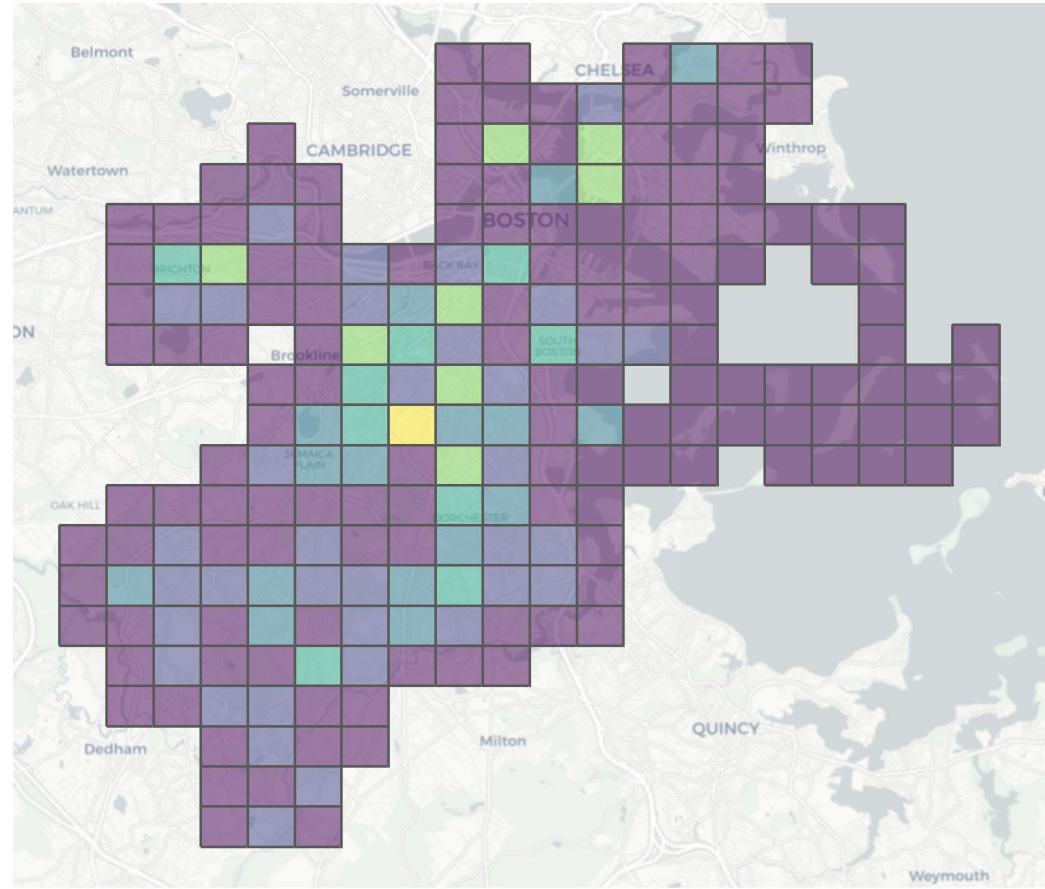# Aggregated to a grid

Schools per square km

Aggregated to a clockboard

Schools per square km
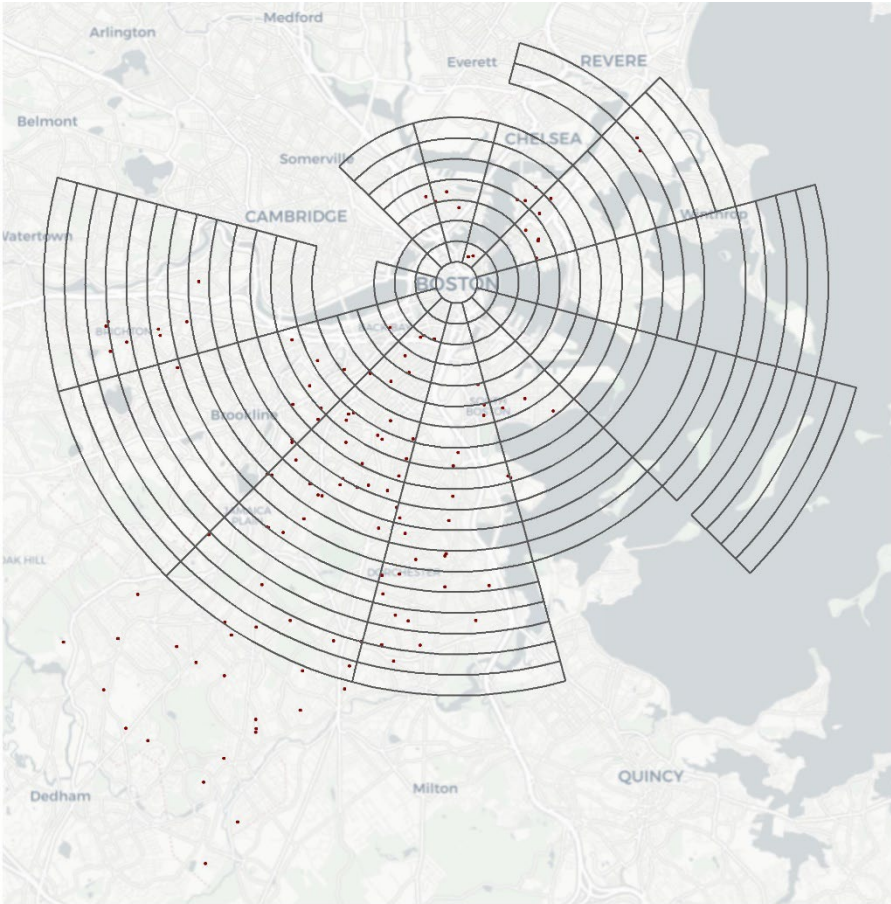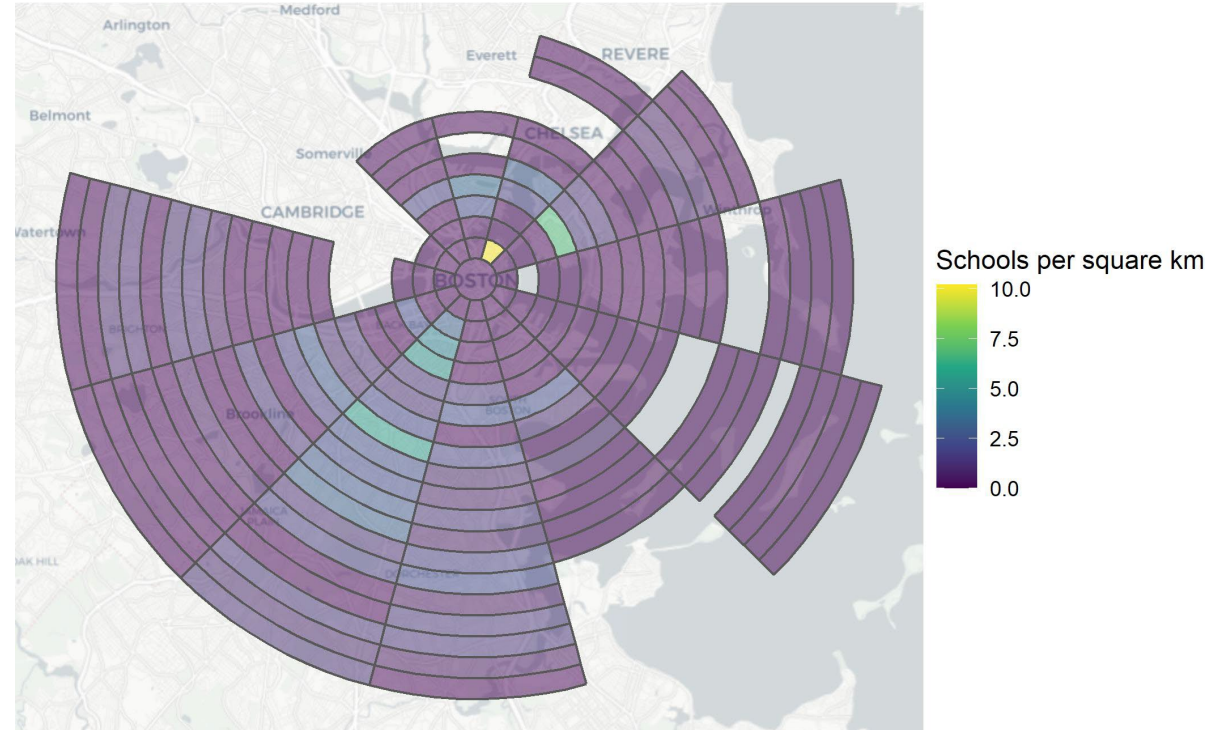
Map tiles and data by OpenStreetMap

Census Geography

Census blocks

Block 5000
GEOID: 250173537005000

Census blocks are usually bounded by streets, or (especially when the street network has long block lengths) other boundaries such as rivers or property boundaries.

Census block groups

Block Group 5
GEOID: 25017353700<u>5</u>

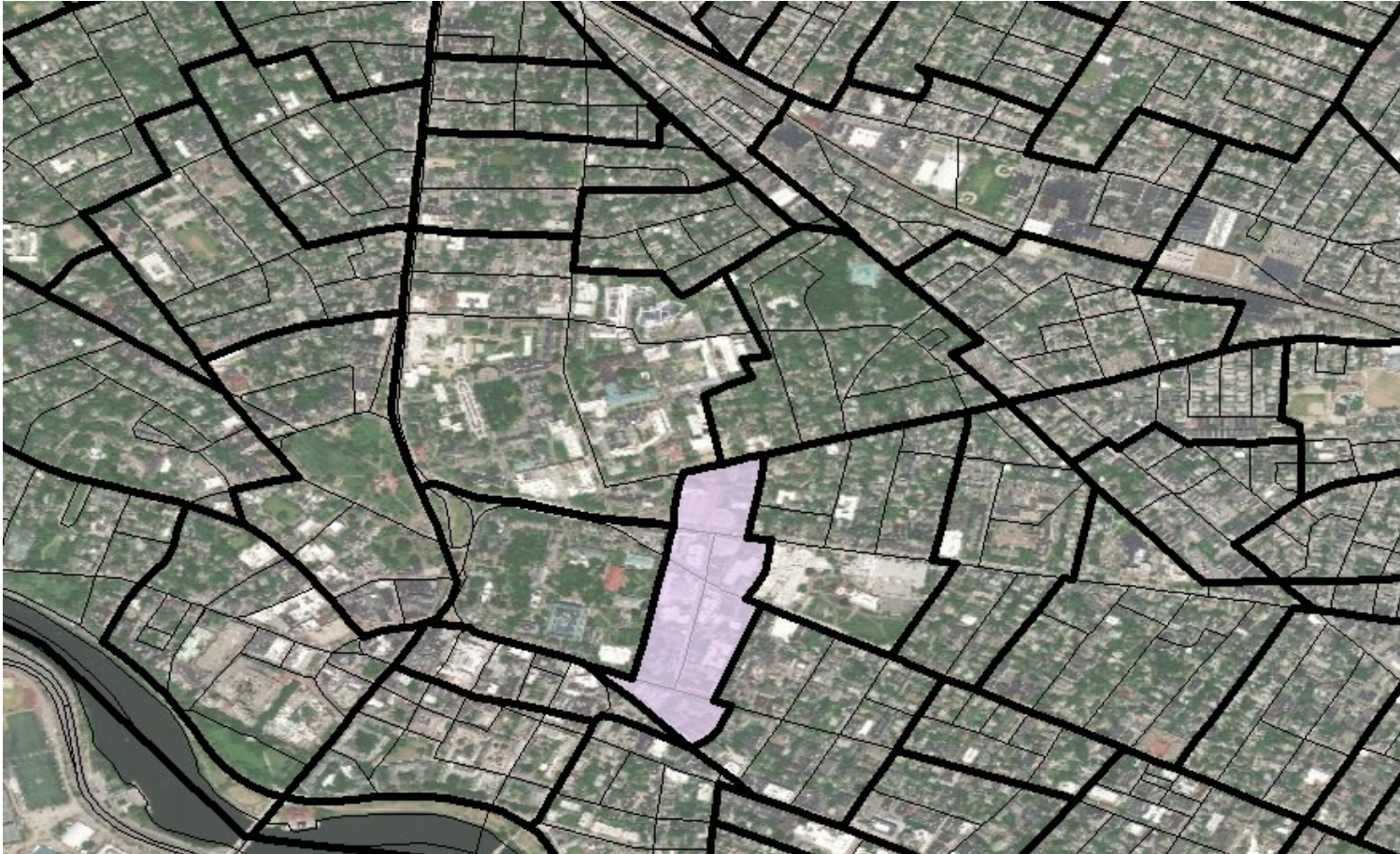Census block groups are groups of several census blocks. This is smallest geographic unit for which data tables from the decennial census are available.

Census tracts
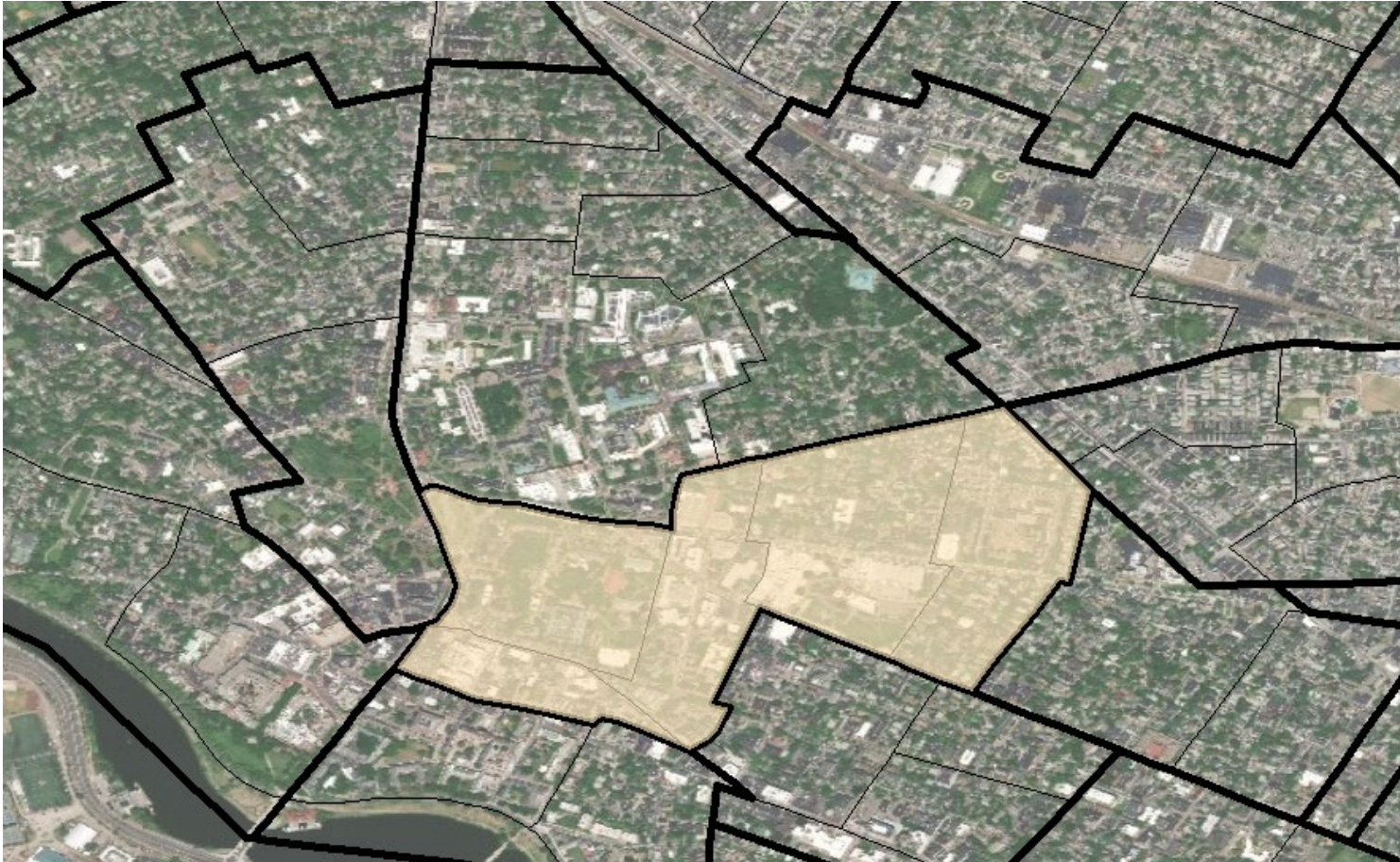
Tract 3537
GEOID: 25017353700

This is smallest geographic unit for which data tables from the American Community Survey is available.

The size of tracts may vary widely – they are designed to be more consistent in population than in size.

Census tracts are common proxies for "neighborhoods."

Counties (and county equivalents)
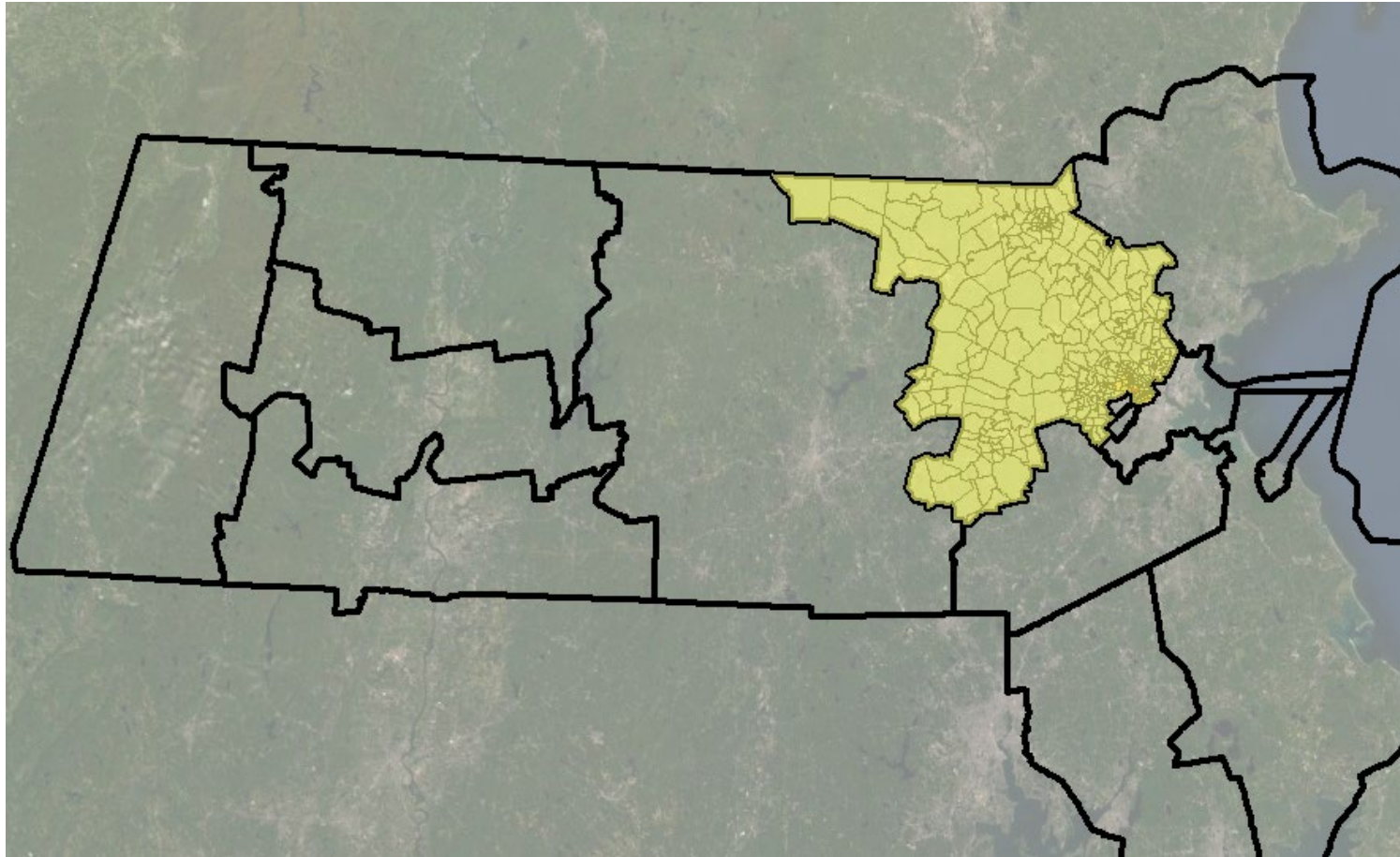
Middlesex County
GEOID: 25017

Unlike lower levels of census geography, county boundaries are political boundaries.

Public Use Microdata Areas (PUMAs)
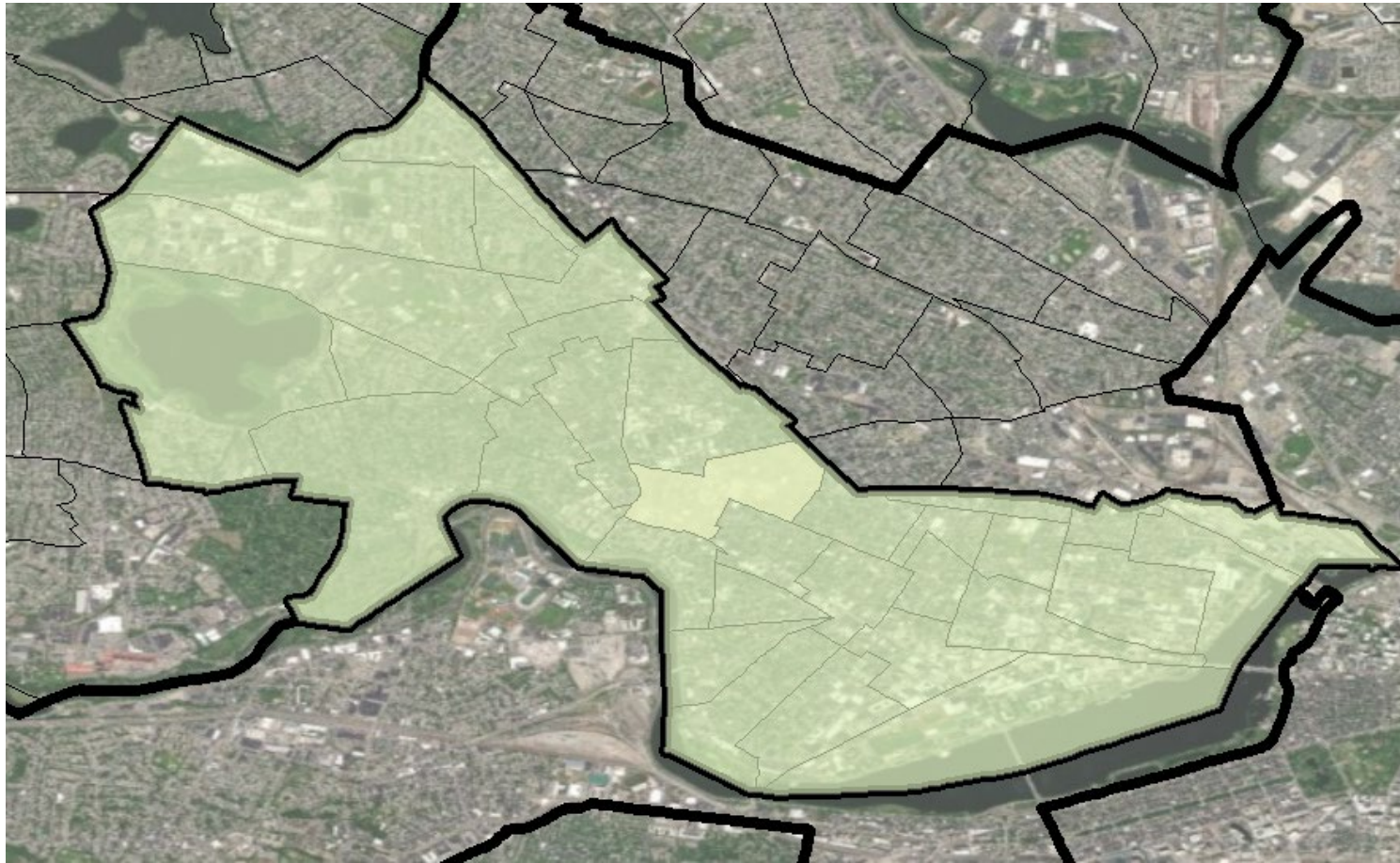
Middlesex County (East)—Cambridge City PUMA
GEOID: 2500506

This is smallest geographic unit for which the Census Bureau provides public microdata.

PUMAs are built on census tracts, but may contain multiple counties. They must have a population of at least 100,000 people and be geographically contiguous.

States (and state equivalents)

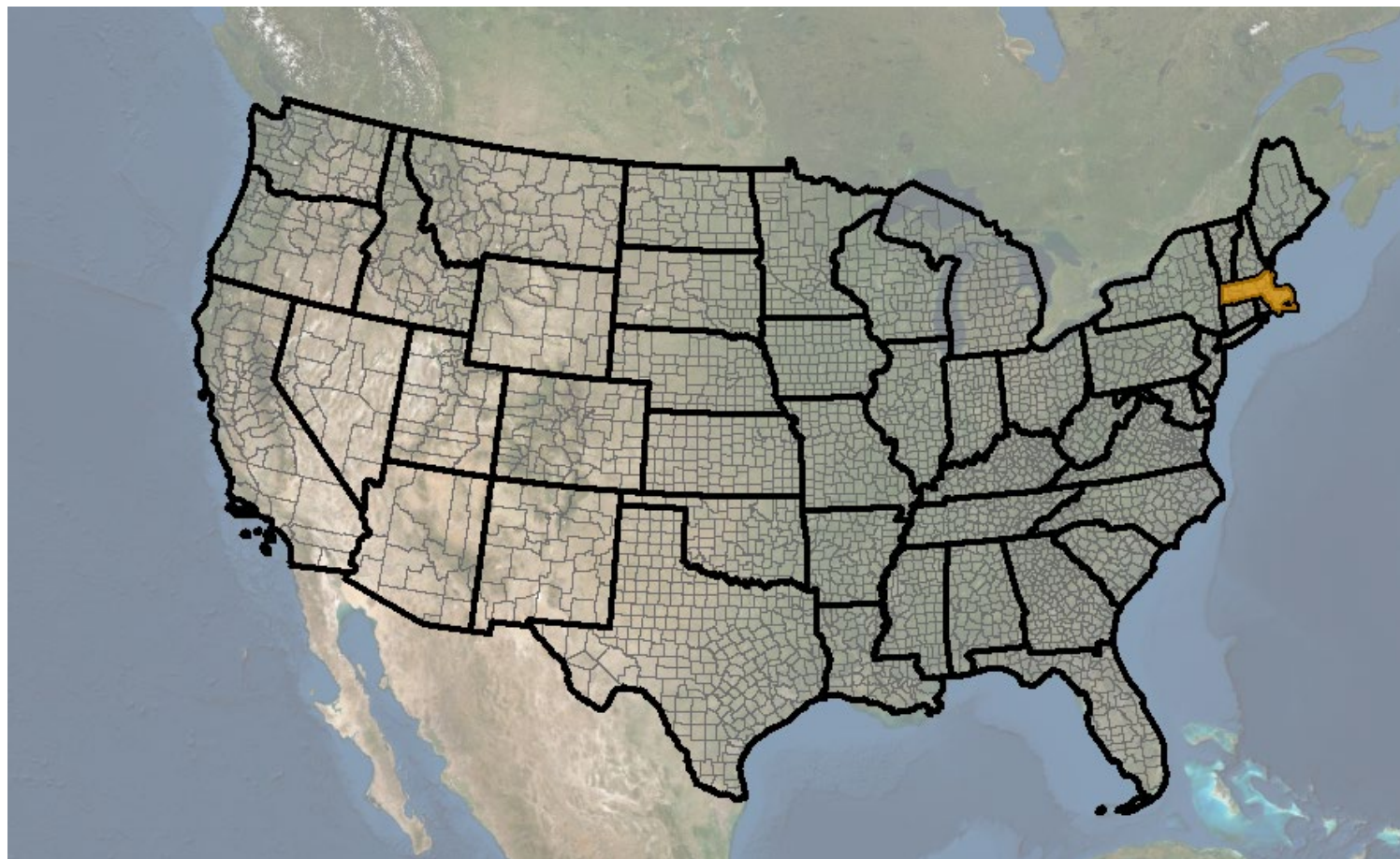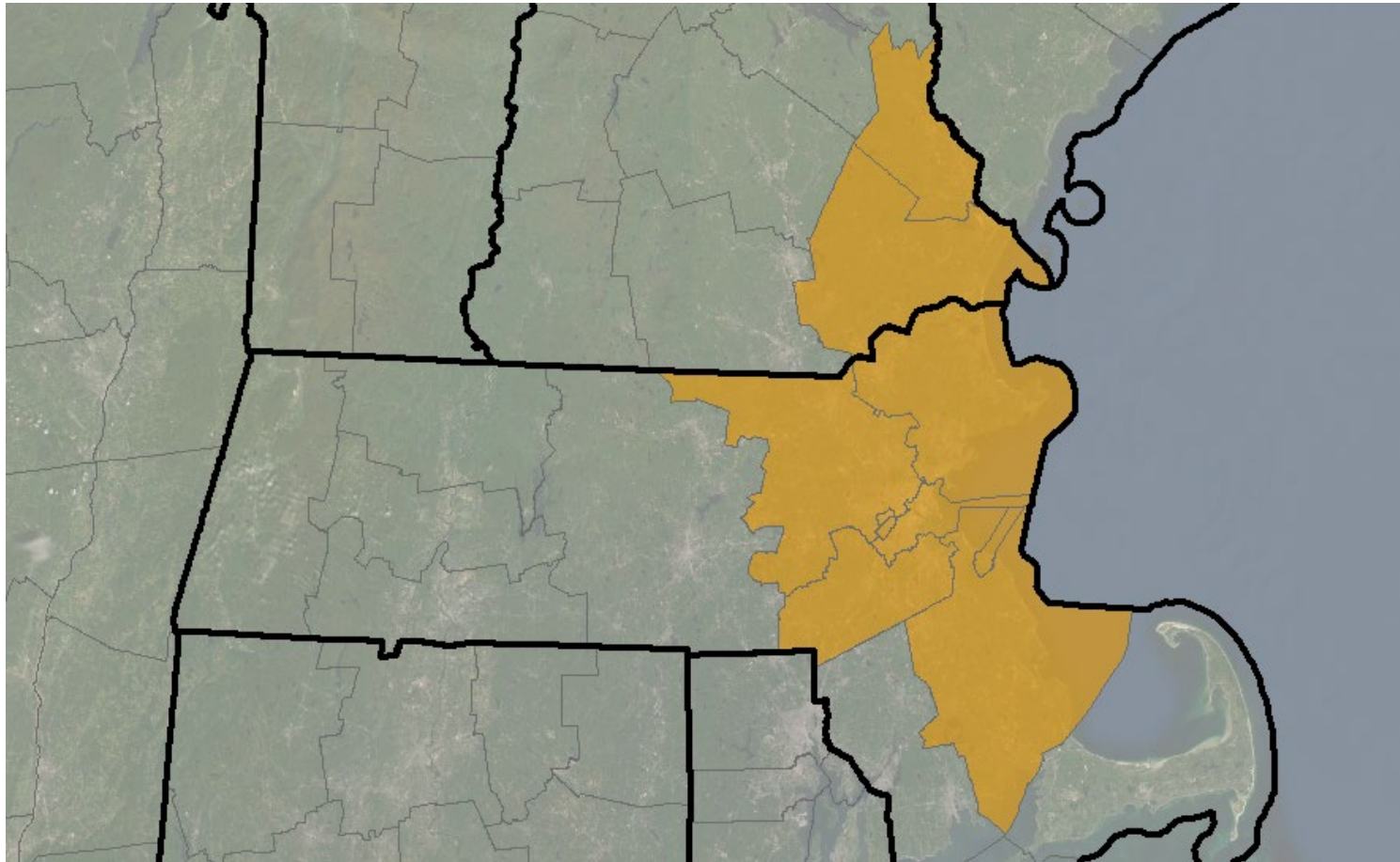
Massachusetts
GEOID: 25

State boundaries are political boundaries.

Core-based statistical areas (CBSAs)

Boston-Cambridge-Newton, MA-NH
Metropolitan Statistical Area
GEOID: 14460

CBSAs are defined by the office of management and budget (OMB), not the census bureau. They comprise one or more counties that are linked by commuting patterns. Could be either metropolitan statistical areas (MSAs) or micropolitan areas.

Micropolitan areas have populations between 10,000 and 50,000.

MSAs have populations of at least 50,000.

They may cross state lines.

Urban(ized) Area (UA/UZA) or Urban Cluster (UC)
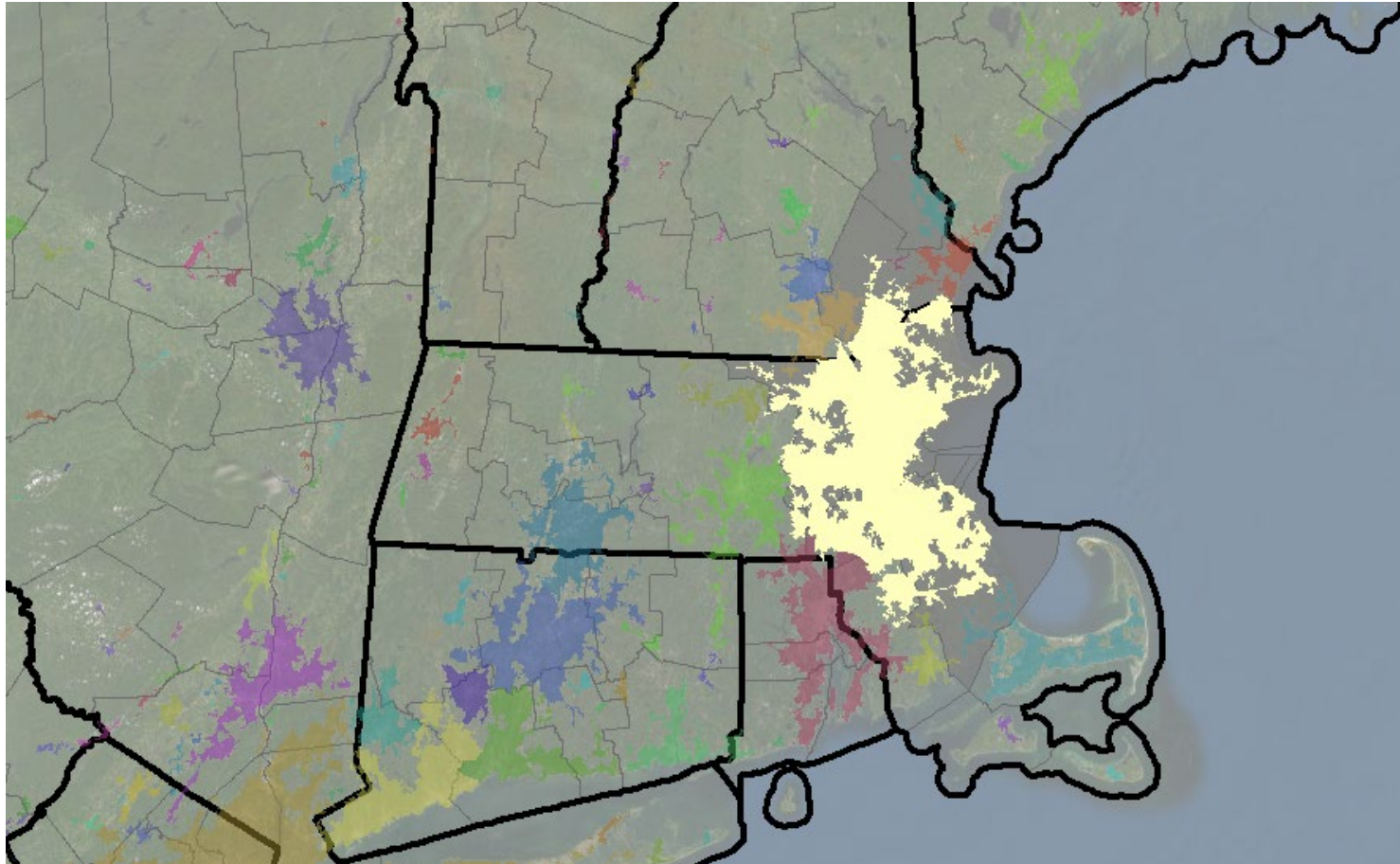


Boston, MA-NH-RI Urbanized Area
GEOID: 09271

The census defines urban areas or clusters as densely settled groups of adjacent census blocks or tracts with a population of at least 25,000.

Urban areas (UAs) have populations of at least 50,000 and urban clusters (UCs) have populations of at least 25,000. The census classifies the rest of the country as rural.

The USDOT refers to UAs as UZAs and classifies UCs as rural.

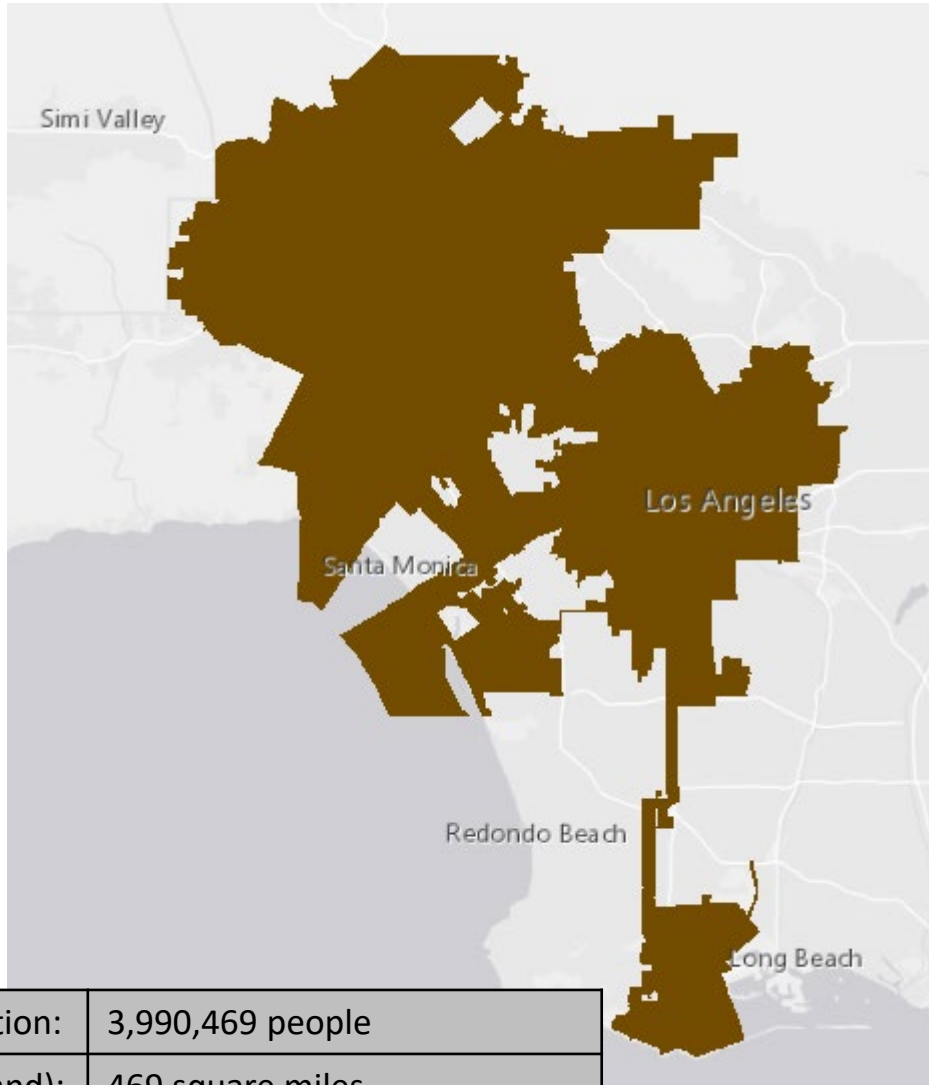# GEOIDs: FIPS, UACE codes

FIPS codes for nested geographies:

250173537005000

State | County | Tract | Block group | Block
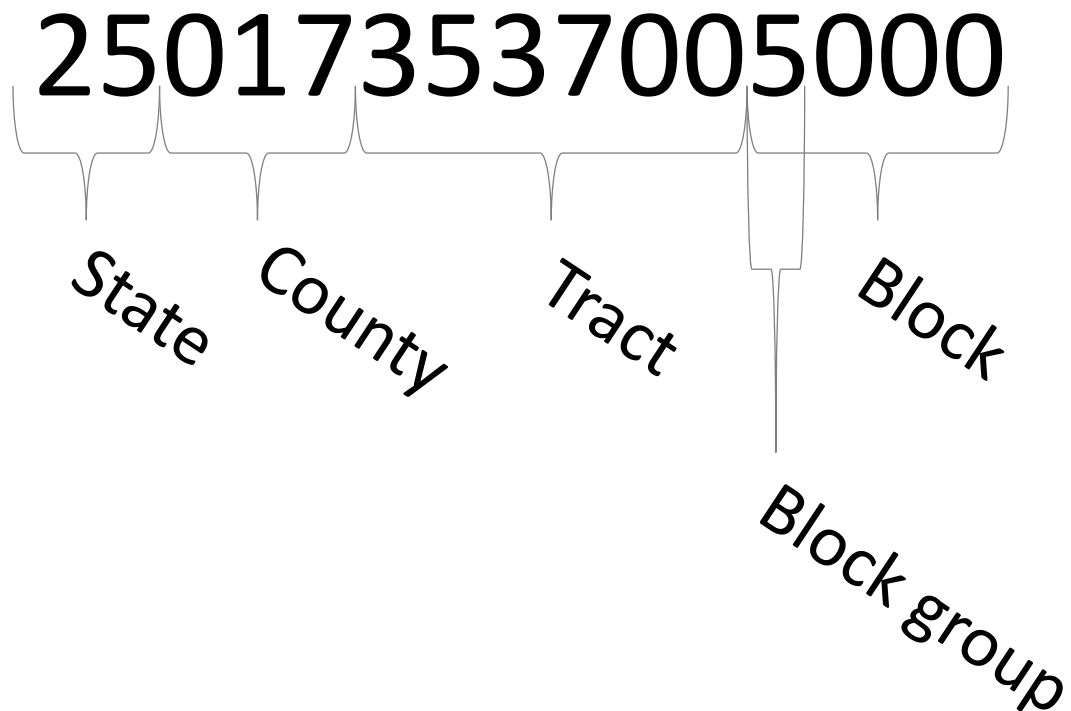
For non-nested geographies, numeric codes are generally assigned alphabetically.

Which is denser?

Los Angeles or New York?

City

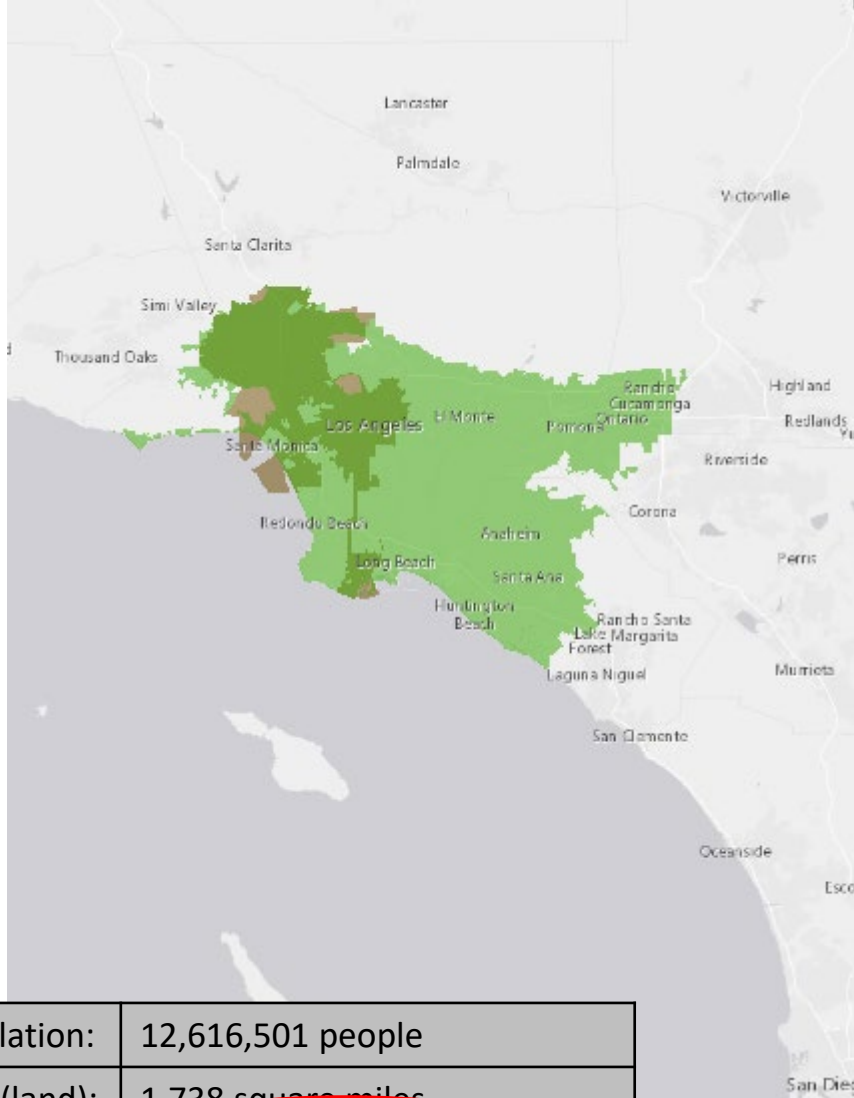| Population:	3,990,469 people
Area (land):	469 square miles
Density:	8,509 people per square mile
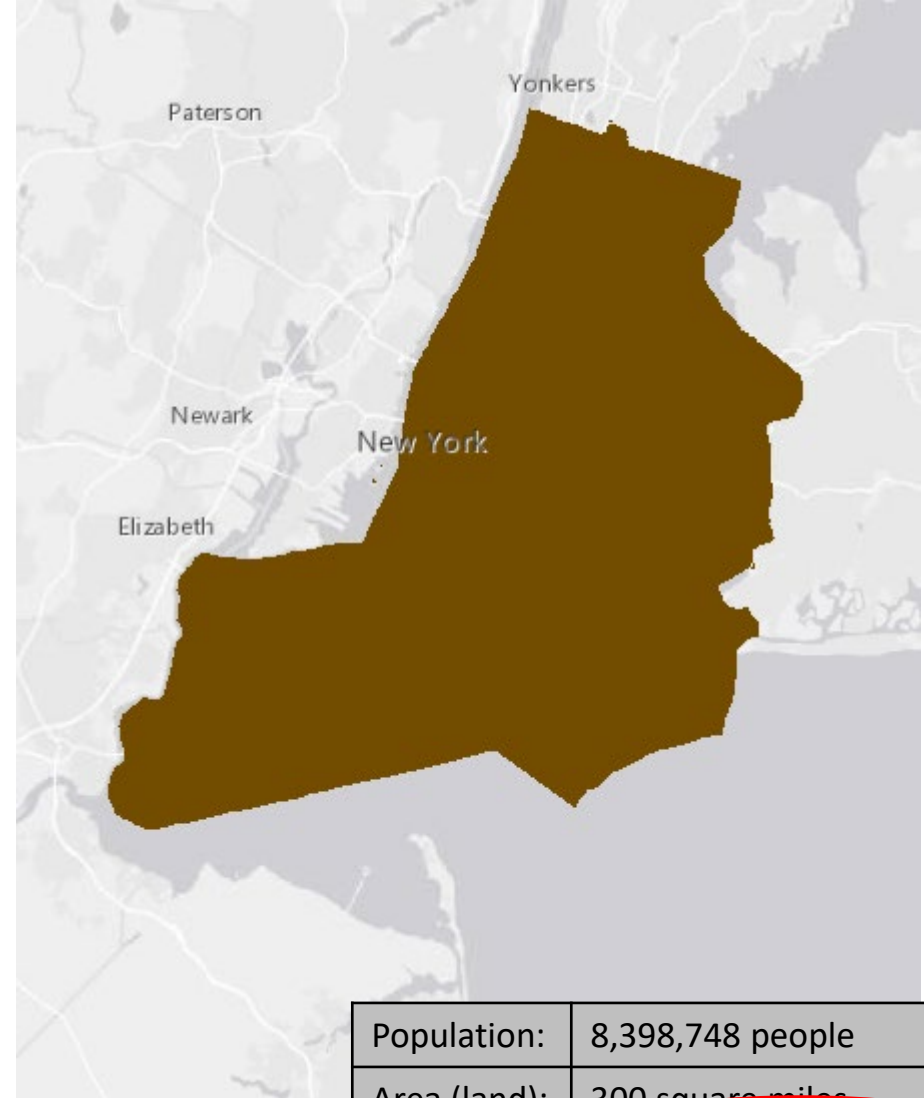
Population:	8,398,748 people
Area (land):	300 square miles
Density:	27,960 people per square mile

Urbanized Area

Population:	12,616,501 people
Area (land):	1,738 square miles
Density:	7,259 people per square mile
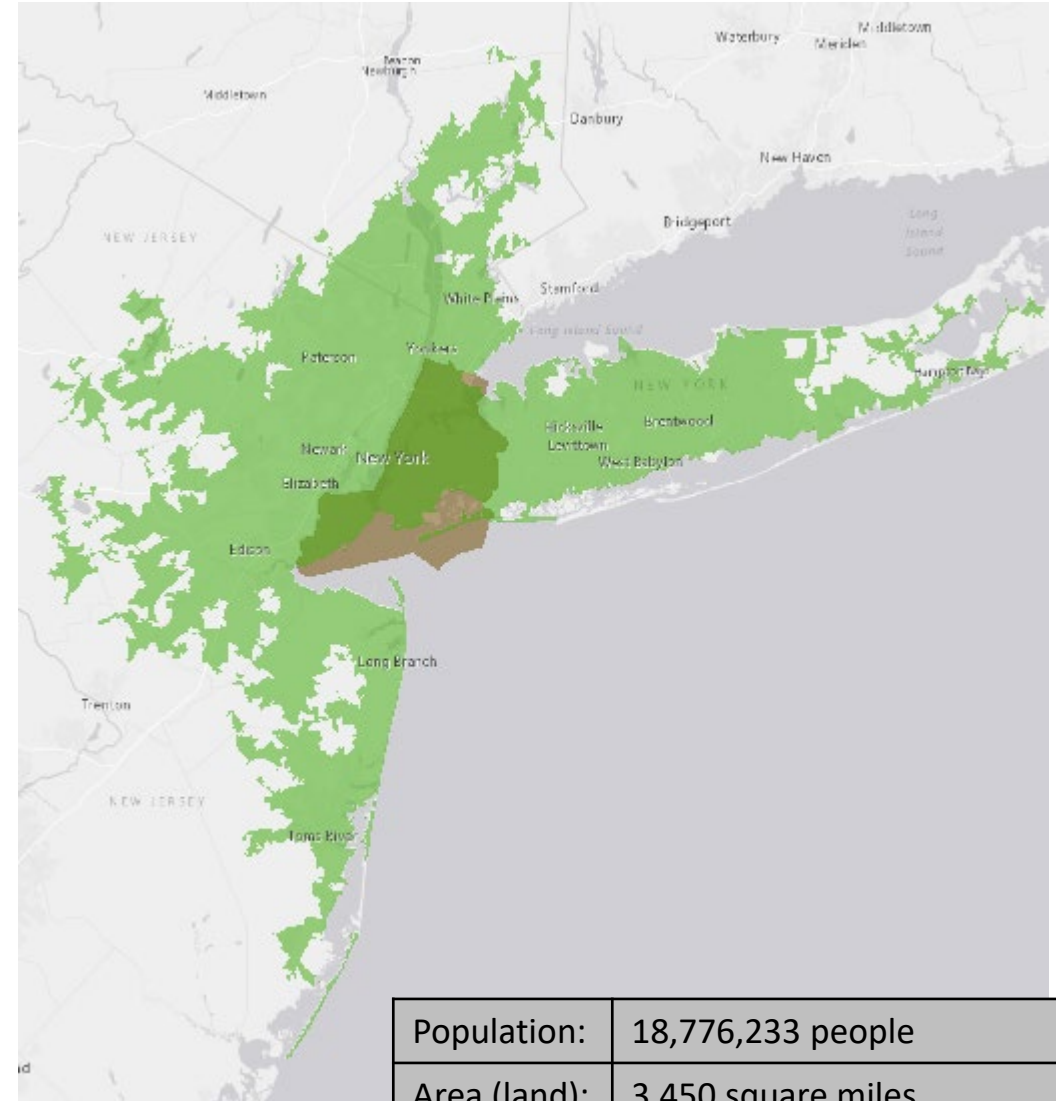
Population:	18,776,233 people
Area (land):	3,450 square miles
Density:	5,443 people per square mile

Metropolitan Statistical Area

Population:	13,261,538 people
Area (land):	4,849 square miles
Density:	2,735 people per square mile

Population:	20,192,042 people
Area (land):	8,293 square miles
Density:	2,435 people per square mile