Methodology statement: 2024 Esri Urbanicity Type

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Table of contents

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Introduction

The urban-rural continuum conceptualizes the vast array of urbanicity patterns within an area. Complex economic and social relationships exist between population centers, rural outposts, and all points in between. Esri's *Urbanicity Type* data is a classification system that designates population into one of 10 urbanicity categories that share characteristics typifying urbanicity including, density, distance, and socioeconomic dependence on urban cores.

Esri's *Urbanicity Type* data methodology enhances existing statistical definitions of urban-rural relationships by incorporating annual updates of residential and daytime population from Esri Updated Demographics, along with drive times and relative proximity powered by ArcGIS.[1] The 10 *Urbanicity Type* categories provide a more granular, current, and nuanced view of the degree to which population is considered urban or rural.

These classifications and the relationship between them have broad implications around the physical and social definitions of place. Urbanicity can be a strong differentiator in consumer markets as shopping preferences and consumer behaviors vary across the spectrum of urbanicity. Similarly, access to, and use of goods and services vary based on the degree of urbanicity.

Methodology

The geographic foundation of the classification is derived from the latest core based statistical areas (CBSA) as defined by the United States Office of Management and Budget (OMB), the U.S. Census Bureau's urban-rural status and places including both incorporated places and census designated places (CDP).[2,3,4] The *Urbanicity Type* database relies on a hierarchy that is centered on the definition of CBSAs as an entity with at least one core urban area and adjacent counties that have a high degree of social and economic integration with the core as measured by commuting ties. Esri's model uses OMB's identification of principal cities as designated centers of population and employment in CBSAs. Census place boundaries identify cities, towns, boroughs, villages, and so on, as an additional layer in the hierarchy. Whether places are incorporated (legal entities) or not (statistical entities), they are settled concentrations of population that should be differentiated in an urbanization taxonomy.

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[1] https://learn.arcgis.com/en/paths/how-to-use-and-interpret-esri-updated-demographics/

[2] US Census Bureau, Urban and Rural, September 26, 2023, https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural.html.

[3] Office of Management and Budget, OMB Bulletins https://www.census.gov/programs-surveys/metro-micro/about/omb-bulletins.html

[4] US Census Bureau, TIGER/Line®, https://www.census.gov/programs-surveys/geography/technical-documentation/complete-technical-documentation/tiger-geo-line.html

Population and housing estimates from Esri's Updated Demographics enrich this classification with current growth. Whereas the Census Bureau's urban area boundaries remain fixed for the decade, Esri's *Urbanicity Type* tracks both housing development and daytime population growth. While most urban-rural taxonomies rely only on a yes-no set of rules to categorize area types, Esri builds across defined geographic boundaries to create a hybrid model, discrete in some dimensions and continuous in others.

Discrete dimensions in Esri's *Urbanicity Type* classes delineate along CBSA boundaries. Two different models are built to classify blocks inside CBSAs versus outside CBSAs. They are further divided into large CBSAs (population greater than 100,000) and small CBSAs to further differentiate density and proximity measures. While a block being or not being a part of a place is a discrete feature, the model assigns a place-centric *Urbanicity Type* evaluated on a continuous scale.[5]

Understanding that urbanicity is defined as the *degree* to which a given geographical area is urban, Esri considers it important to have a continuous element to its classification model. To achieve this, population and housing density, key variables for measuring urbanization, are not evaluated independently but are assessed relative to density in the broader area. The methodology uses ArcGIS to capture drive times and distances to hot spots of economic activity. Like density, proximity measures are evaluated relative to the broader geographic area. This innovation ensures a symmetry of classification across CBSAs of different sizes by population and land area. In other words, every CBSA, regardless of size, has blocks assigned to *Urban Core – Urban Vicinity – Suburb – Metro Landscape*.

The United States is a large country with a rich and diverse history. States, CBSAs, cities, and towns have different land-use regulations, economic drivers, physical limitations on buildable land, and other factors that have contributed to their development patterns and timelines. As with any classification at this scale, model design cannot possibly capture every scenario. Esri's design process includes extensive quality analysis and visual review of the system to identify clear exceptions. While delineations are determined at the census block level to exploit the maximum resolution of input data, *Urbanicity Type* is currently presented at the census block group level to harmonize with existing Esri demographics products. The data is also available by Esri's geographic summary areas and for custom areas using ArcGIS GeoEnrichment Service to apportion the data to polygons of any size and shape. For further information on GeoEnrichment, refer to this [resource](#) for a wealth of information.

Example Area   The following is an example of the detail provided to users of the *Urbanicity Type* data. For a given geographic area or polygon, a distribution of the 10 urbanicity types is provided, weighted by Esri's updated residential total population estimates. A dominant urbanicity is calculated from this distribution. In the example below, the dominant *Urbanicity Type* is *Suburb*.

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[5] CBSA boundaries are adjusted for places that cross CBSA boundaries. Places are assigned as either fully inside a CBSA or not in a CBSA.

| Urbanicity Type	Population
1. *Urban Core*	0
2. *Urban Vicinity*	0
3. *Peripheral Community*	0
4. *Suburb*	44,248
5. *Metro Landscape*	16,488
6. *Small Town*	0
7. *Remote Town*	0
8. *Rural Countryside*	0
9. *Rural Remote*	0
10. *Unpopulated*	37
Total	60,736
Dominant *Urbanicity Type* by Population:	*Suburb*

Terminology

Place

Places are the common term used to identify incorporated places and census designated places (CDPs). Incorporated places are legal entities usually named as cities, towns, villages, boroughs, and so on. CDPs are purely statistical entities carved out of the unincorporated land by the Census Bureau. Census 2023 TIGER boundaries are used for Esri's 2024 data products.

CBSA

CBSAs include both metropolitan and micropolitan areas. Esri's 2024 data products employ the 2023 Office of Management and Budget listing of CBSA and related principal cities. Principal Cities are official census-defined places and, therefore, part of the place inventory.

Model Structure

These flowcharts summarize hierarchal relationships established in Esri's model. The tiered approach first evaluates blocks for their location within or outside a CBSA. Secondly, blocks are assessed for the location inside or outside place (city) boundaries. If in a place and in a CBSA, location in a principal city, secondary city, or other city is determined. Classification to an *Urbanicity Type* is subject to size, density, and proximity criteria for the place and the block. Further details are provided in the next section.
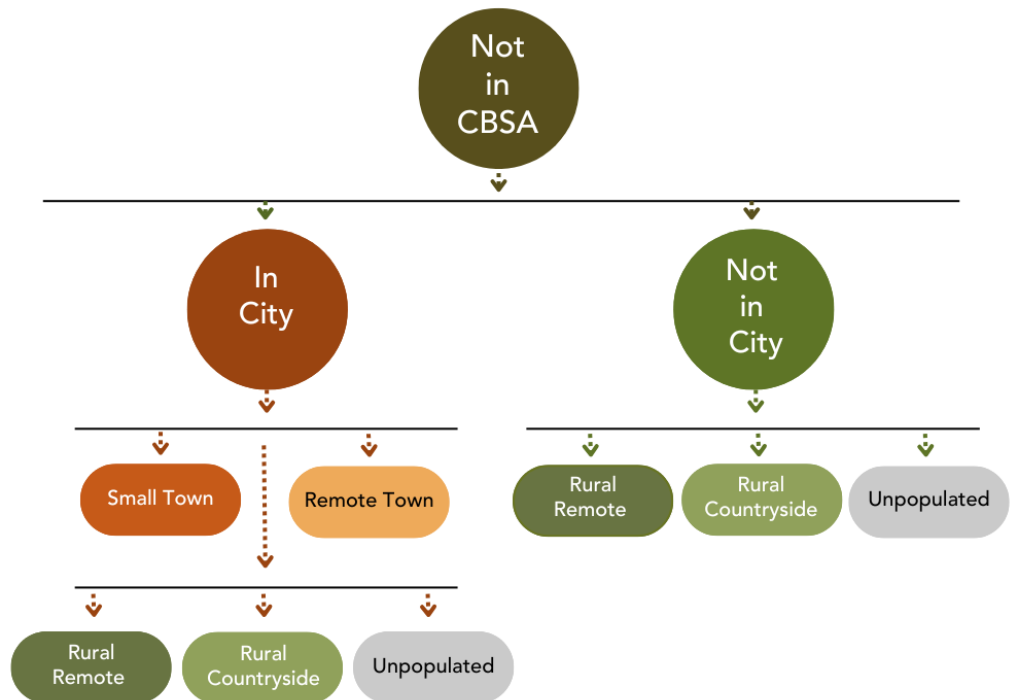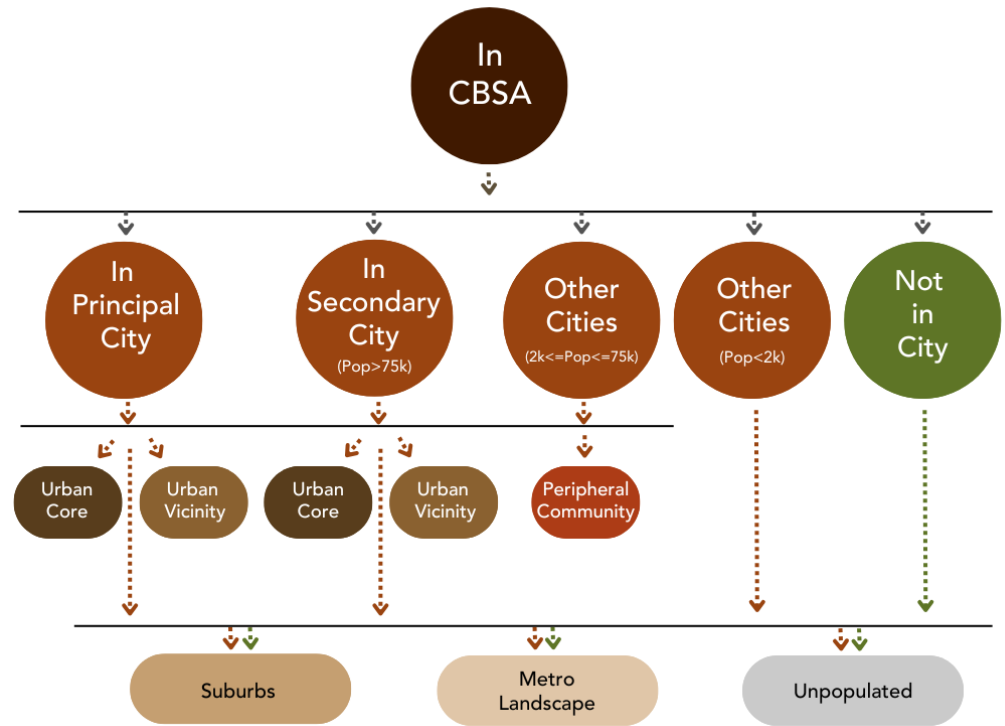
Urbanization Types within CBSA boundaries

Urban Core

An *Urban Core* is defined for principal cities within a CBSA. In larger CBSAs, places with current population greater than 75,000 are also assigned an *Urban Core*. Cities must also meet a minimum density of 400 persons per square mile or have greater than 90 percent urban population as defined in the decennial census. Within these place boundaries, only the densest census blocks relative to housing density of the place, or those with significant daytime population relative to residential population are classified as *Urban Core*. Requirements for density are adjusted for smaller CBSAs to ensure a good distribution of *Urban Core* relative to *Urban Vicinity*.

Exceptions: In limited cases where density criteria do not assign an *Urban Core* to a CBSA, density criteria are relaxed to ensure every CBSA has an *Urban Core*. For the 2024 update, this includes two CBSAs: Homosassa Springs, FL Metropolitan Statistical Area and Show Low, AZ Micropolitan Statistical Area

Urban Vicinity

Urban Vicinity is also defined for principal cities and places with current population greater than 75,000. Cities must also meet a minimum density of 400 persons per square mile or have greater than 90 percent urban population as defined in the decennial census. Density requirements for *Urban Vicinity* are less stringent than for *Urban Core* but do evaluate housing density relative to the place density, and the daytime-to-residential population ratio. It is necessary to adjust density requirements for smaller CBSAs to ensure a sufficient distribution of *Urban Core* relative to *Urban Vicinity*. In very limited cases, *Urban Vicinity* is not assigned in small micropolitan areas because blocks do not meet the density criteria.

Peripheral Community

The largest CBSAs have multiple principal cities defined, but there are other cities with significant population. Only defined in larger CBSAs, these cities with population between 2,000 and 75,000 are distant from the *Urban Core* of a CBSA. Cities must also meet a minimum density of 400 persons per square mile or have greater than 90 percent urban population as defined in the decennial census. As towns falling in the outskirts of a CBSA, *Peripheral Community* territories are more likely to function as small, isolated towns and have lesser connectivity with an urban core. Again, only the densest blocks within the place are assigned to the *Peripheral Community* urbanicity type. *Peripheral Community* is not assigned in small CBSAs (defined as those with population less than 100,000).

Exceptions: In cases where density criteria do not assign an *Urban Core* to a CBSA, the core of a CBSA is assigned as a *Peripheral Community*. They also have proximity to other larger CBSAs and meet the size and density criteria for *Peripheral Community*. For the 2024 release, these CBSAs include Naples-Marco Island, FL, Punta Gorda, FL Metropolitan Statistical Area, Sebastian-Vero Beach-West Vero Corridor, FL Metropolitan Statistical Area, Seaford, DE Micropolitan Statistical Area and Nogales, AZ Micropolitan Statistical Area.

Suburb

Suburb territories are commonly described as communities adjacent to or within commuting distance of a large place. Esri takes this a step further and defines *Suburb* as areas with proximity to an *Urban Core* within CBSAs. Exploiting the

definition of a CBSA that represents counties with commuting ties to central counties, it is reasonable to constrain areas defined as *Suburb* to be within a CBSA boundary only. Blocks assigned to *Suburb* meet a minimum population density and must be defined in a census urban area. In this tiered methodology, blocks can only be assigned as *Suburb* if they do not meet the density criteria for *Urban Core*, *Urban Vicinity*, or *Peripheral Community*.

Metro Landscape
Blocks assigned as *Metro Landscape* include residential population but do not meet the minimum density threshold to classify as *Suburb*. In this tiered methodology, blocks can be only assigned to *Metro Landscape* if they do not meet the density criteria for *Urban Core*, *Urban Vicinity*, *Peripheral Community*, or *Suburb*. By nature of their inclusion in the parent CBSA, these blocks have a socioeconomic connection to an *Urban Core*, however, the social and economic integration is likely less pronounced than for *Suburb*.

Unpopulated
Unpopulated blocks within a CBSA are not assigned an *Urbanicity Type*.

Urbanization Types outside CBSA boundaries

Small Town
Small Town blocks are located in places with a population density of at least 400 persons per square mile, with more than 90 percent of the population residing within a census urban area but located outside of a CBSA area. Like their counterparts in the *Peripheral Community*, *Small Town* blocks must meet density criteria relative to the place they are located in. However, in non-CBSAs, the proximity criteria are defined differently and rely only on drive times rather than distance. *Small towns* are defined as places that are less than a two-hour drive from an *Urban Core*.

Remote Town
Remote Town blocks are located in places with a population density of at least 400 persons per square mile, with more than 50 percent of the population residing in a census urban area but are not within a CBSA area. Similar to *Small Town* blocks, *Remote Town* blocks must meet the same density criteria relative to the place they are located in. However, the drive time from these blocks to any *Urban Core* exceeds two hours.

Rural Countryside
Blocks can only be classified as *Rural Countryside* if they are not located within a CBSA area. They are either located within a place that does not meet the density requirements to be considered a *Small Town* or *Remote Town*, or they are not located within any place at all. These blocks are situated within a two-hour drive from an *Urban Core*.

Rural Remote
Blocks can only be classified as *Rural Remote* if they are not located within a CBSA area. They are either in a place that does not meet the density requirements to be considered a *Small Town* or *Remote Town*, or they are not located in any place at all. These blocks are also situated more than a two-hour drive from an *Urban Core*.

Unpopulated

Unpopulated blocks are not assigned an *Urbanicity Type*. These blocks with no Esri current year residential population can be found both inside and outside core based statistical areas (CBSAs), as well as inside and outside place boundaries. Note that daytime population (commercial activity) may be present in these blocks.

For more information about urbanicity type data, call 1-800-447-9778.

Esri's Data Development team

Led by chief demographer Kyle Cassal, and economist Douglas Skuta, Esri's Data Development team uses sophisticated quantitative methods to produce small area demographic and socioeconomic data to support informed decision-making. The team builds on a rich history of market intelligence to produce trusted independent estimates and forecasts for the United States based on innovative methodologies that use public and private data sources with the power of ArcGIS. Esri's Data Development team provides more than 7,000 proprietary data items to better understand the characteristics of people and places across multiple statistical and administrative boundaries and custom trade areas.

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