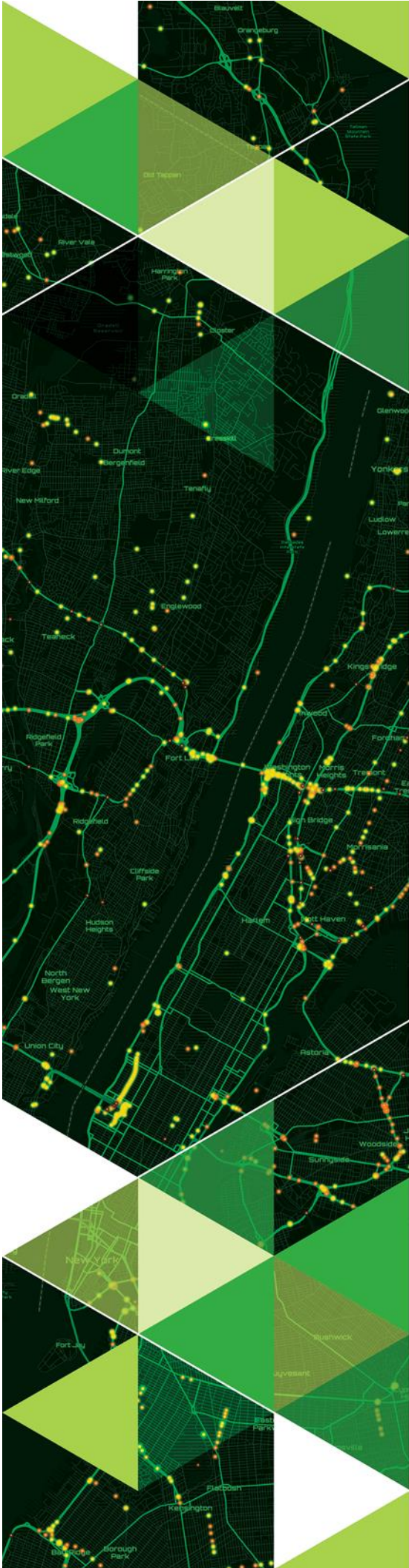




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Methodology statement: 2022 Esri Daytime Population

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Methodology statement: 2022 Esri Daytime Population

Introduction

Knowing an area's demographic landscape is essential in the decision-making process for many public and private entities. Whether it is a retailer searching for the most profitable location for expansion or first responders mapping vulnerable populations for disaster preparations, using a complete demographic profile is an essential decision-making input. Along with its comprehensive data catalog describing resident populations, Esri's 2022 daytime population data adds clarity when the day part is a significant consideration in an analysis.

Data sources and model

A trade area can contain very distinct day and night demographic profiles. Populated areas can be residential, commercial, industrial, administrative, or some combination of each. Vibrant city centers can contain substantially larger numbers of people during the typical workday than during evening hours. Esri's daytime population model provides invaluable insight into an area's daily population expansions and contractions.

The estimates are generated using a mix of inputs from Esri's U.S. Updated Demographics, the decennial census, the American Community Survey (ACS), and business data from Data Axle. Moreover, the modeling process incorporates the important methodological distinction between workers and persons employed. The former represents persons working throughout the workday, while the latter also includes persons employed but absent from work for various reasons such as illness, personal business, or vacation.

Furthermore, the model fittingly accounts for the distinct populations in group quarters. The nonmarketable, incarcerated adult population is considered out of scope and excluded from the estimates. The group quarters population in military installations is reconciled with the more broadly defined armed forces population that can cover personnel living off base as well.¹

The workday population is disaggregated into two primary groups: workers and residents.² The former is estimated using the geographic worker flow data from ACS

¹ Military installation boundaries used now reflect TIGER 2020 geometry.

² It is important to note the differences in definition between Esri's daytime estimates of workers and residents with respect to our current-year, resident-based estimates of total employment and total population. The latter two variables are a tabulation of persons based on where they live. The daytime estimates are not. Daytime workers cover persons who not only live and work in the same area but also those who work in the area but live elsewhere (commuters). Armed forces personnel, living on and off base, are also classified as workers. Moreover, those employed but not at work are classified as a daytime resident. Daytime residents also include the population under 16 years of age and working-age persons who are unemployed or not in the labor force (including retirees, homemakers, college students, and miscellaneous noninstitutional and institutional group quarters populations in nursing homes, juvenile detention centers, homeless shelters, and so on).

COVID-19 adjustments

and employment distributions from Data Axle to establish place-of-residence and place-of-work linkages. The end result is an estimate of the total daytime population covering both residents and workers that can be leveraged for a more detailed and complete demographic analysis for any neighborhood in the United States.

In 2020, numerous mandated state lockdowns were enacted to stop the spread of the coronavirus disease 2019 (COVID-19) that had a profound effect on the typical diaspora of population flows throughout the day. Millions of workers within nonessential industries were dismissed or furloughed because of mandated business closures. Millions more worked from home to comply with social distancing restrictions. By 2022, many have been vaccinated, mandates have been lifted, and the share of workers reporting back to onsite job locations has risen. But the telework rate remains historically elevated and may persist above previous trends as employers continue to offer workplace flexibility. The daytime population models continue to be partially adjusted in an attempt to represent a modified daytime profile as of Esri's July 1, 2022, reference day.

The models incorporate Esri's pandemic-adjusted labor force characteristics that reflect place of residence estimates. Research from the University of Chicago provided the foundational framework to generate targeted estimates for the millions of people required to work from home.³ Occupation-based employment-weighted rates were estimated leveraging the researcher's teleworkable occupation list along with input data from the Bureau of Labor Statistics' Occupational Employment Statistics program. This year, telework rates were updated using survey data published by the Census Bureau's Household Pulse Survey and the Current Population Survey.

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

Esri's data development team

Led by chief demographer Kyle R. Cassal, Esri's data development team has more than 40 years of experience in market intelligence. The team's economists, statisticians, demographers, geographers, and analysts produce independent small-area demographic and socioeconomic estimates and forecasts for the United States. The team develops exclusive demographic models and methodologies to create market-proven datasets, many of which are now industry benchmarks, such as Tapestry™ Segmentation, Consumer Spending, Market Potential, and annual Updated Demographics. Esri® demographics power ArcGIS® through dynamic web maps, data enrichment, reports, and infographics.

³ https://bfi.uchicago.edu/wp-content/uploads/BFI_White-Paper_Dingel_Neiman_3.2020.pdf



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