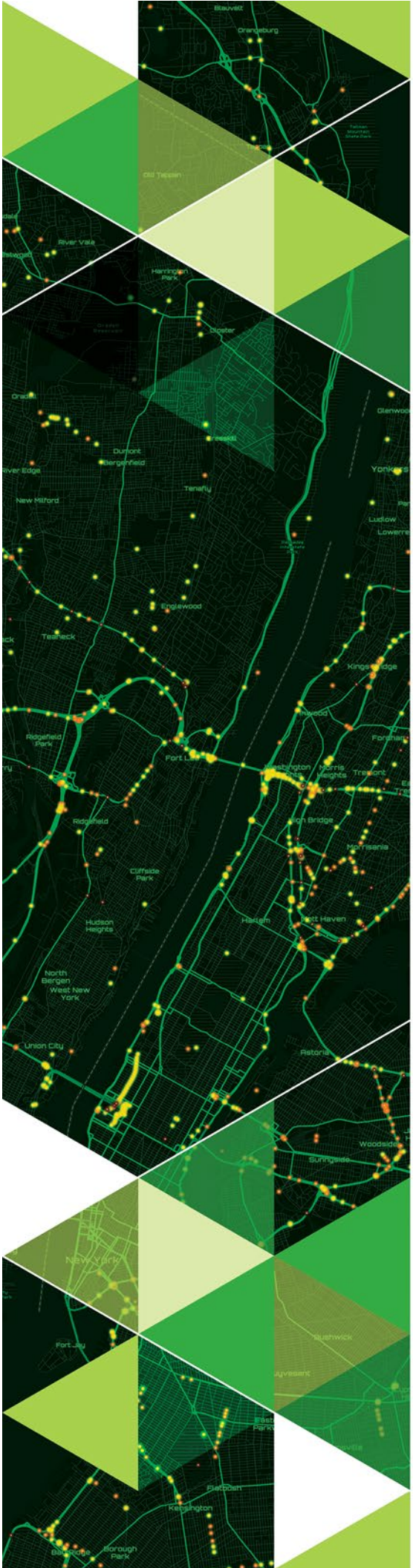

AN ESRI
TECHNICAL PAPER

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Methodology statement: 2024 Esri Daytime Population

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Table of contents

Methodology statement: 2024 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 critical. Along with its comprehensive data catalog describing resident populations, Esri's 2024 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.

The workday population is disaggregated into two primary groups: workers and residents.[1] The former is estimated using the geographic worker flow data from ACS and employment distributions from Data Axle to establish place-of-residence and

[1] It is important to note the differences in definition between Esri's daytime estimates of workers and residents with respect to its 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).

place-of-work linkages. The result is an estimate of the total daytime population covering both residents and workers that can be used for a more detailed and complete demographic analysis for any neighborhood in the United States. Lastly, the model still explicitly accounts for post-pandemic elevated rates of remote work arrangements using data from the ACS. While the share of persons working from home has tapered, rates remain elevated above historical pre-pandemic levels.

For more information about business 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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