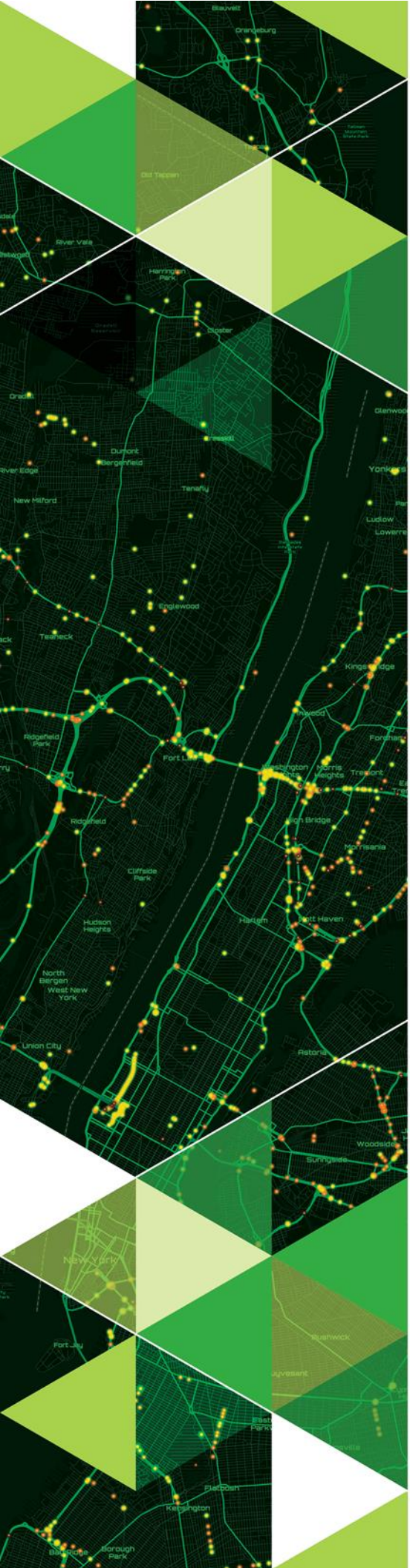

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Methodology statement: Vintage 2023 Esri Time Series Totals

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Introduction

Esri's Vintage Time Series Totals database contains data for total population, households, and housing units for every year between the Census 2010 and Esri's current estimates. This data is available for all 11 geographic schemas included in Esri Updated Demographics down to the block group level geography. For 2023, the Time Series covers the time period from 2010 to 2023. This database provides users with valuable insight looking back 14 years into the past to evaluate trends and patterns in current geography.

Data sources and model

Esri's Time Series estimates are released annually alongside the current-year estimates of total population, households, and housing units. With each annual release, the entire Time Series is revised from July 1, 2010, through July 1 of the year prior to the current release of Esri's Updated Demographics. The revised Time Series estimates fill the void between Census 2010 and Updated Demographics, providing a historical view from the 2010 census year to the current year. Since the estimates for all years will be revised each year, the Time Series estimates are referred to by their vintage, using the current year to denote the vintage of the Time Series estimates. Therefore, the Vintage 2023 Time Series includes estimates for July 1, 2010, through July 1, 2023.

The decennial census is a snapshot of the population on April 1 every 10 years. Esri's Time Series begins with a July 1, 2010, point estimate. This July 1 estimate includes corrections made to the census counts by Esri over the past decade, from 2010 to 2019. Typical census errors include missed housing units, demolished housing, housing units counted where there are none, and group quarters that were misclassified or counted in the wrong location.

The July 1, 2011, to July 1, 2019, estimates of total population, households, and housing units represent Esri's existing postcensal estimates that have been converted to current 2020-based geography and smoothed to match the 2010 to 2020 endpoints. These 2011 to 2019 estimates distribute the difference between Esri's 2020 postcensal estimate and Esri's Census 2020 realigned count, or error of closure, to all years in the 2011 to 2019 time series using multiple algorithms. The end product represents a consistent time series from census to census and are therefore called intercensal estimates.

The 2020 year of the time series represents Esri's July 1, Census 2020 realigned data and is not a replication of the official April 1, 2020, decennial count. Esri's realigned Census 2020 base includes adjustments to over 500 block groups to rectify inconsistencies caused by the Census Bureau's new data privacy methods.[1] The July 1, 2020, estimate not only gives Esri the opportunity to make improvements to

[1] https://www.esri.com/arcgis-blog/products/esri-demographics/state-government/census-2020-realignment-by-esri/

census counts but also allows for a uniform year-over-year data series based on a standard point in time. Census 2020 privacy methods have introduced impossible or improbable statistics, such as cases of households but no household population and extremely large average persons per household. Esri fixes these errors and omissions whenever possible to ensure that the Time Series database has a solid and stable base to build on.

Estimates from 2021 to 2023 represent Esri postcensal estimates that have been smoothed to account for routine data fluctuations and backfilled with new data and corrections whenever possible. 2023 estimates are an exact match with 2023 Esri Updated Demographics estimates.

Demographic change has traditionally been measured by comparing the previous decennial census to estimates from the current year of Esri Updated Demographics. Prior to the release of Time Series estimates, changes such as methodological improvements and the integration of new source data precluded comparison of estimates from the current year to previous years. With Time Series estimates, every attempt is made to build a consistent temporal dataset that can be used to evaluate year-over-year change since the previous decennial census. Model inputs are backfilled when possible, and erratic change has been dampened throughout the database. In many cases where modeling proved consistent, the Time Series estimates will be unchanged from Esri's annual release of Updated Demographics.

Standard statistical and political geography changes are made throughout the decade. To conduct meaningful and accurate analysis, geographic areas must be stable. Time Series estimates use the most recent geographic boundaries for all years of data. This is particularly valuable for geographies that change on a regular basis, such as ZIP Codes, places, congressional districts, and core-based statistical areas.

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 powers ArcGIS® through dynamic web maps, data enrichment, reports, and infographics.

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