



Housing Finance
Agency

FISCAL YEAR 2027

NORTHEAST OHIO HOUSING NEEDS ASSESSMENT

Office of Research & Analytics
July 1, 2026 – June 30, 2027



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ABOUT THE OHIO HOUSING FINANCE AGENCY

For more than 40 years, the Ohio Housing Finance Agency (OHFA) has helped low- and moderate-income Ohioans access safe, quality, and affordable housing. OHFA uses federal and state resources and partners with a broad set of stakeholders to strengthen Ohio's affordable housing landscape. OHFA helps Ohioans achieve the dream of homeownership through down payment assistance, fixed-rate loans, and Mortgage Tax Credits. OHFA also provides financing for the construction and preservation of affordable rental housing for low- and moderate-income families and individuals, including older adults, persons with disabilities, persons experiencing homelessness, persons struggling with mental illness or substance abuse, and veterans. The Agency works to maintain the safety and high standards of this rental housing through asset management, inspections, and compliance training and technical assistance.

ABOUT THE OHIO HOUSING NEEDS ASSESSMENT

Housing is foundational for building a healthy and prosperous future for Ohioans; however, the state continues to face persistent challenges in ensuring that homes are both affordable and accessible. The Ohio Housing Needs Assessment draws on a wide range of data to identify the scope and scale of these challenges. As a key component of the Annual Plan, the assessment provides essential baseline information that guides the Agency in setting its strategic priorities and also serves as an important resource for OHFA's Board, staff, and the state at large.

NORTHEAST OHIO



Downtown Akron

EXECUTIVE SUMMARY

Like much of the state, Northeast Ohio has been losing population. By 2050 the number of residents is expected to fall below 4 million.¹ Much of this decline has been fueled by the loss of manufacturing jobs at the turn of the 21st century. As the region seeks to redefine itself economically — creating new jobs in more sustainable sectors, such as education and healthcare — Northeast Ohio needs to improve or replace much of its aging housing stock in order to meet the demands of the changing workforce.

Glossary:

Housing cost burden: households spending more than 30% of income on housing-related costs, such as rent, mortgage payments, utilities, property taxes, and other such fees (The 30% threshold is a commonly used measure of housing affordability.)

Severe cost burden: households spending more than 50% of income on housing-related costs (For homeowners with a mortgage, this is referred to as “severe mortgage burden.” For renters, this is referred to as “severe rent burden.”)

AMI: area median income, the midpoint of a region’s income distribution — half the households in a region earn more than the median and half earn less (Local income limits help identify program eligibility and affordability based on geography.)

ELI: extremely low-income, having a household income at or below either the federal poverty guideline or 30% of AMI, whichever is higher

VLI: very low-income, having a household income at or below 50% of AMI

¹ Population Characteristics and Projections, Ohio Department of Development.



Home prices in Northeast Ohio make homeownership more affordable for homebuyers on fixed incomes.

Homeownership in Northeast Ohio is relatively affordable for potential homebuyers, especially those on fixed incomes. In 2023 the median home-price-to-income ratios in 15 of the 20 counties in the region were lower than the statewide ratio (2.6 years of income).^{2,3} When homes are priced to fit the housing budgets of prospective buyers, there are more opportunities to achieve the dream of homeownership and build generational wealth.



Northeast Ohio mortgage holders are more likely to find themselves severely cost-burdened, increasing the likelihood of foreclosure.

Despite the affordability of the current housing market in the region, many Northeast Ohioans who have a mortgage find themselves spending more than half their incomes on housing. During the 2019 to 2023 period, 8.7% of mortgage holders in the region were severely cost-burdened — higher than the state average (8.0%).⁴ This increased the chances of mortgage default and foreclosure. In 2024 home mortgage loans were more likely to be in the foreclosure process in Northeast Ohio than Ohio mortgages in general. The foreclosure rate for mortgage holders in the region (0.44%) was above the state average of 0.37%, placing them in danger of losing their homes.⁵

² MarketTrends. Cotality.

³ Small Area Income and Poverty Estimates. U.S. Census Bureau.

⁴ American Community Survey. U.S. Census Bureau.

⁵ MarketTrends. Cotality.



There are not enough affordable and available rental units for low-income Northeast Ohioans.

In 2023 there were only 73 affordable and available rental homes for every 100 VLI renters in the region. This translates to only 189,179 affordable and available rental homes for the 259,071 VLI renter households in Northeast Ohio, leaving a shortage of 69,892 units.⁶ Closing this affordability gap between supply and demand for VLI renters will require sustained public investment in affordable housing development.



As rents increase faster than incomes, Northeast Ohio renters are finding themselves severely cost-burdened and at risk of eviction and homelessness.

Since the start of the COVID-19 pandemic, rents have been rapidly increasing. Adjusted for inflation, most counties in the region saw a rise in the median rental price of a two-bedroom apartment from 2019 to 2024 with the greatest increase in Portage County (+48%).⁷ At the same time income growth has generally been stagnant. Half of the counties in the region experienced an increase in median household income from 2018 to 2023, while the other half saw incomes decline.⁸ As such, one in four renters in Northeast Ohio (25%) is spending more than half their income on housing.⁹ When rents rise faster than incomes, housing instability increases. In particular, this puts Northeast Ohio renters on fixed incomes at greater risk of losing their homes to eviction and becoming homeless.

⁶ National Low-Income Housing Coalition.

⁷ RentalTrends. Cotality.

⁸ Small Area Income and Poverty Estimates. U.S. Census Bureau.

⁹ American Community Survey. U.S. Census Bureau.



Northeast Ohio's aging housing stock puts young children at serious risk of lead poisoning.

Much of Northeast Ohio's housing stock was built before the nation's first laws banning lead-based paint were enacted. Older homes are more likely to contain chipped lead paint or lead-contaminated dust, which can be ingested by young children. Due to the presence of lead, children in the region under 6 years of age have a higher prevalence of elevated blood lead levels (BLLs) than the statewide cohort (2.9% compared to 2.0%).¹⁰ Having safe and quality housing improves children's chances of living healthy lives.



With the population aging, an increasing number of Northeast Ohio seniors are living alone.

Northeast Ohioans are relatively old. In 2023 the median age in most counties in the region was higher than the statewide median (40 years).¹¹ In addition, more and more older adults are living alone. During the 2019 to 2023 period, 15% of households in Northeast Ohio were occupied by an adult aged 65 or over living by themselves. This was higher than the statewide share of such households (13%).¹² Aging householders living alone face unique challenges when it comes to maintaining the cost and upkeep of their homes, especially among those who wish to age in place.

¹⁰ DataOhio. InnovateOhio.

¹¹ Population and Housing Estimates. U.S. Census Bureau.

¹² American Community Survey. U.S. Census Bureau.



Racial disparities in housing persist, making it harder for Black Northeast Ohioans to achieve economic stability.

Black renters in the region are more likely to spend at least half their incomes on housing than their white counterparts — 35% compared to 22%. This 13-percentage-point gap in severe rent burden between Black and white renters is also wider than the statewide gap (9).¹³ In Northeast Ohio, Black potential homebuyers are almost twice as likely to be denied on a mortgage loan application as their white counterparts. In 2023, 17% of Black applicants were denied compared to 8% of white applicants, a greater disparity (9 percentage points) than statewide (7).¹⁴ Furthering fair housing practices will help enable Black Northeast Ohioans to build generational wealth and achieve greater economic stability for their families.

¹³ IPUMS USA, University of Minnesota.

¹⁴ Home Mortgage Disclosure Act (HMDA) data, Consumer Financial Protection Bureau.

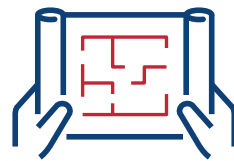
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OHFA IMPACT IN NORTHEAST OHIO

While the region faces a number of affordable housing challenges, OHFA has long been partnering with organizations in Northeast Ohio to finance and encourage the production of affordable rental housing and homeownership options. The following numbers highlight the impact of OHFA's work in the region since the start of the Agency. For more examples of this impact, see the spotlight stories on pages 11 and 28.

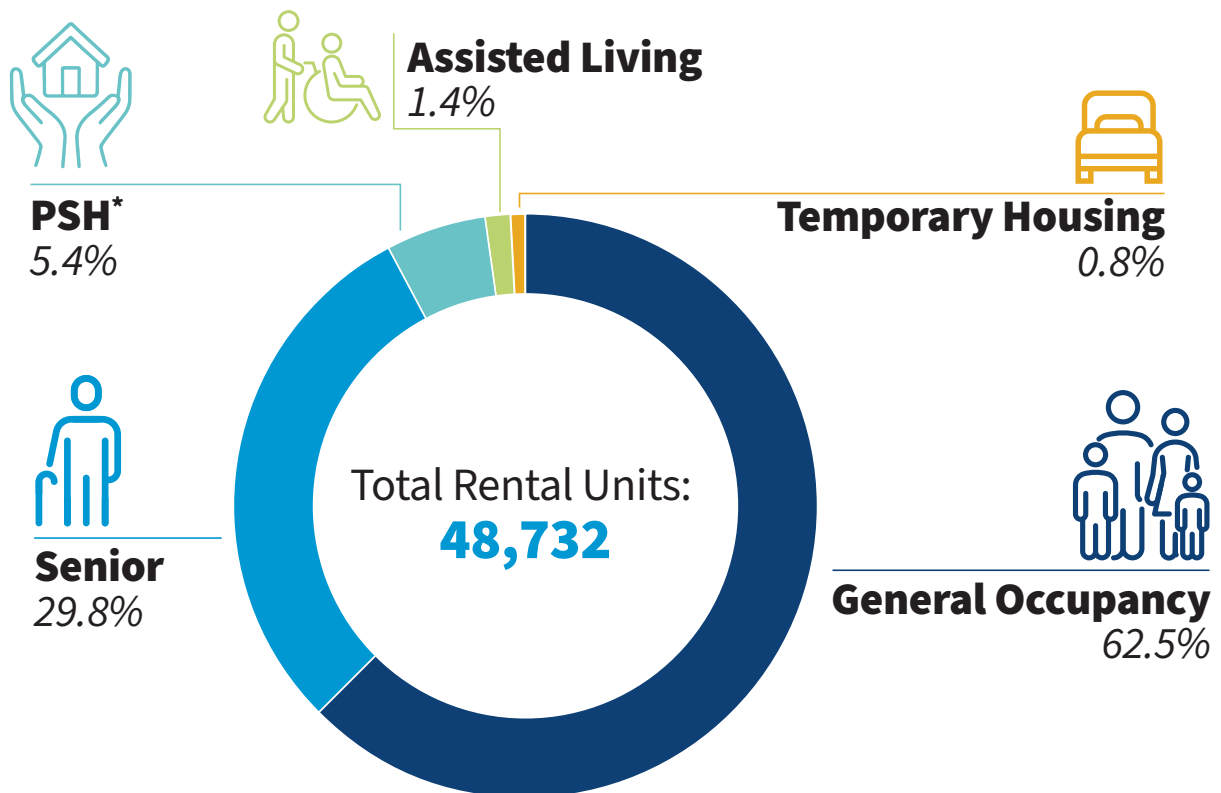


62,646
Homebuyers Assisted



48,732
Affordable Rental Units
Built or Preserved

RENTAL UNITS DEVELOPED BY PRIORITY NEED



* PSH = Permanent Supportive Housing



OHIO HEROES

OHFA's Ohio Heroes program encourages Ohio residents who serve the public to become homeowners by offering discounted mortgage rates. Qualified homebuyers have to meet certain income and credit requirements and work in one of several public service positions, including police officers, firefighters, EMTs, physicians, nurses, and teachers. Veterans, active-duty military members, and reservists are also eligible. As part of the program, qualified borrowers participate in free homebuyer education courses that help them learn more about the homebuying process. For example, courses include learning how to calculate closing costs, what to expect from a home inspection, and the general timeline for completing documents.

OHFA has assisted 4,364 homebuyers in Northeast Ohio through this program since it started in 2008.

For more information about the Ohio Heroes program, visit OHFA's website at <https://myohiohome.org/ohioheroes.aspx>.

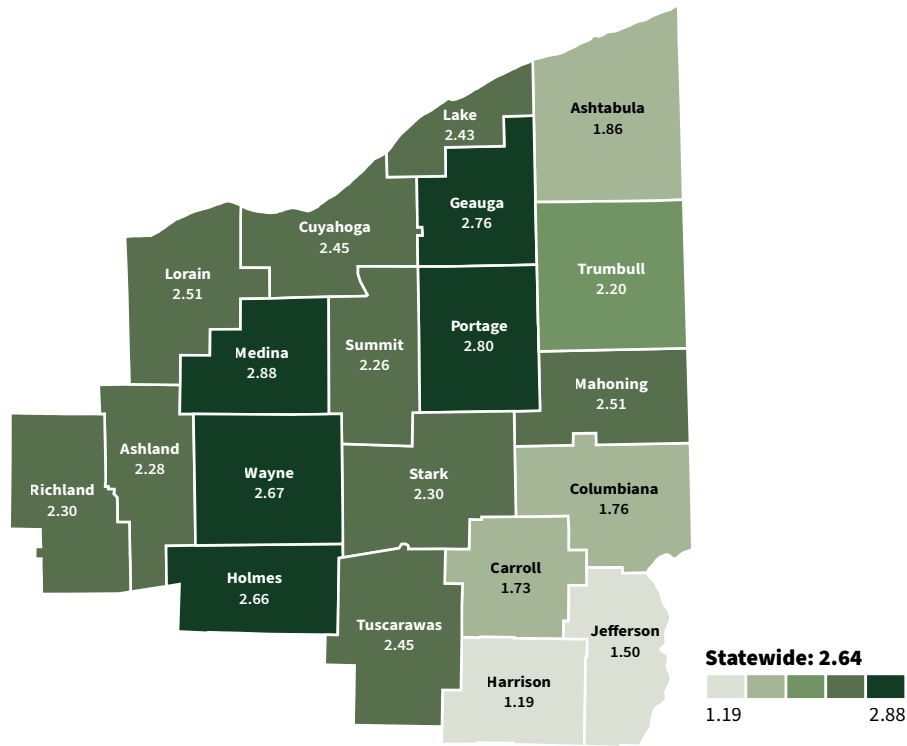
HOMEOWNERSHIP

This section looks at homeownership, homebuying, and how homeowners are balancing housing costs. The strength of the housing market can provide insight into how the supply and demand for housing may create challenges to realizing and maintaining the dream of owning a home.

SECTION HIGHLIGHTS

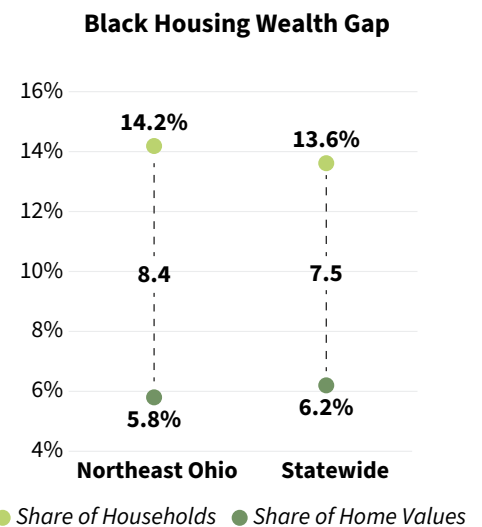
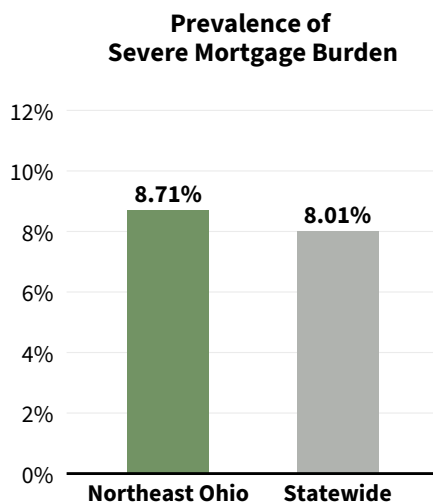
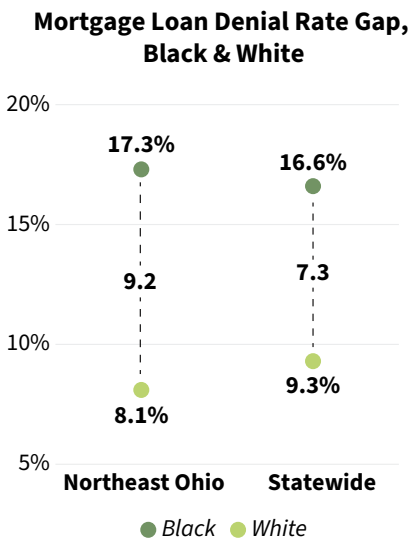
- Black potential homebuyers in Northeast Ohio are almost twice as likely to be denied on a mortgage loan application as their white counterparts. In 2023, 17.3% of Black applicants were denied compared to 8.1% of white applicants — a greater disparity (9.2 percentage points) than statewide (7.3).
- During the 2019 to 2023 period, 8.71% of mortgage holders in Northeast Ohio were severely cost-burdened — meaning they spent at least half their incomes on housing — higher than the state average (8.01%).
- Black Northeast Ohioans hold a disproportionately small share of the region’s housing wealth. While 14.2% of homes in Northeast Ohio in 2023 had a Black head of household, only 5.8% of housing wealth in the region was Black-owned. The resulting housing wealth gap of 8.4 percentage points is larger than the statewide gap (7.5).
- The home-price-to-income ratios in most Northeast Ohio counties in 2023 were lower than the statewide ratio, making homeownership relatively affordable for potential homebuyers in the region. Harrison County had the lowest price-to-income ratio (1.19), making it the best place in the region to buy a home in terms of affordability. In Northeast Ohio, only five counties — Medina, Portage, Geauga, Wayne, and Holmes — had more unaffordable price-to-income ratios than the statewide ratio (2.64 years of income).

Median Home-Price-to-Income Ratio by County



Source: MarketTrends, Cotality (based on 2023 sales); 2023 Small Area Income and Poverty Estimates (SAIPE), U.S. Census Bureau

How the Region Compares



Sources: Home Mortgage Disclosure Act (HMDA) data, Consumer Financial Protection Bureau (based on 2023 loan applications); IPUMS USA, University of Minnesota (based on the 2023 American Community Survey [ACS] Public Use Microdata Sample)

Notes: Mortgage loan denial rate is the percentage of home purchase mortgage loan applications denied by lenders. Applications include pre-approval requests. Applications approved but not accepted are counted as approved. Applications withdrawn by applicant, files closed for incompleteness and loans purchased by a financial institution are excluded from the analysis. Severe housing cost burden is defined as spending more than 50% of income on housing-related costs or having no income. The 50% threshold is commonly associated with being housing unstable and at risk of losing one's home. Severe mortgage burden is a related term applicable to mortgage holders. The housing wealth gap is the difference between the share of households and the share of aggregate home values by the race of the head of household. Estimates include all heads of household who identify as a race alone or in combination with other races. Regional estimates derived from IPUMS USA are calculated using a geographic correspondence file from the Missouri Census Data Center at the University of Missouri to "crosswalk" the data from Public Use Microdata Areas (PUMAs) to counties.

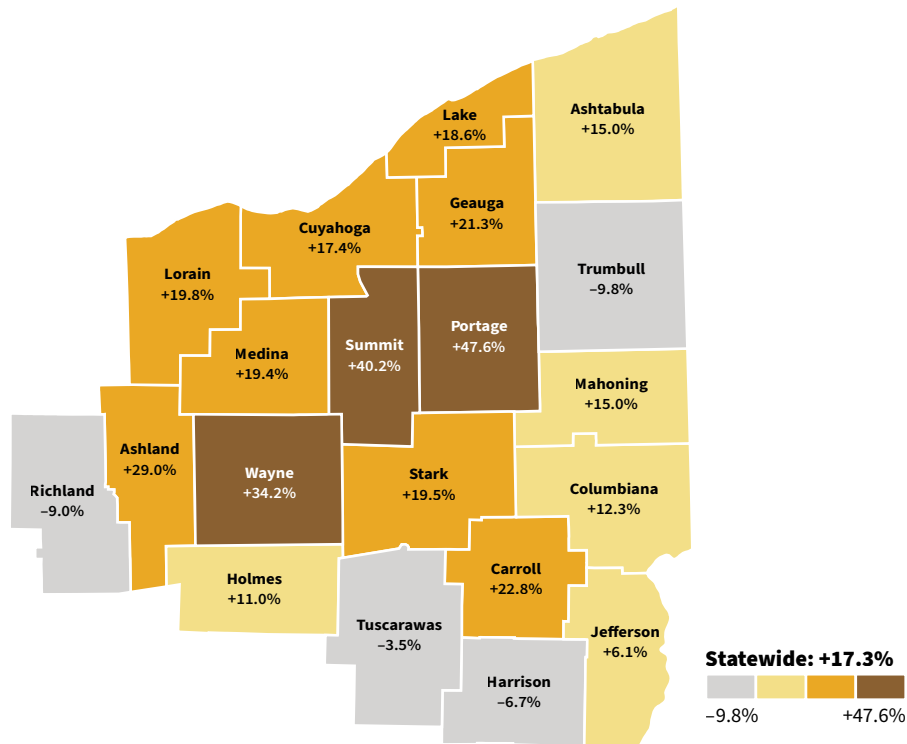
RENTAL HOUSING

This section focuses on how Northeast Ohio’s renters are able to balance housing costs compared to income. When renters spend 30% or more of their incomes on housing, they risk being unable to afford other necessities, such as food and healthcare. When they spend 50% or more of their incomes on rent and other housing costs, they find themselves at risk of eviction and homelessness. Rent burden places householders in a precarious position in which any unexpected cost, such as a car repair, can make their housing situations unstable.

SECTION HIGHLIGHTS

- For every 100 VLI renters in the region, there were only 73 rental units affordable and available to them in 2023 — slightly more than the state average (71).
- One in four Northeast Ohio renters (25.4%) spent at least half their incomes on housing during the 2019 to 2023 period — higher than the statewide rate of 24.4% — putting them at risk of eviction and homelessness.
- Black renters in the region are more likely to experience severe rent burden than their white counterparts — 34.5% compared to 21.7%. This 12.8-percentage-point gap between Black and white renters is also wider than the statewide gap (9.0).
- Since the start of the COVID-19 pandemic, rents in Ohio have been rapidly increasing. Adjusted for inflation, most counties in Northeast Ohio saw a rise in the median rental price for a two-bedroom apartment from 2019 to 2024 with the greatest increase in Portage County (+47.6%). Among counties in the region, only four— Trumbull, Richland, Harrison, and Tuscarawas — saw a decrease in rent over that period.

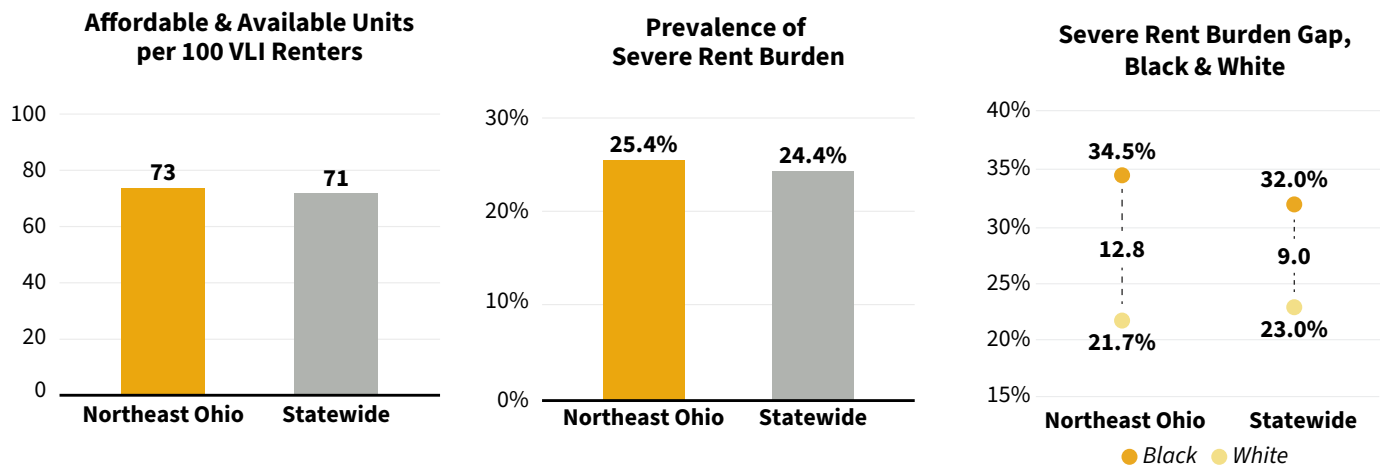
Change in Median Rent for a Two-Bedroom Apartment 2019 to 2024 by County



Source: RentalTrends, Cotality

Notes: Only includes two-bedroom single-family homes. The median rental price for these units is a proxy for the median rent in the overall market. Percent change in median rent takes into account an inflationary adjustment of 2019 rental prices to 2024 dollars based on the Consumer Price Index for All Urban Consumers (CPI-U), from the U.S. Bureau of Labor Statistics, for "all items less shelter."

How the Region Compares



Sources: National Low Income Housing Coalition (public data request) (based on the 2023 American Community Survey [ACS] Public Use Microdata Sample); 2019–2023 ACS Five-Year Estimates, Tables B25070 & B25106; IPUMS USA, University of Minnesota (based on the 2023 ACS Public Use Microdata Sample)

Notes: Gross rent includes average monthly cost of utilities (i.e., electricity, natural gas, water, sewer, and heating fuels). Extremely low-income (ELI) is defined as those with incomes at or below the federal poverty level or 30% of area median income, whichever is greater. Very low-income (VLI) is defined as those with incomes at or below 50% of area median income, including ELI households. Affordability is based on the common standard that households should not spend more than 30% of their income on housing. Rental units are both "affordable and available" to renters in a specific income group if the gross rent meets the 30% affordability threshold and they are either available for rent or occupied by households with incomes at or below the defined income level. Regional estimates derived from both the National Low Income Housing Coalition analysis and IPUMS USA are calculated using a geographic correspondence file from the Missouri Census Data Center at the University of Missouri to "crosswalk" the data from Public Use Microdata Areas (PUMAs) to counties. Severe housing cost burden is defined as spending more than 50% of income on housing-related costs or having no income. The 50% threshold is commonly associated with being housing unstable and at risk of losing one's home. Severe rent burden is a related term applicable to renters.

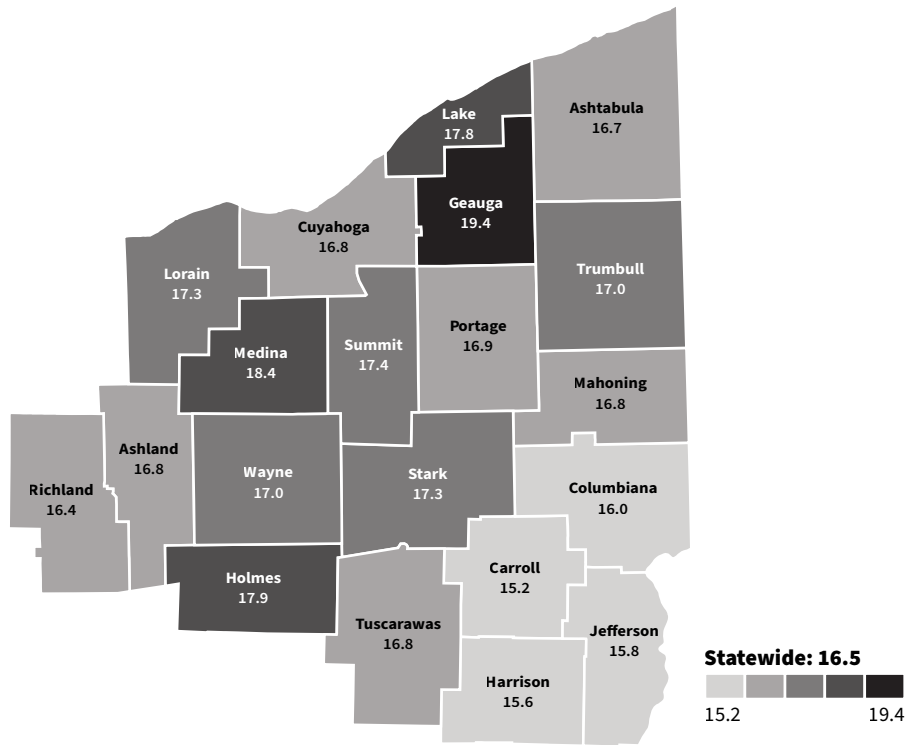
HOME ENERGY & UTILITIES

This section looks at residential utility and energy use and how the cost of utilities affects household budgets. Many Northeast Ohioans struggle to afford their monthly utility bills. These additional costs beyond a rent or mortgage payment can make some places in the region less affordable to call home.

SECTION HIGHLIGHTS

- Home energy costs can be a burden for some Northeast Ohio households. In 2024, 4.97% of households in the region participated in the federally funded Home Energy Assistance Program (HEAP). Income-eligible households may have a one-time payment applied to their heating or cooling utility bills. This participation rate was lower than the state average (5.20%).
- The Percentage of Income Payment Plan (PIPP) is another energy assistance program available to income-eligible Ohio households. In 2024, 5.12% of Northeast Ohio households relied on this state-funded program throughout the year to help with their gas or electric bills. This rate was on par with statewide participation (5.15%).
- During the 2019 to 2023 period, 13.8% of households in the region lacked a broadband subscription at home — worse than statewide coverage (12.1%) — limiting their access to reliable internet services.
- The average Northeast Ohio household uses 17.1 metric tons of carbon dioxide equivalent every year to heat, cool, and power its home. This residential carbon footprint is higher than the state average (16.5). Larger single-family suburban homes — such as those found in Geauga County, which has the largest average residential carbon footprint in the region and the state (19.4) — tend to expend more energy. Meanwhile, Carroll County in the rural Appalachian part of the region has the lowest average home energy use in Northeast Ohio (15.2).

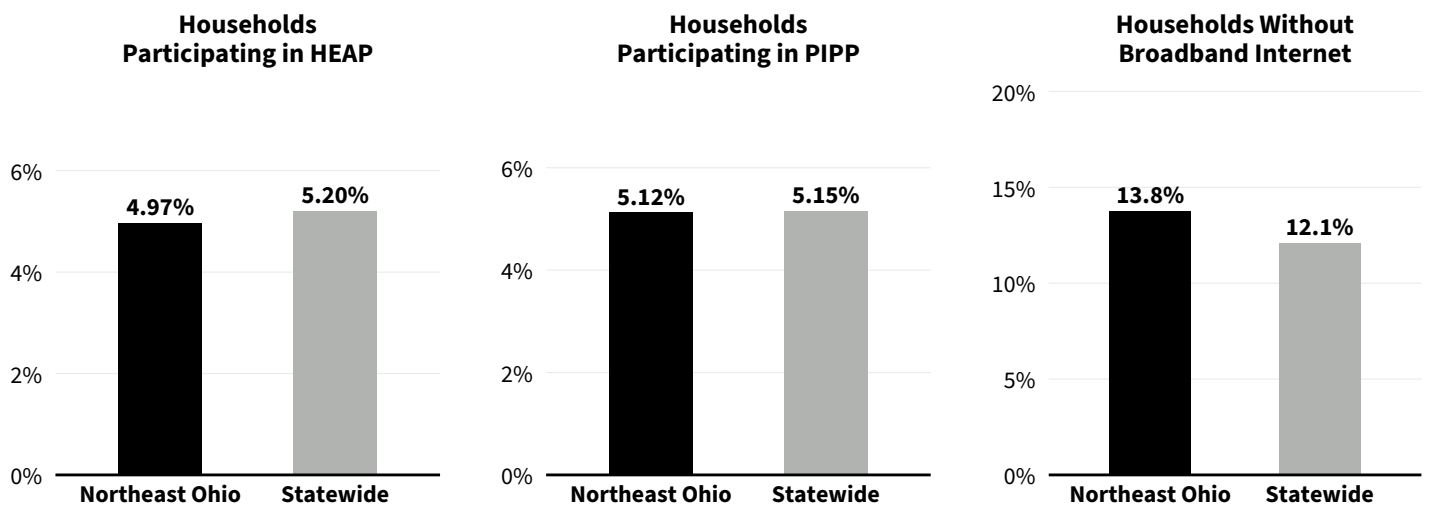
Average Residential Carbon Footprint in Metric Tons per Year by County



Source: CoolClimate Network; University of California, Berkeley (public data request)(based on 2013 data)

Notes: This CoolClimate Network model includes direct emissions from consumption of fossil fuels to heat homes as well as indirect emissions embodied in the production of electricity used to power homes. Electricity is measured in kilowatt hours per year, natural gas is measured in cubic feet per year, and home fuel oil is measured in gallons per year. Carbon footprint is measured in metric tons of carbon dioxide equivalent (CO₂e) per year, which includes carbon dioxide and other greenhouse gases that contribute to climate change such as methane and nitrous oxide.

How the Region Compares



Sources: 2024 Energy Assistance program data, Ohio Department of Development (public data request); 2019–2023 American Community Survey (ACS) Five-Year Estimates, Tables DP04 and B28003

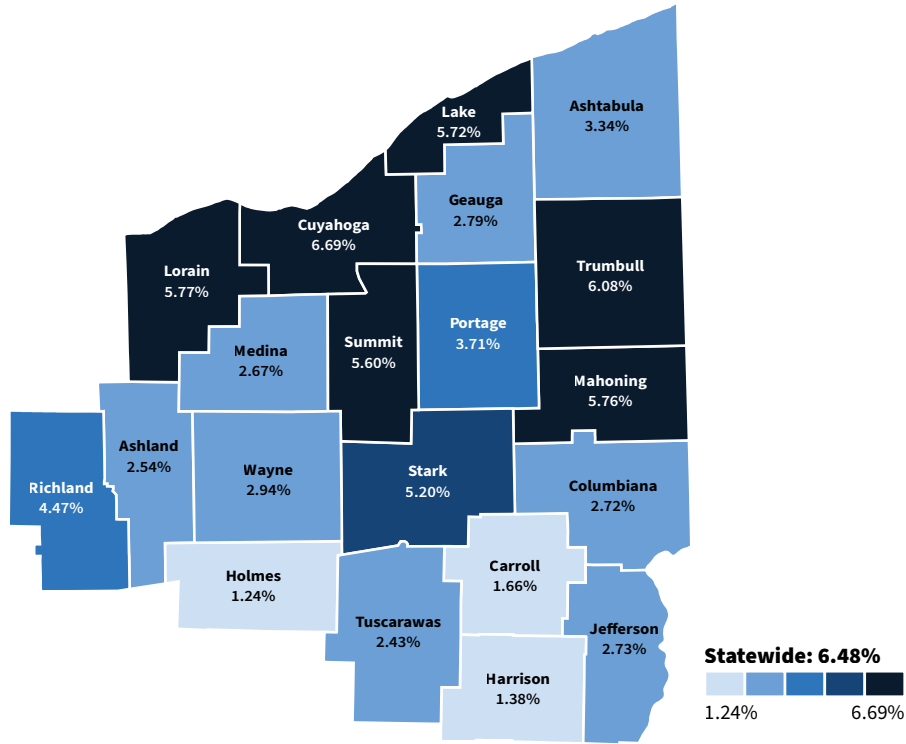
HOUSING INSTABILITY & HOMELESSNESS

This section focuses on the population at risk of losing their homes to foreclosure or eviction and those populations experiencing homelessness. Data on those who are housing unstable are difficult to find — particularly for those forced to live with friends or family for a short period of time.

SECTION HIGHLIGHTS

- In 2023, 11.2% of Northeast Ohioans lived in households spending at least half their incomes on housing, putting them at risk of losing their homes to foreclosure or eviction. The likelihood of living in severely cost-burdened housing was also greater in this region than for Ohioans in general (10.7%).
- Home mortgage loans in Northeast Ohio were more likely to be in the foreclosure process in 2024 than Ohio mortgages in general. The foreclosure rate for mortgage holders in the region (0.44%) was above the state average of 0.37%, placing them in danger of losing their homes.
- During the 2024/2025 school year, Northeast Ohio’s public and community schools reported that 1.85% of students lacked a fixed, regular, and adequate place to sleep. This rate was on par with the statewide average (1.87%).
- In 2024, 6.69% of Cuyahoga County renters had an eviction filed against them, putting them at risk of homelessness. This was a higher eviction filing rate than the statewide average (6.48%). All other Northeast Ohio counties, however, had a lower rate than the state average with Holmes having the lowest in the region (1.24%).

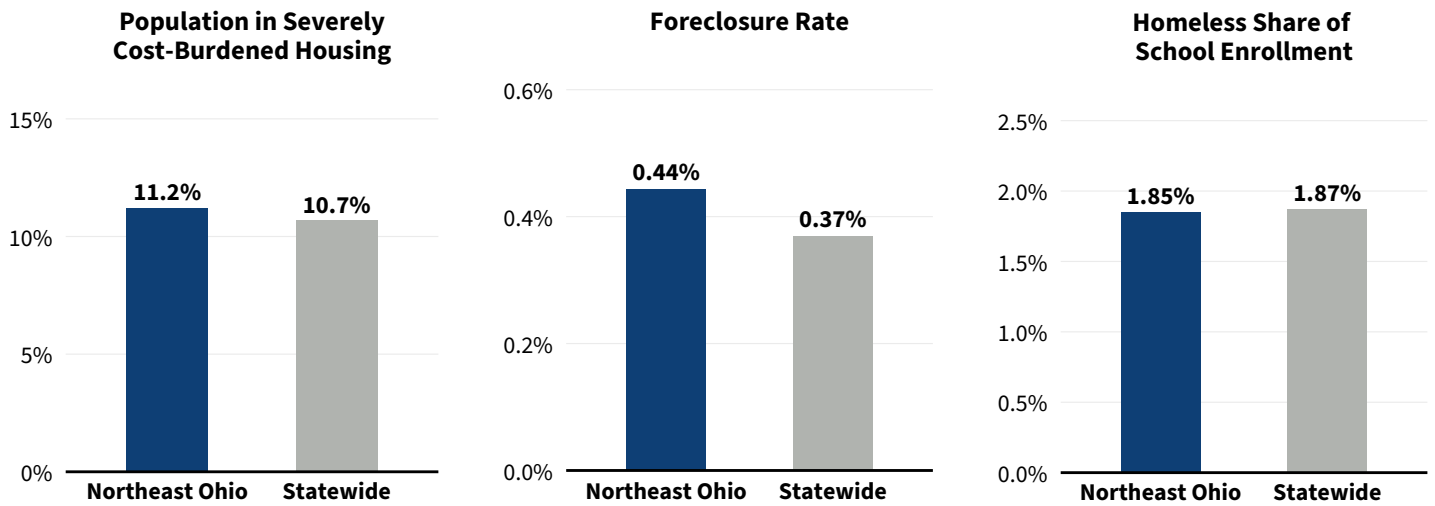
Eviction Filing Rate by County



Source: State of Ohio Court Statistics (based on 2024 court filings); 2023 American Community Survey (ACS) Five-Year Estimates, ACS One-Year Estimates Table B25003

Notes: The eviction filing rate is the number of new eviction filings per 100 renter-occupied households. In Ohio an eviction is legally referred to as a "forcible entry and detainer" or F.E.D.

How the Region Compares



Sources: IPUMS USA, University of Minnesota (based on the 2023 American Community Survey [ACS] Public Use Microdata Sample); MarketTrends, Cotality (based on 2024 data); Ohio Department of Education and Workforce (public data request) (based on 2024/25 school year data)

Notes: Regional estimates derived from IPUMS USA are calculated using a geographic correspondence file from the Missouri Census Data Center at the University of Missouri to "crosswalk" the data from Public Use Microdata Areas (PUMAs) to counties. Students meet the McKinney-Vento definition of homeless when they lack a fixed, regular, and adequate nighttime residence. Students who are sharing the housing of another person (doubled up) due to loss of housing, economic hardship, or similar reason meet the definition of homeless. This includes students living in motels, hotels, RV parks, or campgrounds due to lack of alternative adequate accommodations, as well as those living in emergency or transitional shelters or abandoned in hospitals. All numbers are based on total head count.

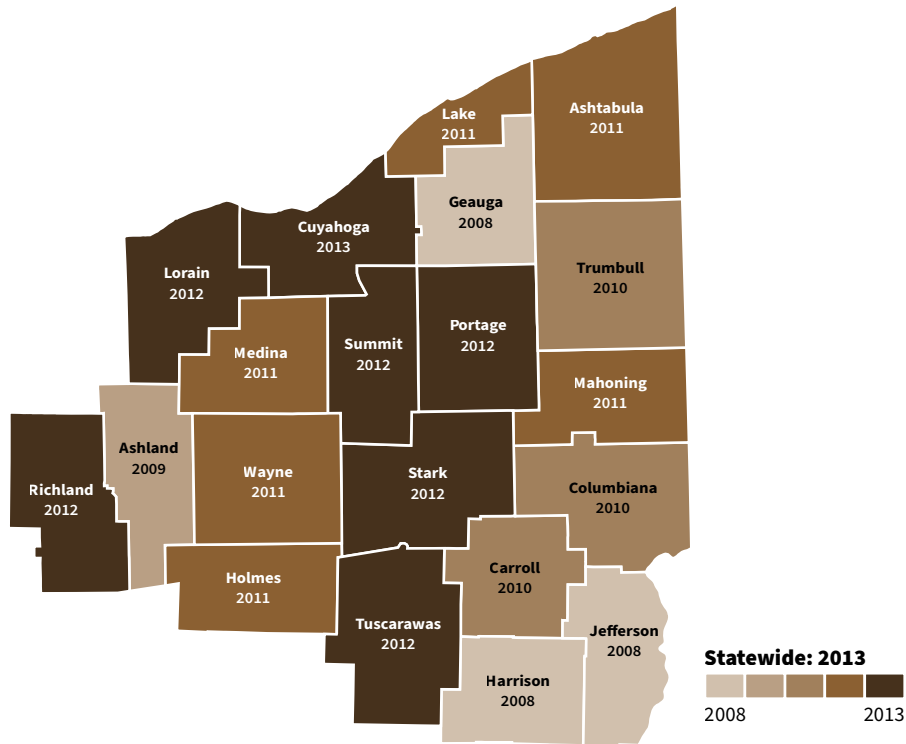
HOUSING STOCK

This section focuses on the types of housing in Northeast Ohio as well as new home construction, housing quality, and moving. Slow growth in residential construction — combined with historically low housing vacancy rates — create obstacles for prospective homebuyers and renters on fixed incomes.

SECTION HIGHLIGHTS

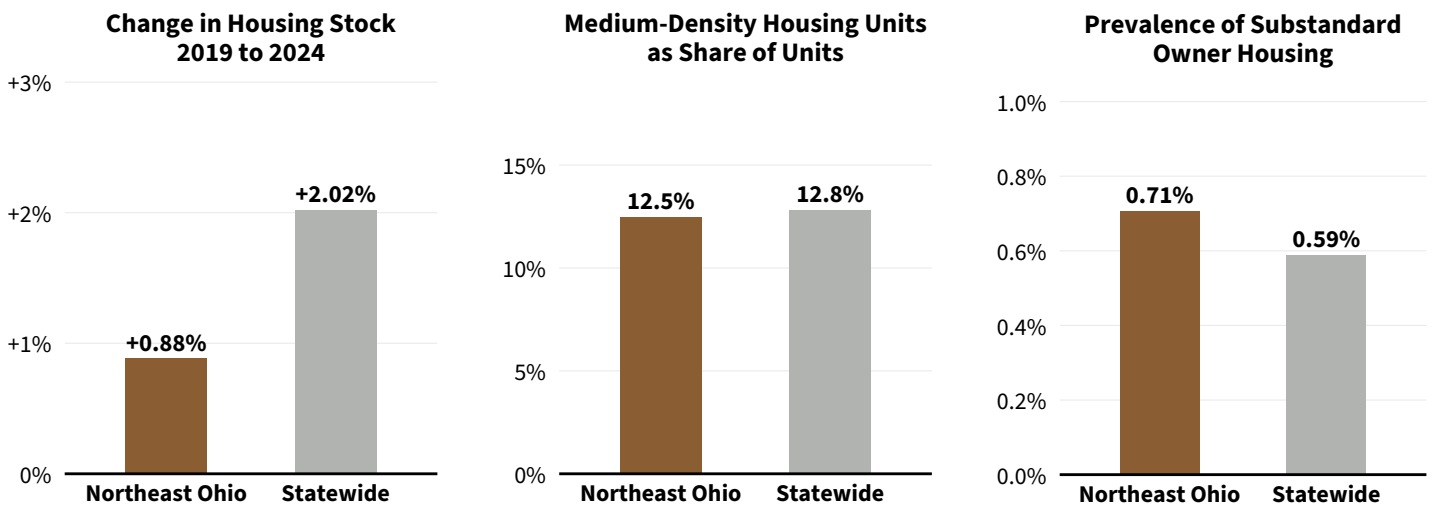
- Since 2019 the region’s housing stock has grown by only 0.88% — less than half the statewide growth rate (+2.02%).
- One in eight housing units in Northeast Ohio (12.5%) can be classified as medium-density housing, which includes townhomes and duplexes. This ratio is on par with the statewide share of such housing (12.8%).
- During the 2019 to 2023 period, 0.71% of owner-occupied housing units in the region were considered substandard meaning they lacked a complete kitchen or plumbing. This was higher than the statewide share of substandard owner-occupied housing (0.59%).
- Half of all Ohio heads of household moved into their current homes in 2013 or later. Most householders in Northeast Ohio have lived in their current residences longer than that with all counties but one having an earlier median move-in date than 2013. Geauga, Harrison, and Jefferson counties tied for having the region’s earliest median move-in date (2008) meaning the typical householder in those counties has lived in their current residence longer.

Median Year Moved into Unit by County



Source: 2019–2023 American Community Survey (ACS) Five-Year Estimates, Table B25039

How the Region Compares



Sources: Population and Housing Estimates, U.S. Census Bureau; 2019–2023 American Community Survey (ACS) Five-Year Estimates, Table B25024; IPUMS USA, University of Minnesota (based on the 2023 ACS Public Use Microdata Sample)

Notes: Medium-density housing units include single-family attached units and those in structures with 2 to 4 units. The U.S. Department of Housing and Urban Development (HUD) defines substandard housing as a unit that lacks complete kitchen or plumbing facilities. Regional estimates derived from IPUMS USA are calculated using a geographic correspondence file from the Missouri Census Data Center at the University of Missouri to “crosswalk” the data from Public Use Microdata Areas (PUMAs) to counties.

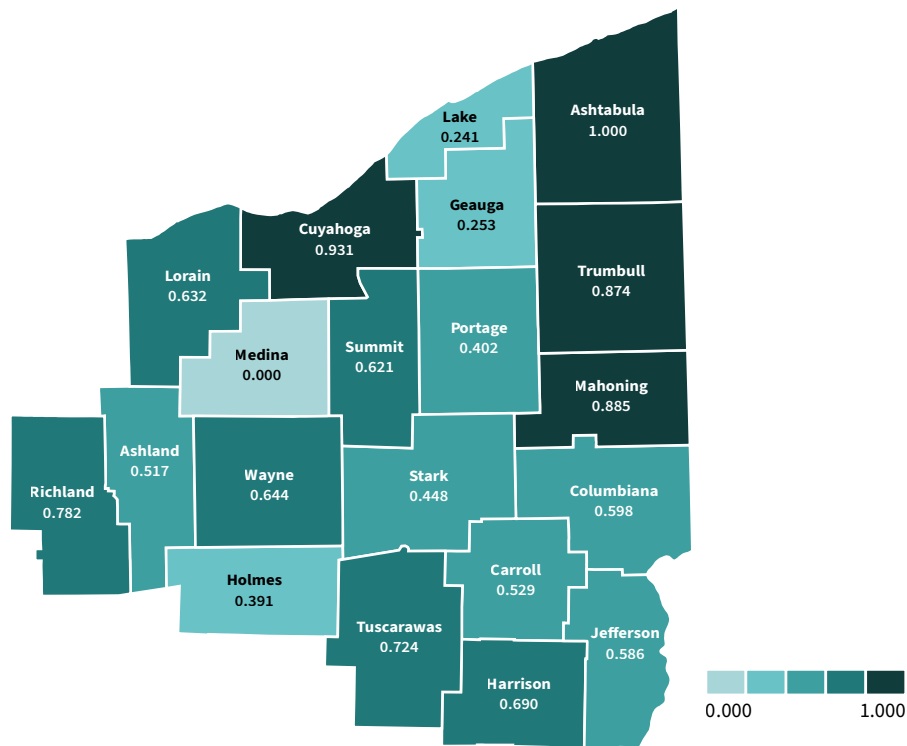
HEALTH

This section focuses on the housing challenges of vulnerable Northeast Ohioans with high-risk medical conditions as well as the ways in which housing instability, quality, and safety are important social determinants of health and wellbeing. Older inadequate homes present serious health challenges for Ohio's families — particularly those with young children who are especially at risk of lead-based paint hazard.

SECTION HIGHLIGHTS

- Due to the presence of lead-based paint in Northeast Ohio's older housing stock, children in the region under 6 years of age — who can easily ingest chipped lead paint or lead-contaminated dust — have a higher prevalence of elevated blood lead levels (BLLs) than the statewide cohort (2.91% compared to 1.97%).
- Between 2019 and 2023, nearly seven (6.69) out of every 1,000 children born in Northeast Ohio died before their first birthdays — just below the statewide infant mortality rate (6.97) during that period. Having unsafe, low-quality, or inconsistent housing puts the youngest children at greater risk of mortality.
- Adults in the region are more likely to live with a disability. During the 2019 to 2023 period, 17.2% of Northeast Ohioans aged 18 or older had a disability compared to 16.7% of adults statewide.
- Northeast Ohio households are generally more vulnerable to disasters or disease outbreaks than the average Ohio household. In 2022 most counties in the region had a Social Vulnerability Index (SVI) score over 0.500. Ashtabula had the highest score in the state (1.000) making residents of this Appalachian county the most susceptible to the potential negative effects caused by external stresses on human health, such as a natural disaster, man-made ecological catastrophe, or pandemic. At the same time, Medina County had the lowest SVI score in the state (0.000) indicating that residents of this suburban county would be the least at risk in such a crisis.

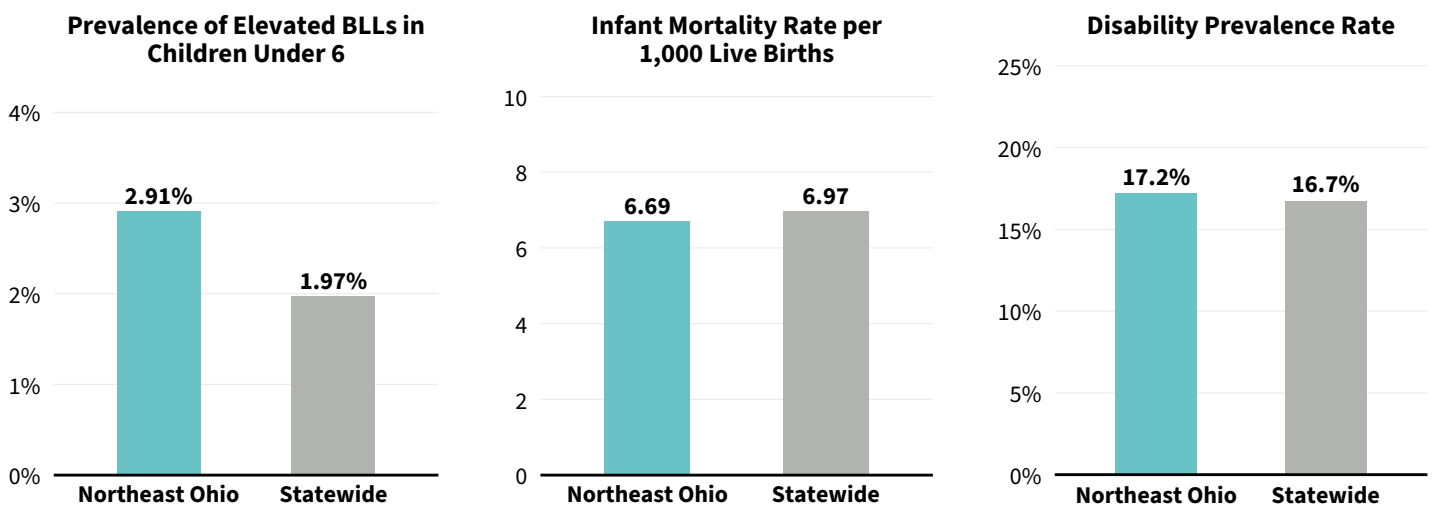
Social Vulnerability Index Score by County



Source: 2022 Social Vulnerability Index, Centers for Disease Control and Prevention (CDC)

Notes: Social vulnerability is defined as the degree to which a community exhibits certain social conditions that may affect that community’s ability to prevent human suffering and financial loss in the event of a hazardous event, such as a natural disaster, man-made ecological catastrophe, or disease outbreak. The Social Vulnerability Index (SVI) is a place-based index designed to identify and quantify communities experiencing social vulnerability. Possible scores range from 0 (lowest vulnerability) to 1 (highest vulnerability). Social conditions used in this model are divided into four themes: Socioeconomic Status (accounts for poverty, unemployment, housing cost burden, education, and health insurance); Household Characteristics (accounts for age, disabilities, family type, and English proficiency); Racial/Ethnic Minority Status; and Housing Type/Transportation (accounts for structure type, crowding, vehicles, and group quarters). The Overall SVI Score combines all four themes.

How the Region Compares



Sources: DataOhio, InnovateOhio (based 2023 Ohio Department of Health data); Infant Mortality Annual Report, Ohio Department of Children & Youth (based on infant deaths from 2019 through 2023); 2019–2023 American Community Survey (ACS) Five-Year Estimates, Table B18101

Notes: Elevated blood lead levels (BLLs) are defined as having five or more micrograms of lead per deciliter of blood (µg/dL) and are tested in children under 6 years. The prevalence rate is the number of children with confirmed elevated blood lead levels divided by the number tested. The infant mortality rate is the number of infant deaths (before the first birthday) per 1,000 live births in the year prior. Rates based on fewer than 10 deaths are considered unreliable and are thus suppressed. Rates based on fewer than 20 deaths should be interpreted with caution. Statewide total deaths include 2 deaths in unknown counties. Disability status is defined as having serious difficulty with hearing, vision, cognition, ambulation, self-care (e.g., bathing and dressing), or independent living (e.g., performing errands such as shopping).

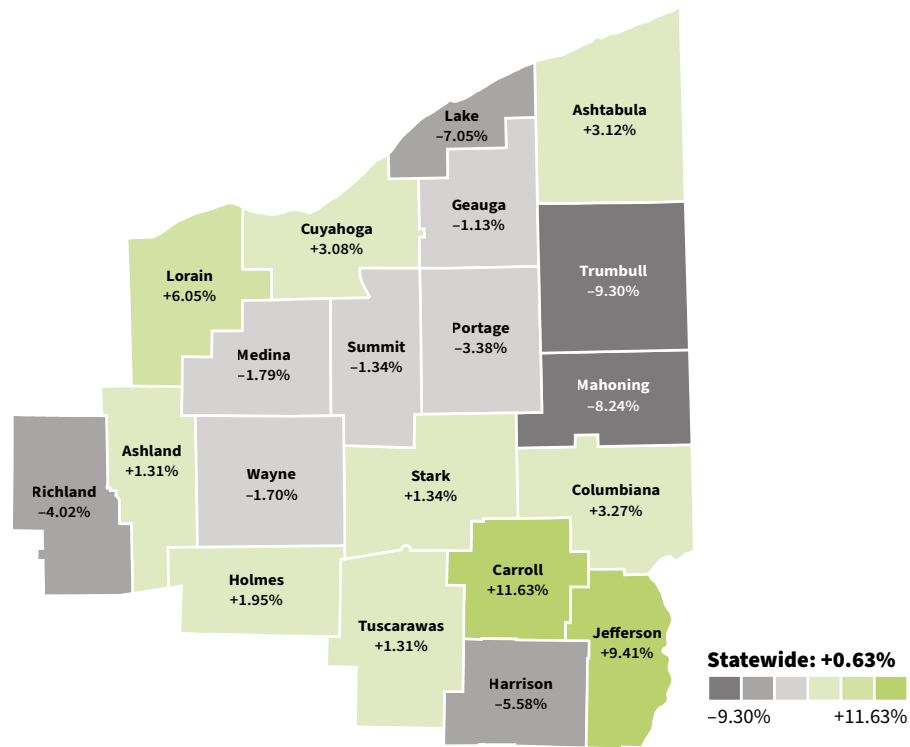
INCOME & LABOR

This section gives information on Northeast Ohio's economic indicators, such as poverty rates, income levels, and unemployment rates. These provide important context on the ability to afford housing.

SECTION HIGHLIGHTS

- In 2023, 13.8% of Northeast Ohio households were living below the federal poverty level — representing a slightly higher poverty rate than the state average (13.2%).
- Working-age Northeast Ohioans are less likely to participate in the labor force. In 2024, 61.7% of civilians in the region aged 16 or older had a job or were actively looking for work. This labor force participation rate was lower than the state average (63.8%).
- Of those in Northeast Ohio's labor force, 4.20% were unemployed, compared to the statewide unemployment rate of 4.28%.
- Adjusted for inflation, income growth in Ohio has generally been stagnant since 2018. In Northeast Ohio, half the counties in the region experienced an increase in median household incomes from 2018 to 2023 while the other half saw them decline. Among these counties, Carroll had the most income growth (+11.63%) and Trumbull had the greatest loss of income (–9.30%).

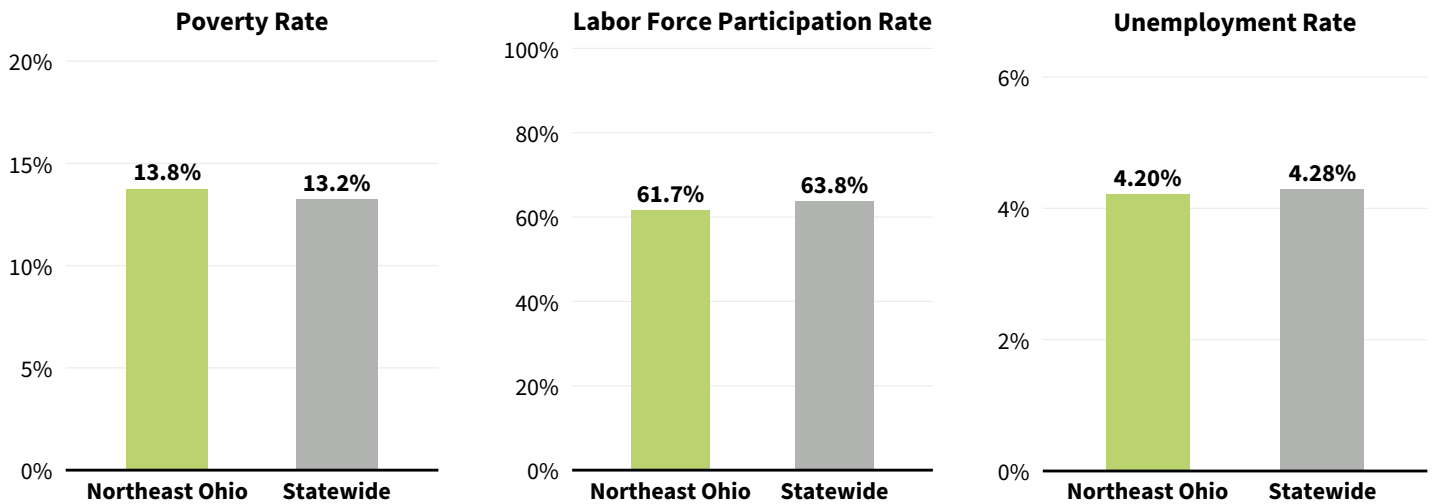
Change in Median Household Income 2018 to 2023 by County



Source: Small Area Income and Poverty Estimates (SAIPE), U.S. Census Bureau

Notes: Percent change in median household income takes into account an inflationary adjustment of 2018 household incomes to 2023 dollars based on the Consumer Price Index for All Urban Consumers (CPI-U), from the U.S. Bureau of Labor Statistics, for "all items less shelter."

How the Region Compares



Sources: 2023 Small Area Income and Poverty Estimates (SAIPE), U.S. Census Bureau; Local Area Unemployment Estimates, U.S. Bureau of Labor Statistics (based on 2024 annual averages); 2019–2023 American Community Survey (ACS) Five-Year Estimates, Tables S1810 & S1811

Notes: Poverty status can only be determined for individuals in households and therefore the denominator excludes individuals living in group quarters such as college dormitories, correctional facilities, and nursing homes.

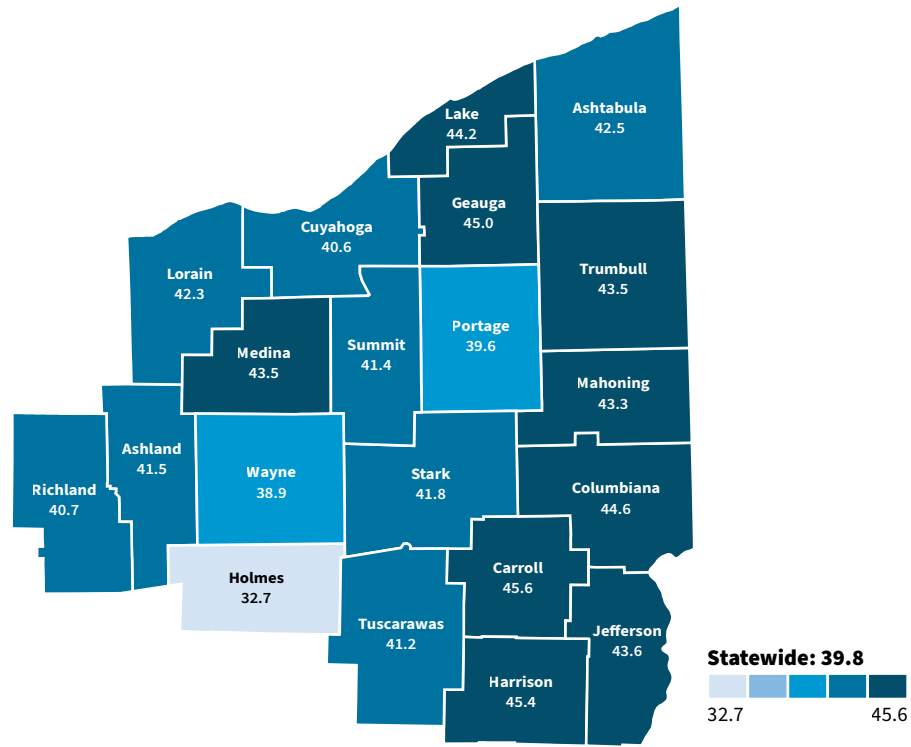
DEMOGRAPHICS

This section details the general population trends within Northeast Ohio as well as segments of the population that are at particular risk for housing challenges or instability. Population changes shape the demand for housing and provide insight into what types of housing are most needed.

SECTION HIGHLIGHTS

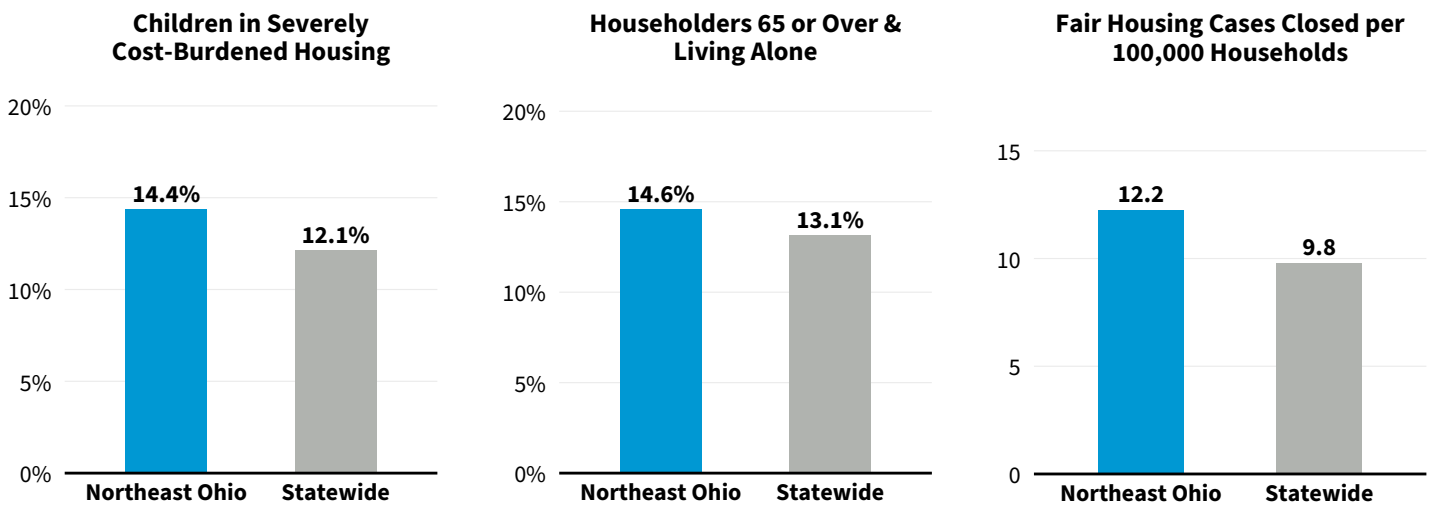
- One in seven children in Northeast Ohio (14.4%) lived in a household spending at least half its income on housing in 2023 — putting them at risk of losing their homes to foreclosure or eviction. The likelihood of living in severely cost-burdened housing is greater in this region than for Ohioans under 18 in general (12.1%).
- During the 2019 to 2023 period, 14.6% of households in Northeast Ohio were occupied by an adult aged 65 or over who was living alone. This was higher than the statewide share of such households (13.1%). Aging householders living alone face unique challenges when it comes to maintaining the cost and upkeep of their homes, especially among those who wish to age in place.
- Northeast Ohio residents are more likely to have filed a fair housing discrimination case than Ohioans in general. Since 2010 the U.S. Department of Housing and Urban Development (HUD) closed 12.2 such cases for every 100,000 households in the region compared to the statewide rate over the same period (9.8).
- Northeast Ohioans are relatively old. In 2023 the median age in most counties in the region was higher than the statewide median (39.8 years). Among counties in the region, Carroll had the highest median age (45.6) while Holmes — where there are many large Amish families with children — had the lowest (32.7).

Median Age by County



Source: 2023 Population and Housing Estimates, U.S. Census Bureau

How the Region Compares



Sources: IPUMS USA, University of Minnesota (based on the 2023 American Community Survey Public Use Microdata Sample); 2019–2023 American Community Survey (ACS) Five-Year Estimates, Table B11007; Office of Fair Housing and Equal Opportunity, U.S. Department of Housing and Urban Development (public data request) (based on fair housing discrimination cases closed between 2010 and 2024)

Notes: Regional estimates derived from IPUMS USA are calculated using a geographic correspondence file from the Missouri Census Data Center at the University of Missouri to “crosswalk” the data from Public Use Microdata Areas (PUMAs) to counties. Bases of discrimination are defined in Title VIII of the Civil Rights Act of 1968 (a.k.a., the Fair Housing Act). There are seven protected categories: disability, race, color, national origin, sex, familial status, and religion, in addition to protection from retaliation in response to a previously filed fair housing complaint.



Photo courtesy of TGF Housing Resources

HITCHCOCK HOUSING

Cleveland | Cuyahoga County

Property Details:

Developer: The Finch Group, Inc.

Funding Type: Low-Income Housing Tax Credit (LIHTC); HOME Investment Partnerships Program – American Rescue Plan (HOME-ARP); Housing Development Loan (HDL) program; Multifamily Bond program

Funding Amount: \$8,445,440 in 4% LIHTC; \$5,500,000 in HOME-ARP funds; \$2,000,000 in HDL; \$10,000,000 in MF bonds

Population Served: Permanent Supportive Housing

Hitchcock Housing provides a home and supportive services to women embarking on a journey of recovery. Hitchcock's recovery housing offers an alcohol- and drug-free environment where healing is prioritized and women are met with comprehensive guidance on how to achieve and maintain sobriety. Residents are given the tools to succeed in living independently as well as access to counseling, employment support, and healthcare resources.

APPENDIX

	Ashland	Ashtabula	Carroll	Columbiana	Cuyahoga	Geauga
Homeownership						
Median home sales price, 2023	\$150,904	\$108,175	\$115,996	\$98,071	\$151,648	\$275,692
Median home-price-to-income ratio, 2023	2.28	1.86	1.73	1.76	2.45	2.76
Severely cost-burdened mortgage holders, 2023	761	1,471	447	1,218	20,153	1,552
Prevalence of severe mortgage burden, 2023	8.17%	9.59%	8.88%	7.72%	10.40%	8.06%
Rental Housing						
Renter-occupied households, 2023	3,980	9,388	2,035	9,615	217,285	4,055
Median monthly rent, 2-BR apt., 2019 (2024 dollars)	\$805	\$841	\$864	\$799	\$1,048	\$1,220
Median monthly rent, 2-BR apt., 2024	\$1,039	\$968	\$1,060	\$896	\$1,230	\$1,480
Change in median rent, 2-BR apt., 2019 to 2024	+ 29.0%	+ 15.0%	+ 22.8%	+ 12.3%	+ 17.4%	+ 21.3%
Severely cost-burdened renters, 2023	1,042	2,413	400	2,306	58,292	766
Prevalence of severe rent burden, 2023	26.2%	25.7%	19.7%	24.0%	26.8%	18.9%
Home Energy & Utilities						
Total residential carbon footprint (tCO ₂ e/yr), 2013	344,778	640,226	171,895	662,034	9,249,493	685,205
Avg. residential carbon footprint (tCO ₂ e/yr), 2013	16.8	16.7	15.2	16.0	16.8	19.4
Households participating in HEAP, 2024	552	4,169	726	3,803	24,820	878
Share of households participating in HEAP, 2024	2.67%	10.70%	6.33%	9.19%	4.48%	2.47%
Households participating in PIPP, 2024	394	4,031	499	3,661	25,039	752
Share of households participating in PIPP, 2024	1.91%	10.35%	4.35%	8.85%	4.52%	2.11%
Households without broadband internet, 2023	3,036	5,933	2,632	6,479	76,337	4,807
Share of households without broadband, 2023	14.7%	15.2%	22.9%	15.7%	13.8%	13.5%
Housing Instability & Homelessness						
Average monthly foreclosures, 2024	18	64	12	36	823	33
Foreclosure rate, 2024	0.37%	0.78%	0.57%	0.42%	0.60%	0.30%
Eviction filings, 2024	111	340	42	302	15,174	129
Eviction filing rate, 2024	2.54%	3.34%	1.66%	2.72%	6.69%	2.79%
Housing Stock						
Medium-density housing units, 2023	1,844	3,464	671	5,280	98,902	2,109
Share of medium-density housing units, 2023	8.19%	7.47%	5.01%	11.45%	16.07%	5.61%
Median year moved into unit, 2023	2009	2011	2010	2010	2013	2008
Health						
Infant deaths, 2019–2023	22	41	9	31	521	21
Infant mortality rate per 1K live births, 2019–2023	7.70	7.92	5	6.37	7.92	4.59
Noninstitutionalized adults with a disability, 2023	7,020	14,523	4,453	16,020	171,771	8,846
Adult disability prevalence rate, 2023	17.6%	19.9%	21.2%	20.6%	17.6%	12.1%
Overall Social Vulnerability Index (SVI) score, 2022	0.517	1.000	0.529	0.598	0.931	0.253
Income & Labor						
Median household income, 2018 (2023 dollars)	\$65,297	\$56,394	\$60,060	\$53,977	\$60,065	\$101,008
Median household income, 2023	\$66,149	\$58,152	\$67,044	\$55,744	\$61,912	\$99,863
Change in median household income, 2018 to 2023	+ 1.3%	+ 3.1%	+ 11.6%	+ 3.3%	+ 3.1%	- 1.1%
Poverty estimate, 2023	6,888	16,603	3,150	15,127	193,220	5,953
Poverty rate, 2023	13.5%	17.8%	11.9%	15.7%	16.0%	6.3%
Civilian labor force, 2024	26,095	44,126	12,765	45,562	618,338	49,685
Labor force participation rate, 2024	63.0%	58.5%	62.7%	56.7%	61.4%	65.3%
Unemployment estimate, 2024	1,150	2,181	595	2,246	24,310	1,653
Unemployment rate, 2024	4.41%	4.94%	4.66%	4.93%	3.93%	3.33%
Demographics						
Median age, 2023	41.5	42.5	45.6	44.6	40.6	45.0
Householders 65 or over and living alone, 2023	2,735	5,679	1,624	6,622	85,788	4,107
Share of householders 65+ and living alone, 2023	13.2%	14.6%	14.2%	16.0%	15.5%	11.5%

	Harrison	Holmes	Jefferson	Lake	Lorain	Mahoning
Homeownership						
Median home sales price, 2023	\$67,783	\$198,204	\$84,608	\$178,679	\$189,158	\$132,700
Median home-price-to-income ratio, 2023	1.19	2.66	1.50	2.43	2.51	2.51
Severely cost-burdened mortgage holders, 2023	347	528	811	3,213	5,270	3,518
Prevalence of severe mortgage burden, 2023	17.48%	8.99%	8.76%	6.89%	9.13%	9.68%
Rental Housing						
Renter-occupied households, 2023	1,203	1,835	6,609	23,761	31,548	26,858
Median monthly rent, 2-BR apt., 2019 (2024 dollars)	\$795	\$873	\$799	\$1,082	\$967	\$731
Median monthly rent, 2-BR apt., 2024	\$742	\$969	\$847	\$1,283	\$1,158	\$841
Change in median rent, 2-BR apt., 2019 to 2024	- 6.7%	+ 11.0%	+ 6.1%	+ 18.6%	+ 19.8%	+ 15.0%
Severely cost-burdened renters, 2023	321	377	1,817	5,363	8,523	7,050
Prevalence of severe rent burden, 2023	26.7%	20.5%	27.5%	22.6%	27.0%	26.2%
Home Energy & Utilities						
Total residential carbon footprint (tCO ₂ e/yr), 2013	89,831	235,785	422,822	1,745,431	2,131,731	1,635,192
Avg. residential carbon footprint (tCO ₂ e/yr), 2013	15.6	17.9	15.8	17.8	17.3	16.8
Households participating in HEAP, 2024	687	354	2,594	2,451	5,862	8,322
Share of households participating in HEAP, 2024	11.60%	2.66%	9.56%	2.44%	4.66%	8.48%
Households participating in PIPP, 2024	647	205	2,733	2,107	6,017	9,325
Share of households participating in PIPP, 2024	10.93%	1.54%	10.07%	2.10%	4.78%	9.50%
Households without broadband internet, 2023	1,122	5,160	4,591	8,944	18,298	14,333
Share of households without broadband, 2023	18.9%	38.7%	16.9%	8.9%	14.5%	14.6%
Housing Instability & Homelessness						
Average monthly foreclosures, 2024	7	5	32	109	161	98
Foreclosure rate, 2024	0.76%	0.34%	0.72%	0.32%	0.41%	0.43%
Eviction filings, 2024	19	34	209	1,431	1,908	1,682
Eviction filing rate, 2024	1.38%	1.24%	2.73%	5.72%	5.77%	5.76%
Housing Stock						
Medium-density housing units, 2023	259	1,187	2,371	11,310	14,389	10,043
Share of medium-density housing units, 2023	3.50%	8.15%	7.62%	10.68%	10.61%	9.29%
Median year moved into unit, 2023	2008	2011	2008	2011	2012	2011
Health						
Infant deaths, 2019–2023	2	25	29	42	97	98
Infant mortality rate per 1K live births, 2019–2023	5	6.23	9.09	4.02	6.09	8.34
Noninstitutionalized adults with a disability, 2023	2,113	3,092	10,410	30,098	41,784	34,367
Adult disability prevalence rate, 2023	19.1%	10.3%	20.2%	16.3%	17.4%	19.5%
Overall Social Vulnerability Index (SVI) score, 2022	0.690	0.391	0.586	0.241	0.632	0.885
Income & Labor						
Median household income, 2018 (2023 dollars)	\$60,419	\$73,063	\$51,434	\$79,135	\$71,186	\$57,667
Median household income, 2023	\$57,050	\$74,490	\$56,276	\$73,559	\$75,496	\$52,914
Change in median household income, 2018 to 2023	- 5.6%	+ 2.0%	+ 9.4%	- 7.0%	+ 6.1%	- 8.2%
Poverty estimate, 2023	2,011	3,813	9,884	23,146	34,018	42,602
Poverty rate, 2023	14.5%	8.8%	16.1%	10.1%	11.0%	19.5%
Civilian labor force, 2024	6,861	22,142	27,402	128,720	158,343	100,290
Labor force participation rate, 2024	63.9%	77.8%	51.6%	67.5%	63.6%	55.1%
Unemployment estimate, 2024	316	689	1,683	4,486	6,120	5,227
Unemployment rate, 2024	4.61%	3.11%	6.14%	3.49%	3.86%	5.21%
Demographics						
Median age, 2023	45.4	32.7	43.6	44.2	42.3	43.3
Householders 65 or over and living alone, 2023	987	1,086	4,551	15,103	18,231	15,539
Share of householders 65+ and living alone, 2023	16.7%	8.1%	16.8%	15.1%	14.5%	15.8%

	Medina	Portage	Richland	Stark	Summit	Trumbull
Homeownership						
Median home sales price, 2023	\$260,074	\$206,767	\$131,554	\$146,500	\$157,500	\$113,633
Median home-price-to-income ratio, 2023	2.88	2.80	2.30	2.30	2.26	2.20
Severely cost-burdened mortgage holders, 2023	3,074	1,561	1,307	4,403	8,501	2,972
Prevalence of severe mortgage burden, 2023	7.89%	5.74%	6.84%	6.82%	8.57%	9.31%
Rental Housing						
Renter-occupied households, 2023	13,500	18,351	14,947	46,461	71,462	22,875
Median monthly rent, 2-BR apt., 2019 (2024 dollars)	\$1,175	\$823	\$963	\$887	\$755	\$915
Median monthly rent, 2-BR apt., 2024	\$1,403	\$1,215	\$877	\$1,060	\$1,058	\$826
Change in median rent, 2-BR apt., 2019 to 2024	+ 19.4%	+ 47.6%	- 9.0%	+ 19.5%	+ 40.2%	- 9.8%
Severely cost-burdened renters, 2023	2,708	5,845	3,333	9,781	18,592	5,628
Prevalence of severe rent burden, 2023	20.1%	31.9%	22.3%	21.1%	26.0%	24.6%
Home Energy & Utilities						
Total residential carbon footprint (tCO ₂ e/yr), 2013	1,312,473	1,070,148	814,314	2,666,730	3,967,183	1,442,036
Avg. residential carbon footprint (tCO ₂ e/yr), 2013	18.4	16.9	16.4	17.3	17.4	17.0
Households participating in HEAP, 2024	1,655	3,321	3,647	6,946	10,676	4,323
Share of households participating in HEAP, 2024	2.28%	5.14%	7.28%	4.47%	4.65%	5.02%
Households participating in PIPP, 2024	1,402	3,660	3,721	8,081	12,319	4,352
Share of households participating in PIPP, 2024	1.93%	5.67%	7.43%	5.20%	5.37%	5.05%
Households without broadband internet, 2023	6,629	7,770	7,043	23,163	23,540	15,243
Share of households without broadband, 2023	9.1%	12.0%	14.1%	14.9%	10.3%	17.7%
Housing Instability & Homelessness						
Average monthly foreclosures, 2024	63	61	53	175	257	106
Foreclosure rate, 2024	0.23%	0.30%	0.48%	0.36%	0.38%	0.61%
Eviction filings, 2024	387	715	706	2,537	4,207	1,493
Eviction filing rate, 2024	2.67%	3.71%	4.47%	5.20%	5.60%	6.08%
Housing Stock						
Medium-density housing units, 2023	7,625	9,246	7,138	21,154	31,559	9,427
Share of medium-density housing units, 2023	10.07%	13.02%	13.07%	12.63%	12.76%	9.97%
Median year moved into unit, 2023	2011	2012	2012	2012	2012	2010
Health						
Infant deaths, 2019–2023	25	43	49	124	168	60
Infant mortality rate per 1K live births, 2019–2023	3.02	6.43	7.21	6.28	6.09	5.99
Noninstitutionalized adults with a disability, 2023	21,058	19,341	17,470	47,140	67,215	31,492
Adult disability prevalence rate, 2023	14.8%	14.8%	19.1%	16.3%	16.0%	20.2%
Overall Social Vulnerability Index (SVI) score, 2022	0.000	0.402	0.782	0.448	0.621	0.874
Income & Labor						
Median household income, 2018 (2023 dollars)	\$91,858	\$76,500	\$59,659	\$62,832	\$70,736	\$56,963
Median household income, 2023	\$90,211	\$73,911	\$57,261	\$63,673	\$69,786	\$51,668
Change in median household income, 2018 to 2023	- 1.8%	- 3.4%	- 4.0%	+ 1.3%	- 1.3%	- 9.3%
Poverty estimate, 2023	13,795	20,077	16,972	45,043	68,166	33,696
Poverty rate, 2023	7.6%	12.9%	14.4%	12.3%	12.9%	17.2%
Civilian labor force, 2024	100,767	87,162	51,917	183,971	271,628	84,683
Labor force participation rate, 2024	68.4%	64.9%	54.9%	61.7%	62.6%	52.4%
Unemployment estimate, 2024	3,238	3,742	2,607	8,261	12,351	4,559
Unemployment rate, 2024	3.21%	4.29%	5.02%	4.49%	4.55%	5.38%
Demographics						
Median age, 2023	43.5	39.6	40.7	41.8	41.4	43.5
Householders 65 or over and living alone, 2023	8,358	8,045	7,606	21,308	31,571	13,967
Share of householders 65+ and living alone, 2023	11.5%	12.5%	15.2%	13.7%	13.8%	16.2%

	Tuscarawas	Wayne	Region	Statewide
Homeownership				
Median home sales price, 2023	\$152,375	\$186,483	n/a	\$179,408
Median home-price-to-income ratio, 2023	2.45	2.67	n/a	2.64
Severely cost-burdened mortgage holders, 2023	984	1,580	63,671	158,914
Prevalence of severe mortgage burden, 2023	6.88%	8.26%	8.71%	8.01%
Rental Housing				
Renter-occupied households, 2023	10,902	9,720	546,390	1,510,762
Median monthly rent, 2-BR apt., 2019 (2024 dollars)	\$1,095	\$849	n/a	\$961
Median monthly rent, 2-BR apt., 2024	\$1,057	\$1,139	n/a	\$1,127
Change in median rent, 2-BR apt., 2019 to 2024	- 3.5%	+ 34.2%	n/a	+ 17.3%
Severely cost-burdened renters, 2023	2,360	1,687	138,604	368,528
Prevalence of severe rent burden, 2023	21.6%	17.4%	25.4%	24.4%
Home Energy & Utilities				
Total residential carbon footprint (tCO ₂ e/yr), 2013	633,247	749,547	30,670,102	78,426,683
Avg. residential carbon footprint (tCO ₂ e/yr), 2013	16.8	17.0	17.1	16.5
Households participating in HEAP, 2024	2,098	2,205	90,089	251,190
Share of households participating in HEAP, 2024	5.50%	4.99%	4.97%	5.20%
Households participating in PIPP, 2024	1,934	2,003	92,882	248,794
Share of households participating in PIPP, 2024	5.07%	4.53%	5.12%	5.15%
Households without broadband internet, 2023	6,830	7,577	249,467	583,685
Share of households without broadband, 2023	17.9%	17.1%	13.8%	12.1%
Housing Instability & Homelessness				
Average monthly foreclosures, 2024	28	25	2,164	4,885
Foreclosure rate, 2024	0.36%	0.22%	0.44%	0.37%
Eviction filings, 2024	290	311	32,027	104,842
Eviction filing rate, 2024	2.43%	2.94%	5.53%	6.48%
Housing Stock				
Medium-density housing units, 2023	4,338	5,095	247,411	675,513
Share of medium-density housing units, 2023	10.62%	10.89%	12.48%	12.81%
Median year moved into unit, 2023	2012	2011	n/a	2013
Health				
Infant deaths, 2019–2023	36	46	1,489	4,521
Infant mortality rate per 1K live births, 2019–2023	6.38	6.51	6.69	6.97
Noninstitutionalized adults with a disability, 2023	13,347	13,457	575,017	1,507,220
Adult disability prevalence rate, 2023	19.0%	15.4%	17.2%	16.7%
Overall Social Vulnerability Index (SVI) score, 2022	0.724	0.644	n/a	n/a
Income & Labor				
Median household income, 2018 (2023 dollars)	\$61,295	\$71,038	n/a	\$67,450
Median household income, 2023	\$62,098	\$69,834	n/a	\$67,873
Change in median household income, 2018 to 2023	+ 1.3%	- 1.7%	n/a	+ 0.6%
Poverty estimate, 2023	12,127	10,366	576,657	1,518,119
Poverty rate, 2023	13.4%	9.2%	13.8%	13.2%
Civilian labor force, 2024	45,579	61,676	2,127,711	5,898,612
Labor force participation rate, 2024	62.7%	68.3%	61.7%	63.8%
Unemployment estimate, 2024	1,864	2,156	89,433	252,536
Unemployment rate, 2024	4.09%	3.50%	4.20%	4.28%
Demographics				
Median age, 2023	41.2	38.9	n/a	39.8
Householders 65 or over and living alone, 2023	5,395	6,035	264,337	634,176
Share of householders 65+ and living alone, 2023	14.2%	13.7%	14.6%	13.1%

DATA SOURCES

Consumer Financial Protection Bureau, Home Mortgage Disclosure Act (HMDA) data
<https://www.consumerfinance.gov/data-research/hmda/>

Cotality, Real Estate Analytics Suite, MarketTrends and RentalTrends
<https://corelogicreas.com/REAS/servlet/mstrWeb>

InnovateOhio Platform, DataOhio
<https://data.ohio.gov/wps/portal/gov/data/>

National Low Income Housing Coalition (public data request)
<https://nlihc.org/>

Ohio Department of Children & Youth, Infant Mortality Annual Report
<https://childrenandyouth.ohio.gov/about-dcy/dcy-data-reporting/data-reporting>

Ohio Department of Development, Energy Assistance (public data request)
<https://development.ohio.gov/individual/energy-assistance>

Ohio Department of Development, TourismOhio, Ohio Regions
<https://ohio.org/regions/>

Ohio Department of Education and Workforce (public data request)
<http://education.ohio.gov/>

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<https://www.supremecourt.ohio.gov/courts/services-to-courts/court-services/dashboards/>

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<https://data.census.gov/>

U.S. Department of Commerce, Bureau of the Census, Population and Housing Estimates
<https://www.census.gov/programs-surveys/popest.html>

U.S. Department of Commerce, Bureau of the Census, Small Area Income and Poverty Estimates
<https://www.census.gov/programs-surveys/saipe.html>

U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Social Vulnerability Index
<https://www.atsdr.cdc.gov/place-health/php/svi/svi-data-documentation-download.html>

U.S. Department of Housing and Urban Development, Office of Fair Housing and Equal Opportunity (public data request)
https://www.hud.gov/program_offices/fair_housing_equal_opp

U.S. Department of Labor, Bureau of Labor Statistics, Consumer Price Index
<https://www.bls.gov/cpi/>

U.S. Department of Labor, Bureau of Labor Statistics, Local Area Unemployment Statistics
<https://www.bls.gov/lau/>

University of California, Berkeley; CoolClimate Network (public data request)
<https://coolclimate.berkeley.edu/>

University of Minnesota, IPUMS USA
<https://usa.ipums.org/usa/>

University of Missouri, Missouri Census Data Center, Geocorr Applications
<http://mcdc.missouri.edu/applications/geocorr.html>