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Advancing Health Equity and Inclusive Growth in Buffalo

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Advancing Health Equity and Inclusive Growth in Buffalo

Abstract

"With millions in public and private investments in the Buffalo Niagara Medical Campus and Governor Cuomo's historic "Buffalo Billion" investment in economic development, the city of Buffalo, New York, is poised for resurgence. As is true in cities and regions across the country, communities of color are growing and buffering overall population loss. But if new investments do not address persistent racial and economic inequities, the city's long-term economic future is at risk. The Buffalo region's economy could have been over \$4 billion stronger in 2014 alone if racial gaps in income were eliminated. Inclusive growth is the path to sustainable economic prosperity and health equity. To build a Buffalo economy that works for all, city and regional leaders must commit to putting all residents on the path to economic security through protections and policies that enable existing residents to remain in the city, connect to jobs and opportunities, and benefit from new development."

Keywords

Buffalo, Health, Race, Demographics, PDF

Advancing Health Equity and Inclusive Growth in **Buffalo**



Summary

With millions in public and private investments in the Buffalo Niagara Medical Campus and Governor Cuomo’s historic “Buffalo Billion” investment in economic development, the city of Buffalo, New York, is poised for resurgence. As is true in cities and regions across the country, communities of color are growing and buffering overall population loss. But if new investments do not address persistent racial and economic inequities, the city’s long-term economic future is at risk.

The Buffalo region’s economy could have been over \$4 billion stronger in 2014 alone if racial gaps in income were eliminated. Inclusive growth is the path to sustainable economic prosperity and health equity. To build a Buffalo economy that works for all, city and regional leaders must commit to putting all residents on the path to economic security through protections and policies that enable existing residents to remain in the city, connect to jobs and opportunities, and benefit from new development.

Indicators

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Race/Ethnicity and Nativity, 2014

Black, Latino, Asian or Pacific Islander, and White Populations by Ancestry, 2014

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Disconnected Youth: 16- to 24-Year-Olds Not in School or Work by Race/Ethnicity, 1990 to 2014

Disconnected Youth: 16- to 24-Year-Olds Not in School or Work by Race/Ethnicity and Gender, 1990 to 2014

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Percent Living in Limited Supermarket Access (LSAs) Areas by Race/Ethnicity, 2014

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Share of Adults with Angina or Coronary Heart Disease by Geography, 2012

Share of Adults with Angina or Coronary Heart Disease by Race/Ethnicity, 2012

Life Expectancy at Birth by Geography, 2015

Life Expectancy at Birth by Race/Ethnicity, 2014

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Health Insurance Rates by Geography, 2014

Health Insurance Rates by Race/Ethnicity, 2014

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Share of Low-Wage Jobs and Affordable Rental Housing Units, 2014

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Percentage Gain in Income with Racial Equity, 2014

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Foreword

A healthy and thriving city begins with healthy residents. The dominant narrative says that healthy lifestyles, avoiding risky behavior, and seeing a doctor on a regular basis result in healthy individuals. However, factors such as access to educational opportunities and high-quality jobs, the persistence of racial inequalities, and ecological degradation all play a role in healthy communities. The region's rich legacy and complex history have a direct connection to the current state of health in the city of Buffalo, New York.

At the beginning of the Great Depression, Buffalo had 573,000 inhabitants, making it the 13th largest city in the United States. Over the next 75 years, the city lost 55 percent of its population, a trend that lasted into the early part of the 21st century. Today grassroots organizations are working hard: training leaders on the neighborhood level to create new models of neighborhood development, with community-control as a core value; promoting safe, and walkable neighborhoods; seeding new consumer and worker cooperatives; advocating for high quality and sustainable job creation; and initiating community-based solar and geothermal projects that are helping to create a new architecture of

energy. The mission is to create a more equitable and sustainable Buffalo for all.

In addition, Buffalo is being repopulated through an influx of immigrants and newly resettled refugees. Currently, there are 85 languages spoken within our city limits. It remains New York State's second biggest city, with a population of close to 260,000. Buffalo has quickly become a national model for how to effectively integrate diverse populations into all facets of society, most notably through community organizing and entrepreneurship.

In 2015, Open Buffalo partnered with resident leaders in our city's Fruit Belt neighborhood to ensure that the community benefits from economic development programs and projects through quality jobs, education and training, local and minority business opportunities, and green design and operations. We have started with an initial focus on the Buffalo Niagara Medical Campus because of its symbolism as the epicenter of Buffalo's economic resurgence and promise of the "New Buffalo." However, it is unclear at this moment whether that promise will come to fruition as rapid gentrification is displacing longtime residents, income inequality is

increasing, and the parallel reality being faced in neighborhoods like the Fruit Belt is akin to "a tale of two cities."

That's why we're committed to change at the neighborhood level.

Guided by the vision of fostering democratic participation in community wealth-building strategies, the Fruit Belt community has worked over the past year to create the first community land trust in the city of Buffalo. It will serve as a model for other neighborhoods and communities facing similar challenges and be a model of what a regenerative economy looks like.

It is our firm belief that Buffalo's greatest days are ahead and that a rising tide should lift all boats. We're creating the movement toward a resilient and regenerative economy that is place-based and people-focused. Our communities and their health are paramount in securing that beautiful and bold vision.

Sincerely,



Franchelle Hart
Executive Director, Open Buffalo

Acknowledgments

PolicyLink and the Program for Environmental and Regional Equity (PERE) at the University of Southern California are grateful to the Robert Wood Johnson Foundation for their generous support of this project. This equity profile and the accompanying policy brief are part of a series of reports produced in partnership with local community coalitions in Buffalo, Fresno, Long Island, Cincinnati, and Sacramento. This profile features additional health indicators to build a data-backed case for equity while the brief lifts up policy solutions to advance health equity, inclusive growth, and a culture of health. These communities are also a part of the All-In Cities initiative at PolicyLink, which supports community leaders in advancing racial economic inclusion and equitable growth. This initiative is generously supported by Prudential and the Surdna Foundation.

We also thank Open Buffalo for their partnership. The analyses and recommendations in the report were informed by a local advisory committee convened by Open Buffalo, which

included the Partnership for the Public Good, and PUSH Buffalo, as well as interviews conducted with local leaders from the Buffalo Federation of Neighborhood Centers, the Community First Alliance, the University of Buffalo, the Buffalo Niagara Medical Campus, city officials, and the Community Foundation for Greater Buffalo. We are grateful for the time and leadership of our local partners and all that they do to build a more just and equitable Buffalo.

This profile was written by Ángel Ross at PolicyLink; the data, charts, and maps were prepared by Sheila Xiao, Pamela Stephens, and Justin Scoggins at PERE; and Rosamaria Carrillo of PolicyLink assisted with formatting, editing, and design. Rebecca Flournoy assisted with development of the framework presented in the profile.

Introduction

Overview

America's cities and metropolitan regions are the nation's engines of economic growth and innovation, and where a new economy that is equitable, resilient, and prosperous must be built.

Policy changes that advance *health equity* can guide leaders toward a new path of shared prosperity. Health equity means that everyone has a just and fair opportunity to be healthy. This requires removing obstacles to attaining and maintaining good health, such as poverty and discrimination, and addressing the social determinants of health: education, employment, income, family and social support, community safety, air and water quality, housing, and transit. Health equity promotes inclusive growth, since healthy people are better able to secure jobs, fully participate in society, and contribute to a vibrant local and regional economy.

This profile analyzes the state of health equity and inclusive growth in Buffalo city, and the accompanying policy brief, *Health Equity: The Path to Inclusive Prosperity in Buffalo*,

summarizes the data and presents recommendations to advance health equity and inclusive growth. They were created by PolicyLink and the Program for Environmental and Regional Equity (PERE) in partnership with Open Buffalo, a civic initiative to make major, long-term improvements in justice and equity in the city of Buffalo.

The data used in this profile were drawn from a regional equity indicators database that includes the largest 100 cities, the largest 150 metro areas, all 50 states, and the United States as a whole. The database incorporates hundreds of data points from public and private data sources including the U.S. Census Bureau, the U.S. Bureau of Labor Statistics, the Behavioral Risk Factor Surveillance System (BRFSS), and the Integrated Public Use Microdata Series (IPUMS). Note that while we disaggregate most indicators by major racial/ethnic groups, there is too little data on certain populations to report confidently. See the "Data and methods" section for a more detailed list of data sources.

We hope this information is used broadly by residents and community groups, elected officials, planners, business leaders, funders, and others working to build a stronger and more equitable Buffalo.

Introduction

What is an equitable city?

Cities are equitable when all residents – regardless of race/ethnicity, nativity, family income, neighborhood of residence, or other characteristics – can fully participate in the city’s economic vitality, contribute to its readiness for the future, and connect to its assets and resources.

Strong, equitable cities:

- Possess **economic vitality**, providing high-quality jobs to their residents and producing new ideas, products, businesses, and economic activity so the city remains sustainable and competitive.
- Are **ready for the future**, with a skilled, ready workforce, and a healthy population.
- Are **places of connection**, where residents can access the essential ingredients to live healthy and productive lives in their own neighborhoods, reach opportunities located throughout the city (and beyond) via transportation or technology, participate in political processes, and interact with other diverse residents.

Introduction

Why equity matters now

The face of America is changing.

Our country's population is rapidly diversifying. Already, more than half of all babies born in the United States are people of color. By 2030, the majority of young workers will be people of color. And by 2044, the United States will be a majority people-of-color nation.

Yet racial and income inequality is high and persistent.

Over the past several decades, long-standing inequities in income, wealth, health, and opportunity have reached unprecedented levels. Wages have stagnated for the majority of workers, inequality has skyrocketed, and many people of color face racial and geographic barriers to accessing economic opportunities.

Racial and economic equity is necessary for economic growth and prosperity.

Equity is an economic imperative as well as a moral one. Research shows that inclusion and diversity are win-win propositions for nations, regions, communities, and firms.

For example:

- More equitable regions experience stronger, more sustained growth.¹
- Regions with less segregation (by race and income) and lower income inequality have more upward mobility.²
- The elimination of health disparities would lead to significant economic benefits from reductions in health-care spending and increased productivity.³
- Companies with a diverse workforce achieve a better bottom line.⁴
- A diverse population more easily connects to global markets.⁵
- Less economic inequality results in better health outcomes for everyone.⁶

The way forward is with an equity-driven growth model.

To secure America's health and prosperity, the nation must implement a new economic model based on equity, fairness, and opportunity. Leaders across all sectors must remove barriers to full participation, connect more people to opportunity, and invest in human potential.

Cities play a critical role in shifting to inclusive growth.

Local communities are where strategies are being incubated to foster equitable growth: growing good jobs and new businesses while ensuring that all – including low-income people and people of color – can fully participate as workers, consumers, entrepreneurs, innovators, and leaders.

¹ Manuel Pastor, "Cohesion and Competitiveness: Business Leadership for Regional Growth and Social Equity," OECD Territorial Reviews, Competitive Cities in the Global Economy, Organisation For Economic Co-Operation And Development (OECD), 2006; Manuel Pastor and Chris Benner, "Been Down So Long: Weak-Market Cities and Regional Equity" in *Retooling for Growth: Building a 21st Century Economy in America's Older Industrial Areas* (New York: American Assembly and Columbia University, 2008); Randall Eberts, George Erickcek, and Jack Kleinhenz, "Dashboard Indicators for the Northeast Ohio Economy: Prepared for the Fund for Our Economic Future" (Cleveland, OH: Federal Reserve Bank of Cleveland, 2006), <https://www.clevelandfed.org/newsroom-and-events/publications/working-papers/working-papers-archives/2006-working-papers/wp-0605-dashboard-indicators-for-the-northeast-ohio-economy.aspx>.

² Raj Chetty, Nathaniel Hendren, Patrick Kline, and Emmanuel Saez, "Where is the Land of Economic Opportunity? The Geography of Intergenerational Mobility in the U.S.," *Quarterly Journal of Economics* 129 (2014): 1553-1623, http://www.equality-of-opportunity.org/assets/documents/mobility_geo.pdf.

³ Darrell Gaskin, Thomas LaVeist, and Patrick Richard, *The State of Urban Health: Eliminating Health Disparities to Save Lives and Cut Costs* (New York, NY: National Urban League Policy Institute, 2012).

⁴ Cedric Herring, "Does Diversity Pay?: Race, Gender, and the Business Case for Diversity," *American Sociological Review* 74 (2009): 208-22; Slater, Weigand and Zwirlein, "The Business Case for Commitment to Diversity," *Business Horizons* 51 (2008): 201-209.

⁵ U.S. Census Bureau, "Ownership Characteristics of Classifiable U.S. Exporting Firms: 2007," Survey of Business Owners Special Report, June 2012, <http://www.census.gov/econ/sbo/export07/index.html>.

⁶ Kate Pickett and Richard Wilkinson, "Income Inequality and Health: A Causal Review," *Social Science & Medicine* 128 (2015): 316-326.

Introduction

Equity indicators framework

The indicators in this profile are presented in five sections. The first section describes the city's demographics. The next three sections present indicators of the city's economic vitality, readiness, and connectedness. The final section explores the economic benefits of equity. Below are the questions answered within each of the five sections.

Demographics:

Who lives in the city, and how is this changing?

- Is the population growing?
- Which groups are driving growth?
- How diverse is the population?
- How does the racial/ethnic composition vary by age?

Economic vitality:

How is the city doing on measures of economic growth and well-being?

- Is the region producing good jobs?
- Can all residents access good jobs?
- Is growth widely shared?
- Do all residents have enough income to sustain their families?
- Are race/ethnicity and nativity barriers to economic success?
- What are the strongest industries and occupations?

Readiness:

How prepared are the city's residents for the 21st century economy?

- Does the workforce have the skills for the jobs of the future?
- Are all youth ready to enter the workforce?
- Are residents healthy? Do they live in health-promoting environments?
- Are health disparities decreasing?
- Are racial gaps in education decreasing?

Connectedness:

Are the city's residents and neighborhoods connected to one another and to the region's assets and opportunities?

- Do residents have transportation choices?
- Can residents access jobs and opportunities located throughout the region?
- Can all residents access affordable, quality, convenient housing?
- Do neighborhoods reflect the city's diversity? Is segregation decreasing?

Economic benefits:

What are the benefits of racial economic inclusion to the broader economy?

- What are the projected economic gains of racial equity?
- Do these gains come from closing racial wage or employment gaps?

Introduction

Policy change is the path to health equity and inclusive growth

Equity is just and fair inclusion into a society in which all can participate, prosper, and reach their full potential. Health equity, as defined by the Robert Wood Johnson Foundation, means that everyone has a just and fair opportunity to be healthy. This requires removing obstacles to health such as poverty, discrimination, and their consequences, which include powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments, and health care.

Many of the conditions and policies that advance health equity also promote inclusive growth. Healthy people are better able to secure jobs and participate in their full capacity, creating a vibrant local economy. In a highly complementary way, equitable economic growth – where all residents have access to good jobs and entrepreneurial opportunities – supports the health of residents throughout the region. This happens through tackling structural barriers and ensuring greater economic security, which reduces stress and increases people's access to health care and preventive services.¹

Ensuring that policies and systems serve to increase inclusion and remove barriers is particularly important given the history of urban and metropolitan development in the United States. Regions and cities are highly segregated by race and income. Today's cities are patchworks of concentrated advantage and disadvantage, with some neighborhoods home to good schools, bustling commercial districts, services, parks, and other crucial ingredients for economic success, while other neighborhoods provide few of those elements.

These patterns of exclusion were created and continue to be maintained by public policies at the federal, state, regional, and local levels. From redlining to voter ID laws to exclusionary zoning practices and more, government policies have fostered racial inequities in health, wealth, and opportunity. Reversing the trends and shifting to equitable growth requires dismantling barriers and enacting proactive policies that expand opportunity.

Health equity can be achieved through policy and systems changes that remove barriers, and build opportunity, and address the social determinants of health, or the factors outside of the health-care system that play a fundamental role in health outcomes. Social determinants of health include both structural drivers, like the inequitable distribution of power and opportunity, and the environments of everyday life – where people are born, live, learn, work, play, worship, and age.² There are seven key social determinants of health: education, employment, income, family and social support, community safety, air and water quality, and housing and transit.³

¹ Steven H. Woolf, Laudan Aron, Lisa Dubay, Sarah M. Simon, Emily Zimmerman, and Kim X. Luk, *How Are Income and Wealth Linked to Economic Longevity* (Washington, DC: The Urban Institute and the Center on Society and Health, April 2015), <http://www.urban.org/sites/default/files/publication/49116/2000178-How-are-Income-and-Wealth-Linked-to-Health-and-Longevity.pdf>.

² Rachel Davis, Diana Rivera, and Lisa Fujie Parks, *Moving from Understanding to Action on Health Equity: Social Determinants of Health Frameworks and THRIVE* (Oakland, CA: The Prevention Institute, August 2015), <https://www.preventioninstitute.org/sites/default/files/publications/Moving%20from%20Understanding%20to%20Action%20on%20Health%20Equity%20%E2%80%93%20Social%20Determinants%20of%20Health%20Frameworks%20and%20THRIVE.pdf>.

³ County Health Rankings and Roadmaps, "Our Approach" (University of Wisconsin Population Health Institute, 2016), <http://www.countyhealthrankings.org/our-approach>.

Introduction

Health equity and inclusive growth are intertwined

The interconnection between health equity and inclusive growth can be seen across the four dimensions of our framework.

Economic vitality

In a region that cultivates inclusive growth and health equity, good jobs are accessible to all, including less-educated workers, and residents have enough income to sustain their families and save for the future. The region has growing industries, and race/ethnicity and nativity are not barriers to economic success. Economic growth is widely shared, and incomes among lower-paid workers are increasing. The population becomes healthier and more productive, since income is a documented determinant of good health, and reduced economic inequality has been linked to better health outcomes for everyone.

Readiness

In a region that cultivates inclusive growth and health equity, all residents have the skills needed for jobs of the future, and youth are ready to enter the workforce. High levels of good health are found throughout the

population, and racial gaps in health are decreasing. Residents have health insurance and can readily access health-care services.

Connectedness

In a region that cultivates inclusive growth and health equity, residents have good transportation choices linking them to a wide range of services that support good health and economic and educational opportunities. Many residents choose to walk, bike, and take public transit – increasing exercise for these residents and reducing air pollution, which positively influence health. Local neighborhood and school environments support health and economic opportunity for all residents, allowing everyone to participate fully in the local economy. Neighborhoods are less segregated by race and income, and all residents wield political power to make their voices heard.

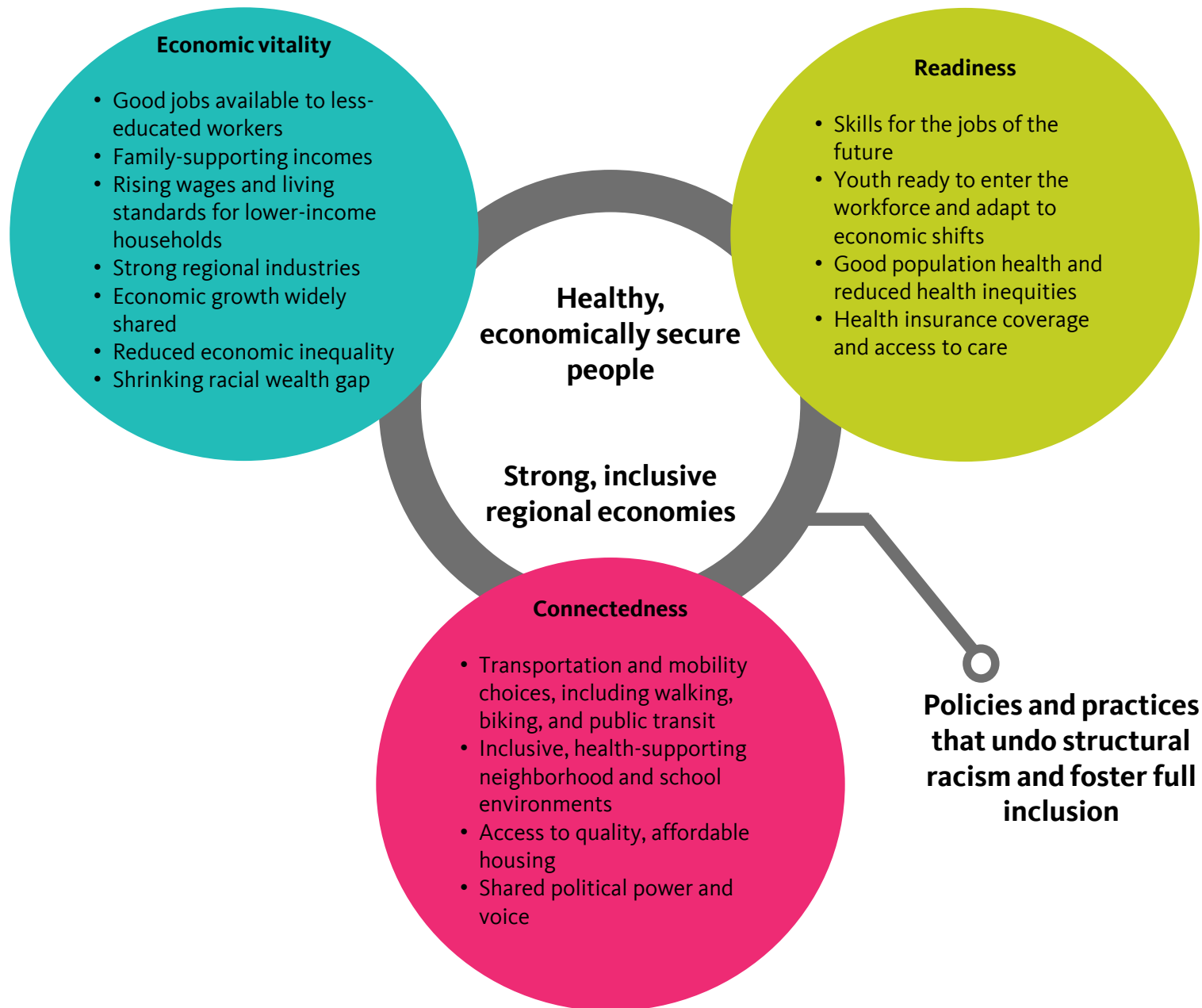
Economic benefits

The elimination of racial health disparities and improving health for all generates significant economic benefits from reductions in health-

care spending and increased productivity. Research shows that economic growth is stronger and more sustainable in regions that are more equitable.

Introduction

Key drivers of health equity and inclusive growth

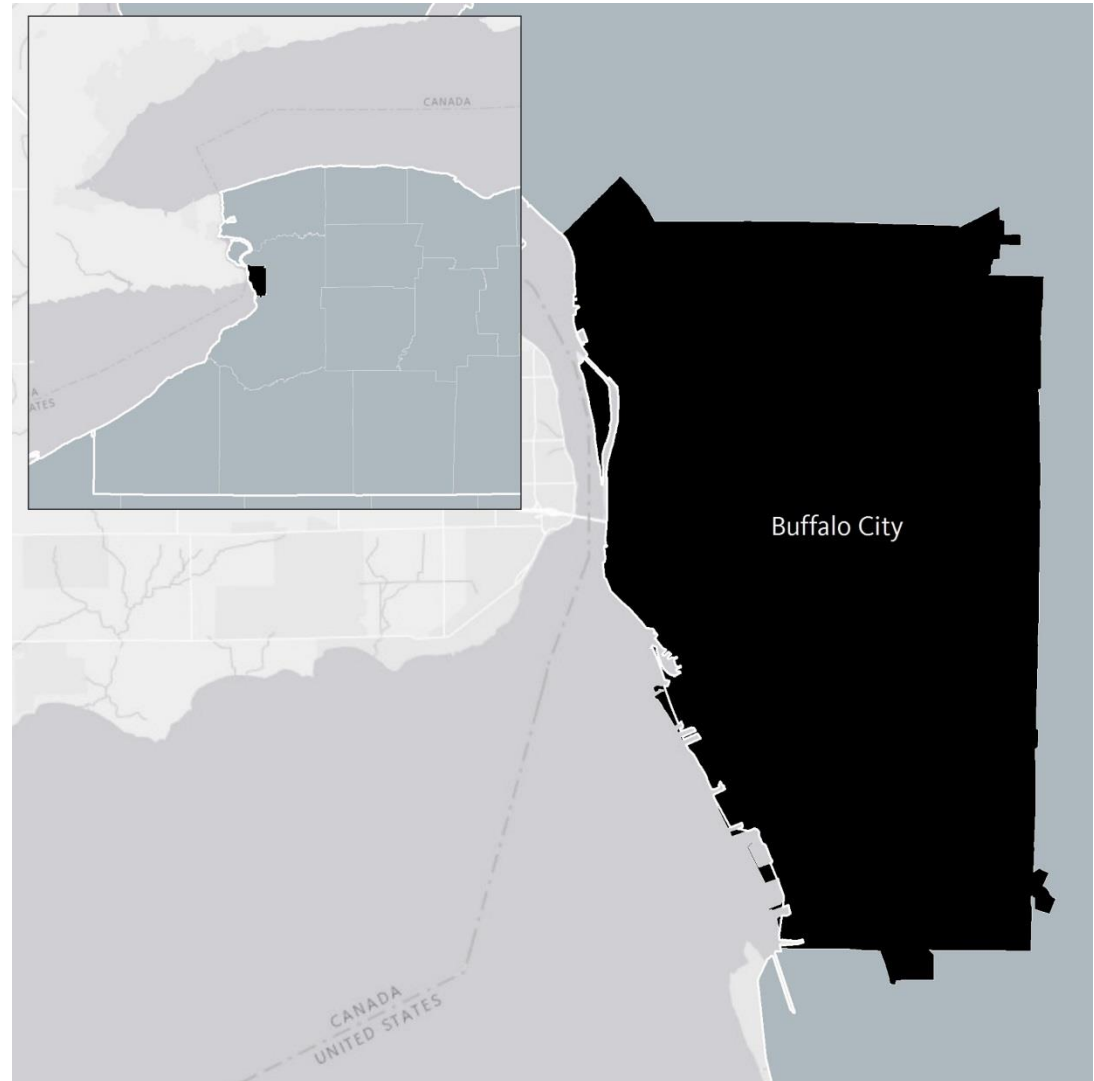


Introduction

Geography

This profile describes demographic, economic, and health conditions in the city of Buffalo, portrayed in black on the map to the right. Buffalo is situated within the Buffalo-Niagara, New York metropolitan statistical area, which includes Erie and Niagara counties.

Unless otherwise noted, all data follow the city geography, which is simply referred to as “Buffalo.” Some exceptions due to lack of data availability are noted beneath the relevant figures. Information on data sources and methodology can be found in the “Data and methods” section beginning on page 104.



Demographics

Highlights

Who lives in the city, and how is this changing?

- Buffalo was 70 percent White in 1980, but it became majority people of color in the 2000s.
- The overall population has declined, but some communities of color in the city are growing.
- The city's fastest-growing demographic groups are also comparatively younger than Whites.
- The Asian or Pacific Islander and Black immigrant populations more than tripled from 2000 to 2014, collectively adding nearly 10,000 residents.

Growth in the Asian or Pacific Islander immigrant population since 2000:

249%

Median age of Latinos and Asians or Pacific Islanders:

24

Racial generation gap in 2014 (in percentage points):

31

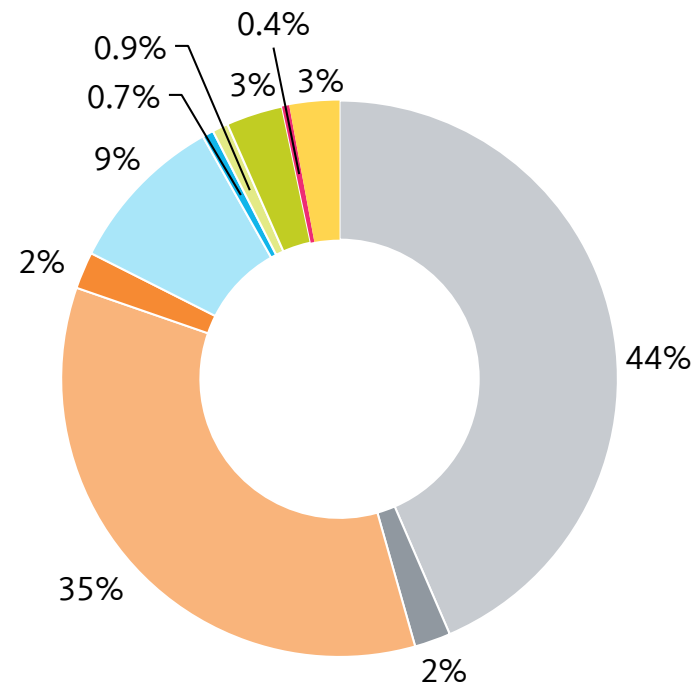
Demographics

How racially/ethnically diverse is the city?

Buffalo has a diverse population. The White population (including White immigrants) constitutes 46 percent of the population, compared to 63 percent nationwide. After Whites, the largest racial/ethnic group in the city are Black residents (37 percent) followed by Latinos (10 percent).

Race/Ethnicity and Nativity, 2014

- White, U.S.-born
- White, Immigrant
- Black, U.S.-born
- Black, Immigrant
- Latino, U.S.-born
- Latino, Immigrant
- Asian or Pacific Islander, U.S.-born
- Asian or Pacific Islander, Immigrant
- Native American and Alaska Native
- Mixed/other



Source: Integrated Public Use Microdata Series.

Note: Data 2014 represent a 2010 through 2014 average. The IPUMS American Community Survey (ACS) microdata was adjusted to match the ACS summary file percentages by race/ethnicity.

Demographics

How racially/ethnically diverse is the city?

Communities of color in the city are also diverse. People of Southeast Asian ancestry make up more than one-third of the Asian or Pacific Islander population and 90 percent are immigrants. Latinos of Caribbean ancestry make up the largest Latino subgroup and 3 percent are immigrants.

Black, Latino, Asian or Pacific Islander, and White Populations by Ancestry, 2014

Black	Population	% Immigrant	Latino	Population	% Immigrant
Sub-Saharan African	6,485	50%	Caribbean	19,232	3%
Caribbean/West Indian	1,801	N/A	South American	626	N/A
European	533	N/A	Mexican	580	N/A
North African/Southwest Asian	272	N/A	Central American	346	N/A
Latin American	238	N/A	Other Latino	5,308	8%
African American/Other Black	86,737	1%	Total	26,091	7%
Total	96,065	6%			
Asian or Pacific Islander	Population	% Immigrant	White	Population	% Immigrant
Southeast Asian	3,994	90%	Western European	71,326	2%
South Asian	3,242	72%	Eastern European	22,653	7%
East Asian	2,003	76%	North American	7,329	2%
Pacific Islander	42	N/A	Middle Eastern/North African	2,453	--
Other Asian or Pacific Islander	1,358	N/A	Other White	14,598	3%
Total	10,638	78%	Total	118,359	5%

Source: Integrated Public Use Microdata Series.

Note: Data represent a 2010 through 2014 average. "N/A" indicates that data on the percent immigrant is not available.

Demographics

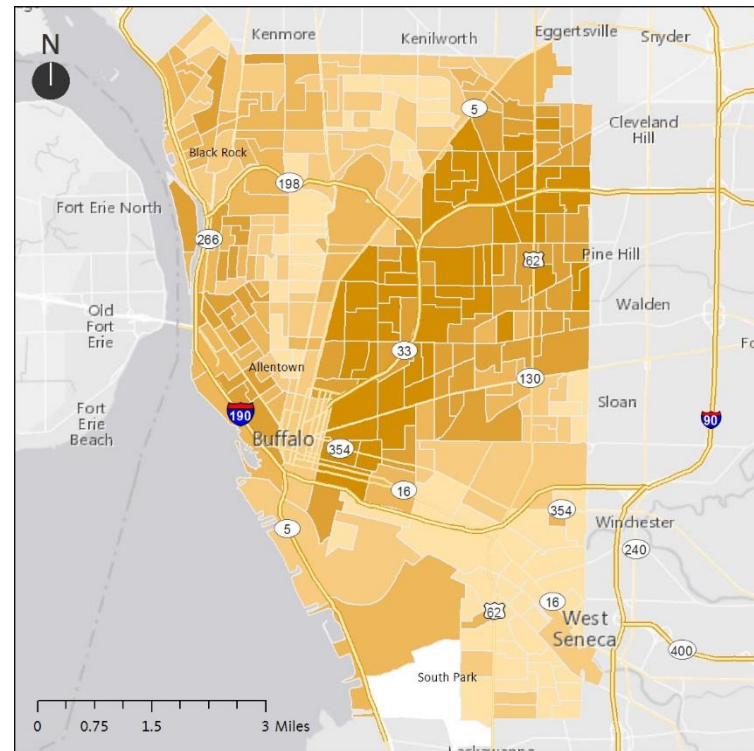
How racially/ethnically diverse is the city?

Communities of color are spread throughout Buffalo, but are more concentrated in the northeastern part of the city.

Several neighborhoods in the east are at least 92 percent people of color.

Percent People of Color by Census Block Group, 2014

- Less than 20%
- 20% to 46%
- 46% to 75%
- 75% to 92%
- 92% or more



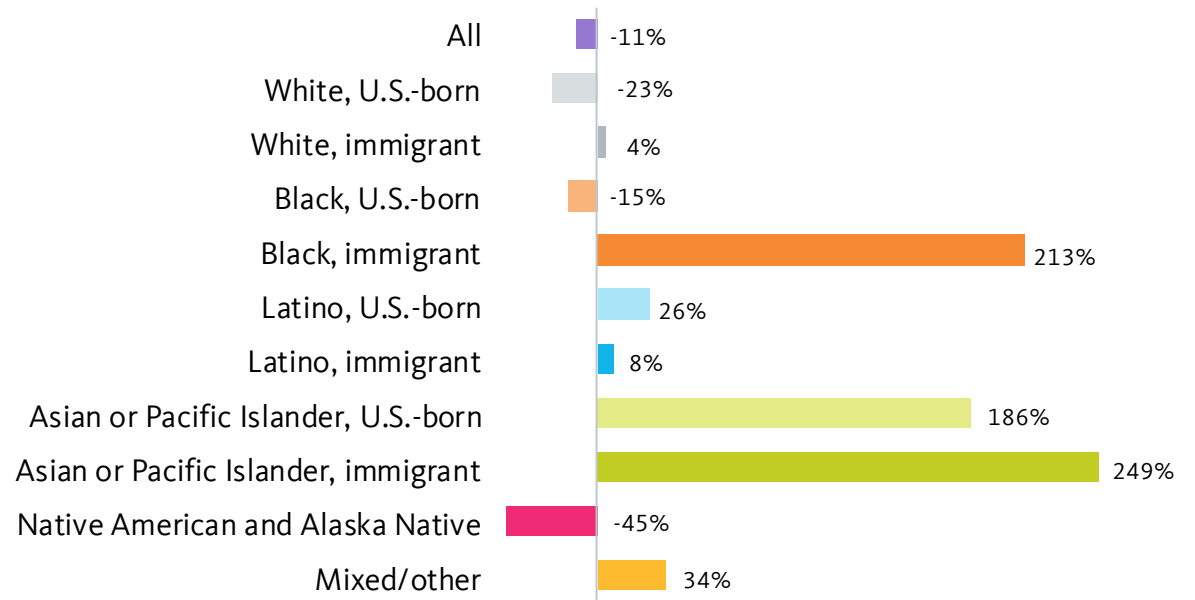
Sources: U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community.
 Note: Data represent a 2010 through 2014 average. Areas in white are missing data.

Demographics

How is the area's population changing over time?

Despite overall population loss, communities of color, especially immigrant communities of color, are growing. The Asian or Pacific Islander and Black immigrant populations more than tripled, collectively adding nearly 10,000 residents. The U.S.-born White population, on the other hand, declined by 23 percent, or nearly 34,000 people.

Growth Rates of Major Racial/Ethnic Groups by Nativity, 2000 to 2014



Source: Integrated Public Use Microdata Series.
 Note: Data for 2014 represent a 2010 through 2014 average.

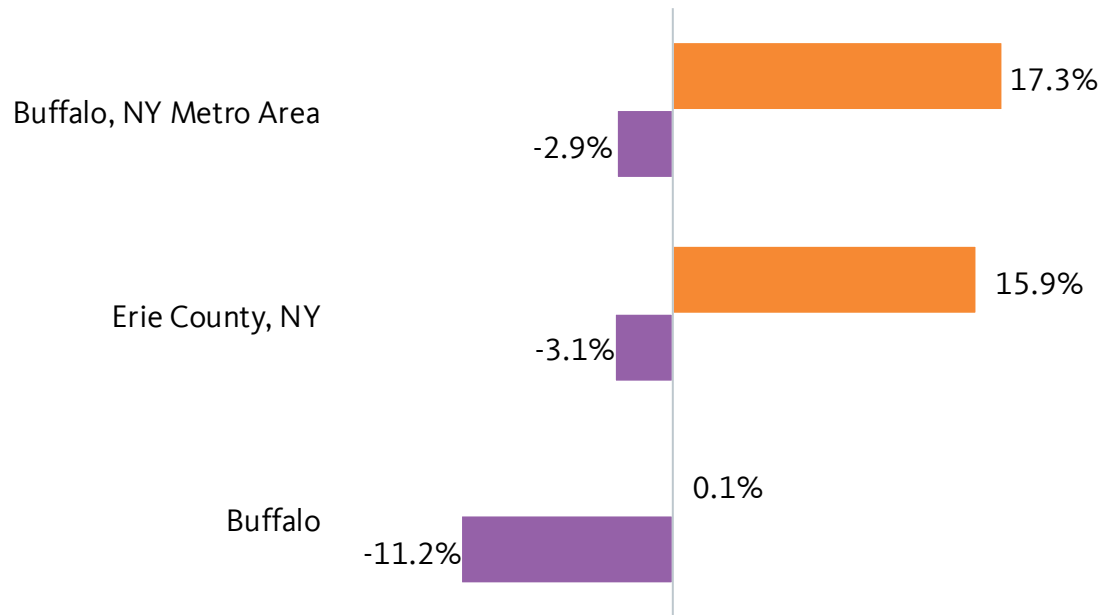
Demographics

How is the area's population changing over time?

Communities of color have played a critical role in buffering overall population decline in the region. The total population declined in both the broader Buffalo metro area and Erie County, while the people-of-color population grew by 17 and 16 percent, respectively, and was stable in the city of Buffalo.

Net Change in Population by Geography, 2000 to 2014

- People-of-color Growth
- Total Population Growth



Source: U.S. Census Bureau.
 Note: Data for 2014 represent a 2010 through 2014 average.

Demographics

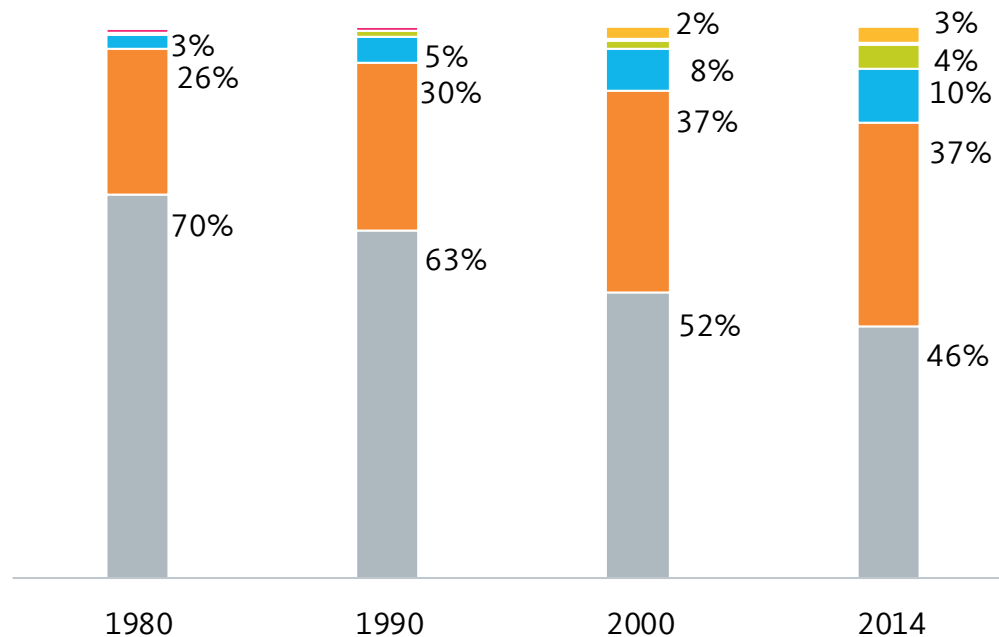
How is the area's population changing over time?

The city became majority people of color in the mid-2000s.

Latinos and Asians or Pacific Islanders have driven growth. The Latino share of the population more than tripled from 1980 to 2014. The Black population grew from 26 percent in 1980 to 37 percent in 2000, and remained stable through 2014.

Racial/Ethnic Composition, 1980 to 2014

- Mixed/other
- Native American
- Asian or Pacific Islander
- Latino
- Black
- White



Source: U.S. Census Bureau.

Note: Data for 2014 represent a 2010 through 2014 average. Shares by race/ethnicity in 2014 may differ slightly from those reported on page 18 due to rounding.

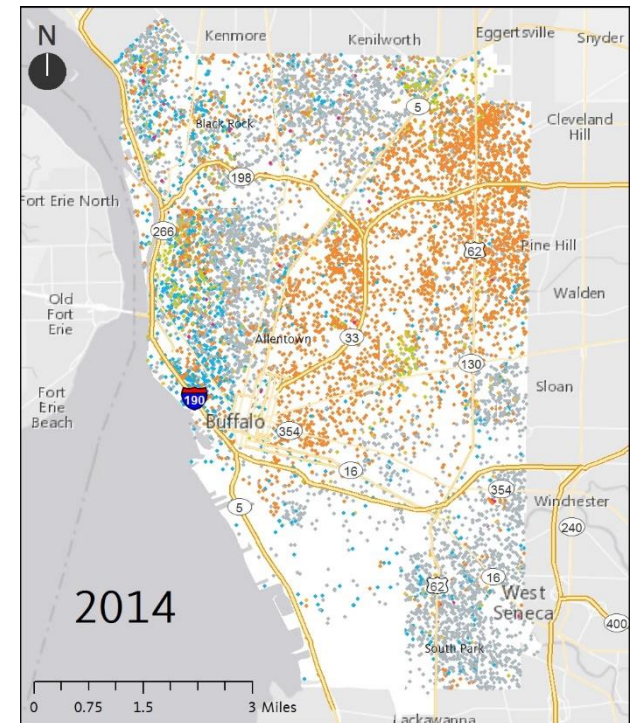
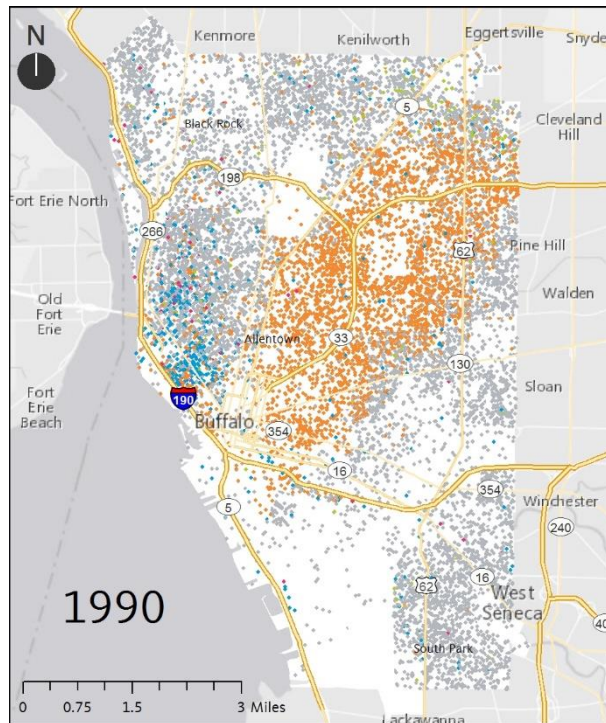
Demographics

How is the area's population changing over time?

There has been some integration of Latinos, Asians or Pacific Islanders, African Americans, and Whites on the west side, but the northeast remains mostly Black and the southeast mostly White. Population decline and growth in the Asian or Pacific Islander population are clearly visible in the maps.

Race/Ethnicity Dot Map by Census Block Group, 1990 and 2014

- Race/ethnicity
 1 Dot = 25 people
- White
 - Black
 - Latino
 - Asian or Pacific Islander
 - Native American
 - Mixed/other



Sources: U.S. Census Bureau; GeoLytics, Inc.; TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community.
 Note: Data for 2014 represent a 2010 through 2014 average.

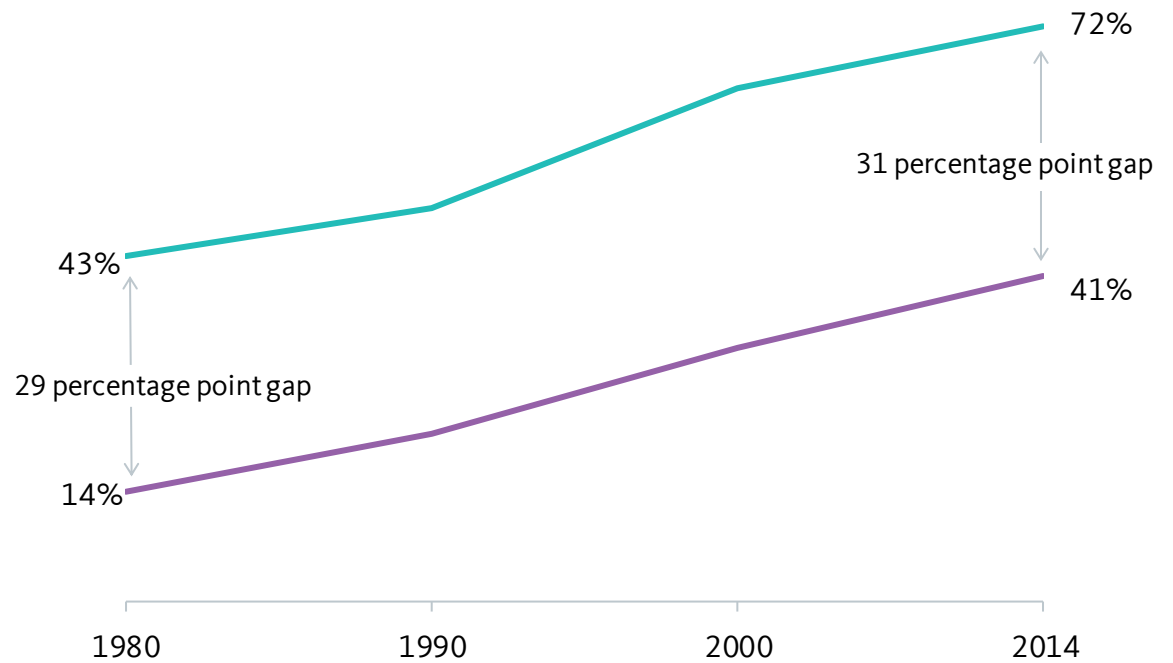
Demographics

How is the area's population changing over time?

The racial generation gap was high in 1980, and has continued to grow. By 2014, 72 percent of youth were people of color, compared with 41 percent of seniors. A large racial generation gap often corresponds with lower investments in educational systems and infrastructure to support youth.

Racial Generation Gap:
Percent People of Color (POC)
by Age Group, 1980 to 2014

- Percent of seniors who are POC
- Percent of youth who are POC



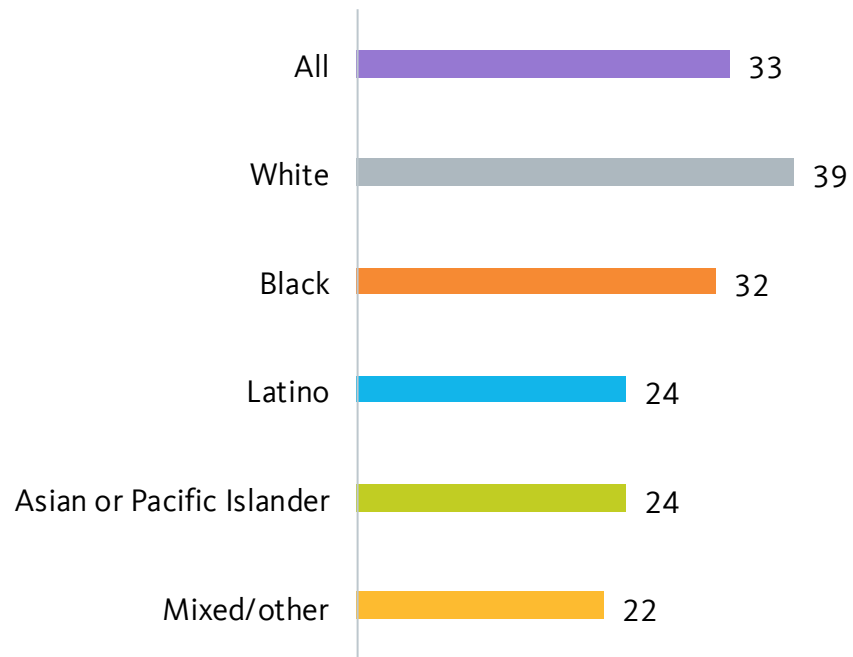
Source: U.S. Census Bureau.
Note: Data for 2014 represent a 2010 through 2014 average.

Demographics

How is the area's population changing over time?

The city's fastest-growing racial/ethnic groups are comparatively younger than Whites. People of other or mixed races have the youngest median age at 22 years old. The median age of Latinos (24) and Asian or Pacific Islanders (24) are considerably lower than that of Whites (39).

Median Age by Race/Ethnicity, 2014



Source: Integrated Public Use Microdata Series.
 Note: Data represent a 2010 through 2014 average.

Demographics

How is the area's population changing over time?

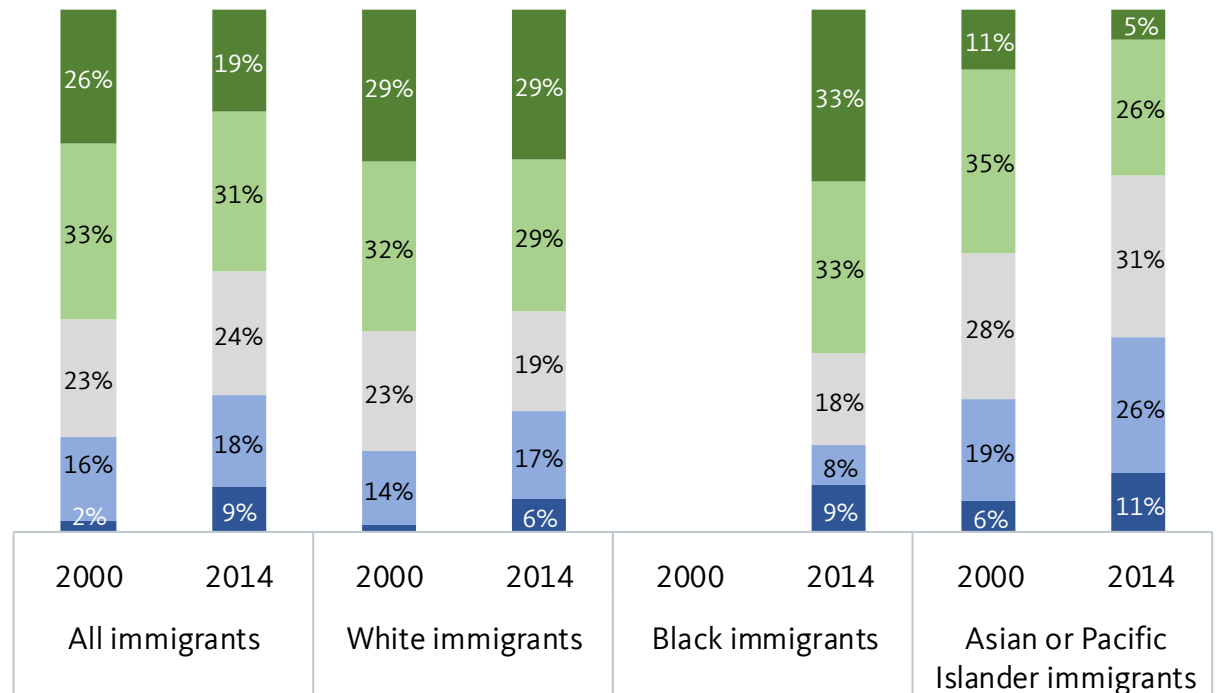
Asian or Pacific Islander immigrants are the fastest-growing population group, and are the least likely to speak English.

Language barriers are known to impact access to health care and other vital services.

English-Speaking Ability Among Immigrants by Race/Ethnicity, 2000 and 2014

Percent speaking English

- Only
- Very well
- Well
- Not well
- Not at all



Source: Integrated Public Use Microdata Series. Universe includes all persons ages 5 or older.

Note: Data for some groups by race/ethnicity/nativity in some years are excluded due to small sample size. Data for 2014 represent a 2010 through 2014 average.

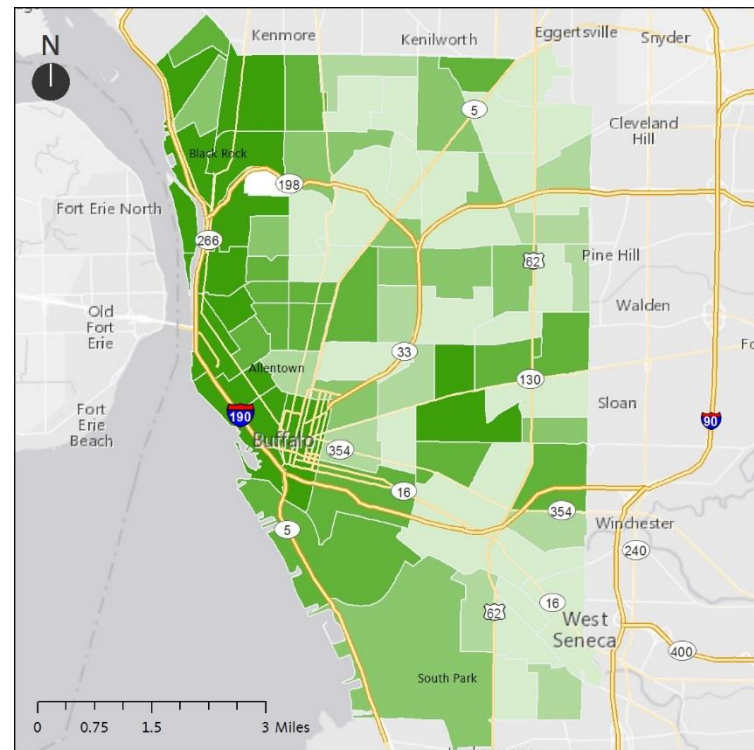
Demographics

How is the area's population changing over time?

There are pockets of linguistic isolation throughout Buffalo, with higher concentrations on the western border of the city. Linguistically isolated households are defined as those in which no member age 14 years or older speaks English at least “very well.”

Household Linguistic Isolation by Census Tract, 2014

- Less than 1%
- 1% to 2%
- 2% to 3%
- 3% to 8%
- 8% or more



Sources: U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community.
 Note: Data represent a 2010 through 2014 average. Areas in white are missing data.

Economic vitality

Highlights

How is the city doing on measures of economic growth and well-being?

- GDP growth outpaced job growth in Erie County before and after the economic downturn, though both measures have improved post-recession.
- Although education is a leveler, racial and gender gaps persist in the labor market. Black workers have higher rates of unemployment than Whites at all levels of education.
- Poverty and working poverty have grown over the last decade. Asians or Pacific Islanders and Latinos had the highest poverty and working poverty rates in 2014.

Real wage growth for the median worker since 1979:

-10%

Share of Asian or Pacific Islander children living in poverty:

64%

Wage gap between Whites and Latinos:

\$6/hour

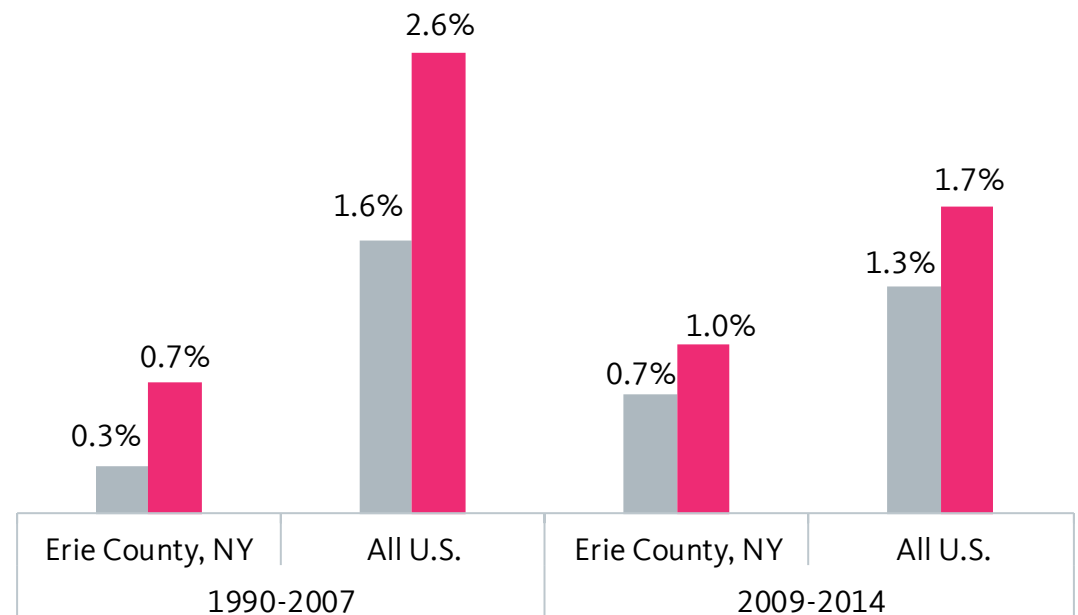
Economic vitality

Is the county producing good jobs?

Erie County is rebounding from the Great Recession. Pre-downturn, the county’s economy performed significantly worse than the nation in terms of job and GDP growth. Since 2009, it has experienced increased growth in both jobs and GDP – though at lower rates than the overall U.S. economy.

Average Annual Growth in Jobs and GDP, 1990 to 2007 and 2009 to 2014

- Jobs
- GDP



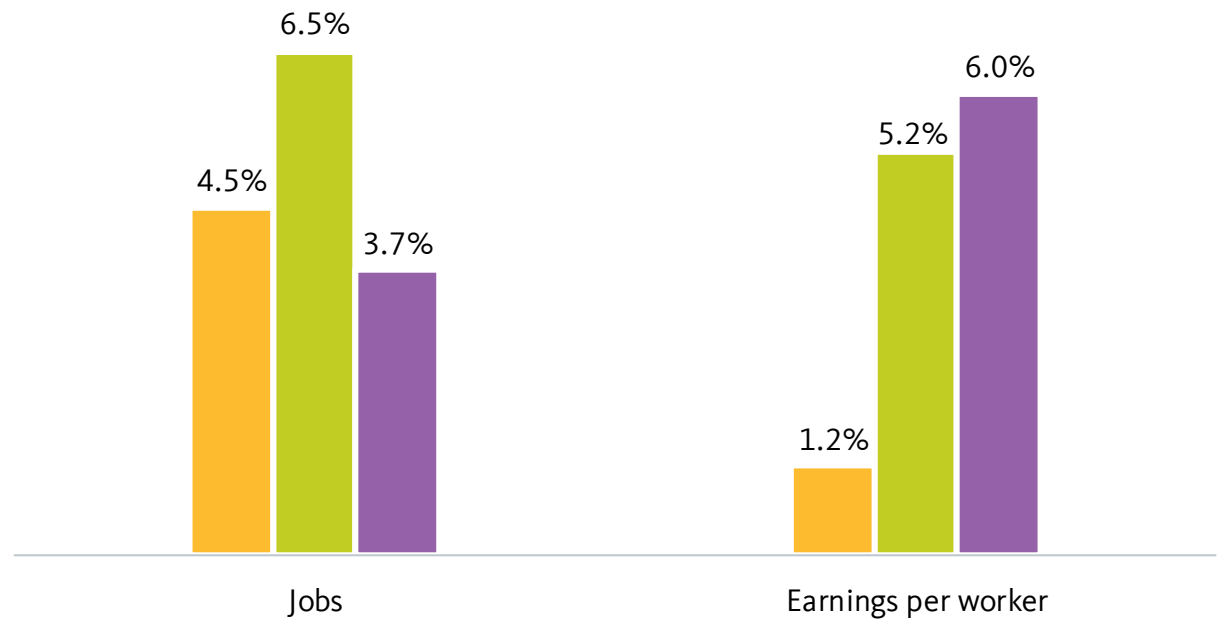
Economic vitality

Is the county producing good jobs?

Low-wage jobs grew by 4.5 percent in Erie County from 1990 to 2015. Middle-wage jobs grew by 6.5 percent and high-wage jobs by 3.7 percent. Low-wage jobs saw the lowest increase in earnings per worker at 1.2 percent. High-wage jobs saw the largest increase in earnings per worker at 6 percent.

Growth in Jobs and Earnings by Industry Wage Level, 1990 to 2015

- Low wage
- Middle wage
- High wage



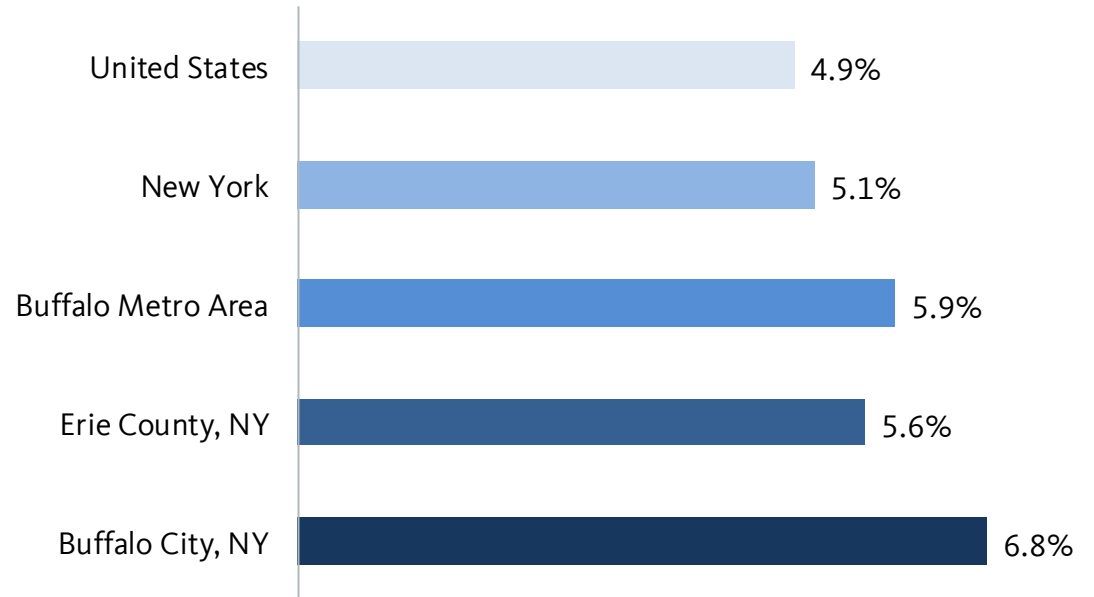
Sources: U.S. Bureau of Labor Statistics; Woods & Poole Economics, Inc.
 Note: Universe includes all jobs covered by the federal Unemployment Insurance (UI) program. Data is for Erie County, NY.

Access to good jobs

How close is the city to reaching full employment?

Unemployment is higher in the city of Buffalo than the broader region and country as a whole. The national unemployment rate was 4.9 percent in February 2017, but it was 5.6 percent in Erie County and 6.8 percent in Buffalo.

Unemployment Rate, February 2017



Source: U.S. Bureau of Labor Statistics. Universe includes the civilian noninstitutional labor force ages 16 and older.
 Note: Rates are not seasonally adjusted, and all but that for the United States are preliminary estimates.

Access to good jobs

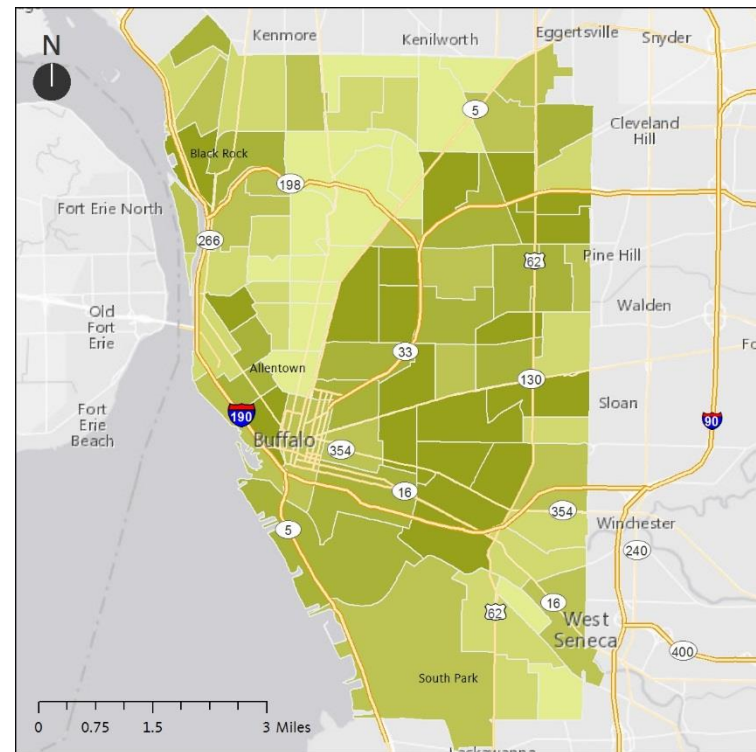
How close is the city to reaching full employment?

Unemployment is relatively high in Buffalo compared to the national average, and it varies geographically.

Unemployment rates are higher on the east side of the city, where several neighborhoods have an unemployment rate that exceeds 21 percent.

Unemployment Rate by Census Tract, 2014

- Less than 7%
- 7% to 11%
- 11% to 15%
- 15% to 21%
- 21% or more



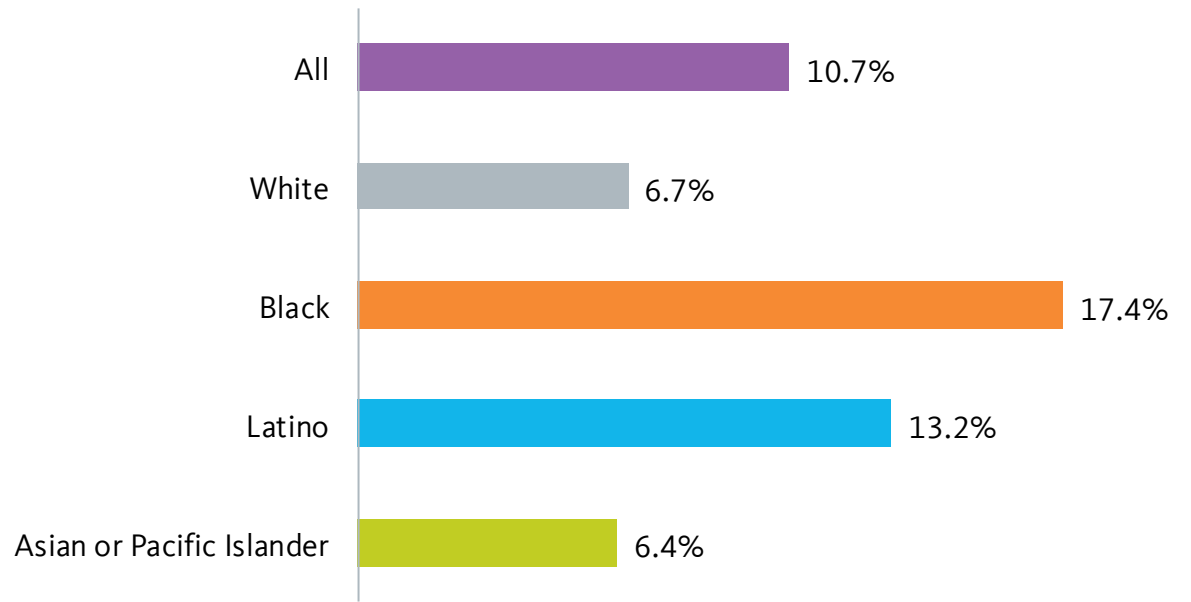
Sources: U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community. Universe includes the civilian noninstitutional population ages 16 and older.
 Note: Data represent a 2010 through 2014 average.

Access to good jobs

How close is the city to reaching full employment?

In 2014, unemployment was relatively high in the city overall, and racial inequities persist. Rates of unemployment in the city are highest for Black (17.4 percent) and Latino residents (13.2 percent). Whites and Asian or Pacific Islanders have the lowest unemployment rates (6.7 percent and 6.4 percent, respectively).

Unemployment Rate by Race/Ethnicity, 2014



Source: Integrated Public Use Microdata Series. Universe includes the civilian noninstitutional labor force ages 25 through 64.
 Note: Data represent a 2010 through 2014 average.

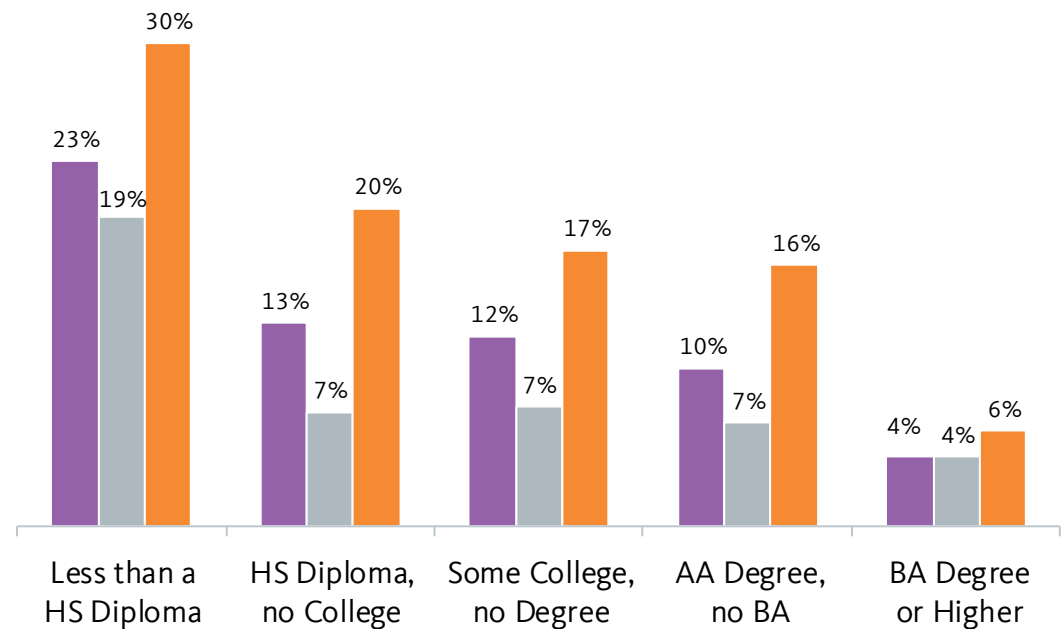
Access to good jobs

How close is the city to reaching full employment?

Unemployment declines as education levels increase, but racial gaps remain. Black residents face higher rates of unemployment than Whites at all education levels. Black high school graduates are about as likely to be unemployed as White residents without a high school diploma.

Unemployment Rate by Educational Attainment and Race/Ethnicity, 2014

- All
- White
- Black



Source: Integrated Public Use Microdata Series. Universe includes the civilian noninstitutional labor force ages 25 through 64.
 Note: Data represent a 2010 through 2014 average.

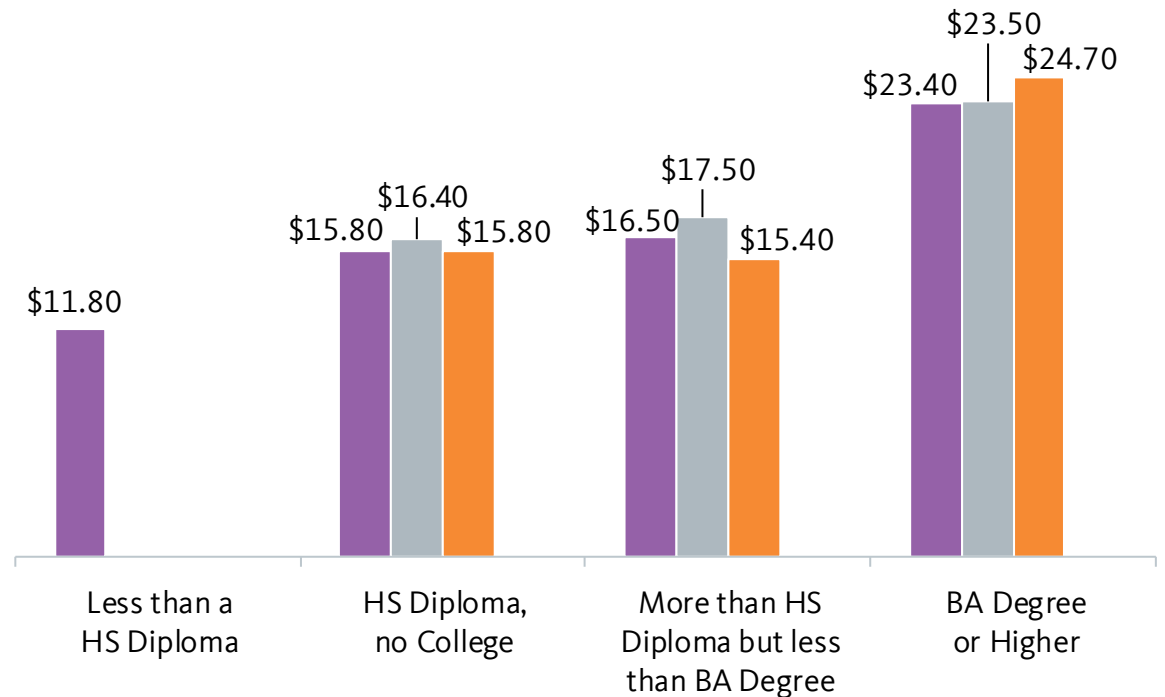
Access to good jobs

Can all workers earn a living wage?

Racial wage gaps, however, are less prominent in Buffalo than in the nation as a whole. Wages tend to rise with education, and the smallest racial wage gaps are among residents with a bachelor’s degree or higher.

Median Hourly Wage by Educational Attainment and Race/Ethnicity, 2014

- All
- White
- Black



Source: Integrated Public Use Microdata Series. Universe includes civilian noninstitutional full-time wage and salary workers ages 25 through 64.
 Note: Data for some racial/ethnic groups are excluded due to small sample size. Data represent a 2010 through 2014 average. Values are in 2014 dollars.

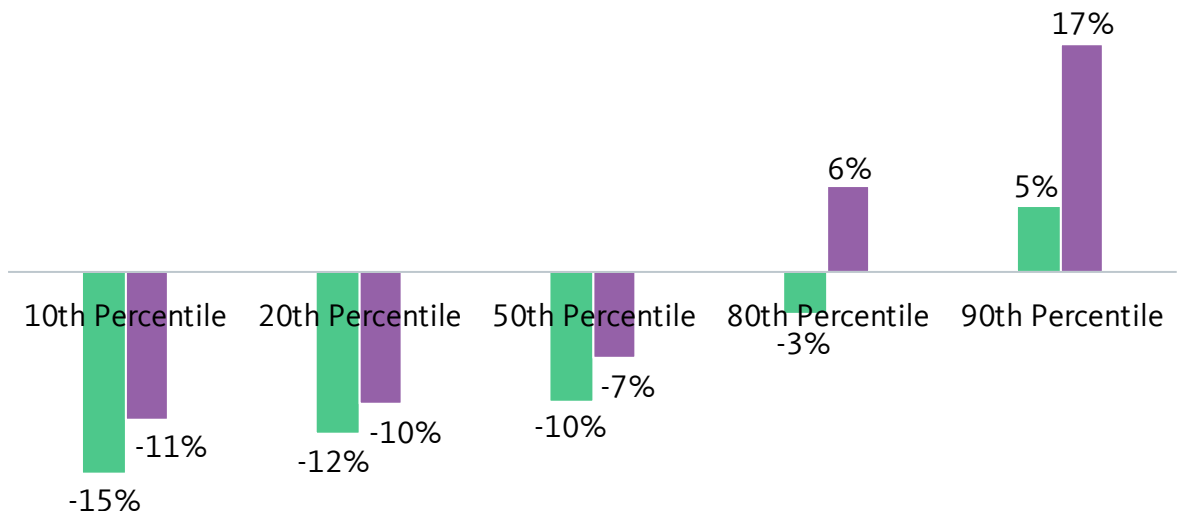
Inclusive growth

Are incomes increasing for all workers?

Only workers at the 90th percentile of the income distribution have seen their wages grow since 1979. Workers at the 10th percentile have experienced the most significant wage declines. National growth outpaces that in Buffalo across the board, but the city’s highest earners have seen a 5 percent wage increase.

Real Earned Income Growth for Full-Time Wage and Salary Workers, 1979 to 2014

- Buffalo
- United States



Source: Integrated Public Use Microdata Series. Universe includes civilian noninstitutional full-time wage and salary workers ages 25 through 64. Note: Data for 2014 represent a 2010 through 2014 average.

Inclusive growth

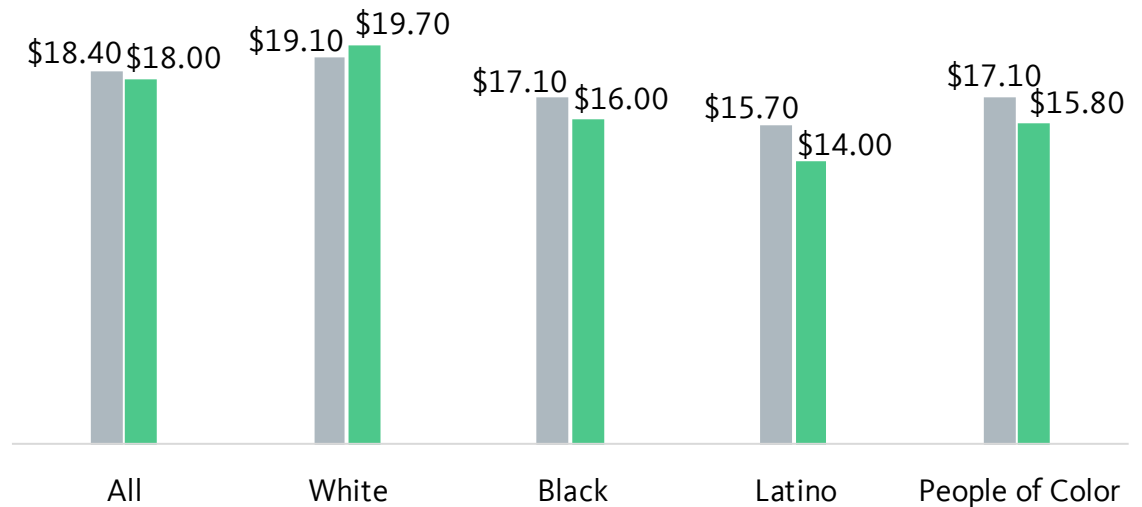
Are incomes increasing for all workers?

Despite relatively low racial wage gaps, not all groups have experienced an increase in median hourly wage since 2000.

White workers saw their median hourly wage increase, while Latino and Black workers experienced wage declines. Latinos had the lowest median wage in the city at \$14/hour.

Median Hourly Wage by Race/Ethnicity, 2000 and 2014

■ 2000
■ 2014



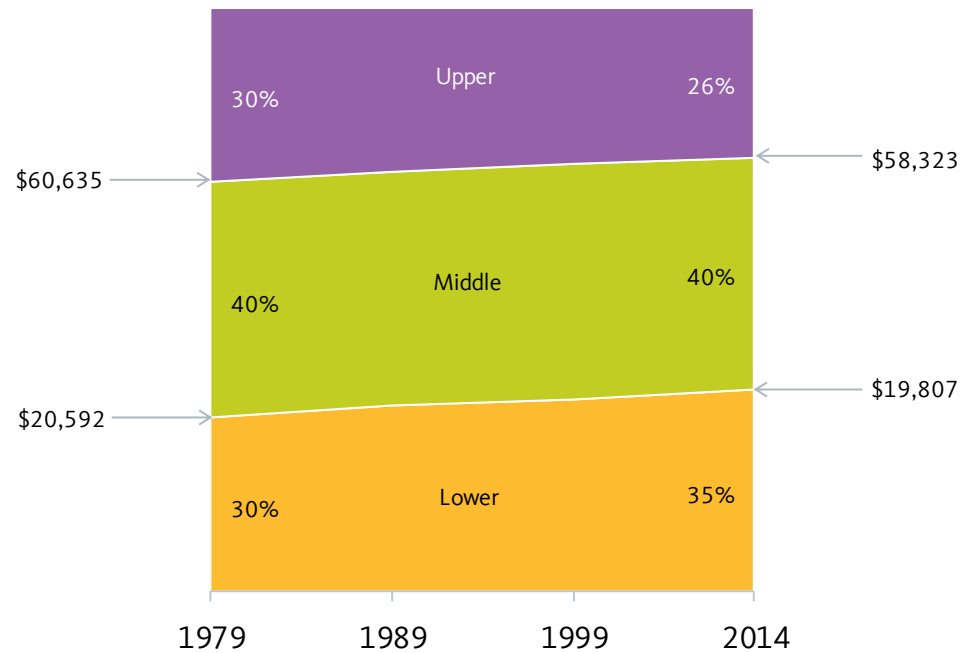
Source: Integrated Public Use Microdata Series. Universe includes civilian noninstitutional full-time wage and salary workers ages 25 through 64. Note: Data for 2014 represent a 2010 through 2014 average. Values are in 2014 dollars.

Inclusive growth

Is the middle class expanding?

The city's middle class has remained stable. Since 1979, the share of middle-class households has remained steady at 40 percent of households. The share of lower-income households, however, has increased and the share of upper-income households has declined.

Households by Income Level, 1979 and 2014



Source: Integrated Public Use Microdata Series. Universe includes all households (no group quarters).
 Note: Data for 2014 represent a 2010 through 2014 average. Dollar values are in 2014 dollars.

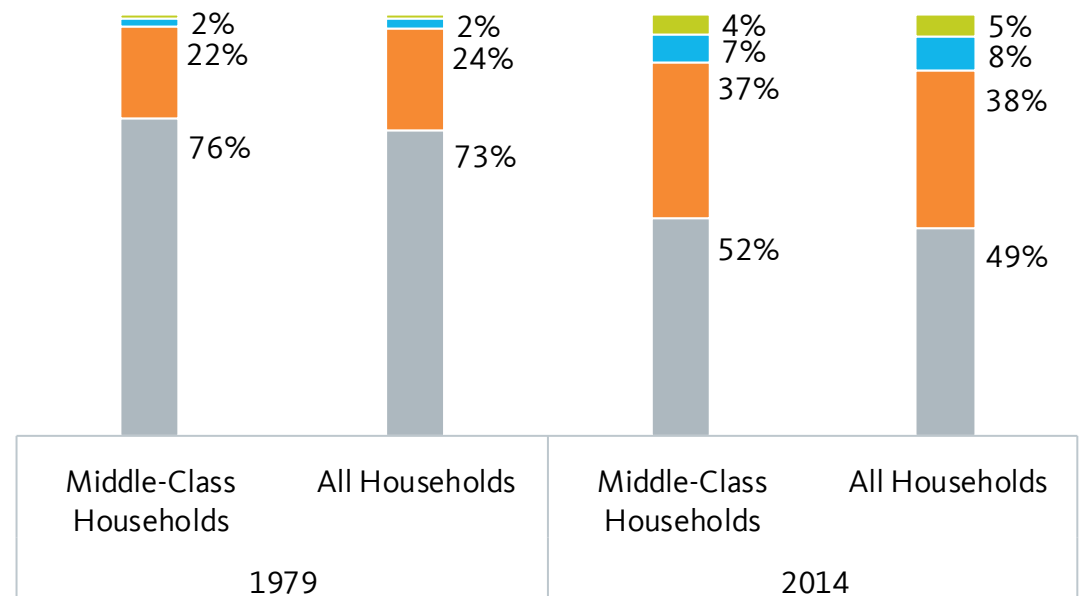
Inclusive growth

Is the middle class becoming more inclusive?

The middle class has become more diverse but does not fully reflect the city’s racial/ethnic composition. Just over half of all households are of color but households of color account for just 48 percent of middle-class households.

Racial Composition of Middle-Class Households and All Households, 1979 and 2014

- Asian, Native American or Other
- Latino
- Black
- White



Source: Integrated Public Use Microdata Series. Universe includes all households (no group quarters).
 Note: Data for 2014 represent a 2010 through 2014 average.

Inclusive growth

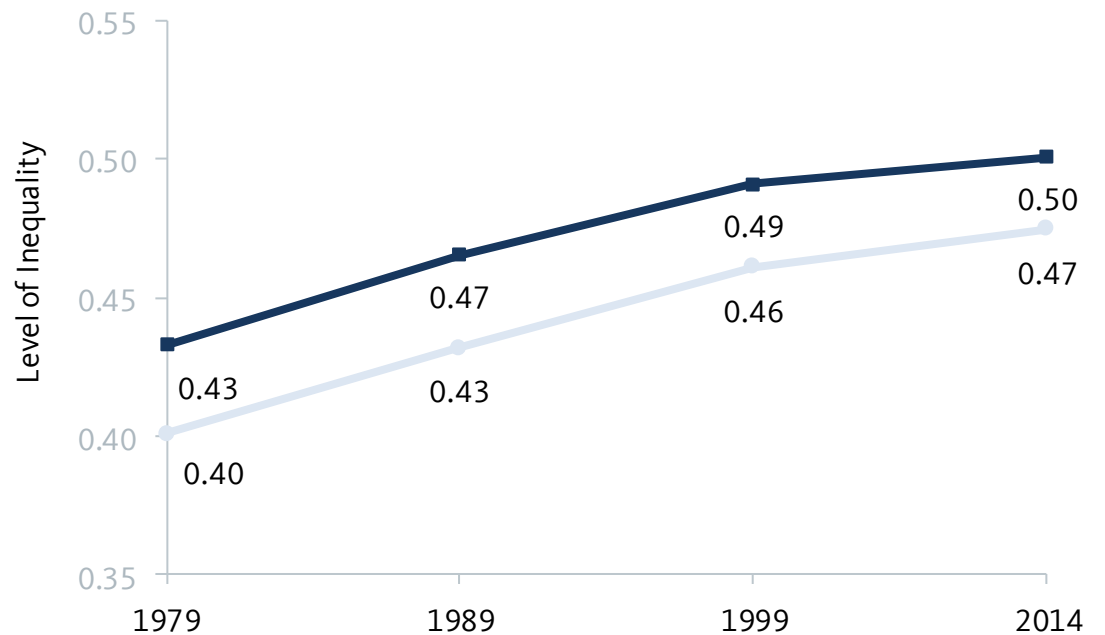
Is inequality low and decreasing?

Income inequality, as measured by the Gini coefficient, is increasing and higher in Buffalo than in the United States overall. A growing body of research suggests that living in a community with high levels of income inequality is associated with lower life expectancy.

Income Inequality, 1979 to 2014

- Buffalo City, NY
- United States

Inequality is measured here by the Gini coefficient for household income, which ranges from 0 (perfect equality) to 1 (perfect inequality: one household has all of the income).



Source: Integrated Public Use Microdata Series. Universe includes all households (no group quarters).
 Note: Data for 2014 represent a 2010 through 2014 average.

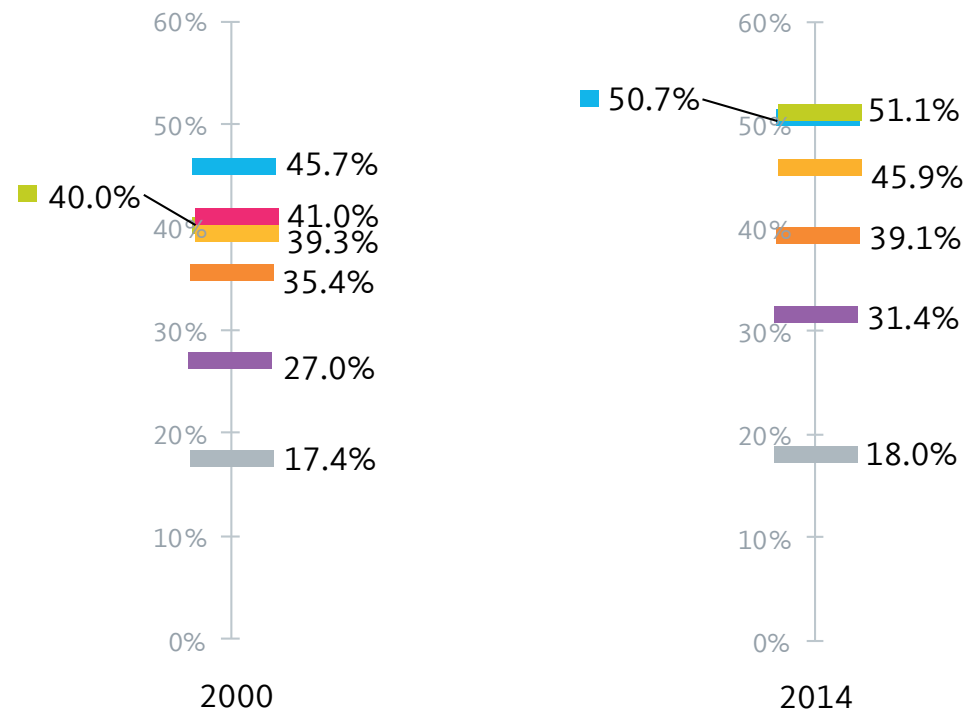
Economic security

Is poverty low and decreasing?

Poverty is on the rise in the city, and the rate is higher among communities of color. The overall poverty rate in 2014 was 31 percent but half of Asians or Pacific Islanders and Latinos live in poverty compared with 18 percent of White residents.

Poverty Rate by Race/Ethnicity, 2000 and 2014

- All
- White
- Black
- Latino
- Asian or Pacific Islander
- Native American
- Other



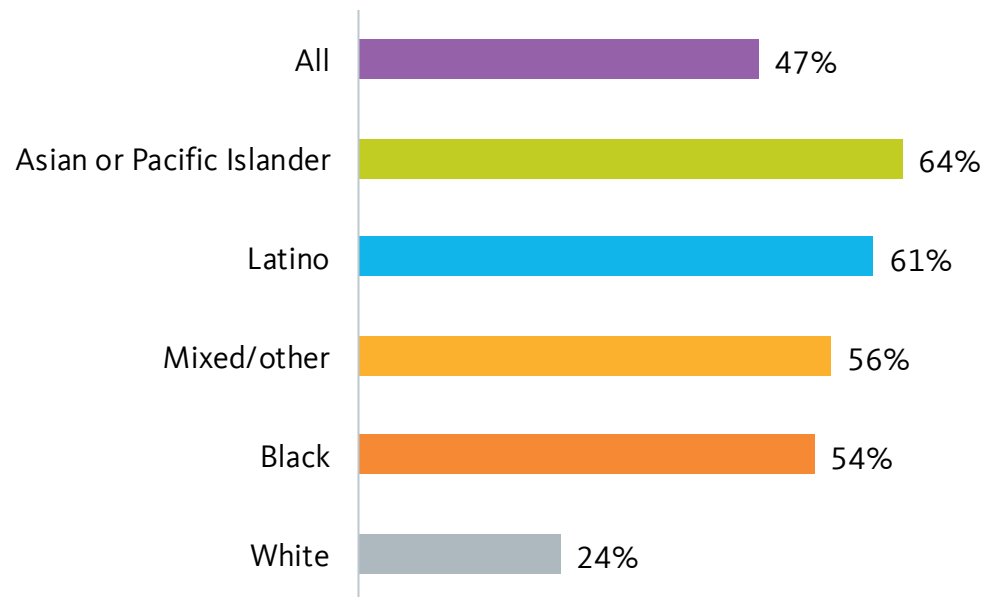
Source: Integrated Public Use Microdata Series. Universe includes all persons not in group quarters. Data for 2014 represent a 2010 through 2014 average.
 Note: Data for some racial/ethnic groups in some years are excluded due to small sample size.

Economic security

Is poverty low and decreasing?

Asian or Pacific Islander children have the highest poverty rates followed by Latino children. In 2014, 47 percent of all children in Buffalo were living in poverty. This includes one in four White children, more than half of Black children, and more than three in five Latino and Asian or Pacific Islander children.

Child Poverty Rate by Race/Ethnicity, 2014



Source: Integrated Public Use Microdata Series. Universe includes the population under age 18 not in group quarters. Note: Data represent a 2010 through 2014 average.

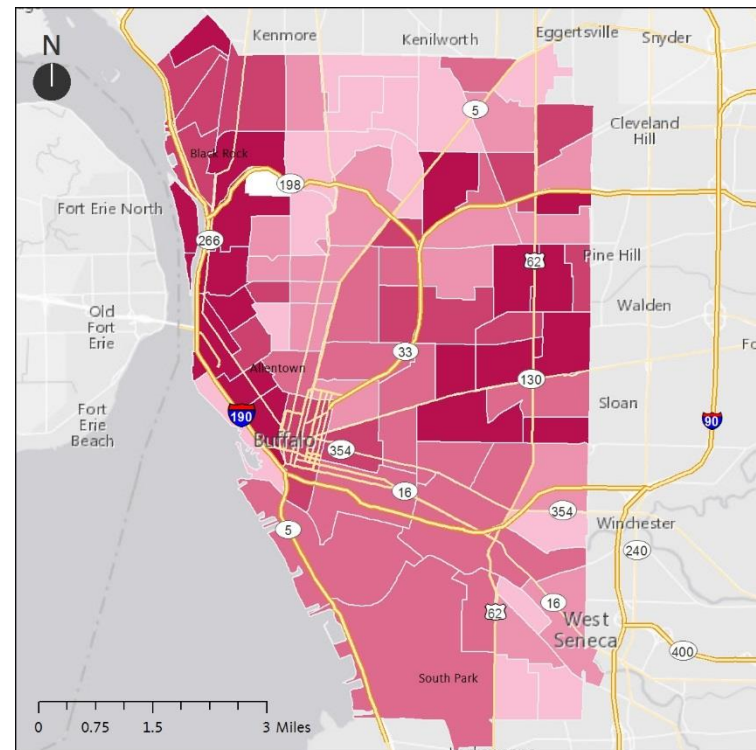
Economic security

Is poverty low and decreasing?

Poverty rates are relatively high in Buffalo across the board, but differences by neighborhood remain. The highest poverty rates are seen along the eastern and western borders of the city, in neighborhoods with a poverty rate of 42 percent or more.

Percent Population Below the Poverty Level by Census Tract, 2014

- Less than 17%
- 17% to 28%
- 28% to 37%
- 37% to 42%
- 42% or more



Source: U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community. Universe includes all persons not in group quarters.
 Note: Data represent a 2010 through 2014 average. Areas in white are missing data.

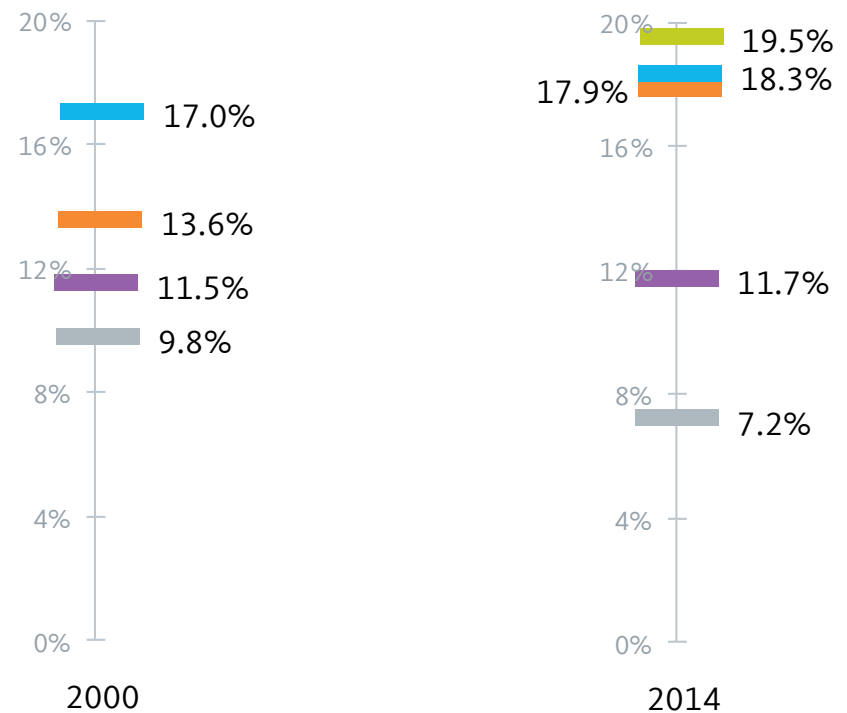
Economic security

Is the share of working poor low and decreasing?

Rates of working poverty have declined for White workers but are on the rise among workers of color. The working-poor rate – defined as working full time with a family income below 200 percent of poverty – is highest among Asians or Pacific Islanders, Latinos, and African Americans.

Working-Poor Rate by Race/Ethnicity, 2000 and 2014

- All
- White
- Black
- Latino
- Asian or Pacific Islander



Source: Integrated Public Use Microdata Series. Universe includes the civilian noninstitutional population ages 25 through 64 not in group quarters.
 Note: Data for 2014 represent a 2010 through 2014 average. Data for some racial/ethnic groups in some years are excluded due to small sample size.

Strong industries and occupations

Which industries are projected to grow?

The five-county Western New York region is projected to add more than 52,300 jobs by 2022. The industries projected to add the most jobs are professional and business services, health care and social assistance, and accommodation and food services.

Industry Employment Projections, 2012-2022

Industry	2012 Estimated Employment	2022 Projected Employment	Total 2012 to 2022 Employment Change	Annual Avg. Percent Change	Total Percent Change
Professional and Business Services	78,640	93,340	14,700	2%	19%
Health Care and Social Assistance	92,310	106,870	14,560	1%	16%
Accommodation and Food Services	56,220	66,950	10,730	2%	19%
Construction	21,780	25,060	3,280	1%	15%
Retail Trade	74,890	77,550	2,660	0%	4%
Other Services (except Government)	29,870	32,330	2,460	1%	8%
Educational Services	73,470	75,730	2,260	0%	3%
Arts, Entertainment, and Recreation	8,390	10,520	2,130	2%	25%
Wholesale Trade	23,420	24,610	1,190	0%	5%
Transportation and Warehousing	16,710	17,840	1,130	1%	7%
Total Self Employed and Unpaid Family Workers, All Jobs	41,500	42,340	840	0%	2%
Finance and Insurance	34,530	35,260	730	0%	2%
Agriculture, Forestry, Fishing and Hunting	2,990	2,920	-70	0%	-2%
Mining	620	530	-90	-2%	-15%
Utilities	1,970	1,850	-120	-1%	-6%
Information	8,800	8,140	-660	-1%	-8%
Manufacturing	67,670	66,150	-1,520	0%	-2%
Government	63,030	61,140	-1,890	0%	-3%
Total, All Industries	696,810	749,130	52,320	1%	8%

Source: New York State Department of Labor.

Note: Data are for combined projections for the area of Western New York (Allegany, Cattaraugus, Chautauqua, Erie, and Niagara counties). Figures may not add up to total due to rounding.

Strong industries and occupations

Which occupations are projected to grow?

More than 10,500 of the jobs projected to be added by 2022 will be in food preparation and serving-related occupations.

Another 10,000 will be health-care practitioners and technical occupations and personal-care and service occupations.

Occupational Employment Projections, 2012-2022

Occupation	2012 Estimated Employment	2022 Projected Employment	Total 2012-2022 Employment Change	Annual Avg. Percent Change	Total Percent Change
Food Preparation and Serving Related Occupations	60,600	71,140	10,540	2%	17%
Healthcare Practitioners and Technical Occupations	40,370	45,470	5,100	1%	13%
Personal Care and Service Occupations	30,700	35,600	4,900	1%	16%
Office and Administrative Support Occupations	118,850	123,170	4,320	0%	4%
Business and Financial Operations Occupations	30,910	34,120	3,210	1%	10%
Healthcare Support Occupations	18,700	21,700	3,000	1%	16%
Education, Training, and Library Occupations	54,010	56,910	2,900	1%	5%
Construction and Extraction Occupations	27,230	29,860	2,630	1%	10%
Sales and Related Occupations	68,400	70,980	2,580	0%	4%
Computer and Mathematical Occupations	14,780	17,160	2,380	2%	16%
Building and Grounds Cleaning and Maintenance Occupations	26,660	29,040	2,380	1%	9%
Transportation and Material Moving Occupations	38,240	40,390	2,150	1%	6%
Management Occupations	29,450	31,250	1,800	0.6%	6%
Installation, Maintenance, and Repair Occupations	24,770	26,120	1,350	1%	5%
Community and Social Service Occupations	12,540	13,840	1,300	1%	10%
Protective Service Occupations	20,000	20,530	530	0%	3%
Legal Occupations	7,210	7,720	510	1%	7%
Life, Physical, and Social Science Occupations	5,880	6,250	370	1%	6%
Arts, Design, Entertainment, Sports, and Media Occupations	11,940	12,280	340	0%	3%
Architecture and Engineering Occupations	8,100	8,310	210	0%	3%
Production Occupations	45,380	45,320	-60	0%	0%
Farming, Fishing, and Forestry Occupations	2,100	1,970	-130	-1%	-6%
Total, All Occupations	696,810	749,130	52,320	1%	8%

Source: New York State Department of Labor.

Note: Data are for combined projections for the area of Western New York (Allegany, Cattaraugus, Chautauqua, Erie, and Niagara counties). Figures may not add up to total due to rounding.

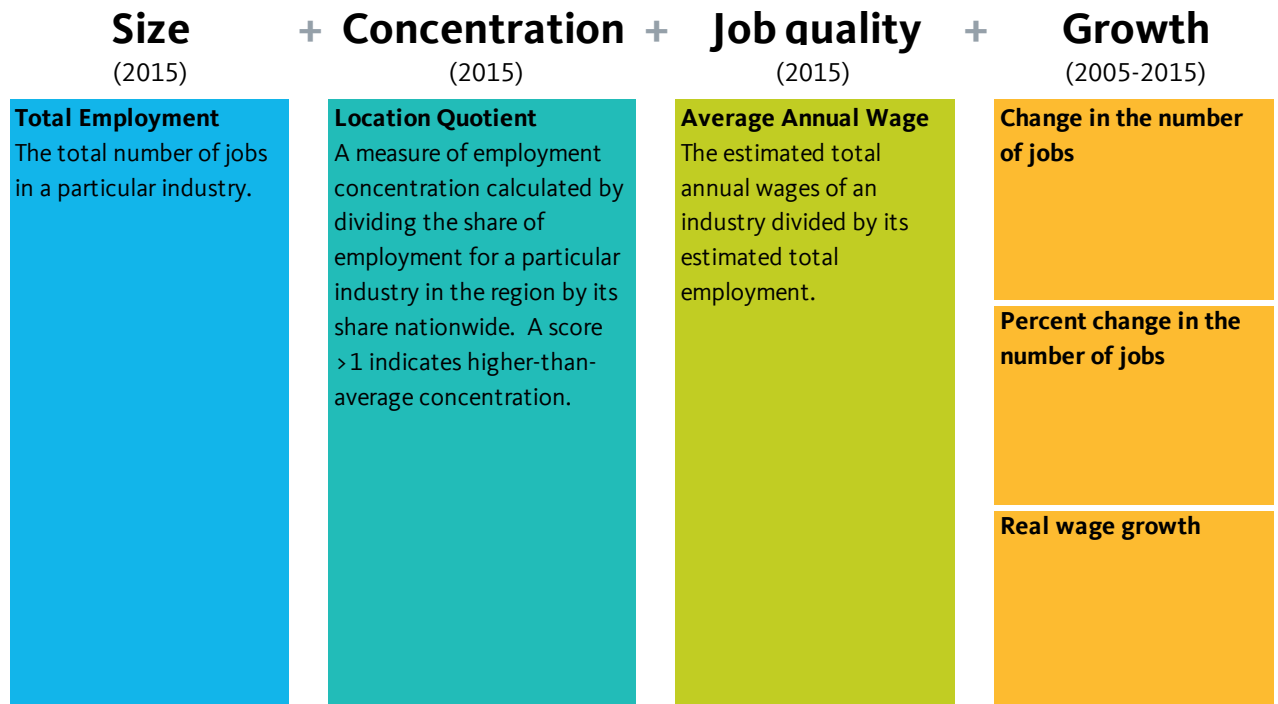
Strong industries and occupations

Identifying the region's strong industries

Understanding which industries are strong and competitive in the region is critical for developing effective strategies to attract and grow businesses. To identify strong industries in the region, 19 industry sectors were categorized according to an “**industry strength index**” that measures four characteristics: size, concentration, job quality, and growth. Each characteristic was given an equal weight (25 percent each) in determining the index value. “Growth” was an average of three indicators of growth (change in the number of jobs, percent change in the number of jobs, and real wage growth). These characteristics were examined over the last decade to provide a current picture of how the region’s economy is changing.

Given that the regional economy has experienced widespread employment decline in almost all industries, it is important to note that this index is only meant to provide general guidance on the strength of various industries. Its interpretation should be informed by examining all four metrics of size, concentration, job quality, and growth.

Industry strength index =



Note: This industry strength index is only meant to provide general guidance on the strength of various industries in the region, and its interpretation should be informed by an examination of individual metrics used in its calculation, which are presented in the table on the next page. Each indicator was normalized as a cross-industry z-score before taking a weighted average to derive the index.

Strong industries and occupations

What are the county's strongest industries?

The strongest industries in Erie County include management of companies and enterprises and health care and social assistance. Despite losing over 9,000 jobs from 2005 to 2015, manufacturing still employs nearly 43,000 people in the county.

Strong Industries Analysis, 2015

Industry	Size	Concentration	Job Quality	Growth			Industry Strength Index
	Total employment (2015)	Location Quotient (2015)	Average annual wage (2015)	Change in employment (2005 to 2015)	% Change in employment (2005 to 2015)	Real wage growth (2005 to 2015)	
Management of Companies and Enterprises	12,815	1.8	\$86,042	5,110	66%	22%	133.8
Health Care and Social Assistance	63,440	1.0	\$43,212	5,581	10%	14%	66.9
Finance and Insurance	24,728	1.3	\$65,950	-899	-4%	7%	35.8
Arts, Entertainment, and Recreation	7,378	1.0	\$59,483	1,830	33%	28%	28.2
Accommodation and Food Services	42,813	1.0	\$17,477	8,473	25%	18%	23.1
Professional, Scientific, and Technical Services	23,829	0.8	\$61,368	2,333	11%	13%	15.4
Manufacturing	42,810	1.1	\$63,454	-9,171	-18%	2%	8.3
Utilities	1,275	0.7	\$95,952	-433	-25%	19%	3.5
Retail Trade	52,007	1.0	\$26,160	-187	0%	6%	3.4
Wholesale Trade	18,900	1.0	\$61,004	-1,451	-7%	9%	-1.1
Education Services	12,206	1.4	\$34,607	1,308	12%	1%	-7.2
Construction	16,955	0.8	\$55,620	929	6%	10%	-10.9
Other Services (except Public Administration)	17,521	1.2	\$25,926	1,912	12%	4%	-16.5
Transportation and Warehousing	13,024	0.9	\$42,321	1,485	13%	-3%	-35.6
Information	6,632	0.7	\$59,857	-1,905	-22%	12%	-39.6
Administrative and Support and Waste Management and Remediation Services	26,225	0.9	\$31,683	-1,890	-7%	2%	-39.9
Real Estate and Rental and Leasing	6,282	0.9	\$41,045	-94	-1%	8%	-41.5
Mining	248	0.1	\$68,530	49	25%	-7%	-75.5
Agriculture, Forestry, Fishing and Hunting	789	0.2	\$30,662	-47	-6%	22%	-99.7

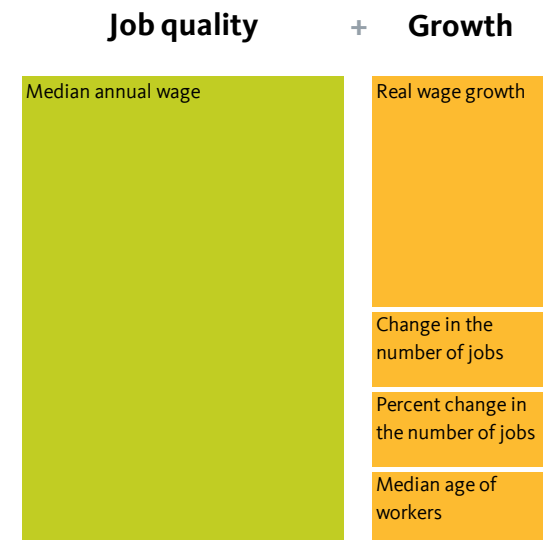
Sources: U.S. Bureau of Labor Statistics; Woods & Poole Economics, Inc. Universe includes all private sector jobs covered by the federal Unemployment Insurance (UI) program.
 Note: Data is for Erie County, NY. Dollar values are in 2015 dollars.

Strong industries and occupations

Identifying high-opportunity occupations

Understanding which occupations are strong and competitive in the region can help leaders develop strategies to connect and prepare workers for good jobs. To identify high-opportunity occupations in the region, we developed an **“occupation opportunity index”** based on measures of job quality and growth, including median annual wage, real wage growth, job growth (in number and share), and median age of workers. A high median age of workers indicates that there will be replacement job openings as older workers retire.

Occupation opportunity index =



Strong industries and occupations

What are the region's high-opportunity occupations?

Advertising, marketing, promotions, public relations, and sales managers rank highest on the occupation opportunity index with a median annual income of more than \$100,000, followed by operations specialties managers and top executives.

Strong Occupations Analysis, 2011

Occupation	Employment	Job Quality	Growth			Occupation Opportunity Index	
	(2011)	Median Annual Wage (2011)	Real Wage Growth (2011)	Change in Employment (2005-11)	% Change in Employment (2005-11)		Median Age (2010)
Advertising, Marketing, Promotions, Public Relations, and Sales Managers	1,400	\$105,427	7%	30	2%	43	2.04
Operations Specialties Managers	4,880	\$98,387	6%	90	2%	45	1.82
Top Executives	7,570	\$98,026	-6%	1,600	27%	48	1.70
Postsecondary Teachers	5,970	\$67,579	30%	4,000	203%	43	1.51
Health Diagnosing and Treating Practitioners	20,650	\$81,069	11%	3,170	18%	46	1.46
Other Management Occupations	5,920	\$79,482	3%	-220	-4%	46	1.16
Lawyers, Judges, and Related Workers	3,300	\$85,114	-18%	730	28%	49	1.07
Engineers	3,710	\$73,698	-1%	500	16%	44	0.93
Supervisors of Protective Service Workers	1,230	\$68,731	1%	640	108%	47	0.92
Social Scientists and Related Workers	580	\$64,681	14%	-800	-58%	41	0.78
Business Operations Specialists	14,230	\$58,005	10%	4,680	49%	43	0.76
Computer Occupations	11,920	\$63,316	7%	2,670	29%	38	0.75
Financial Specialists	9,390	\$63,066	6%	1,000	12%	44	0.73
Law Enforcement Workers	3,370	\$62,790	10%	-690	-17%	41	0.68
Electrical and Electronic Equipment Mechanics, Installers, and Repairers	1,390	\$53,516	22%	-200	-13%	44	0.64
Sales Representatives, Services	4,480	\$59,474	11%	60	1%	42	0.64
Physical Scientists	560	\$62,798	3%	-250	-31%	46	0.62
Architects, Surveyors, and Cartographers	570	\$64,361	-11%	310	119%	48	0.59
Supervisors of Installation, Maintenance, and Repair Workers	1,460	\$59,880	4%	-470	-24%	49	0.56
Life Scientists	1,030	\$65,683	-9%	30	3%	43	0.52
Fire Fighting and Prevention Workers	1,130	\$55,242	N/A	N/A	N/A	41	0.47
Sales Representatives, Wholesale and Manufacturing	7,030	\$56,069	3%	-1,170	-14%	45	0.38
Supervisors of Construction and Extraction Workers	1,700	\$58,840	-3%	-180	-10%	43	0.38
Supervisors of Office and Administrative Support Workers	6,460	\$49,740	8%	-60	-1%	48	0.34
Life, Physical, and Social Science Technicians	760	\$44,809	19%	-330	-30%	42	0.29

Sources: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes all nonfarm wage and salary jobs.
 Note: Analysis reflects the Buffalo-Niagara Falls, NY Core Based Statistical Area as defined by the U.S. Office of Management and Budget.

Strong industries and occupations

Identifying high-opportunity occupations

Once the occupation opportunity index score was calculated for each occupation, occupations were sorted into three categories (high, middle, and low opportunity). The average index score is zero, so an occupation with a positive value has an above-average score while a negative value represents a below-average score.

Because education level plays such a large role in determining access to jobs, we present the occupational analysis for each of three educational attainment levels: workers with a high school diploma or less, workers with more than a high school diploma but less than a BA, and workers with a BA or higher.

All jobs (2011)

High opportunity
(35 occupations)

Middle opportunity
(21 occupations)

Low opportunity
(21 occupations)

Strong industries and occupations

What occupations are high opportunity?

Supervisors of construction and extraction workers, supervisors of production workers, and other construction workers are high-opportunity jobs for workers without postsecondary education.

Occupation Opportunity Index: Occupations by Opportunity Level for Workers with a High School Diploma or Less

Occupation	Employment	Job Quality	Growth			Occupation Opportunity Index	
	(2011)	Median Annual Wage (2011)	Real Wage Growth (2011)	Change in Employment (2005-11)	% Change in Employment (2005-11)		Median Age (2010)
High Opportunity							
Supervisors of Construction and Extraction Workers	1,700	\$58,840	-2.7%	-180	-9.6%	43	0.38
Supervisors of Production Workers	2,310	\$55,000	-4.9%	-660	-22.2%	46	0.23
Other Construction and Related Workers	2,330	\$43,688	-1.6%	970	71.3%	48	0.07
Supervisors of Transportation and Material Moving Workers	1,100	\$48,542	-6.3%	-120	-9.8%	44	0.01
Supervisors of Building and Grounds Cleaning and Maintenance Workers	1,190	\$43,049	0.2%	-40	-3.3%	47	-0.02
Metal Workers and Plastic Workers	8,010	\$38,505	2.4%	1,820	29.4%	47	-0.05
Middle Opportunity							
Construction Trades Workers	13,840	\$42,572	-4.7%	1,930	16.2%	42	-0.10
Other Installation, Maintenance, and Repair Occupations	9,840	\$42,021	-4.5%	-2,480	-20.1%	46	-0.22
Food Processing Workers	1,820	\$28,736	13.5%	-450	-19.8%	39	-0.34
Supervisors of Food Preparation and Serving Workers	3,450	\$29,653	12.9%	-230	-6.3%	34	-0.35
Printing Workers	1,650	\$34,597	-8.8%	240	17.0%	46	-0.42
Food and Beverage Serving Workers	27,430	\$18,481	5.4%	14,880	118.6%	23	-0.43
Other Production Occupations	10,520	\$30,609	-0.4%	-710	-6.3%	45	-0.46
Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	5,660	\$34,301	-8.0%	120	2.2%	43	-0.46
Motor Vehicle Operators	13,730	\$31,214	-1.4%	-1,990	-12.7%	47	-0.48
Low Opportunity							
Other Protective Service Workers	5,150	\$24,063	4.6%	-360	-6.5%	44	-0.58
Material Recording, Scheduling, Dispatching, and Distributing Workers	17,120	\$28,169	-9.0%	3,040	21.6%	42	-0.59
Assemblers and Fabricators	6,160	\$27,891	-1.0%	-1,650	-21.1%	43	-0.61
Grounds Maintenance Workers	2,650	\$25,880	3.6%	-430	-14.0%	36	-0.62
Nursing, Psychiatric, and Home Health Aides	12,390	\$24,797	0.2%	960	8.4%	38	-0.64
Textile, Apparel, and Furnishings Workers	1,410	\$22,967	0.8%	-1,250	-47.0%	51	-0.68
Building Cleaning and Pest Control Workers	13,180	\$22,556	1.9%	-1,290	-8.9%	46	-0.68
Personal Appearance Workers	1,890	\$23,002	-1.6%	130	7.4%	39	-0.74
Other Personal Care and Service Workers	7,260	\$20,709	-13.3%	4,460	159.3%	37	-0.79
Cooks and Food Preparation Workers	10,890	\$21,203	2.4%	850	8.5%	24	-0.85
Material Moving Workers	11,790	\$24,137	-5.7%	-2,170	-15.5%	37	-0.87
Retail Sales Workers	34,200	\$19,794	4.5%	-1,950	-5.4%	26	-0.92
Other Food Preparation and Serving Related Workers	5,500	\$17,937	2.0%	1,040	23.3%	21	-0.97

Sources: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes all nonfarm wage and salary jobs for which the typical worker is estimated to have a high school diploma or less.

Note: Analysis reflects the Buffalo-Niagara Falls, NY Core Based Statistical Area as defined by the U.S. Office of Management and Budget.

Strong industries and occupations

What occupations are high opportunity?

Supervisors of protective service workers; law enforcement workers; and electrical mechanics, installers, and repairers are high-opportunity jobs for workers with more than a high school diploma but less than a bachelor’s degree.

Occupation Opportunity Index: Occupations by Opportunity Level for Workers with More Than a High School Diploma but Less Than a Bachelor’s Degree

Occupation	Employment	Job Quality	Growth				Occupation Opportunity Index	
	(2011)	Median Annual Wage (2011)	Real Wage Growth (2011)	Change in Employment (2005-11)	% Change in Employment (2005-11)	Median Age (2010)		
High Opportunity	Supervisors of Protective Service Workers	1,230	\$68,731	0.7%	640	108.5%	47	0.92
	Law Enforcement Workers	3,370	\$62,790	9.7%	-690	-17.0%	41	0.68
	Electrical and Electronic Equipment Mechanics, Installers, and Repairers	1,390	\$53,516	21.8%	-200	-12.6%	44	0.64
	Supervisors of Installation, Maintenance, and Repair Workers	1,460	\$59,880	3.9%	-470	-24.4%	49	0.56
	Fire Fighting and Prevention Workers	1,130	\$55,242	--	--	--	41	0.47
	Supervisors of Office and Administrative Support Workers	6,460	\$49,740	8.0%	-60	-0.9%	48	0.34
	Life, Physical, and Social Science Technicians	760	\$44,809	19.5%	-330	-30.3%	42	0.29
	Drafters, Engineering Technicians, and Mapping Technicians	1,850	\$47,591	0.5%	-660	-26.3%	45	0.08
	Plant and System Operators	920	\$48,858	-11.5%	-390	-29.8%	51	-0.03
	Supervisors of Sales Workers	4,820	\$44,633	-3.3%	-190	-3.8%	41	-0.09
Middle Opportunity	Health Technologists and Technicians	11,710	\$40,082	1.4%	950	8.8%	43	-0.09
	Legal Support Workers	1,320	\$44,610	-3.2%	-1,080	-45.0%	43	-0.13
	Secretaries and Administrative Assistants	16,600	\$34,562	4.9%	-580	-3.4%	49	-0.20
	Occupational Therapy and Physical Therapist Assistants and Aides	650	\$35,024	5.4%	-40	-5.8%	37	-0.28
	Financial Clerks	18,580	\$31,926	3.7%	2,250	13.8%	42	-0.28
	Information and Record Clerks	23,280	\$29,421	-0.6%	2,460	11.8%	39	-0.46
	Supervisors of Personal Care and Service Workers	610	\$33,200	-5.4%	-20	-3.2%	42	-0.47
Low Opportunity	Other Healthcare Support Occupations	3,430	\$29,512	1.0%	-400	-10.4%	43	-0.49
	Other Education, Training, and Library Occupations	8,350	\$25,535	5.0%	-970	-10.4%	47	-0.52
	Other Office and Administrative Support Workers	18,140	\$26,907	0.1%	-440	-2.4%	44	-0.57
	Communications Equipment Operators	750	\$26,550	--	--	--	41	-0.78
Entertainment Attendants and Related Workers	1,670	\$19,716	3.0%	-90	-5.1%	34	-0.83	

Sources: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes all nonfarm wage and salary jobs for which the typical worker is estimated to have more than a high school diploma but less than a BA degree. Note: Analysis reflects the Buffalo-Niagara Falls, NY Core Based Statistical Area as defined by the U.S. Office of Management and Budget.

Strong industries and occupations

What occupations are high opportunity?

Advertising, marketing, promotions, public relations, and sales managers; operations specialties managers; top executives; postsecondary teachers, and health practitioners are high-opportunity occupations for workers with a bachelor’s degree or higher.

Occupation Opportunity Index: Occupations by Opportunity Level for Workers with a Bachelor’s Degree or Higher

Occupation	Employment (2011)	Job Quality Median Annual Wage (2011)	Growth			Occupation Opportunity Index	
			Real Wage Growth (2011)	Change in Employment (2005-11)	% Change in Employment (2005-11)		Median Age (2010)
High Opportunity							
Advertising, Marketing, Promotions, Public Relations, and Sales Managers	1,400	\$105,427	7.0%	30	2.2%	43	2.04
Operations Specialties Managers	4,880	\$98,387	6.0%	90	1.9%	45	1.82
Top Executives	7,570	\$98,026	-5.6%	1,600	26.8%	48	1.70
Postsecondary Teachers	5,970	\$67,579	29.6%	4,000	203.0%	43	1.51
Health Diagnosing and Treating Practitioners	20,650	\$81,069	11.2%	3,170	18.1%	46	1.46
Other Management Occupations	5,920	\$79,482	2.5%	-220	-3.6%	46	1.16
Lawyers, Judges, and Related Workers	3,300	\$85,114	-17.9%	730	28.4%	49	1.07
Engineers	3,710	\$73,698	-1.3%	500	15.6%	44	0.93
Social Scientists and Related Workers	580	\$64,681	13.9%	-800	-58.0%	41	0.78
Business Operations Specialists	14,230	\$58,005	10.1%	4,680	49.0%	43	0.76
Computer Occupations	11,920	\$63,316	6.6%	2,670	28.9%	38	0.75
Financial Specialists	9,390	\$63,066	6.1%	1,000	11.9%	44	0.73
Sales Representatives, Services	4,480	\$59,474	10.8%	60	1.4%	42	0.64
Physical Scientists	560	\$62,798	3.2%	-250	-30.9%	46	0.62
Architects, Surveyors, and Cartographers	570	\$64,361	-10.7%	310	119.2%	48	0.59
Life Scientists	1,030	\$65,683	-8.5%	30	3.0%	43	0.52
Sales Representatives, Wholesale and Manufacturing	7,030	\$56,069	3.1%	-1,170	-14.3%	45	0.38
Preschool, Primary, Secondary, and Special Education School Teachers	18,140	\$54,108	-4.3%	-1,140	-5.9%	39	0.15
Counselors, Social Workers, and Other Community and Social Service	9,050	\$40,320	0.7%	2,580	39.9%	42	-0.04
Middle Opportunity							
Other Sales and Related Workers	2,400	\$35,605	8.0%	-530	-18.1%	41	-0.20
Librarians, Curators, and Archivists	970	\$41,855	-10.5%	-70	-6.7%	44	-0.27
Media and Communication Workers	1,410	\$42,228	-11.6%	50	3.7%	41	-0.29
Religious Workers	920	\$40,540	-21.0%	180	24.3%	56	-0.35
Art and Design Workers	1,180	\$35,024	-5.8%	-280	-19.2%	39	-0.47
Low Opportunity							
Entertainers and Performers, Sports and Related Workers	1,490	\$36,258	-14.6%	440	41.9%	38	-0.52
Media and Communication Equipment Workers	780	\$31,302	-6.3%	180	30.0%	40	-0.53
Other Teachers and Instructors	5,360	\$27,855	-35.4%	4,290	400.9%	35	-0.76

Sources: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes all nonfarm wage and salary jobs for which the typical worker is estimated to have a BA degree or higher.

Note: Analysis reflects the Buffalo-Niagara Falls, NY Core Based Statistical Area as defined by the U.S. Office of Management and Budget.

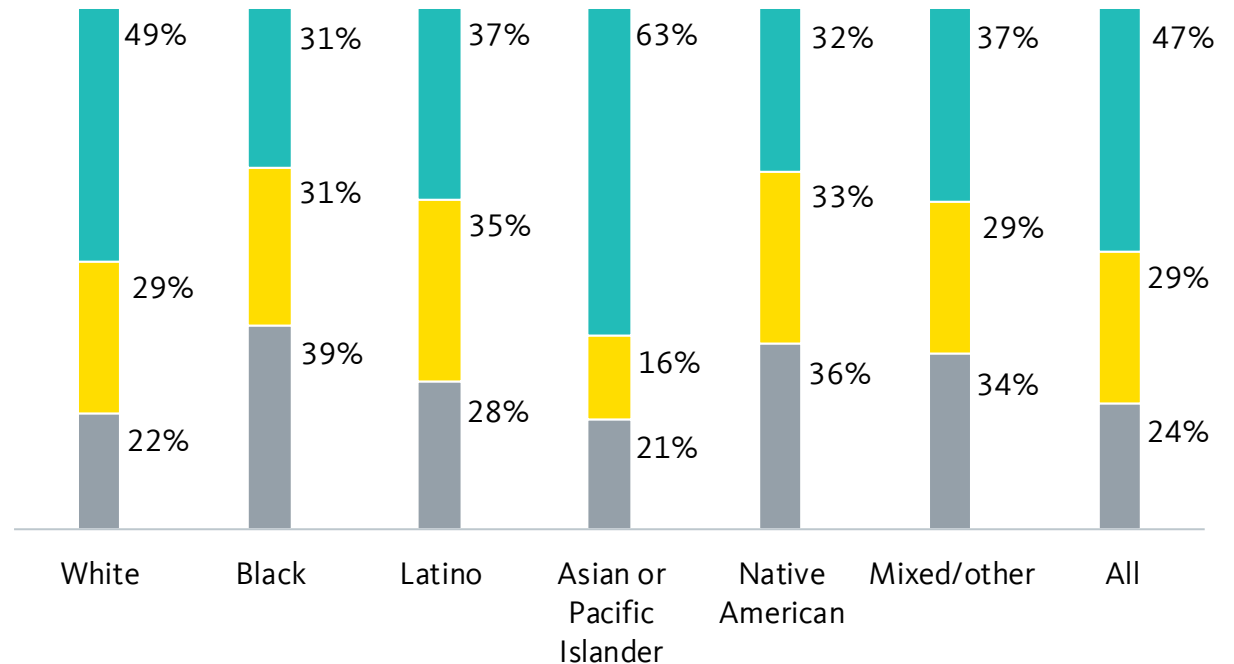
Strong industries and occupations

Is race/ethnicity a barrier to economic success?

Examining access to high-opportunity jobs by race/ethnicity, we find that Asian or Pacific Islander and White workers are most likely to be employed in high-opportunity occupations. Black workers are the least likely to be in these occupations and are most likely to be employed in low-opportunity occupations.

Opportunity Ranking of Occupations by Race/Ethnicity, All Workers

- High Opportunity
- Middle Opportunity
- Low Opportunity



Sources: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes the employed civilian noninstitutional population ages 25 through 64.
 Note: Analysis reflects the Buffalo-Niagara Falls, NY Core Based Statistical Area as defined by the U.S. Office of Management and Budget.

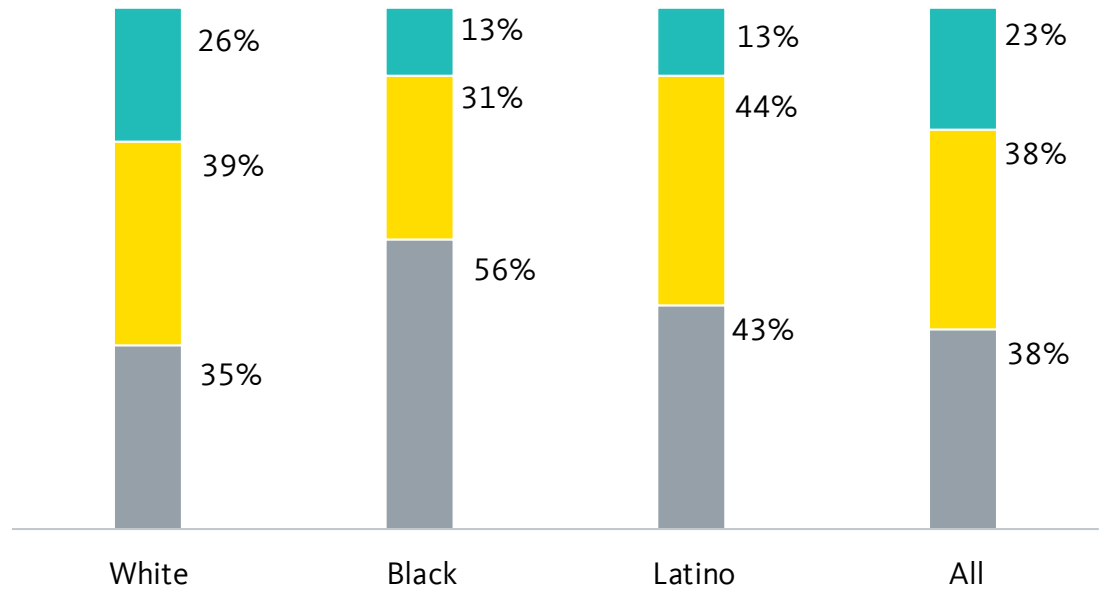
Strong industries and occupations

Is race/ethnicity a barrier to economic success?

Among workers with a high school diploma or less, Whites are most likely to be employed in high-opportunity occupations. White and Latino workers with low levels of education are most likely to hold middle-opportunity jobs. Black workers are most likely to be in low-opportunity jobs.

Opportunity Ranking of Occupations by Race/Ethnicity, Workers with Low Educational Attainment

- High Opportunity
- Middle Opportunity
- Low Opportunity



Sources: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes the employed civilian noninstitutional population ages 25 through 64 with a high school diploma or less.
 Note: Analysis reflects the Buffalo-Niagara Falls, NY Core Based Statistical Area as defined by the U.S. Office of Management and Budget. Data for some racial/ethnic groups are excluded due to small sample size.

Strong industries and occupations

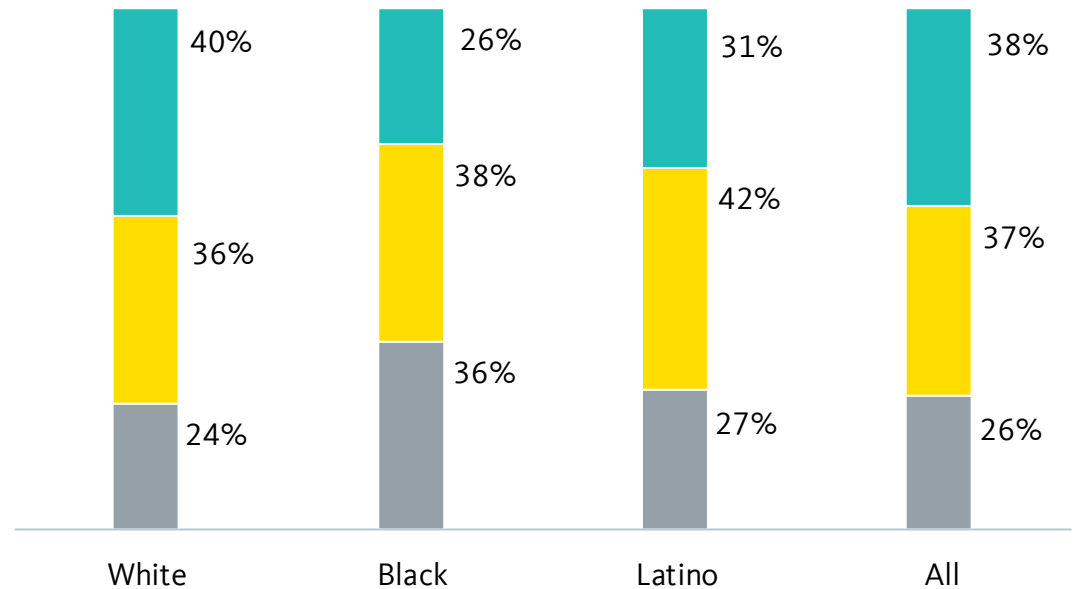
Is race/ethnicity a barrier to economic success?

Differences in job opportunity are generally smaller among workers with some college or an associate’s degree.

White workers are most likely to be found in high-opportunity jobs and Latinos and Blacks are most likely to be in middle-opportunity jobs. A higher share of Black workers are in low-opportunity jobs compared with other racial/ethnic groups.

Opportunity Ranking of Occupations by Race/Ethnicity, Workers with Middle Educational Attainment

- High Opportunity
- Middle Opportunity
- Low Opportunity



Sources: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes the employed civilian noninstitutional population ages 25 through 64 with more than a high school diploma but less than a BA degree. Note: Analysis reflects the Buffalo-Niagara Falls, NY Core Based Statistical Area as defined by the U.S. Office of Management and Budget. Data for some racial/ethnic groups are excluded due to small sample size.

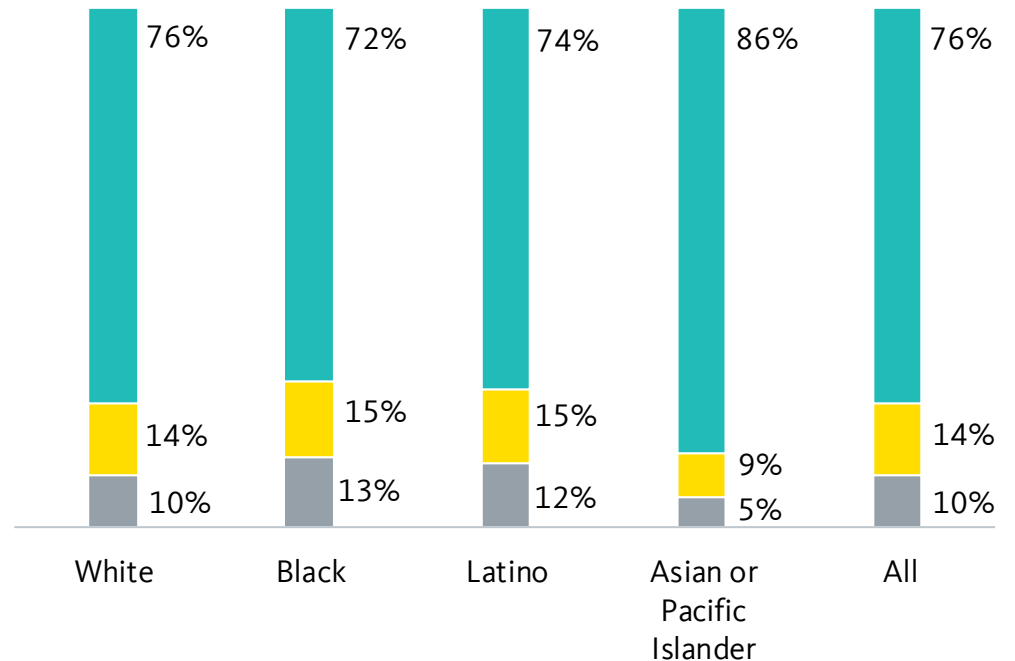
Strong industries and occupations

Is race/ethnicity a barrier to economic success?

Differences in access to high-opportunity occupations tend to decrease even more for workers with college degrees, though racial gaps across groups remain. Among the most educated workers, Asian or Pacific Islander workers are the most likely to be in high-opportunity occupations.

Opportunity Ranking of Occupations by Race/Ethnicity, Workers with High Educational Attainment

- High Opportunity
- Middle Opportunity
- Low Opportunity



Sources: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes the employed civilian noninstitutional population ages 25 through 64 with a BA degree or higher.
 Note: Analysis reflects the Buffalo-Niagara Falls, NY Core Based Statistical Area as defined by the U.S. Office of Management and Budget. Data for some racial/ethnic groups are excluded due to small sample size.

Readiness

Highlights

How prepared are the city's residents for the 21st century economy?

- There are looming skills and education gaps, especially for African Americans and Latinos, whose rates of postsecondary education (having at least an associate's degree) are far lower than the share of future jobs that will require that level of education.
- Despite some progress since 2000, Black and Latino young people were twice as likely as White youth to be without a high school diploma and not in pursuit of one in 2014.
- Black residents are six times as likely as White residents to live in neighborhoods not well served by supermarkets.

Share of people of color with an associate's degree or higher:

25%

Number of youth who are disconnected from school and work:

6,800

Percent of Black residents who live in limited supermarket access areas:

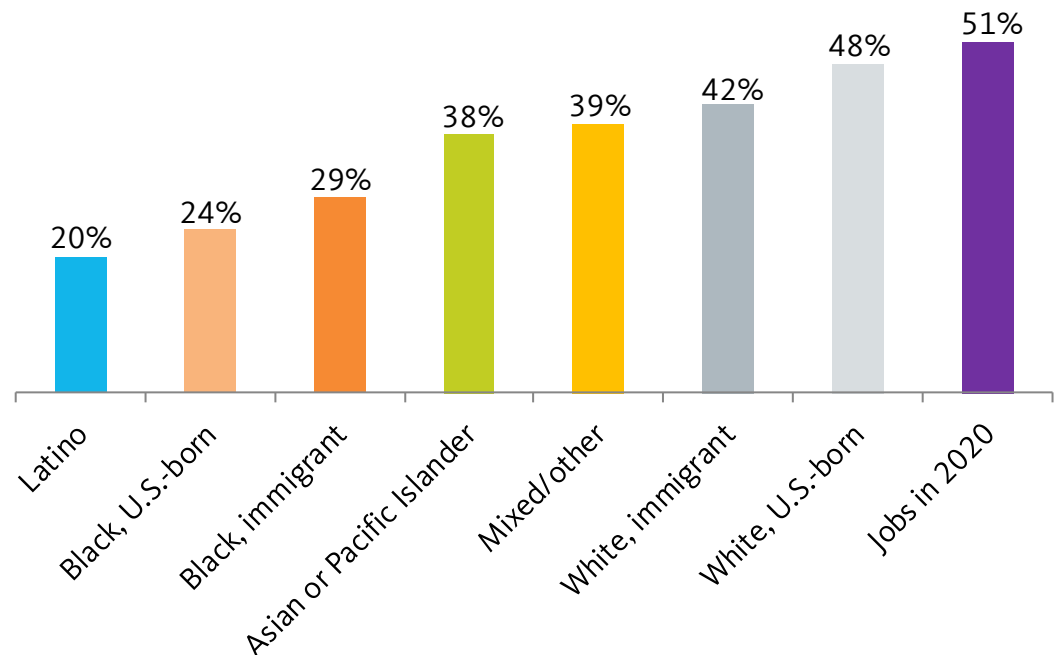
36%

Skilled workforce

Does the workforce have the skills for the jobs of the future?

The education levels of the city’s population aren’t keeping up with employers’ educational demands. By 2020, an estimated 51 percent of jobs in New York state will require at least an associate’s degree. Only 20 percent of Latinos and 24 percent of U.S.-born Black residents of Buffalo have that level of education today.

Share of Working-Age Population with an Associate’s Degree or Higher by Race/Ethnicity and Nativity, 2014, and Projected Share of Jobs that Require an Associate’s Degree or Higher, 2020



Sources: Georgetown Center for Education and the Workforce; Integrated Public Use Microdata Series. Universe for education levels of workers includes all persons ages 25 through 64. Note: Data for 2014 by race/ethnicity and nativity represents a 2010 through 2014 average for Buffalo City; data on jobs in 2020 represents a state-level projection for New York.

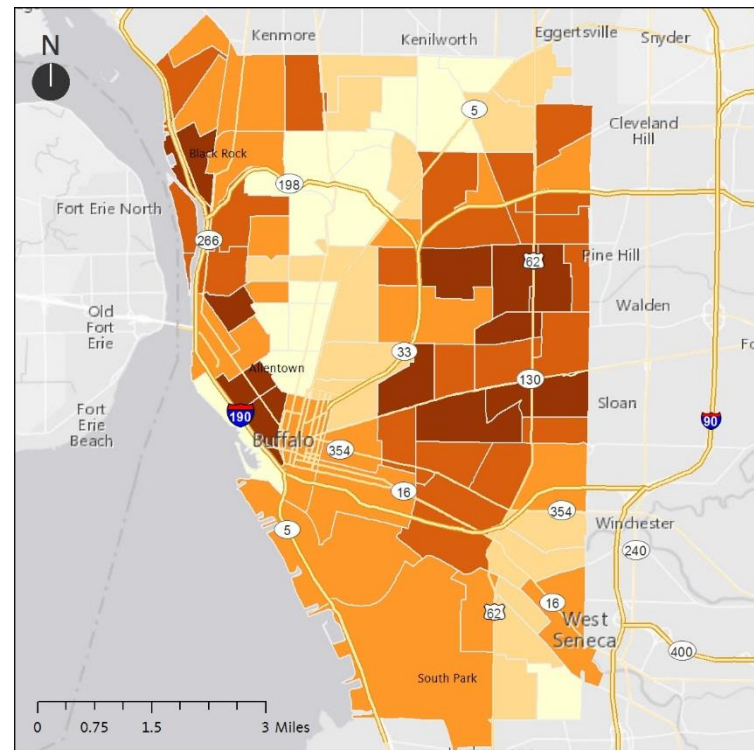
Youth preparedness

Do all children have access to opportunity?

The highest levels of opportunities for children are concentrated in the north central part of the city. Lower scores on the child opportunity index are found in parts of Black Rock, southwest and northwest of Allentown (bordering some of the highest opportunity areas), and in other neighborhoods in the mid-eastern part of the city.

Composite Child Opportunity Index by Census Tract

- Very High
- High
- Moderate
- Low
- Very Low



Sources: The diversitydatakids.org and the Kirwan Institute for the Study of Race and Ethnicity; TomTom, ESRI, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community. Note: The Child Opportunity Index is a composite of indicators across three domains: educational opportunity, health and environmental opportunity, and social and economic opportunity. The vintage of the underlying indicator data varies, ranging from years 2007 through 2013. The map was created by ranking the census tract level Overall Child Opportunity Index Score into quintiles for the city.

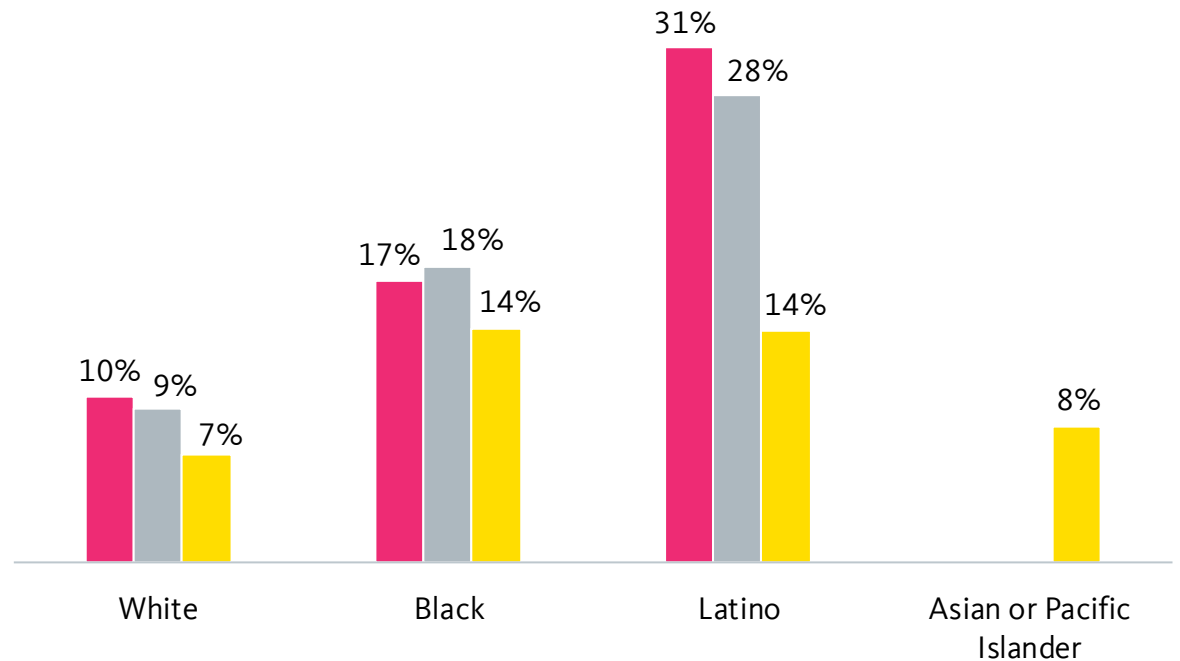
Youth preparedness

Are youth ready to enter the workforce?

More of Buffalo’s youth are getting high school diplomas, but racial gaps remain. Despite some progress since 2000, Black and Latino young people were twice as likely as White youth to be without a high school diploma and not in pursuit of one in 2014.

Share of 16- to 24-Year-Olds Not Enrolled in School and without a High School Diploma by Race/Ethnicity, 1990 to 2014

- 1990
- 2000
- 2014



Source: Integrated Public Use Microdata Series.
 Note: Data for 2014 represent a 2010 through 2014 average. Data for some racial/ethnic groups in some years are excluded due to small sample size.

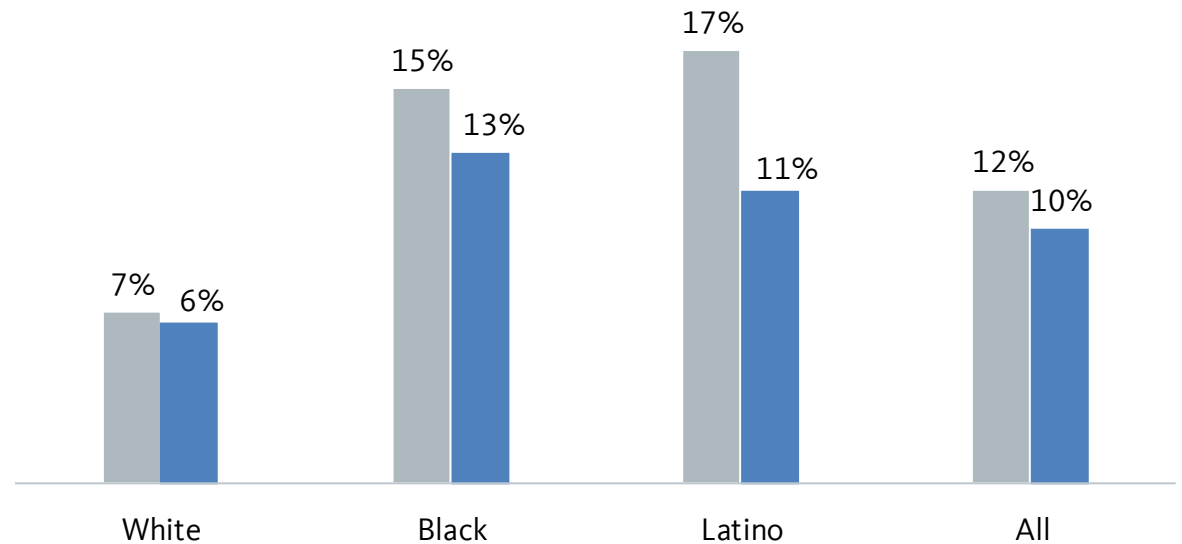
Youth preparedness

Are youth ready to enter the workforce?

Young women overall are less likely than men to drop out of high school. Among young men, Latinos are the most likely to be without a high school diploma and not in pursuit of one; young Black women are the most likely among young women.

Share of 16- to 24-Year-Olds Not Enrolled in School and without a High School Diploma by Race/Ethnicity and Gender, 2014

- Male
- Female



Source: Integrated Public Use Microdata Series.
 Note: Data represent a 2010 through 2014 average.

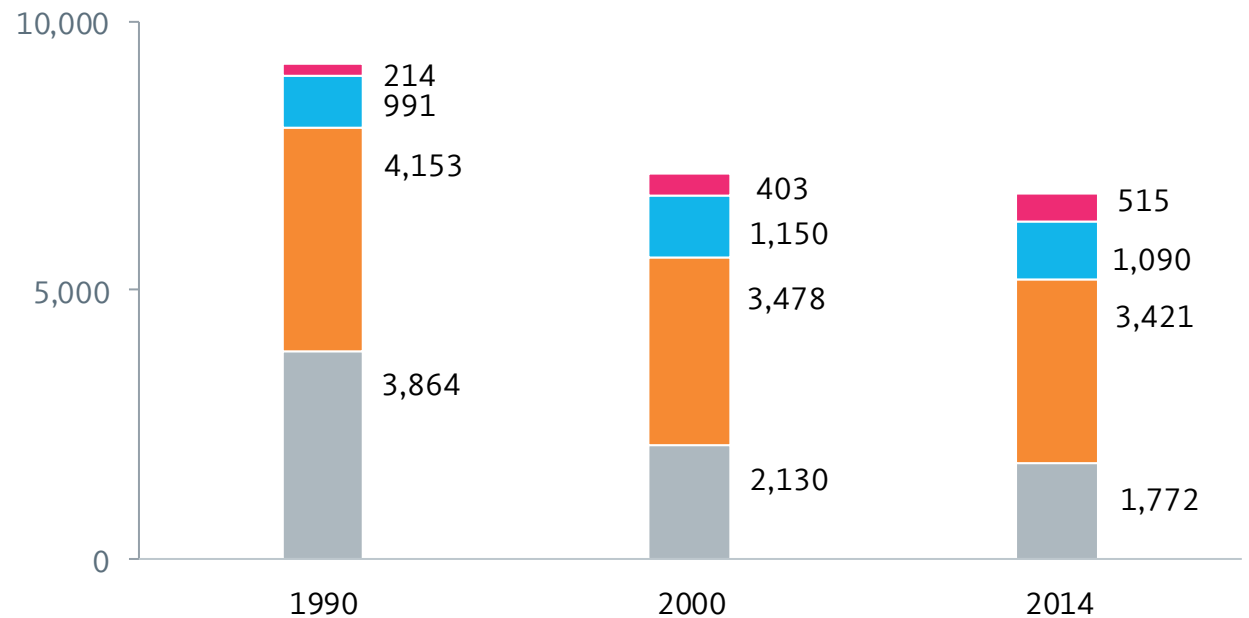
Youth preparedness

Are youth ready to enter the workforce?

While the total number of youth who are disconnected has decreased since 1990, youth of color have become increasingly disproportionately disconnected. Of the nearly 6,800 disconnected youth in 2014, half were Black. Youth of color are nearly three-fourths of disconnected youth, even though they make up only 58 percent of all young people.

Disconnected Youth: 16- to 24-Year-Olds Not in School or Work by Race/Ethnicity, 1990 to 2014

- Asian, Native American or Other
- Latino
- Black
- White



Source: Integrated Public Use Microdata Series.
 Note: Data for 2014 represent a 2010 through 2014 average.

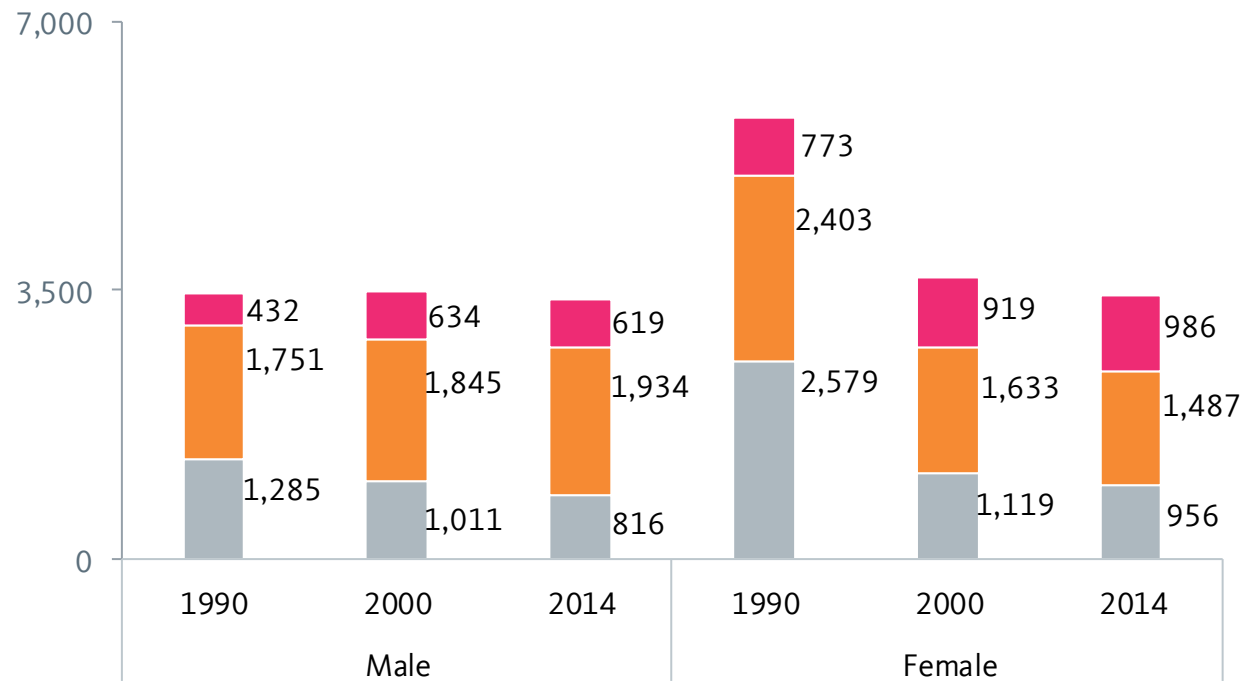
Youth preparedness

Are youth ready to enter the workforce?

Virtually all of the decline in the number of disconnected youth since 1990 has been driven by young women. Young Black men are more likely to be disconnected than Black women, but the reverse is true for other groups, with young women being more likely to be disconnected than men.

Disconnected Youth: 16- to 24-Year-Olds Not in School or Work by Race/Ethnicity and Gender, 1990 to 2014

- Latino, Asian, Native American or Other
- Black
- White



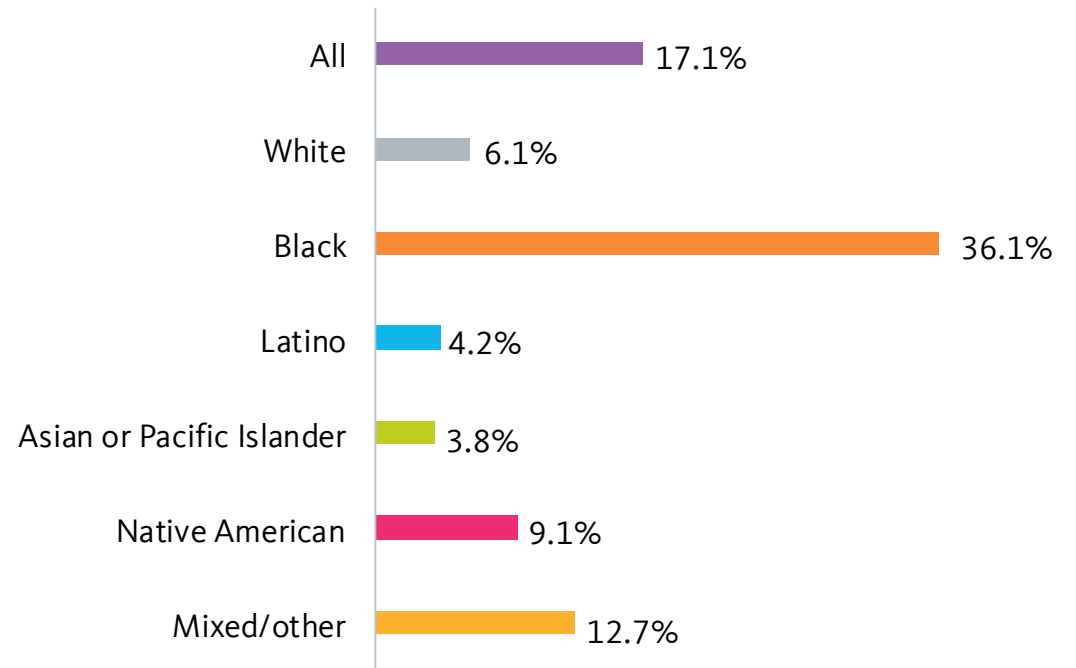
Source: Integrated Public Use Microdata Series.
 Note: Data for 2014 represent a 2010 through 2014 average.

Health-promoting environments

Can all residents access healthy food?

Black Buffalo residents are six times as likely as their White counterparts and nine times as likely as their Latino and Asian or Pacific Islander counterparts to live in limited supermarket access areas. Access to healthy food is a critical component of a healthy, thriving community.

Percent Living in Limited Supermarket Access Areas (LSAs) by Race/Ethnicity, 2014



LSAs are defined as areas where residents must travel significantly farther to reach a supermarket than the “comparatively acceptable” distance traveled by residents in well-served areas with similar population densities and car ownership rates.

Sources: The Reinvestment Fund, 2014 LSA analysis; U.S. Census Bureau.
 Note: Data on population by race/ethnicity reflects a 2010 through 2014 average.

Health-promoting environments

Can all residents access healthy food?

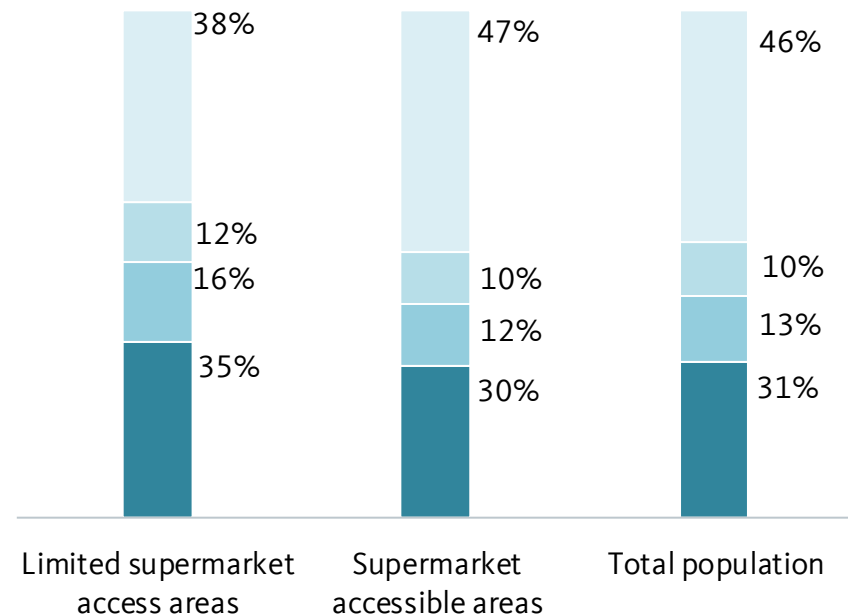
The population living below the federal poverty level and close to poverty is also disproportionately located in LSAs.

The population with a family income below 150 percent of the federal poverty level (FPL) makes up 44 percent of the city’s total population, but accounts for 51 percent of the LSA residents.

Percent Population in Limited Supermarket Access Areas (LSAs), 2014

- 200% or above FPL
- 150-199% FPL
- 100-149% FPL
- Below 100% FPL

LSAs are defined as areas where residents must travel significantly farther to reach a supermarket than the “comparatively acceptable” distance traveled by residents in well-served areas with similar population densities and car ownership rates.



Sources: The Reinvestment Fund, 2014 LSA analysis; U.S. Census Bureau. Universe includes all persons not in groups quarters. Note: Data on population by poverty status reflects a 2010 through 2014 average.

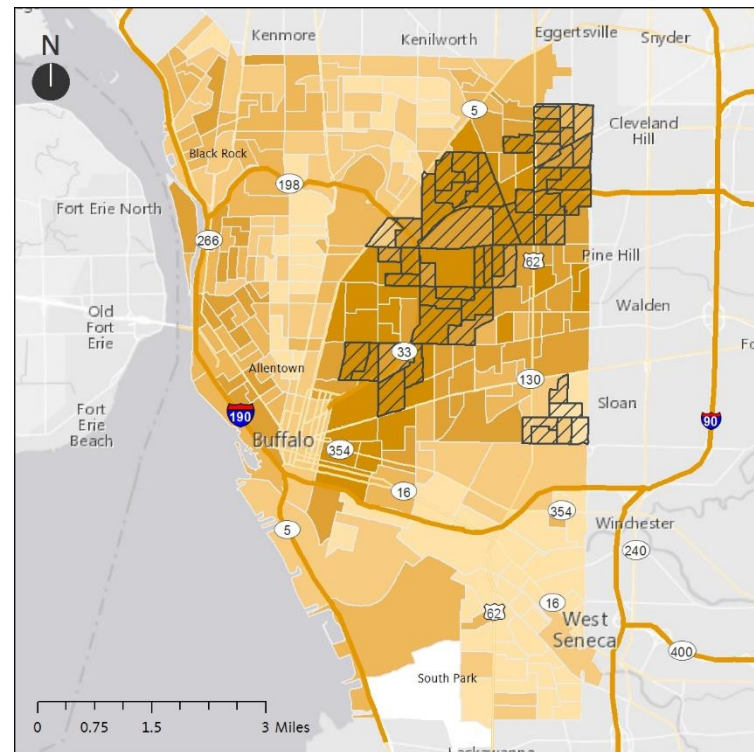
Health-promoting environments

Can all residents access healthy food?

Most of the city’s food deserts are clustered in the eastern part of the city – in neighborhoods where at least three in four residents are people of color. The one exception is the limited supermarket access area located near the village of Sloan, which is predominately White.

Percent People of Color by Census Block Group and Limited Supermarket Access Block Groups, 2014

- Less than 20%
- 20% to 46%
- 46% to 75%
- 75% to 92%
- 92% or more
- Limited Supermarket Access



Sources: The Reinvestment Fund, 2014 LSA analysis; U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community.
 Note: Data on population by race/ethnicity represent a 2010 through 2014 average. Areas in white are missing data.

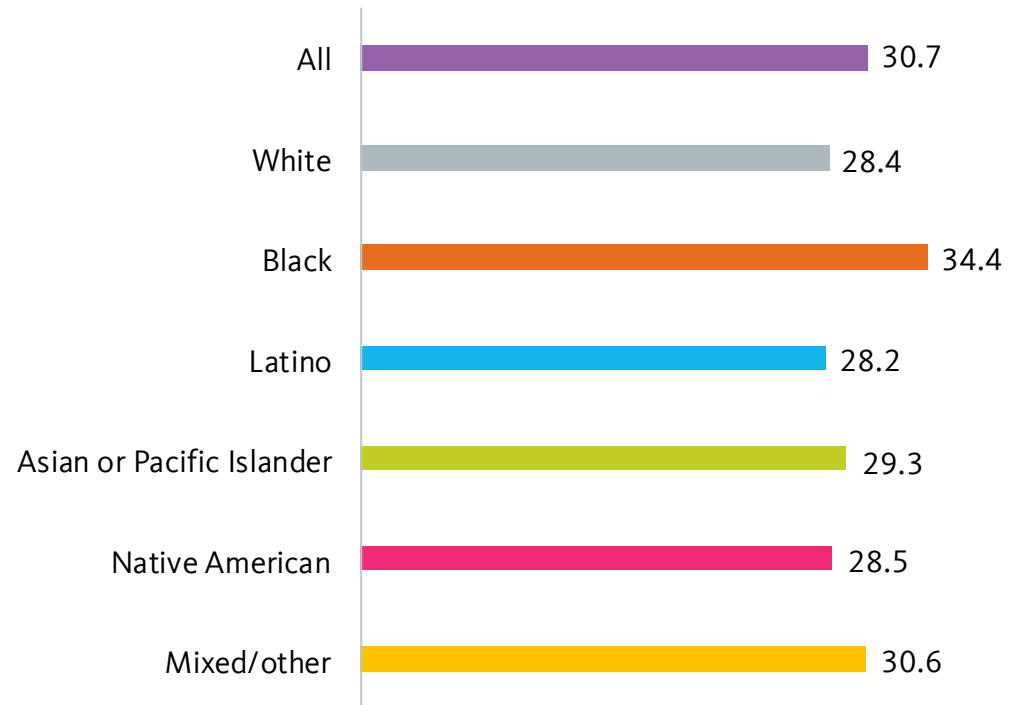
Health-promoting environments

Do all residents live in areas with clean air?

The average Black resident of Buffalo has more exposure to air pollution than 34 percent of census tracts in the United States. By contrast, the average White or Latino resident of Buffalo has more exposure than 28 percent of census tracts in the country.

Air Pollution: Exposure Index by Race/Ethnicity, 2014

Values range from 1 (lowest risk) to 100 (highest risk) on a national scale. The index value is based on percentile ranking each risk measure across all census tracts in the U.S. and taking the average ranking for each Atlas geography and demographic group.



Sources: U.S. EPA, 2011 National-Scale Air Toxics Assessment; U.S. Census Bureau.
 Note: Data on population by race/ethnicity represent a 2010 through 2014 average.

Health-promoting environments

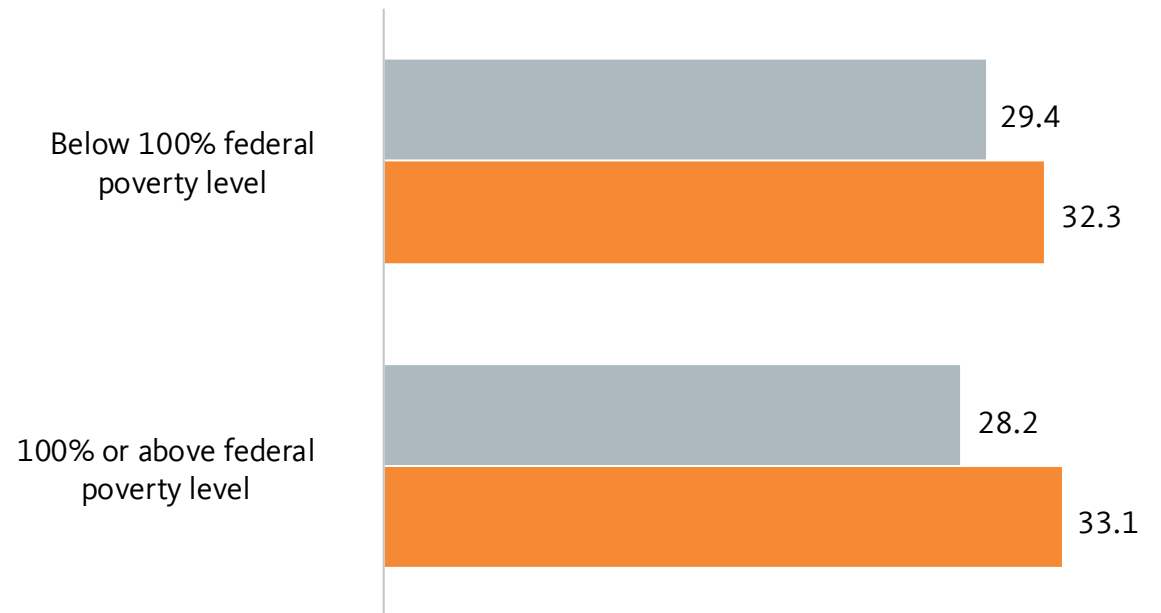
Do all residents live in areas with clean air?

While both race and economic class impact exposure to pollutants, race has a larger effect. In Buffalo, people of color who live above the federal poverty level have higher rates of exposure to air pollution than both White people and people of color who live in poverty.

Air Pollution: Exposure Index by Poverty Status, 2014

- White
- People of color

Values range from 1 (lowest risk) to 100 (highest risk) on a national scale. The index value is based on percentile ranking each risk measure across all census tracts in the U.S. and taking the average ranking for each Atlas geography and demographic group.



Sources: U.S. EPA, 2011 National-Scale Air Toxics Assessment; U.S. Census Bureau. Universe includes all persons not in group quarters. Note: Data on population by poverty status represent a 2010 through 2014 average.

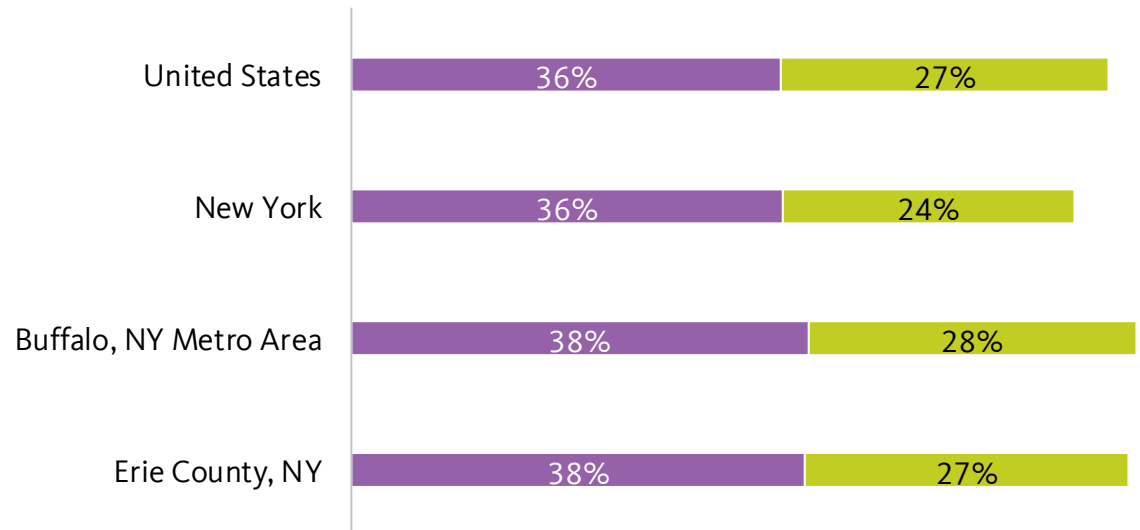
Health of residents

Do all residents have the opportunity to live long and healthy lives?

Overweight and obesity rates are slightly higher in the Erie County than for New York State overall. In Erie County, nearly two in three adults are overweight or obese.

Adult Overweight and Obesity Rates by Geography, 2012

- Overweight
- Obese



Source: Centers for Disease Control and Prevention. Universe includes all persons ages 18 or older.
 Note: Data represent a 2008 through 2012 average.

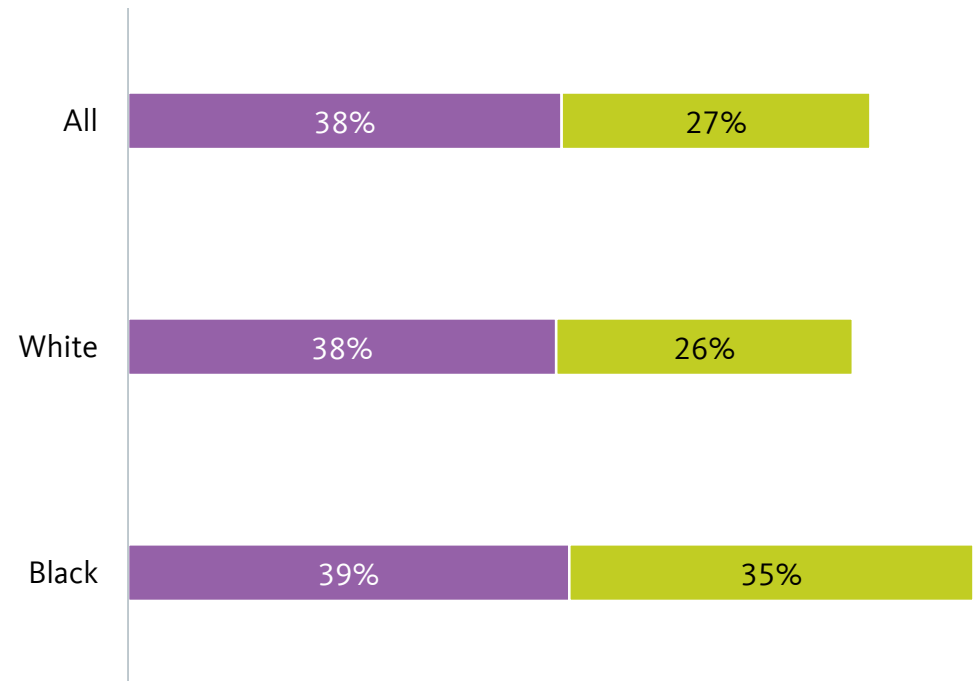
Health of residents

Do all residents have the opportunity to live long and healthy lives?

Black residents of Erie County, who are the most likely to live in areas without access to healthy food, face higher obesity rates than Whites. While genetics matter, research shows other important social and environmental factors influence obesity, including toxic stress, income, and education.

Adult Overweight and Obesity Rates by Race/Ethnicity, 2012

- Overweight
- Obese



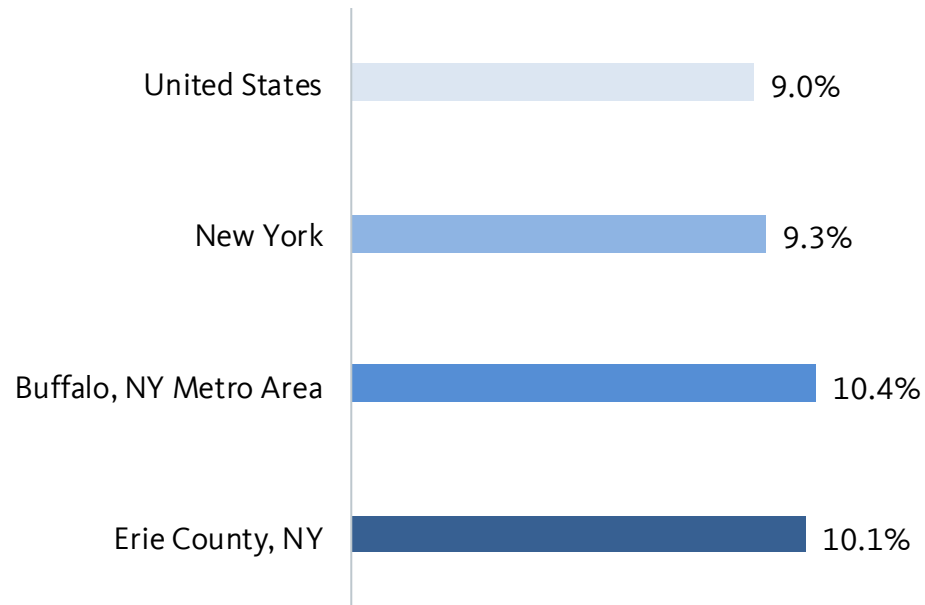
Source: Centers for Disease Control and Prevention. Universe includes all persons ages 18 or older.
 Note: Data represent a 2008 through 2012 average for Erie County, NY. Data for some racial/ethnic groups are excluded due to small sample size.

Health of residents

Do all residents have the opportunity to live long and healthy lives?

When compared to the state and nation overall, Erie County also has a slightly higher rate of adult diabetes. One in 10 adults in the county has diabetes.

Adult Diabetes Rates by Geography, 2012



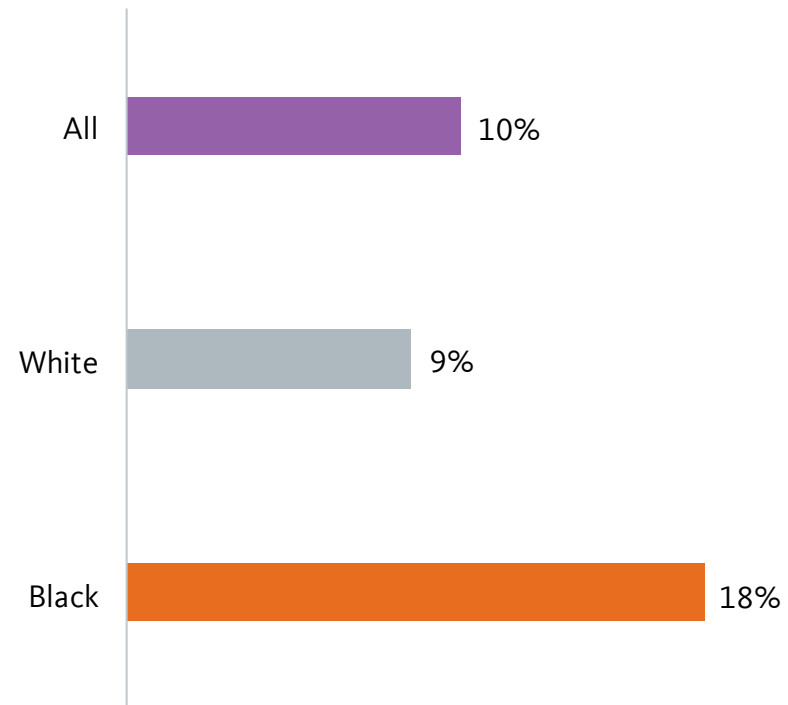
Source: Centers for Disease Control and Prevention. Universe includes all persons ages 18 or older.
Note: Data represent a 2008 through 2012 average.

Health of residents

Do all residents have the opportunity to live long and healthy lives?

Black residents of Erie County are twice as likely as White residents to have diabetes. The social determinants of health – where people live, learn, work, and age – are increasingly recognized as influencing growing rates of chronic diseases such as diabetes.

Adult Diabetes Rates by Race/Ethnicity, 2012



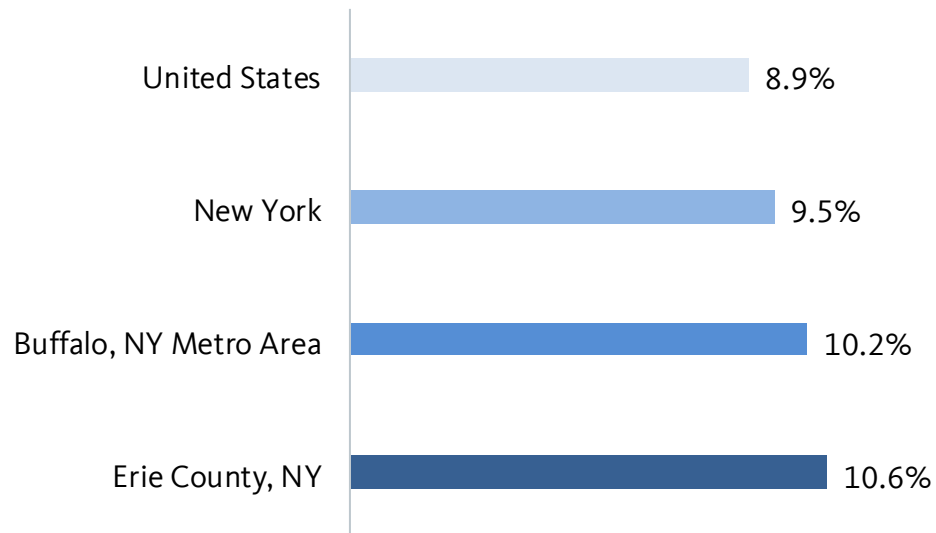
Source: Centers for Disease Control and Prevention. Universe includes all persons ages 18 or older.
 Note: Data represent a 2008 through 2012 average for Erie County, NY. Data for some racial/ethnic groups are excluded due to small sample size.

Health of residents

Do all residents have the opportunity to live long and healthy lives?

The share of adults living with asthma is higher in the state of New York than in the country overall, and higher still in Erie County. Nearly 11 percent of adults in the county have asthma.

Adult Asthma Rates by Geography, 2012



Source: Centers for Disease Control and Prevention. Universe includes all persons ages 18 or older.
 Note: Data represent a 2008 through 2012 average.

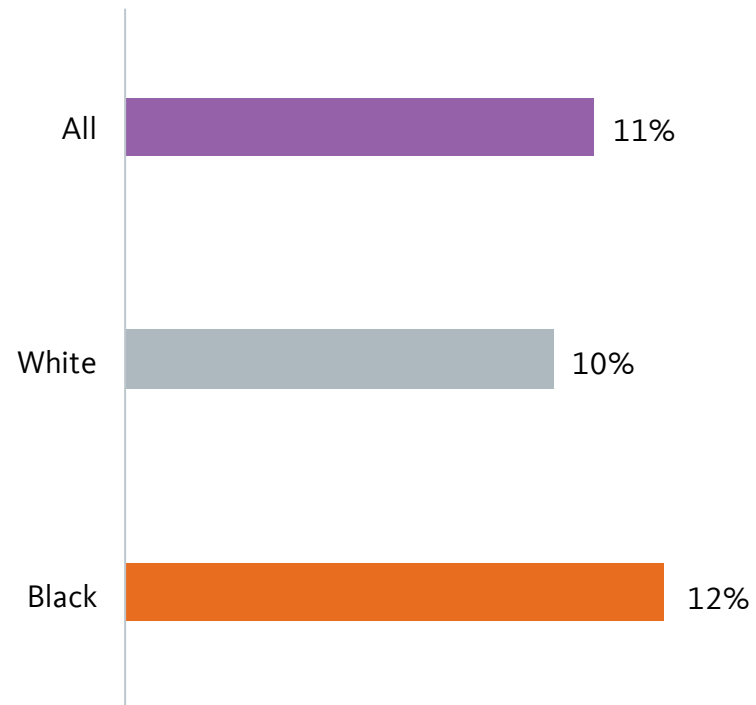
Health of residents

Do all residents have the opportunity to live long and healthy lives?

Black adults, who have greater than average exposure to air pollution, have a higher rate of asthma than White adults.

Within Erie County, 12 percent of Black adults have asthma.

Adult Asthma Rates by Race/Ethnicity, 2012



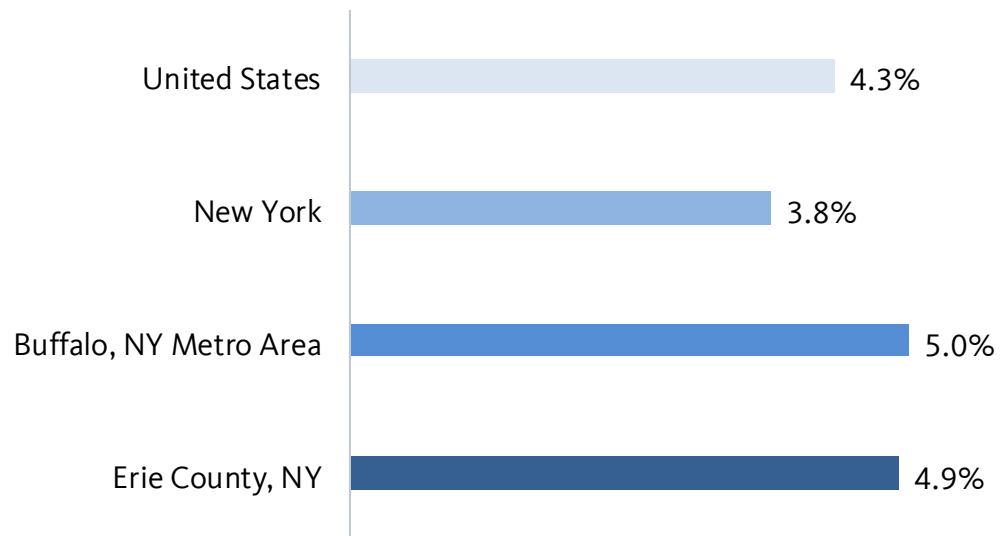
Source: Centers for Disease Control and Prevention. Universe includes all persons ages 18 or older.
Note: Data represent a 2008 through 2012 average for Erie County, NY. Data for some racial/ethnic groups are excluded due to small sample size.

Health of residents

Do all residents have the opportunity to live long and healthy lives?

The share of adults who have had a heart attack is higher in the Buffalo region than in both the state and nation overall. In both Erie County and the Buffalo metro area, roughly 5 percent of adults have had a heart attack.

Share of Adults Who Have Had a Heart Attack by Geography, 2012



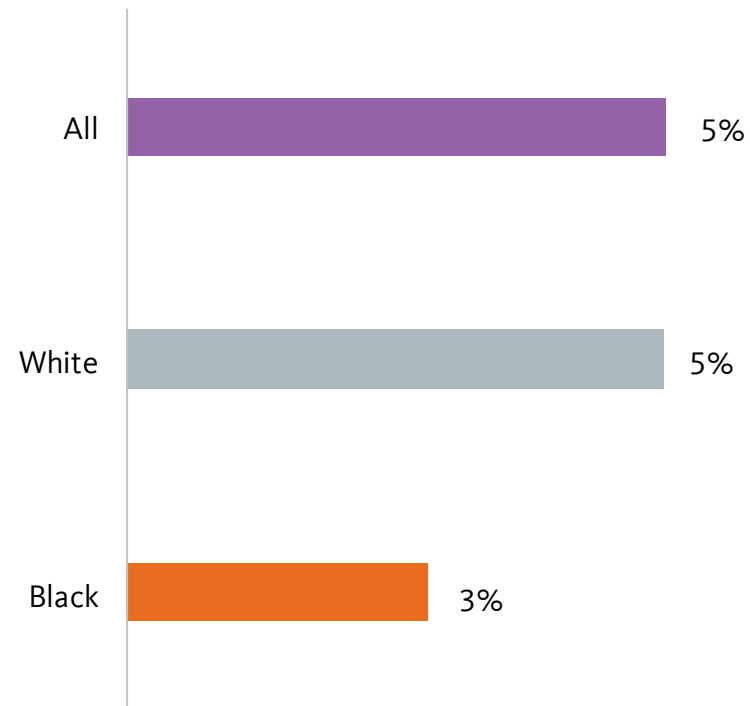
Source: Centers for Disease Control and Prevention. Universe includes all persons ages 18 or older.
 Note: Data represent a 2008 through 2012 average.

Health of residents

Do all residents have the opportunity to live long and healthy lives?

In Erie County, White adults are slightly more likely than Black adults to have had a heart attack. About 5 percent of White adults have had a heart attack compared with 3 percent of Black adults.

Share of Adults Who Have Had a Heart Attack by Race/Ethnicity, 2012



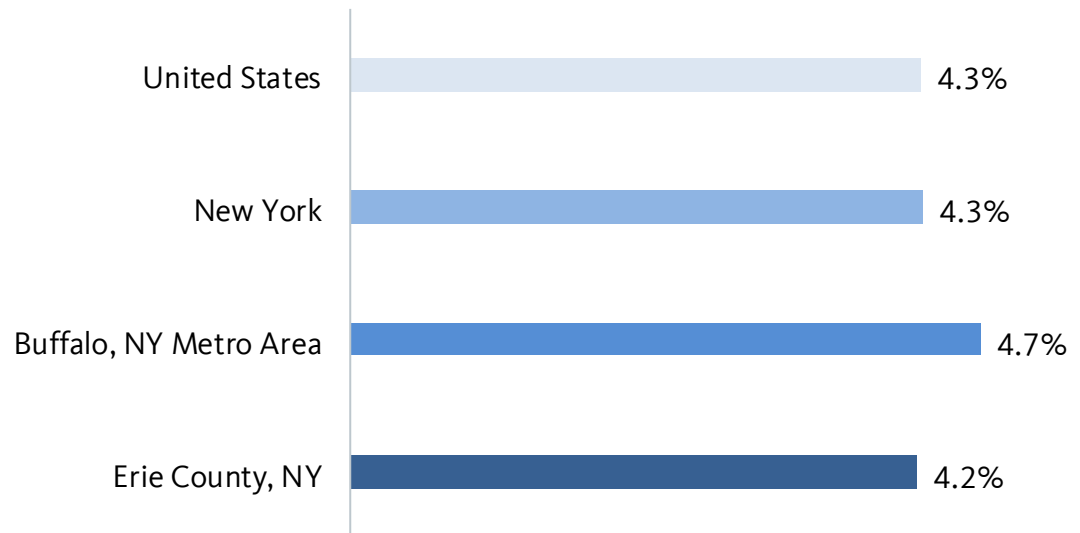
Source: Centers for Disease Control and Prevention. Universe includes all persons ages 18 or older.
 Note: Data represent a 2008 through 2012 average for Erie County, NY. Data for some racial/ethnic groups are excluded due to small sample size.

Health of residents

Do all residents have the opportunity to live long and healthy lives?

Heart disease is the leading cause of death in the United States. The share of adults who have been diagnosed with angina or coronary heart disease in Erie County nearly matches the share nationwide.

Share of Adults with Angina or Coronary Heart Disease by Geography, 2012



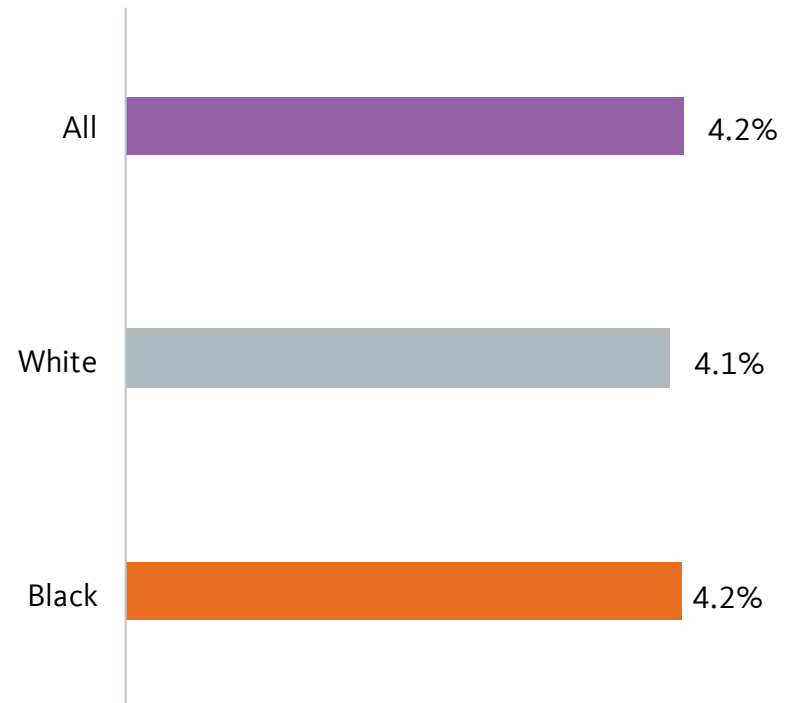
Source: Centers for Disease Control and Prevention. Universe includes all persons ages 18 or older.
 Note: Data represent a 2008 through 2012 average.

Health of residents

Do all residents have the opportunity to live long and healthy lives?

Unlike other chronic illnesses, there are no apparent racial disparities in angina or coronary heart disease (CHD) in Erie County: 4.2 percent of African Americans and 4.1 percent of Whites have been diagnosed with angina or CHD. Of course, these estimates do not control for age or health-care access.

Share of Adults with Angina or Coronary Heart Disease by Race/Ethnicity, 2012



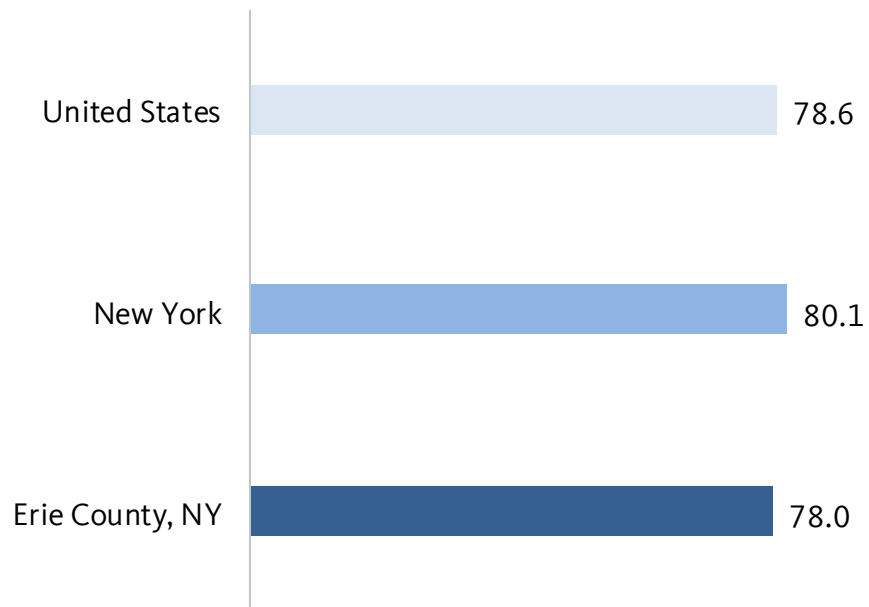
Source: Centers for Disease Control and Prevention. Universe includes all persons ages 18 or older.
 Note: Data represent a 2008 through 2012 average for Erie County, NY. Data for some racial/ethnic groups are excluded due to small sample size.

Health of residents

Do all residents have the opportunity to live long and healthy lives?

Health equity means that everyone has a just and fair opportunity to lead a long and healthy life, but life expectancy at birth varies from place to place. The overall life expectancy in the United States is 78.6 years; in New York, it's 80.1 years; in Erie County, it's 78.0 years.

Life Expectancy at Birth by Geography, 2015



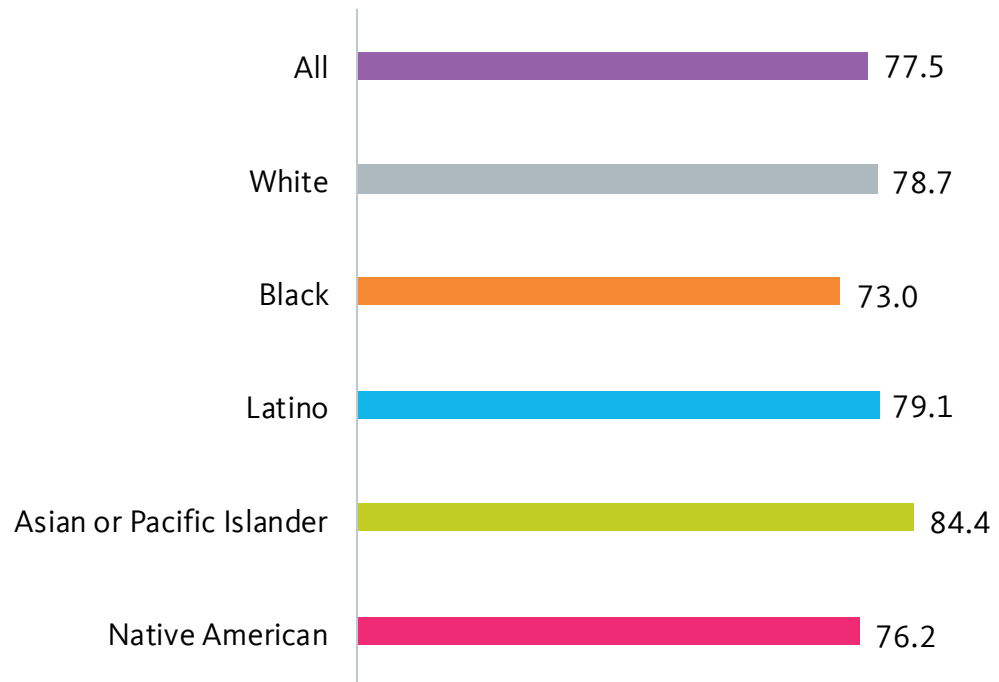
Source: Centers for Disease Control and Prevention.
 Note: Data represent a 2011 through 2015 average for Erie County, NY.

Health of residents

Do all residents have the opportunity to live long and healthy lives?

African Americans and Native Americans in Buffalo have the lowest life expectancy in Erie County. In fact, Black life expectancy is more than 5 years shorter than White life expectancy. Asians or Pacific Islanders in the county have the highest life expectancy of 84.4 years.

Life Expectancy at Birth by Race/Ethnicity, 2014



Source: Centers for Disease Control and Prevention.
 Note: Data represent a 2011 through 2015 average for Erie County, NY.

Health of residents

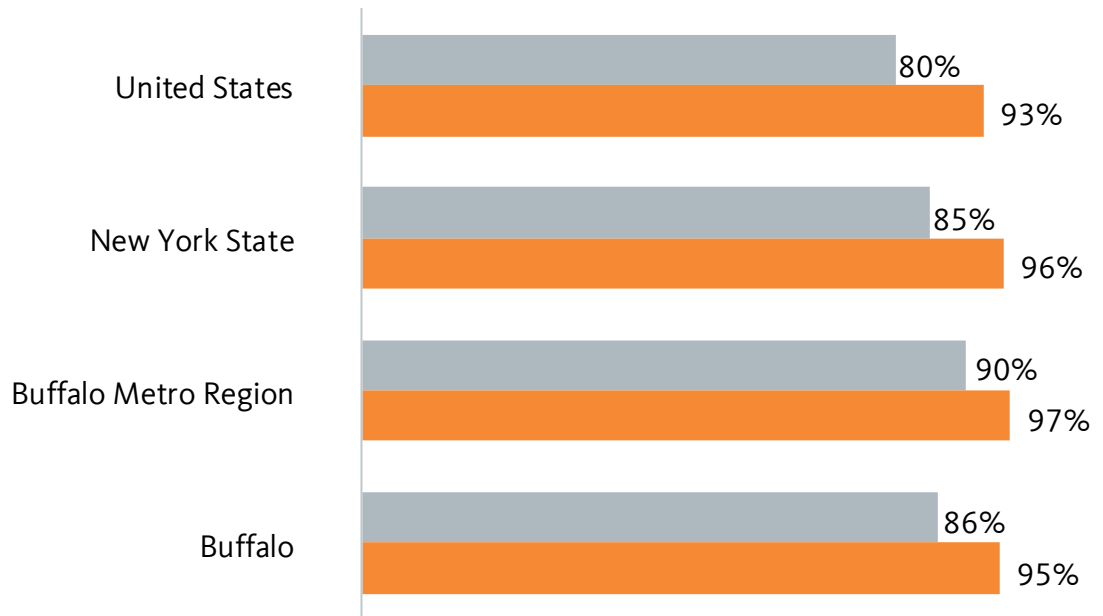
Do residents have access to health insurance and health-care services?

Health insurance rates in the city of Buffalo are higher than the national average for both children and adults, though they are lower than the broader Buffalo metro area averages.

Within the city, 86 percent of adults and 95 percent of children are covered.

Health Insurance Rates by Geography, 2014

- 18-64 years
- 0-17 years



Source: Integrated Public Use Microdata Series.
 Note: Data represent a 2010 through 2014 average.

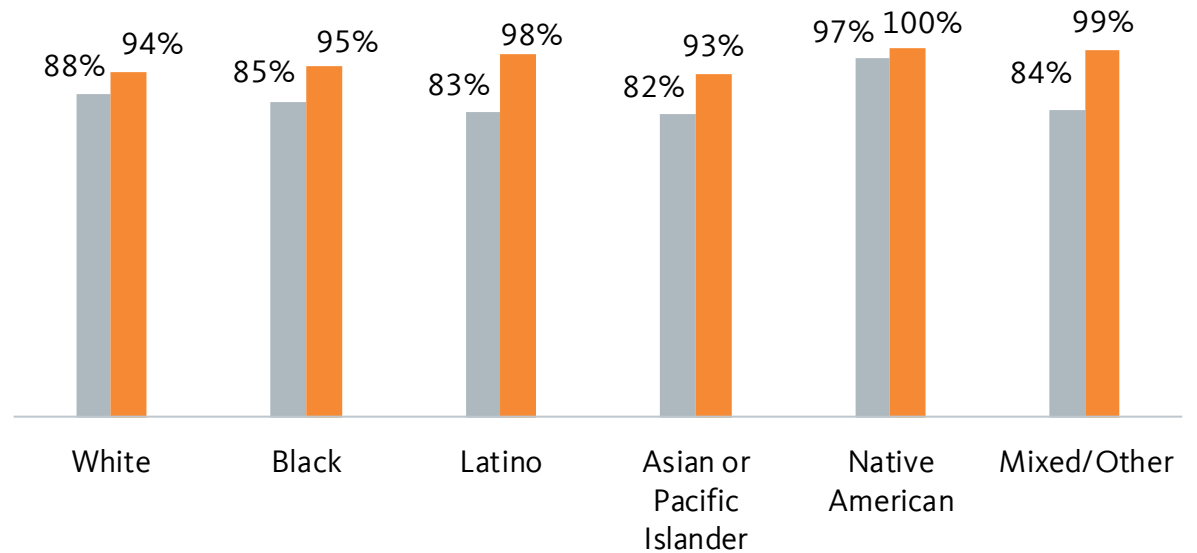
Health of residents

Do residents have access to health insurance and health-care services?

Asian or Pacific Islander and Latino adults, two of the city’s fastest growing populations, are among the least likely to have health insurance. Just 82 percent of Asian or Pacific Islander adults and 83 percent of Latino adults are covered. Without health insurance, many people go without needed medical treatment and are less likely to access preventative care.

Health Insurance Rates by Race/Ethnicity, 2014

- 18-64 years
- 0-17 years



Source: Integrated Public Use Microdata Series.
 Note: Data represent a 2010 through 2014 average.

Connectedness

Highlights

Are the city's residents and neighborhoods connected to one another and to the region's assets and opportunities?

To build a **culture of health** – where every person, no matter where they live, has an equal opportunity to live the healthiest life possible – we must improve people's opportunities to be healthier in the places where they live, learn, work, and play.

- Low-income Black workers are the most likely to rely on public transit to get to work.
- Black and Latino renters are the most likely to spend more than 30 percent of their incomes on rent.
- Segregation has declined since 1990 but remains high between Black and White residents.

Share of renter households that pay too much:

55%

Share of very low-income Black workers who rely on public transit:

30%

Share of Whites who would need to move to achieve Black-White integration:

68%

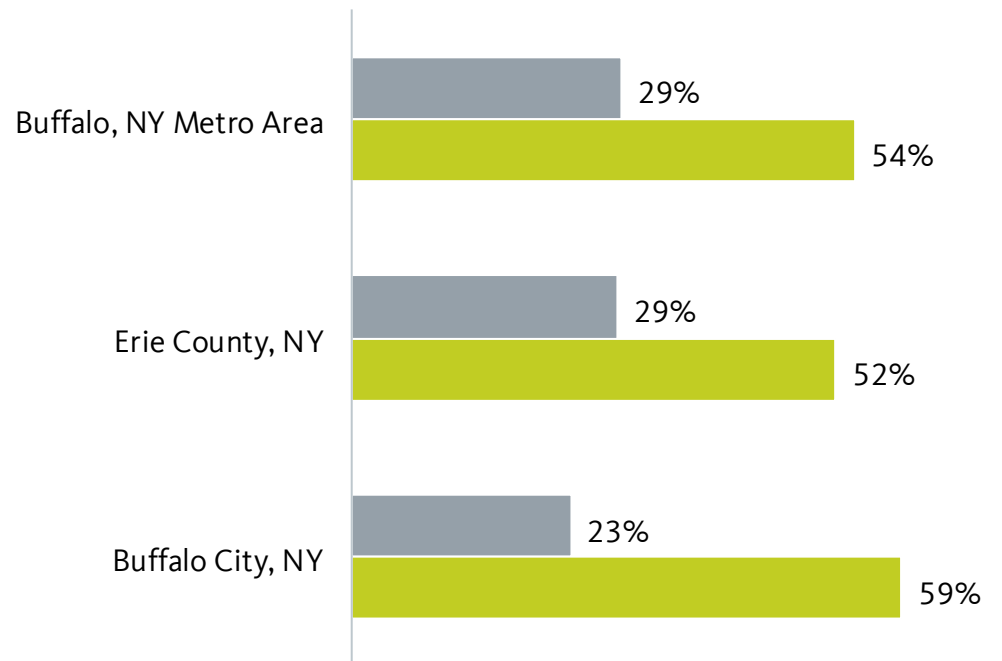
Connectedness

Can all residents access affordable, quality housing?

The share of affordable rental housing is higher in Buffalo than in the county and region overall. In Buffalo, 23 percent of jobs are low wage (paying \$1,250 per month or less) and 59 percent of rental units are affordable (with rent less than \$750 per month, which is about 30 percent of the combined income of two low-wage workers).

Share of Low-Wage Jobs and Affordable Rental Housing Units, 2014

- Share of jobs that are low-wage
- Share of rental housing units that are affordable



Source: Housing data from the U.S. Census Bureau and jobs data from the 2012 Longitudinal-Employer Household Dynamics.
 Note: Data represent a 2010 through 2014 average.

Connectedness

Can all residents access affordable, quality housing?

The number of low-wage jobs and affordable rental housing units is similar in Buffalo. While there are about twice as many low-wage jobs as affordable rental housing units in Erie County and the Buffalo metro area overall, the ratio is close to one in the city of Buffalo. Still, not all low-wage workers can find quality, safe, and affordable housing.

Low-Wage Jobs, Affordable Rental Housing, and Jobs-Housing Ratio, 2014

	Jobs (2012)		Housing (2014)			Jobs-Housing Ratios	
	All	Low-wage	All	Rental*	Affordable Rental*	All Jobs: All Housing	Low-wage Jobs-Affordable Rentals
Buffalo City, NY	137,037	32,166	111,444	63,445	37,457	1.2	0.9
Erie County, NY	473,199	134,865	381,783	128,051	66,561	1.2	2.0
Buffalo, NY Metro Area	544,248	157,367	470,035	152,585	82,369	1.2	1.9

*Includes only those units paid for in cash rent.

Source: Housing data from the U.S. Census Bureau and jobs data from the 2012 Longitudinal Employer-Household Dynamics.
 Note: Housing data represent a 2010 through 2014 average.

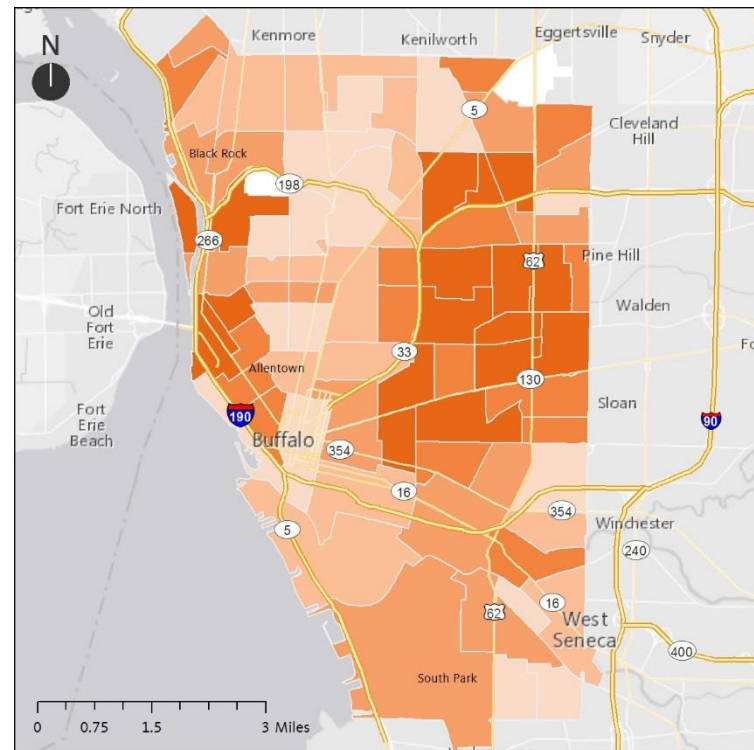
Connectedness

Can all residents access affordable, quality housing?

High rent burden occurs throughout the city. In several communities, the majority of renter households are rent burdened (spending more than 30 percent of income on rent); those on the east side are particularly affected.

Percent Rent-Burdened Households by Census Tract, 2014

- Less than 42%
- 42% to 54%
- 54% to 62%
- 62% to 68%
- 68% or more



Sources: U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community. Universe includes all renter-occupied households with cash rent.
 Note: Data represent a 2010 through 2014 average. Areas in white are missing data.

Connectedness

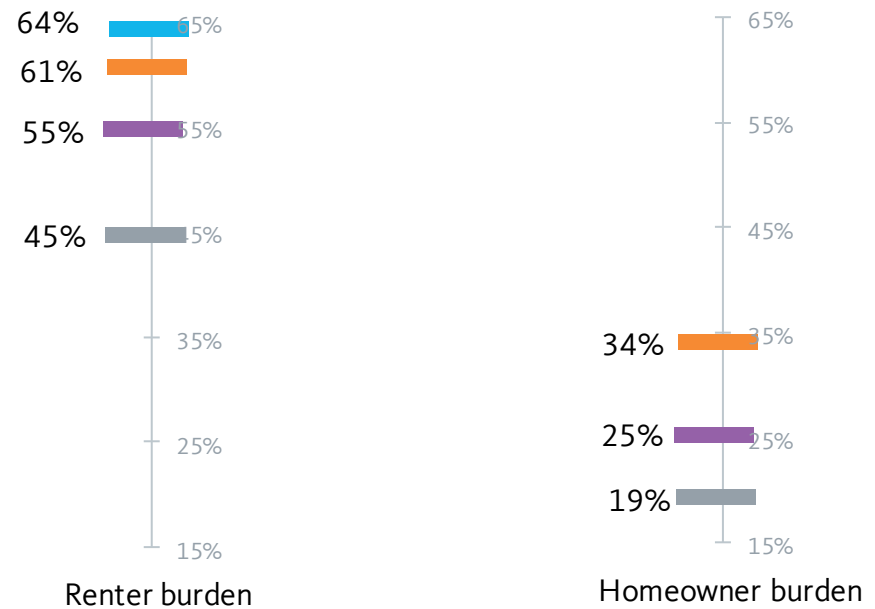
Can all residents access affordable, quality housing?

More than half of renter households are rent burdened while a quarter of homeowner households are cost burdened

(spending more than 30 percent of income on housing costs). Black households are more likely than White households to be cost burdened, regardless of whether they rent or own.

Renter Housing Burden and Homeowner Housing Burden by Race/Ethnicity, 2014

- All
- White
- Black
- Latino



Source: Integrated Public Use Microdata Series. Universe includes all renter-occupied households (no group quarters) with cash rent for renter burden and all owner-occupied households (no group quarters) for homeowner burden. Note: Data represent a 2010 through 2014 average. Data for some racial/ethnic groups are excluded due to small sample size.

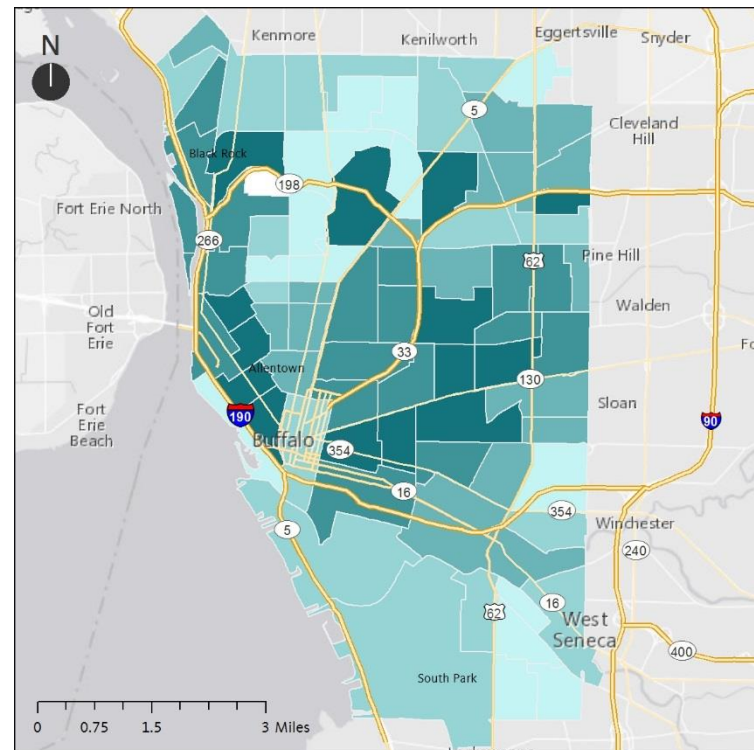
Connectedness

Do residents have transportation choices?

Car access varies by neighborhood, and many of those with low rates of access are far away from transit hubs. There are several census tracts where 43 percent of households or more do not have a vehicle and likely rely on public transit.

Percent Households without a Vehicle by Census Tract, 2014

- Less than 16%
- 16% to 27%
- 27% to 33%
- 33% to 43%
- 43% or more



Sources: U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community. Universe includes all households (no group quarters).
 Note: Data represent a 2010 through 2014 average. Areas in white are missing data.

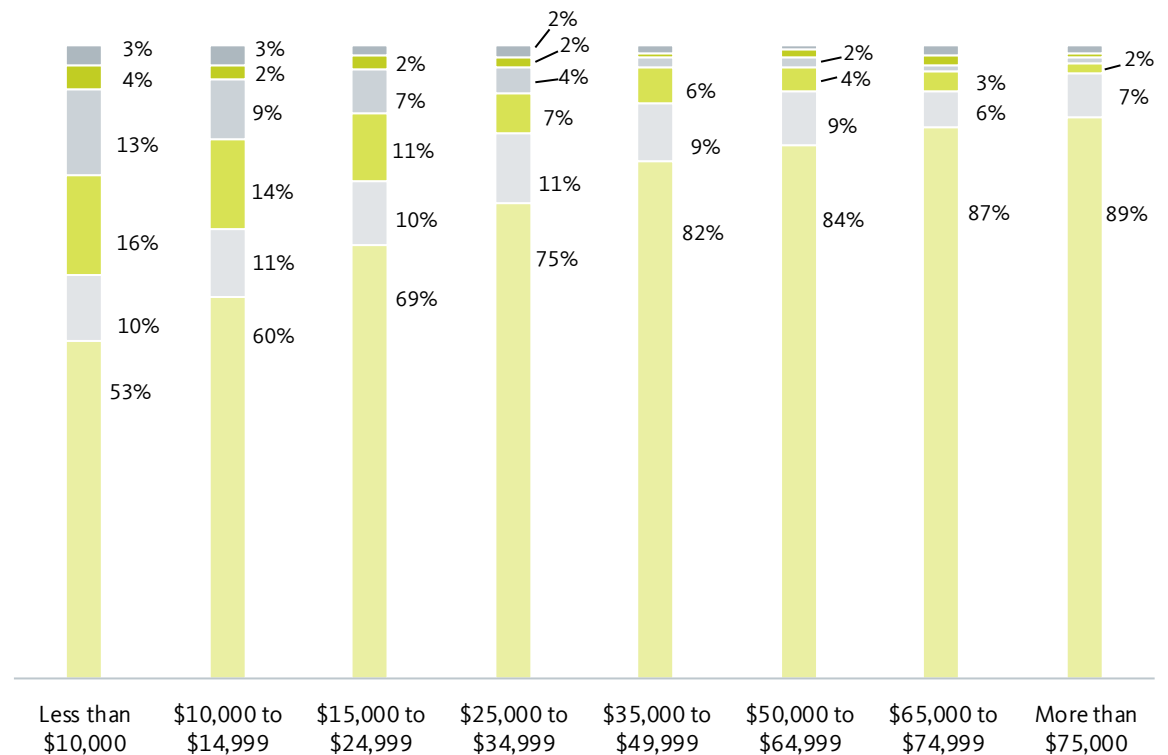
Connectedness

Do residents have transportation choices?

Lower-income residents are less likely to drive alone to work than those with higher income. While 77 percent of all residents drive alone to work, single-driver commuting varies by income, with 53 percent of workers earning less than \$10,000 a year driving alone compared with 89 percent of those earning more than \$75,000 a year.

Means of Transportation to Work by Annual Earnings, 2014

- Worked at home
- Other
- Walked
- Public transportation
- Auto-carpool
- Auto-alone



Source: U.S. Census Bureau. Universe includes workers ages 16 and older with earnings.
 Note: Data represent a 2010 through 2014 average.

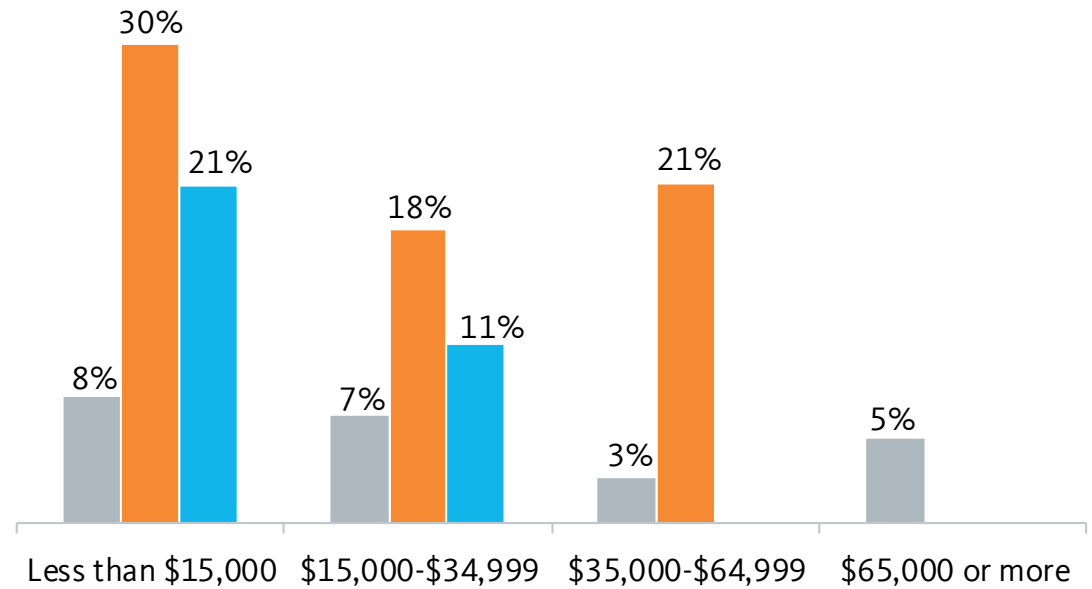
Connectedness

Do residents have transportation choices?

People of color are more likely than Whites to rely on the regional transit system to get to work. Black and low-income Latino workers are the most likely to use public transit. Middle-income Black workers are seven times as likely as their White counterparts to take public transit to work.

Percent Using Public Transit by Annual Earnings and Race/Ethnicity, 2014

- White
- Black
- Latino



Source: Integrated Public Use Microdata Series. Universe includes workers ages 16 and older with earnings.
 Note: Data represent a 2010 through 2014 average. Data for some racial/ethnic groups in some earnings categories are excluded due to small sample size.

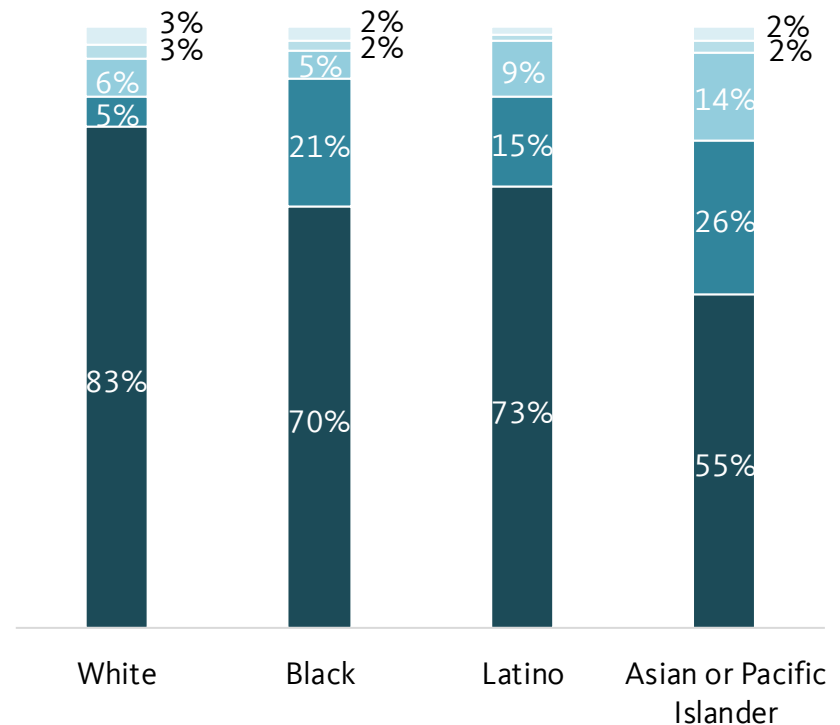
Connectedness

Do residents have transportation choices?

Workers of color are more likely to use the bus and less likely to drive to work than White workers. While 21 percent of Black workers, 15 percent of Latino workers, and 26 percent of Asian or Pacific Islander workers commute to work by bus, only 5 percent of White workers do.

Percent of Workers by Mode of Transportation and Race/Ethnicity, 2014

- Other
- Worked at home
- Walked only
- Bus or streetcar
- Auto, truck, or van



Source: Integrated Public Use Microdata Series. Universe includes people ages 16 and older who worked during the week prior to the survey.
 Note: Data represent a 2010 through 2014 average.

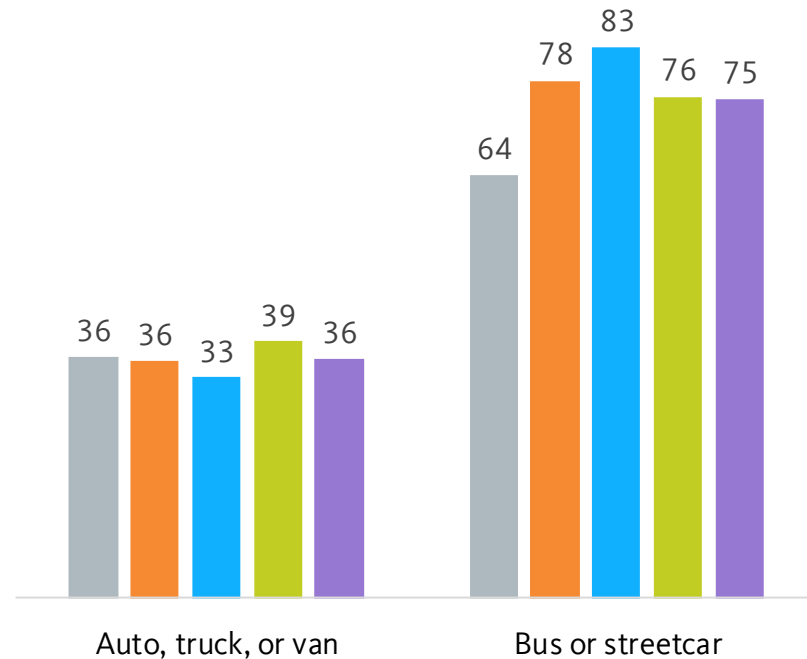
Connectedness

Do residents have transportation choices?

Commute times are much longer for bus riders, and particularly bus riders of color, compared to those who drive to work. The average daily commute to and from work is 78 minutes for Black bus riders, 83 minutes for Latino bus riders, and 76 minutes for Asian or Pacific Islander bus riders.

Average Daily Travel Time to Work by Mode of Transportation and Race/Ethnicity (in minutes), 2014

- White
- Black
- Latino
- Asian or Pacific Islander
- All



Source: Integrated Public Use Microdata Series. Universe includes people ages 16 and older who worked outside of their home during the week prior to the survey.
 Note: Data represent a 2010 through 2014 average. Daily travel time is calculated by multiplying reported one-way daily commute time by two.

Connectedness

Do residents have transportation choices?

Workers of color who ride the bus experience a significant travel time penalty compared to their White counterparts and to those who drive to work. The average Black worker who rides the bus spends 59 more hours in transit each year compared to White bus riders and 174 more hours (more than four full work weeks) compared to White workers who drive.

Annual Travel Time Penalty (in hours) for Workers Who Ride the Bus by Race/Ethnicity, 2014

Compared to:	Black workers		Latino workers		Asian or Pacific Islander workers		All workers of color combined	
	Per worker	All workers	Per worker	All workers	Per worker	All workers	Per worker	All workers
White workers who ride the bus	59	392,582	80	97,019	49	44,772	62	562,862
All workers who drive	175	1,159,713	196	236,918	165	149,407	180	1,626,070
White workers who drive	174	1,152,149	195	235,538	164	148,376	177	1,599,583

Source: Integrated Public Use Microdata Series. Universe includes people ages 16 and older who worked outside of their home during the week prior to the survey.

Note: Data represent a 2010 through 2014 average. Annual travel time penalty assumes five days of work per week and 50 weeks per year. Travel time penalty per worker is calculated by multiplying the difference in average daily travel time to work between bus riders of each race/ethnicity and the comparison group (White bus riders, all drivers, and White drivers) by 250 (i.e., five days per week times 50 weeks per year). Travel time penalty for all workers is calculated by multiplying the per worker penalty by the number of workers of each race/ethnicity who ride the bus to work.

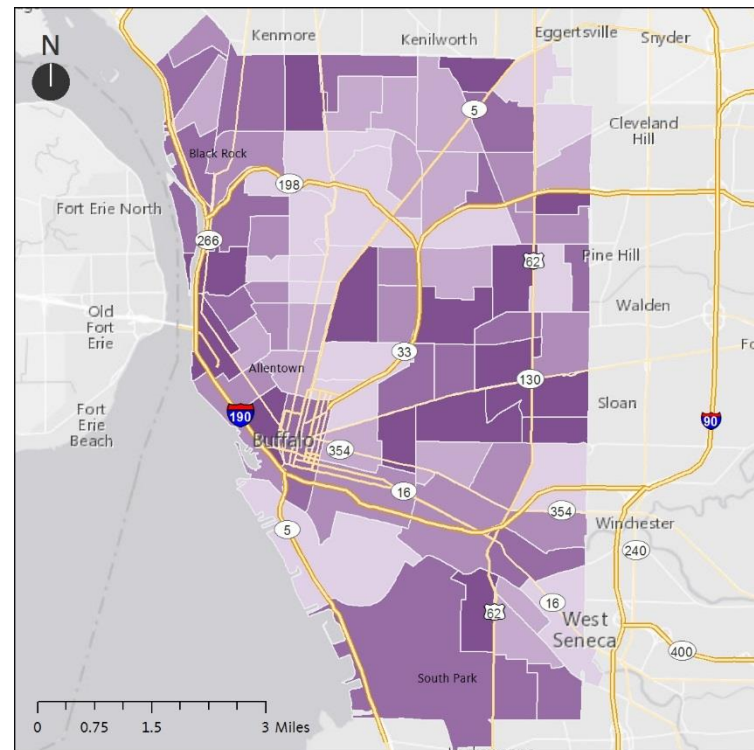
Connectedness

Do residents have transportation choices?

Neighborhoods with the highest commute times are scattered throughout the region. A cluster of eastside neighborhoods have commute times that are 23 minutes or longer.

Average Travel Time to Work (in minutes) by Census Tract, 2014

- Less than 18 minutes
- 18 to 20 minutes
- 20 to 21 minutes
- 21 to 23 minutes
- 23 minutes or more



Sources: U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community. Universe includes all persons ages 16 or older who work outside of home. Note: Data represent a 2010 through 2014 average. Areas in white are missing data.

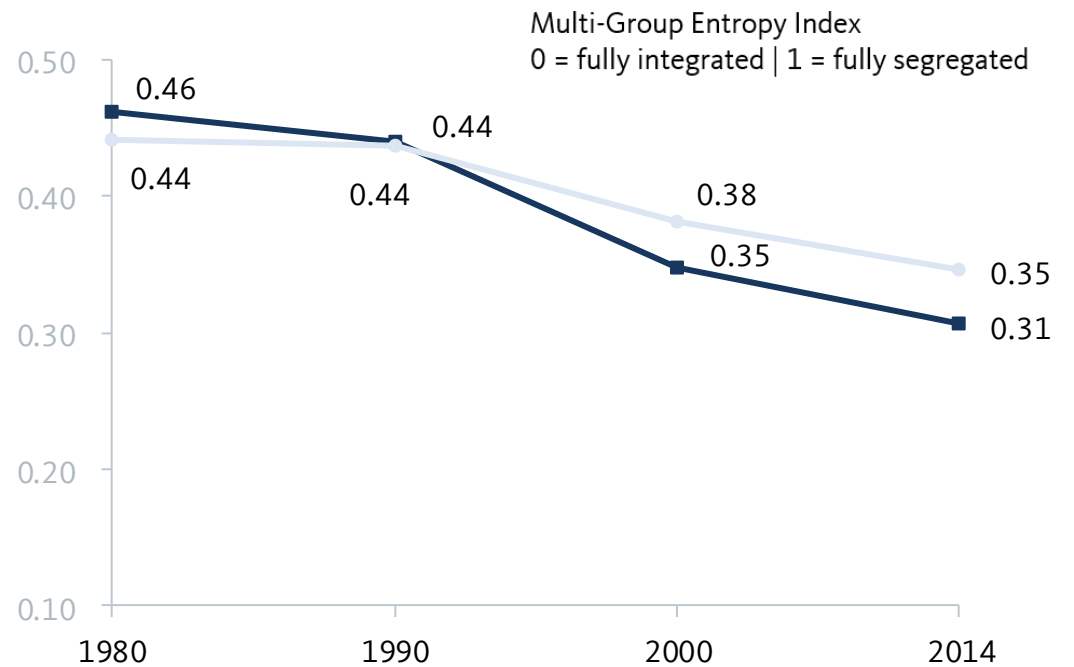
Connectedness

Do neighborhoods reflect the region's diversity?

Buffalo was more segregated than the nation overall in 1980, but segregation has declined each decade since. The entropy index ranges from 0, if all census tracts had the same racial/ethnic composition as the city (fully integrated), to 1, if all census tracts contained one group only (fully segregated).

Residential Segregation, 1980 to 2012

- Buffalo
- United States



Source: U.S. Census Bureau.
Note: Data for 2014 represent a 2010 through 2014 average.

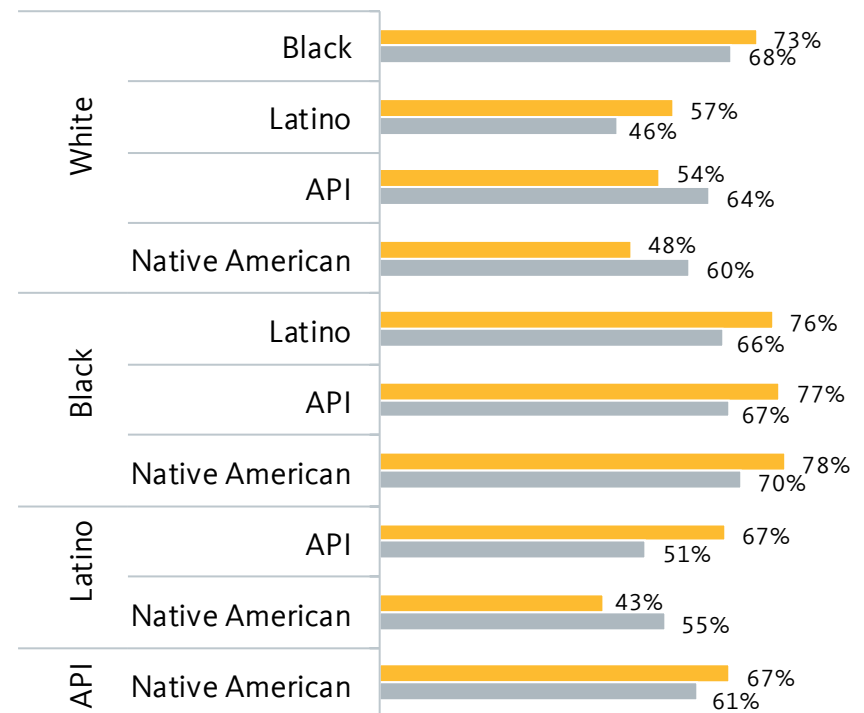
Connectedness

Do neighborhoods reflect the region's diversity?

Segregation has also declined for most groups based on the dissimilarity index. Latino-Asian or Pacific Islander segregation declined the most in Buffalo from 1990 to 2014. In 2014, segregation remained high between Whites and Blacks in the city: 68 percent of Whites would have to move to achieve Black-White integration.

Residential Segregation, 1990 and 2014, Measured by the Dissimilarity Index

- 1990
- 2014



Source: U.S. Census Bureau.
 Note: Data for 2014 represent a 2010 through 2014 average.

Economic benefits

Highlights

What are the benefits of racial economic inclusion to the broader economy?

- The region's economy could have been over \$4 billion stronger in 2014 if its racial gaps in income were eliminated.
- Asians or Pacific Islanders would see a 127 percent gain in average annual income with racial equity in the city while Latinos would see an increase of 98 percent.
- For people of color as a whole, 70 percent of projected income gains would come from closing racial employment gaps in the city.

Potential gain in GDP with racial equity in the broader region:

\$4.3B

Percentage gain in average Asian or Pacific Islander income with racial equity:

127%

Economic benefits of equity

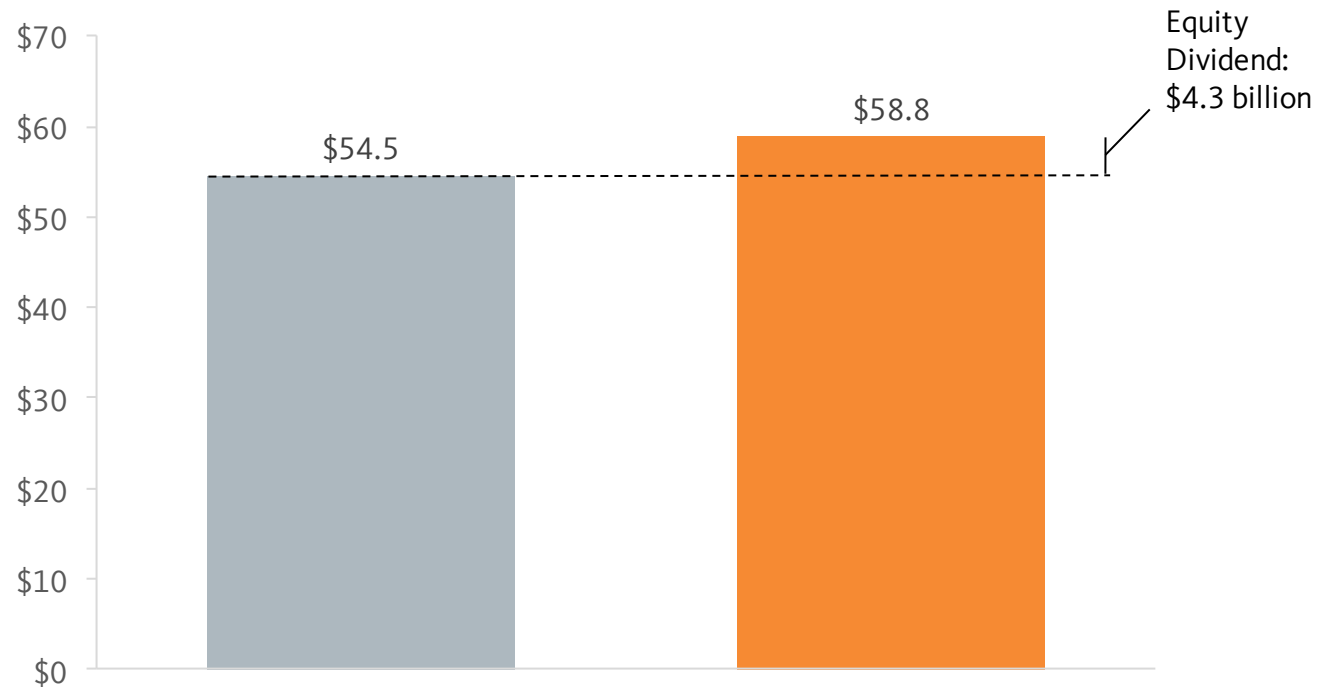
What are the economic benefits of inclusion?

The Buffalo metro area’s GDP would have been \$4.3 billion higher in 2014 if its racial gaps in income were eliminated.

This equity dividend is more than double the total 2017 Erie and Niagara County budgets combined.

Actual GDP and Estimated GDP without Racial Gaps in Income, 2014

- GDP in 2014 (billions)
- GDP if racial gaps in income were eliminated (billions)



Sources: U.S. Bureau of Economic Analysis; Integrated Public Use Microdata Series; U.S. Bureau of Labor Statistics.
 Note: Analysis reflects the Buffalo-Niagara Falls, NY Core Based Statistical Area as defined by the U.S. Office of Management and Budget.

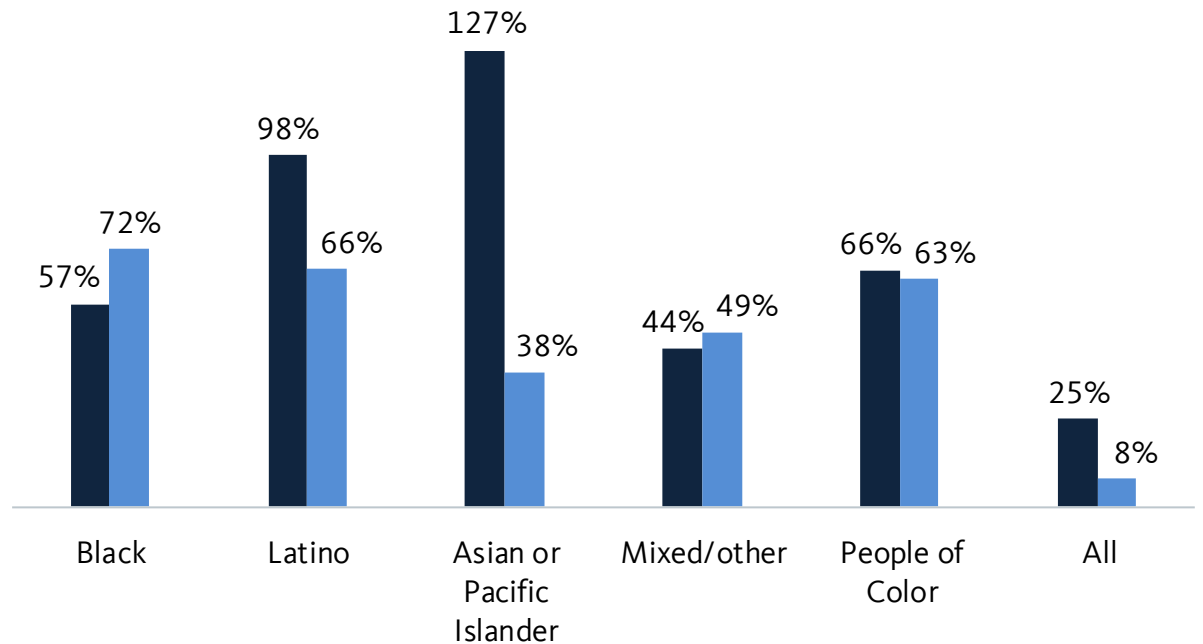
Economic benefits of equity

What are the economic benefits of inclusion?

Asians or Pacific Islanders would see the largest percent increase in average income with racial equity in the city of Buffalo at 127 percent, followed by Latinos at 98 percent. At the regional level, Black residents would see the largest gains in average income at 72 percent.

Percentage Gain in Income with Racial Equity, 2014

- Buffalo
- Buffalo, NY Metro Area



Sources: U.S. Bureau of Economic Analysis; Integrated Public Use Microdata Series; U.S. Bureau of Labor Statistics.

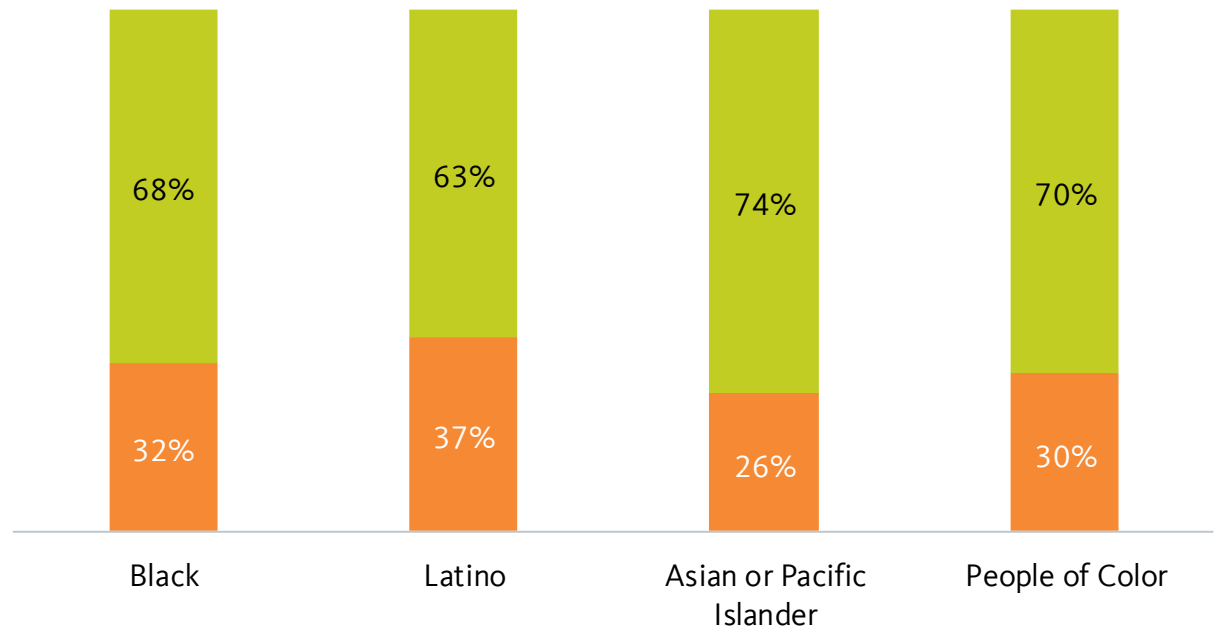
Economic benefits of equity

What are the economic benefits of inclusion?

Within the city, most of the gains in average income would come from closing employment gaps between White residents and people of color. Nearly three-fourths of the gains for the Asian or Pacific Islander population, for example, would come from an increase in employment.

Source of Income Gains, 2014

- Employment
- Wages



Sources: U.S. Bureau of Economic Analysis; Integrated Public Use Microdata Series; U.S. Bureau of Labor Statistics.

Data and methods

Data source summary and geography

Selected terms and general notes

Broad racial/ethnic origin

Nativity

Detailed racial/ethnic ancestry

Other selected terms

General notes on analyses

Summary measures from IPUMS microdata

Adjustments made to census summary data on race/ethnicity by age

Adjustments made to demographic projections

National projections

County and regional projections

Estimates and adjustments made to BEA data on GDP

Adjustments at the state and national levels

County and metropolitan area estimates

Middle-class analysis

Assembling a complete dataset on employment and wages by industry

Growth in jobs and earnings by industry wage level, 1990 to 2015

Analysis of occupations by opportunity level

Health data and analysis

Analysis of access to healthy food

Air pollution data and analysis

Estimated life expectancy at birth

Measures of diversity and segregation

Estimates of GDP without racial gaps in income

Data and methods

Data source summary and geography

Unless otherwise noted, all of the data and analyses presented in this profile are the product of PolicyLink and USC Program for Environmental and Regional Equity (PERE), and reflect the city of Buffalo. The specific data sources are listed in the table shown here.

While much of the data and analysis presented in this profile are fairly intuitive, in the following pages we describe some of the estimation techniques and adjustments made in creating the underlying database, and provide more detail on terms and methodology used. Finally, the reader should bear in mind that while only a single region is profiled here, many of the analytical choices in generating the underlying data and analyses were made with an eye toward replicating the analyses in other regions and the ability to update them over time. Thus, while more regionally specific data may be available for some indicators, the data in this profile draws from our regional equity indicators database that provides data that are comparable and replicable over time.

Source	Dataset
Integrated Public Use Microdata Series (IPUMS)	1980 5% State Sample 1990 5% Sample 2000 5% Sample 2010 American Community Survey, 5-year microdata sample 2010 American Community Survey 2014 American Community Survey, 5-year microdata sample
U.S. Census Bureau	1980 Summary Tape File 1 (STF1) 1980 Summary Tape File 2 (STF2) 1980 Summary Tape File 3 (STF3) 1990 Summary Tape File 2A (STF2A) 1990 Modified Age/Race, Sex and Hispanic Origin File (MARS) 1990 Summary Tape File 4 (STF4) 2000 Summary File 1 (SF1) 2010 Summary File 1 (SF1) 2014 ACS 5-year Summary File (2012 5-year ACS) 2012 Longitudinal Employer-Household Dynamics, LODES 7 2010 TIGER/Line Shapefiles, 2010 Census Block Groups 2010 TIGER/Line Shapefiles, 2010 Census Tracts 2010 TIGER/Line Shapefiles, 2010 Counties
Geolytics	1980 Long Form in 2010 Boundaries 1990 Long Form in 2010 Boundaries 2000 Long Form in 2010 Boundaries
Woods & Poole Economics, Inc.	2016 Complete Economic and Demographic Data Source
U.S. Bureau of Economic Analysis	Gross Domestic Product by State Gross Domestic Product by Metropolitan Area Local Area Personal Income Accounts, CA30: Regional Economic Profile
U.S. Bureau of Labor Statistics	Quarterly Census of Employment and Wages Local Area Unemployment Statistics Occupational Employment Statistics
New York State Department of Labor	Long-Term Industry Employment Projections, 2012-2022 Long-Term Occupational Employment Projections, 2012-2022
Centers for Disease Control and Prevention	Behavioral Risk Factor Surveillance System (BRFSS) WONDER Compressed Mortality Data
The Reinvestment Fund	2014 Analysis of Limited Supermarket Access (LSA)
U.S. Environmental Protection Agency	2011 National-Scale Air Toxics Assessment (NATA)
Georgetown University Center on Education and the Workforce	Updated projections of education requirements of jobs in 2020, originally appearing in: Recovery: Job Growth And Education Requirements Through 2020; State Report

Data and methods

Selected terms and general notes

Broad racial/ethnic origin

In all of the analyses presented, all categorization of people by race/ethnicity and nativity is based on individual responses to various census surveys. All people included in our analysis were first assigned to one of six mutually exclusive racial/ethnic categories, depending on their response to two separate questions on race and Hispanic origin as follows:

- “White” and “non-Hispanic White” are used to refer to all people who identify as White alone and do not identify as being of Hispanic origin.
- “Black” and “African American” are used to refer to all people who identify as Black or African American alone and do not identify as being of Hispanic origin.
- “Latino” refers to all people who identify as being of Hispanic origin, regardless of racial identification.
- “Asian American and Pacific Islander,” “Asian or Pacific Islander,” “Asian,” and “API” are used to refer to all people who identify as Asian American or Pacific Islander alone and do not identify as being of Hispanic origin.

- “Native American” and “Native American and Alaska Native” are used to refer to all people who identify as Native American or Alaskan Native alone and do not identify as being of Hispanic origin.
- “Mixed/other” and “other or mixed race” are used to refer to all people who identify with a single racial category not included above, or identify with multiple racial categories, and do not identify as being of Hispanic origin.
- “People of color” or “POC” is used to refer to all people who do not identify as non-Hispanic White.

Nativity

The term “U.S.-born” refers to all people who identify as being born in the United States (including U.S. territories and outlying areas), or born abroad to American parents. The term “immigrant” refers to all people who identify as being born abroad, outside of the United States, to non-American parents.

Detailed racial/ethnic ancestry

Given the diversity of ethnic origin and large presence of immigrants among the Latino and Asian populations, we sometimes present data for more detailed racial/ethnic categories within these groups. In order to maintain consistency with the broad racial/ethnic categories, and to enable the examination of second-and-higher generation immigrants, these more detailed categories (referred to as “ancestry”) are drawn from the first response to the census question on ancestry, recorded in the IPUMS variable “ANCESTR1.” For example, while country-of-origin information could have been used to identify Filipinos among the Asian population or Salvadorans among the Latino population, it could only do so for immigrants, leaving only the broad “Asian” and “Latino” racial/ethnic categories for the U.S.-born population. While this methodological choice makes little difference in the numbers of immigrants by origin we report – i.e., the vast majority of immigrants from El Salvador mark “Salvadoran” for their ancestry – it is an important point of clarification.

Data and methods

Selected terms and general notes

(continued)

Other selected terms

Below we provide some definitions and clarification around some of the terms used in the profile:

- The terms “region,” “metropolitan area,” “metro area,” and “metro” are used interchangeably to refer to the geographic areas defined as Metropolitan Statistical Areas under the OMB’s December 2003 definitions.
- The term “neighborhood” is used at various points throughout the profile. While in the introductory portion of the profile this term is meant to be interpreted in the colloquial sense, in relation to any data analysis it refers to census tracts.
- The term “communities of color” generally refers to distinct groups defined by race/ethnicity among people of color.
- The term “high school diploma” refers to both an actual high school diploma as well as high school equivalency or a General Educational Development (GED) certificate.
- The term “full-time” workers refers to all persons in the IPUMS microdata who reported working at least 45 or 50 weeks

(depending on the year of the data) and usually worked at least 35 hours per week during the year prior to the survey. A change in the “weeks worked” question in the 2008 ACS, as compared with prior years of the ACS and the long form of the decennial census, caused a dramatic rise in the share of respondents indicating that they worked at least 50 weeks during the year prior to the survey. To make our data on full-time workers more comparable over time, we applied a slightly different definition in 2008 and later than in earlier years: in 2008 and later, the “weeks worked” cutoff is at least 50 weeks while in 2007 and earlier it is 45 weeks. The 45-week cutoff was found to produce a national trend in the incidence of full-time work over the 2005-2010 period that was most consistent with that found using data from the March Supplement of the Current Population Survey, which did not experience a change to the relevant survey questions. For more information, see:

https://www.census.gov/content/dam/Census/library/working-papers/2012/demo/Gottschalck_2012FCSM_VII-B.pdf.

General notes on analyses

Below we provide some general notes about the analysis conducted:

- In regard to monetary measures (income, earnings, wages, etc.) the term “real” indicates the data has been adjusted for inflation. All inflation adjustments are based on the Consumer Price Index for all Urban Consumers (CPI-U) from the U.S. Bureau of Labor Statistics, available at: <https://www.bls.gov/cpi/cpid1612.pdf> (see table 24).

Data and methods

Summary measures from IPUMS microdata

Although a variety of data sources were used, much of our analysis is based on a unique dataset created using microdata samples (i.e., “individual-level” data) from the Integrated Public Use Microdata Series (IPUMS), for four points in time: 1980, 1990, 2000, and 2010-2014 pooled together. While the 1980 through 2000 files are based on the decennial census and each cover about 5 percent of the U.S. population, the 2010-2014 files are from the ACS and cover only about 1 percent of the U.S. population each. Five years of ACS data were pooled together to improve the statistical reliability and to achieve a sample size that is comparable to that available in previous years. Survey weights were adjusted as necessary to produce estimates that represent an average over the 2010-2014 period.

Compared with the more commonly used census “summary files,” which include a limited set of summary tabulations of population and housing characteristics, use of the microdata samples allows for the flexibility to create more illuminating metrics

of equity and inclusion, and provides a more nuanced view of groups defined by age, race/ethnicity, and nativity for various geographies in the United States.

The IPUMS microdata allows for the tabulation of detailed population characteristics, but because such tabulations are based on samples, they are subject to a margin of error and should be regarded as estimates – particularly in smaller regions and for smaller demographic subgroups. In an effort to avoid reporting highly unreliable estimates, we do not report any estimates that are based on a universe of fewer than 100 individual survey respondents.

A key limitation of the IPUMS microdata is geographic detail. Each year of the data has a particular lowest level of geography associated with the individuals included, known as the Public Use Microdata Area (PUMA) for years 1990 and later, or the County Group in 1980. PUMAs are generally drawn to contain a population of about 100,000, and vary greatly in geographic size

from being fairly small in densely populated urban areas, to very large in rural areas, often with one or more counties contained in a single PUMA.

The major challenge for our purposes is that PUMAs do not neatly align with the boundaries of cities and metro areas, often with several PUMAs entirely contained within the core of the city or metro areas but several other, more peripheral PUMAs straddling the boundary.

Because PUMAs do not neatly align with the boundaries of cities and metro areas, we created a geographic crosswalk between PUMAs and each geography for the 1980, 1990, 2000, and 2010-2014 microdata. For simplicity, the description below refers only to the PUMA-to-city crosswalk but the same procedure was used to generate the PUMA-to-metro area crosswalk.

We first estimated the share of each PUMA’s population that fell inside each city using population information specific to each year

Data and methods

Summary measures from IPUMS microdata

(continued)

from Geolytics, Inc. at the 2000 census block group level of geography (2010 population information was used for the 2010-2014 geographic crosswalk). If the share was at least 50 percent, then the PUMAs were assigned to the city and included in generating our city summary measures. For most PUMAs assigned to a city, the share was 100 percent.

For the remaining PUMAs, however, the share was somewhere between 50 and 100 percent, and this share was used as the “PUMA adjustment factor” to adjust downward the survey weights for individuals included in such PUMAs when estimating regional summary measures. Finally, we made one final adjustment to the individual survey weights in all PUMAs assigned to a city: we applied a “regional adjustment factor” to ensure that the weighted sum of the population from the PUMAs assigned to city matched the total population reported in the official census summary files for each year/period. The final adjusted survey weight used to make all city estimates was, thus, equal to the product of

the original survey weight in the IPUMS microdata, the PUMA adjustment factor, and the regional adjustment factor.

To measure geographic fit, we calculated three measures: the share of the city population in each year that was derived from PUMAs that were 80 percent, 90 percent, and 100 percent contained in the city (based on population counts in each year). For example, a city with perfect geographic fit would be one in which 100 percent of the population was derived from PUMAs for which 100 percent of the PUMA population was contained in that city. A city of dubious geographic fit thus might be one in which zero percent of its population was from 80-percent-contained PUMAs (indicating that all of the PUMAs assigned to it were somewhere between 50 and 80 percent contained, since a PUMA must be at least 50 percent to be assigned to the city in the first place).

The table shown below provides the above measures of fit for the city of Buffalo, along with the regional adjustment factor that

was applied (which again, gives a sense of how much the population from PUMAs allocated to the city had to be adjusted to match the actual city population in each year).

Percentage of city population from:	1980	1990	2000	2010-2014
completely contained PUMAs	0.00	1.00	0.63	0.58
90% contained PUMAs	1.00	1.00	1.00	1.00
80% contained PUMAs	1.00	1.00	1.00	1.00
Regional adjustment factor:	1.00	1.01	1.00	1.01

As can be seen, in each year/period, the entire city population from which estimates are drawn is based on PUMAs that are at least 90 percent contained in the city boundaries. Moreover, a comparison of the percentage people of color, the poverty rate, and the percentage immigrant calculated from the IPUMS microdata and the decennial census/ACS summary file for each year/period shows that they are very similar. While the differences are a bit larger for 1980 (with the largest difference of four points found for the percentage people of color and much smaller differences for the other two variables), for all other years the three calculated variables differ by 0.6 percentage points or less.

Data and methods

Adjustments made to census summary data on race/ethnicity by age

For the racial generation gap indicator, we generated consistent estimates of populations by race/ethnicity and age group (under 18, 18-64, and over 64 years of age) for the years 1980, 1990, 2000, and 2014 (which reflects a 2010 through 2014 average), at the county level, which was then aggregated to the regional level and higher. The racial/ethnic groups include non-Hispanic White, non-Hispanic Black, Hispanic/Latino, non-Hispanic Asian and Pacific Islander, non-Hispanic Native American/Alaska Native, and non-Hispanic Other (including other single race alone and those identifying as multiracial). While for 2000, this information is readily available in SF1, for 1980 and 1990, estimates had to be made to ensure consistency over time, drawing on two different summary files for each year.

For 1980, while information on total population by race/ethnicity for all ages combined was available at the county level for all the requisite groups in STF1, for race/ethnicity by age group we had to look to STF2, where it was only available for non-

Hispanic White, non-Hispanic Black, Hispanic, and the remainder of the population. To estimate the number of non-Hispanic Asian and Pacific Islanders, non-Hispanic Native Americans/Alaskan Natives, and non-Hispanic Others among the remainder for each age group, we applied the distribution of these three groups from the overall county population (of all ages) from STF1.

For 1990, population by race/ethnicity at the county level was taken from STF2A, while population by race/ethnicity was taken from the 1990 Modified Age Race Sex (MARS) file – special tabulation of people by age, race, sex, and Hispanic origin. However, to be consistent with the way race is categorized by the Office of Management and Budget’s (OMB) Directive 15, the MARS file allocates all persons identifying as “Other race” or multiracial to a specific race. After confirming that population totals by county were consistent between the MARS file and STF2A, we calculated the number of “Other race” or multiracial that had been added to each racial/ethnic group in each county (for all

ages combined) by subtracting the number that is reported in STF2A for the corresponding group. We then derived the share of each racial/ethnic group in the MARS file that was made up of other or mixed race people and applied this share to estimate the number of people by race/ethnicity and age group exclusive of the other or mixed race category, and finally the number of the other or mixed race people by age group.

For 2014 (which, again, reflects a 2010 through 2014 average), population by race/ethnicity and age was taken from the 2014 ACS 5-year summary file, which provides counts by race/ethnicity and age for the non-Hispanic White, Hispanic/Latino, and total population combined. County by race/ethnicity and age for all people of color combined was derived by subtracting non-Hispanic Whites from the total population.

Data and methods

Adjustments made to demographic projections

National projections

National projections of the non-Hispanic White share of the population are based on the U.S. Census Bureau's 2014 National Population Projections. However, because these projections follow the OMB 1997 guidelines on racial classification and essentially distribute the other single-race alone group across the other defined racial/ethnic categories, adjustments were made to be consistent with the six broad racial/ethnic groups used in our analysis.

Specifically, we compared the percentage of the total population composed of each racial/ethnic group from the Census Bureau's Population Estimates program for 2015 (which follows the OMB 1997 guidelines) to the percentage reported in the 2015 ACS 1-year Summary File (which follows the 2000 Census classification). We subtracted the percentage derived using the 2015 Population Estimates program from the percentage derived using the 2015 ACS to obtain an adjustment factor for each group

(all of which were negative except that for the mixed/other group) and carried this adjustment factor forward by adding it to the projected percentage for each group in each projection year. Finally, we applied the resulting adjusted projected population distribution by race/ethnicity to the total projected population from the 2014 National Population Projections to get the projected number of people by race/ethnicity in each projection year.

County and regional projections

Similar adjustments were made in generating county and regional projections of the population by race/ethnicity. Initial county-level projections were taken from Woods & Poole Economics, Inc. Like the 1990 MARS file described above, the Woods & Poole projections follow the OMB Directive 15-race categorization, assigning all persons identifying as other or multiracial to one of five mutually exclusive race categories: White, Black, Latino, Asian/Pacific Islander, or Native American. Thus, we first generated an adjusted version of the county-level Woods &

Poole projections that removed the other or multiracial group from each of these five categories. This was done by comparing the Woods & Poole projections for 2010 to the actual results from SF1 of the 2010 Census, figuring out the share of each racial/ethnic group in the Woods & Poole data that was composed of other or mixed race persons in 2010, and applying it forward to later projection years. From these projections, we calculated the county-level distribution by race/ethnicity in each projection year for five groups (White, Black, Latino, Asian/Pacific Islander, and Native American), exclusive of other and mixed race people.

To estimate the county-level share of population for those classified as Other or mixed race in each projection year, we then generated a simple straight-line projection of this share using information from SF1 of the 2000 and 2010 Census. Keeping the projected other or mixed race share fixed, we allocated the remaining population share to each of the other five racial/ethnic groups by applying the racial/ethnic distribution implied

Data and methods

Adjustments made to demographic projections

(continued)

by our adjusted Woods & Poole projections for each county and projection year. The result was a set of adjusted projections at the county level for the six broad racial/ethnic groups included in the profile, which were then applied to projections of the total population by county from the Woods & Poole data to get projections of the number of people for each of the six racial/ethnic groups.

Finally, an Iterative Proportional Fitting (IPF) procedure was applied to bring the county-level results into alignment with our adjusted national projections by race/ethnicity described above. The final adjusted county results were then aggregated to produce a final set of projections at the metro area and state levels.

Data and methods

Estimates and adjustments made to BEA data on GDP

The data on national gross domestic product (GDP) and its analogous regional measure, gross regional product (GRP) – both referred to as GDP in the text – are based on data from the U.S. Bureau of Economic Analysis (BEA). However, due to changes in the estimation procedure used for the national (and state-level) data in 1997, and a lack of metropolitan area estimates prior to 2001, a variety of adjustments and estimates were made to produce a consistent series at the national, state, metropolitan-area, and county levels from 1969 to 2014.

Adjustments at the state and national levels

While data on gross state product (GSP) are not reported directly in the profile, they were used in making estimates of gross product at the county level for all years and at the regional level prior to 2001, so we applied the same adjustments to the data that were applied to the national GDP data. Given a change in BEA's estimation of gross product at the state and national levels from a standard industrial classification (SIC) basis to a North American Industry Classification

System (NAICS) basis in 1997, data prior to 1997 were adjusted to avoid any erratic shifts in gross product in that year. While the change to a NAICS basis occurred in 1997, BEA also provides estimates under an SIC basis in that year. Our adjustment involved figuring the 1997 ratio of NAICS-based gross product to SIC-based gross product for each state and the nation, and multiplying it by the SIC-based gross product in all years prior to 1997 to get our final estimate of gross product at the state and national levels.

County and metropolitan area estimates

To generate county-level estimates for all years, and metropolitan-area estimates prior to 2001, a more complicated estimation procedure was followed. First, an initial set of county estimates for each year was generated by taking our final state-level estimates and allocating gross product to the counties in each state in proportion to total earnings of employees working in each county – a BEA variable that is available for all counties and years. Next, the initial county estimates were aggregated to metropolitan-area level, and

were compared with BEA's official metropolitan-area estimates for 2001 and later. They were found to be very close, with a correlation coefficient very close to one (0.9997). Despite the near-perfect correlation, we still used the official BEA estimates in our final data series for 2001 and later. However, to avoid any erratic shifts in gross product during the years up until 2001, we made the same sort of adjustment to our estimates of gross product at the metropolitan-area level that was made to the state and national data – we figured the 2001 ratio of the official BEA estimate to our initial estimate, and multiplied it by our initial estimates for 2000 and earlier to get our final estimate of gross product at the metropolitan-area level.

We then generated a second iteration of county-level estimates – just for counties included in metropolitan areas – by taking the final metropolitan-area-level estimates and allocating gross product to the counties in each metropolitan area in proportion to total earnings of employees working in each

Data and methods

Estimates and adjustments made to BEA data on GDP

(continued)

county. Next, we calculated the difference between our final estimate of gross product for each state and the sum of our second-iteration county-level gross product estimates for metropolitan counties contained in the state (that is, counties contained in metropolitan areas). This difference, total nonmetropolitan gross product by state, was then allocated to the nonmetropolitan counties in each state, once again using total earnings of employees working in each county as the basis for allocation. Finally, one last set of adjustments was made to the county-level estimates to ensure that the sum of gross product across the counties contained in each metropolitan area agreed with our final estimate of gross product by metropolitan area, and that the sum of gross product across the counties contained in state agreed with our final estimate of gross product by state. This was done using a simple IPF procedure.

We should note that BEA does not provide data for all counties in the United States, but rather groups some counties that have had boundary changes since 1969 into county

groups to maintain consistency with historical data. Any such county groups were treated the same as other counties in the estimate techniques described above.

Data and methods

Middle-class analysis

To analyze middle-class decline over the past four decades, we began with the regional household income distribution in 1979 – the year for which income is reported in the 1980 Census (and the 1980 IPUMS microdata). The middle 40 percent of households were defined as “middle class,” and the upper and lower bounds in terms of household income (adjusted for inflation to be in 2010 dollars) that contained the middle 40 percent of households were identified. We then adjusted these bounds over time to increase (or decrease) at the same rate as real average household income growth, identifying the share of households falling above, below, and in between the adjusted bounds as the upper, lower, and middle class, respectively, for each year shown. Thus, the analysis of the size of the middle class examined the share of households enjoying the same relative standard of living in each year as the middle 40 percent of households did in 1979.

Data and methods

Assembling a complete dataset on employment and wages by industry

Analysis of jobs and wages by industry, reported on pages 31 and 49, is based on an industry-level dataset constructed using two-digit NAICS industries from the Bureau of Labor Statistics' Quarterly Census of Employment and Wages (QCEW). Due to some missing (or undisclosed) data at the county and regional levels, we supplemented our dataset using information from Woods & Poole Economics, Inc., which contains complete jobs and wages data for broad, two-digit NAICS industries at multiple geographic levels. (Proprietary issues barred us from using Woods & Poole data directly, so we instead used it to complete the QCEW dataset.) While we refer to counties in describing the process for "filling in" missing QCEW data below, the same process was used for the regional and state levels of geography.

Given differences in the methodology underlying the two data sources (in addition to the proprietary issue), it would not be appropriate to simply "plug in" corresponding Woods & Poole data directly to fill in the QCEW data for undisclosed industries.

Therefore, our approach was to first calculate the number of jobs and total wages from undisclosed industries in each county, and then distribute those amounts across the undisclosed industries in proportion to their reported numbers in the Woods & Poole data.

To make for a more accurate application of the Woods & Poole data, we made some adjustments to it to better align it with the QCEW. One of the challenges of using Woods & Poole data as a "filler dataset" is that it includes all workers, while QCEW includes only wage and salary workers. To normalize the Woods & Poole data universe, we applied both a national and regional wage and salary adjustment factor; given the strong regional variation in the share of workers who are wage and salary, both adjustments were necessary. Second, while the QCEW data are available on an annual basis, the Woods & Poole data are available on a decadal basis until 1995, at which point they become available on an annual basis. For the 1990-1995 period, we estimated the Woods & Poole annual jobs and wages figures using a

straight-line approach. Finally, we standardized the Woods & Poole industry codes to match the NAICS codes used in the QCEW.

It is important to note that not all counties and regions were missing data at the two-digit NAICS level in the QCEW, and the majority of larger counties and regions with missing data were only missing data for a small number of industries and only in certain years. Moreover, when data are missing it is often for smaller industries. Thus, the estimation procedure described is not likely to greatly affect our analysis of industries, particularly for larger counties and regions.

Data and methods

Growth in jobs and earnings by industry wage level, 1990 to 2015

The analysis on page 31 uses our filled-in QCEW dataset (see the previous page) and seeks to track shifts in regional job composition and wage growth by industry wage level.

Using 1990 as the base year, we classified broad industries (at the two-digit NAICS level) into three wage categories: low, middle, and high wage. An industry's wage category was based on its average annual wage, and each of the three categories contained approximately one-third of all private industries in the region.

We applied the 1990 industry wage category classification across all the years in the dataset, so that the industries within each category remained the same over time. This way, we could track the broad trajectory of jobs and wages in low-, middle-, and high-wage industries.

This approach was adapted from a method used in a Brookings Institution report, *Building From Strength: Creating Opportunity in Greater Baltimore's Next Economy*. For more information, see:

https://www.brookings.edu/wp-content/uploads/2016/06/0426_baltimore_economy_vey.pdf.

While we initially sought to conduct the analysis at a more detailed NAICS level, the large amount of missing data at the three- to six-digit NAICS levels (which could not be resolved with the method that was applied to generate our filled-in two-digit QCEW dataset) prevented us from doing so.

Data and methods

Analysis of occupations by opportunity level

The analysis of strong occupations on page 51 and jobs by opportunity level on pages 53-55 are related and based on an analysis that seeks to classify occupations in the region by opportunity level. Industries and occupations with high concentrations in the region, strong growth potential, and decent and growing wages are considered strong.

To identify “high-opportunity” occupations, we developed an “occupation opportunity index” based on measures of job quality and growth, including median annual wage, wage growth, job growth (in number and share), and median age of workers (which represents potential job openings due to retirements).

Once the “occupation opportunity index” score was calculated for each occupation, they were sorted into three categories (high, middle, and low opportunity). Occupations were evenly distributed into the categories based on employment. The strong occupations shown on page 51 are those found in the top, or high category (though not all occupations may be listed due to limited

space). There are some aspects of this analysis that warrant further clarification. First, the “occupation opportunity index” that is constructed is based on a measure of job quality and set of growth measures, with the job-quality measure weighted twice as much as all of the growth measures combined. This weighting scheme was applied both because we believe pay is a more direct measure of “opportunity” than the other available measures, and because it is more stable than most of the other growth measures, which are calculated over a relatively short period (2005-2011). For example, an increase from \$6 per hour to \$12 per hour is fantastic wage growth (100 percent), but most would not consider a \$12-per-hour job as a “high-opportunity” occupation.

Second, all measures used to calculate the “occupation opportunity index” are based on data for metropolitan statistical areas from the Occupational Employment Statistics (OES) program of the U.S. Bureau of Labor Statistics (BLS), with one exception: median age by occupation. This measure, included

among the growth metrics because it indicates the potential for job openings due to replacements as older workers retire, is estimated for each occupation from the 2010 5-year IPUMS ACS microdata file (for the employed civilian noninstitutional population ages 16 and older). It is calculated at the metropolitan statistical area level (to be consistent with the geography of the OES data), except in cases for which there were fewer than 30 individual survey respondents in an occupation; in these cases, the median age estimate is based on national data.

Third, the level of occupational detail at which the analysis was conducted, and at which the lists of occupations are reported, is the three-digit standard occupational classification (SOC) level. While considerably more detailed data is available in the OES, it was necessary to aggregate to the three-digit SOC level in order to align closely with the occupation codes reported for workers in the ACS microdata, making the analysis reported on page 51 possible.

Data and methods

Analysis of occupations by opportunity level

(continued)

Fourth, while most of the data used in the analysis are regionally specific, information on the education level of “typical workers” in each occupation, which is used to divide occupations in the region into the three groups by education level (as presented on pages 53-55), was estimated using national 2010 IPUMS ACS microdata (for the employed civilian noninstitutional population ages 16 and older). Although regionally specific data would seem to be the better choice, given the level of occupational detail at which the analysis is conducted, the sample sizes for many occupations would be too small for statistical reliability. And, while using pooled 2006-2010 data would increase the sample size, it would still not be sufficient for many regions, so national 2010 data were chosen given the balance of currency and sample size for each occupation. The implicit assumption in using national data is that the occupations examined are of sufficient detail that there is not great variation in the typical educational level of workers in any given occupation from region to region. While this may not hold true in reality, we would note

that a similar approach was used by Jonathan Rothwell and Alan Berube of the Brookings Institution in *Education, Demand, and Unemployment in Metropolitan America* (Washington D.C.: Brookings Institution, September 2011).

We should also note that the BLS does publish national information on typical education needed for entry by occupation. However, in comparing these data with the typical education levels of actual workers by occupation that were estimated using ACS data, there were important differences, with the BLS levels notably lower (as expected). The levels estimated from the ACS were determined to be the appropriate choice for our analysis as they provide a more realistic measure of the level of educational attainment necessary to be a viable job candidate – even if the typical requirement for entry is lower.

Fifth, it is worthwhile to clarify an important distinction between the lists of occupations by typical education of workers and

opportunity level, presented on pages 53-55, and the charts depicting the opportunity level associated with jobs held by workers with different education levels and backgrounds by race/ethnicity, presented on pages 56-59. While the former are based on the national estimates of typical education levels by occupation, with each occupation assigned to one of the three broad education levels described, the latter are based on actual education levels of workers in the region (as estimated using 2010 5-year IPUMS ACS microdata), who may be employed in any occupation, regardless of its associated “typical” education level.

Lastly, it should be noted that for all of the occupational analysis, it was an intentional decision to keep the categorizations by education and opportunity level fairly broad, with three categories applied to each. For the categorization of occupations, this was done so that each occupation could be more justifiably assigned to a single typical education level; even with the three broad categories some occupations had a fairly even

Data and methods

Analysis of occupations by opportunity level

(continued)

distribution of workers across them nationally, but, for the most part, a large majority fell in one of the three categories. In regard to the three broad categories of opportunity level, and education levels of workers shown on pages 57-59, this was kept broad to ensure reasonably large sample sizes in the 2010 5-year IPUMS ACS microdata that was used for the analysis.

Data and methods

Health data and analysis

Health data presented are from the Behavioral Risk Factor Surveillance System (BRFSS) database, housed in the Centers for Disease Control and Prevention. The BRFSS database is created from randomized telephone surveys conducted by states, which then incorporate their results into the database on a monthly basis.

The results of this survey are self-reported and the population includes all related adults, unrelated adults, roomers, and domestic workers who live at the residence. The survey does not include adult family members who are currently living elsewhere, such as at college, a military base, a nursing home, or a correctional facility.

The most detailed level of geography associated with individuals in the BRFSS data is the county. Using the county-level data as building blocks, we created additional estimates for the region, state, and United States.

While the data allow for the tabulation of

personal health characteristics, it is important to keep in mind that because such tabulations are based on samples, they are subject to a margin of error and should be regarded as estimates – particularly in smaller regions and for smaller demographic subgroups.

To increase statistical reliability, we combined five years of survey data, for the years 2008 through 2012. As an additional effort to avoid reporting potentially misleading estimates, we do not report any estimates that are based on a universe of fewer than 100 individual survey respondents. This is similar to, but more stringent than, a rule indicated in the documentation for the 2012 BRFSS data of not reporting (or interpreting) percentages based on a denominator of fewer than 50 respondents (see: https://www.cdc.gov/brfss/annual_data/2012/pdf/Compare_2012.pdf). Even with this sample size restriction, regional estimates for smaller demographic subgroups should be regarded with particular care.

For more information and access to the BRFSS database, see:

<http://www.cdc.gov/brfss/index.html>.

Data and methods

Analysis of access to healthy food

Analysis of access to healthy food access is based on the 2014 Analysis of Limited Supermarket Access (LSA) from the The Reinvestment Fund (TRF). LSA areas are defined as one or more contiguous census block groups (with a collective population of at least 5,000) where residents must travel significantly farther to reach a supermarket than the “comparatively acceptable” distance traveled by residents in well-served areas with similar population densities and car ownership rates.

The methodology’s key assumption is that block groups with a median household income greater than 120 percent of their respective metropolitan area’s median (or non-metro state median for non-metropolitan areas) are adequately served by supermarkets and thus travel an appropriate distance to access food. Thus, higher-income block groups establish the benchmark to which all block groups are compared controlling for population density and car ownership rates.

A LSA score is calculated as the percentage by

which the distance to the nearest supermarket would have to be reduced to make a block group’s access equal to the access observed for adequately served areas. Block groups with a LSA score greater than 45 were subjected to a spatial connectivity analysis, with 45 chosen as the minimum threshold because it was roughly equal to the average LSA score for all LSA block groups in the 2011 TRF analysis.

Block groups with contiguous spatial connectivity of high LSA scores are referred to as LSA areas. They represent areas with the strongest need for increased access to supermarkets. Our analysis of the percent of people living in LSA areas by race/ethnicity and poverty level was done by merging data from the 2014 5-year ACS summary file with LSA areas at the block group level and aggregating up to the city, county, and higher levels of geography.

For more information on the 2014 LSA analysis, see:

https://www.reinvestment.com/wp-content/uploads/2015/12/2014_Limited_Supermarket_Access_Analysis-Brief_2015.pdf.

Data and methods

Air pollution data and analysis

The air pollution exposure index is derived from the 2011 National-Scale Air Toxics Assessment (NATA) developed by the U.S. Environmental Protection Agency. The NATA uses general information about emissions sources to develop risk estimates and *does not* incorporate more refined information about emissions sources, which suggests that the impacts of risks may be overestimated. Note, however, that because that analysis presented using this data is relative to the U.S. overall in the case of exposure index, the fact that the underlying risk estimates themselves may be overstated is far less problematic.

The NATA data include estimates of cancer risk and respiratory hazards (non-cancer risk) at the census tract level based on exposure to outdoor sources. It is important to note that while diesel particulate matter (PM) exposure is included in the NATA non-cancer risk estimates, it is not included in the cancer risk estimates (even though PM is a known carcinogen).

The index of exposure to air pollution presented is based on a combination of separate indices for cancer risk and respiratory hazard at the census tract level, using the 2011 NATA. We followed the approach used by the U.S. Department of Housing and Urban Development (HUD) in developing its Environmental Health Index. The cancer risk and respiratory hazard estimates were combined by calculating tract-level z-scores for each and adding them together as indicated in the formula below:

$$COMBINED_i = \left(\frac{c_i - \mu_c}{\sigma_c} \right) + \left(\frac{r_i - \mu_r}{\sigma_r} \right)$$

Where c indicates cancer risk, r indicates respiratory risk, i indexes census tracts, and μ and σ represent the means and standard deviations, respectively, of the risk estimates across all census tracts in the United States.

The combined tract level index, $COMBINED_i$, was then ranked in ascending order across all tracts in the United States, from 1 to 100. Finally, the tract-level rankings were

summarized to the city, county, and higher levels of geography for various demographic groups (i.e., by race/ethnicity and poverty status) by taking a population-weighted average using the group population as weight, with group population data drawn from the 2014 5-year ACS summary file.

For more information on the NATA data, see <http://www.epa.gov/national-air-toxics-assessment>.

Data and methods

Estimated life expectancy at birth

To estimate life expectancy at birth, by race/ethnicity and geography, we used information on mortality and mid-year population estimates from the Centers for Disease Control and Prevention's Wide-ranging Online Data for Epidemiologic Research (WONDER) databases (the Compressed Mortality Data) and constructed abridged life tables. A life table is a table that includes the number of deaths, total population, probability of dying, and remaining life expectancy by single year of age. Abridged life tables are similar, but present the information for age groups rather than by single year of age. Remaining life expectancy for each age group is largely a function of the probability of dying for people in their own age group and in older age groups.

To prepare the data, we made a series of parallel extracts at the county, state, census region (Northeast, Midwest, South, and West), and national levels to derive data on the number of deaths and mid-year population counts by race/ethnicity and age

group, for the years 2011 through 2015 combined. Multiple years of data were pooled together to improve the accuracy of our estimates at the county level (and the same pooling was applied to the state and national extracts for reasons of comparability). We then used the data to construct abridged life tables following the methodology described in an article by Chin Long Chiang, *On Constructing Current Life Tables*, published in the *Journal of the American Statistical Association* in September, 1972, Volume 67, Number 339.

In the publicly available information from the WONDER Compressed Mortality Data, the death counts are not disclosed if there are fewer than 10 deaths in a given age group. The age groups for which data was extracted include: less than one year, one to four years, five to nine years, 10 to 14 years, 15 to 19 years, 20 to 24 years, 25 to 34 years, 35 to 44 years, 45 to 54 years, 55 to 64 years, 65 to 74 years, 75 to 84 years, and 85 years or older. For larger counties and states, and the nation as a whole, all of the death counts for each

group by age and race/ethnicity were disclosed. For smaller counties and states, however, some of the death counts were not disclosed – particularly for the younger age groups and for smaller racial/ethnic groups.

In order to generate estimates for all groups by race/ethnicity and age, we made a series of substitutions. For age groups with undisclosed death counts, we substituted in the probability of dying from the state level (for the corresponding racial/ethnic group); if the state level death counts were also undisclosed, we applied the probability of dying from the census region; if the census region death count was also missing (which was very seldom the case), we applied the probability of dying from the nation overall.

Once all of the abridged life tables were complete, county level information on mid-year population and death counts (imputed death counts for age groups where substitutions were made) was aggregated to the metro area and regional levels. To calculate estimated life expectancy at birth,

Data and methods

Estimated life expectancy at birth

(continued)

0.5 years was added to the life expectancy estimate for the less than one-year-old age group (since the midpoint of that estimate reflect the population age 0.5 years).

While applying death probabilities from higher levels of geography when they are missing in a local geography does amount to ecological fallacy, the approach finds some justification in the fact that estimated life expectancy does exhibit a high degree of spatial autocorrelation. It is also important to point out that remaining life expectancy for any particular age group is not only a function of the probability of dying for that age group, but also for all of the older age groups in the distribution. And given that younger age groups are far more likely to be nondisclosed than the older age groups, even when their death rates are drawn for higher levels of geography, their life expectancy estimates still tend to be based upon a lot of original, geographically-specific information.

Still, to avoid reporting highly unreliable estimates – that is, those for which too many

substitutions were made – we only report estimates for which 90 percent of the mid-year population by age group is from age groups that had disclosed death counts in the underlying data. In other words, we do not report estimates for populations where more than 10 percent are from age groups with undisclosed death counts. Finally, because the WONDER Compressed Mortality Data does not provide data for individuals of mixed or other race, we cannot make estimates for that broad racial/ethnic group.

Data and methods

Measures of diversity and segregation

In the profile we refer to several measures of residential segregation by race/ethnicity (the “multi-group entropy index” on page 98 and the “dissimilarity index” on page 99). While the common interpretation of these measures is included in the text of the profile, the data used to calculate them, and the sources of the specific formulas that were applied, are described below.

All of these measures are based on census-tract-level data for 1980, 1990, and 2000 from Geolytics, and for 2014 (which reflects a 2010 through 2014 average) from the 2014 5-year ACS. While the data for 1980, 1990, and 2000 originate from the decennial censuses of each year, an advantage of the Geolytics data we use is that it has been “re-shaped” to be expressed in 2010 census tract boundaries, and so the underlying geography for our calculations is consistent over time; the census tract boundaries of the original decennial census data change with each release, which could potentially cause a change in the value of residential segregation

indices even if no actual change in residential segregation occurred. In addition, while most all the racial/ethnic categories for which indices are calculated are consistent with all other analyses presented in this profile, there is one exception. Given limitations of the tract-level data released in the 1980 Census, Native Americans are combined with Asians and Pacific Islanders in that year. For this reason, we set 1990 as the base year (rather than 1980) in the chart on page 99, but keep the 1980 data in other analyses of residential segregation as this minor inconsistency in the data is not likely to affect the analyses.

The formulas for the multi-group entropy index were drawn from a 2004 report by John Iceland of the University of Maryland, *The Multigroup Entropy Index (Also Known as Theil's H or the Information Theory Index)* available at: <https://www.census.gov/topics/housing/housing-patterns/about/multi-group-entropy-index.html>. In that report, the formula used to calculate the multigroup entropy index (referred to as the “entropy index” in the

report) appear on page 8.

The formula for the other measure of residential segregation, the dissimilarity index, is well established, and is made available by the U.S. Census Bureau at: <https://www.census.gov/library/publications/2002/dec/censr-3.html>.

Data and methods

Estimates of GDP without racial gaps in income

Estimates of the gains in average annual income and GDP under a hypothetical scenario in which there is no income inequality by race/ethnicity are based on the 2014 5-Year IPUMS ACS microdata. We applied a methodology similar to that used by Robert Lynch and Patrick Oakford in chapter two of *All-In Nation: An America that Works for All*, with some modification to include income gains from increased employment (rather than only those from increased wages). As in the Lynch and Oakford analysis, once the percentage increase in overall average annual income was estimated, 2014 GDP was assumed to rise by the same percentage.

We first organized individuals aged 16 or older in the IPUMS ACS into six mutually exclusive racial/ethnic groups: non-Hispanic White, non-Hispanic Black, Latino, non-Hispanic Asian/Pacific Islander, non-Hispanic Native American, and non-Hispanic Other or multiracial. Following the approach of Lynch and Oakford in *All-In Nation*, we excluded from the non-Hispanic Asian/Pacific Islander category subgroups whose average incomes

were higher than the average for non-Hispanic Whites. Also, to avoid excluding subgroups based on unreliable average income estimates due to small sample sizes, we added the restriction that a subgroup had to have at least 100 individual survey respondents in order to be included.

We then assumed that all racial/ethnic groups had the same average annual income and hours of work, by income percentile and age group, as non-Hispanic Whites, and took those values as the new “projected” income and hours of work for each individual. For example, a 54-year-old non-Hispanic Black person falling between the 85th and 86th percentiles of the non-Hispanic Black income distribution was assigned the average annual income and hours of work values found for non-Hispanic White persons in the corresponding age bracket (51 to 55 years old) and “slice” of the non-Hispanic White income distribution (between the 85th and 86th percentiles), regardless of whether that individual was working or not. The projected individual annual incomes and work hours

were then averaged for each racial/ethnic group (other than non-Hispanic Whites) to get projected average incomes and work hours for each group as a whole, and for all groups combined.

One difference between our approach and that of Lynch and Oakford is that we include all individuals ages 16 years and older, rather than just those with positive income. Those with income values of zero are largely non-working, and were included so that income gains attributable to increased average annual hours of work would reflect both expanded work hours for those currently working and an increased share of workers – an important factor to consider given sizeable differences in employment rates by race/ethnicity. One result of this choice is that the average annual income values we estimate are analogous to measures of per capita income for the age 16 and older population and are notably lower than those reported in Lynch and Oakford; another is that our estimated income gains are relatively larger as they presume increased employment rates.



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