An Equity Profile of
Battle Creek

Acknowledgments

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Equity Profiles are products of a partnership between PolicyLink and PERE, the Program for Environmental and Regional Equity at the University of Southern California.

The views expressed in this document are those of PolicyLink and PERE.

Summary

Battle Creek, Michigan is becoming a majority people-of-color city, and communities of color will continue to drive growth and change into the foreseeable future. The city's diversity can be a tremendous economic asset if people of color are fully included as workers, entrepreneurs, and innovators. But, economic decline, rising inequality, and persistent racial inequities place its long-term economic future at risk.

Equitable growth is the path to sustained economic prosperity in Battle Creek. The state of Michigan's economy could have been $34 billion stronger in 2014 if its racial gaps in income had been closed: an 7 percent increase. By embedding an equity approach throughout city government and advancing policy strategies to grow good jobs, build healthy communities of opportunity, prevent displacement, and ensure just policing and court systems, Battle Creek can put all residents on the path toward reaching their full potential, and secure a bright future for the city and region.

Key Findings

- Battle Creek has experienced net population decline since 1980, with all of the net decline attributable to the White population.

- The city's demographic mix has shifted. The percentage of residents who are people of color increased from 18 percent in 1980 to 33 percent in 2014.

- The top 20 percent of households hold more than half of all income while the bottom 20 percent hold 3 percent.

- Youth disconnection from school and work is a challenge in the city: young people ages 16 to 19 are twice as likely as youth statewide to be disconnected.

- As cities work towards equity, the state of Michigan will benefit. In 2014, the state's GDP would have been $34 billion larger – a 7 percent increase – had there been no racial gaps in income.

Share of residents who are people of color:

33%

Renters spending more than 30 percent of household income on housing:

55%

Potential increase in state GDP with equitable incomes:

$34 billion

Introduction

Introduction
Overview

Across the country, community organizations and residents, local governments, business leaders, funders, and policymakers are striving to put plans, policies, and programs in place that build healthier, more equitable communities and foster inclusive growth.

These efforts recognize that equity – just and fair inclusion into a society in which all can participate, prosper, and reach their full potential – is fundamental to a brighter future for their communities.

Knowing how a community stands in terms of equity is a critical first step in planning for greater equity. To assist with that process, PolicyLink and the Program for Environmental and Regional Equity (PERE) developed an equity indicators framework that communities can use to understand and track the state of equity and equitable growth locally.

This document presents an equity analysis of the Battle Creek, Michigan. It was developed with the support of the W.K. Kellogg

Foundation to help local community groups, elected officials, planners, business leaders, funders, and others working to build a stronger and more equitable city. The foundation is supporting the development of equity profiles in 10 of its priority communities across Louisiana, Michigan, Mississippi, and New Mexico.

The data in this profile are drawn from a regional equity database that includes data for the largest 100 cities and 150 regions in the United States, as well as all 50 states. This 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, and Woods and Poole Economics. It also includes unique data on child and family well-being from the W.K. Kellogg Foundation Priority Communities Dashboard Database, contributed by The diversitydatakids.org Project based at the Institute for Child, Youth and Family Policy at the Heller School for Social Policy and Management at Brandeis University.

See the "Data and methods" section of this profile for a detailed list of data sources.

This profile uses a range of data sources to describe the state of equity in Battle Creek as comprehensively as possible, but there are limitations. Not all data collected by public and private sources is disaggregated by race/ethnicity and other demographic characteristics. And in some cases, even when disaggregated data is available, the sample size for a given population is too small to report with confidence.

Communities facing deep challenges and barriers to inclusion may be absent from some of the analysis presented here due to small sample size. Local data sources and the lived experiences of diverse residents should supplement the data provided in this profile to more fully represent the state of equity in Battle Creek.

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]
• Greater economic equity 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 building this new growth model.
Local communities are where strategies are being incubated that 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" (Federal Reserve Bank of Cleveland: April 2006), http://www.clevelandfed.org/Research/workpaper/2006/wp06-05.pdf.

[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." http://obs.rc.fas.harvard.edu/chetty/website/v2/Geography%20Executive%20Summary%20and%20Memo%20January%202014.pdf

[3] Darrell Gaskin, Thomas LaVeist, and Patrick Richard, "The State of Urban Health: Eliminating Health Disparities to Save Lives and Cut Costs." National Urban League Policy Institute, 2012.

[4] Cedric Herring. "Does Diversity Pay?: Race, Gender, and the Business Case for Diversity." *American Sociological Review*, 74, no. 2 (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
What is an equitable city?

Cities are equitable when all residents – regardless of their race/ethnicity, and nativity, neighborhood of residence, or other characteristics – are fully able to participate in the city's economic vitality, contribute to the city's readiness for the future, and connect to the city's 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
Geography

This profile describes demographic, economic, and health conditions in the city of Battle Creek, Michigan, portrayed in black on the map to the right. Battle Creek is situated in the northwest portion of Calhoun County, which is coterminous with the Battle Creek, MI Metropolitan Statistical Area.

Unless otherwise noted, all data follow the city geography, which is simply referred to as "Battle Creek." 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 78.

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 estimates the economic benefits of racial 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 composition vary by age?

Economic vitality:
How is the city doing on measures of economic growth and well-being?
- Is the city 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?
- Are racial gaps in education and health decreasing?
- Can all residents access healthy food?

Connectedness:
Are the city's residents and neighborhoods connected to one another and to the city's assets and opportunities?
- Do residents have transportation choices?
- Can residents access jobs and opportunities located throughout the city?
- Can all residents access affordable, quality, and convenient housing?
- Do neighborhoods reflect the city's diversity? Is segregation decreasing?

Economic benefits:
How would addressing racial inequities affect the regional economy?
- How would the region's gross domestic product be affected?
- How much would residents benefit from closing racial gaps in income and employment?

Demographics

Demographics
Highlights
Who lives in the city, and how is it changing?

- The city has experienced net population decline since 1980, with all of the net decline attributable to the White population.

- The percentage of residents who are people of color increased from 18 percent in 1980 to 33 percent in 2014.

- The Mixed/other race and Latino populations have grown fastest since 2000. The median age for Latinos is 18 years younger than that of White residents.

- Battle Creek's racial generation gap (the difference between the share of seniors of color and the share of youth of color) has more than doubled since 1980.

Share of residents who are people of color:

33%

Median age of Latinos:

23

Racial generation gap (in percentage points):

30

Demographics
Overall population decrease but growing people-of-color population

Over the past four decades, the city's population has shifted. Between 2000 and 2014, the total population in the state, county, and city has declined while the population of color has increased. The increase has been most prominent in the city of Battle Creek where the people-of-color-population increased by 18 percent.

The White population has declined in each decade since 1980, while the people-of-color population has increased. This increase, however, was not as high as the loss of the White population. In addition, population growth for people of color was less from 2000 to 2014 than from 1990 to 2000.

White population decline has outpaced growth in people of color since 1980

Composition of Net Population Growth by Decade, 1980 to 2014
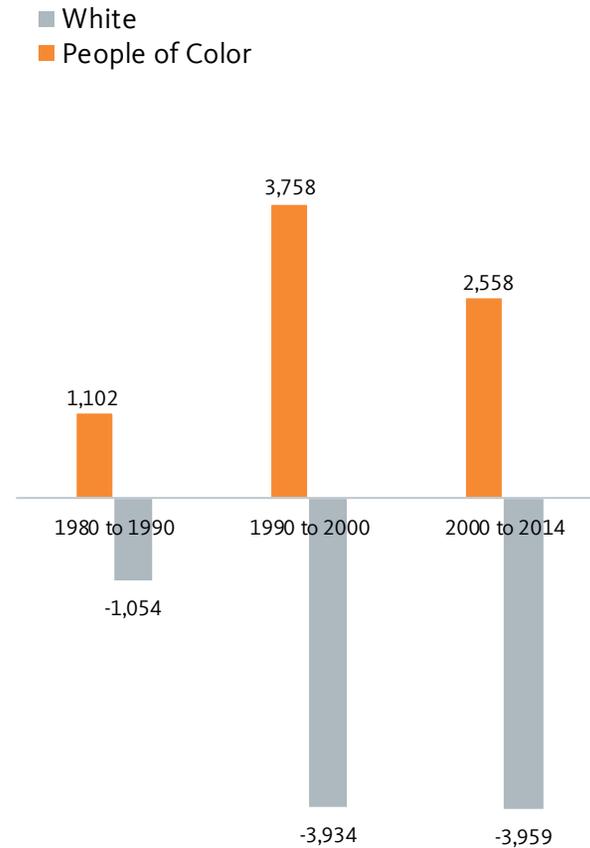
- White
- People of Color

The total population has declined despite large increases in the number of people of color

Percent Change in Population, 2000 to 2014
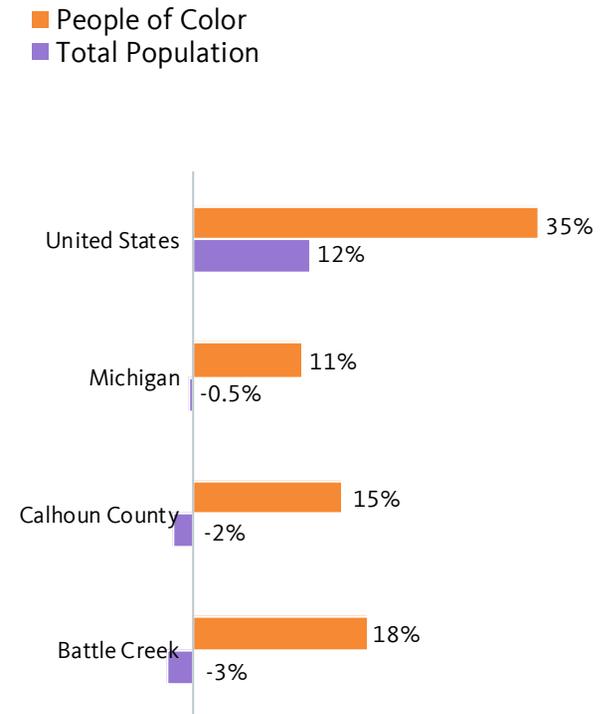
- People of Color
- Total Population

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

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

Demographics
Though still a majority White city, the city is growing more diverse

In 1980, the population was 82 percent White but, today, one in three residents are people of color.

The population of mixed/other races and the Latino population experienced the steepest increase in share since 1980. The Asian or Pacific Islander population also experienced significant growth in share, increasing from less than 1 percent in 1980 to 3 percent in 2014. While the share of the total population that is White has decreased in each decade since 1980, the share of residents who are Black has increased, stabilizing in the 2000s.

Since 2000, the White population decreased by 10 percent and the Black population decreased by 2 percent. Meanwhile, populations of all other race/ethnic groups increased. People of mixed/other races grew the most followed by Latinos and Asians or Pacific Islanders.

Today, one in three residents are people of color
Racial/Ethnic Composition, 1980 to 2014

- ■ Mixed/other
- ■ Native American
- ■ Asian or Pacific Islander
- ■ Latino
- ■ Black
- ■ White
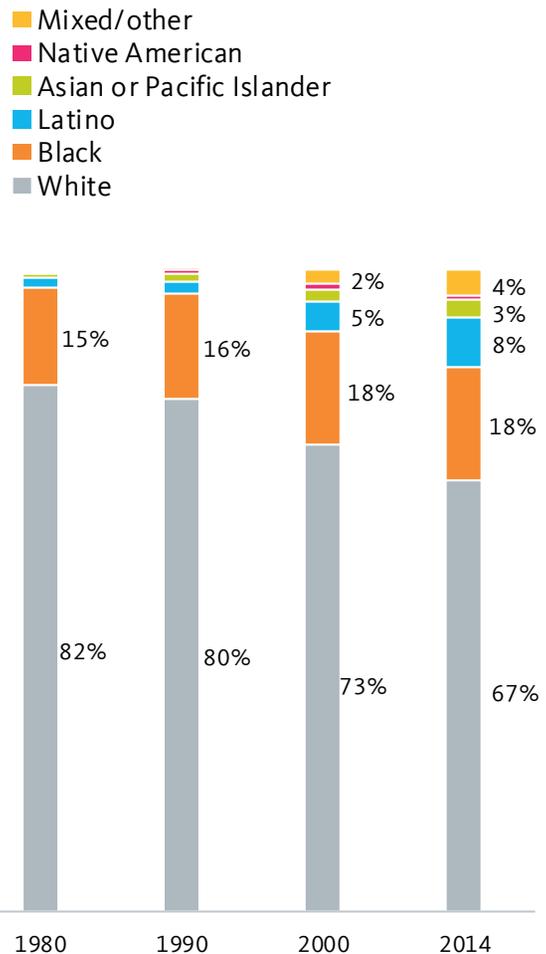
Source: U.S. Census Bureau.
Note: Data for 2014 represent a 2010 through 2014 average. Much of the increase in the Mixed/other population between 1990 and 2000 is due to a change in the survey question on race.

The White population declined by 10 percent from 2000 to 2014 while all other population groups grew
Growth Rates of Major Racial/Ethnic Groups, 2000 to 2014
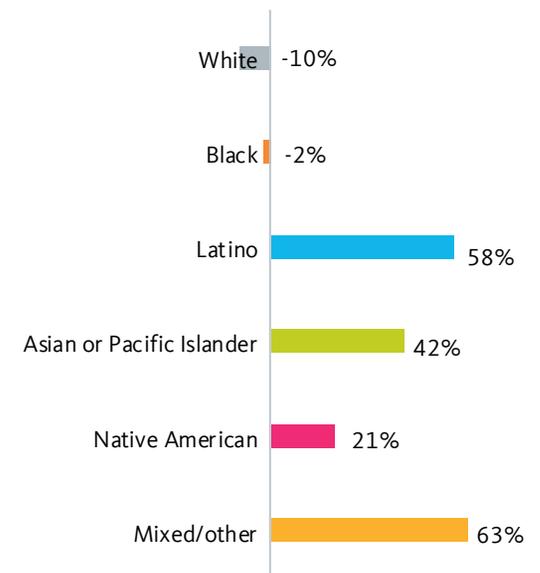
Group	Growth Rate
White	-10%
Black	-2%
Latino	58%
Asian or Pacific Islander	42%
Native American	21%
Mixed/other	63%

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

Demographics
The majority of residents were born in the United States

Immigrants account for 6 percent of Battle Creek's total population, or roughly 3,100 residents. And while immigrants account for 1 percent or less of the White and Black populations in the city, they account for a much greater share of the Latino and Asian or Pacific Islander populations. The majority of Latinos in the city are U.S.-born (73 percent), making one in four immigrants. Eighty-six percent of the Asian or Pacific Islander population are immigrants.

Immigrants account for just 6 percent of the total population and 86 percent of the Asian or Pacific Islander population
Race, Ethnicity, and Nativity, 2014

■ U.S.-born
■ Immigrant

		Total population
All	94%	51,963
White	99%	34,802
Black	100%	9,520
Latino	73%	27%	3,911
Asian or Pacific Islander	14%	86%	1,467
Native American	97%	485
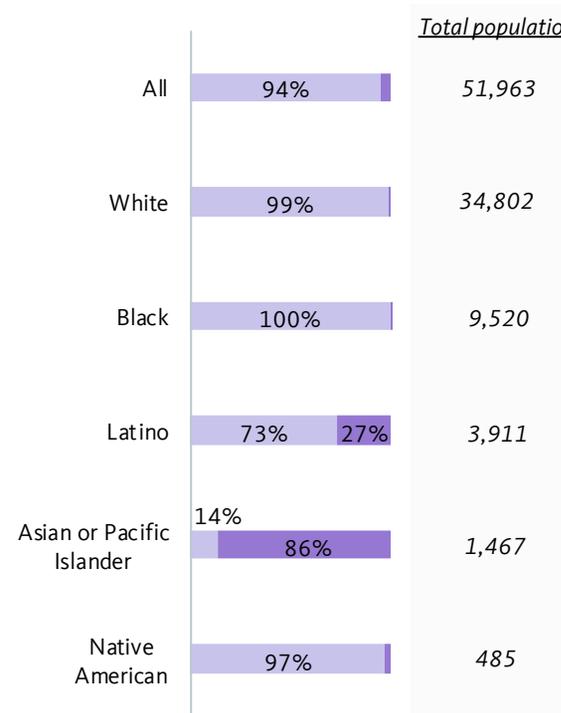
Source: U.S. Census Bureau.
Note: Data represent a 2010 through 2014 average.

Demographics
Battle Creek is more diverse than the county and state

While not as diverse as the nation overall, Battle Creek is more diverse than Michigan and Calhoun County.

The diversity score is a measure of racial/ethnic diversity in a given area. It measures the representation of the six major racial/ethnic groups (White, Black, Latino, Asian or Pacific Islander, Native American, and other/mixed race) in the population. The maximum possible diversity score (1.79) would occur if each group were evenly represented in the region – that is, if each group accounted for one-sixth of the total population.

Note that the diversity score describes the city as a whole and does not measure racial segregation, or the extent to which different racial/ethnic groups live in different neighborhoods. Segregation measures can be found on pages 55 and 56.

While home to residents of many races and ethnicities, the county is relatively homogenous as compared to the city
Diversity Score, 2014

Region	Diversity Score
United States	1.13
Michigan	0.83
Calhoun County	0.77
Battle Creek	1.03
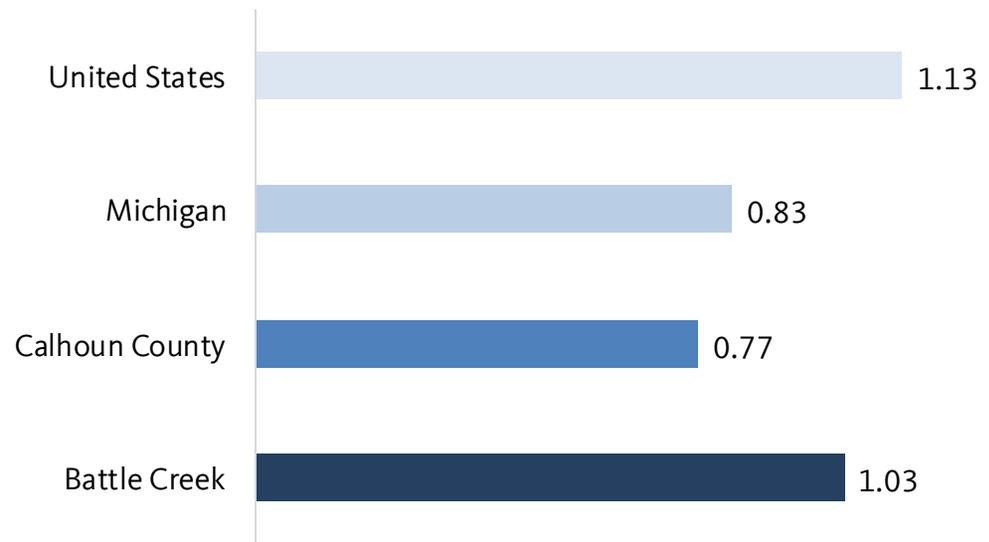
Source: U.S. Census Bureau.
Note: Data represent a 2010 through 2014 average.

Demographics
Demographic change varies by neighborhood

Mapping the growth in people of color by census block group illustrates variation in growth and decline in communities of color throughout the city. The map highlights how the population of color has increased in many neighborhoods throughout the city – particularly the southern half where some neighborhoods experienced increases of 180 percent or higher.

At the same time, other neighborhoods have experienced loss in the population of color including tracts in Urbandale and Springfield Place.

There is considerable variation in growth and decline in communities of color by neighborhood
Percent Change in People of Color by Census Block Group, 2000 to 2014

- Decline of 38% or more
- Decline of less than 38% or no growth
- Increase of less than 45%
- Increase 45% to 180%
- Increase of 180% or more
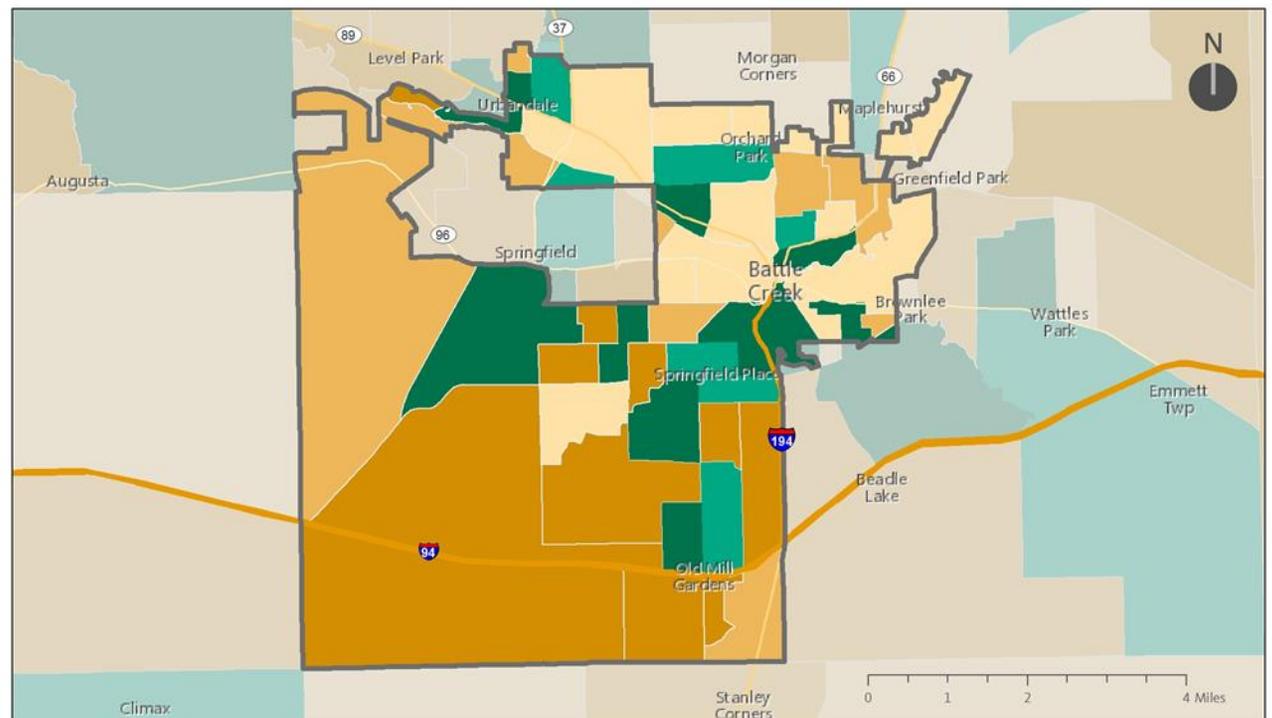
Sources: U.S. Census Bureau, GeoLytics, Inc.; TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community.
Note: One should keep in mind when viewing this map, and others that display a share or rate, that while there is wide variation in the size (land area) of the census block groups in the region, each has a roughly similar number of people. Thus, care should be taken not to assign unwarranted attention to large block groups just because they are large. Data for 2014 represents a 2010 through 2014 average.

Demographics
A more integrated Battle Creek

The eastern side of the city is more densely populated than the western side of the city, and the Black population remains more concentrated in the northeastern area of the city. There is noticeable decline in the Black and White populations from 1990 to 2014 throughout the city, as well as increases in the Latino and Asian or Pacific Islander populations on the eastern side of the city.

The Black-White segregation in Indianola has declined
Racial/Ethnic Composition by Census Block Group, 1990 and 2014

Race/ethnicity
1 Dot = 20 people
- White
- Black
- Latino
- Asian or Pacific Islander
- Native American
- Mixed/other
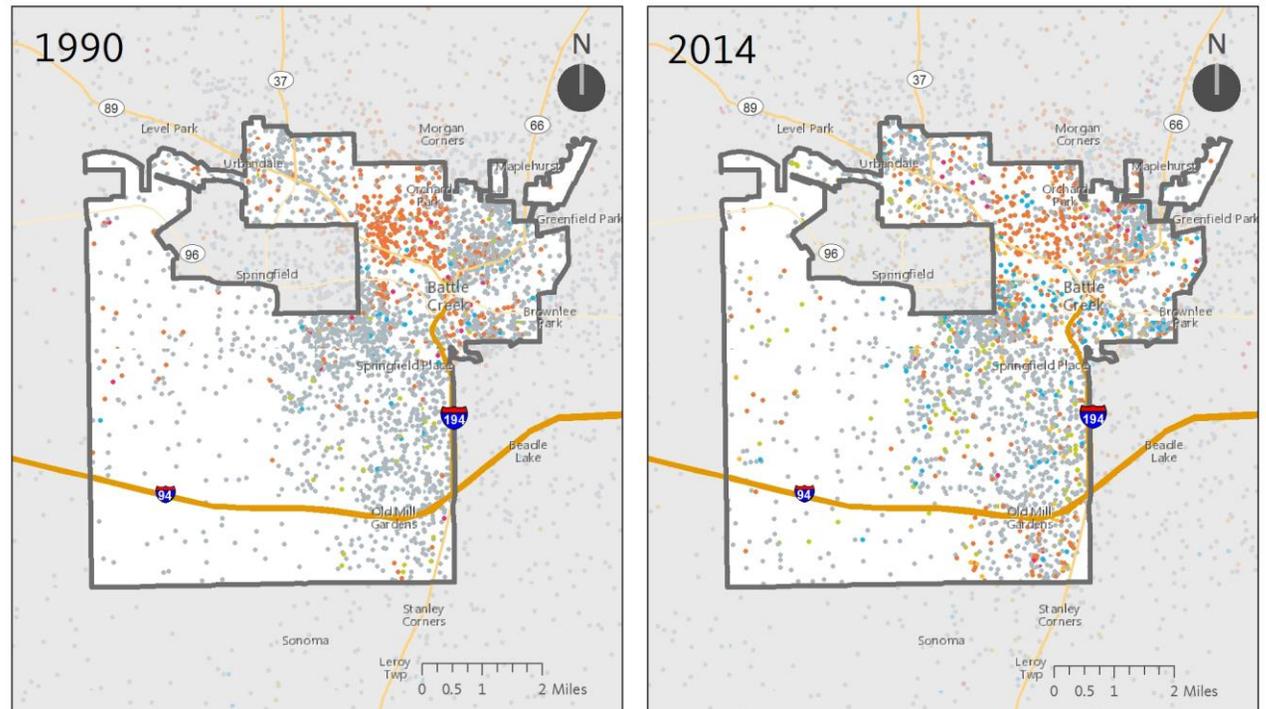
Sources: U.S. Census Bureau, GeoLytics, Inc.; TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community.
Note: Data for 2014 represents a 2010 through 2014 average.

Demographics
Calhoun County will slowly continue to become more diverse

Demographic change in Calhoun County is occurring at a slower pace than that of the nation as a whole, but it is projected to continue diversifying into the future. In 1980, the county was just 12 percent people of color – when the nation was 20 percent people of color. By 2010, the county was 20 percent people of color and the nation was 36 percent people of color. By 2050, Calhoun County is projected to be 38 percent people of color.

Most of this demographic shift will come from growth in the number of Latinos and people of mixed/other races: the Latino share of the population is projected to more than double from 2010 to 2050. And the population of mixed/other races will nearly triple. The share of the population that is White is projected to decline from 80 percent to 62 percent over the same time period.

Latinos are projected to grow from 5 percent of Calhoun County's population in 2010 to 11 percent by 2050
Racial/Ethnic Composition, 1980 to 2050

Legend:
- U.S. % White
- Mixed/other
- Native American
- Asian or Pacific Islander
- Latino
- Black
- White

	1980	1990	2000	2010	2020	2030	2040	2050
Mixed/other			3%	3%	4%	5%	6%	8%
Latino			3%	5%	6%	7%	9%	11%
Black	10%	10%	11%	11%	11%	11%	12%	13%
White	88%	86%	82%	80%	76%	72%	68%	62%

Projected
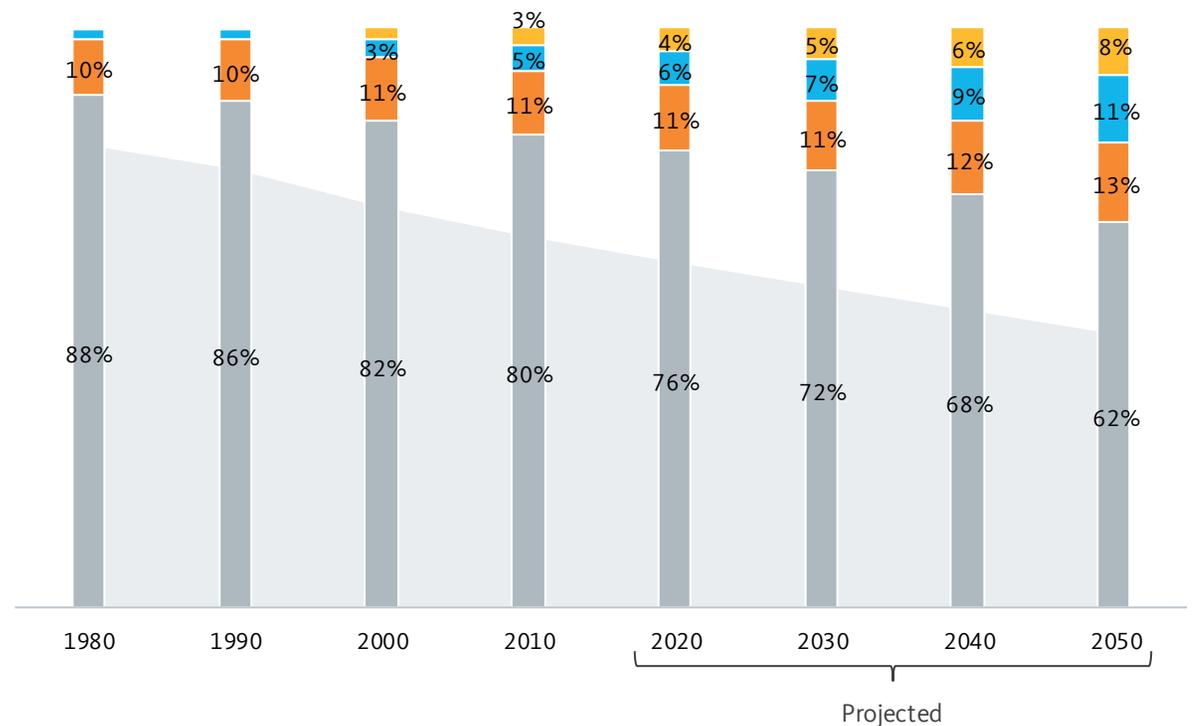
Sources: U.S. Census Bureau, Woods & Poole Economics, Inc. Note: Data is for Calhoun County, MI. Much of the increase in the Mixed/other population between 1990 and 2000 is due to a change in the survey question on race.

Demographics
A more diverse youth population

Youth are leading the demographic shift occurring in the city. Today, 45.4 percent of Battle Creek's youth (under age 18) are people of color, compared with just 15.8 percent of the region's seniors (over age 64). This near 30 percentage point difference between the share of youth of color and seniors of color is referred to as the racial generation gap. A large racial generation gap often corresponds with lower investments in educational systems and infrastructure to support youth.

The city's growing populations are also comparatively younger than the White population. Latinos have the lowest median age at 23 years old followed by Black residents at 33 years old.

The generation gap has more than doubled since 1980
Percent People of Color (POC) by Age Group, 1980 to 2014

— Percent of seniors who are POC
— Percent of youth who are POC

45.4%

30 percentage point gap

23.9%

13 percentage point gap

10.6%   15.8%

1980   1990   2000   2014
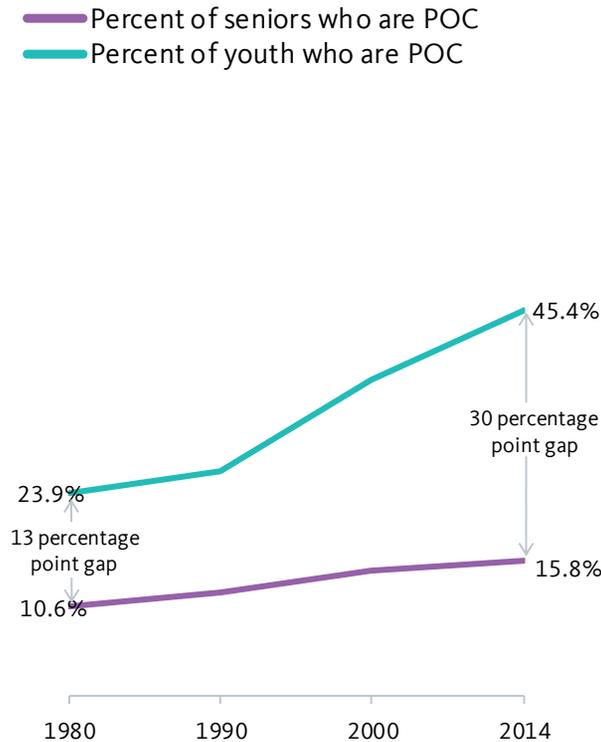
Source: U.S. Census Bureau.
Note: Data for 2014 represent a 2010 through 2014 average. Gap value may not equal difference in percentages shown due to rounding.

People of color tend to be younger than Whites
Median Age by Race/Ethnicity, 2014
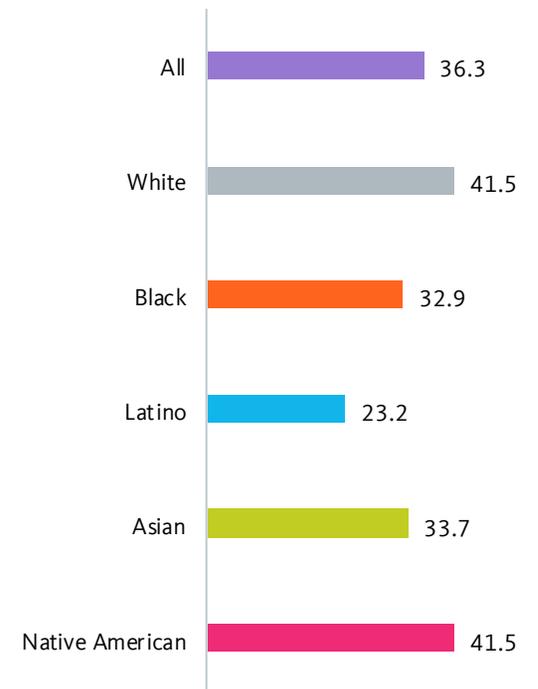
Race/Ethnicity	Median Age
All	36.3
White	41.5
Black	32.9
Latino	23.2
Asian	33.7
Native American	41.5

Source: U.S. Census Bureau.
Note: Data represent a 2010 through 2014 average. "White" is defined as non-Hispanic white and "Latino" includes all who identify as being of Hispanic origin. "Asian" does not include those who identify as "Pacific Islander". All other racial/ethnic groups include any Latinos who identify with that particular racial category.

Demographics
The city's racial generation gap is relatively large

Battle Creek's 30 percentage point racial generation gap is larger than that of both the state of Michigan and the nation as a whole.

The racial generation gap is higher in Battle Creek than in the state and country overall
The Racial Generation Gap in 2014
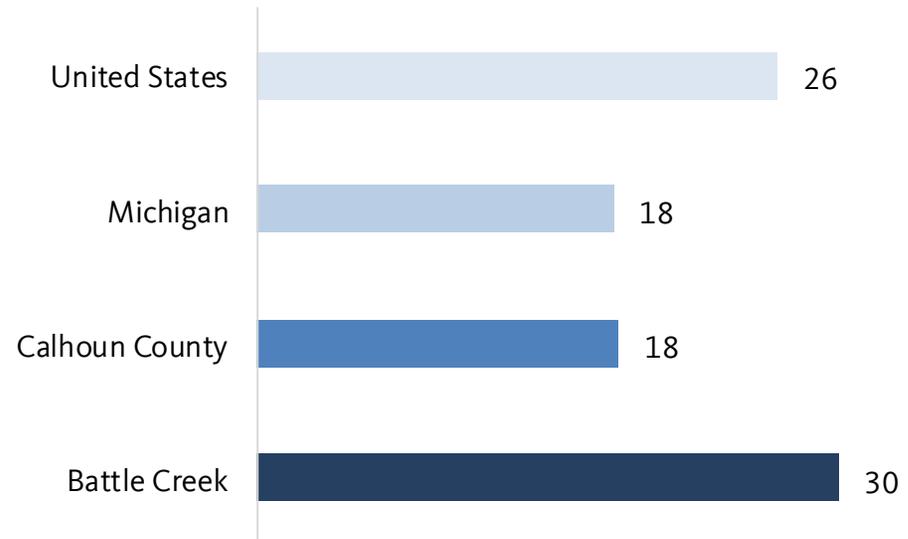
United States	26
Michigan	18
Calhoun County	18
Battle Creek	30

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

Economic vitality

Economic vitality
Highlights

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

- Cumulative growth in both real GRP and job growth in Calhoun County has lagged considerably behind the nation since 1979.

- Despite similar labor force participation rates, the Black population in Battle Creek is nearly twice as likely to be unemployed as the White population.

- The top 20 percent of households hold more than half of all income in the city while the bottom 20 percent hold 3 percent of total income.

- Black, Latino, Native American, and Mixed/other residents face the highest poverty rates in the city.

Black unemployment rate:

21%

Share of total income held by the top 20 percent of households:

51%

Black children living in poverty:

45%

Economic vitality
Economic growth has consistently worsened

Cumulative growth in real GRP has lagged considerably behind the nation as a whole. From 1979 to 2014, real GRP grew just 1 percent in Calhoun County compared with 106 percent in the country overall. Despite modest increases in the 1990s and early 2000s, most of the growth was stunted by the recession.

The story is similar when it comes to cumulative job growth in the county. From 1979 to 2014, job growth declined compared with a 64 percent increase in the nation over the same time period. There consistent growth in jobs over the 1990s but the number of jobs peaked in 1997.

Despite modest increases in the 1990s and early 2000s, growth in GDP has remained mostly flat since 1979
Cumulative Growth in Real GRP, 1979 to 2014

- Calhoun County
- United States
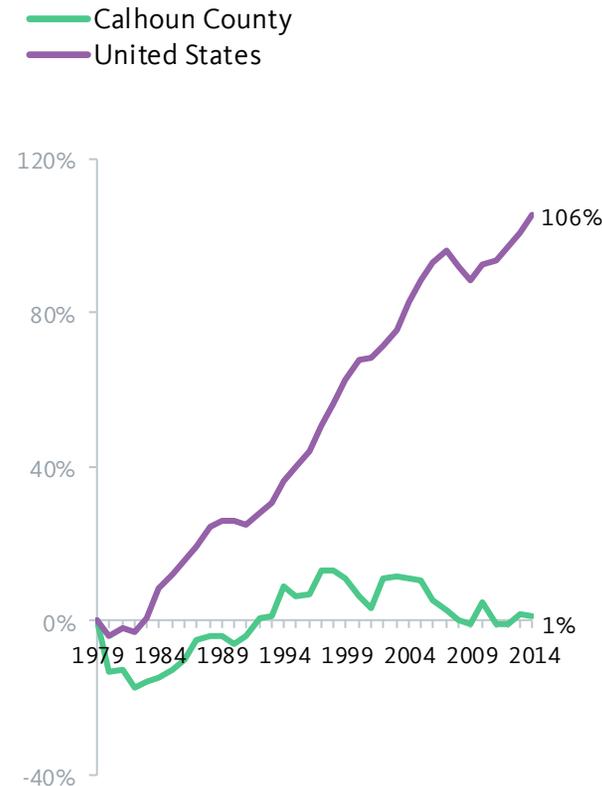
Source: U.S. Bureau of Economic Analysis.

Despite growth from 1990 until 2008, the number of jobs in the county has declined since 1979
Cumulative Job Growth, 1979 to 2014

- Calhoun County
- United States
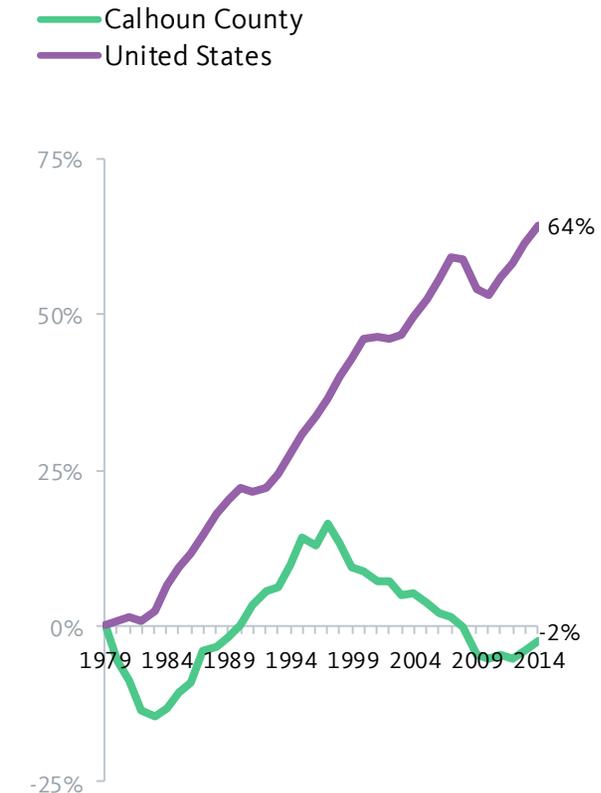
Source: U.S. Bureau of Economic Analysis.

Economic vitality
Unemployment has fallen below the national rate

Spikes in unemployment from the economic downturn of 2005 to 2009 hit Calhoun County later than the United States as a whole. Unemployment hit its peak in Calhoun County in 2009 when unemployment reached 12 percent – three percentage points higher than the national rate at the time. But it has dropped considerably since then and by 2014, it was on par than the nation's unemployment rate.

Unemployment has declined considerably since its peak in 2009
Unemployment Rate, 1990 to 2015

Calhoun County
United States

Downturn 2005-2009

5.3%
4.9%
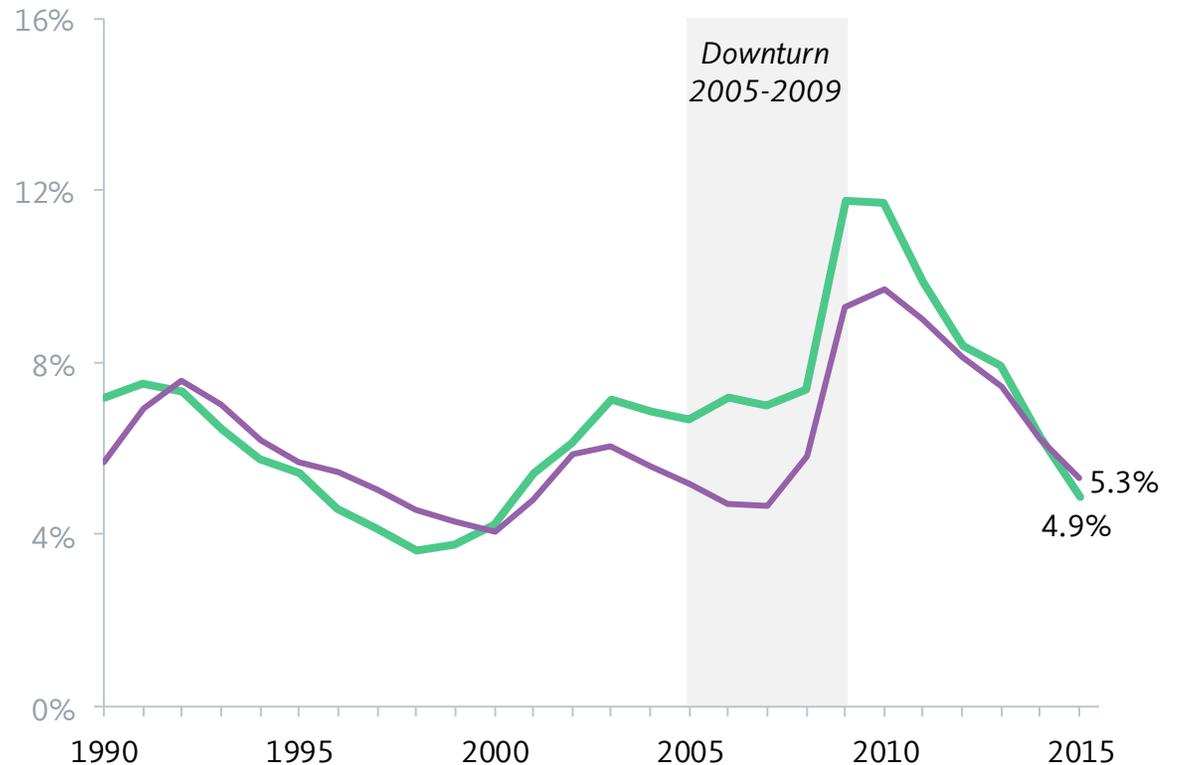
Source: U.S. Bureau of Labor Statistics. Universe includes the civilian noninstitutional population ages 16 and older.

Economic vitality
Job growth per person is lower than national average

While overall job growth is essential, the real question is how job growth is keeping pace with population growth. Although there was cumulative job loss, the jobs-to-population ratio has been positive because of population decline. Despite a spike in the number of jobs relative to the size of the population in the mid-1990s, job growth per person in Battle Creek has been far slower than the national average since 2000. The number of jobs per person has only increased by 3 percent since 1979, while it has increased by 16 percent for the nation overall.

Job growth in the county is 13 percentage points lower than the national average
Cumulative Growth in Jobs-to-Population Ratio, 1979 to 2014

— Calhoun County
— United States
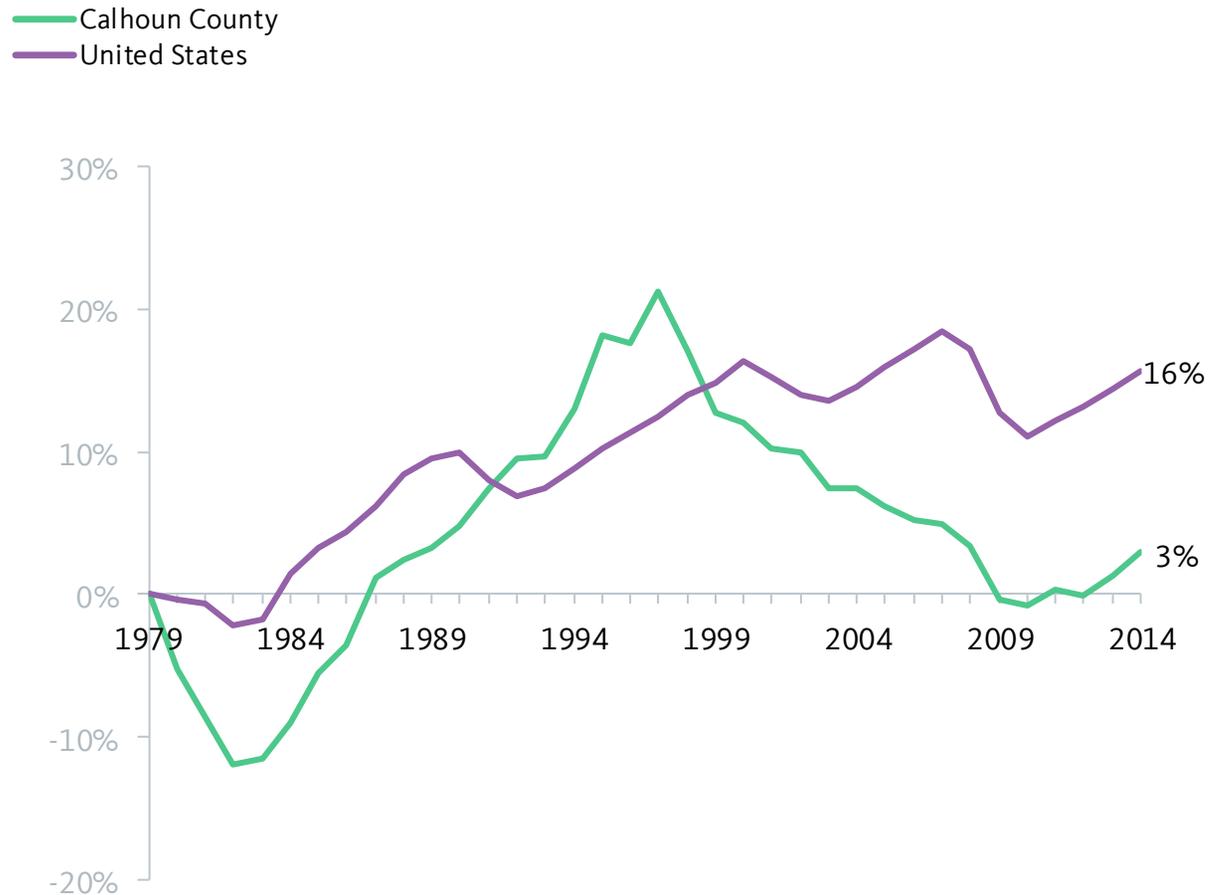
Source: U.S. Bureau of Economic Analysis.

Economic vitality
Low labor force participation and high unemployment rate

Labor force participation rates are slightly lower in Battle Creek than in the country overall: while 64 percent of people ages 16 or older are in the labor force nationally, just 60 percent of Battle Creek residents are in the labor force. Labor force participation rates are highest among Latino residents of the city..

The city also has a higher unemployment rate than the nation. Among Battle Creek residents in the labor force, 14 percent are unemployed. Black residents have the highest unemployment rate followed by Latino residents. White and Native American residents have the lowest unemployment rates in the city. It is important to note that actual unemployment is likely even higher because only those who are *actively searching* for work are counted as unemployed, not those who have given up the search.

Labor force participation rates are lower in Battle Creek than the United States overall
Labor Force Participation Rate by Race/Ethnicity, 2014

Battle Creek	
United States	64%
Michigan	61%
All	60%
White	59%
Black	59%
Latino	74%
Asian or Pacific Islander	62%
Native American	60%
Mixed/other	64%

Unemployment is higher in Battle Creek than in Michigan and Black residents have the highest unemployment rate
Unemployment Rate by Race/Ethnicity, 2014
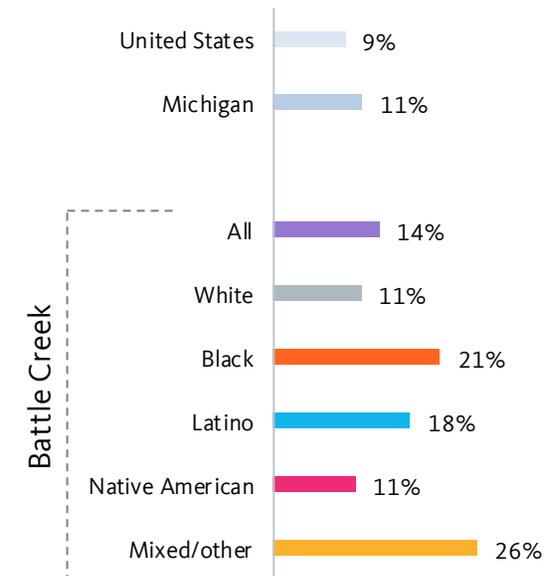
Battle Creek	
United States	9%
Michigan	11%
All	14%
White	11%
Black	21%
Latino	18%
Native American	11%
Mixed/other	26%

Source: U.S. Census Bureau. Universe includes the population age 16 or older. Note: Data represent a 2010 through 2014 average. "White" is defined as non-Hispanic white and "Latino" includes all who identify as being of Hispanic origin. All other racial/ethnic groups include any Latinos who identify with that particular racial category.

Source: U.S. Census Bureau. Universe includes the civilian labor force age 16 or older. Note: Data represent a 2010 through 2014 average. "White" is defined as non-Hispanic white and "Latino" includes all who identify as being of Hispanic origin. All other racial/ethnic groups include any Latinos who identify with that particular racial category.

Economic Vitality
Unemployment concentrated in communities of color

Unemployment is geographically concentrated in specific census tracts in the county. Most of the high unemployment neighborhoods (where unemployment is 20 percent or higher) are also communities where 44 percent or more residents are people of color.

One of these high unemployment tracts in the north of the city near Orchard Park neighbors a tract where the unemployment rate is less than 8 percent.

Most census tracts in the city have an average unemployment rate of at least 14 percent
Unemployment Rate by Census Tract, 2014

Less than 8%
8% to 11%
11% to 15%
15% to 20%
20% or more

44% or more People of color
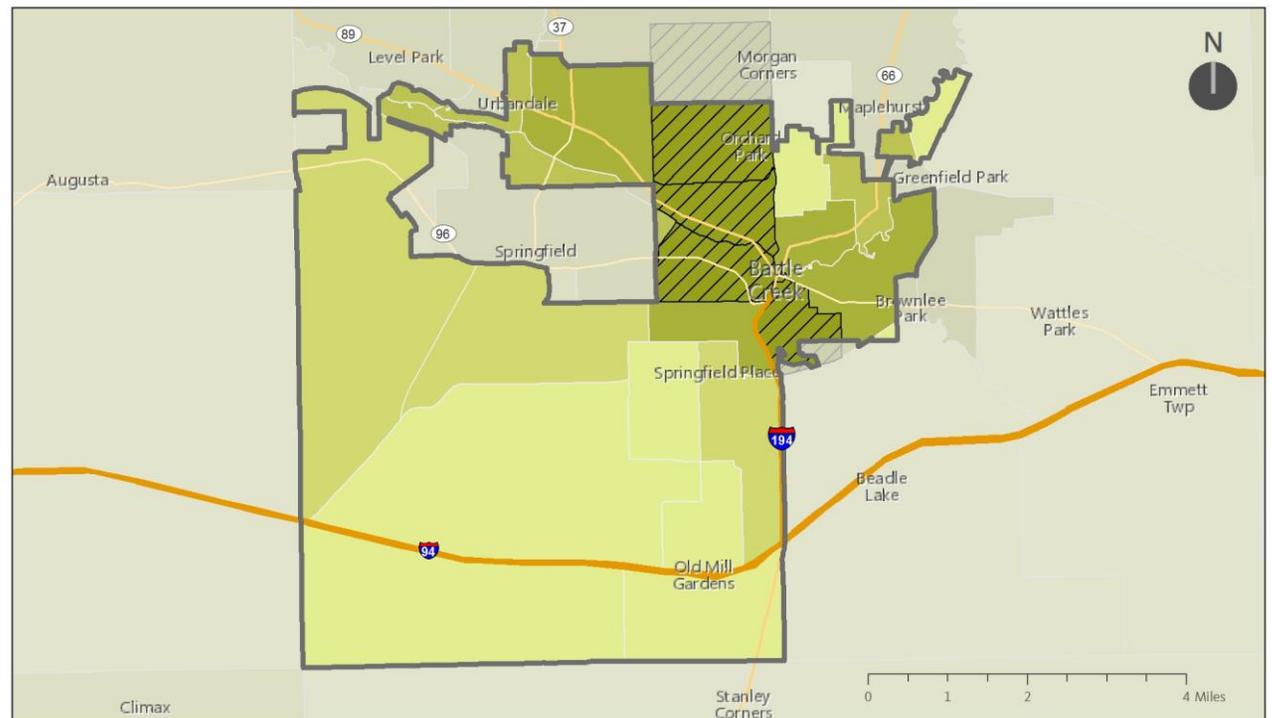
Source: U.S. Census Bureau, TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community. Universe includes the civilian labor force age 16 or older. Note: Data represent a 2010 through 2014 average. Areas in white are missing data.

Economic vitality
Income inequality slightly higher than state and nation

Income inequality is slightly higher in Battle Creek than in Calhoun County and nearly matches inequality at the national level. The Gini coefficient is 0.47 in Battle Creek but 0.45 in Calhoun County.

Income inequality here is measured by the Gini coefficient, which is the most commonly used measure of inequality. The Gini coefficient measures the extent to which the income distribution deviates from perfect equality, meaning that every household has the same income. The value of the Gini coefficient ranges from zero (perfect equality) to one (complete inequality, one household has all of the income).

Income inequality is slightly higher in Battle Creek than in Calhoun County overall
The Gini Coefficient, 2014

United States	0.48
Michigan	0.46
Calhoun County	0.45
Battle Creek	0.47

Source: U.S. Census Bureau. Universe includes all households (no group quarters).
Note: Data represents a 2010 through 2014 average.
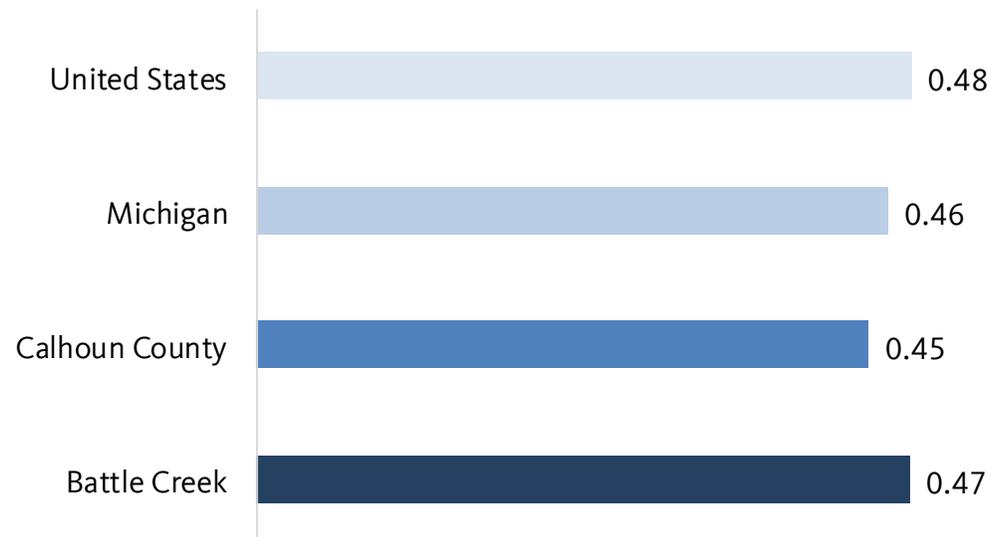
Economic vitality
Declining income for all households, particularly those with middle incomes

After adjusting for inflation, incomes have declined for all of the city's households since 1979. The real decline in income has been greatest for households in the middle of the income distribution, with a decline of 27 percent for households at the 50th percentile (the median).

Compared to the United States overall, household income has declined much more in Battle Creek since 1979 across the income distribution – even near the top (at the 80th and 90th percentiles) where there was actually some growth nationally.

Household income fell across the income distribution, but fell most for those in the middle
Real Household Income Growth, 1979 to 2014
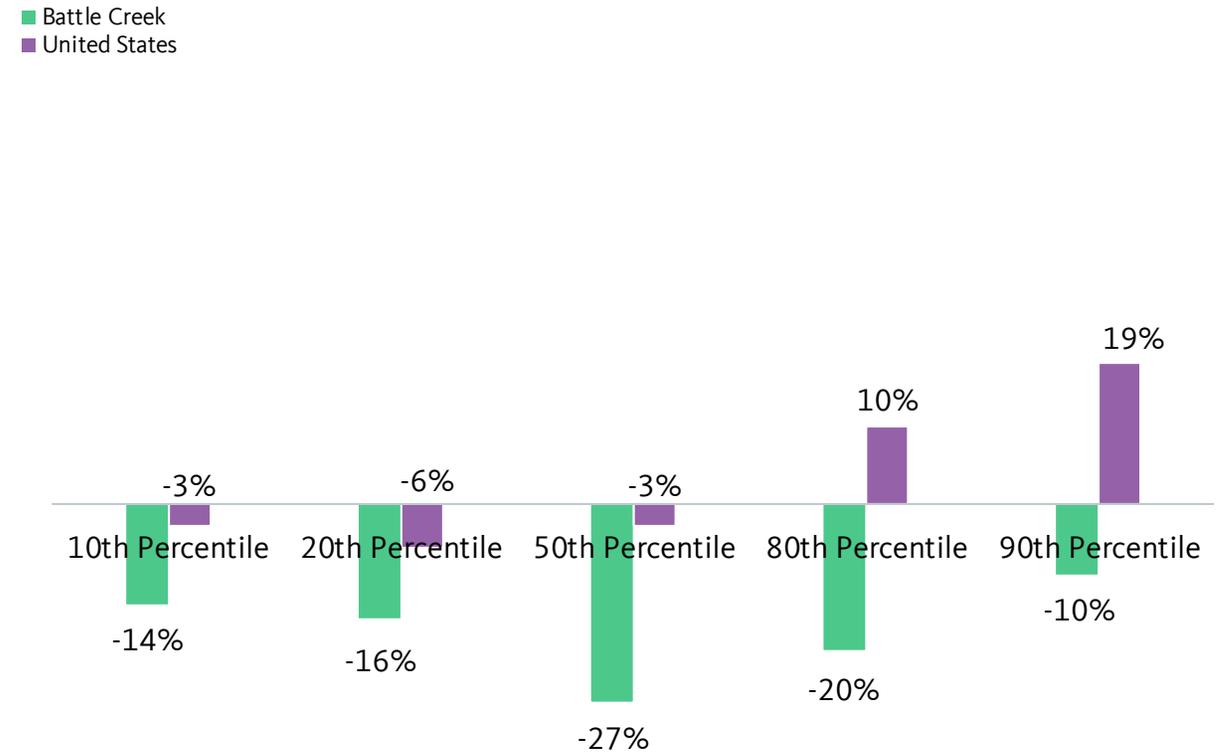
- ■ Battle Creek
- ■ United States

Source: U.S. Census Bureau. Universe includes all households (no group quarters).
Note: Data for 2014 represent a 2010 through 2014 average. Percentile values are estimated using Pareto interpolation.

Economic vitality
Income heavily concentrated amongst the top 20 percent of households

Income is concentrated among the city's highest-earning households. The top 20 percent of households take home half of all income earned in the city, earning more than $77,000 annually. Within that group, the top 5 percent (households with incomes exceeding $150,000) take home 23 percent of all income, earning more than three and four times what a household in the middle 20 percent of city residents earns ($29,837-$47,720). The bottom 20 percent of households collectively earn just 3 percent of the city's total income.

Nearly a quarter of all household income goes to the top five percent of households
Aggregate Household Income by Quantile, 2014
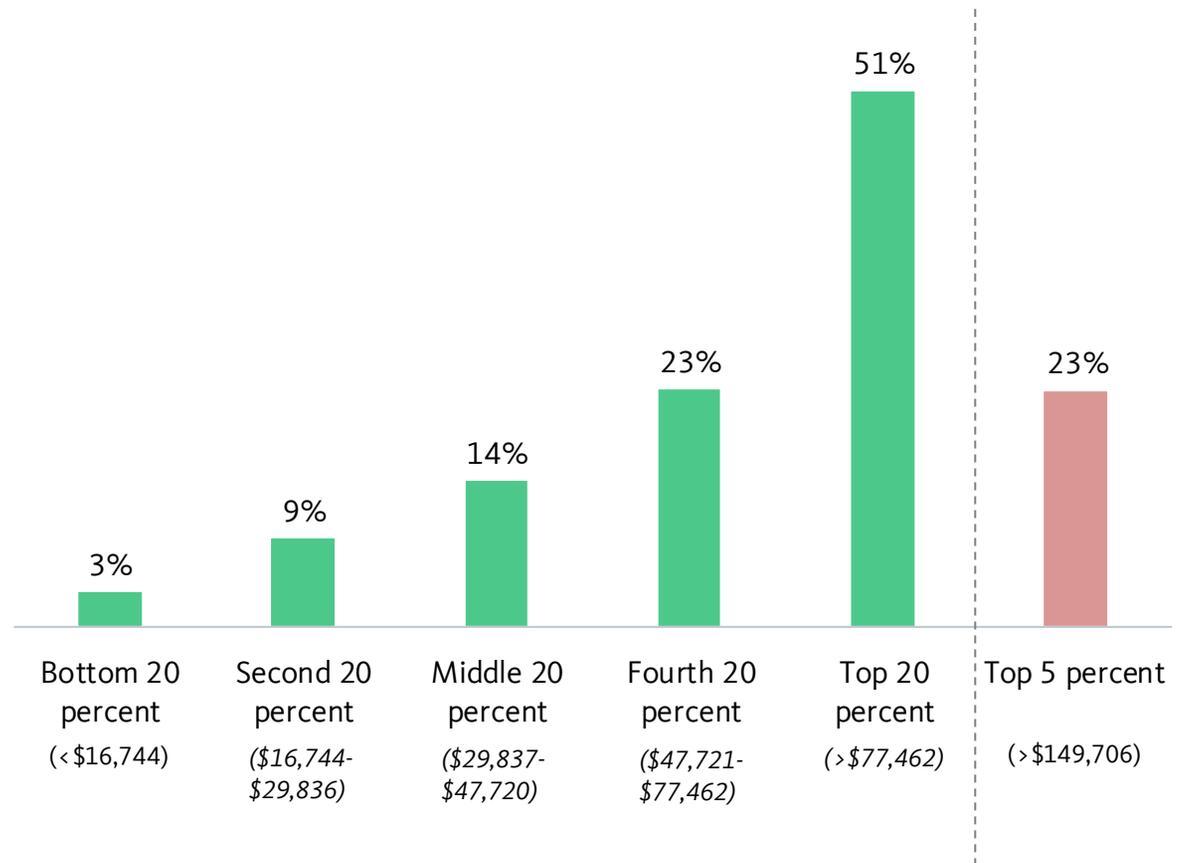
3%	9%	14%	23%	51%	23%
Bottom 20 percent	Second 20 percent	Middle 20 percent	Fourth 20 percent	Top 20 percent	Top 5 percent
(<$16,744)	($16,744-$29,836)	($29,837-$47,720)	($47,721-$77,462)	(>$77,462)	(>$149,706)

Source: U.S. Census Bureau. Universe includes all households (no group quarters).
Note: Data represent a 2010 through 2014 average. Values are in 2014 dollars.

Economic vitality
Households of color are overrepresented among households earning less than $35,000 a year

Households of color are overrepresented among households earning less than $35,000 a year and significantly underrepresented among households earning between $75,000 and $149,999 a year.

In 2014, households of color made up 27 percent of all households. But more than one in three households earning less than $20,000 annually are headed by a person of color. At the same time, just 13 percent of households earning $100,000-$149,999 are headed by a person of color. At the highest household income level ($150,000 or more), 23 percent of households are headed by people of color, thus households of color are somewhat better represented in this income tier as opposed to those just below.

Households earing between $50,000 to $59,999 most closely match the distribution of all households
Racial Composition of Households by Income Level, 2014

■ White
■ People of Color
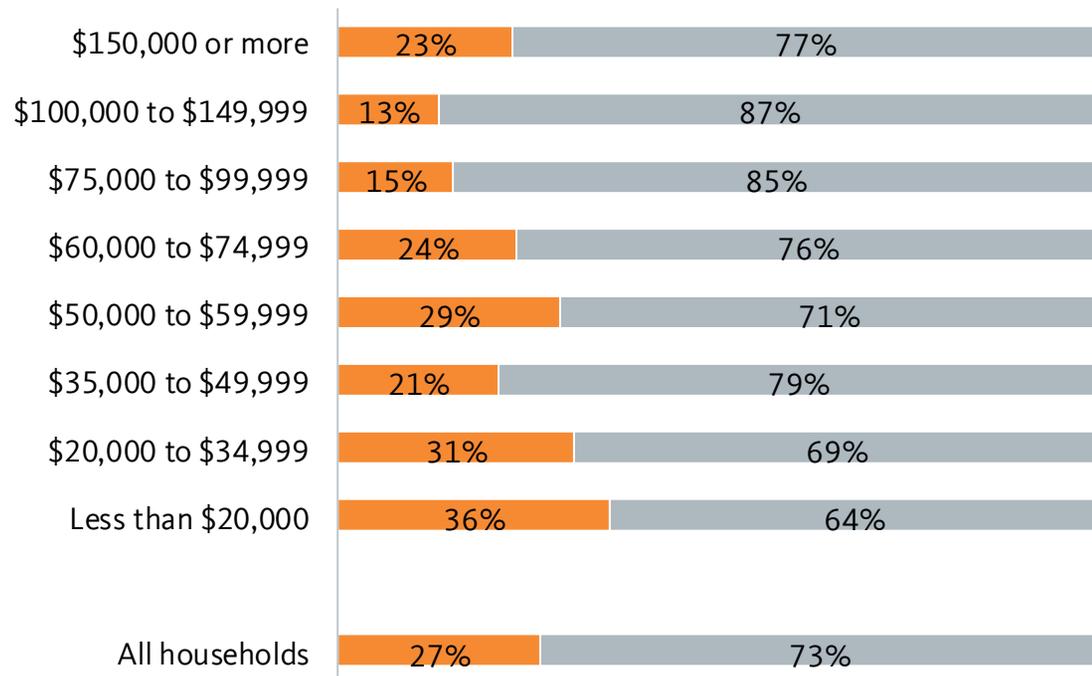
Income Level	People of Color	White
$150,000 or more	23%	77%
$100,000 to $149,999	13%	87%
$75,000 to $99,999	15%	85%
$60,000 to $74,999	24%	76%
$50,000 to $59,999	29%	71%
$35,000 to $49,999	21%	79%
$20,000 to $34,999	31%	69%
Less than $20,000	36%	64%
All households	27%	73%

Source: U.S. Census Bureau. Universe includes all households (no group quarters).
Note: Data represent a 2010 through 2014 average. Dollar values are in 2014 dollars.

Economic vitality
Latina and Black women have the lowest median earnings

Battle Creek workers experience marked differences in median by race and gender. White women earn less than Black, Asian, and Native American men, but earn more than Latino men and women of color.

White women earn considerably more than their women-of-color peers: median wages are more than $12,000 less for Latinas and $6,000 less for Black women.

Though men of color have a higher median earnings than their female counterparts, they are notably lower than that of White men. Latino men have the lowest median earnings of all men and a lower median earnings than White women.

The median earnings of Latina women are nearly $23,000 lower than that of White men
Median Earnings by Race/Ethnicity and Gender, 2014

- Male
- Female

All
- $42,873
- $33,423

White
- $45,264
- $35,022

Black
- $40,904
- $28,646

Latino
- $30,849
- $22,456
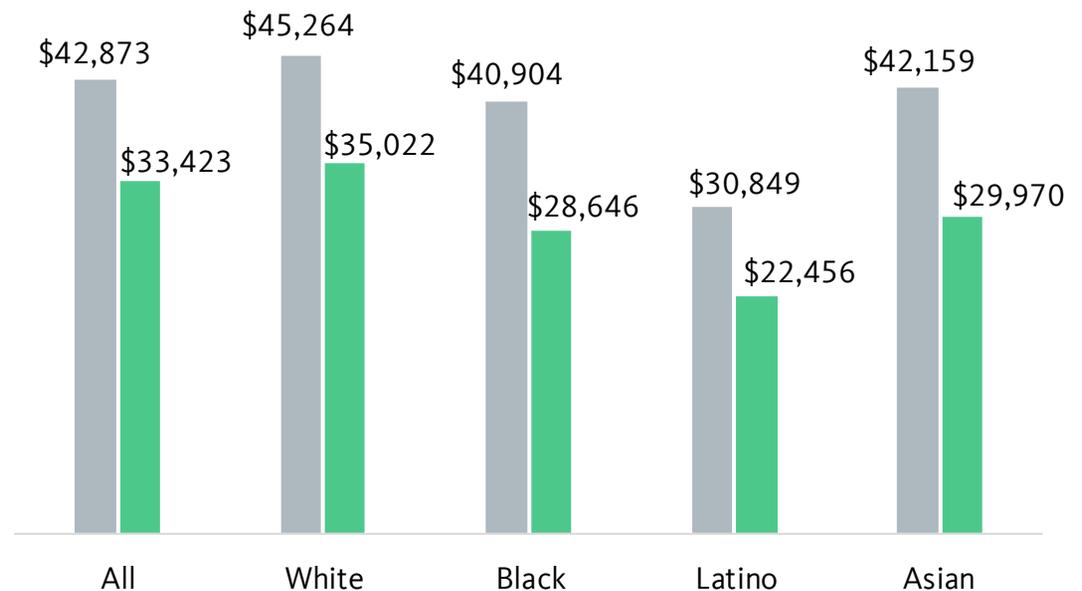
Asian
- $42,159
- $29,970

Source: U.S. Census Bureau. Universe includes full-time workers with earnings age 16 or older.
Note: "White" is defined as non-Hispanic white and "Latino" includes all who identify as being of Hispanic origin. "Asian" does not include Pacific Islanders. All other racial/ethnic groups include any Latinos who identify with that particular racial category. Values are in 2014 dollars. Data for some racial/ethnic groups are not available due to small sample size.

Economic vitality
Notable disparities in poverty by race

Residents experience poverty very differently depending upon their race/ethnicity. The overall poverty rate is 22 percent, but this varies from 5 percent among Asians or Pacific Islanders to 37 percent among residents of mixed/other races.

Child poverty is even higher in the city. Overall, 32 percent of children in Battle Creek are in poverty. This ranges from 4 percent of Asian or Pacific Islander children to 45 percent Black children. More than two in five Black and Latino children live in poverty as do one in four White children.

Black, Latino, Native American, and Mixed/other residents are about twice as likely to be poor as Whites

Poverty Rate by Race/Ethnicity, 2014
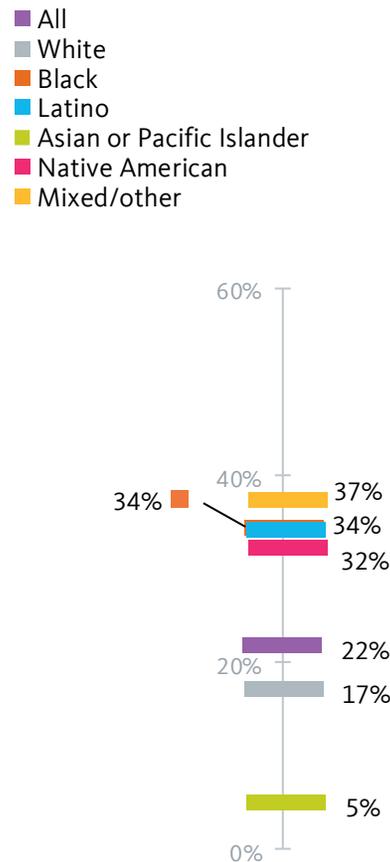
- All
- White
- Black
- Latino
- Asian or Pacific Islander
- Native American
- Mixed/other

34%

60%
37%
34%
32%
40%
22%
20%
17%
5%
0%

Black, Latino, and Mixed/other children face the highest poverty rates in the city

Child Poverty Rate by Race/Ethnicity, 2014

- All
- White
- Black
- Latino
- Asian or Pacific Islander
- Mixed/other

60%
45%
41%
40%
39%
32%
26%
20%
4%
0%

Source: U.S. Census Bureau. Universe includes all persons not in group quarters. Note: "White" is defined as non-Hispanic white and "Latino" includes all who identify as being of Hispanic origin. All other racial/ethnic groups include any Latinos who identify with that particular racial category. Data represent a 2010 through 2014 average.
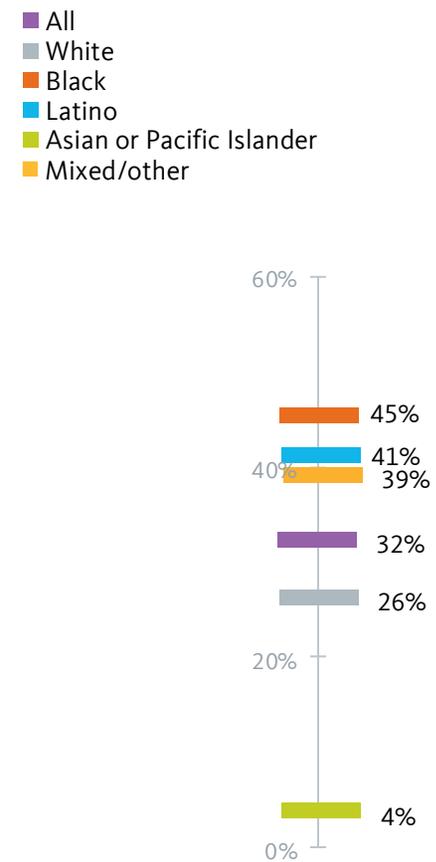
Source: U.S. Census Bureau. Universe includes the population age 17 or younger not in group quarters. Note: "White" is defined as non-Hispanic white and "Latino" includes all who identify as being of Hispanic origin. All other racial/ethnic groups include any Latinos who identify with that particular racial category. Data represent a 2010 through 2014 average. Data for some racial/ethnic groups are not reported due to small sample size.

Economic vitality
High rates of working poverty

Despite working, one in five residents ages 16 or older lives in poverty. With a working poverty rate of 21%, Battle Creek workers are more likely than those in Calhoun County and Michigan as a whole to be in poverty.

Working poor is defined here as workers age 16 or older with a family income below 150 percent of the federal poverty level. For a family of four, this is roughly $36,000 a year.

The working poverty rate is higher in Battle Creek than in the county, state, and nation overall
Working Poverty Rate, 2014

United States   14%

Michigan   15%

Calhoun County   16%

Battle Creek   21%
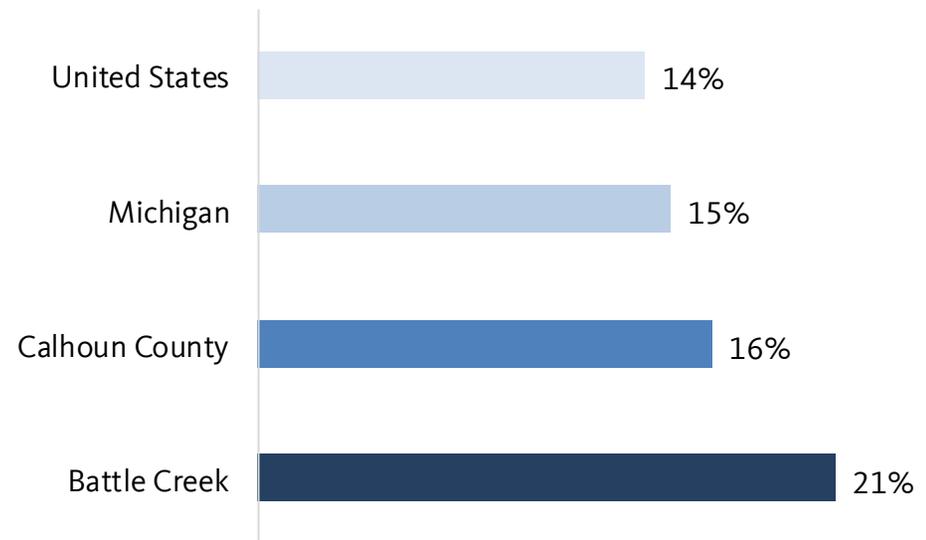
Source: U.S. Census Bureau. Universe includes workers age 16 or older not in group quarters.
Note: Data represent a 2010 through 2014 average.

Economic vitality
Major loss of low- and high-wage jobs

In Calhoun county, although earnings per worker have increased for workers at all industry wage levels, only middle-wage jobs have increased. High-wage jobs have declined by 17 percent while low-wage jobs have dropped by 12 percent. Importantly, there was strong growth in middle-wage jobs.

Even though earnings per worker increased across the board, only middle-wage jobs increased in Calhoun County
Growth in Jobs and Earnings by Industry Wage Level, 1990 to 2015

- Low wage
- Middle wage
- High wage

25%

13%

10%

8%

Jobs

Earnings per worker

-12%

-17%

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

Economic vitality
Earnings growth is fastest among the highest wage industries

Earnings growth has been positive in all low-wage industries from 1990 to 2015, but average annual earnings are still quite low. They are lowest for accommodation and food services at just $14,500 in 2015 and with just a 2 percent increase from 1990. These industries account for nearly a quarter of all jobs in Calhoun County.

Middle-wage industries account for 39 percent of jobs in the county but earning growth has been negative in three industries: administrative and support and waste management and remediation services; information; and education services. Wholesale trade saw the largest increase in earnings from 1990 to 2015 and had an average annual earnings of over $74,000 in 2015.

Among high-wage industries, management of companies and enterprises saw the greatest earnings growth and the highest average annual earnings in 2015.

Management of companies and enterprises have the highest average annual earnings followed by utilities
Industries by Wage-Level Category in 2015

Wage Category	Industry	Average Annual Earnings 1990	Average Annual Earnings 2015	Percent Change in Earnings 1990-2015	Share of Jobs 2015
High	Utilities	$78,869	$136,168	73%	
	Management of Companies and Enterprises	$69,374	$184,158	165%	
	Manufacturing	$61,490	$58,419	-5%	37%
	Transportation and Warehousing	$56,644	$58,675	4%	
	Finance and Insurance	$50,984	$50,158	-2%	
	Professional, Scientific, and Technical Services	$50,318	$96,804	92%	
Middle	Construction	$50,211	$57,886	15%	
	Wholesale Trade	$48,373	$74,164	53%	
	Administrative and Support and Waste Management and Remediation Services	$40,932	$24,339	-41%	39%
	Information	$39,347	$37,072	-6%	
	Health Care and Social Assistance	$39,321	$43,746	11%	
	Education Services	$36,760	$27,699	-25%	
	Other Services (except Public Administration)	$28,656	$40,458	41%	
Low	Mining	$28,069	$37,564	34%	
	Retail Trade	$23,488	$25,922	10%	
	Real Estate and Rental and Leasing	$22,274	$31,164	40%	24%
	Arts, Entertainment, and Recreation	$16,329	$17,958	10%	
	Accommodation and Food Services	$14,226	$14,469	2%	
	Agriculture, Forestry, Fishing and Hunting	$13,499	$27,739	105%	

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 Calhoun County, MI. Dollar values are in 2015 dollars.

Economic vitality

Health care and social assistance to add the most jobs in the region through 2022

Within the seven-county Southwest Prosperity Region, the health care and social assistance industry is projected to add the most jobs by far from 2012 to 2022: more than a quarter of the 24,000 new jobs in the region by 2022. Manufacturing is projected to add another 3,200 jobs while administrative and support and waste management and

remediation services are projected to add nearly 2,600.

Transportation and warehousing are strong and expanding in the region
Industry Employment Projections, 2012 to 2022

Industry	2012 Estimated Employment	2022 Projected Employment	Total 2012 to 2022 Employment Change	Annual Avg. Percent Change	Total Percent Change
Health Care and Social Assistance	42,470	49,220	6,750	1.5%	16%
Manufacturing	53,790	56,960	3,170	0.6%	6%
Administrative and Support and Waste Management and Remediation Services	17,360	19,920	2,560	1.4%	15%
Accommodation and Food Services	25,680	28,050	2,370	0.9%	9%
Construction	8,700	10,370	1,670	1.8%	19%
Other Services (Except Government)	12,880	14,240	1,360	1.0%	11%
Educational Services	30,520	31,860	1,340	0.4%	4%
Professional, Scientific, and Technical Services	10,160	11,450	1,290	1.2%	13%
Total Self-Employed and Unpaid Family Workers, Non-Agriculture	17,060	18,080	1,020	0.6%	6%
Wholesale Trade	10,450	11,300	850	0.8%	8%
Transportation and Warehousing	6,850	7,450	600	0.8%	9%
Agriculture, Forestry, Fishing and Hunting	8,430	8,800	370	0.4%	4%
Finance and Insurance	10,340	10,650	310	0.3%	3%
Retail Trade	31,900	32,160	260	0.1%	1%
Arts, Entertainment, and Recreation	3,180	3,370	190	0.6%	6%
Real Estate and Rental and Leasing	2,660	2,820	160	0.6%	6%
Mining	240	270	30	1.2%	13%
Management of Companies and Enterprises	1,610	1,590	-20	-0.1%	-1%
Utilities	2,570	2,480	-90	-0.4%	-4%
Information	2,310	2,140	-170	-0.8%	-7%
Government	21,520	21,290	-230	-0.1%	-1%
Total, All Industries	**320,670**	**344,470**	**23,800**	**0.7%**	**7%**

Sources: Michigan Department of Technology, Management and Budget, Bureau of Labor Market Information and Strategic Initiatives.
Note: Data is for the Southwest Prosperity Region which includes Berrien, Van Buren, Cass, Kalamazoo, St. Joseph, Calhoun, and Branch Counties in Michigan. Figures may not sum to total due to rounding.

Economic vitality
Food preparation and serving-related occupations to add the most jobs through 2022

Of the 24,000 jobs to be added to the broader region by 2022, food preparation and serving related occupations, production occupations, and health-care practitioners and technical occupations are projected to add the most jobs. Health-care support occupations are projected to increase by the largest percentage: 17 percent from 2012 to 2022.

Education, healthcare, and personal care occupations projected to add most jobs but growth expected for arts, design, entertainment, and other services as well

Occupational Employment Projections, 2012 to 2022

Occupation	2012 Estimated Employment	2022 Projected Employment	Total 2012 to 2022 Employment Change	Annual Avg. Percent Change	Total Percent Change
Food Preparation and Serving Related Occupations	28,490	31,095	2,605	0.9%	9%
Production Occupations	35,190	37,780	2,590	0.7%	7%
Healthcare Practitioners and Technical Occupations	18,475	20,795	2,320	1.2%	13%
Healthcare Support Occupations	11,810	13,850	2,040	1.6%	17%
Education, Training, and Library Occupations	19,400	20,810	1,410	0.7%	7%
Management Occupations	19,770	21,135	1,365	0.7%	7%
Construction and Extraction Occupations	9,630	10,980	1,350	1.3%	14%
Transportation and Material Moving Occupations	18,790	20,115	1,325	0.7%	7%
Personal Care and Service Occupations	10,420	11,680	1,260	1.1%	12%
Building and Grounds Cleaning and Maintenance Occupations	11,700	12,870	1,170	1.0%	10%
Business and Financial Operations Occupations	13,040	14,195	1,155	0.9%	9%
Installation, Maintenance, and Repair Occupations	12,055	13,190	1,135	0.9%	9%
Office and Administrative Support Occupations	46,160	47,050	890	0.2%	2%
Sales and Related Occupations	30,085	30,930	845	0.3%	3%
Architecture and Engineering Occupations	7,105	7,680	575	0.8%	8%
Computer and Mathematical Occupations	3,850	4,335	485	1.2%	13%
Community and Social Service Occupations	4,670	5,150	480	1.0%	10%
Protective Service Occupations	5,635	5,865	230	0.4%	4%
Life, Physical, and Social Science Occupations	3,030	3,230	200	0.6%	7%
Arts, Design, Entertainment, Sports, and Media Occupations	4,495	4,665	170	0.4%	4%
Farming, Fishing, and Forestry Occupations	5,460	5,590	130	0.2%	2%
Legal Occupations	1,410	1,485	75	0.5%	5%
Total, All Occupations	**320,675**	**344,465**	**23,790**	**0.7%**	**7%**

Sources: Michigan Department of Technology, Management and Budget, Bureau of Labor Market Information and Strategic Initiatives.
Note: Data is for the Southwest Prosperity Region which includes Berrien, Van Buren, Cass, Kalamazoo, St. Joseph, Calhoun, and Branch Counties in Michigan. Figures may not sum to total due to rounding.

Economic vitality
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 wage growth). These characteristics were examined over the last decade to provide a current picture of how the region's economy is changing.

Industry strength index =

Size (2015)	**+**	**Concentration** (2015)	**+**	**Job quality** (2015)	**+**	**Growth** (2005 to 2015)
Total Employment The total number of jobs in a particular industry.		**Location Quotient** A measure of employment concentration calculated by dividing the share of employment for a particular industry in the region by its share nationwide. A score >1 indicates higher-than-average concentration.		**Average Annual Wage** The estimated total annual wages of an industry divided by its estimated total employment		**Change in the number of jobs** **Percent change in the number of jobs** **Real wage growth**

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.

Economic vitality
Manufacturing and utilities are the strongest industries

Within Calhoun County, manufacturing, utilities, and health care and social assistance are the strongest industries. Even though manufacturing saw a decline in employment and real wages from 2005 to 2015, it had the highest location quotient of all industries, indicating a local concentration and advantage relative to the nation.

Health care and social assistance was the second largest industry and ranked third on the industry strength index with an average annual wage of nearly $44,000.

Annual average job growth of less than one percent per year projected for the broader region, with new jobs projected in health care and other services
**Industry Strength Index**

Industry	Size Total employment (2015)	Concentration Location Quotient (2015)	Job Quality Average annual wage (2015)	Growth Change in employment (2005 to 2015)	% Change in employment (2005 to 2015)	Real wage growth (2005 to 2015)	Industry Strength Index
Manufacturing	11,804	2.4	$58,419	-2,043	-15%	-13%	98.8
Utilities	375	1.7	$136,168	117	45%	59%	86.0
Health Care and Social Assistance	9,148	1.2	$43,746	1,251	16%	5%	71.4
Professional, Scientific, and Technical Services	2,026	0.6	$96,804	921	83%	103%	60.1
Management of Companies and Enterprises	570	0.6	$184,158	-197	-26%	33%	49.0
Transportation and Warehousing	1,679	0.9	$58,675	620	59%	26%	16.7
Wholesale Trade	1,629	0.7	$74,164	346	27%	36%	10.2
Retail Trade	5,613	0.9	$25,922	-1,218	-18%	4%	-16.3
Agriculture, Forestry, Fishing and Hunting	458	0.9	$27,739	225	97%	-12%	-19.0
Other Services (except Public Administration)	1,451	0.8	$40,458	-179	-11%	13%	-26.2
Education Services	1,112	1.0	$27,699	269	32%	-25%	-26.4
Construction	1,609	0.6	$57,886	-522	-24%	11%	-30.5
Accommodation and Food Services	4,080	0.8	$14,469	-727	-15%	1%	-34.2
Finance and Insurance	896	0.4	$50,158	-299	-25%	7%	-48.8
Administrative and Support and Waste Management and Remediation Services	2,520	0.7	$24,339	-923	-27%	-7%	-50.3
Mining	68	0.2	$37,564	27	66%	-25%	-56.3
Real Estate and Rental and Leasing	288	0.3	$31,164	-19	-6%	9%	-59.5
Information	448	0.4	$37,072	-205	-31%	-8%	-64.5
Arts, Entertainment, and Recreation	503	0.6	$17,958	-264	-34%	8%	-65.1

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

Economic vitality
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.

Job quality, measured by the median annual wage, accounted for two-thirds of the occupation opportunity index, and growth accounted for the other one third. Within the growth category, half was determined by wage growth and the other half was divided equally between the change in number of jobs, percent change in jobs, and median age of workers.

Occupation opportunity index =

Job quality	+	Growth

Median annual wage

Real wage growth

Change in the number of jobs

Percent change in the number of jobs

Median age of workers
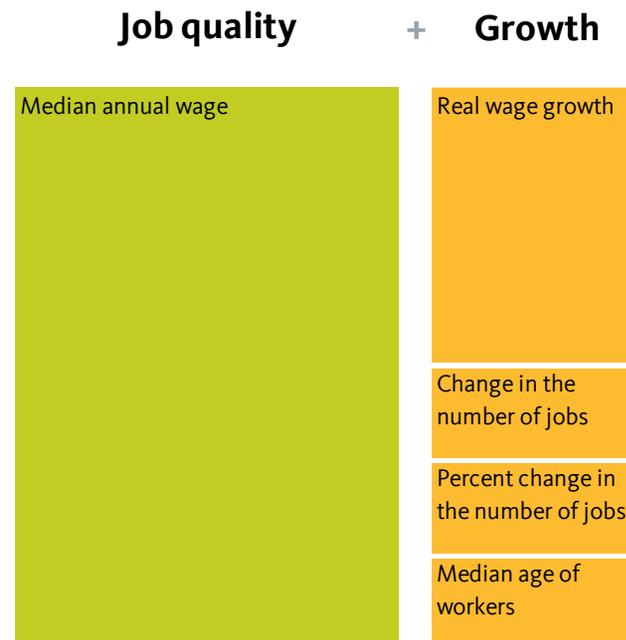
Note: Each indicator was normalized as a cross-occupation z-score before taking a weighted average to derive the index.

Economic vitality
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 degree or less, workers with more than a high-school degree but less than a BA, and workers with a BA or higher.

Given that the regional economy has experienced widespread employment decline across many occupation groups, it is important to note that this index is only meant to provide general guidance on the strength of various occupations. Its interpretation should be informed by examining all metrics of job quality and growth.

All jobs
(2011)

High-opportunity
(25 occupations)

Middle-opportunity
(16 occupations)

Low-opportunity
(16 occupations)
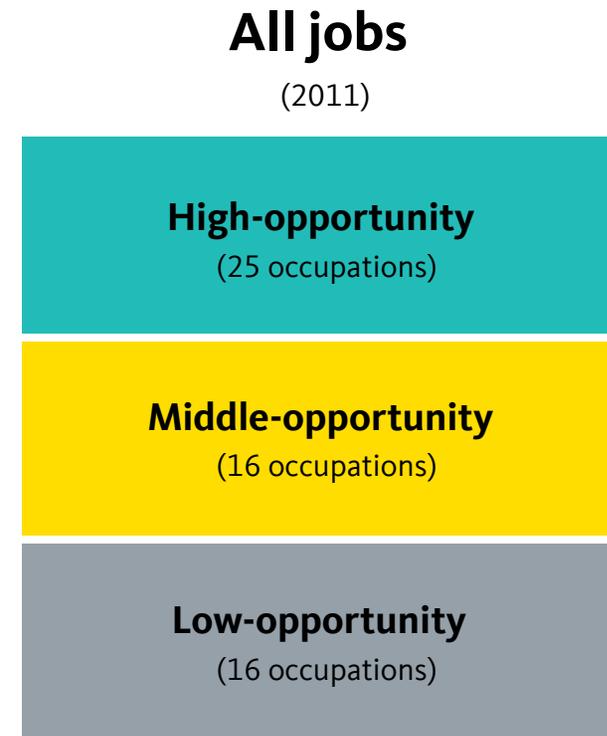
Note: The occupation opportunity index and the three broad categories drawn from it are only meant to provide general guidance on the level of opportunity associated with various occupations in the region, and its interpretation should be informed by an examination of individual metrics used in its calculation, which are presented in the tables on the following pages.

Economic vitality

High-opportunity occupations for workers with a high school diploma or less

Supervisors of construction, extraction, and production 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 Median Annual Wage	Growth Real Wage Growth	Growth Change in Employment	Growth % Change in Employment	Occupation Opportunity Index
		(2011)	(2011)	(2011)	(2005-11)	(2005-11)	
High-Opportunity	Supervisors of Construction and Extraction Workers	90	$62,660	7.5%	-120	-57.1%	0.67
	Supervisors of Production Workers	440	$56,710	13.6%	-150	-25.4%	0.54
	Printing Workers	120	$40,550	NA	NA	NA	-0.04
	Supervisors of Transportation and Material Moving Workers	100	$41,982	-12.3%	0	0.0%	-0.07
	Motor Vehicle Operators	1,150	$34,528	-0.5%	190	19.8%	-0.10
Middle-Opportunity	Supervisors of Food Preparation and Serving Workers	450	$35,410	12.8%	30	7.1%	-0.11
	Other Installation, Maintenance, and Repair Occupations	750	$40,679	-10.2%	-360	-32.4%	-0.27
	Other Production Occupations	1,470	$34,900	-0.5%	-530	-26.5%	-0.28
	Construction Trades Workers	660	$38,743	-17.3%	-580	-46.8%	-0.38
	Metal Workers and Plastic Workers	1,030	$30,840	-5.6%	-250	-19.5%	-0.40
	Material Moving Workers	1,210	$26,767	19.1%	-540	-30.9%	-0.45
	Supervisors of Building and Grounds Cleaning and Maintenance Workers	60	$31,570	-16.1%	-30	-33.3%	-0.45
	Nursing, Psychiatric, and Home Health Aides	1,780	$23,577	-5.5%	630	54.8%	-0.50
Low-Opportunity	Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	450	$30,328	-26.3%	-30	-6.3%	-0.59
	Other Personal Care and Service Workers	610	$18,994	6.7%	100	19.6%	-0.62
	Material Recording, Scheduling, Dispatching, and Distributing Workers	1,230	$29,762	-15.7%	-690	-35.9%	-0.63
	Other Food Preparation and Serving Related Workers	470	$18,078	13.5%	200	74.1%	-0.66
	Cooks and Food Preparation Workers	950	$20,557	-5.8%	160	20.3%	-0.77
	Building Cleaning and Pest Control Workers	830	$21,494	-19.4%	-240	-22.4%	-0.77
	Retail Sales Workers	3,420	$19,558	-3.3%	-160	-4.5%	-0.80
	Food and Beverage Serving Workers	2,280	$18,322	19.1%	-500	-18.0%	-0.82
	Food Processing Workers	150	$21,659	-25.4%	10	7.1%	-0.84
	Grounds Maintenance Workers	220	$22,250	-16.8%	-160	-42.1%	-0.86
	Personal Appearance Workers	170	$22,100	NA	NA	NA	-0.87
	Textile, Apparel, and Furnishings Workers	140	$19,270	NA	NA	NA	-0.90
	Assemblers and Fabricators	1,420	$24,008	-21.6%	-1,140	-44.5%	-0.98
	Animal Care and Service Workers	80	$18,380	NA	NA	NA	-1.08

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 degree or less.
Note: Analysis reflects the Battle Creek, MI Metropolitan Statistical Area as defined by the U.S. Office of Management and Budget. Dollar values are in 2011 dollars. "N/A" indicates that no data are available.

Economic vitality
High-opportunity occupations for workers with more than a high school diploma but less than a BA

Supervisors of installation, maintenance, and repair workers are high-opportunity jobs for workers with more than a high school diploma but less than a BA

Occupation Opportunity Index: Occupations by Opportunity Level for Workers with More Than a High School Diploma but Less Than a BA

	Occupation	Employment	Job Quality Median Annual Wage	Growth Real Wage Growth	Growth Change in Employment	Growth % Change in Employment	Occupation Opportunity Index
		(2011)	(2011)	(2011)	(2005-11)	(2005-11)	
High-Opportunity	Supervisors of Installation, Maintenance, and Repair Workers	150	$63,450	2.5%	-100	-40.0%	0.69
	Law Enforcement Workers	200	$52,400	NA	NA	NA	0.46
	Supervisors of Protective Service Workers	90	$50,328	NA	NA	NA	0.42
	Drafters, Engineering Technicians, and Mapping Technicians	250	$49,357	-18.2%	170	212.5%	0.35
	Supervisors of Office and Administrative Support Workers	330	$49,530	6.4%	-270	-45.0%	0.25
	Health Technologists and Technicians	1,100	$42,910	4.4%	360	48.6%	0.24
	Supervisors of Sales Workers	660	$40,138	-11.2%	160	32.0%	-0.03
	Secretaries and Administrative Assistants	860	$35,662	2.7%	100	13.2%	-0.08
Middle-Opportunity	Other Office and Administrative Support Workers	1,930	$26,949	10.5%	700	56.9%	-0.11
	Financial Clerks	990	$31,566	-8.5%	-110	-10.0%	-0.35
	Supervisors of Personal Care and Service Workers	60	$32,340	-19.1%	10	20.0%	-0.42
	Entertainment Attendants and Related Workers	200	$18,220	12.6%	130	185.7%	-0.49
	Information and Record Clerks	1,400	$28,628	-9.7%	-160	-10.3%	-0.51
Low-Opportunity	Other Healthcare Support Occupations	630	$29,439	NA	NA	NA	-0.60
	Other Education, Training, and Library Occupations	540	$22,420	-25.4%	20	3.8%	-0.77

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.
Note: Analysis reflects the Battle Creek, MI Metropolitan Statistical Area as defined by the U.S. Office of Management and Budget. Dollar values are in 2011 dollars. "N/A" indicates that no data are available.

Economic vitality

High-opportunity occupations for workers with a BA degree or higher

Advertising, marketing, promotions, public relations, and sales managers are high-opportunity occupations for workers with a BA degree or higher
Occupation Opportunity Index: All Levels of Opportunity for Workers with a BA Degree or Higher

	Occupation	Employment	Job Quality Median Annual Wage	Growth Real Wage Growth	Change in Employment	% Change in Employment	Occupation Opportunity Index
		(2011)	(2011)	(2011)	(2005-11)	(2005-11)	
High-Opportunity	Advertising, Marketing, Promotions, Public Relations, and Sales Managers	140	$107,830	16.8%	30	27.3%	2.19
	Operations Specialties Managers	470	$100,981	12.0%	-140	-23.0%	1.92
	Top Executives	630	$99,810	12.8%	-70	-10.0%	1.92
	Health Diagnosing and Treating Practitioners	1,880	$88,634	26.4%	210	12.6%	1.80
	Lawyers, Judges, and Related Workers	60	$75,890	NA	NA	NA	1.49
	Engineers	550	$78,634	11.1%	210	61.8%	1.35
	Other Management Occupations	880	$81,691	-2.1%	240	37.5%	1.33
	Business Operations Specialists	1,860	$63,700	-3.6%	300	19.2%	0.77
	Preschool, Primary, Secondary, and Special Education School Teachers	1,490	$56,003	-0.4%	380	34.2%	0.53
	Financial Specialists	320	$56,339	3.8%	-110	-25.6%	0.49
	Media and Communication Workers	120	$54,705	-0.8%	-40	-25.0%	0.36
	Postsecondary Teachers	120	$48,010	NA	NA	NA	0.29
Middle-Opportunity	Counselors, Social Workers, and Other Community and Social Service Specialists	410	$54,705	-0.8%	-30	-6.8%	-0.14
	Computer Occupations	170	$56,339	3.8%	-340	-66.7%	-0.18
	Sales Representatives, Services	360	$48,010	NA	120	50.0%	-0.24

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 Battle Creek, MI Metropolitan Statistical Area as defined by the U.S. Office of Management and Budget. Dollar values are in 2011 dollars. "N/A" indicates that no data are available.

Readiness

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

- More than half of Black residents ages 25 and older have more than a high school diploma, as do 59 percent of White residents.

- Youth disconnection from school and work is a challenge in the city: young people ages 16 to 19 are twice as likely as youth statewide to be disconnected.

- Racial inequities persist in early childhood education: just 16 percent of Black third graders achieve reading proficiency compared with 71 percent of Asian or Pacific Islander third graders.

- Nearly one in five residents in the city lacks health insurance and uninsured rates are highest among the Asian or Pacific Islander and mixed/other populations.

Share of Black residents with more than a high school diploma:

53%

Share of 3rd graders achieving reading proficiency:

37%

Share of Asian or Pacific Islander residents without health insurance:

25%

Readiness

Asian or Pacific Islander adults are most likely to have a bachelor's degree or higher

While the share of White and Black residents ages 25 or older without a high school diploma is the same in the city at 10 percent, White residents are more likely than Black residents to have a bachelor's degree or higher. Latino residents have lower educational attainment on average while Asian or Pacific Islander residents have higher educational attainment. Nearly half of Asians or Pacific Islanders have a bachelor's degree or higher.

There are wide gaps in educational attainment
Educational Attainment by Race/Ethnicity, 2014

- Bachelor's degree or higher
- Some college or associate's degree
- High school grad
- Less than high school diploma
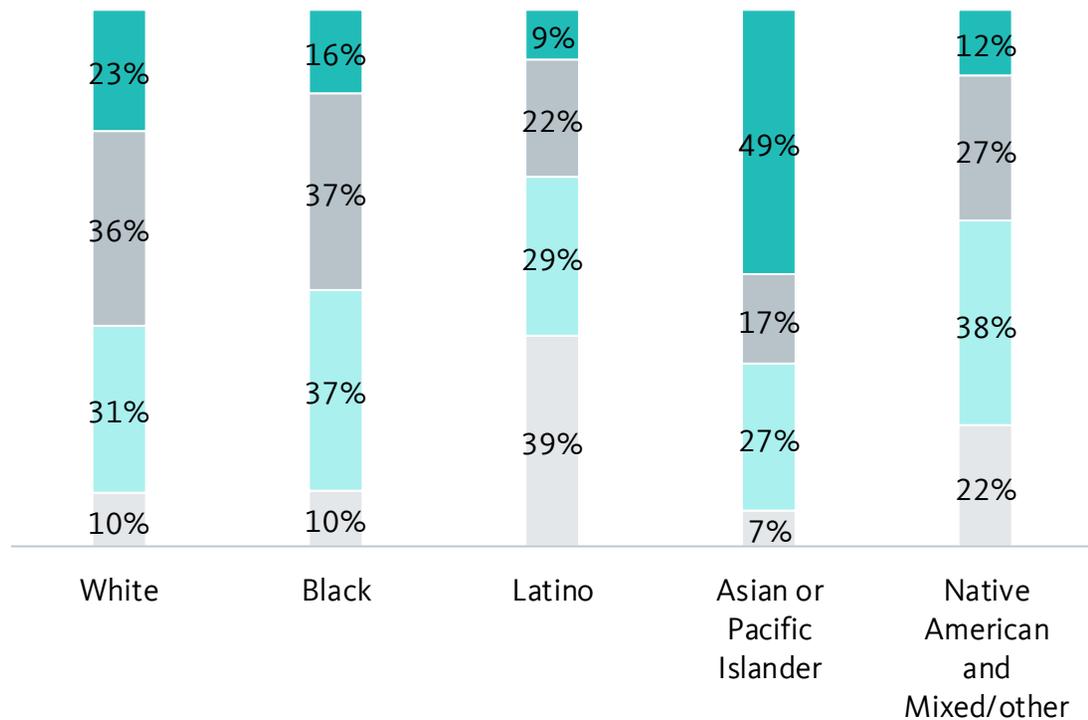
	White	Black	Latino	Asian or Pacific Islander	Native American and Mixed/other
Bachelor's degree or higher	23%	16%	9%	49%	12%
Some college or associate's degree	36%	37%	22%	17%	27%
High school grad	31%	37%	29%	27%	38%
Less than high school diploma	10%	10%	39%	7%	22%

Source: U.S. Census Bureau. Universe includes all persons age 25 or older.
Note: Data represent a 2010 through 2014 average. "White" is defined as non-Hispanic white and "Latino" includes all who identify as being of Hispanic origin. All other racial/ethnic groups include any Latinos who identify with that particular racial category.

Readiness
Local shares of residents with bachelor's degree or higher falls below statewide and nationwide shares

Overall, Battle Creek and Calhoun County residents ages 25 and over are less likely to have a bachelor's degree or higher than those in Michigan and the United States. Just 21 percent of adult residents in the city have a BA or higher, compared to 26 percent statewide and 29 percent nationally.

Educational attainment in Battle Creek is lower than the state and nationally
Percent of the Population with a Bachelor's Degree or Higher, 2014
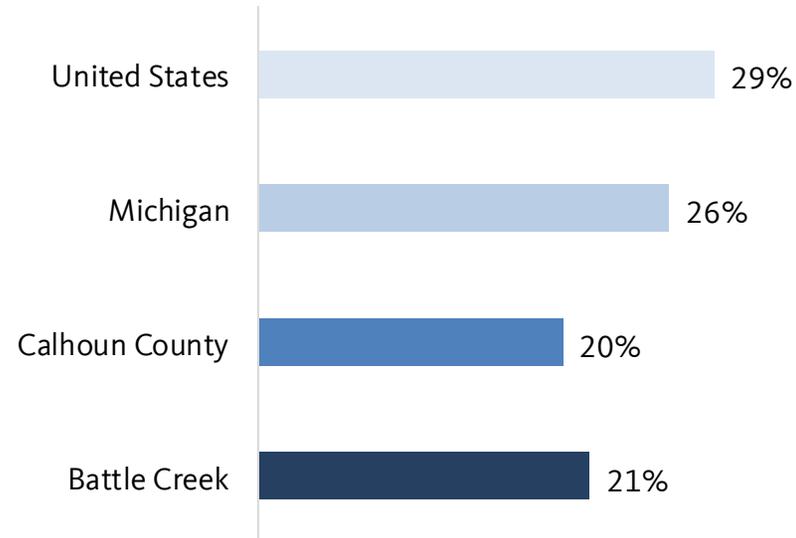
United States	29%
Michigan	26%
Calhoun County	20%
Battle Creek	21%

Source: U.S. Census Bureau. Universe includes all persons age 25 or older.
Note: Data represent a 2010 through 2014 average.

Readiness
A potential education and skills gap for people of color

By 2020, 33 percent of jobs in Michigan will require a bachelor's degree or higher. The education levels of the city's population, however, are not in line with employer's future demands.

API males and females are by far the most likely to have a bachelor's degree across groups. All other groups fail to meet the threshold for these future demands, with Latino males and females, and Native American males having the lowest level of bachelor's degree attainment.

The region will face a skills gap unless education levels increase – especially for African Americans, Latinos, and Native American males
Share of Working-Age Population with a BA Degree or Higher by Race/Ethnicity and Gender, 2014, and Projected Share of Jobs that Require a BA Degree or Higher, 2020

White, male	White, female	Black, male	Black, female	Latino, male	Latina, female	API, male	API, female	Native American, male	Native American, female	Jobs in 2020
25%	21%	17%	14%	10%	8%	60%	40%	9%	28%	33%
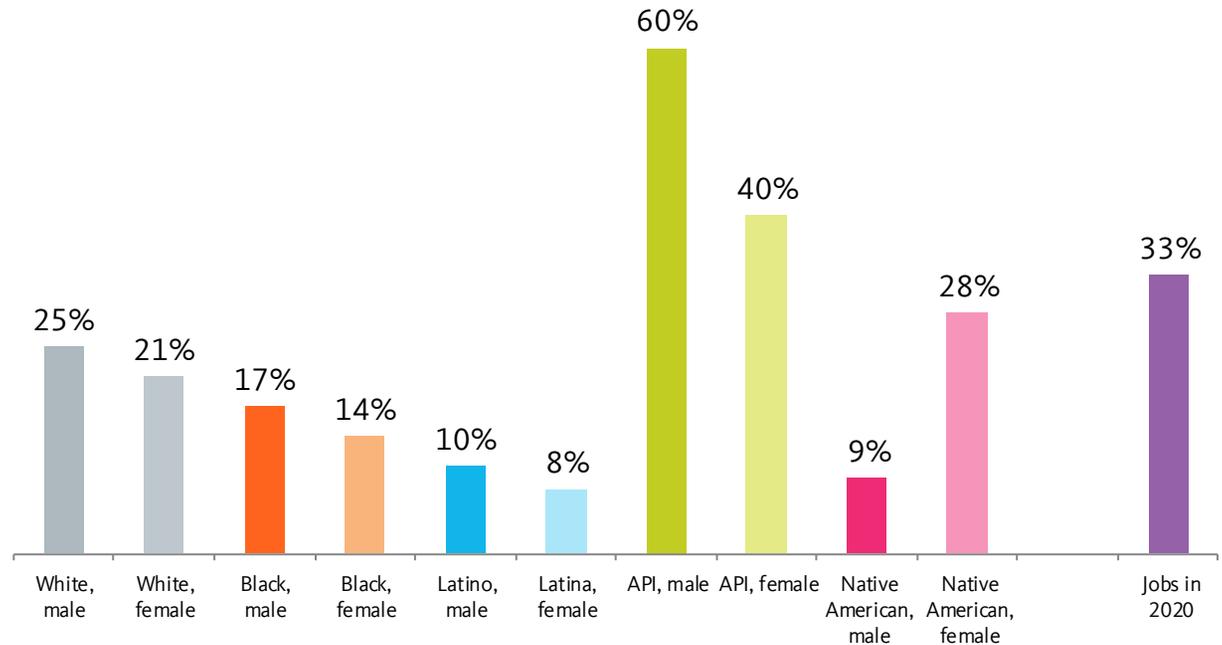
Sources: Georgetown Center for Education and the Workforce, U.S. Census Bureau. Universe for education levels of workers includes all persons age 25 or older. Note: "White" is defined as non-Hispanic white and "Latino" includes all who identify as being of Hispanic origin. All other racial/ethnic groups include any Latinos who identify with that particular racial category. Data on education levels by race/ethnicity represents a 2010 through 2014 average for Battle Creek while data on educational requirements for jobs in 2020 are based on statewide projections for Michigan.

Readiness
A high share of youth are disconnected from work or school

The share of disconnected youth – young people ages 16- to 19-years-old not in work or school – is higher in Battle Creek than Calhoun County and Michigan overall. Statewide, 8 percent of youth are disconnected but that number is double in the city of Battle Creek.

Battle Creek youth are more likely to be disconnected than their peers in the rest of the state and nationally
Percent of 16- to 19-Year-Olds Not in Work or School, 2014

United States   8%
Michigan   8%
Calhoun County   10%
Battle Creek   16%
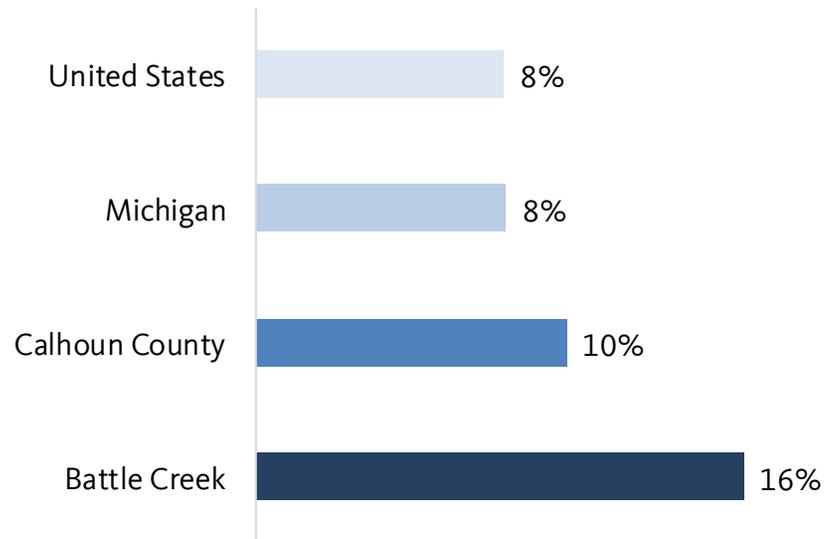
Source: U.S. Census Bureau.
Note: Data represent a 2010 through 2014 average.

Readiness
Low access to early childhood education

Battle Creek's 3- and 4-year-olds are much less likely to benefit from early childhood education than children their age across the county and throughout the state of Michigan. While 47 percent of 3- and 4-year-olds statewide are enrolled in school, just 39 percent of all children in this age range are enrolled in preschool.

Preschool enrollment is considerably lower in Battle Creek than the county and state overall
Percent of 3- to-4-Year-Olds Enrolled in School, 2014

United States	47%
Michigan	47%
Calhoun County	46%
Battle Creek	39%
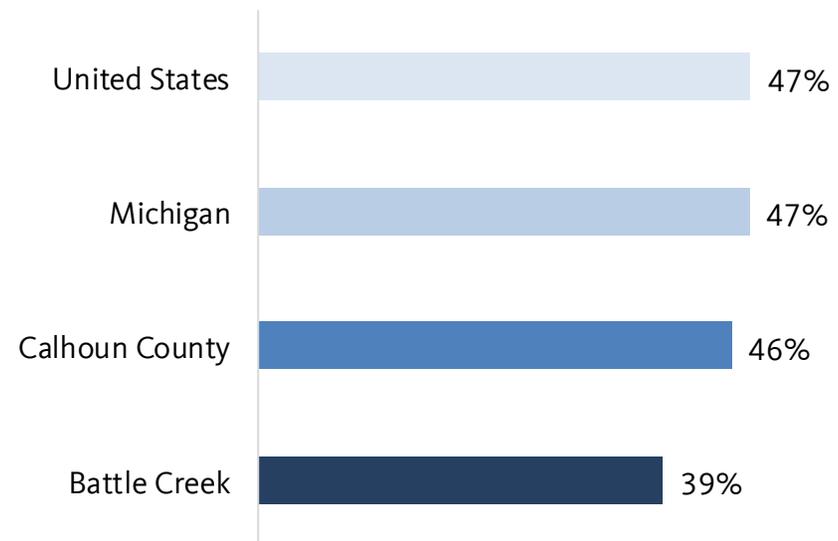
Source: U.S. Census Bureau. Universe includes all persons ages 3 and 4.
Note: Data represent a 2010 through 2014 average.

Readiness
Racial inequities in access to early education

The share of 3- to 5-year-olds enrolled in preschool or Kindergarten (58 percent) is higher than the share of 3- and 4-years old (39 percent).

Third grade reading proficiency levels are low for students living in the city. Just over 1 in 3 third-grade students can read at grade level by the end of the year. White students are three times as likely as Black students to be reading at proficiency. Latino students are more likely than Black students to be reading at grade level but less likely than White students. Asian or Pacific Islander third graders have the highest rates of reading proficiency in the city.

Elementary attendance – defined as children attending at least 95 percent of school days – is low and racial disparities persist. Native American children have the lowest attendance while Asian or Pacific Islander children have the highest attendance. Overall, just 41 percent of elementary students attend at least 95 percent of school days.

There are stark racial inequities across indicators of early childhood learning

Share of 3- to 5-year-olds who are Enrolled in Nursery School, Preschool or Kindergarten, 2010-2014

All	58%
White	52%
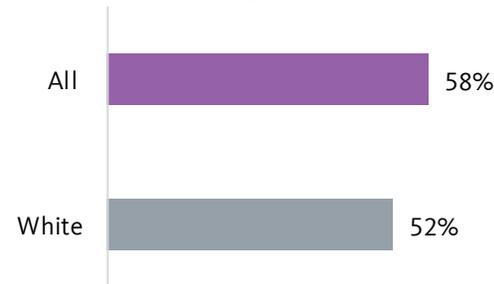
Share Achieving 3rd Grade Reading Proficiency, 2015

All	37%
White	48%
Black	16%
Latino	27%
Asian or Pacific Islander	71%
Mixed race	48%
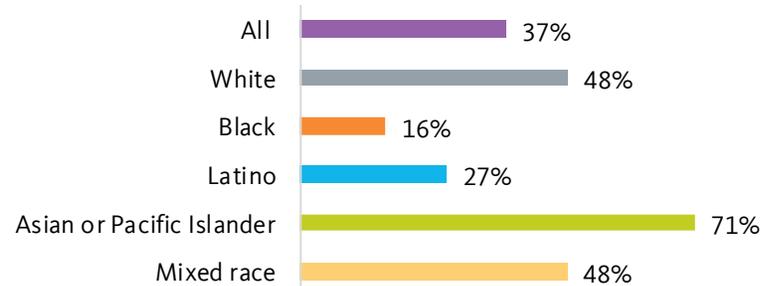
Share of Elementary Children Absent Fewer than 10 Days in School Year, 2014-2015

All	41%
White	68%
Black	49%
Latino	63%
Asian or Pacific Islander	86%
Native American	33%
Mixed race	56%
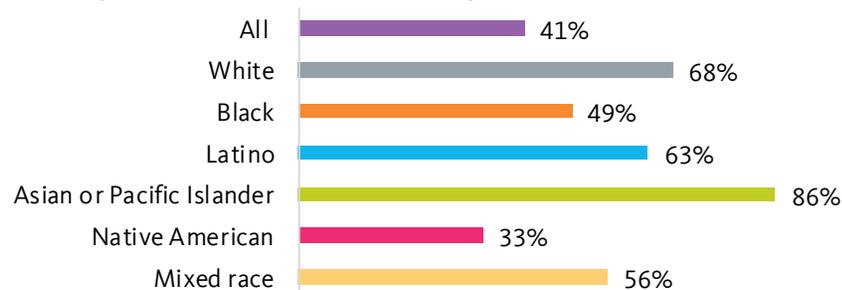
Sources: The diversitydatakids.org project calculations of data from the American Community Survey, 2010-2014 and the Michigan Department of Education.
Note: Data for some racial/ethnic groups are excluded due to data availability. Estimates for school enrollment for 3- to 5-year-olds are derived from survey data and subject to sampling variability; please interpret accordingly. Estimates based on survey data are not reported if the margin of error at the 95 percent confidence interval is one-third of the estimate value or more.

Readiness
People of color are more likely to be uninsured

Access to health insurance is similar across racial and ethnic groups, although residents who are people of color are more likely to be uninsured than White residents. People of color are between 4 and 8 percentage points more likely to be uninsured than White residents. Overall, 19 percent of city residents are uninsured.

One in four Asians or Pacific Islanders lack health insurance compared with 17 percent of Whites
Percent Without Health Insurance by Race/Ethnicity, 2014

Race/Ethnicity	Percent
All	19%
White	17%
Black	22%
Latino	21%
Asian or Pacific Islander	25%
Native American	23%
Mixed/other	24%
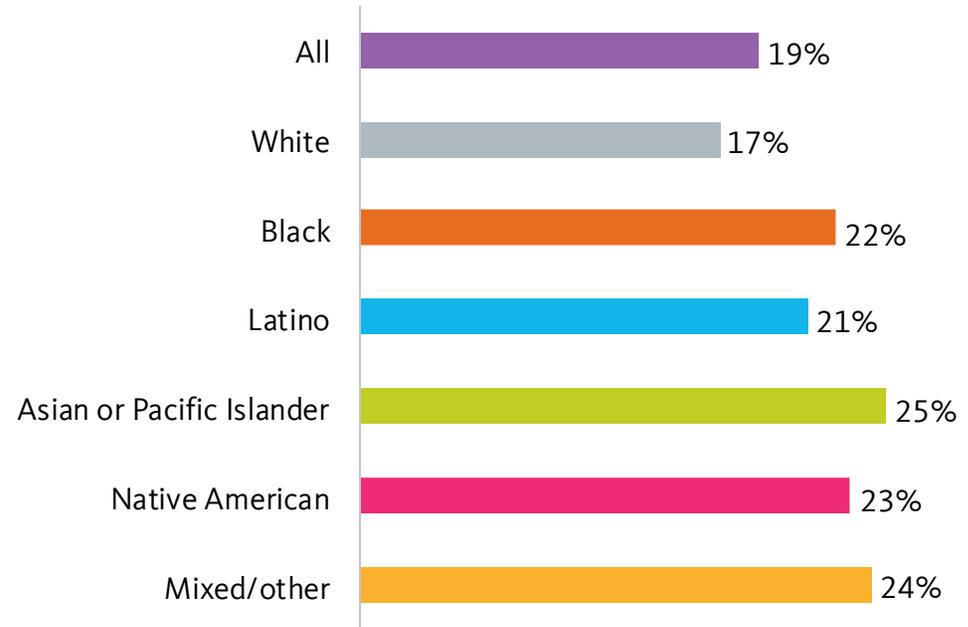
Source: U.S. Census Bureau. Universe includes the civilian noninstitutionalized population ages of 18 through 64.
Note: Data represent a 2010 through 2014 average. "White" is defined as non-Hispanic white and "Latino" includes all who identify as being of Hispanic origin. All other racial/ethnic groups include any Latinos who identify with that particular racial category.

Readiness
A high share of elderly residents live alone

Though many seniors prefer to live at home, a growing number of seniors are living alone. Though not inherently bad, research has found that social isolation is associated with a greater risk of dying. Living alone may also be unsafe for some seniors. The share of elderly persons living alone is higher in Battle Creek than in the county and state as a whole. More than one in three seniors lives alone in the city compared with just over one in four seniors nationwide.

A greater share of elderly residents in Battle Creek live alone compared with the county and state overall
Percent of Elderly Living Alone, 2014

United States	27%
Michigan	29%
Calhoun County	29%
Battle Creek	37%

Source: U.S. Census Bureau. Universe includes all persons age 65 or older.
Note: Data represent a 2010 through 2014 average.
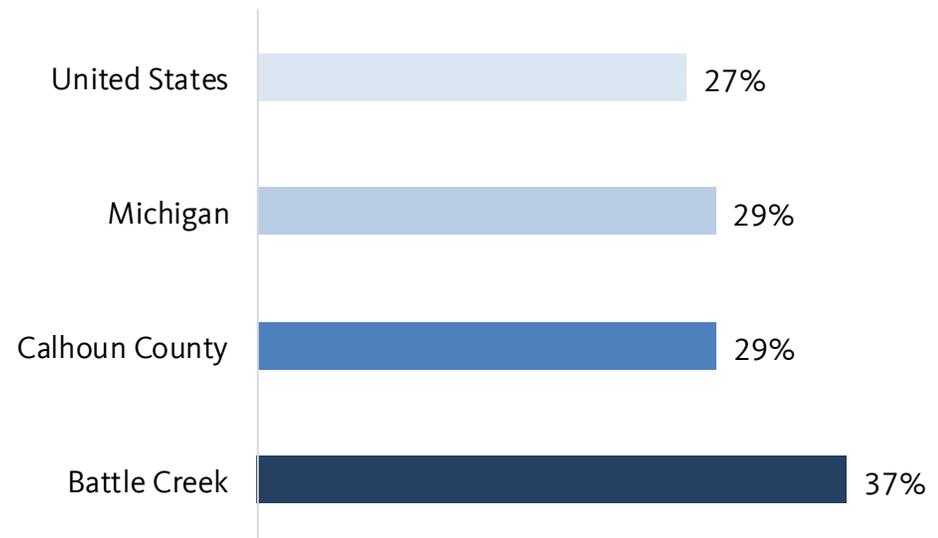
Connectedness

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

• Overall segregation has declined considerably. However, this is driven by declining Black-White and Black-Latino segregation as it has increased between all other groups.

• Access to a vehicle is a challenge for city residents. Battle Creek households are more likely to be carless than in the county or state overall. Lower-income workers are more likely to rely on the region's transit system to get to work.

• More than half of renter households are cost burdened in Battle Creek, meaning they spend more than 30 percent of household income on housing costs. Twenty-nine percent are severely cost burdened – spending more than half of their income on rent.

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

40%

Share of households without access to a vehicle:

12%

Share of severely rent burdened households:

29%

Connectedness
Overall segregation is slowly decreasing

Residential segregation, as measured by the multi-group entropy index, has declined considerably since 1980. In 1980, it was 0.31 but by 2014, it was 0.16, despite little change since 2000. The greatest decrease occurred between 1990 and 2000 when the index dropped by 0.10.

A declining White population may result in a decline in racial segregation without increased Black-White integration. Still, residential segregation is lower in Battle Creek than in Michigan and the United States overall.

The multi-group entropy index ranges from a value of 0, meaning that all census tracts have the same racial/ethnic composition as the entire metropolitan area (maximum integration), to a high of 1, if all census tracts contained one group only (maximum segregation).

Residential segregation has declined considerably since 1980
Residential Segregation, 1980 to 2014

- Battle Creek
- Michigan
- United States
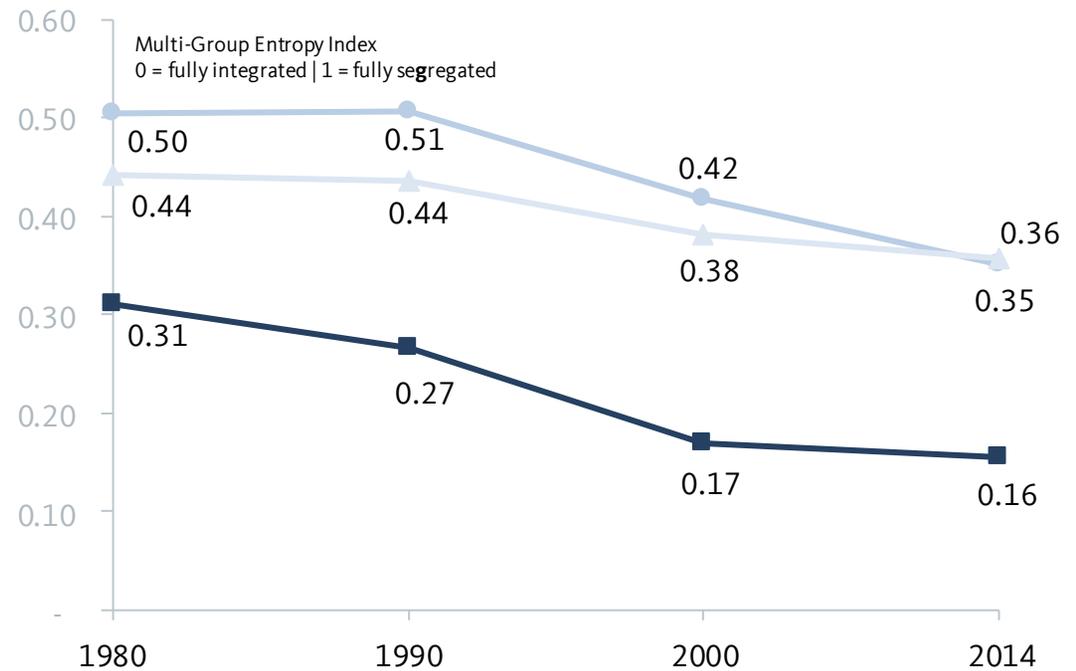
Multi-Group Entropy Index
0 = fully integrated | 1 = fully se**g**regated

Sources: U.S. Census Bureau, Geolytics.
Note: Data for 2014 represents a 2010 through 2014 average.

Connectedness
Segregation has increased between some groups

The dissimilarity index estimates the share of a given racial/ethnic group that would need to move to a new neighborhood to achieve complete residential integration. This measure shows that there has been a decline in Black-White segregation since 1990, but a rise in White-Latino and White-Asian or Pacific Islander segregation.

In 2014, segregation remained highest between Black and Asian or Pacific Islander residents and Native American and Asian or Pacific Islander residents. The latter two populations represent a relatively small share of the city's residents. Amongst the city's largest population groups, 40 percent of White residents would need to move to achieve Black-White integration.

Despite a decline in Black-White segregation, segregation has increased for most other race/ethnic groups
Residential Segregation, 1990 and 2014, Measured by the Dissimilarity Index

■ 1990
■ 2014
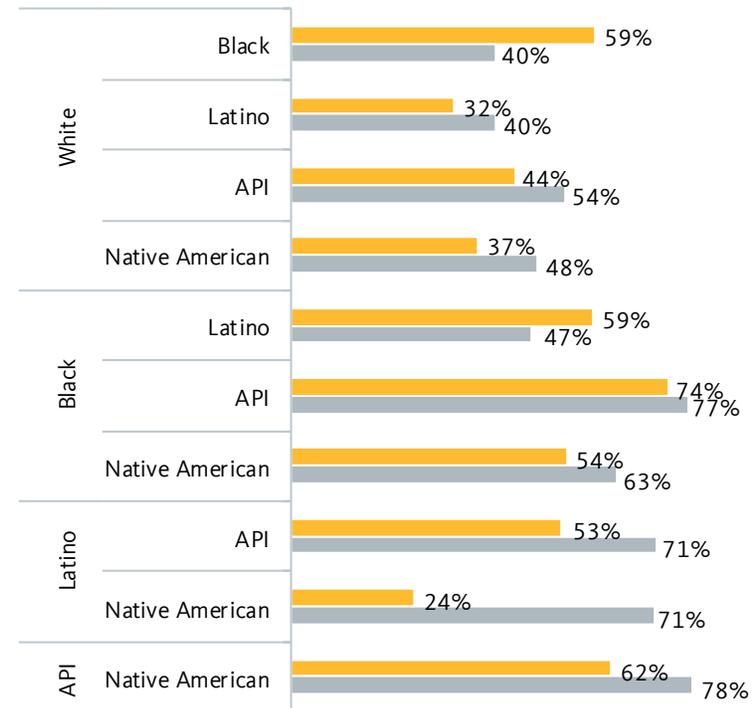
Group	1990	2014
White – Black	59%	40%
White – Latino	32%	40%
White – API	44%	54%
White – Native American	37%	48%
Black – Latino	59%	47%
Black – API	74%	77%
Black – Native American	54%	63%
Latino – API	53%	71%
Latino – Native American	24%	71%
API – Native American	62%	78%

Sources: U.S. Census Bureau, Geolytics. Note: Data for 2014 represent a 2010 through 2014 average.

Connectedness
Poverty is highest in northeastern neighborhoods

Residents' experience of poverty varies considerably depending upon where they live. While the city's overall poverty rate is 22 percent, poverty tends to be more concentrated in specific neighborhoods. Census tracts in the southern part of the city have a poverty rate of less than 10 percent while a few neighborhoods near downtown have a poverty rate of 33 percent or more.

All of the neighborhoods where people of color make up 44 percent or more of the population have a poverty rate of 24 percent or higher.

Unsurprisingly, the neighborhoods that saw the largest increases in poverty also have the highest poverty rates
Percent Population Below the Poverty Level by Census Tract, 2014

Less than 10%
10% to 16%
16% to 24%
24% to 33%
33% or more

44% or more People of color
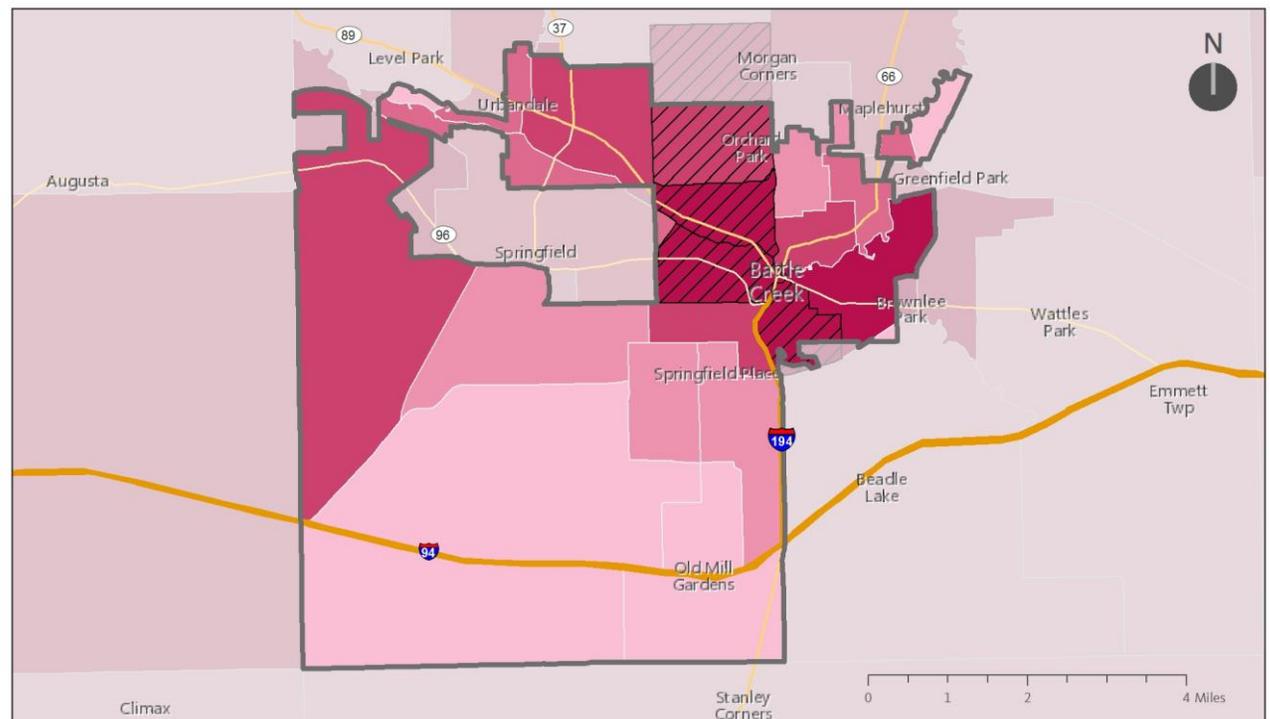
Sources: U.S. Census Bureau, TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community. Universe includes all persons not in group quarters. Note: Data represent a 2010 through 2014 average.

Connectedness
Many neighborhoods experienced increases in poverty

Between 2000 and 2014, many neighborhoods in the city experienced at least some increase in the percentage of people living in poverty. All of the tracts with 44 percent or more people of color had a percentage-point increase

A string of neighborhoods along the southwestern area of the city and near Springfield Place saw a decline or no change in their poverty rate.

The greatest increases in poverty occurred in the northern half of the city
Percentage-Point Change in Poverty Rate by Census Tract, 2000 to 2014

- Decline or no change
- Less than 5-point increase
- 5- to 9-point increase
- 9- to 12-point increase
- 12-point increase or more
- 44% or more People of color
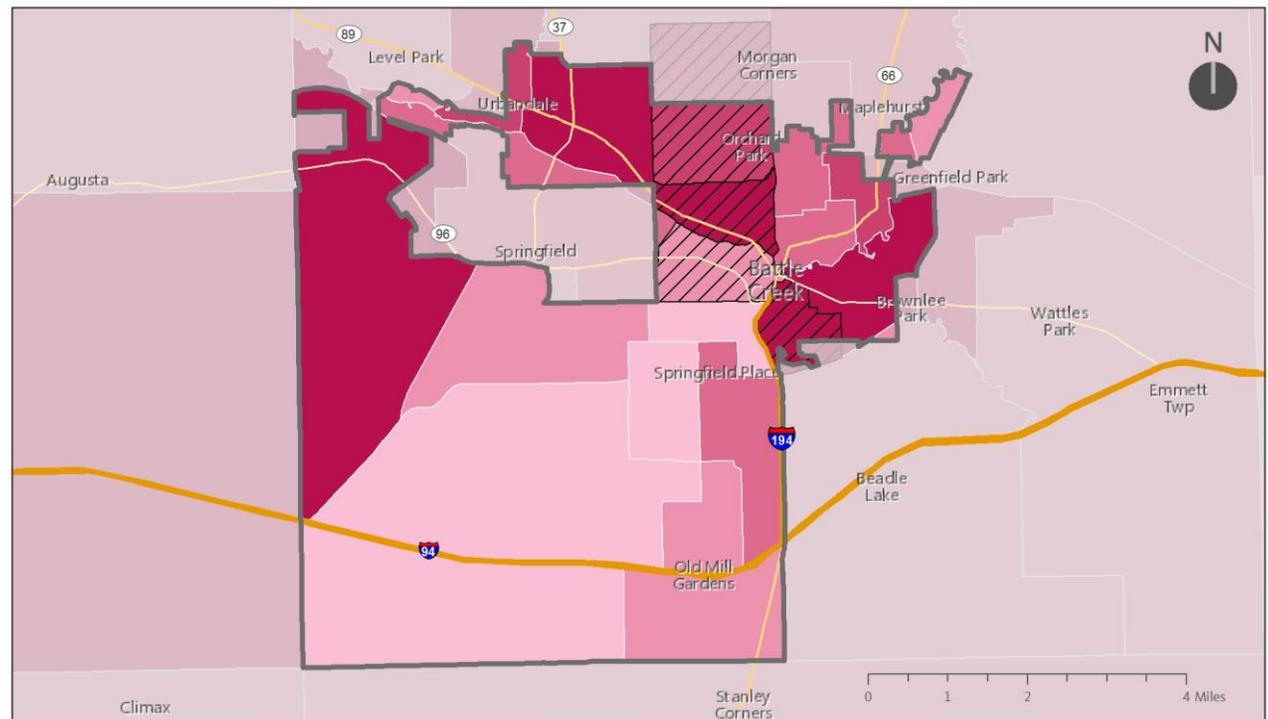
Sources: U.S. Census Bureau, TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community. Universe includes all persons not in group quarters. Note: Data for 2014 represents a 2010 through 2014 average.

Connectedness
Low-income workers are most likely to rely on the regional transit system

In 2014, the county had a higher percentage of households without a vehicle (12 percent) than either the state or the nation as a whole. Carless households are considerably more likely to rely on the regional transit system.

While a majority of residents at all income levels predominantly commute to work alone using a car, single-driver commuting fluctuates with income. Nine in ten residents who earn $65,000 or more annually commute alone by car compared to one in four workers who earn less than $15,000 per year.

Previous research has found that the connection between social mobility and transportation is stronger than the relationship between mobility and neighborhood crime or elementary school test scores.

There's a higher share of carless households in Battle Creek than the county and state
Percent of Households without a Vehicle, 2014

United States — 9%
Michigan — 8%
Calhoun County — 8%
Battle Creek — 12%
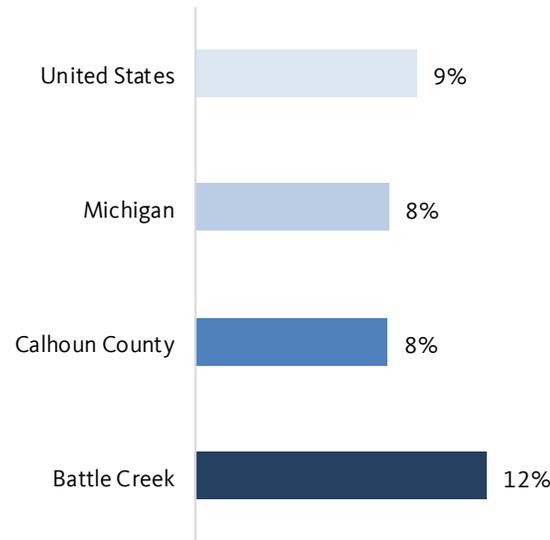
Low-wage workers are more likely to carpool and use public transit
Means of Transportation to Work by Annual Earnings, 2014

- Public transportation or other
- Auto-carpool
- Auto-alone

Earnings	Public transportation or other	Auto-carpool	Auto-alone
Less than $15,000	11%	16%	74%
$15,000 - $34,999	6%	11%	83%
$35,000 - $64,999	3%	9%	88%
$65,000 or more	2%	8%	90%

Source: U.S. Census Bureau. Universe includes all households (no group quarters). Note: Data represent a 2010 through 2014 average.

Source: U.S. Census Bureau. Universe includes workers age 16 or older with earnings. Note: Data represent a 2010 through 2014 average. Figures may not add up to total due to rounding.

Connectedness
Car access is more limited in the northeast section of the city

Access to a vehicle remains a challenge for many households in Battle Creek. Citywide, 12 percent of households lack access to a vehicle, but the rate is as high as 16 percent or more among neighborhoods made up of 44 percent or more people of color. In census tracts along the I-194, however, less than 4 percent of households are carless.

Limited car access can make accessing jobs, health care, and leisure activities difficult, particularly in areas not well served by public transportation.

Households without access to vehicles are likely to be found in areas with a larger share of people of color
Percent of Households Without a Vehicle by Census Tract, 2014
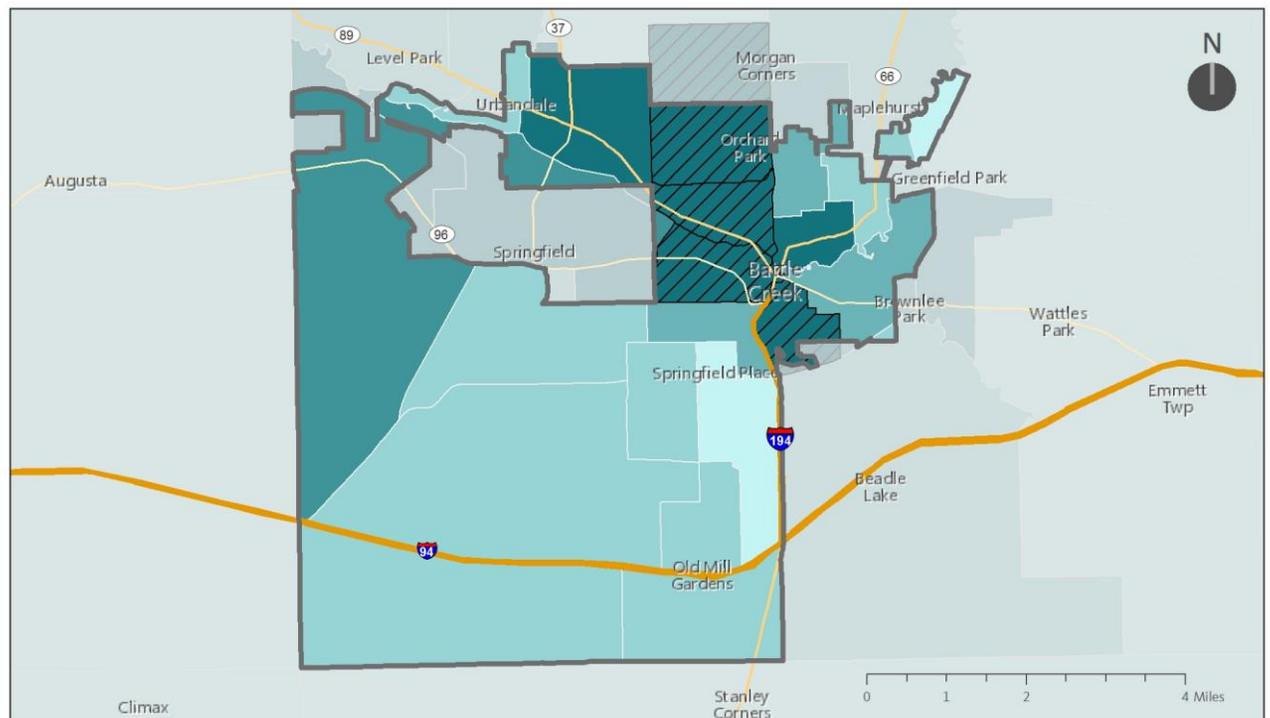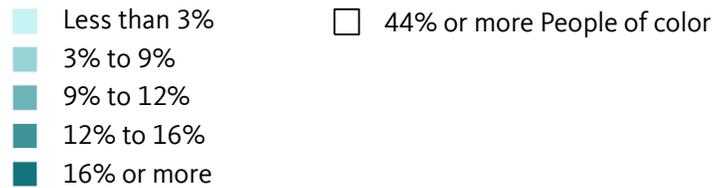
Less than 3%
3% to 9%
9% to 12%
12% to 16%
16% or more

☐ 44% or more People of color

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

Connectedness
Commute times also vary by neighborhood

Average commute times tend to be longest for residents in and around Urbandale and Greenfield Park, as well as near Springfield Place and Old Mill Gardens. Though there is some overlap, a few neighborhoods with low car access also have relatively short commute times.

It is well established that longer commute times can take a toll on workers, reducing opportunities of physical activity and increasing stress levels.

Neighborhoods with the highest commute times are sprinkled throughout the city
Average Travel Time to Work by Census Tract and High People of Color Tracts, 2014

Less than 17 minutes   44% or more People of color

17 to 18 minutes

18 to 19 minutes

19 to 20 minutes

20 minutes or more
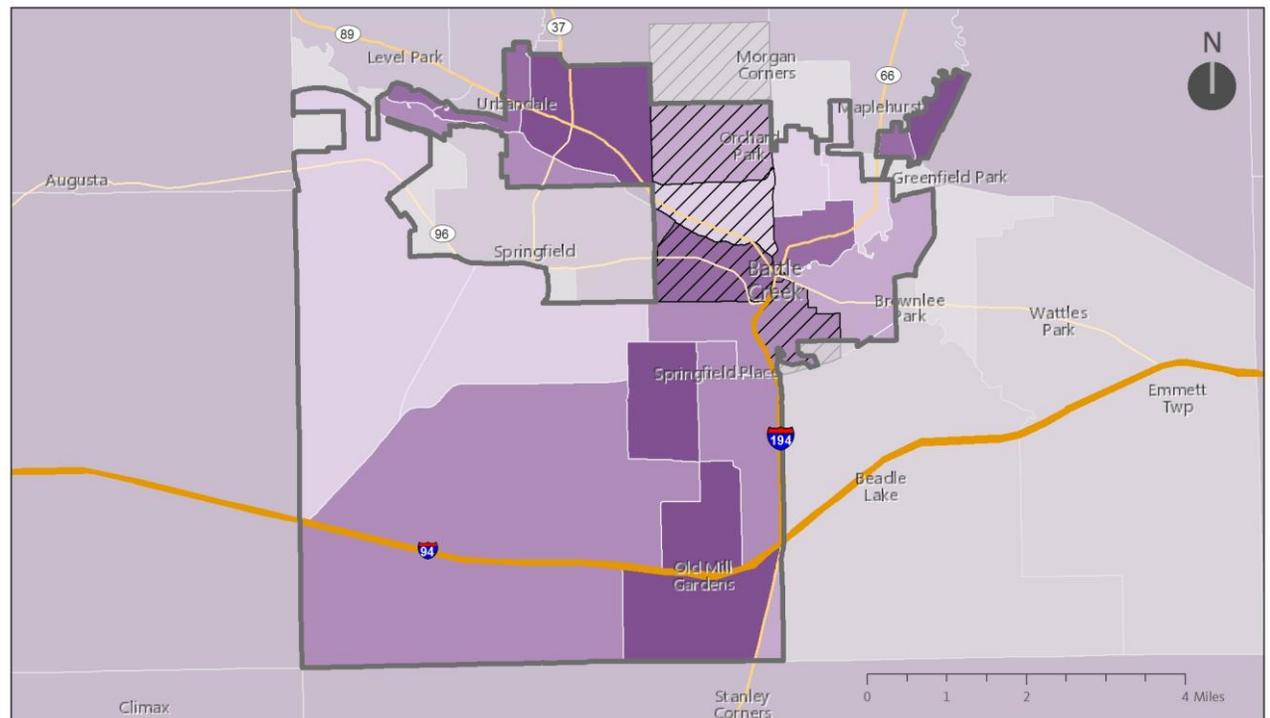
Sources: U.S. Census Bureau, TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community. Universe includes all persons age 16 or older who work outside of home. Note: Data represent a 2010 through 2014 average.

Connectedness
Half of renters in the region are housing burdened

More than half of the renter households are cost burdened in Battle Creek, meaning they spend more than 30 percent of household income on housing costs. Another 29 percent are severely cost burdened – spending more than half of their income on rent.

These rates are slightly higher than those in Calhoun County, but comparable to those in Michigan overall.

Renters in the city experience high rates of housing burden
Share of Households that are Rent Burdened, 2014

- Rent burdened
- Severely rent burdened

United States
52%
27%

Michigan
54%
30%

Calhoun County
50%
26%

Battle Creek
55%
29%
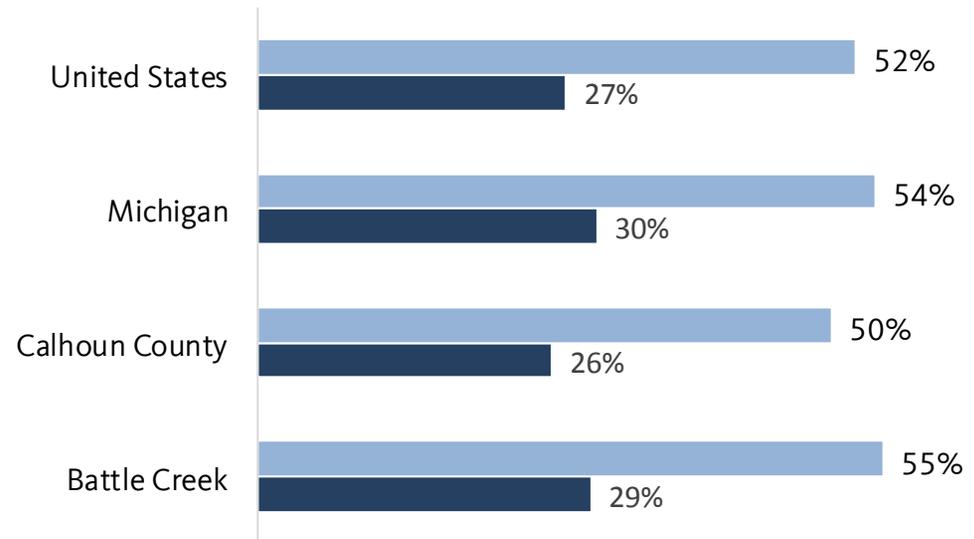
Source: U.S. Census Bureau. Universe includes renter-occupied households with cash rent (no group quarters).
Note: Data represent a 2010 through 2014 average.

Economic benefits

Economic benefits
Highlights

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

- Michigan's economy could have been nearly $34 billion stronger in 2014 – a 7 percent increase – if its racial gaps in income had been closed.

- In Michigan, 68 percent of the racial income gap between people of color and Whites is due to differences in employment, while 32 percent is due to differences in wages.

- With racial equity in income in Battle Creek, African Americans would see their average annual income grow by $8,600 while Latinos would see an average increase of $12,200.

Equity dividend for Michigan:

$34billion

Average annual income gain with racial equity for people of color in Battle Creek:

$8,000

Economic benefits of inclusion
A potential $34 billion per year GDP boost from racial equity

Michigan stands to gain a great deal from addressing racial inequities. The state's economy could have been $34 billion stronger in 2014 if its racial gaps in income had been closed: a 7 percent increase.

Using data on income by race, we calculated how much higher total economic output would have been in 2014 if all racial groups who currently earn less than Whites had earned similar average incomes as their White counterparts, controlling for age.

We also examined how much of the state's racial income gap between people of color and Whites was due to differences in wages and how much was due to differences in employment (measured by hours worked). Nationally, 64 percent of the racial income gap between all people of color and Whites is due to wage differences. In Michigan, the share of the gap attributable to wages is only 32 with the remaining 68 percent due to differences in employment.

Michigan's GDP would have been nearly $34 billion higher if there were no racial gaps in income
Statewide Actual GDP and Estimated GDP without Racial Gaps in Income, 2014

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

Equity Dividend: $33.5 billion

$447.2 $480.7
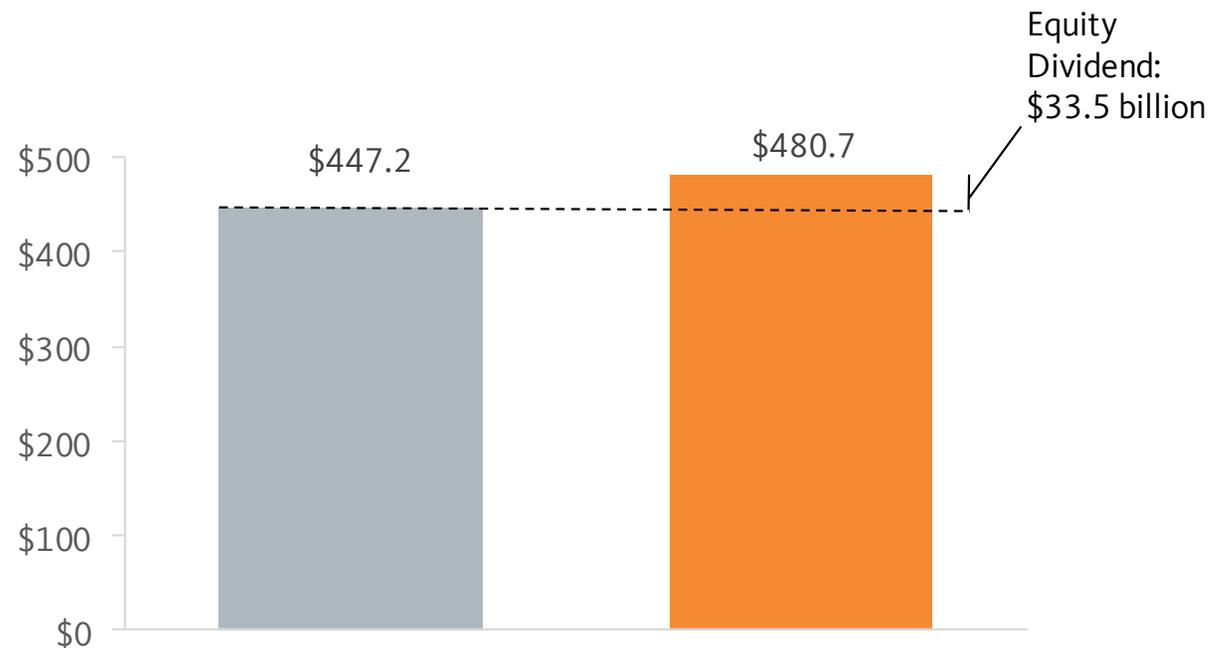
Sources: Integrated Public Use Microdata Series; Bureau of Economic Analysis.
Note: Data reflect the state of Michigan and represent a 2010 through 2014 average. Values are in 2014 dollars.

Economic benefits of inclusion
Average income for people of color would increase by about 46 percent with racial equity

Estimated income gains with racial equity for people of color in Michigan are a bit lower than for the nation overall – 46 and 54 percent, respectively. This suggests that income gaps by race are less severe in the state than the national average.

African Americans, would see the largest gain in average annual income at 59 percent, while Asians or Pacific Islanders would see only a 6 percent gain.

Income gains were estimated by calculating the percentage increase in income for each racial/ethnic group if they had the same average annual income (and income distribution) and hours of work as non-Hispanic Whites, controlling for age.

African Americans in Michigan would experience the largest income increases with racial equity
Statewide Percentage Gain in Income with Racial Equity by Race/Ethnicity, 2014
■ Michigan
■ United States
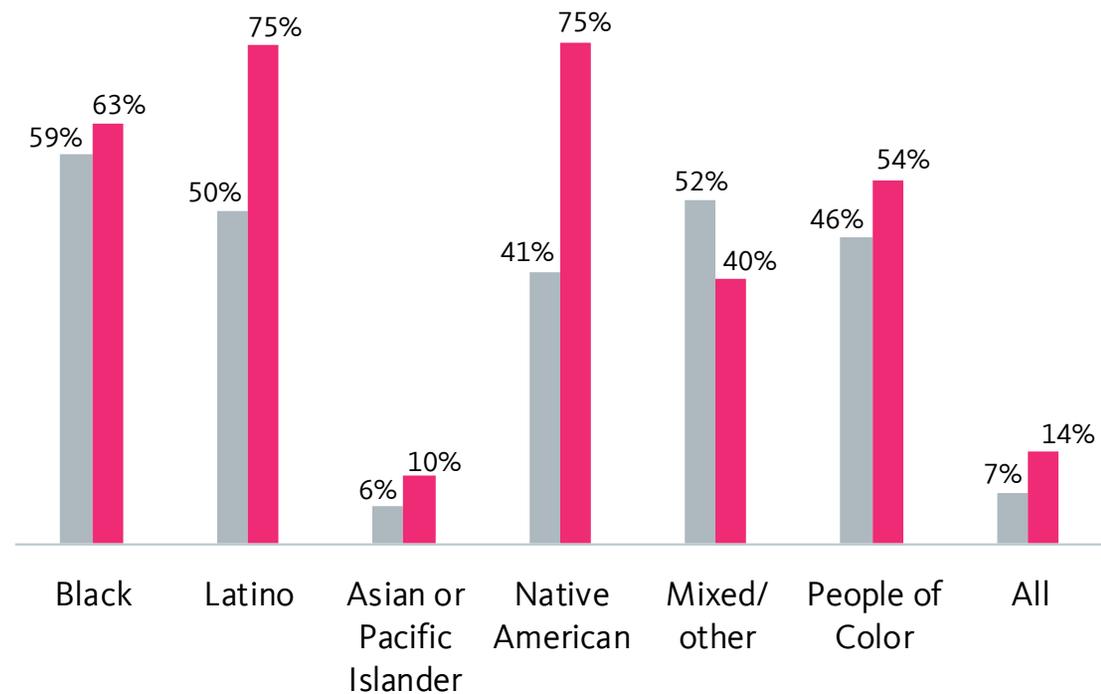
Source: Integrated Public Use Microdata Series. Universe includes all persons ages 16 and older.
Note: Data reflect the state of Michigan and represent a 2010 through 2014 average.

Economic benefits of inclusion
Average income for African Americans would increase by about $12,700 per year

On average, people of color in the Michigan are projected to see their incomes grow by about $11,100 with racial equity. African Americans would see the largest increase at $12,700, while Latinos and those of mixed or other races would see gains that are slightly higher than the average for all people of color combined.

People of color in Michigan would see an average income gain of about $11,100 with racial equity
Statewide Gain in Average Income with Racial Equity by Race/Ethnicity, 2014
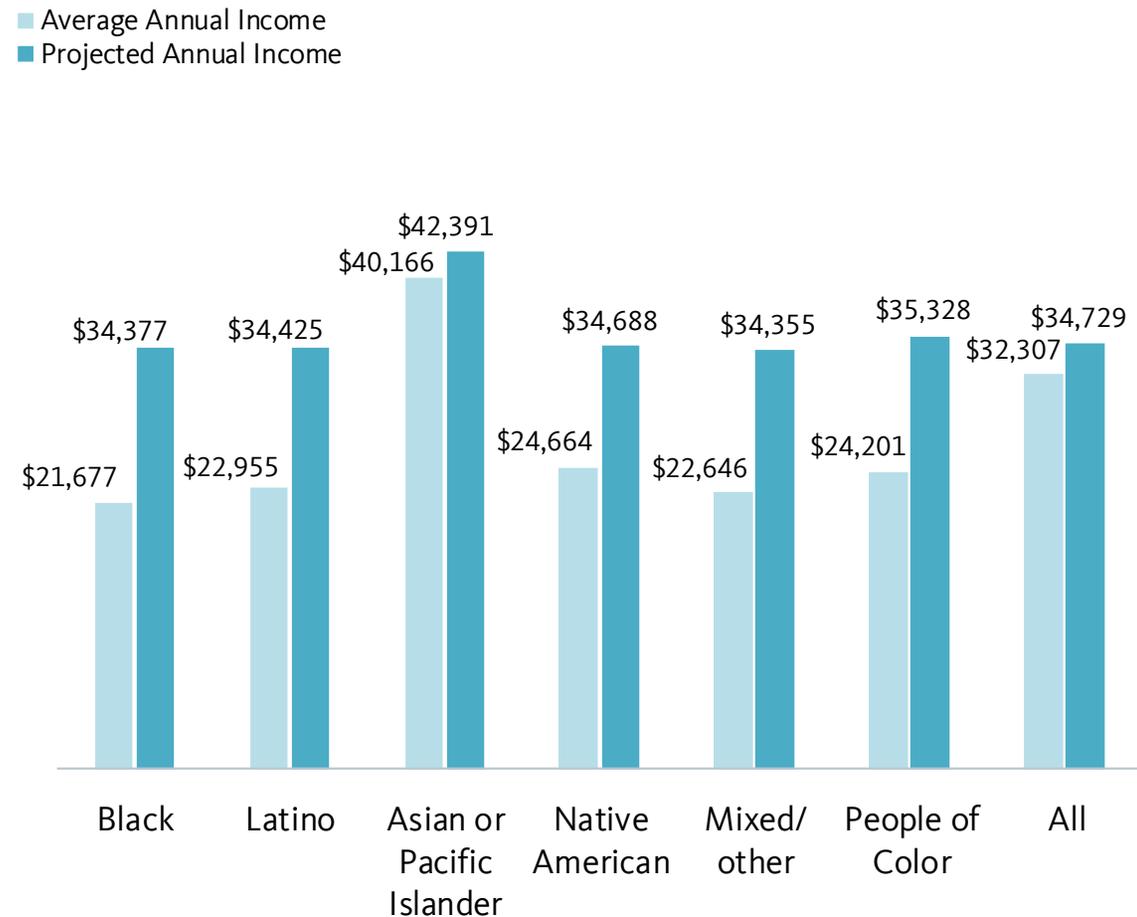
- Average Annual Income
- Projected Annual Income

	Average Annual Income	Projected Annual Income
Black	$21,677	$34,377
Latino	$22,955	$34,425
Asian or Pacific Islander	$40,166	$42,391
Native American	$24,664	$34,688
Mixed/other	$22,646	$34,355
People of Color	$24,201	$35,328
All	$32,307	$34,729

Source: Integrated Public Use Microdata Series. Universe includes all persons ages 16 and older.
Note: Data reflect the state of Michigan and represent a 2010 through 2014 average. Values are in 2014 dollars.

Economic benefits of inclusion

Most of the potential income gains would come from closing the racial employment gap

We also examined how much of the state's racial income gap was due to differences in wages and how much was due to differences in employment (measured by hours worked).

In Michigan, 68 percent of the racial income gap is due to differences in employment, while only 32 percent is due to differences in wages. However, these shares vary tremendously by race/ethnicity. For African Americans, an even larger share of the racial income gap is attributable to employment (71 percent) while for Latinos, the majority of the gap is attributable to lower wages (61 percent). For Asian or Pacific Islanders, whom as a group have age-adjusted hourly wages that are actually slightly higher than those of Whites, all of the income gain with racial equity would come from increased employment rates and hours of work.

Most of the racial income gap in Michigan is due to differences in employment
Statewide Source of Gains in Income with Racial Equity By Race/Ethnicity, 2014

- Employment
- Wages
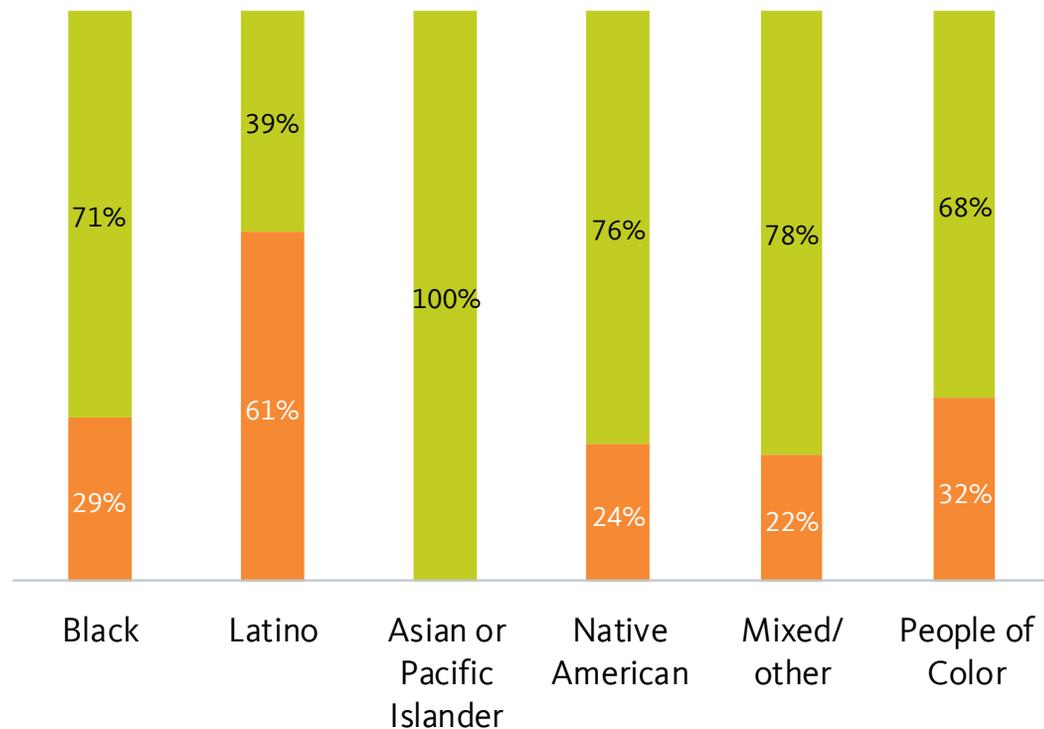
Race/Ethnicity	Employment	Wages
Black	71%	29%
Latino	39%	61%
Asian or Pacific Islander	100%	
Native American	76%	24%
Mixed/other	78%	22%
People of Color	68%	32%

Source: Integrated Public Use Microdata Series. Universe includes all persons ages 16 and older.
Note: Data reflect the state of Michigan and represent a 2010 through 2014 average.

Economic benefits of inclusion

Income gains with racial equity are likely to be smaller in Battle Creek than for the state overall – but still substantial

Although there is insufficient data to a conduct a full analysis of gains in income and GDP with racial equity in Battle Creek, a comparison of average annual average income by race/ethnicity for the population 16 and older suggests that the gains would be a bit smaller for the city than for the state overall – but still substantial.

If average annual income for groups of color rose to the levels we observe for non-Hispanic Whites, we would anticipate that average annual income for all people of color combined would rise by over $8,200, from about $22,600 to $30,800. Latinos would see the largest gain of about $12,200, while African Americans would see a gain of about $8,600.

The incomes of Native Americans and Asian or Pacific Islanders would not be expected to rise as their average levels are already above those of the White population.

People of color in Battle Creek would see an average income gain of about $8,200 with racial equity
Estimated Gain in Average Income with Racial Equity by Race/Ethnicity, 2014
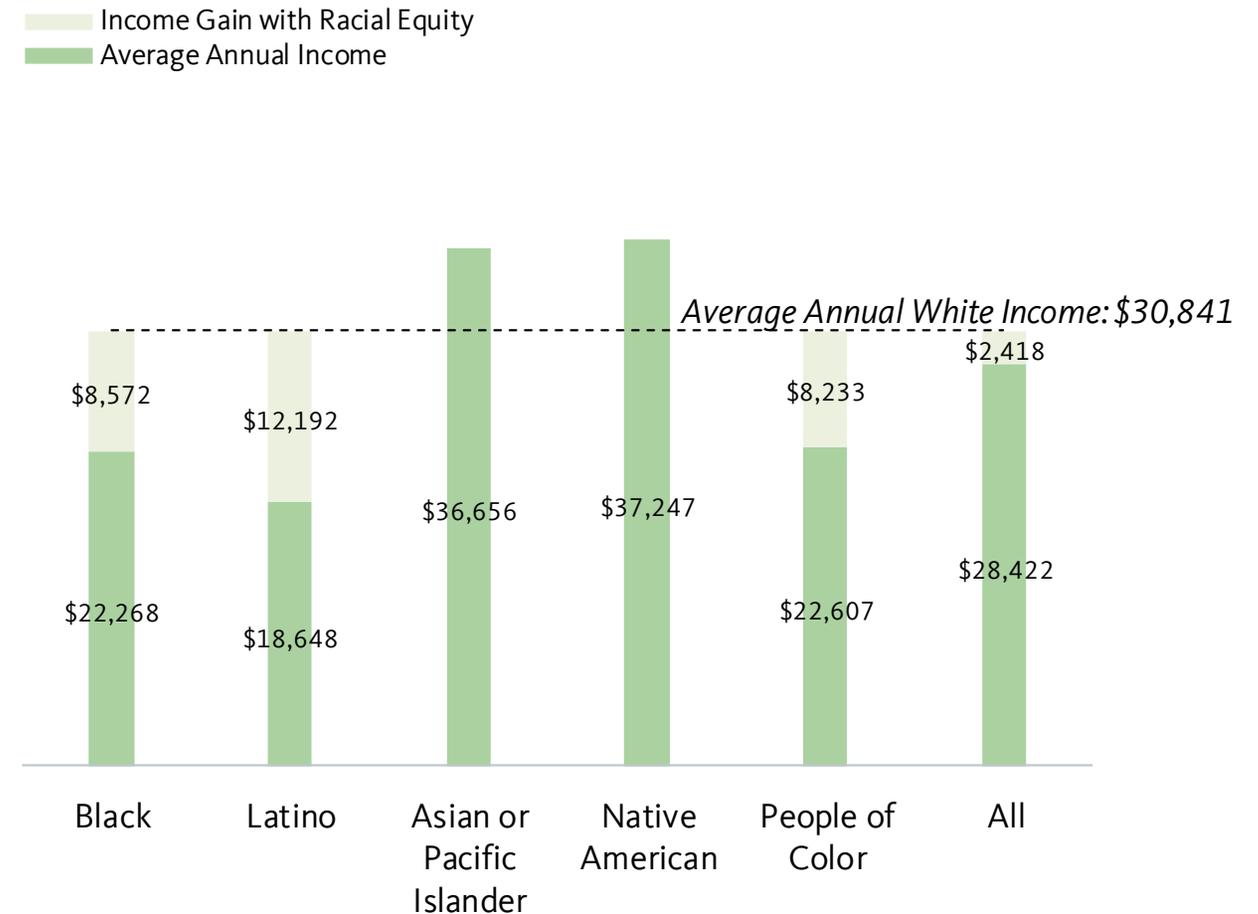
Income Gain with Racial Equity
Average Annual Income

Average Annual White Income: $30,841

	Black	Latino	Asian or Pacific Islander	Native American	People of Color	All
Income Gain	$8,572	$12,192			$8,233	$2,418
Average Annual Income	$22,268	$18,648	$36,656	$37,247	$22,607	$28,422

Source: U.S. Census Bureau. Universe includes all persons ages 16 and older.
Note: Data represent a 2010 through 2014 average. "White" is defined as non-Hispanic white and "Latino" includes all who identify as being of Hispanic origin. All other racial/ethnic groups include any Latinos who identify with that particular racial category. Values are in 2014 dollars.

Implications

Implications
Advancing racial equity and inclusive growth

Battle Creek's increasingly diverse population is a major economic asset that can help the city compete in the global economy, if the city's leaders invest in ensuring all of its residents can contribute their talent and creativity to building a strong next economy.

Grow good, accessible jobs that provide pathways to the middle class

Good jobs that are accessible to workers of color and other marginalized workers who are likely to live in poor, isolated neighborhoods form the bedrock of equitable cities. A job that pays enough to support one's family and put some away for the future, provides health care and other benefits, and safe, dignified, family-friendly working conditions is a universal foundation for well-being and prosperity. Battle Creek should target its economic development efforts to grow high-road, inclusive businesses in high-opportunity sectors; leverage public investments to help entrepreneurs of color and triple-bottom-line businesses grow more good jobs; and set high standards for wages and benefits for all workers.

Increase the economic security and mobility of vulnerable families and workers

Economic security – having enough money to cover basic needs and enough savings to weather setbacks and invest for the future – critical to the health and well-being of families, neighborhoods, and local economies. In Battle Creek, one-third of all Black, Latino, Native American, and residents who identify as mixed or another race are economically insecure (at or below the federal poverty line). The city can make strides to reduce this insecurity and strengthen its economy by connecting vulnerable residents with jobs and opportunities to save and build assets, removing discriminatory barriers to employment, and protecting families from predatory financial practices.

Cultivate homegrown talent through a strong cradle-to-career pipeline

A skilled workforce is the key to cities success in the global economy, so Battle Creek and other cities must prioritize equipping youth of color with the skills to excel in the 21st century workforce. By

2020, 33 percent of Michigan's jobs will require an bachelor's degree or higher. There are large differences in educational attainment by race/ethnicity and nativity. While 23 percent of the White population and 49 percent of the API population has an associate's degree or higher, only 9 percent of Latino residents and 16 percent of African American residents have the same educational attainment. Battle Creek can nurture homegrown talent by taking a cradle-to-career approach that includes a strong workforce system to connect adult workers – including those facing barriers to employment – with employment opportunities.

Create healthy, opportunity-rich neighborhoods for all

High-quality neighborhoods are fundamental building blocks for health and economic opportunity. People who live in resource-rich neighborhoods with good schools, safe streets, parks, transit, clean air and water, and places to buy healthy food and other services are much more likely to live long, healthy, secure lives. The city should work to improve services and quality of life in its poorest neighborhoods and make catalytic investments that reconnect disinvested

Implications
Advancing racial equity and inclusive growth
(continued)

neighborhoods to the regional economy and spur equitable development that builds community wealth.

Build resilient, connected infrastructure
Infrastructure – roads, transit, sidewalks, bridges, ports, broadband, parks, schools, water lines, and more – is the skeletal support that allows cities to function and connects their residents to each other and to the regional and global economy. Battle Creek should leverage investments in existing and new infrastructure developing, targeting resources to high-need, underserved neighborhoods to foster equitable growth and economic opportunity.

Increase access to high-quality, affordable homes and prevent displacement
Housing is the lynchpin for opportunity: the location and quality of the home you can afford not only affects your living space and your household budget – it determines the quality of your schools, the safety of your streets, the length of your commute, your exposure to toxics, and more. Battle Creek must take proactive steps to ensure that working-class families of color can live in healthy homes that connect them to

opportunity – and that they can afford to stay in those homes. Fifty-five percent of renters are housing burdened. A multi-strategy approach that includes funding sources, policy levers, code enforcement, and tenant protections and services can expand housing opportunity and protect low-income communities of color from displacement.

Conclusion
Community leaders in the public, private, and nonprofit sectors are already taking steps to connect its more vulnerable communities to educational and economic opportunities, and these efforts must continue. To secure a prosperous future, Battle Creek should implement a growth model that is driven by equity – just and fair inclusion into a society in which everyone can participate and prosper. Concerted investments and policies for, and developed from within, communities of color will also be essential to ensure the city's fastest-growing populations are ready to lead it into the next economy.

Data and methods

Data and methods
Data source summary and regional geography

Unless otherwise noted, all of the data and analyses presented in this profile are the product of PolicyLink and the USC Program for Environmental and Regional Equity (PERE), and reflect the Battle Creek, Michigan. 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 city 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 cities and 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)	2010 American Community Survey, 5-year microdata sample
	2010 American Community Survey, 1-year microdata sample
U.S. Census Bureau	1980 Summary Tape File 1 (STF1)
	1980 Summary Tape File 2 (STF2)
	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 American Community Survey, 5-year summary file
	2010 TIGER/Line Shapefiles, 2010 Census Block Groups
	2014 TIGER/Line Shapefiles, 2014 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
The diversitydatakids.org Project	W.K. Kellogg Foundation Priority Communities Dashboard Database
Michigan Department of Technology, Management and Budget	Industry Employment Projections
	Occupational Projections
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

Unless otherwise noted, the categorization of people by race/ethnicity is based on their response to two separate questions on race and Hispanic origin, and people are placed in six mutually exclusive categories 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," "other or mixed race," etc. 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.

However, much of the analysis by race/ethnicity presented in this profiles relies upon the 2014 5-year American Community Survey (ACS) summary file. In most of the ACS tables that provide socioeconomic data disaggregated by race/ethnicity, those who identify Hispanic or Latino can only be excluded from the White population. As indicated in the note beneath the relevant figures, this means that the data presented for the Black, Asian or Pacific Islander, Native American, and Mixed/other populations may include some number of people from the Latino category. The Mixed/other category is likely to have the largest share of Latinos

included in the socioeconomic data reported for them, but this really depends on the geography being examined. To provide some context when reviewing data in this profile that is *not* presented by the six mutually exclusive racial/ethnic categories, it may be useful to know that in the city of Battle Creek, Latinos account for 3 percent of the Black population, 0 percent of the Asian or Pacific Islander population, 11 percent of the Native American population, and 26 percent of the Mixed/other population.

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 present tables that

Data and methods
Selected terms and general notes
(continued)

provide counts detailed racial/ethnic categories within these groups. The categories, referred to as "ancestry," are based on tables in the ACS summary file that break down the Latino, Native American, and Asian or Pacific Islander populations by more detailed racial/ethnic or tribal categories. Such detailed tables are not available for the White, Black, and Mixed/other populations.

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

• The term "region" may refer to a city but typically refers to metropolitan areas or other large urban areas (e.g. large cities and counties). The terms "metropolitan area," "metro area," and "metro" are used interchangeably to refer to the geographic areas defined as Metropolitan Statistical Areas under the December 2003 definitions of the Office of Management and Budget (OMB).

• 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" refers to all persons who reported working at least 50 weeks and usually worked at least 35 hours per week during the 12 months prior to the survey.

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.

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 2010-2014 average), at the city and county levels, which were 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, with the latter group only appearing in 2000 and later due to a change in the survey question). While for 2000 and later years, this information is readily available in SF1 and in the ACS, 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 city and county

levels for all the requisite groups in STF2, for race/ethnicity by age group we had to look to STF1, 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/Pacific Islanders, non-Hispanic Native Americans, and non-Hispanic Others among the remainder for each age group, we applied the distribution of these three groups from the overall city and county populations (across all ages) to that remainder.

For 1990, the level of detail available in the underlying data differed at the city and county levels, calling for different estimation strategies. At the county level, data by race/ethnicity was taken from STF2A, while data by race/ethnicity and age was taken from the 1990 MARS file—a special tabulation of people by age, race, sex, and Hispanic origin. However, to be consistent with the way race is categorized by the OMB's Directive 15, the MARS file allocates all persons identifying as "other race alone" or multiracial to a specific race. After confirming that population totals

by county (across all ages) were consistent between the MARS file and STF2A, we calculated the number of "other race alone" or multiracial people who had been added to each racial/ethnic group in each county by subtracting the number who were reported in STF2A for the corresponding group. We then derived the share of each racial/ethnic group in the MARS file (across all ages) that was made up of "other race alone" or multiracial people and applied it to estimate the number of people by race/ethnicity and age group exclusive of "other race alone" or multiracial people and the total number of "other race alone" or multiracial people in each age group.

For the 1990 city-level estimates, all data were from STF1, which provided counts of the total population for the six broad racial/ethnic groups required but not counts by age. Rather, age counts were only available for people by single race alone (including those of Hispanic origin) as well as for all people of Hispanic origin combined. To estimate the number of people by race/ethnicity and age for the six

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

(continued)

broad racial/ethnic groups that are detailed in the profile, we first calculated the share of each single-race alone group that was Hispanic based on the overall population (across all ages). We then applied it to the population counts by age and race alone to generate an initial estimate of the number of Hispanic and non-Hispanic people in each age/race alone category. This initial estimate was multiplied by an adjustment factor (specific to each age group) to ensure that the sum of the estimated number of Hispanic people across the race alone categories within each age group equated to the "actual" number of Hispanic origin by age as reported in STF1. Finally, an Iterative Proportional Fitting (IPF) procedure was applied to ensure that our final estimate of the number of people by race/ ethnicity and age was consistent with the total population by race/ethnicity (across all ages) and total population by age group (across all racial/ethnic categories) as reported in STF1.

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 regional, 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 prevent 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 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. The resulting county-level estimates were then aggregated to the regional and metro area levels.

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
Assembling a complete dataset on employment and wages by industry

Analysis of jobs and wages by industry, reported on pages 37-38, and 41-42, 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 nondisclosed) 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.)

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 nondisclosed industries. Therefore, our approach was to first calculate the number of jobs and total wages from nondisclosed industries in each county, and

then distribute those amounts across the nondisclosed 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. Another adjustment made was to aggregate data for some 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.

The same above procedure was applied at the county and state levels. To assemble data at for regions and metro areas, we aggregated the county-level results.

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

The analysis on pages 37-38 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 all broad private sector 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 by Jennifer S. Vey, *Building From Strength: Creating Opportunity in Greater Baltimore's Next Economy* (Washington D.C.: Brookings Institution, 2012).

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 occupations on pages 43-47 seeks to classify occupations in the region by opportunity level. 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.

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, 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 45-47), 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

Data and methods
Analysis of occupations by opportunity level
(continued)

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, it is not a terrible assumption, and a similar approach was used in a Brookings Institution report by Jonathan Rothwell and Alan Berube, *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.

Finally, 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 so that it could be used to estimate typical education levels of workers by occupation.

Data and methods
Measures of diversity and segregation

In the profile, we refer to measures of residential segregation by race/ethnicity (the "diversity score" on page 17, the "multi-group entropy index" on page 60 and the "dissimilarity index" on page 61). 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 measures are based on census-tract-level data for 1980, 1990, and 2000 from Geolytics, and for 2014 (which reflects a 2010-2014 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 of 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 61, but keep the 1980 data in the chart on page 60 as this minor inconsistency in the data is not likely to affect the analysis.

The formula for the multi-group entropy index was 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 multi-group entropy index (referred to as the "entropy index" in the report) appears on page 8.

The formula for 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: White, Black, Latino, Asian or Pacific Islander, Native American, and Mixed/other (with all defined non-Hispanic except for Latinos, of course). 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 hours of work would reflect both more hours for the those currently working and an increased share of workers – an important factor to consider given 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 thus 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.

Data and methods
Estimates of GDP without racial gaps in income
(continued)

Note that because no GDP data is available at the city level (partly because economies tend to operate at well beyond city boundaries), our estimates of gains in GDP with racial equity are only reported at the regional level. Estimates of income gains and the source of gains by race/ethnicity, however, are reported for the profiled geography.

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Headquarters:
1438 Webster Street
Suite 303
Oakland, CA 94612
t 510 663-2333
f 510 663-9684

Communications:
55 West 39th Street
11th Floor
New York, NY 10018
t 212 629-9570
f 212 763-2350

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University of Southern California
950 W. Jefferson Boulevard
JEF 102
Los Angeles, CA 90089
t 213 821-1325
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