



OAKLAND COUNTY ECONOMIC OUTLOOK

2021-2023

SUMMARY INTRODUCTION

DAVID COULTER

OAKLAND COUNTY EXECUTIVE

To a person, Oakland County demonstrated its resilience, collaborative spirit and innovation during these past 15 months, as we charted a course through an unprecedented global pandemic. I am grateful that our Oakland County leaders and employees did not hesitate to answer the call and demonstrate the important role of local county government during these trying times. Our county is comprised of more than 1.2 million residents and 42,000 businesses that generate more than 20 percent of Michigan's gross domestic product. Maintaining a healthy economy in Oakland County is not only a key goal for us, but also provides an essential contribution to the fiscal well-being of the region and state.

Oakland County received more than \$257 million in funding from the federal and state governments to manage through the pandemic. My administration along with the County Board of Commissioners prioritized the aid and distributed the funding with the largest portion dedicated to communities and families; closely followed by funding for businesses and workers; and, finally, to support county COVID-19 operations.

Oakland County leaned in to provide support to make certain our residents had the resources they needed to survive. Through funding to local municipalities, public schools, libraries, senior centers, veteran service organizations, and community centers, we worked to ensure services and support systems were accessible virtually and/or in person. Emergency funds for rent, mortgage, utilities and food assistance also were made available to veterans and their dependents, as well as citizens negatively impacted financially by COVID-19.

Nearly \$90 million in support was directed to the business community for those seriously impacted by the pandemic through a variety of initiatives, including:

- A series of five small business grant programs that provided direct financial support to small businesses, in the early days of the pandemic through the winter of 2021, ranging from the retail and hospitality industries to manufacturing, business services, and wholesale.
- Grant programs were developed to support manufacturing companies to retool and use advanced manufacturing processes to provide PPE and improve the region's ability to respond to future supply chain disruptions.
- 15,000 reopen kits were created to help small businesses access hard to find PPE and cleaning supplies needed to safely open to the public.

We are not fully recovered in Oakland County and there is more work that still needs to be done. But, we have a strategic plan, collaborative partners, American Rescue Plan aid, and an awesome team that led one of the most robust economic grant programs in the country. We are positioned to thrive in the months ahead.



OAKLAND COUNTY ECONOMIC OUTLOOK

2021-2023



Gabriel Ehrlich



Donald Grimes

PRESENTED BY

**Dr. Gabriel M. Ehrlich
and Donald R. Grimes**
University of Michigan

JUNE 2021

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Research Seminar in Quantitative Economics (RSQE)

The Research Seminar in Quantitative Economics (RSQE) is a modeling and forecasting unit that has been in operation at the University of Michigan since 1952. Four times per year, RSQE provides forecasts of both the U.S. economy and the Michigan economy. RSQE hosts the University of Michigan's Annual Economic Outlook Conference, the longest running such event in the U.S., in Ann Arbor each November. RSQE has twice received the prestigious Blue Chip Annual Economic Forecasting Award (AEFA) recognizing "accuracy, timeliness, and professionalism" in economic forecasting.

Dr. Gabriel M. Ehrlich

received his Ph.D. in economics from the University of Michigan. He is the director of the University's Research Seminar in Quantitative Economics (RSQE). His research focuses on macroeconomics and urban and regional economics. His work has been published in the *New England Journal of Medicine*, the *Review of Economics and Statistics*, the *Journal of Urban Economics*, and the *Journal of Health Politics, Policy and Law*.

Prior to joining RSQE, Dr. Ehrlich worked in the Financial Analysis Division at the Congressional Budget Office (CBO), where he forecast interest rates and conducted analysis on monetary policy and the mortgage finance system. He earned his undergraduate degrees in finance and economics at the University of Maryland.

Dr. Ehrlich testifies twice per year to the state legislature on Michigan's fiscal and economic outlook. He recently coauthored The United States Economic Outlook for 2021–2022 and The Michigan Economic Outlook for 2021–2022.

Donald R. Grimes

received his master's degree in economics from the University of Michigan. He is a senior research area specialist at the University's Research Seminar in Quantitative Economics (RSQE). His primary research interests are in labor economics and economic forecasting.

For 40 years, he has been engaged in economic forecasting for state and local governments and is frequently called upon for policy advice. He has worked for many years with the Michigan departments of Transportation and Treasury and the Michigan Economic Development Corporation on policy analysis and evaluating economic strategies. He is co-director of a project to generate long-term economic and demographic projections for all of the counties of Michigan. His past research includes a study looking at Michigan's industrial structure with a view to identifying sectors that will promote economic growth in the future.

His work has been published recently in the *Economic Development Quarterly*, the *New England Journal of Medicine*, and the *Journal of Health Politics, Policy and Law*. He recently coauthored The Michigan Economic Outlook for 2021–2022.

Dr. Michael R. McWilliams

is the Michigan Forecasting Specialist at the Research Seminar in Quantitative Economics (RSQE) at the University of Michigan. He earned his Ph.D. in economics from the University of Michigan, and he has also received an M.Sc. in economics from the London School of Economics and Political Science. At RSQE, Michael assists with forecasts of the Michigan economy and leads the development of state tax revenue projections. He recently coauthored The Michigan Economic Outlook for 2021–2022.

Michael's personal research focuses on a range of topics in environmental and natural resource economics, including land use change and its causes and environmental consequences, regulation of light-duty vehicles, and the impact of the ethanol mandates. His work has been published in the *Proceedings of the National Academy of Sciences* and *Energy Policy*. During his graduate study, Michael interned at the U.S. Environmental Protection Agency, Office of Transportation and Air Quality.

Jacob T. Burton

is an economist at the University of Michigan's Research Seminar in Quantitative Economics (RSQE), where he contributes to the Michigan and U.S. forecasts four times per year. He recently finished his master's degree in applied economics from Eastern Michigan University. He coauthored The United States Economic Outlook for 2021–2022 and The Michigan Economic Outlook for 2021–2022. His primary fields of interests are in economic forecasting and energy economics.

Tina Dhariwal

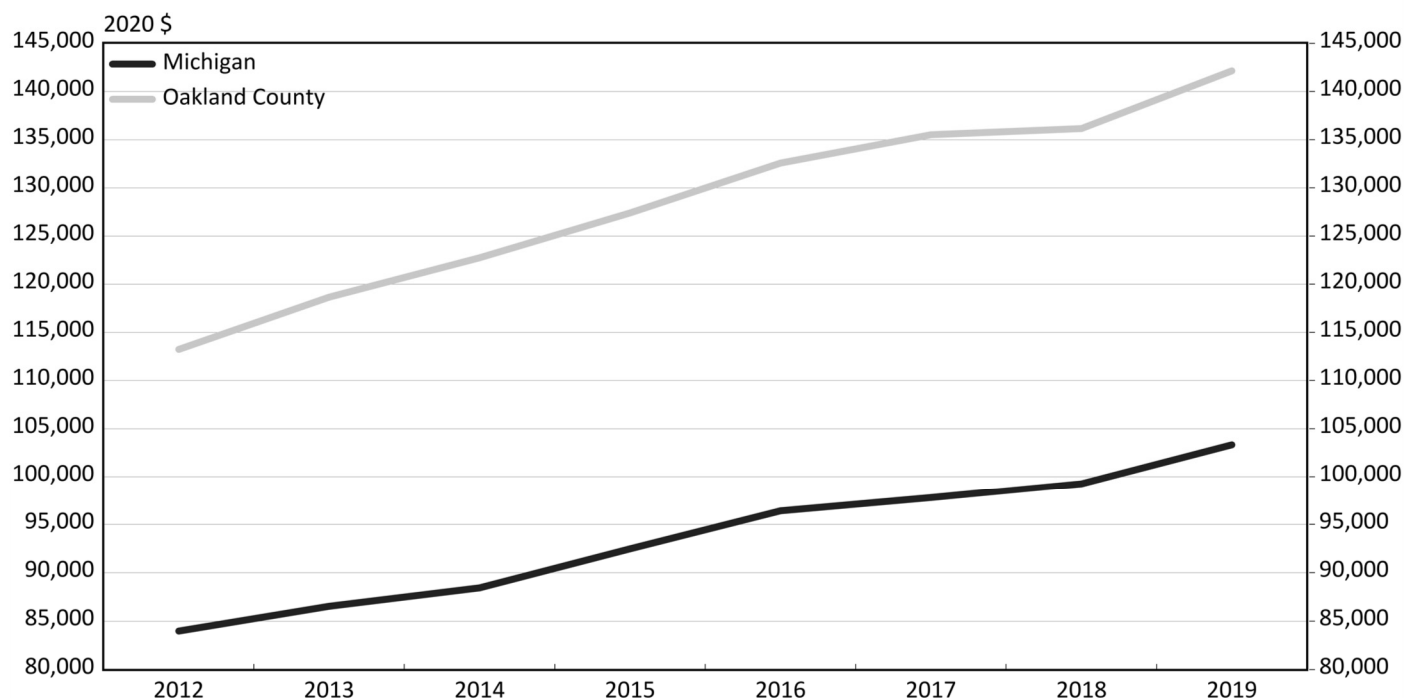
received her master's degree in economics from the University of Wisconsin-Madison. She is a research area specialist associate at Research Seminar in Quantitative Economics (RSQE) at the University of Michigan. She contributes to the U.S. forecast four times per year and recently coauthored The United States Economic Outlook for 2021–2022. Her primary fields of interests are macroeconomics and development economics.

Owen Kay

is a current PhD Student in Economics and Public Policy at the University of Michigan and a Graduate Student Research Assistant with the University of Michigan's Research Seminar in Quantitative Economics (RSQE). His research interests are in public, urban, and energy economics. Before coming to the University of Michigan, he received a B.A. in economics and physics from Williams College and worked at the Federal Reserve Board of Governors.

Figure 1

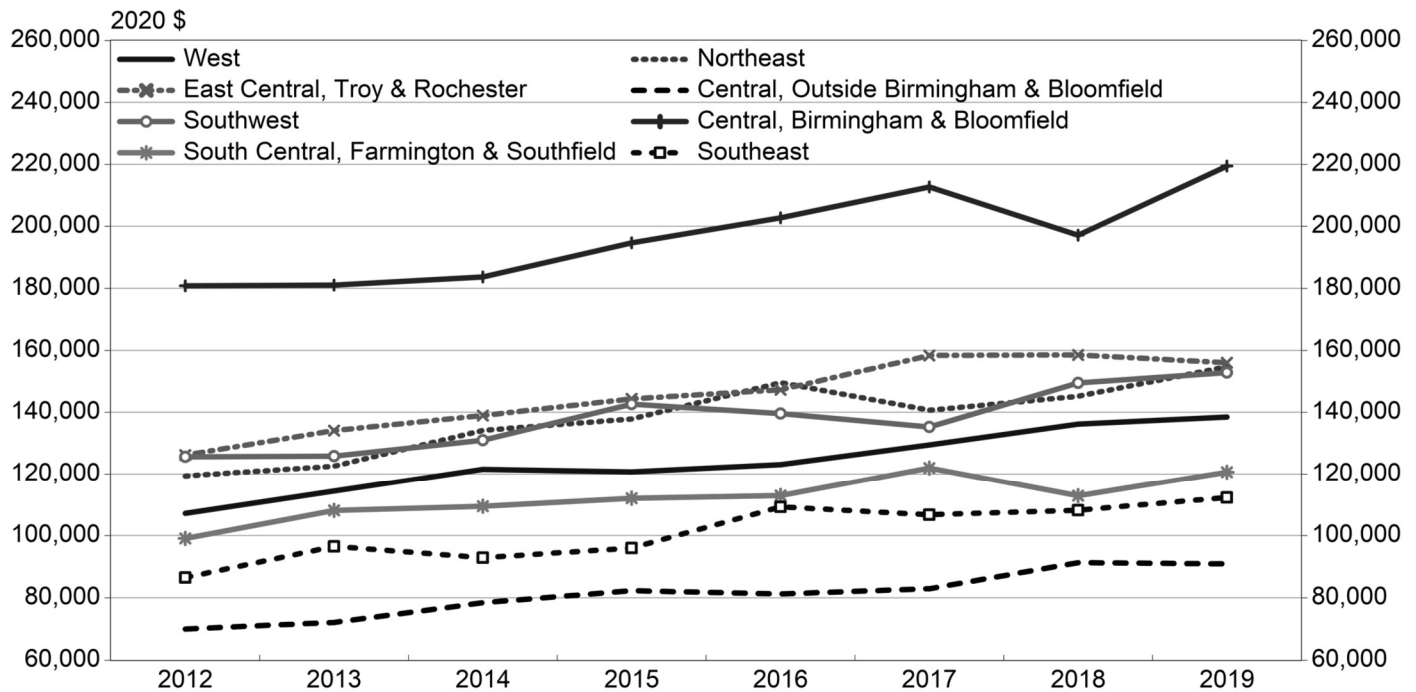
Average Adjusted Three-Person Equivalent Household Income, MI vs Oakland



- Although it is well-known that Oakland County has a prosperous economy, we often receive questions about how widely distributed the County's prosperity is across geographical areas and demographic groups. We have examined these topics in detail for this year's forecast.
- Figure 1 shows average household income for residents of Oakland County compared to residents in Michigan for the years 2012 to 2019.
- The average income measure shown is adjusted for household size and differences in cost of living in different parts of the state as described in our report for the Southeast Michigan Council of Governments, [Evaluating Shared Prosperity in Southeast Michigan, 2012–2018](#), with minor modifications.
- All income figures have also been adjusted to be expressed in 2020 inflation-adjusted dollars.
- Average adjusted household income in Oakland County is significantly higher than in Michigan overall, reflecting Oakland's relative prosperity.
- In 2019, the average three-person equivalent household income in Oakland County (\$142,000) was almost \$40,000 higher than the comparable income for the state of Michigan (\$103,000).
- Average adjusted household income growth between 2012 and 2019 was similar in Oakland County and in Michigan. In Oakland County, average adjusted incomes grew by one-quarter, from \$113,000 to \$142,000. In Michigan, average adjusted incomes also grew by one-quarter, from \$84,000 to \$103,000.
- We use the BEA's Regional Price Parity index to adjust household incomes for local costs of living, but do not adjust for differences in housing costs within Metropolitan Statistical Areas, as we did in our report for the Southeast Michigan Council of Governments.

Figure 2

Average Adjusted Three-Person Equivalent Household Income, Oakland PUMAs



- Figure 2 shows the average adjusted income from 2012–2019 for Oakland County's eight Public Use Microdata Areas (PUMAs) designated by the U.S. Census Bureau.
- Appendix C at the end of this booklet contains a map displaying Oakland's eight PUMA regions.
- Oakland County ranks among the most affluent areas in Michigan and the country. The four highest income PUMA regions in Oakland County had higher average adjusted household incomes than any other PUMA region in Michigan outside of Oakland County.
- Oakland County's most prosperous PUMA region, Central, Birmingham & Bloomfield, had one of the highest adjusted incomes in the country. In 2019, it ranked 17th out of more than 2,300 PUMAs nationwide.
- Despite Oakland County's overall prosperity, there are large geographic disparities within the county.
- Oakland's least prosperous PUMA region is the Central, Outside Birmingham and Bloomfield region, which includes most of Pontiac and Auburn Hills. This region's average adjusted household income was well below the statewide average and significantly less than half the average income in the neighboring Central, Birmingham and Bloomfield region.
- Average adjusted household incomes grew at a similar rate in Oakland's eight PUMA regions between 2012 and 2019. In each region, average incomes grew between 20 and 30 percent cumulatively during that time period.

Table 1

Population in Lower-, Middle-, and Upper-Income Households, Oakland vs MI

	<u>Lower-Income Population</u>	<u>Middle-Income Population</u>	<u>Upper-Income Population</u>
Michigan			
All Race/Ethnicity	28%	53%	19%
Hispanic	41%	46%	13%
Non-Hispanic Asian	21%	49%	30%
Non-Hispanic Black	47%	42%	11%
Non-Hispanic White	23%	57%	20%
Oakland County			
All Race/Ethnicity	18%	51%	32%
Hispanic	27%	50%	23%
Non-Hispanic Asian	13%	43%	43%
Non-Hispanic Black	33%	56%	11%
Non-Hispanic White	14%	51%	35%

Note: some totals do not sum to 100 percent because of rounding.

- Table 1 shows the share of Michigan and Oakland County residents we classify as living in lower-, middle-, and upper-income households.
- We define the threshold between lower- and middle-income households to be two-thirds the median three-person equivalent household income in the United States, adjusted for local cost of living and household size. We define the threshold between middle- and upper-income households to be twice the adjusted national median income.
- In areas where the cost of living is equal to the national average, we classify a three-person household as middle income if it had a household income between \$51,000 and \$153,000 in 2019. The range was \$41,600 to \$124,900 for a two-person household and \$29,400 to \$88,300 for a single-person household. Those thresholds are 7.7 percent lower in Michigan and 4.7 percent lower in Oakland County, reflecting the Detroit MSA's lower cost of living.
- Oakland County's relatively high average incomes are reflected in fewer lower-income residents and more higher-income residents compared to the statewide average.
- Only 18 percent of Oakland County residents live in lower-income households, compared to 28 percent of Michigan residents. Conversely, 32 percent of Oakland County residents lived in upper-income households, compared to only 19 percent of Michigan residents.
- However, the sharp economic disparities along racial and ethnic lines that exist at the state level are also present in Oakland County. Although only 13 percent of Non-Hispanic Asian and 14 percent of Non-Hispanic White residents live in lower-income households, 27 percent of Hispanic and 33 percent of Non-Hispanic Black residents do so.
- Non-Hispanic Black residents of Oakland County are much more likely to live in middle-income households and much less likely to live in lower-income households than in Michigan overall. They are not any likelier to live in upper-income households, however.
- Hispanic residents of Oakland County are roughly equally likely to live in upper-income or lower-income households. In Michigan overall, there are approximately three times as many Hispanic residents living in lower-income households than in upper-income households.

Table 2

Oakland County Compared with its Peers*

County	State	Population 2019	Associate's Degree or More	Child Poverty	Median Family Income**	High-Income Persons Aged 65 or Older	Managerial, Professional	Sum of Rankings	Rank of Sum
Fairfax	VA	1,147,532	1	1	5	1	1	9	1
Montgomery	MD	1,050,688	2	3	9	2	4	20	2
Bergen	NJ	932,202	13	8	1	4	5	31	3
Wake	NC	1,111,761	7	4	7	14	3	35	4
Collin	TX	1,034,730	9	5	3	13	7	37	5
DuPage	IL	922,921	3	13	4	9	9	38	6
Nassau	NY	1,356,924	8	14	2	5	12	41	7
Westchester	NY	967,506	14	10	10	6	8	48	8
Oakland	MI	1,257,584	6	9	8	17	10	50	9
Hennepin	MN	1,265,843	10	7	15	16	6	54	10
Fulton	GA	1,063,937	4	2	33	15	2	56	11
Fairfield	CT	943,332	5	15	16	7	14	57	12
Travis	TX	1,273,954	11	6	22	10	11	60	13
Contra Costa	CA	1,153,526	17	18	12	3	17	67	14
Suffolk	NY	1,476,601	16	19	6	8	21	70	15
St. Louis	MO	994,205	12	12	17	20	15	76	16
Allegheny	PA	1,216,045	15	11	23	27	13	89	17
Mecklenburg	NC	1,110,356	19	17	21	24	16	97	18
Honolulu	HI	974,563	24	30	11	11	22	98	19
Salt Lake	UT	1,160,437	18	22	13	22	25	100	20
Prince George's	MD	909,327	21	24	18	12	29	104	21
Franklin	OH	1,316,756	20	16	29	25	18	108	22
Gwinnett	GA	936,250	25	27	20	23	19	114	23
Pinellas	FL	974,996	26	20	19	29	27	121	24
Erie	NY	918,702	22	21	31	30	20	124	25
Pierce	WA	904,980	23	37	14	18	34	126	26
Palm Beach	FL	1,496,770	36	29	25	19	23	132	27
Sacramento	CA	1,552,058	28	28	24	21	32	133	28
Hillsborough	FL	1,471,968	31	25	28	35	26	145	29
Orange	FL	1,393,452	34	33	26	31	24	148	30
Cuyahoga	OH	1,235,072	27	23	34	36	28	148	30
Pima	AZ	1,047,279	29	32	27	26	36	150	32
Duval	FL	957,755	33	35	30	32	30	160	33
Milwaukee	WI	945,726	35	31	35	34	31	166	34
Shelby	TN	937,166	30	36	36	28	37	167	35
Marion	IN	964,582	32	34	32	38	33	169	36
Philadelphia	PA	1,584,064	39	26	39	39	35	178	37
Fresno	CA	999,101	37	38	38	33	38	184	38
Kern	CA	900,202	38	39	37	37	40	191	39
Bronx	NY	1,418,207	40	40	40	40	39	199	40

*All counties in the United States with a population between 900,000 and 1,600,000 in 2019

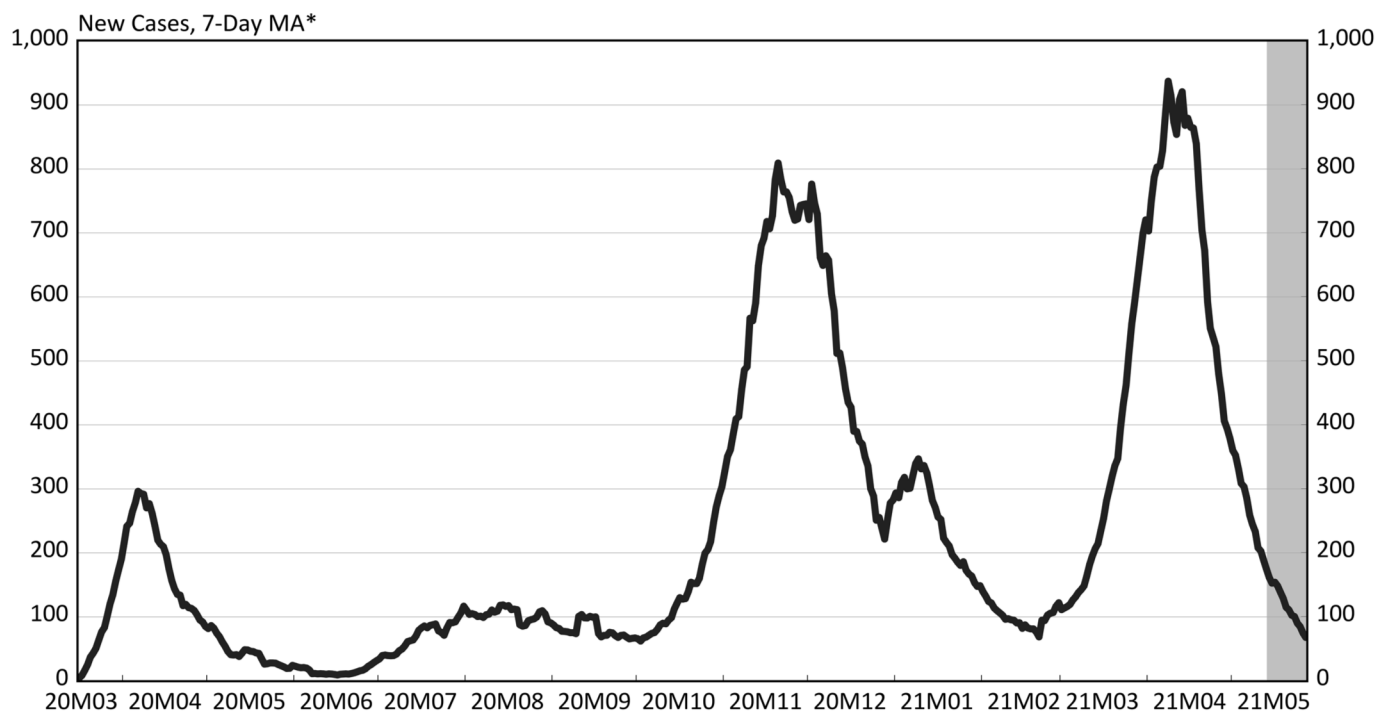
**Adjusted for cost of living

Source: American Community Survey 2019. Census Bureau Population Estimates, March 2021.

- Comparing Oakland County's economic foundation to its peer counties' helps us assess the county's prospects going forward.
- We ranked Oakland County and 39 other counties of similar size in the United States on a series of measures that we consider to be indicative of economic prospects for the future. (The data underlying the rankings are provided in appendix B.)
- We considered all counties in the United States with populations between 900,000 and 1.6 million in 2019, when Oakland's population was 1.26 million. This group contains many of the most prosperous counties in the nation.
- A lower number for the rank indicates a better position among the counties; that is, a rank of 1 is best and 40 is worst. Oakland County ranks between 6 and 17 across the five measures.
- In Table 2, we calculate an overall ranking for each of the 40 counties by summing their rankings across the five measures.
- Oakland ranks 9th overall among this group of counties. We believe that Oakland's top-ten ranking reflects its solid economic foundation, which augurs well for its future prospects.
- The five measures we consider are: (1) educational attainment—the share of the population aged 25 to 64 with at least an associate's degree in 2019; (2) child poverty—the share of the population aged 17 and under who lived within families whose income was below the poverty level in 2019; (3) median family income adjusted for the local cost of living in 2019; (4) high-income seniors—the share of persons aged 65 and older with income at least five times the poverty line in 2019; and (5) professional occupations—the share of employed county residents working in professional and managerial occupations in 2019.
- Oakland is especially noteworthy for its share of residents with an associate's degree or more, where it ranks 6th; its median family income adjusted for the cost of living, where it ranks 8th; and its share of residents employed in professional and managerial occupations, where it ranks 10th.
- Oakland's lowest ranking came in the share of high-income seniors, but the county's ranking of 17th still placed it within the top half of its peers.
- Oakland's high education levels, strong family incomes, and large share of managerial and professional jobs put the county in a strong position to rebound from the economic hardship resulting from the COVID-19 pandemic.

Figure 3

New Cases of COVID-19 in Oakland County



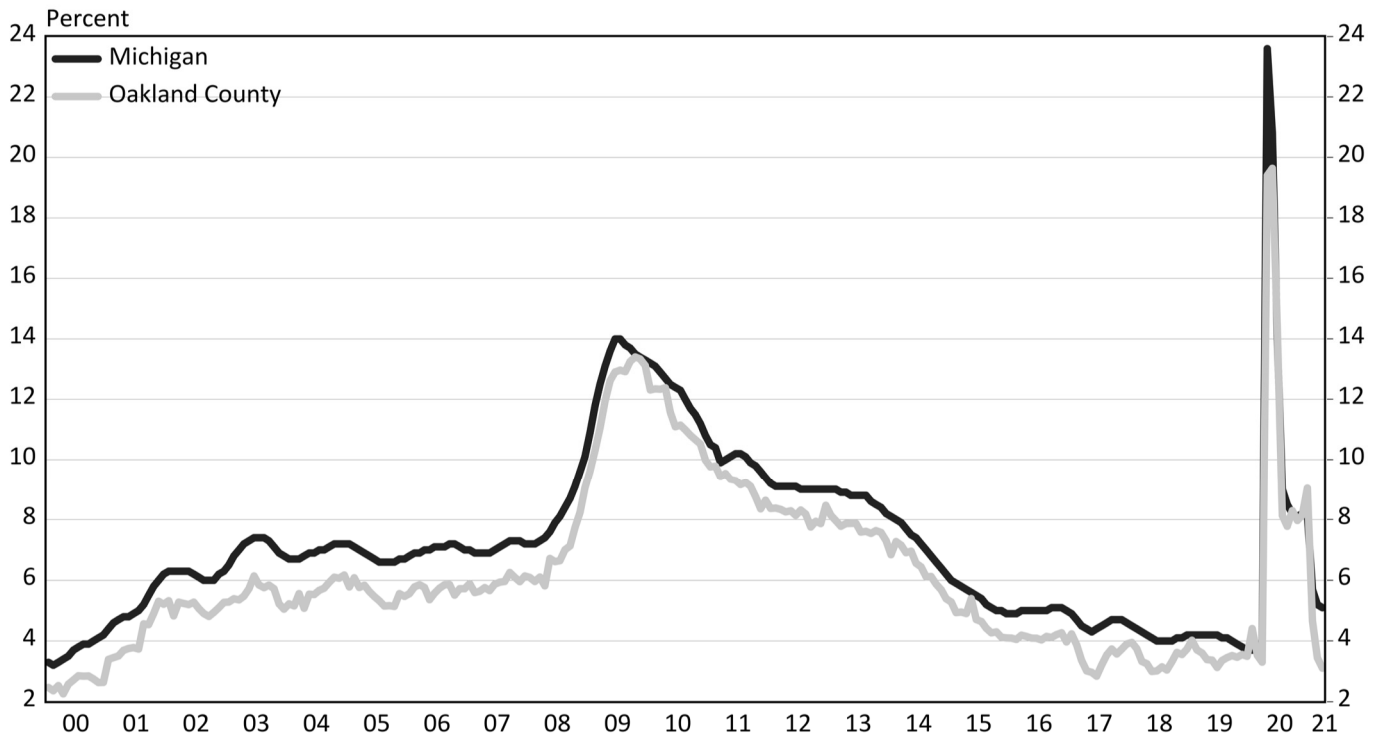
Source: Oakland County Dashboard as of 05/27/2021

*Data in shaded area is more likely to be revised

- Figure 3 displays the seven-day moving average of new COVID-19 cases in Oakland County. The future path of the pandemic and the success in vaccinating the population will play the most important role in determining how quickly the local economy recovers.
- New cases of COVID-19 in Oakland County peaked at 937 on April 8th, before declining to below 100 per day by late May.
- While we are optimistic that the current downward trajectory of the pandemic will continue, the pace of COVID-19 vaccines has been slowing down recently.
- The state of Michigan administered 676,054 doses the week ending April 10th, just before the pause of the Johnson & Johnson vaccine. The pace of vaccinations has declined since then. Michigan administered only 314,464 doses the week ending May 22nd.
- As of May 27th, the statewide vaccination rate stood at 58.5% of the population aged 16 years or more. Oakland County residents have received vaccinations at a higher rate than the state average, with 65.4 percent of residents having at least one dose administered.
- Despite the substantial recent slowdown in the pace of vaccinations, we remain optimistic that sufficient numbers of the reluctant and harder-to-reach populations will be vaccinated for the state to achieve herd immunity by late summer or early fall.
- The state currently expects to end all broad-based restrictions on economic activity on July 1st. We expect the COVID-19 pandemic to diminish to a second- or third-order influence on the economic outlook by this fall.

Figure 4

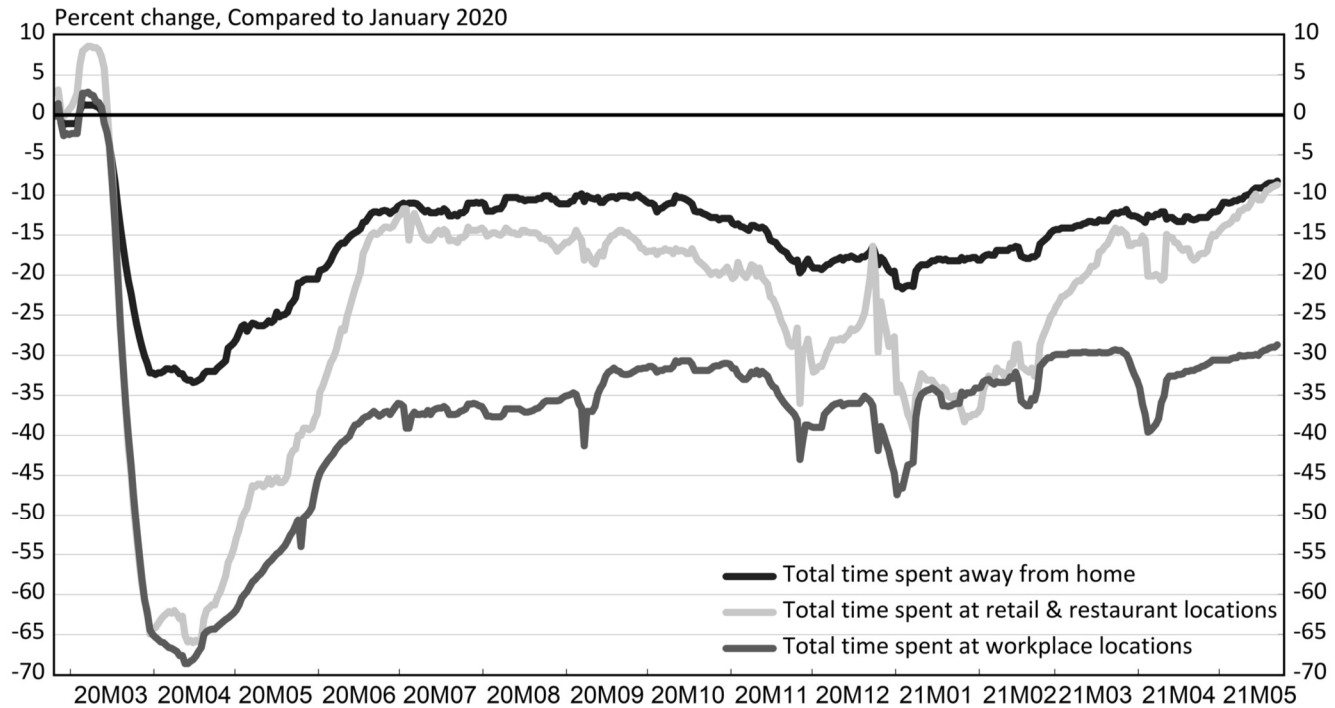
Seasonally Adjusted Unemployment Rate in Michigan and Oakland County



- Figure 4 shows the seasonally adjusted unemployment rates in Michigan and Oakland County. Oakland's unemployment rate peaked at 19.6 percent in May 2020, but it fell to 8.1 percent by July as the economy began to reopen.
- The unemployment rate in Oakland hovered between 7.8 percent and 8.3 percent from July to November 2020 and increased to 9 percent in December as the state's second wave of COVID-19 picked up.
- Oakland's unemployment rate dropped all the way to 4.7 percent in January 2021, and it has continued to decline since then. The unemployment rate in Oakland stood at 3.1 percent as of March, the most recent month for which data was available when we produced this forecast.
- The pandemic has been a very difficult time to gather the data that goes into local area unemployment estimates. Therefore, we believe that the local unemployment rate should be interpreted with caution.
- In particular, we do not believe the current low unemployment readings reflects the extent of slack in the county's labor market. We believe that many people who are currently out of the labor force will return to the labor force this summer and fall.
- We believe the count of employed persons provides a more realistic estimate of where Oakland County's economic recovery currently stands.
- Employment among residents of Oakland County declined by almost 28 percent from March to April 2020. By March 2021, though, the county's household employment count had recovered to only 5.3 percent below its March 2020 level.
- Although there is much more work to be done, the recovery so far illustrates the great strides that the county has made in combating the COVID-19 pandemic.

Figure 5

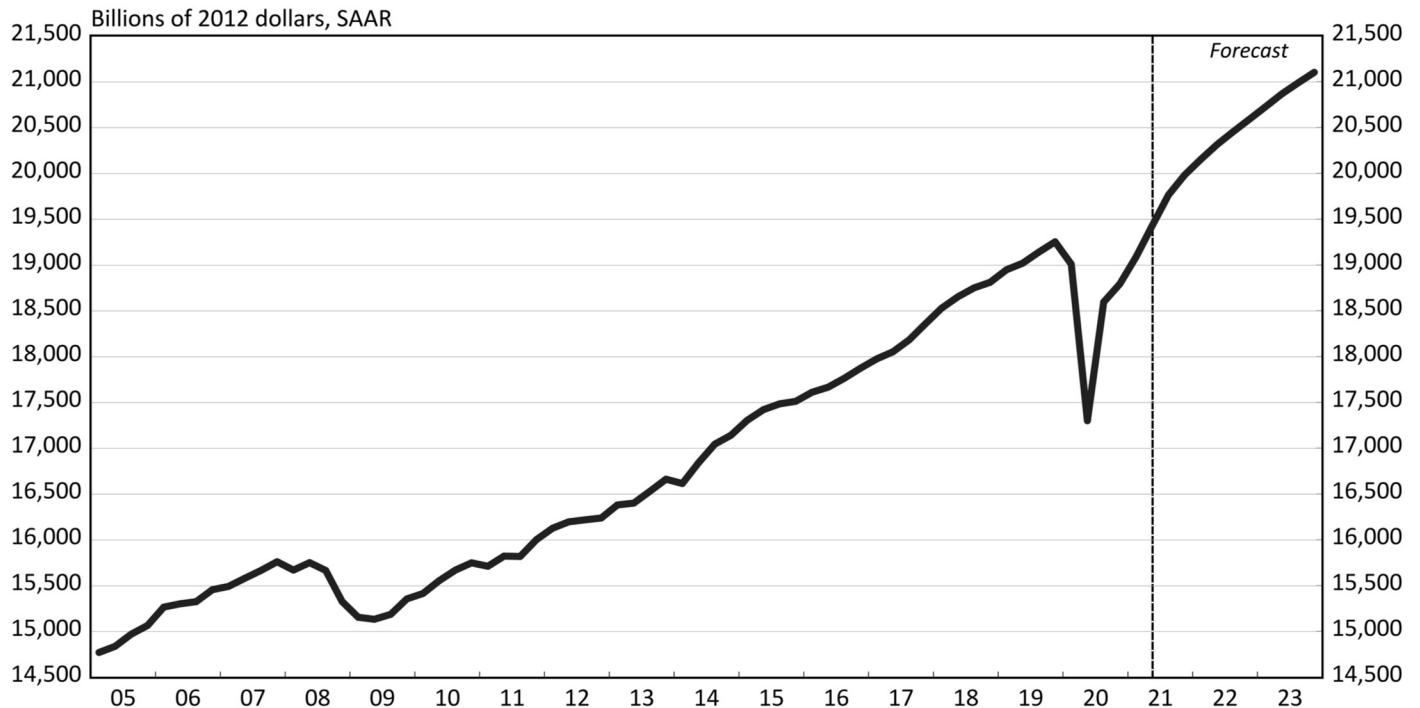
Total Time Spent at Various Locations in Oakland County



Source: Google's COVID-19 Community Mobility Reports via Opportunity Insights

- Figure 5 displays the amount of time spent at various locations in Oakland County as measured by Google's COVID-19 Community Mobility Report. Total time spent away from the home decreased by 32 percent from January to March 2020.
- Trips to workplace locations declined by almost 70 percent among substantial job losses and furloughs, as well as a shift to remote work for those fortunate enough. Time spent at workplace locations recovered to 30 percent lower than its January average by fall of 2020, before dipping again in November and December amid the state's second wave of COVID-19.
- Time spent at workplace locations has now recovered from its end-of-2020 decline, but it remains well below its pre-pandemic level. It has averaged approximately 30 percent below its January 2020 level so far this May.
- Time spent at retail and restaurant locations recovered more quickly in Spring 2020 than time spent at workplace locations, as outdoor activities became widely available in the summer. Time spent at retail and restaurants dipped more sharply during Michigan's second wave of COVID-19 in the late fall and winter, but it has since recovered from that decline.
- So far in May, time spent at retail and restaurant locations in Oakland County has been approximately 11 percent lower than in January 2020, but it has been rising sharply during the month.
- As of May 22nd, the total time spent away from home was about 8 percent below its January 2020 levels. We expect that the total time spent away from home will continue to recover as the public health situation improves, more people become vaccinated, and additional restrictions on activities are lifted.

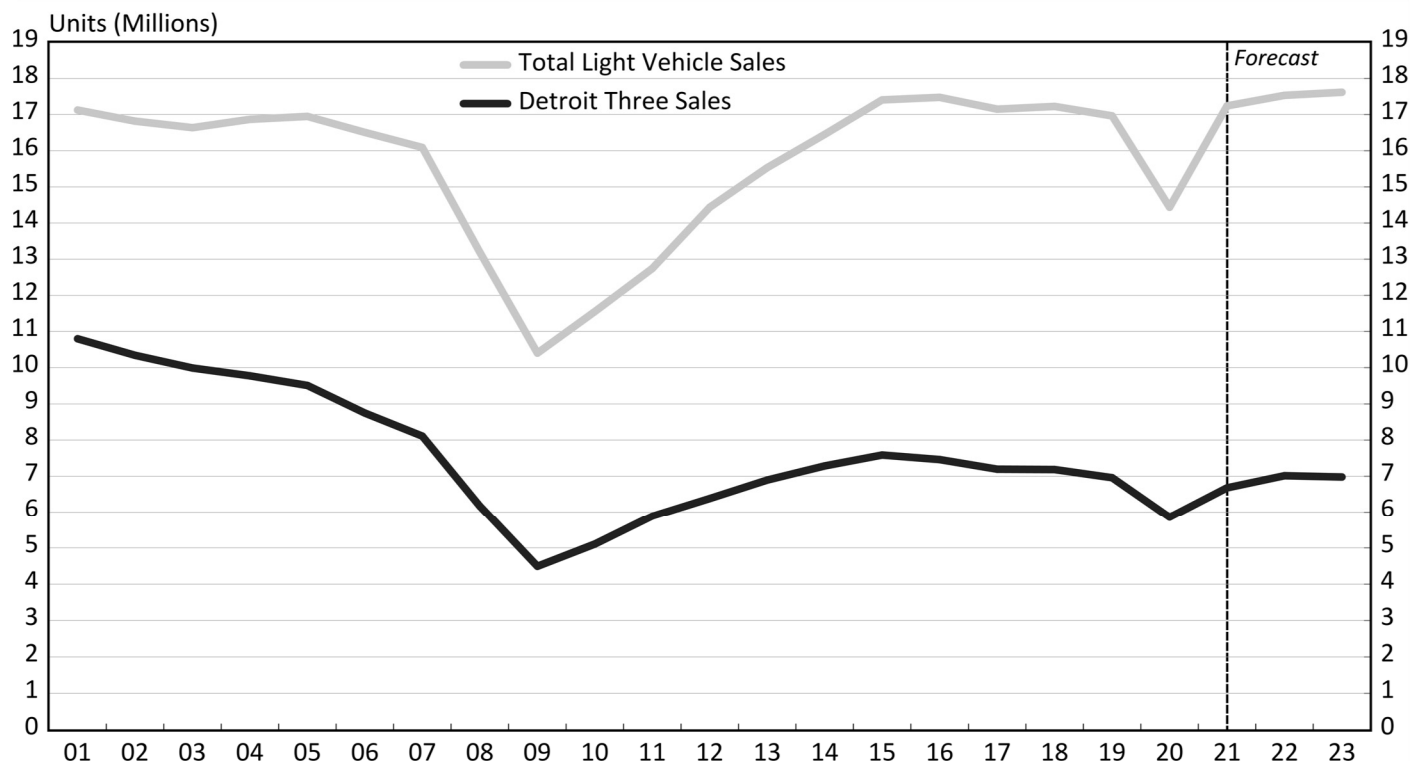
Figure 6

U.S. Real GDP

- Oakland County's economic future is closely tied to the overall health of the national economy. The health of both economies in turn depends strongly on the public health situation and the overall pace of COVID-19 vaccinations.
- Real GDP grew at a 6.4 percent annualized pace in the first quarter of 2021, led by strong growth of consumption spending and with help from residential and business fixed investment.
- The first quarter's expansion followed annualized growth of 4.3 percent in the fourth quarter of 2020 and 33.4 percent in the third quarter after a plunge of 31.4 percent in the second quarter of 2020.
- We anticipate annualized real GDP growth to top 7 percent in each of the next two quarters, with consumption and inventory rebuilding accounting for most of this growth. The annualized quarterly growth pace remains above 3.0 percent through the first half of 2022, but then tapers off to 2.2 percent by the end of 2023.
- On a calendar year average basis, we forecast real GDP to grow by 6.2 percent from 2020 to 2021 after falling by 3.5 percent in 2020.
- The level of real GDP is projected to exceed its pre-pandemic peak during the second quarter of 2021, completing a V-shaped recovery. By the end of 2021, economic output is projected to catch up with the pre-pandemic growth trajectory.
- We expect the pace of the recovery to slow in 2022 and 2023. We forecast annual real GDP growth to register 4.2 percent in 2022 and 2.7 percent in 2023.
- We expect that a \$2.4 trillion spending package (over a 10-year period) will pass Congress this fall via reconciliation, with the start of the most consequential tax policy changes being delayed until fiscal year 2023.
- The Federal Reserve has been extremely accommodative for more than a year. We expect the Fed to succeed in its goal of letting inflation run above 2 percent for some time to "make up" for previous shortfalls. We believe the Fed will taper its purchases of mortgages and other assets this year and will wait until mid-2023 to raise rates.

Figure 7

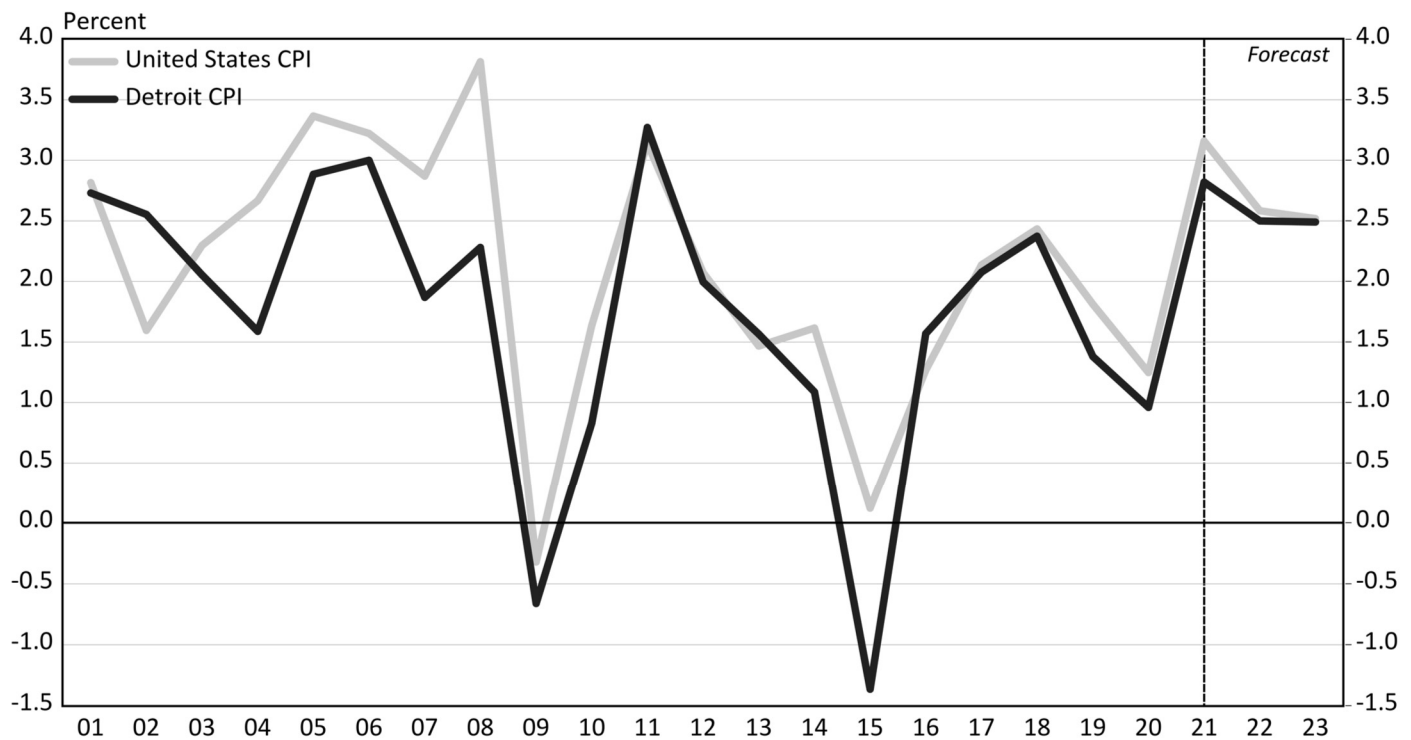
U.S. and Detroit Three Light Vehicle Sales



- Total national light vehicle sales fell from 17 million units in 2019 to 14.4 million units in 2020, although most of that decline occurred in the initial months of the pandemic. Since then, brisk income growth and avoidance of public transportation have supercharged the demand for new and used vehicles.
- New light vehicle sales jumped to an 18.5-million-unit annualized pace in April, the highest reading since 2005.
- The ongoing global silicon chip shortage has reportedly cost domestic automakers more than a million units of lost production. We expect vehicle demand to remain high, but sales will remain constrained by low levels of inventory at least until the third quarter of 2021, when the chip shortage begins to improve.
- Despite supply chain disruptions, we project that sales will reach 17.2 million units this year and surpass their prior all-time highs in 2022–23.
- Rebuilding inventory, especially for trucks, will be challenging due to the lack of capacity. As a result, dealers may have to work with limited inventories for quite some time.
- We expect the light truck share of the total market to continue to grow, from 78 percent in the first quarter of 2021 to over 80 percent in 2023.
- The Detroit Three's share of the light vehicle market has fallen dramatically over the course of the pandemic, from 42.3 percent in the first quarter of 2020 to 38.2 percent in the first quarter of 2021.
- We project the Detroit Three's share of the light vehicle market to nudge up in the coming months, resulting in an average of 38.7 percent this year. The Detroit Three's share of the market rebounds further to 40 percent in 2022 and 39.6 percent in 2023.
- We forecast Detroit Three sales to total 6.7 million units this year, just below the 7 million unit pre-pandemic total of 2019. This year's sales would represent a 14.1 percent gain over the 5.9 million unit sales in 2020.
- In 2022 and 2023, we forecast Detroit Three light vehicle sales to climb to about 7 million units in both years, just a touch above the 2019 pre-pandemic total.

Figure 8

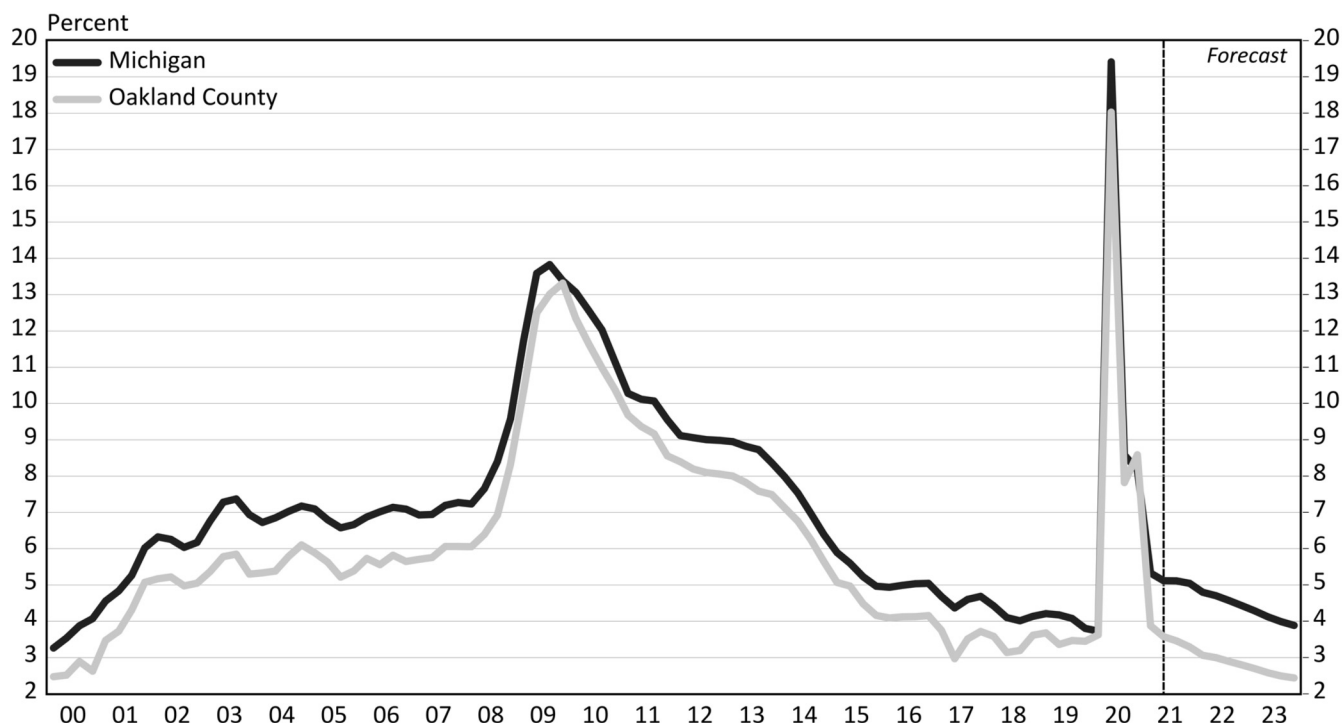
Inflation Rate, National and Detroit CPI



- We measure local inflation by the growth rate of the Detroit Consumer Price Index (CPI), as county-level consumer price data are not available.
- After slowing down in 2020, U.S. core CPI inflation picked up speed in early 2021, jumping by 3 percent year-over-year in April. At the same time, the recovery of gas prices from their drop in spring 2020 contributed to all-item U.S. CPI inflation of 4.2 percent, year-over-year.
- Supply chain disruptions and sharply higher input costs likely contributed to this increase. More than one-third of the spike came from a jump in used car and truck prices alone.
- We expect the Fed to allow inflation to run above 2 percent in the near term to “make up” for previous shortfalls. We believe the Fed will taper its purchases of mortgages and other assets this year, which will prove sufficient to keep inflation expectations anchored. The Fed will wait until mid-2023 to raise rates, responding to the tightening labor market.
- We believe that production will eventually catch up to meet the additional demand, dampening the inflationary impulse.
- We expect rapid growth and fiscal stimulus to drive labor and other input costs higher. An accommodative Fed and the recovery of energy prices will add to inflationary pressure in the short term. We forecast the all-item U.S. CPI to average 3.2 percent in 2021, 2.6 percent in 2022, and 2.5 percent in 2023.
- As with the nation overall, we expect local inflation to be higher over the next few years than we have seen in the recent past. We are forecasting local inflation of 2.8 percent this year and 2.5 percent in each of the next two years.
- The local inflation rate we are forecasting for this year would be the highest since 2011. For context, however, local inflation averaged 2.8 percent from 1990 through 2008.
- The period following the Great Recession has been a period of very low inflation. We do expect inflation to pick up over the next few years, but historically speaking, the inflation rates we are forecasting are not unusual.

Figure 9

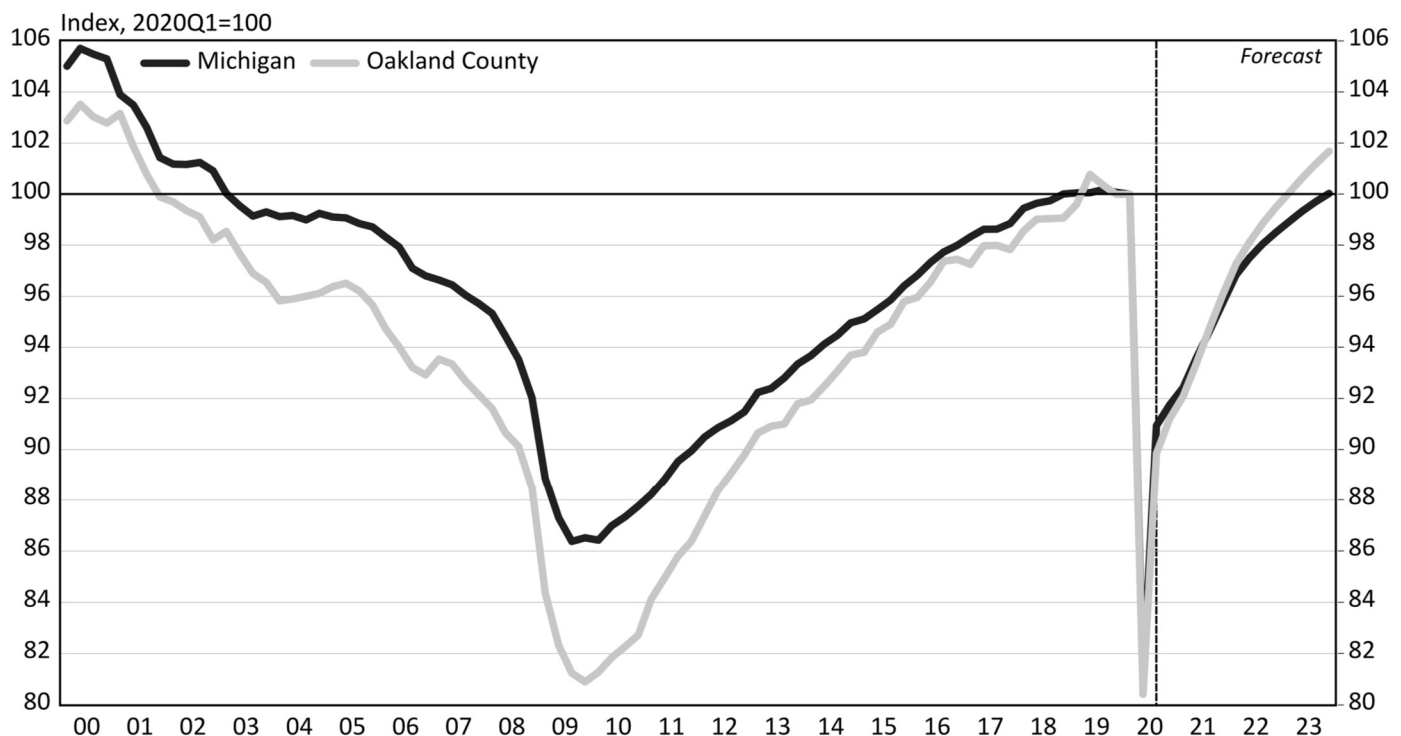
Quarterly Unemployment Rate, Michigan vs Oakland County



- Movements in Oakland County's unemployment rate tend to track movements in the state-wide unemployment rate closely, but unemployment tends to run slightly lower in Oakland County.
- During the Great Recession, the unemployment rate in Michigan peaked at 13.8 percent in the third quarter of 2009, while in Oakland the rate peaked one quarter later, at 13.3 percent.
- The unemployment rate in both the state and county then gradually declined over the next nine years, reaching a low of 3.0 percent in Oakland County in the second quarter of 2017, when the unemployment rate in the state was 4.4 percent.
- That gap had largely closed by the first quarter of 2020, when the unemployment rate in Oakland County was 0.1 percent below the statewide rate (3.6 percent, and 3.7 percent, respectively).
- The COVID-19 recession caused the unemployment rate to jump to 19.4 percent in the state and 18.0 percent in Oakland County in the second quarter of 2020.
- Over the next three quarters, the unemployment rate fell almost as sharply as it increased, reaching 5.3 percent in the state and 3.9 percent in Oakland County by the first quarter of 2021.
- We forecast that the unemployment rate in the state and Oakland County will continue to decline through the end of 2023, with the rate of decline slightly faster in Oakland County.
- We expect the unemployment rate to reach 3.9 percent in Michigan and 2.4 percent in Oakland County by the end of 2023. Our forecasted unemployment rate at the end of 2023 would equal the previous record low unemployment rate in Oakland County, recorded in the fourth quarter of 1999.

Figure 10

Employment Indices for Michigan and Oakland County



- During Michigan's lost decade culminating in the Great Recession, Oakland County lost jobs at a faster rate than the state as a whole.
- Since the end of the Great Recession, employment in Oakland County has grown faster than in the state as a whole.
- Despite the strong recovery in jobs over the next decade, neither Oakland County nor the state of Michigan regained their 2000 employment levels by 2019. The jobs shortfall in Oakland (2.8 percent), however, was smaller than in the state as a whole (5.0 percent).
- The COVID-19 recession led employment in the state of Michigan to decline by 846,700 (19.1 percent) in the second quarter of 2020, while Oakland County lost 145,851 jobs (19.6 percent).
- Starting in the third quarter of 2020, the state and county began a strong rebound.
- By the first quarter of 2021, Michigan had recovered 60.3 percent of its initial pandemic job losses, and we estimate that Oakland County had recovered 59.5 percent.
- We are forecasting that the jobs recovery will continue over the next three years, at a slightly faster pace in the county than in the state.
- We expect Oakland County to return to its 2020q1 employment level in the first quarter of 2023 and to exceed that value by 1.7 percent at the end of 2023.
- We expect the state will return to its 2020q1 employment level a little later, in the fourth quarter of 2023.

Table 3

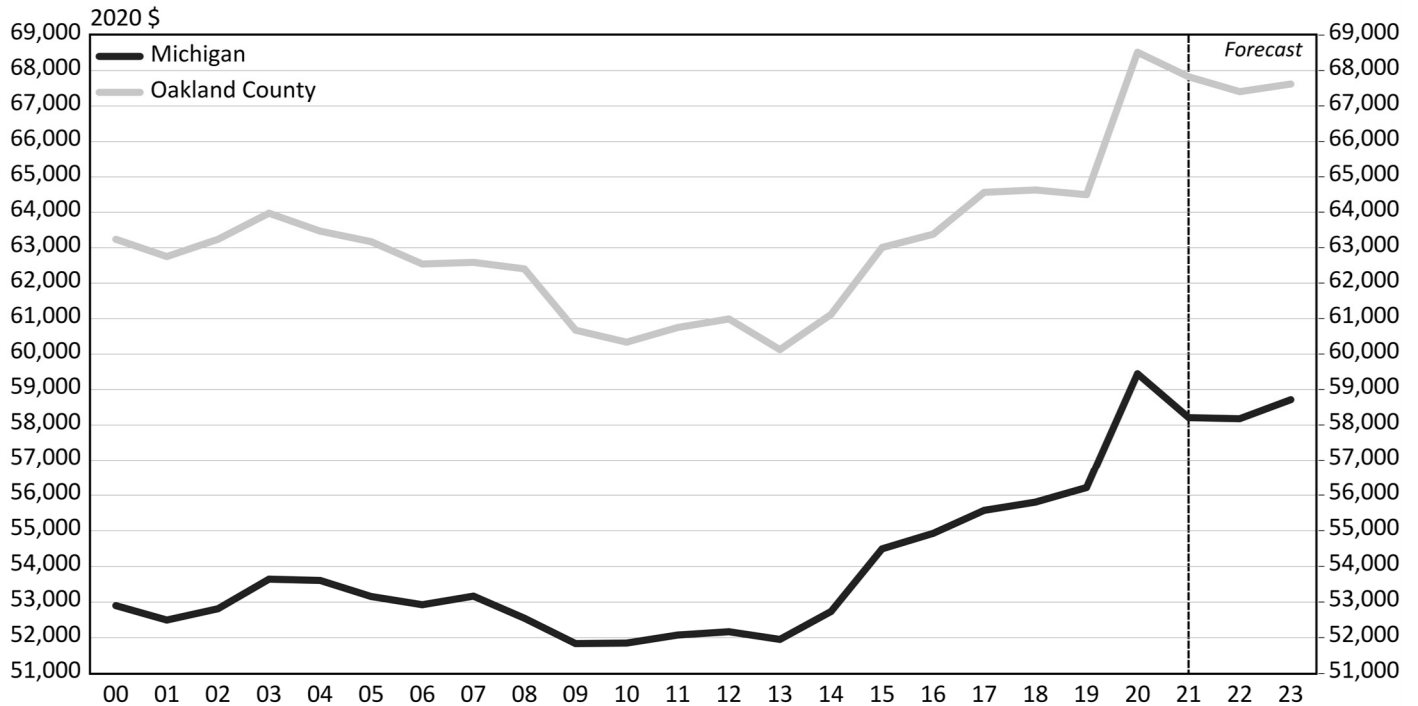
Forecast of Jobs in Oakland County by Major Industry Division, 2020–2023

	2019	Forecast Employment				Average Annual Wage 2019 \$
	2020	2021	2022	2023		
Total Jobs (Number of jobs)	746,298	673,218	700,742	733,299	751,650	63,708
(Annual percentage change)	(1.3)	(-9.8)	(4.1)	(4.6)	(2.5)	
Total Government	45,359	43,091	42,722	44,050	44,446	55,802
Total Private	700,939	630,127	658,020	689,249	707,204	64,220
Full-Recovery Industries						
Utilities	1,527	1,523	1,508	1,537	1,559	127,103
Management of companies and enterprises	18,892	18,589	19,065	20,543	21,639	119,051
Finance and insurance	39,220	41,155	42,378	43,527	44,395	100,547
Wholesale trade	37,850	35,784	36,982	38,032	38,532	98,156
Professional, scientific, and technical services	104,560	98,658	102,449	107,061	109,644	94,245
Construction	27,204	27,441	30,415	33,122	34,448	73,176
Other manufacturing	47,415	43,513	44,918	47,157	48,542	71,376
Transportation and warehousing	12,919	12,563	13,258	14,201	14,896	51,311
Private education	11,453	9,852	10,305	11,084	11,479	43,067
Natural resources and mining	880	915	941	961	982	37,299
Incomplete-Recovery Industries						
Accommodation and food services	61,117	46,048	51,908	58,009	60,771	20,493
Retail trade	78,889	69,612	72,791	72,968	72,874	36,278
Other services	23,271	19,080	20,046	21,045	21,729	37,464
Arts, entertainment and recreation	11,245	6,590	6,927	8,291	8,835	41,824
Administrative support and waste management	61,735	51,645	54,308	56,799	58,090	44,942
Private health and social services	107,133	97,706	99,960	103,569	106,550	52,591
Real estate and rental and leasing	16,969	15,344	15,350	15,930	16,357	56,692
Information	15,097	13,295	13,072	13,456	13,694	86,299
Transportation equipment (Motor Vehicles & Parts) manufacturing	21,709	18,866	19,425	19,942	20,173	104,532
Unclassified	1,853	1,948	2,013	2,013	2,013	51,699
Addendum						
Unemployment Rate	3.5	9.5	3.6	2.9	2.6	

- On an annual average basis, employment in Oakland County declined by 9.8 percent in 2020. The number of jobs is expected to grow by 4.1 percent in 2021, 4.6 percent in 2022, and 2.5 percent in 2023. Oakland's average number of jobs in 2023 is forecast to exceed the 2019 level by 5,352.
- All of the net job gains in the county are forecast to occur in the private sector. Government, which includes public K-12 education as well as Oakland University and Oakland Community College, is forecast to lose 913 jobs between 2019 and 2023.
- In Table 3, we divide the major private sector industry groups into two types of industries, those that fully return to 2019 employment levels by 2023 and those that only partly regain 2019 employment levels. We have listed the "full-recovery" industries in descending order by their average wages in 2019, and we have listed the "incomplete-recovery" industries in descending order. Appendix D displays a full list of roughly 100 industries, organized by NAICS code.
- Table 3 shows that the full-recovery industries tend to be higher-paying (7 out of 10 have an average wage that is above the county average in 2019), while the incomplete-recovery industries are generally lower-paying (7 out of 9 have an average wage that is below the county average).
- The utilities industries pay very well, but they are relatively small and gain only 32 jobs between 2019 and 2023. Management of companies and enterprises lost only 303 jobs in 2020 as those companies successfully transitioned to working from home. Management employment is forecast to grow by 2,747 (14.5 percent) from 2019 to 2023.
- The finance and insurance industry gained jobs in 2020, and it is forecast to continue seeing steady job gains over the next three years. By 2023, finance and insurance is expected to employ 5,175 more workers than it did in 2019 (13.2 percent).
- Employment in professional and technical services declined by 5,902 in 2020, but we are expecting it to recover all of those job losses and more. Between 2019 and 2023, we expect professional services to grow by 5,084 jobs (4.9 percent)
- Within the professional services industry, we expect architectural and engineering services to see the largest job gains between 2019 and 2023 (3,704, or 9.2 percent).
- The construction industry gained 237 jobs in 2020, and we expect it to be the fastest-growing major industry in Oakland County over the next three years, adding 7,007 jobs between 2020 and 2023. A shortage of trained workers may limit those gains, though.
- The manufacturing sector outside of motor vehicle manufacturing is forecast to gain 1,127 jobs between 2019 and 2023, with the largest job gains in miscellaneous manufacturing, which includes medical equipment (732), chemicals and pharmaceuticals (543) and plastics (464).
- Transportation and warehousing is forecast to grow by 1,977 jobs (15.3 percent) as e-commerce continues to grow.
- All of the incomplete-recovery industries suffered a sharp decline in jobs in 2020. Employment in accommodations and food services declined by 24.7 percent, with the greatest job losses in accommodations and full-service restaurants. The industry enjoys a strong rebound over the next three years, but still falls slightly short of 2019 employment levels in 2023.
- The retail trade industry lost 9,277 jobs (11.8 percent) in 2020. We expect it will recover about one-third of those jobs in 2021 (3,179), but that employment will then flatten out. We do not expect that retail trade will return to 2019 employment levels in the foreseeable future.
- Private health and social services lost 9,427 jobs (8.8 percent) in 2020 as individuals deferred medical care. We anticipate that almost all of these job losses will be recovered over the next three years. Local hospitals, however, are expected to employ 1,800 fewer people in 2023 than they did in 2019.
- Information services are expected to add only 399 jobs (3.0 percent) over the next three years, as job losses in newspapers and telecommunications mostly offset job gains in software publishing and data processing.
- Employment in the local motor vehicle and parts manufacturing industry fell by 2,842 jobs (13.1 percent) in 2020. We believe it will recover 46 percent of those job losses over the next three years (1,307). Like retail trade, the local motor vehicle manufacturing industry may never return to 2019 employment levels.

Figure 11

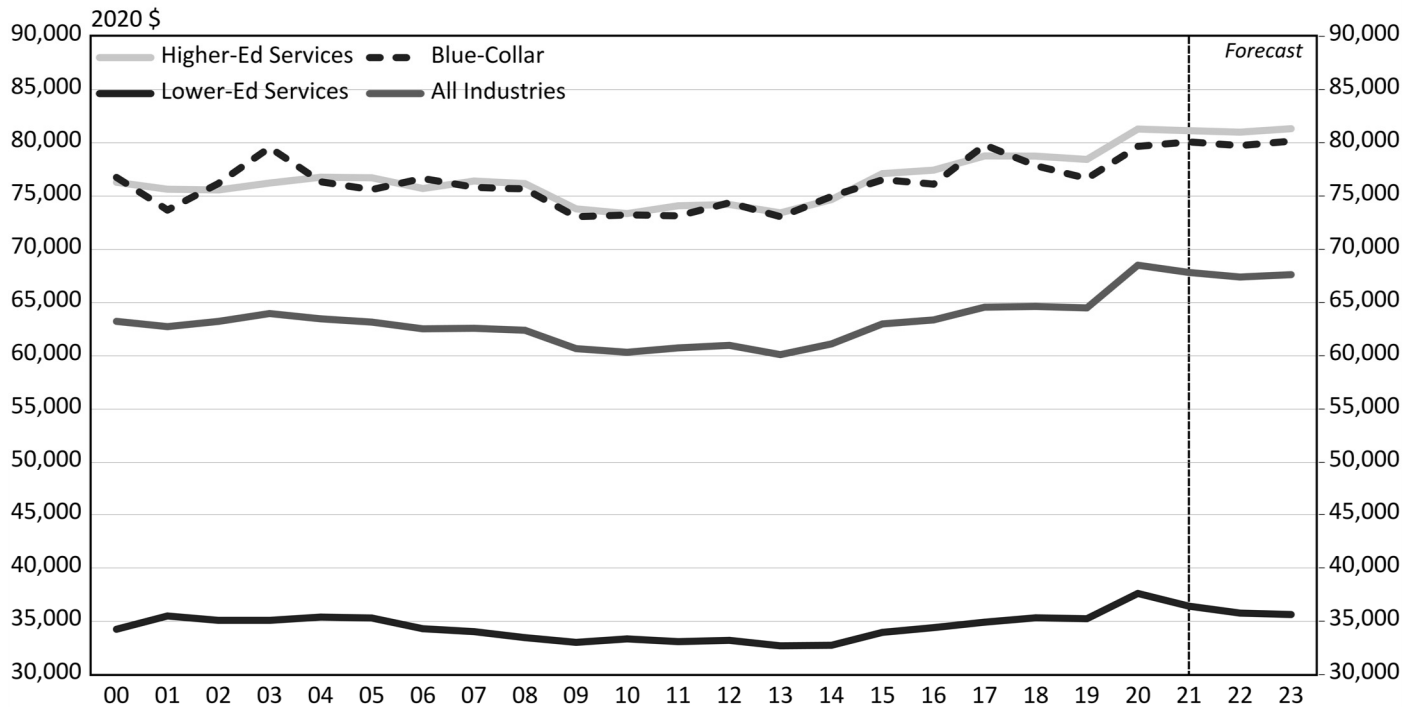
Average Real Wage in Oakland County and Michigan



- Figure 11 shows the average real wage for all workers in Oakland County and Michigan from 2000 to 2023, adjusted for inflation to be expressed in 2020 dollars.
- The average real wage in Oakland County has consistently run about 15 percent higher than in the state of Michigan.
- Both Oakland County and Michigan overall saw a large jump in average real wages during last year's pandemic recession. Real wages grew by 6.2 percent in Oakland County and by 5.8 percent statewide. Those were the largest single-year increases in real wages on record.
- The jump in average wages last year represented the disproportionate loss of lower-paying jobs relative to higher-paying jobs caused by the COVID-19 pandemic. Few individual workers experienced wage increases of that magnitude.
- As the economy recovers from the pandemic, we expect employment among lower-income workers to increase more quickly than among higher-income workers. The mix between higher- and lower-income jobs thus returns closer to pre-pandemic levels.
- We forecast that composition effect to lead average real wages to decline temporarily both in Oakland County and in Michigan. Real wages fall by 1.6 percent from 2020 to 2022 in Oakland County and by 2.1 percent statewide.
- Average real wages start to pick back up in 2023, rising by 1.0 percent statewide and by 0.3 percent in Oakland County.
- Real wages are forecast to average \$67,600 in Oakland and \$58,700 in Michigan by 2023. Thus, despite the near-term pull-back we are forecasting, Oakland County's average real wage in 2023 will stand 4.8 percent above 2019 levels. Average real wages statewide will stand 4.5 percent higher than their 2019 level.

Figure 12

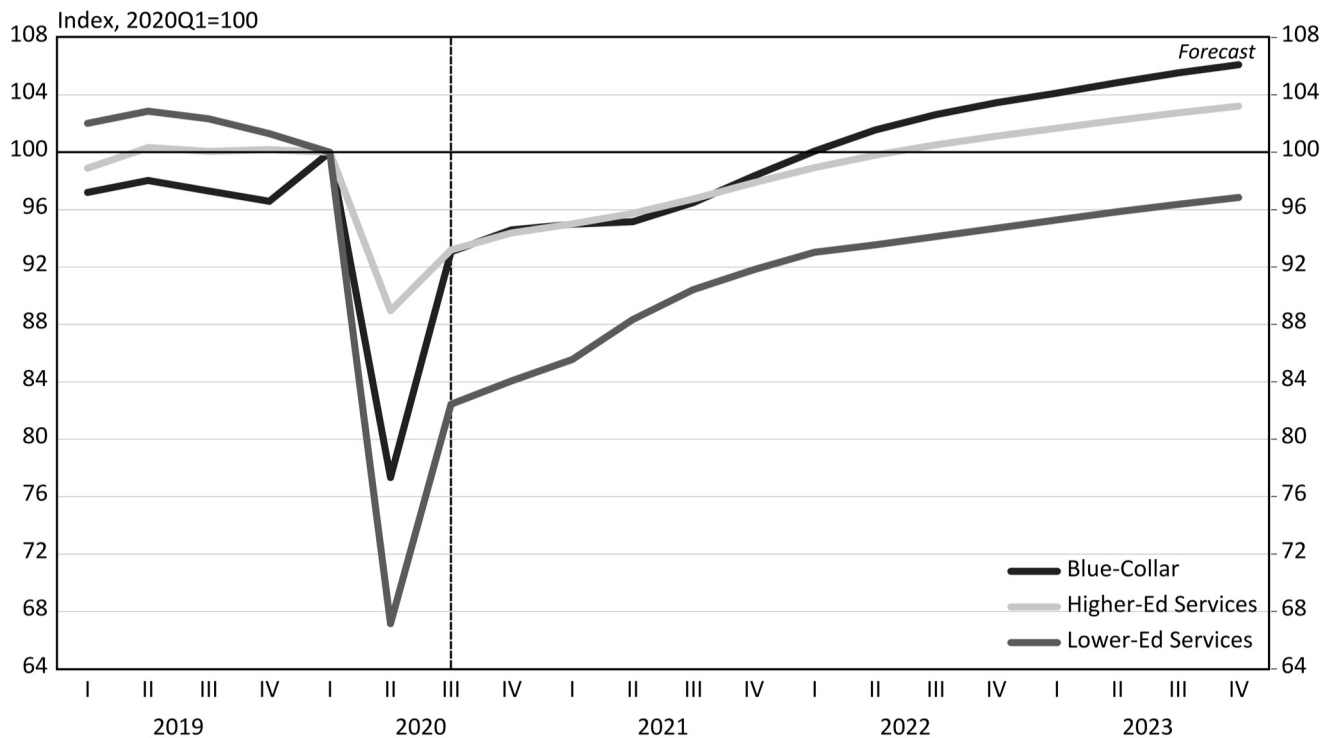
Average Real Wage in Oakland County by Selected Industries



- Figure 12 shows the average wage in Oakland County for three industry categories. The first category comprises traditional blue-collar industries; the second category comprises service-providing industries that tend to employ highly-educated workers, which we call higher-education service industries; and the third category comprises service-providing industries that tend to employ less well-educated workers, which we call lower-education service industries
- Average wages in the blue-collar and higher-education services industries are about twice as high as wages in the lower-education services industries.
- The 2020 pandemic recession caused a spike in average wages in all three industry groups: 4.0 percent in the blue-collar industries, 3.6 percent in the higher-education services industries, and 6.7 percent in the lower-education services industries.
- The relatively large increase in wages in the lower-education services industries reflects the fact that, even within this generally lower-paying industry group, it was the lowest-paid industries (arts and recreation and accommodations and food services) that lost the greatest share of jobs in 2020.
- The real average wage declines in 2021 and 2022 for the lower- and higher-education services industries as inflation picks up and lower-wage workers return to the job. In the blue-collar industries, the real average wage increases in 2021 but decreases in 2022.
- By 2023, real wages are expected to stand around 4.6 percent higher than their 2019 levels in the blue-collar industries, 3.7 percent higher in the higher-education services industries, and 1.1 percent higher in the lower-education services industries.

Figure 13

Employment Indices in Oakland County by Selected Industries



- Figure 13 shows the recent history and our forecast of employment in the blue-collar industries, higher-education services industries, and lower-education services industries in Oakland County between 2019 and 2023. The graph is indexed so that the level of employment in each industry group is equal to 100 in the first quarter of 2020.
- Blue-collar employment in Oakland County dropped by 22.7 percent in the second quarter of 2020. Employment in Oakland's blue-collar industries recovered nearly 70 percent of those losses in the third quarter. We estimate that by the fourth quarter, Oakland's blue-collar industries had recovered more than three-quarters of their initial pandemic job losses.
- Blue-collar employment is forecast to continue recovering in 2021, reaching its pre-pandemic level in the second quarter of 2022. By the end of our forecast period in the fourth quarter of 2023, employment in the blue-collar industries exceeds its pre-pandemic level by 6.1 percent.
- Among Oakland County's blue-collar industries, construction and wholesale trade, transportation, and utilities are both forecast to enjoy strong job gains.

- Employment in Oakland County's higher-education services industries declined by 11 percent in the second quarter of 2020. Although the initial employment decline was smaller than in the blue-collar industries, the recovery to-date has not been as vigorous. We estimate that the higher-education services industries had recovered just under one-half of their second-quarter job losses by the fourth quarter of 2020.
- Higher-education services industry employment is expected to grow in Oakland County over our forecast period. However, the rebound is expected to proceed at a more moderate pace than in the blue-collar industries. We expect the higher-education services industries in Oakland County to reach their pre-pandemic level of employment in the third quarter of 2022. By the fourth quarter of 2023, employment in higher-education services industries is forecast to exceed the pre-pandemic level by 3.2 percent.
- The recovery in the higher-education services industries should be boosted by the widespread return of full-time, in-person K-12 and higher education this fall. The return of the healthcare industry to more normal operations should also boost employment in the higher-education services industries.
- The impact of the 2020 pandemic recession has been the most severe for Oakland County's lower-education services industries. In the second quarter of 2020, employment in these industries declined by 32.8 percent, or nearly one-third. We estimate that the lower-education services industries recovered just over half of those job losses by the fourth quarter of the year.
- We expect healthy job growth in the lower-education services industries through 2023, but the reality is that these industries are currently still in a deep jobs hole. Many businesses in these industries have closed during the pandemic. It will take time for new businesses to open and for new patterns of consumer behavior to be established. Additionally, the headwinds facing the retail trade industry prior to the pandemic remain in place. With those factors in mind, we forecast employment in these industries to remain 3.1 percent short of its pre-pandemic level at the end of our forecast period in the fourth quarter of 2023.
- Oakland County's leisure and hospitality, administrative support and waste management, and other services industries all experience strong growth during our forecast period. The county's retail trade industry is forecast to perform better than statewide, but we believe that the job losses in retail during the pandemic are largely here to stay, even in Oakland County.
- As shown in Figure 12, average wages in the blue-collar and higher-education services industries are more than two times higher than average wages in the lower-education services industries. Therefore, the uneven employment recovery we are forecasting threatens to increase income inequality in Oakland County as it recovers from COVID-19.

Review of the Forecast

Year of Forecast	% Forecast Error for Total Private Jobs	Year of Forecast	% Forecast Error for Total Private Jobs	Year of Forecast	% Forecast Error for Total Private Jobs
1986	+ 1.4	1998	+ 1.3	2010	– 1.7
1987	+ 0.7	1999	– 1.2	2011	– 2.5
1988	– 1.8	2000	+ 0.6	2012	– 2.6
1989	– 1.9	2001	+ 1.9	2013	– 1.1
1990	+ 2.2	2002	+ 3.2	2014	– 0.3
1991	+ 3.9	2003	+ 1.5	2015	– 0.1
1992	– 2.0	2004	+ 2.6	2016	– 0.1
1993	+ 0.5	2005	+ 1.4	2017	+ 1.1
1994	– 1.3	2006	+ 3.4	2018	+ 0.5
1995	+ 0.2	2007	0.0	2019	+ 0.2
1996	– 0.5	2008	+ 2.3	2020	+ 0.9
1997	+ 0.6	2009	+ 5.5		

(Positive numbers indicate that the forecast was too high; negative numbers indicate that it was too low.)

Average absolute forecast error 1986–2020: 1.5%

	Forecast 2020	Actual 2020
Unemployment rate	9.1%	9.5%
Consumer inflation rate	-0.2%	1.0%

Forecast Date: September 2020

- In last year's report, we forecast that Oakland County's private sector would lose 64,900 jobs in 2020, for a decline of 9.3 percent. We now estimate that the county lost 70,800 private jobs last year (a decline of 10.1 percent) resulting in an over-prediction of 0.9 percentage points.
- That forecast error was well below our average absolute error of 1.5 percent since 1986.
- Unlike our private sector forecast, our forecast for the government sector was too pessimistic. We thought the government sector would lose 3,100 jobs last year, for a decline of 6.9 percent. We now estimate that the government sector lost 2,300 jobs last year, for a decline of 5 percent.
- We had forecast that Oakland's unemployment rate would spike from 3.4 percent in 2019 to 9.1 percent in 2020. Oakland County's unemployment rate actually increased to 9.5 percent.
- Last year, we forecast that local prices would decline by 0.2 percent from 2019 to 2020. Local prices ended up increasing by 1.0 percent last year.
- Overall, we are satisfied with last year's forecast error in light of the very difficult forecasting environment caused by the pandemic.

Appendix B

Oakland County Compared with its Peers Indicator Values*

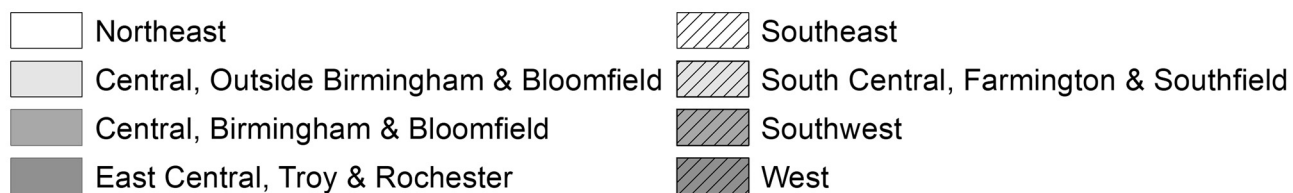
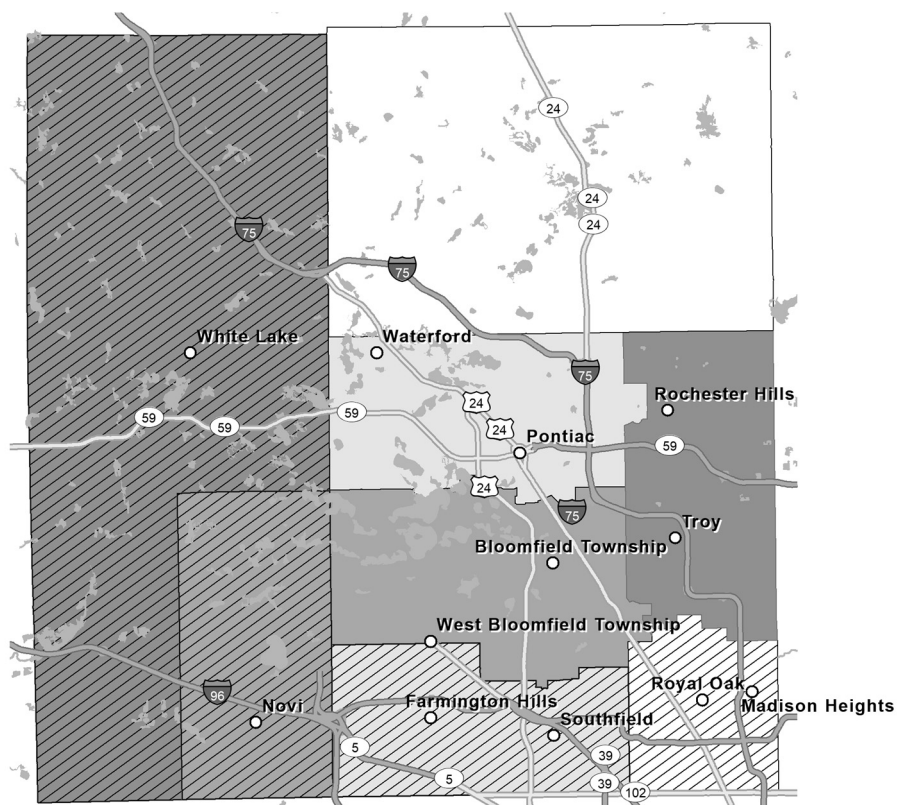
County	State	Population 2019	Associate's Degree or More	Child Poverty	Median Family Income**	High-Income Persons Aged 65 or Older	Managerial, Professional
Fairfax	VA	1,147,532	70.0%	8.4%	125,732	65.8%	58.7%
Montgomery	MD	1,050,688	63.6%	9.4%	114,012	59.3%	57.2%
Bergen	NJ	932,202	62.6%	5.1%	102,672	53.0%	52.2%
Wake	NC	1,111,761	64.5%	9.3%	108,065	43.2%	54.0%
Collin	TX	1,034,730	62.1%	7.1%	107,173	43.4%	54.0%
DuPage	IL	922,921	60.7%	7.8%	110,636	48.0%	47.7%
Nassau	NY	1,356,924	59.5%	6.2%	107,292	52.3%	47.6%
Westchester	NY	967,506	61.4%	9.6%	102,497	49.5%	51.0%
Oakland	MI	1,257,584	60.4%	9.3%	108,512	41.0%	51.4%
Hennepin	MN	1,265,843	62.3%	12.1%	106,988	41.9%	52.2%
Fulton	GA	1,063,937	65.7%	22.3%	110,317	42.0%	57.3%
Fairfield	CT	943,332	58.3%	12.4%	108,782	49.3%	47.2%
Travis	TX	1,273,954	59.8%	14.1%	103,063	47.8%	53.7%
Contra Costa	CA	1,153,526	50.9%	10.4%	94,696	54.9%	44.6%
Suffolk	NY	1,476,601	50.4%	9.2%	95,520	48.4%	42.5%
St. Louis	MO	994,205	56.2%	12.5%	102,990	37.9%	48.2%
Allegheny	PA	1,216,045	58.4%	14.1%	96,859	31.3%	48.9%
Mecklenburg	NC	1,110,356	56.1%	13.2%	91,128	33.9%	45.1%
Honolulu	HI	974,563	49.6%	9.9%	82,328	44.8%	38.3%
Salt Lake	UT	1,160,437	47.1%	11.1%	93,398	36.9%	41.5%
Prince George's	MD	909,327	41.9%	12.6%	88,281	44.7%	40.3%
Franklin	OH	1,316,756	50.8%	18.4%	88,958	33.6%	45.3%
Gwinnett	GA	936,250	50.7%	13.2%	81,134	36.6%	39.7%
Pinellas	FL	974,996	46.4%	13.1%	80,452	30.0%	42.2%
Erie	NY	918,702	50.7%	19.5%	83,238	29.4%	41.8%
Pierce	WA	904,980	40.1%	11.6%	82,738	39.1%	35.6%
Palm Beach	FL	1,496,770	47.8%	15.9%	72,086	38.2%	38.5%
Sacramento	CA	1,552,058	41.5%	15.9%	78,375	37.4%	38.5%
Hillsborough	FL	1,471,968	46.9%	18.4%	74,937	27.9%	39.7%
Orange	FL	1,393,452	47.6%	18.1%	72,575	29.4%	37.6%
Cuyahoga	OH	1,235,072	44.8%	23.3%	78,479	27.7%	40.6%
Pima	AZ	1,047,279	39.3%	18.4%	78,324	32.4%	38.1%
Duval	FL	957,755	41.7%	19.4%	73,464	29.1%	36.9%
Milwaukee	WI	945,726	41.6%	23.7%	72,246	28.4%	38.2%
Shelby	TN	937,166	39.3%	25.9%	75,802	30.8%	36.3%
Marion	IN	964,582	40.8%	19.6%	74,320	24.7%	37.2%
Philadelphia	PA	1,584,064	39.7%	32.1%	52,991	22.2%	39.7%
Fresno	CA	999,101	31.7%	29.7%	67,249	28.9%	31.7%
Kern	CA	900,202	25.2%	26.7%	63,014	26.9%	28.8%
Bronx	NY	1,418,207	29.8%	37.1%	41,904	19.7%	24.7%
<i>State of Michigan</i>			41.7%	17.6%	82,018	27.8%	37.7%
<i>United States</i>			43.8%	16.8%	80,944	32.4%	39.9%

*All counties in the United States with a population between 900,000 and 1,600,000 in 2019.

**Adjusted for cost of living.

Source: American Community Survey 2019. Census Bureau Population Estimates, March 2021. Median Family Income adjusted using BEA price parity indices for 2019 and extended to counties by relative gross rent.

Map of Oakland County PUMAs



Forecast of Jobs in Oakland County by Detailed Industry Division

	Estimate	Forecast			Average Annual Wage
	2020	2021	2022	2023	2019 \$
Total Payroll Jobs (Number of jobs)	673,218	700,742	733,299	751,650	63,708
(Annual percentage change)	(-9.8)	(4.1)	(4.6)	(2.5)	
Total Government	43,091	42,722	44,050	44,446	55,802
Federal government	4,580	4,486	4,507	4,504	72,677
Local education and health services	21,322	21,116	22,111	22,322	53,674
Local public administration	12,265	12,228	12,359	12,462	53,758
State and other local government	4,924	4,892	5,073	5,158	55,589
Total Private	630,127	658,020	689,249	707,204	64,220
Private Goods-Producing	90,736	95,700	101,182	104,145	78,974
Natural resources and mining	915	941	961	982	37,299
Construction	27,441	30,415	33,122	34,448	73,176
Construction of buildings	6,839	7,467	8,099	8,441	75,520
Heavy and civil engineering construction	2,807	3,076	3,309	3,412	85,786
Specialty trade contractors	17,796	19,872	21,714	22,596	70,459
Manufacturing	62,379	64,343	67,099	68,715	81,789
Printing and related support activities	1,735	1,711	1,742	1,759	67,563
Chemicals	3,857	3,985	4,267	4,493	97,106
Plastics and rubber products	4,779	5,259	5,720	6,018	57,262
Nonmetallic mineral products	1,087	1,117	1,155	1,181	67,839
Primary metals	1,142	1,132	1,195	1,224	92,945
Fabricated metals	9,034	9,290	9,860	10,162	61,145
Machinery	10,325	10,493	10,900	11,101	84,510
Computer and electronic products	2,894	2,892	2,886	2,858	78,173
Electrical equipment, appliances, components	1,008	983	1,014	1,031	87,288
Transportation equipment	18,866	19,425	19,942	20,173	104,532
Miscellaneous manufacturing	3,826	4,030	4,263	4,457	62,042
Manufacturing NEC	3,825	4,026	4,154	4,258	49,943
Private Service-Providing	539,391	562,321	588,067	603,058	61,844
Trade, transportation, and utilities	119,482	124,539	126,738	127,862	56,668
Wholesale trade	35,784	36,982	38,032	38,532	98,156
Merchant wholesalers, durable goods	25,354	26,257	27,023	27,387	100,034
Merchant wholesalers, nondurable goods	7,668	8,011	8,288	8,471	85,567
Wholesale electronic markets, agents, brokers	2,762	2,714	2,720	2,674	113,779
Retail trade	69,612	72,791	72,968	72,874	36,278
Motor vehicle and parts dealers	10,708	11,368	11,811	12,092	63,470
Furniture and home furnishings stores	1,872	2,057	2,018	1,959	38,749
Electronics and appliance stores	4,100	4,092	4,275	4,368	52,850
Building material and garden supply dealers	6,557	6,980	6,879	6,806	41,831
Food and beverage stores	12,714	13,304	13,222	13,187	26,051
Health and personal care stores	6,763	7,077	7,386	7,643	36,897
Gasoline stations	2,045	2,124	2,119	2,106	23,487
Clothing and clothing accessories stores	5,084	5,315	5,014	4,731	22,367
Sporting goods, hobby, book, and music stores	2,164	2,224	2,248	2,230	26,731
General merchandise stores	12,294	12,600	12,224	11,898	26,621
Miscellaneous store retailers	4,197	4,490	4,579	4,650	28,369
Nonstore retailers	1,113	1,161	1,192	1,202	61,277
Transportation and warehousing	12,563	13,258	14,201	14,896	51,311
Truck transportation	3,805	4,076	4,292	4,443	59,770
Couriers and messengers	3,018	3,312	3,501	3,669	44,745
Warehousing and storage	1,560	1,619	1,681	1,717	69,428
Transportation and warehousing NEC	4,179	4,250	4,728	5,067	42,954
Utilities	1,523	1,508	1,537	1,559	127,103

Appendix D

Forecast of Jobs in Oakland County by Detailed Industry Division (cont'd)

	Estimate	Forecast			Average Annual Wage
	2020	2021	2022	2023	2019 \$
Information	13,295	13,072	13,456	13,694	86,299
Publishing	3,733	3,638	3,612	3,565	99,020
Motion pictures and sound recording	881	594	616	623	31,053
Telecommunications	4,143	4,060	4,092	4,091	84,966
Data processing, hosting, and related services	1,804	1,919	2,037	2,120	92,044
Information NEC	2,734	2,860	3,099	3,296	103,584
Financial activities	56,500	57,727	59,456	60,752	87,301
Finance and insurance	41,155	42,378	43,527	44,395	100,547
Credit intermediation and related activities	20,432	21,251	21,898	22,408	92,850
Insurance carriers and related activities	15,911	16,210	16,635	16,928	90,618
Finance and insurance NEC	4,812	4,917	4,994	5,059	163,106
Real estate and rental and leasing	15,344	15,350	15,930	16,357	56,692
Professional and business services	168,892	175,823	184,404	189,373	80,339
Professional and technical services	98,658	102,449	107,061	109,644	94,245
Legal services	11,759	11,982	12,292	12,507	96,780
Accounting and bookkeeping services	6,036	6,289	6,405	6,474	72,101
Architectural and engineering services	38,370	40,255	42,721	44,080	101,326
Specialized design services	2,255	2,378	2,520	2,618	108,536
Computer systems design and related services	20,198	20,574	21,196	21,445	94,309
Management and technical consulting services	8,693	9,056	9,470	9,747	95,020
Scientific research and development services	1,246	1,304	1,372	1,411	149,599
Advertising, PR, and related services	3,625	3,559	3,600	3,568	80,382
Other professional and technical services	6,476	7,052	7,485	7,794	60,494
Management of companies and enterprises	18,589	19,065	20,543	21,639	119,051
Administrative support and waste management	51,645	54,308	56,799	58,090	44,942
Private education and health services	107,557	110,265	114,654	118,028	51,672
Education services	9,852	10,305	11,084	11,479	43,067
Health care and social assistance	97,706	99,960	103,569	106,550	52,591
Ambulatory health care	39,039	41,116	42,410	43,526	58,725
Offices of physicians	13,263	13,808	14,092	14,355	83,098
Offices of dentists	5,735	6,448	6,598	6,704	53,381
Offices of other health practitioners	5,699	6,085	6,416	6,716	43,993
Home health care services	8,388	8,564	8,883	9,188	38,299
Other Ambulatory Health Care Services	5,954	6,210	6,421	6,563	50,806
Hospitals	31,950	31,734	32,507	33,229	65,192
Nursing and residential care facilities	16,057	16,108	16,850	17,366	31,077
Social assistance	10,660	11,003	11,802	12,429	25,972
Leisure and hospitality	52,637	58,835	66,300	69,606	23,810
Arts, entertainment, and recreation	6,590	6,927	8,291	8,835	41,824
Accommodation and food services	46,048	51,908	58,009	60,771	20,493
Accommodation	3,946	4,265	4,996	5,465	25,364
Food services and drinking places	42,102	47,644	53,013	55,306	19,980
Restaurants and other eating places	37,710	42,353	47,156	49,245	19,730
Full-service restaurants	18,262	21,440	24,650	26,023	22,245
Limited-service restaurants	16,532	17,798	19,181	19,729	16,266
Other Restaurants and Other Drinking Places	2,915	3,115	3,324	3,493	19,858
Special food services	2,575	3,126	3,345	3,340	23,275
Drinking places, alcoholic beverages	1,816	2,165	2,513	2,720	19,760
Other services	19,080	20,046	21,045	21,729	37,464
Private unclassified service-providing	1,948	2,013	2,013	2,013	51,699

Addendum

Unemployment Rate

9.5

3.6

2.9

2.6



BUSINESS

Fostering innovation, investment and growth in Oakland County, our Business Development team helps businesses locate and expand in our region. From some of the smallest startups to Fortune 500 companies, Oakland County fuels development and innovation through strategic partnerships, business finance and emerging sectors programs.



COMMUNITY

Providing community services for all of our cities, villages and townships in Oakland County. Resources are available in the areas of downtown development, historic preservation and design assistance, environmental stewardship, waste resources, brownfield redevelopment, land use and zoning.



WORKFORCE

Helping our businesses with talent recruitment, training and retention. Building the talent pipeline through career assistance services, apprenticeships and youth programs and events. Achieving our goal of 80 percent of Oakland County adults obtaining a post-secondary degree or certification by 2030.



VETERANS SERVICES

Assisting veterans and their families with a variety of needs, from filing and appealing claims, to applying for grants and other available resources.



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