



# OAKLAND COUNTY ECONOMIC OUTLOOK

2022-2024

# SUMMARY INTRODUCTION

# DAVID COULTER

## OAKLAND COUNTY EXECUTIVE

Economic development is a team sport. I am thrilled to have so many experienced and committed professionals dedicated to growing our economy in Oakland County. Collaborations on the state, county and municipal levels are yielding real results – new investments, business and job expansion, and continued development.

Working together and guided by data drawn from sources such as the annual Economic Outlook study, we help thousands of residents and businesses with critical resources. Our five-year roadmap comprised of seven goals, including a thriving and inclusive economy, ensures we are All ways, moving forward.

We continually measure our progress in areas such as worker wages, business investment, child poverty and minority business development. Our internal metrics, posted on our website, help us track our performance.

While economic development is a team sport, often times the playing field is not level. That is why Oakland County creates programming to ensure that all of our residents and businesses have a real shot at success:

- Oakland80 Tuition Scholarship Program – A partnership with Oakland County Michigan Works! that provides financial support and removes financial roadblocks, so eligible residents can secure a college education or certified training.
- Project Diamond – A partnership with Automation Alley that provides industrial 3D printers to help businesses become competitive and diversified in the advanced manufacturing sector.
- Business Forward – A program that provides local businesses owners with personalized assistance and connections to resources through a team of Business Consultants.
- Revolving Loan Fund – A fund for startup companies and minority, women and veteran-owned businesses that need financial support to break through the barriers to doing business.

With programs like these, we are ensuring Oakland County's economic growth is accessible to all residents and businesses. The County is positioned to fully leverage the significant opportunities coming our way. We have a plan, committed partners, dedicated employees and the resources to make transformational progress throughout our economy.

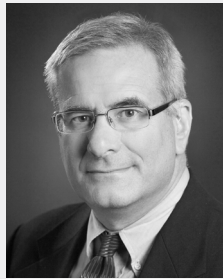


# OAKLAND COUNTY ECONOMIC OUTLOOK

2022-2024



Gabriel Ehrlich



Donald Grimes

## PRESENTED BY

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

APRIL 2022

## OVERVIEW OF CONTENTS

- Oakland County's Economy in the Latest Data
- Oakland County's Success with the Paycheck Protection Program
- How Does the Detroit Metro Area Stack Up in Computer Jobs?
- The U.S. Economic Outlook
- The Economic Outlook for Oakland County through 2024, including:
  - *Inflation Rates and Local Unemployment*
  - *Oakland Employment Growth Compared with Michigan's*
  - *Employment Growth by Major Industry Division*
  - *Average Real Wages by Industry Groups*

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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 2022–2023 and The Michigan Economic Outlook for 2022–2023.

### 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 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 2022–2023.

### 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 2022–2023.

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 Michigan Economic Outlook for 2022–2023. His primary fields of interests are in economic forecasting and energy economics.



This Economic Outlook Summary is available online beginning April 28, 2022 at:  
**AdvantageOakland.com | [lsa.umich.edu/econ/rsqe](http://lsa.umich.edu/econ/rsqe)**

## **The Oakland County Economic Outlook for 2022–2024 Executive Summary**

*Jacob T. Burton, Gabriel M. Ehrlich, Donald R. Grimes, and Michael R. McWilliams  
University of Michigan*

Oakland County, one of the most populous and prosperous counties in Michigan, enjoyed a strong rebound from the COVID-19 pandemic and recession during 2021 and is poised for further growth over the next three years. As of February 2022, the county's unemployment rate stood at 3.8 percent, down dramatically from the level of 19.7 percent it reached in May 2020. Oakland lost 148,900 jobs, or 20 percent of its payroll employment, in the second quarter of 2020. By the third quarter of 2021, the county had regained more than two-thirds of that loss. Up to that point, Oakland's recovery was roughly on par with the state's, but we expect the county's job growth to outpace statewide growth by the end of our forecast in 2024. We project Oakland to surpass its pre-pandemic level of employment during the third quarter of 2023 and to exceed that level by 2.2 percent at the end of 2024. At the same time, we expect the county's unemployment rate to decline to 2.9 percent, comfortably below its average level of 3.4 percent in 2019.

While the overall jobs picture is upbeat, we forecast different speeds of recovery across Oakland's industry groups. Compared with pre-pandemic levels, we expect total employment at the end of 2024 to be strongest for the county's traditional blue-collar industries, which have been among the quickest to recover so far. The blue-collar job count finishes 5.1 percent higher than the pre-pandemic level at the end of 2024. Higher-educational attainment services jobs lost comparatively fewer jobs during the

pandemic, but their recovery has been muted so far. We forecast a slight pickup in the pace of job growth in the short-term, leaving higher-education services jobs 2.1 percent above the pre-pandemic level at the end of 2024. The lower-educational attainment services sector fared the worst during the pandemic, shrinking by one-third in the second quarter of 2020. We estimate that these industries will return to their pre-pandemic levels during the first half of 2024 and exceed those levels by 1.1 percent by the end of the year. Our forecast for Oakland County's lower-education services jobs greatly surpasses our forecast for the state, which remains 1.9 percent below their pre-pandemic levels at the end of 2024.

There are several reasons why we expect to see a stronger recovery in Oakland than the state overall. First, Oakland County has a relatively larger private sector, which has grown more quickly than the government sector over Michigan's recent history. Second, we expect Oakland's tight labor market to draw workers into the labor force more quickly than the state's. We forecast that Oakland's labor force will grow faster than Michigan's labor force in each year of the forecast—we expect Oakland County's labor force to exceed its 2019 level by 1.4 percent in 2024, when Michigan's remains roughly 1 percent below its 2019 level.

Another factor that helped to build a strong foundation for Oakland's recovery was its strong participation in the national Paycheck Protection Program (PPP) early in the pandemic. The PPP was established by the CARES Act in March 2020 to help small businesses continue to pay their workers in the face of economic shutdowns and reduced demand. Publicly available data from the U.S. Small Business Administration shows that a total of 291,571 PPP loans for \$24.1 billion were approved to businesses in Michigan to support a reported 2.8 million jobs in the state. Oakland ranked first out of all counties in Michigan on nearly every metric in the PPP data, including total approved PPP funds (\$5.2 billion), PPP funds per resident (\$4,133), local jobs supported (580,711 jobs), and total PPP loan forgiveness (\$4.5 billion). In fact, more than one in five of Michigan's PPP dollars went to businesses in Oakland County.

Inflation continues to be the major downside of the economic recovery, and it is currently running at its fastest pace in 40 years. The all-items inflation rate for the Detroit Consumer Price Index (CPI) in February 2022 was 7.5 percent year-over-year, the highest reading since September 1981. We expect

inflation to remain high in the near term as the recent spike in gas prices reinforces the pre-existing trend. Improvement in supply chains and contractionary fiscal and monetary policy should help price increases cool off later this year. We project local inflation to register 7.0 percent in 2022, the fastest calendar-year rate since 1981, before dropping to 3.6 percent next year and to 2.5 percent in 2024. That said, the war in Ukraine represents a major risk to our forecast of inflation. The war's largest short-run effects on U.S. inflation will be through higher energy and food prices. Longer-term, it may produce important disruptions to automotive and other supply chains.

Despite the recent inflationary headwinds, average real wages in both the state and county have increased substantially since 2019. Average real wages jumped in 2020 due to the disproportionate loss of lower-paying jobs. As many of those workers returned to work in 2021, average real wages declined in the county, but they remained well above 2019's level. We forecast Oakland's average real wage to resume growth over 2022–2024, finishing the forecast period with an average real wage of \$71,700, or 7.1 percent above the pre-pandemic level from 2019.

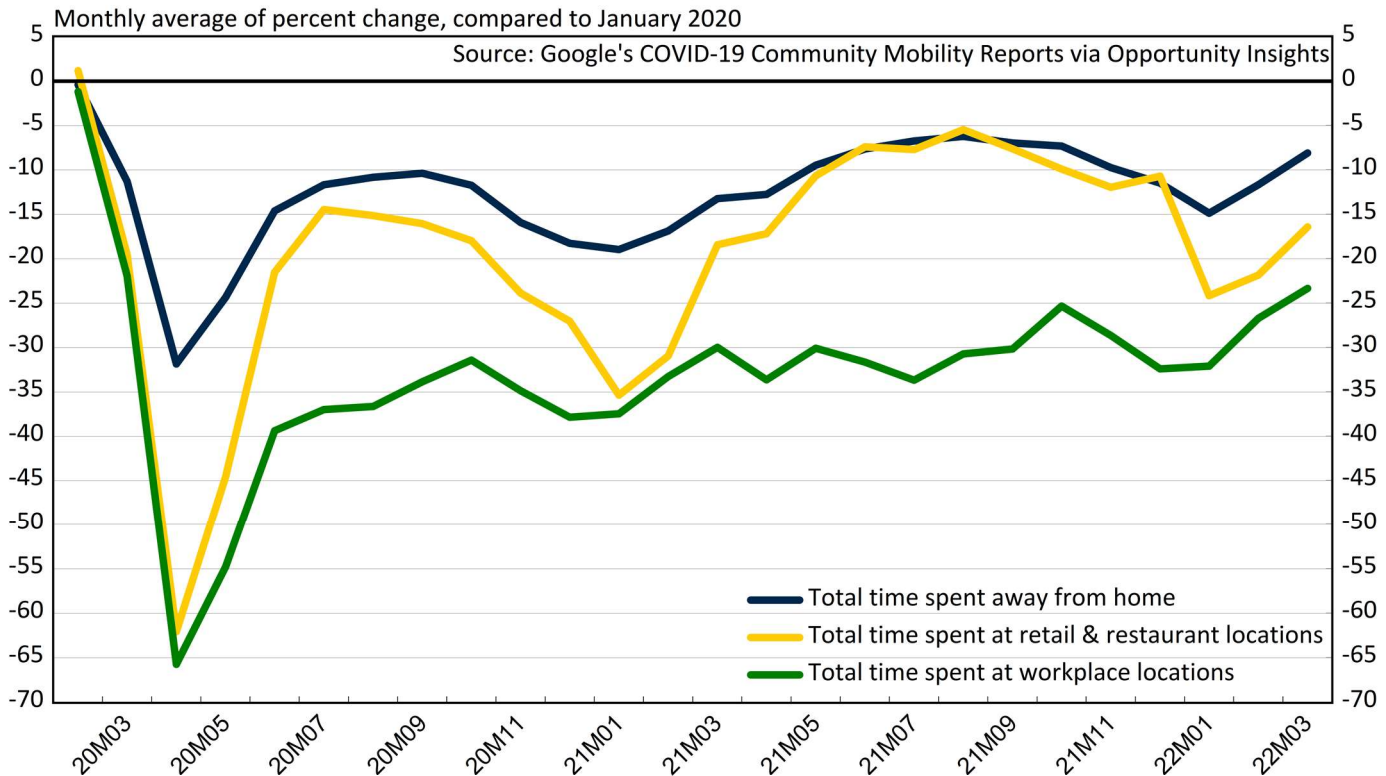
For this year's Economic Outlook, we also examined how employment and wages in computer and math occupations in the Detroit metropolitan area stack up against its peers.<sup>1</sup> Currently, the Detroit metro area is experiencing mixed results for these occupations. On one hand, the region enjoys a slightly higher share of computer and math jobs (3.4 percent) than the nation as a whole (3.3 percent). On the other hand, the median local wage in these occupations (\$83,984) is significantly lower than the national average (\$97,540) after adjusting for the cost of living. To remain the research brain of the automotive industry as vehicles becomes more computer centered, the Detroit metro area will need to find ways to pay more competitively with national leaders in these occupations.

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<sup>1</sup> Oakland County is one of six counties making up the Detroit-Warren-Dearborn Metropolitan Area. The other counties include Lapeer, Livingston, Macomb, St. Clair, and Wayne. Occupational data is not available at the county level for Oakland.

Figure 1

## Time Use Patterns in Oakland County

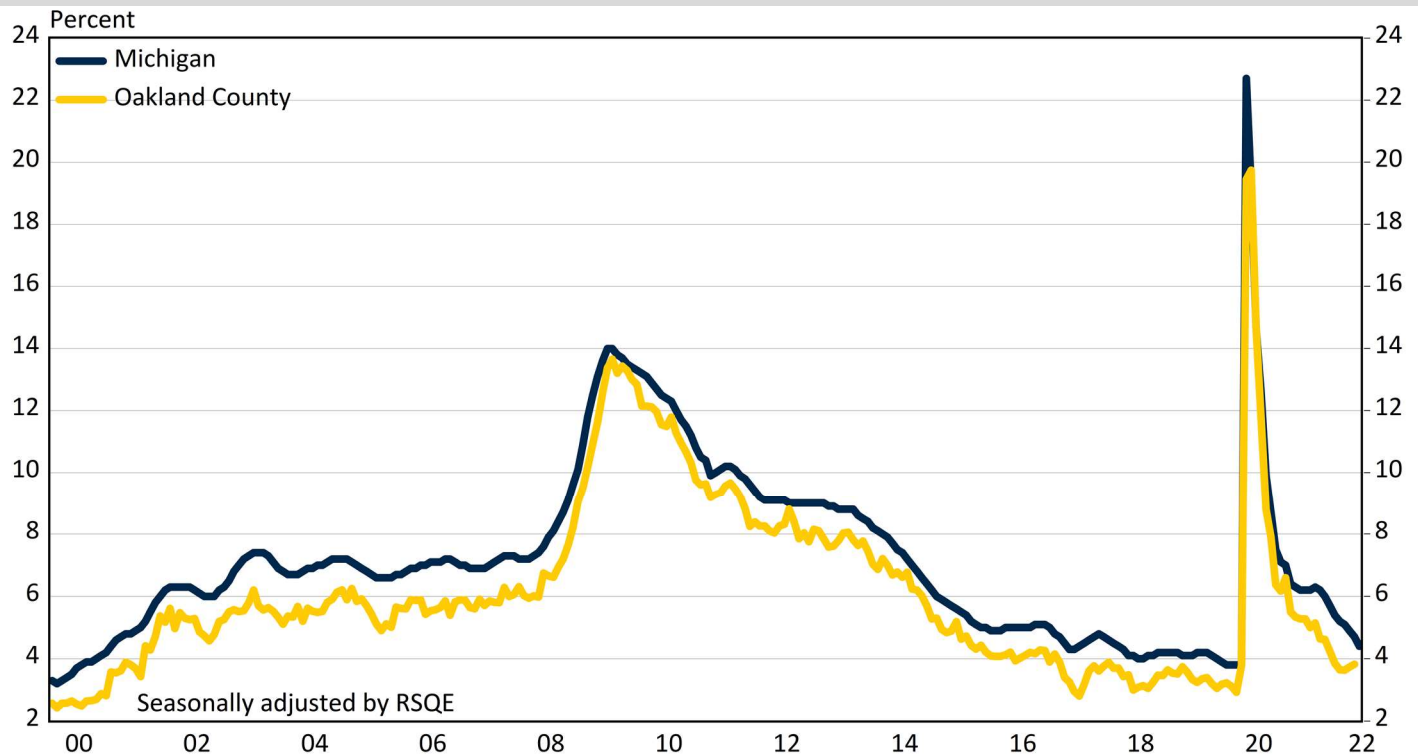


- Figure 1 gives a sense of how Oakland County is and is not returning to pre-pandemic patterns through the lens of Google's COVID-19 Community Mobility Report. The report estimates the amount of time spent at various locations outside the home as measured by cell phone GPS data and is provided by the Opportunity Insights project.
- Total time spent away from the home in Oakland County decreased by 32 percent from January to April 2020. Trips to retail and restaurant locations and to workplaces fell even more sharply, by 62 percent and 66 percent respectively.
- Time spent at stores and restaurants over the past two years has waned and waxed with the weather and the prevalence of COVID-19. (These data are not seasonally adjusted.) The shortfall in time spent at stores and restaurants relative to the pre-pandemic level averaged 9 percent in the second half of 2021. The shortfall spiked to 24 percent this January, with a partial recovery to roughly 16 percent in March.
- Judging from the previous cycles, we are optimistic that, with the decline in the Omicron wave of the COVID-19 pandemic, time spent at Oakland County's stores and restaurants will rebound sharply in the months ahead.
- After a partial recovery in mid-2020, time spent at Oakland County workplaces has inched up slowly, and it has not fluctuated as noticeably with pandemic caseloads as time spent at stores and restaurants.
- Time spent at Oakland County workplaces averaged 31 percent lower than the pre-pandemic level in 2021, but it has recovered to a shortfall of only 23 percent in March 2022.
- We expect a further pick-up in time spent at workplaces over the next few months as return-to-office plans begin to materialize. Still, we expect the shortfall in time spent at workplaces to be very persistent, if not permanent. Some surveys indicate that more than 20 percent of all work hours nationally may be performed remotely even after the pandemic is well behind us.
- Total time spent outside the home in Oakland County averaged 11 percent below its pre-pandemic level in 2021. It fell to 15 percent below the pre-pandemic level in January before returning to an 8 percent shortfall in March.
- We will be monitoring this data closely to get a better sense of how Oakland County's economy is evolving in the months ahead. We expect a widespread return to many of the activities that were disrupted during the pandemic.



Figure 2

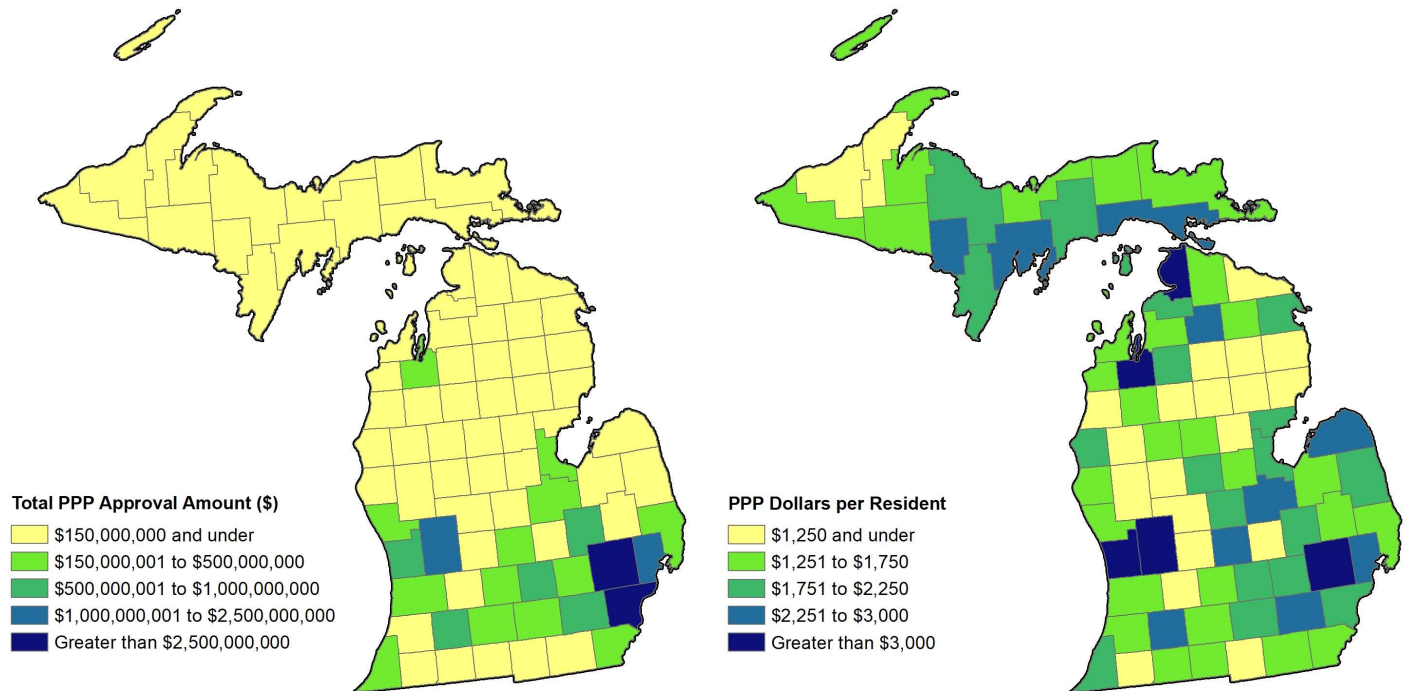
## Monthly Unemployment Rate, Michigan and Oakland County



- In March and April 2022, the BLS revised its historical estimates for Michigan’s and Oakland’s unemployment rate. The revision substantially changed the path of the state and county unemployment rate during 2021.
- Oakland’s unemployment rate rose from 3.8 percent in March 2020 to 19.4 percent in April during the initial wave of the pandemic. Michigan’s unemployment rate jumped from 3.8 percent to 22.7 percent during that time.
- Both the state and county unemployment rates dropped sharply over the spring and early summer of 2020 as the economy began to reopen. By July 2020, Oakland’s unemployment rate had fallen to 11.8 percent, while the state’s unemployment rate had dropped to 12.6 percent.
- Oakland’s unemployment rate dropped to 6.4 percent in October 2020 before nudging up to 6.6 percent in December as the state’s second wave of COVID-19 picked up.
- Michigan’s unemployment rate steadily declined in 2021, from 6.4 percent in January to 5.1 percent in December. It dipped further, to 4.4 percent, in March 2022.
- Oakland County’s unemployment rate fell from 6.6 percent in December 2020 to 4.2 percent in September 2021.
- The county’s unemployment rate then hovered around 3.6–3.9 percent through February 2022, the most recent county-level data available.
- It is important not to let the current wrinkles in the data obscure the big picture. The unemployment rate in Oakland County has declined dramatically from the beginning of the pandemic. It currently sits at 3.8 percent as of February 2022, or 0.9 percentage points below Michigan’s unemployment rate in February (roughly on par with the second half of 2019).

Figure 3

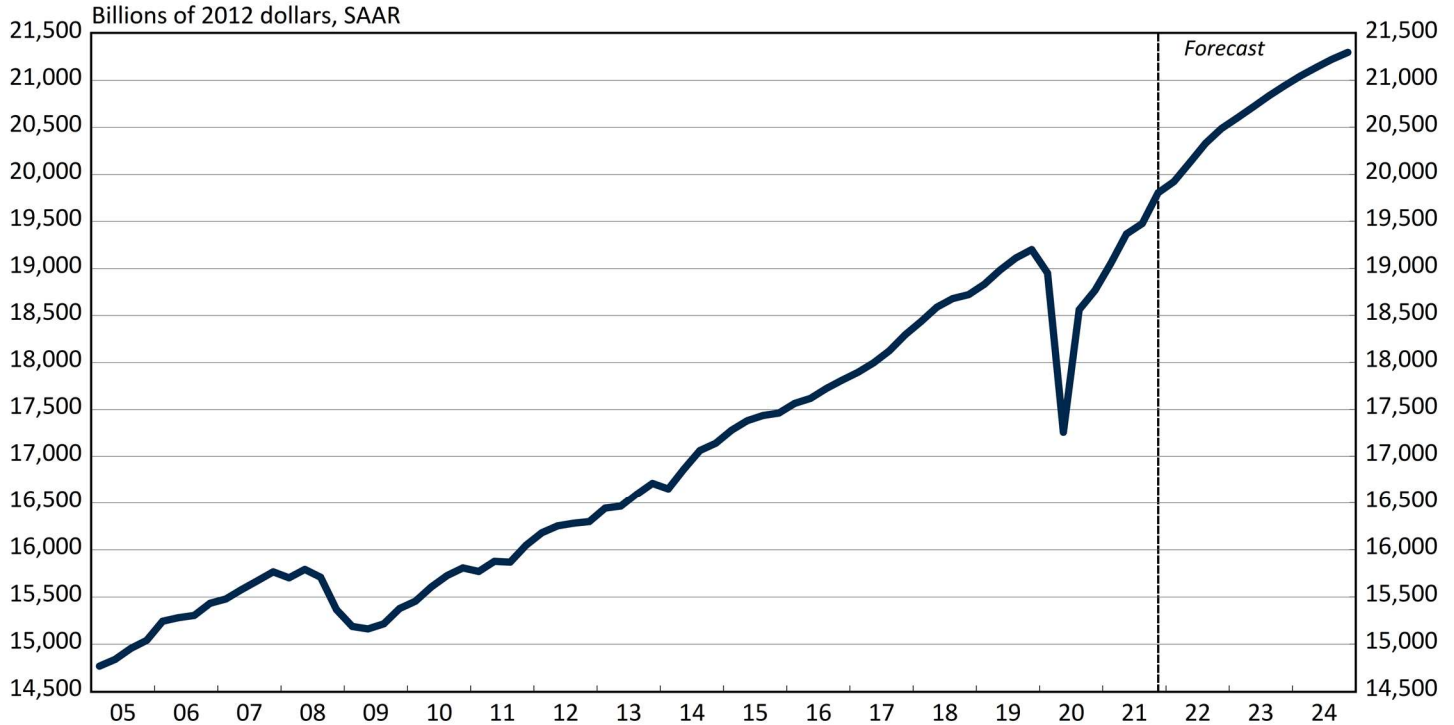
## Distribution of Paycheck Protection Program Loans by County in Michigan



- The maps in Figure 3 show the distribution of Paycheck Protection Program (PPP) loans by county in Michigan. Loan-level data is publicly available from the U.S. Small Business Administration. We used zip code information for each loan to geocode the data to the county level.
- The PPP was established by the CARES Act in March 2020 in response to the sharp recession caused by the COVID-19 pandemic. The purpose of the program was to help small businesses continue to pay their workers in the face of shutdowns and reduced demand. Loan amounts were calculated based on pre-pandemic average payroll costs.
- PPP loans are forgivable for businesses that use at least 60 percent of the proceeds to cover payroll costs. The data show that 95 percent of the PPP loans in both Oakland County and the state overall were forgiven.
- 291,571 PPP loans totaling \$24.1 billion were approved to businesses in Michigan to support over 2.8 million jobs.
- Oakland ranked first out of all counties in the state for total approved PPP funds (\$5.2 billion), jobs supported (580,711 jobs), and total PPP loan forgiveness (\$4.5 billion). More than one-fifth of Michigan's PPP dollars went to Oakland County.
- Oakland was second only to Wayne County in the total number of approved PPP loans (50,911 in Oakland vs 67,442 in Wayne), but the average loan amount was nearly double in Oakland (\$102,086 in Oakland compared to \$56,240 in Wayne). Across Michigan, PPP loans averaged \$82,772.
- The map on the right side of Figure 3 shows total PPP proceeds normalized by each county's total population in 2019. Oakland ranked first in this measure as well, with an average of \$4,133 per resident. The next highest-ranking counties were Grand Traverse (\$3,882) and Kent (\$3,685). The statewide average was \$2,417 per resident.
- In Oakland County, the professional and technical services sector received the most PPP support, with 18.9 percent of the county's total proceeds, followed by ambulatory health care services (9.4 percent), and food services and drinking places (7.1 percent).
- Roughly one-third of all PPP loan dollars in Michigan were serviced by in-state banks, with the same amount serviced by banks in Ohio. The remaining third was spread across the country.
- We believe Oakland County's strong uptake of PPP loans is an important factor behind its vigorous economic recovery, which has outpaced the state's.

Figure 4

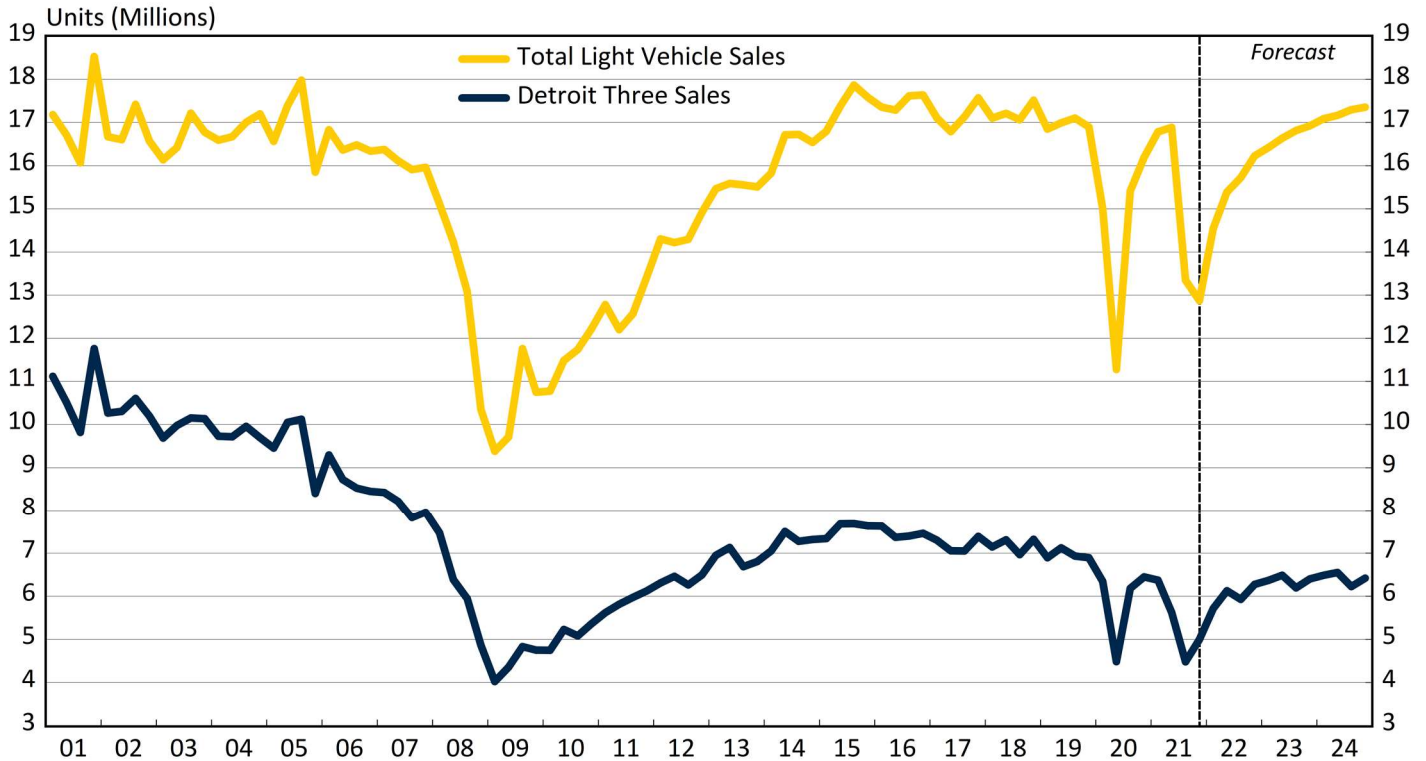
## U.S. Real GDP



- Oakland County's economic future is closely tied to the overall health of the national economy. Figure 4 shows our February 2022 forecast for quarterly U.S. real GDP. Note that our U.S. forecast was completed prior to Russia's invasion of Ukraine.
- Real GDP grew at a 6.9 percent annualized pace in the fourth quarter of 2021, but that brisk pace was bolstered by a strong contribution from inventory restocking, which we do not expect to persist.
- We project the pace of growth to step down to 2.4 percent in the first quarter of 2022 due to the Omicron wave of the COVID-19 pandemic that surged at the start of the year.
- Real GDP then grows at a healthier average pace of 3.8 percent over the remainder of 2022. We do not expect Russia's invasion of Ukraine to lead to a sharp slowdown in growth this year, although it is clearly a major downside risk to our economic outlook.
- On a calendar year average basis, we forecast real GDP to grow by 4.1 percent in 2022, a deceleration from the 5.7 percent growth pace in 2021 but a healthy performance, nevertheless.
- Real GDP growth decelerates further after this year. We forecast growth of 2.8 percent in 2023 and 1.9 percent in 2024.
- We believe that the extremely strong fiscal and monetary policy responses to the pandemic have been crucial in producing the V-shaped recovery in real GDP that we are forecasting. Both monetary and fiscal policy turn sharply tighter in our forecast, consistent with an economy that is returning to full employment.
- We project the federal budget deficit to shrink from an average of 13.4 percent of GDP in fiscal years 2020 and 2021 to 4.8 percent in fiscal 2022 and 3.3 percent in each of 2023 and 2024. The basic picture of a rapidly shrinking deficit does not depend on the particulars of any potential revival of the Biden Administration's Build Back Better agenda.
- The Federal Reserve recently raised short-term interest rates for the first time since cutting them to near zero at the start of the pandemic. The Fed is likely to raise rates at each of the six remaining meetings of the Federal Open Market Committee this year. Market observers currently expect the federal funds rate to rise to the mid-2 percent range by yearend. That range would require the Fed to raise rates by 50 basis points at some meetings.

Figure 5

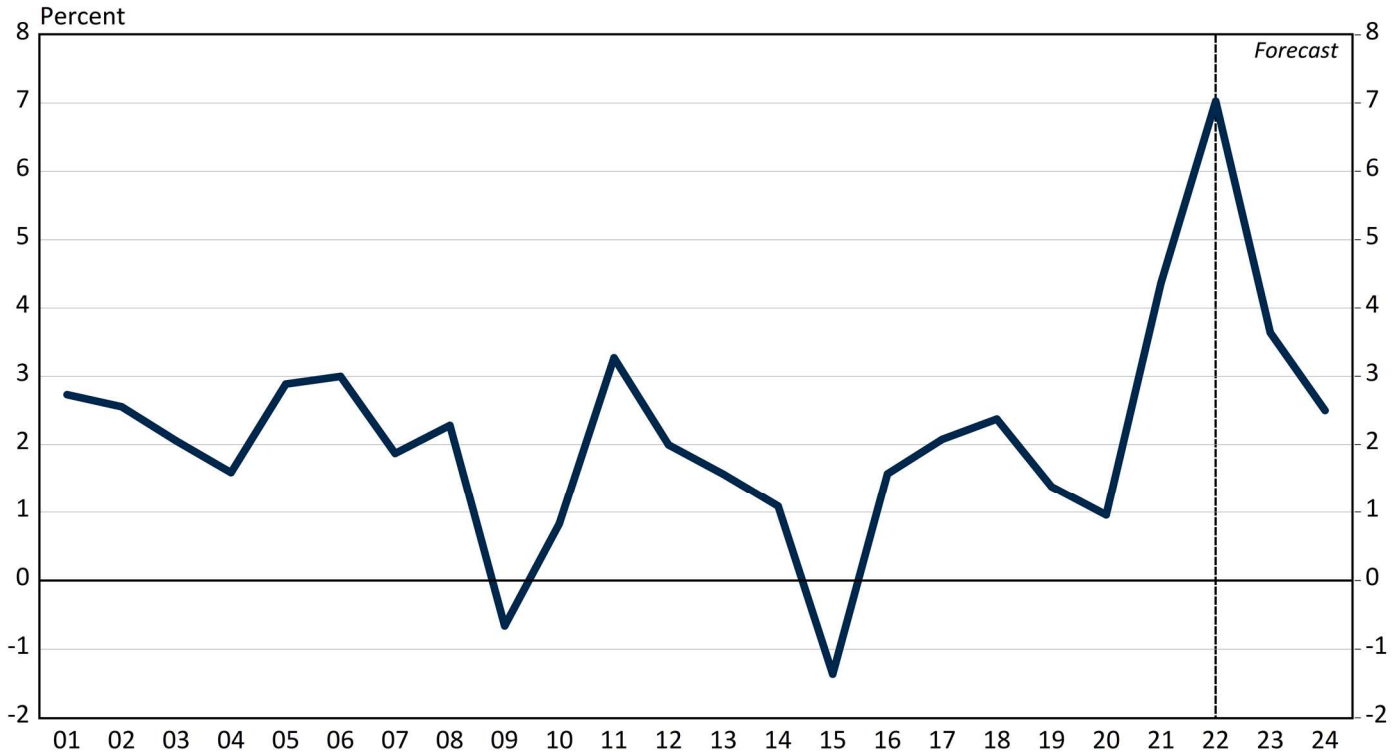
## U.S. and Detroit Three Light Vehicle Sales



- Figure 5 shows our quarterly forecast for total U.S. and Detroit Three light vehicle sales. Light vehicle sales rebounded temporarily from the pandemic in late 2020 and early 2021. Sales averaged a 16.8-million-unit pace in the first half of last year, not far off the 17.0-million-unit pace in 2019.
- Vehicle sales plunged again in the second half of 2021, to an average pace of just 13.1 million units. The global microchip shortage coming out of the pandemic drastically curtailed light vehicle production last year, leading to barebones inventories on dealer lots and lower sales volumes.
- The microchip shortage is not yet finished, but it has eased substantially since its peak. Production volumes have begun to pick up, and sales have started to follow suit. The light vehicle sales pace jumped to 15.0 million units in January, but it has slipped again over the past two months to an estimated 13.3 million in March.
- The war in Ukraine, which has led to sharply higher gas and food prices, may also lead to supply chain disruptions in the auto industry, which sources important raw materials from Ukraine and Russia. Much will depend on the duration and path of the war.
- We project total light vehicle sales to climb to 15 million units this year, 16.7 million next year, and 17.2 million in 2024. The sales pace we are projecting for 2024 would be on par with the pace seen in 2018–19.
- The Detroit Three automakers' share of light vehicle sales fell from 40.5 percent in 2020 to 35.9 percent in 2021, as the Detroit Three were disproportionately affected by the microchip shortage last year.
- The Detroit Three's share of the market recovered sharply in the fourth quarter of 2021, though, and we expect further recovery in the first half of this year. We are projecting the Detroit Three's share of light vehicle sales to average 38.9 percent this year, before dipping to 38.1 percent next year and 37.3 percent in 2024.
- Our forecast thus calls for Detroit Three light vehicle sales to total 6.0 million units this year and 6.4 million units in each of the next two years. That performance would not get the Detroit Three quite back to the 7.0 million unit sales they achieved in 2019, but it would still be a substantial recovery from the 5.4 million units they sold in 2021.

Figure 6

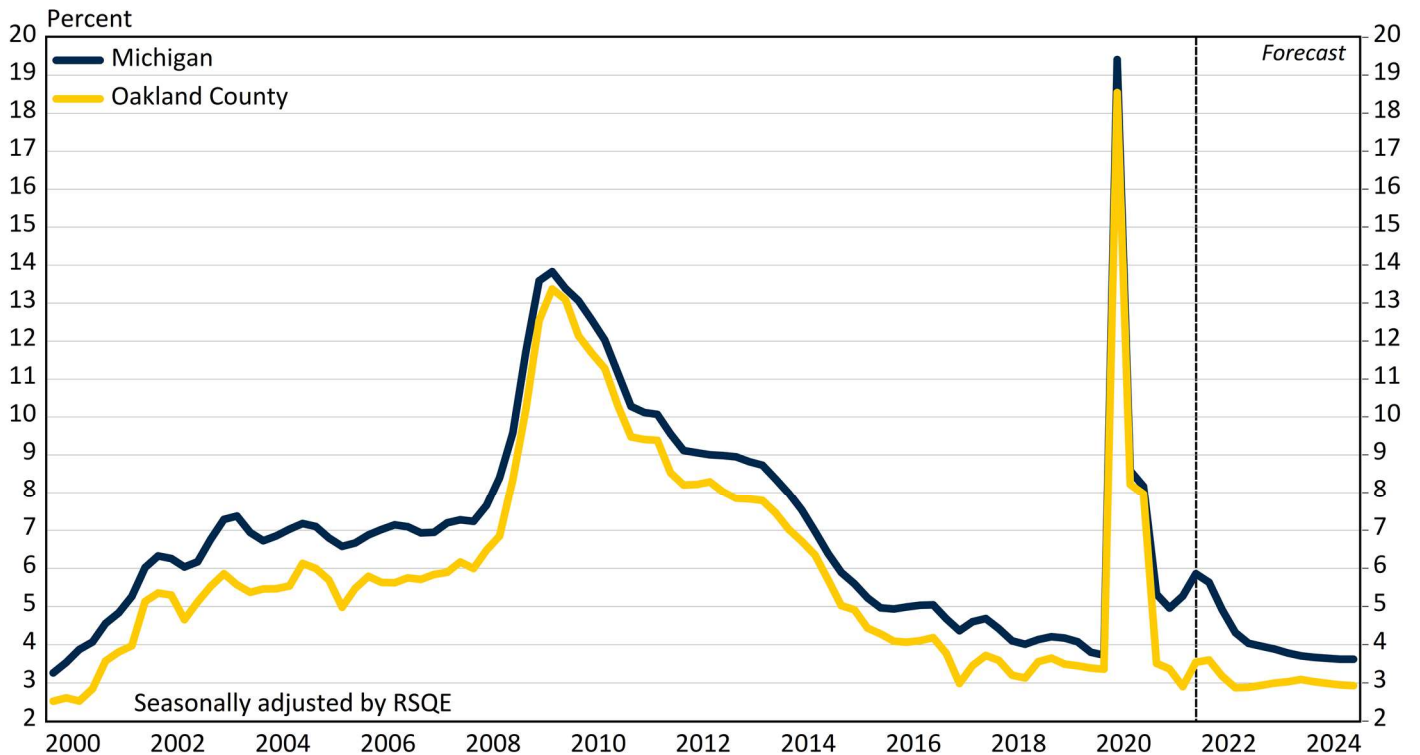
## Detroit CPI Inflation Rate



- Figure 6 shows history and our forecast of calendar year average local inflation from 2005 to 2024. We measure local inflation by the growth rate of the Detroit Consumer Price Index (CPI), as county-level consumer price data are not available.
- Calendar year average local inflation registered 4.4 percent in 2021, but inflation was running even higher at the end of the year. Local prices increased by 7.0 percent from December 2020 to December 2021.
- We expect inflation to remain very high in the near-term, as the recent spike in gas prices reinforces the pre-existing trend. Local inflation picked up to 7.5 percent year-over-year in February.
- Prior to Russia's invasion of Ukraine, we saw several reasons to expect price increases to cool off in 2022. First, supply chains were already showing tangible signs of improvement in some high-frequency indicators. Second, fiscal policy has turned highly contractionary. Third, monetary policy has started to turn sharply tighter.
- In the long run, these trends ought to bring inflation back to a more tolerable pace. It is unclear how long that process will take and what toll it will take on economic growth in the meantime, though.
- We project local inflation to register 7.0 percent in 2022, the fastest calendar-year rate since 1981. We are currently forecasting local inflation to drop to 3.6 percent next year, in light of the improvement in supply chains and tighter macroeconomic policy. Local inflation then dips further, to 2.5 percent, in 2024.
- The inflation rates we are forecasting for 2023 and 2024 would be higher than the Federal Reserve would prefer, but they would represent substantial progress toward the Fed's inflation target.
- The war in Ukraine represents a major risk to our forecast of inflation. The war's largest short-run effects on U.S. inflation will be through higher energy and food prices. Longer-term, it may present important disruptions to automotive and other supply chains. Despite these risks, it is important to remember that the human toll of the war dwarfs its macroeconomic impact.
- Finally, the COVID-19 outlook remains a risk for the inflation outlook. Renewed lockdowns in China could further disrupt U.S. supply chains, putting upward pressure on prices, even if the pandemic remains muted in the United States.

Figure 7

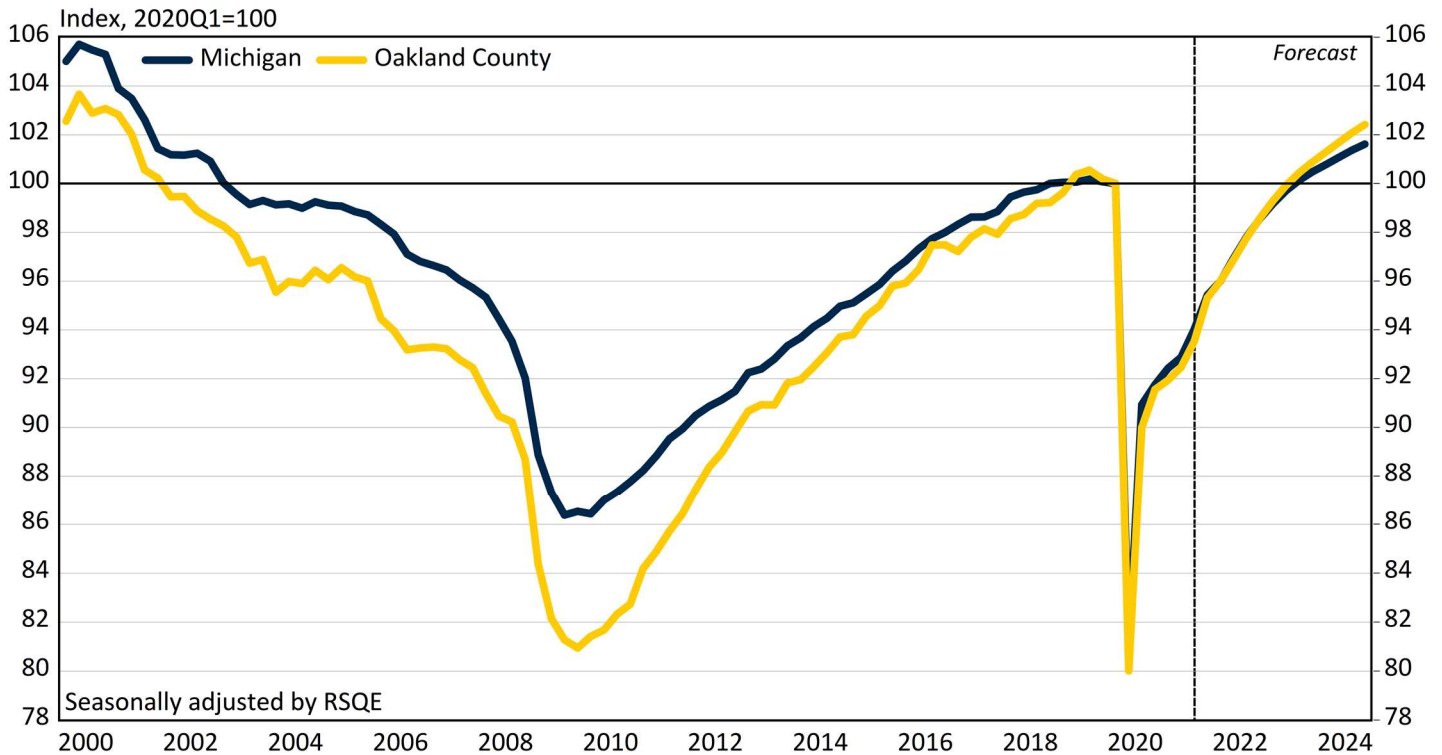
## Quarterly Unemployment Rate, Michigan and Oakland County



- Figure 7 shows the quarterly unemployment rate in Michigan and Oakland County. Our forecasts of Michigan's and Oakland's unemployment rates were completed before the revision to the historical data mentioned previously, which is why the path for the unemployment rates in 2021 differs slightly from the path shown in Figure 2.
- Joblessness rose less sharply at the start of the COVID-19 pandemic in Oakland County than statewide. We attribute that difference to the county's larger share of white-collar jobs, which allowed residents to remain employed while working from home.
- By the end of 2021, Oakland's unemployment rate had come down to 3.5 percent, or one-tenth of a percentage point above its pre-pandemic level. Meanwhile, the statewide rate of 5.9 percent remained 2.1 percentage points above its pre-pandemic level.
- We forecast that the unemployment rate in the state will continue to decline through the end of 2024. We believe that the county's unemployment rate has already declined to near its long-term level, however, and will hover around 3 percent over the next few years.
- We expect Oakland County's tight labor market to draw workers into the labor force during the final two years of our forecast. As more residents begin looking for work, the count of unemployed will temporarily rise, and this process will prevent the unemployment rate from falling in the short run.
- We forecast that Oakland County's labor force will grow more quickly than Michigan's in each year of the forecast. In fact, we expect Oakland County's labor force to exceed its 2019 level by 1.4 percent in 2024, while the state's labor force remains roughly 1 percent below its 2019 level.
- Despite forecasting Oakland's unemployment rate to hold roughly steady over the next three years, we expect that Oakland County's economy will have more residents employed and looking for work than it did in 2019.

Figure 8

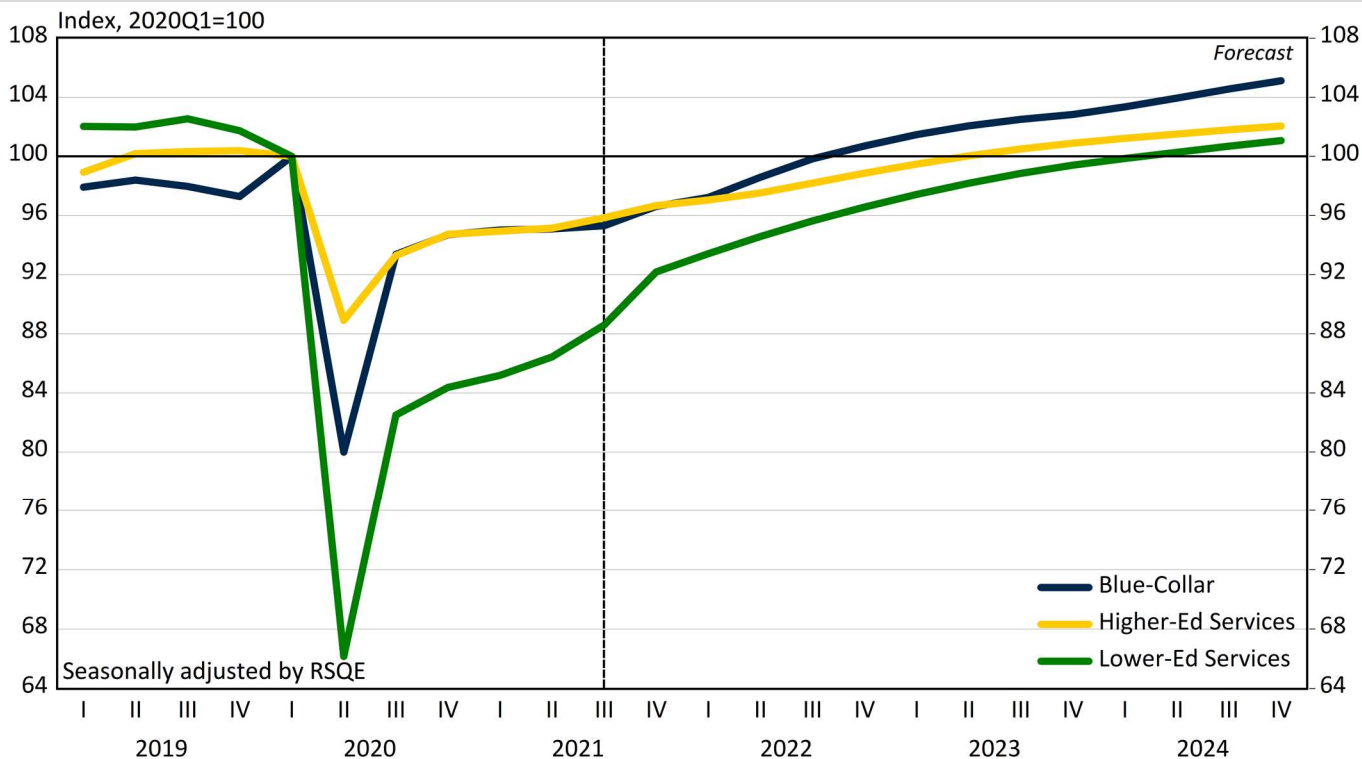
## Quarterly Payroll Employment Indices, Michigan and Oakland County



- Figure 8 displays our forecast for payroll employment in Michigan and Oakland County, with both series indexed to a level of 100 in 2020q1.
- The COVID-19 recession led employment in the state of Michigan to decline by 846,700 jobs (19.1 percent) in the second quarter of 2020, while Oakland County lost 148,900 jobs (20.0 percent).
- Although the county's economy experienced a more severe downturn during the initial stage of the pandemic, we estimate that the county had caught up to the state's recovery in the first quarter of 2022.
- We forecast that the state and county will then move in tandem through the first quarter of 2023, when both remain roughly 1.5 percent below their pre-pandemic levels.
- Throughout the remainder of the forecast, we predict that job growth in Oakland County will outpace statewide growth, as it did when exiting the Great Recession.
- One reason we expect Oakland's growth to pick up steam relative to the state's is that Oakland County has a disproportionately larger private sector, which has grown more quickly than the government sector over Michigan's recent history.
- We expect employment in Oakland County to return to its pre-pandemic level in the third quarter of 2023 and to exceed that level by 2.2 percent at the end of 2024.
- We also forecast employment in Michigan to return to its pre-pandemic employment level in the third quarter of 2023, and to exceed that value by 1.6 percent at the end of 2024.
- Although we are forecasting a strong recovery throughout the state, at the end of our forecast Michigan remains 3.9 percent below its peak employment level achieved in the second quarter of 2000. Oakland County recovers to within 1.2 percent of its own all-time employment peak (also achieved in 2000q2).

Figure 9

## Job Indices in Oakland County by Selected Industries



- On the chart above, we categorize each of Oakland County's industries into one of three groups. The graph displays our forecast for each group's total employment level, with values indexed to 100 in 2020q1. The industries that make up each group can be found in Table 1.
- The **blue-collar** industries' job count declined by roughly one-fifth in the second quarter of 2020. We estimate that it will take until the end of 2022 to recover those losses.
- We expect further growth ahead, leaving the blue-collar industries 5.1 percent higher than their pre-pandemic employment level, or 7,800 jobs, at the end of our forecast. Growth in this sector is bolstered by General Motors' planned investment in its Orion Assembly plant, which should add roughly 1,200 jobs through 2024.
- The **higher-educational** attainment services industries are those that tend to employ workers with a college degree or higher educational credential. The pandemic led to relatively few job losses in Oakland's higher-education services industries, but their recovery has been muted so far. We are estimating that they will recover their initial losses in the second quarter of 2023, lagging the blue-collar industries' recovery by two quarters.
- We forecast a steady recovery for higher-education services going forward. This industry group averages 0.3 percent employment growth per quarter from the second half of 2023 through 2024, leaving its employment 2.1 percent above the pre-pandemic level by the end of 2024.
- The **lower-educational** attainment services industries tend to employ workers without a college degree. They suffered the worst of the pandemic's impact, with employment shrinking by one-third in 2020q2. We estimate that these industries had recovered roughly four out of every five jobs that were lost during the initial stage of the pandemic by the first quarter of 2022.
- These industries are expected to return to their pre-pandemic levels during the first half of 2024 and exceed those levels by 1.1 percent at the end of the year. Our forecast for Oakland County's lower-education services industries greatly surpasses our forecast for the state. Statewide employment in these industries remains 1.9 percent below their pre-pandemic level at the end of 2024.



Table 1

## Forecast of Jobs in Oakland County by Major Industry Division

	2019	2020	Forecast Employment				Average Annual Wage
			2021	2022	2023	2024	2020 \$
<b>Total Jobs (Number of jobs)</b>	<b>746,344</b>	<b>673,381</b>	<b>695,157</b>	<b>724,941</b>	<b>745,995</b>	<b>758,854</b>	<b>68,628</b>
(Annual percentage change)	(1.3)	(-9.8)	(3.2)	(4.3)	(2.9)	(1.7)	
<b>Blue-Collar</b>	<b>149,530</b>	<b>140,554</b>	<b>145,892</b>	<b>151,353</b>	<b>156,139</b>	<b>159,225</b>	<b>84,738</b>
Utilities	1,527	1,532	1,581	1,607	1,618	1,637	149,343
Transportation equipment (Motor Vehicles & Parts) manufacturing	21,707	18,916	19,853	21,030	21,847	23,017	100,568
Wholesale trade	37,848	35,668	35,751	36,225	36,592	36,708	100,000
Construction	27,228	27,085	28,527	29,254	30,667	31,179	80,769
Other manufacturing	47,412	43,674	45,973	48,331	49,825	50,541	75,432
Transportation and warehousing	12,928	12,699	13,082	13,728	14,376	14,891	54,252
Natural resources and mining	881	979	1,126	1,179	1,215	1,251	42,188
<b>Higher-Ed Services</b>	<b>358,679</b>	<b>338,125</b>	<b>343,237</b>	<b>351,333</b>	<b>359,653</b>	<b>364,737</b>	<b>79,392</b>
Management of companies and enterprises	18,886	18,658	18,949	19,435	20,210	20,621	113,089
Finance and insurance	39,220	41,129	43,767	43,754	43,613	43,299	105,469
Professional, scientific, and technical services	104,559	98,740	99,097	102,113	103,856	104,740	97,203
Information	15,094	13,347	13,286	13,700	13,970	14,125	96,377
Real estate and rental and leasing	16,974	15,499	16,006	16,458	16,860	17,132	64,248
Total Government	45,352	43,099	43,340	44,918	45,728	46,144	59,471
Private health and social services	107,144	97,886	98,758	100,323	104,181	107,095	56,132
Private education	11,450	9,766	10,017	10,632	11,236	11,582	46,965
<b>Lower-Ed Services</b>	<b>236,276</b>	<b>192,728</b>	<b>203,933</b>	<b>220,023</b>	<b>227,927</b>	<b>232,570</b>	<b>38,125</b>
Administrative support and waste management	61,734	51,852	54,397	57,497	59,053	59,744	48,822
Other services	23,276	19,057	20,188	21,394	22,406	23,152	43,082
Retail trade	78,885	69,540	72,265	74,373	75,239	75,692	40,430
Arts, entertainment and recreation	11,257	6,857	8,304	9,775	10,601	11,203	31,513
Accommodation and food services	61,125	45,423	48,796	56,985	60,628	62,780	21,304
Unclassified	1,858	1,974	2,096	2,231	2,276	2,321	55,988
<i>Addendum:</i>							
Total Private	700,992	630,282	651,816	680,023	700,267	712,710	69,254

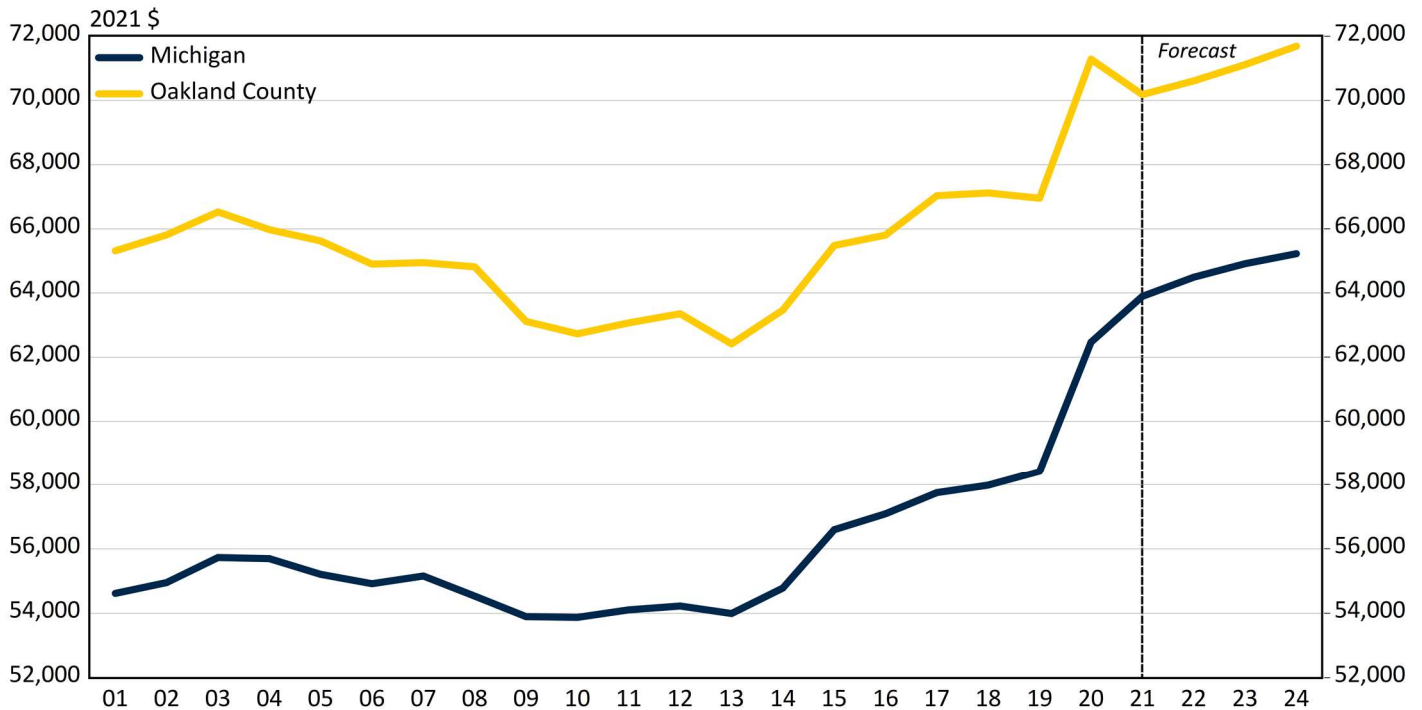
- On an annual average basis, employment in Oakland County declined by 9.8 percent in 2020. We estimate that Oakland recovered about one-third of those jobs last year, growing by 3.2 percent in 2021. We are forecasting that job growth will accelerate this year, with employment growing by 4.3 percent on an annual average basis.
- We project that job growth in the county will then decelerate to a growth pace of 2.9 percent in 2023 and 1.7 percent in 2024. Oakland's payroll jobs count in 2024 exceeds the 2019 level by 12,510 jobs.
- Most 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, adds 792 jobs between 2019 and 2024. The private sector grows by 11,718 jobs over that period.

## Forecast of Jobs in Oakland County by Major Industry Division

- In Table 1, we divide Oakland's major industry groups into the blue-collar, higher-education attainment services, and lower-education attainment services groups described previously. Within each group, the major industries are listed in descending order based upon their average wage in 2020. Appendix B at the back of this report displays a full list of roughly 100 industries, organized by NAICS code.
- Table 1 shows that six out of seven of the major blue-collar industry groups are expected to employ more people in 2024 than they did in 2019. Blue-collar industries are forecast to employ 9,695 more people in 2024 than they did in 2019.
- Transportation equipment manufacturing adds 1,177 jobs this year, 817 jobs in 2023, and 1,170 jobs in 2024 as auto production recovers from the microprocessor shortage and production of electric vehicles at the Lake Orion assembly plant ramps up.
- The recovery in wholesale trade is less robust, so that by 2024 employment remains 1,141 jobs below 2019 levels.
- The local construction industry, on the other hand, is expected to see very brisk employment gains over the next three years: by 2024, employment is forecast to exceed 2019 levels by 3,951 jobs, or 14.5 percent. Despite rising interest rates, the biggest problem this industry will face is finding enough people able and willing to fill these jobs.
- Employment gains in non-automotive manufacturing are also expected to be strong; by 2024 employment in these industries is forecast to exceed 2019 levels by 3,129 or 6.6 percent. The largest job gains are in miscellaneous manufacturing (NAICS code 339), which includes medical equipment manufacturing.
- The transportation and warehousing sector benefits from the on-going shift to e-commerce. By 2024, employment is forecast to be 1,963 jobs or 15.2 percent higher than in 2019. Note that this industry pays higher average wages (\$54,252) than the retail trade industry (\$40,430).
- Six out of the eight higher-education attainment services industries are expected to have more jobs in 2024 than in 2019. The job gains are generally more modest than in the blue-collar industries, however, accumulating to a gain of only 6,058 between 2019 and 2024.
- Employment in management of companies and finance and insurance are expected to see the fastest job growth among the higher-education attainment services industries. Between 2019 and 2024, employment in corporate management is forecast to grow by 1,735 or 9.2 percent, while finance and insurance adds 4,079 jobs (10.4 percent).
- On the other hand, employment gains between 2019 and 2024 in the large professional and technical services industry are expected to be fairly modest, accumulating to only 181 jobs. Employment gains over the next three years in the computer systems design industry are notably weak, following large losses in 2020 and 2021.
- Employment in the private health and social services industry declined by 9,258 jobs in 2020 and only added back 872 in 2021. Over the next three years, health and social services is forecast to add 8,337 jobs, but those gains will still leave it 49 jobs short of 2019 levels in 2024.
- Within the health care sector, job gains in ambulatory health and social services are offset by losses in hospitals and nursing and other residential care facilities between 2019 and 2024.
- All of the industries in the lower-educational attainment services industries paid below the county's average wage in 2019. Four out of five of those industries lose jobs between 2019 and 2024.
- The one industry in this group that is forecast to exceed 2019 employment levels (by a small margin) is accommodations and food services. This industry lost about a quarter of its jobs in 2019, but it is expected to enjoy a vigorous recovery over the next three years.
- Retail trade remains furthest from 2019 employment levels in 2024 (-3,193 jobs) at the end of our forecast. Given the shift toward e-commerce, we do not expect retail trade to return to 2019 employment levels any time in the foreseeable future.

Figure 10

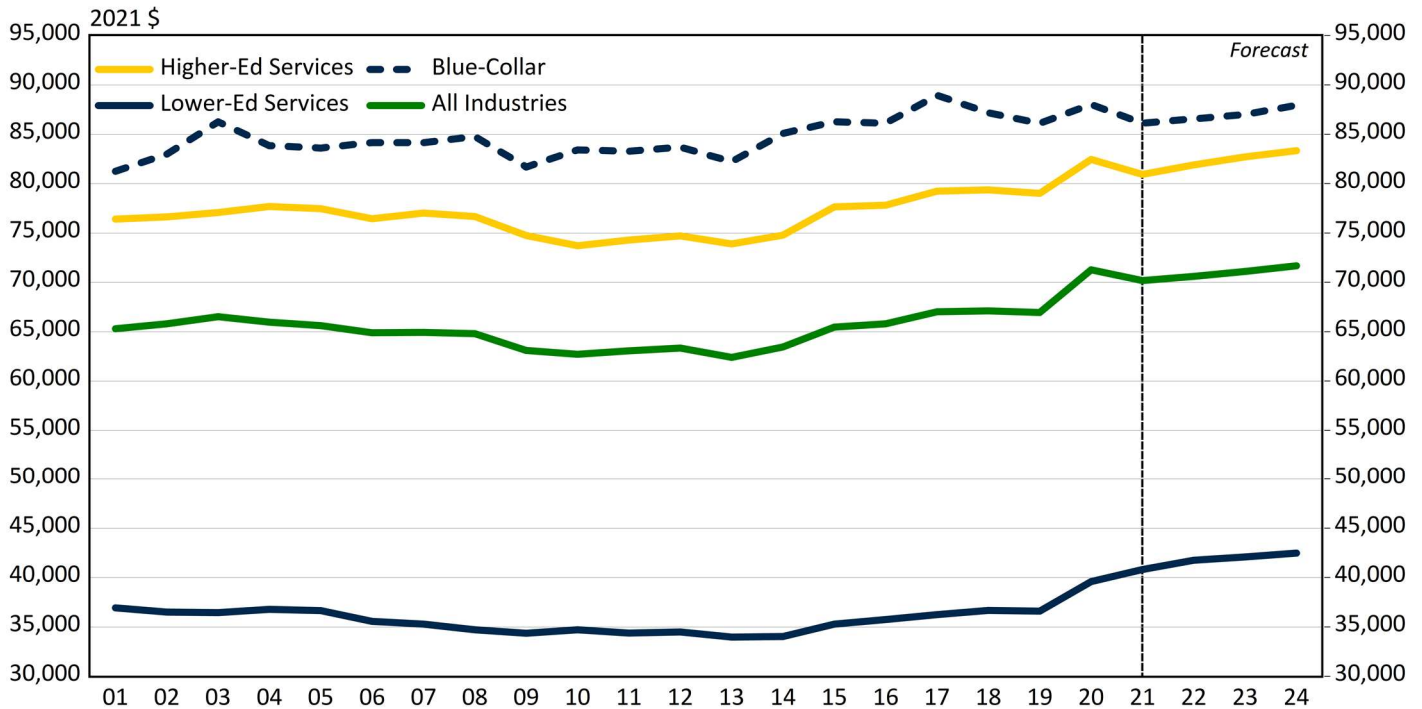
## Average Real Wage, Michigan and Oakland County



- Figure 10 shows the annual average real wage for all workers in Oakland County and in Michigan from 2001 to 2024, adjusted for inflation to be expressed in 2021 dollars.
- The average real wage in Oakland County has consistently run about 15 to 20 percent higher than in the state of Michigan since 2001, although the gap has narrowed slightly in that time.
- Both Oakland County and Michigan saw a large jump in average real wages during 2020. Real wages grew by 6.5 percent in Oakland County and by 6.9 percent statewide. Those were the largest single-year increases in real wages on record.
- The jump in average wages in 2020 was caused by the disproportionate loss of lower-paying jobs relative to higher-paying jobs during the COVID-19 pandemic. Few individual workers experienced wage increases of that magnitude.
- As the economy continues to recover from the pandemic, we expect employment for lower-income workers to increase more quickly than for higher-income workers. The mix between higher- and lower-income jobs thus returns closer to pre-pandemic levels.
- We estimate that the changing composition effect led average real wages to decline by 1.5 percent in Oakland County in 2021. We estimate that in Michigan, the average real wage increased by 2.3 percent.
- As the economy largely returns to normal in 2022 and 2023 and inflation runs at the fastest pace in decades, the real average wage is forecast to grow slowly in both Oakland County and Michigan.
- Real wages are forecast to grow to \$71,700 in Oakland and \$65,200 in Michigan by 2024. Thus, Oakland County's average real wage in 2024 will stand 7.1 percent above 2019 levels. Average real wages statewide will be 11.6 percent higher than their 2019 level.

Figure 11

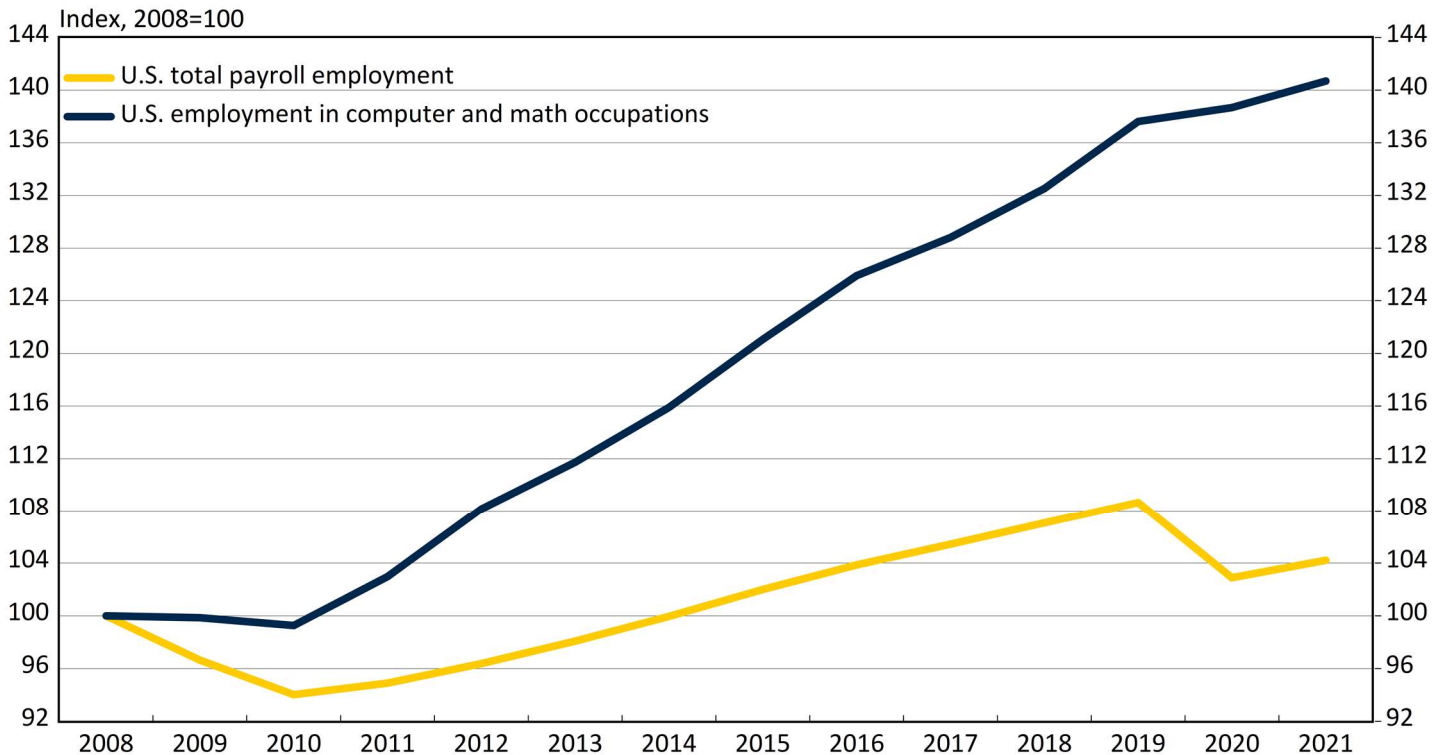
## Average Real Wage in Oakland County by Selected Industry Group



- Figure 11 shows the average real wage (2021 dollars) in Oakland County for the same three industry categories shown in Figure 9: traditional blue-collar industries, higher-education service industries, and 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: 2.2 percent in the blue-collar industries, 4.4 percent in the higher-education services industries, and 8.2 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 declined in 2021 in the blue-collar industries and higher-education services industries, but it increased modestly in the lower-education services industries even as inflation picked up.
- Real wage growth returns over the next three years, averaging 0.7 percent per year in the blue-collar industries, 1.0 percent per year in higher-education attainment services, and 1.3 percent per year in the lower-education attainment services industries.
- By 2024, real wages are expected to stand around 2.1 percent higher than their 2019 levels in the blue-collar industries, 5.5 percent higher in the higher-education services industries, and a whopping 16.1 percent higher in the lower-education services industries.
- Tight labor market conditions, as reflected in the relatively low unemployment rate, help to ensure that Oakland's prosperity is shared with workers in lower-wage industries.

Figure 12

## Growth in U.S. Employment: Total vs. Computer and Math Occupations



- Figure 12 shows the change in total employment and in computer and math occupation employment in the United States between May 2008 and May 2021. Both data series are indexed so that the values in May 2008 are equal to 100.
- The data come from the Occupational Employment and Wage Statistics (OEWS) program produced by the BLS.
- Between May 2008 and May 2019, total wage and salary employment in the United States increased by 11.7 million jobs (8.6 percent). Jobs in computer and math occupations increased by 1.2 million (37.6 percent).
- Between May 2008 and May 2019 employment in computer and math occupations accounted for 10.6 percent of all net new jobs in the United States, despite accounting for only 2.4 percent of all jobs as of May 2008.
- Between May 2019 and May 2020, total employment in the United States declined by 7.8 million due to the COVID-19 recession. Computer and math occupations, on the other hand, added 34,800 jobs over this period.
- The following year, from May 2020 to May 2021, the United States added 1.8 million wage and salary jobs, including 67,100 jobs in computer and math occupations.
- Arguably, the future prosperity of the United States and its communities are going to be determined in large part by how successful they are in attracting firms and industries that tend to employ large numbers of workers in computer and math occupations. This will be especially true for communities that wish to participate in the shift to electric and autonomous vehicles.

Table 2

**Oakland vs. Its Peers: Computer and Math Occupations**

Metropolitan Area	Total Employment	Occupational Employment in Computer & Math	Share of Employment in Computer & Math	Computer & Math 2021 Median Wage (\$)	2021 Median Wage (\$)
Detroit, MI	1,801,530	60,530	3.4%	83,984	48,996
Atlanta, GA	2,587,890	112,520	4.3%	101,745	46,660
Boston, MA	2,585,140	131,990	5.1%	93,533	54,973
Charlotte, MA	1,209,890	53,290	4.4%	106,935	47,843
Chicago, IL	4,232,830	130,440	3.1%	91,391	45,114
Dallas, TX	3,588,960	157,650	4.4%	94,554	43,279
Denver, CO	1,464,790	78,420	5.4%	94,359	45,865
Minneapolis, MN	1,822,920	84,970	4.7%	96,735	47,137
Philadelphia, PA	2,654,680	89,260	3.4%	96,094	46,482
Pittsburgh, PA	1,043,000	34,630	3.3%	83,054	48,294
San Francisco, CA	2,242,190	161,110	7.2%	111,852	52,825
Seattle, WA	1,917,560	160,660	8.4%	116,488	53,800
St. Louis, MO	1,277,050	42,670	3.3%	83,889	46,024
<i>Addenda:</i>					
United States	140,886,310	4,654,750	3.3%	97,540	45,760

Wages are adjusted for local cost of living differences using BEA price parity index and are based on full-time equivalent without bonus or overtime pay.

- How is the Detroit region, including Oakland County, doing in attracting computer and math occupation jobs? Table 2 shows the share of employment and the average wage in computer and math occupations in the Detroit metropolitan area and twelve other large metropolitan areas that either are in the Midwest or are well recognized as technology centers.
- These data also come from the BLS' OEWS program.
- In May 2021, computer and math occupations accounted for 3.4 percent of all jobs in the Detroit metropolitan area, compared to 3.3 percent for the nation. Three of the comparison areas have a smaller share of jobs in computer and math occupations, while nine have a larger share of jobs in computer and math occupations.
- An important challenge for the local economy is that the wages paid in computer and math occupations in the region are relatively low compared with the United States as a whole.
- Adjusted for the local cost of living, the median wage in computer and math occupations in the Detroit metropolitan area is \$83,984, which is 14 percent less than the median wage in computer and math occupations in the U.S. overall (\$97,540).
- Furthermore, ten out of the twelve comparable areas have higher wages in computer and math occupations than the Detroit region.
- For example, even after adjusting for differences in the cost of living, the median wage in computer and math occupations in San Francisco is 33 percent higher than it is in the Detroit area. These data do not include the value of stock options and bonuses, so the gap in total compensation may be even larger.
- Overall, jobs in the Detroit area tend to pay relatively well, but not jobs in computer and math occupations. To remain the research brain of the auto industry as vehicles become more computer centered, the region will need to find ways to pay more competitively with national leaders in these occupations.

## 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	2021	+ 1.0

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

Average absolute forecast error 1986–2021: 1.5%

	Forecast 2021	Actual 2021
Unemployment rate	3.6%	4.7%
Consumer inflation rate	2.8%	4.4%

Forecast Date: June 2021

- In last year's report, we forecast that Oakland County would gain 27,900 private-sector jobs in 2021, for an increase of 4.4 percent. We now estimate that the county gained 21,500 jobs last year (an increase of 3.4 percent). Our forecast error of one percent is well below our historical average absolute error of 1.5 percent.
- While our forecast for private jobs in the county was optimistic, we were far more pessimistic about the county's government jobs. Last year, we forecast that government jobs in Oakland County would decline by 0.9 percent, but government employment increased by 0.6 percent, or 240 jobs.
- We had forecast that Oakland's unemployment rate would decrease from 9.5 percent in 2020 to 3.6 percent in 2021. Oakland's unemployment rate ended up decreasing from 9.1 in 2020 to 4.7 percent in 2021. It is important to note that the historical baseline from which we were forecasting was also revised upward this spring.
- We had expected that local prices would increase by 2.8 percent from 2020 to 2021. Local prices ended up increasing by 4.4 percent last year, amid supply shortages in a time of strong demand.
- Overall, we are quite impressed by Oakland County's recovery from the COVID-19 recession, and we are pleased with our forecast accuracy to date. We hope that we can beat our average forecast error again when the dust settles on 2022.
- Exiting a recession and a pandemic is an uncertain process. We hope that our forecasts help decision makers throughout Oakland County in their planning and decision making.

## Forecast of Jobs in Oakland County by Detailed Industry

	Estimate	Forecast			Average Annual Wage
	2021	2022	2023	2024	2020 \$
Total Payroll Jobs (Number of jobs)	695,157	724,941	745,995	758,854	68,628
(Annual percentage change)	(3.2)	(4.3)	(2.9)	(1.7)	
Total Government	43,340	44,918	45,728	46,144	59,471
Federal government	4,497	4,503	4,521	4,527	74,218
State Government	3,789	3,882	3,966	4,003	61,424
Local Government	35,054	36,532	37,240	37,614	57,295
Total Private	651,816	680,023	700,267	712,710	69,254
Private Goods-Producing	95,478	99,794	103,553	105,988	81,913
Natural resources and mining	1,126	1,179	1,215	1,251	42,188
Construction	28,527	29,254	30,667	31,179	80,769
Construction of buildings	7,541	7,905	8,321	8,538	80,942
Heavy and civil engineering construction	2,784	2,900	3,008	3,044	98,879
Specialty trade contractors	18,202	18,450	19,337	19,597	77,878
Manufacturing	65,825	69,361	71,672	73,558	83,029
Printing and related support activities	1,902	2,077	2,183	2,223	61,363
Chemicals	3,874	3,974	4,049	4,151	101,217
Plastics and rubber products	5,096	5,322	5,541	5,637	62,621
Nonmetallic mineral products	1,144	1,212	1,250	1,264	72,273
Fabricated metals	9,624	9,645	9,564	9,500	66,598
Machinery	10,379	10,809	11,111	11,210	87,756
Computer and electronic products	3,131	3,256	3,336	3,367	84,345
Transportation equipment	19,853	21,030	21,847	23,017	100,568
Miscellaneous manufacturing	4,495	5,080	5,452	5,669	64,657
Manufacturing NEC	6,328	6,957	7,340	7,519	68,559
Private Service-Providing	556,338	580,230	596,714	606,722	67,127
Trade, transportation, and utilities	122,682	125,932	127,825	128,929	61,086
Wholesale trade	35,751	36,225	36,592	36,708	100,000
Merchant wholesalers, durable goods	25,146	25,393	25,597	25,590	99,117
Merchant wholesalers, nondurable goods	7,822	8,087	8,276	8,429	91,502
Wholesale electronic markets, agents, brokers	2,783	2,746	2,720	2,689	131,709
Retail trade	72,265	74,373	75,239	75,692	40,430
Motor vehicle and parts dealers	10,962	11,176	11,448	11,674	68,274
Furniture and home furnishings stores	1,854	1,891	1,890	1,868	42,722
Electronics and appliance stores	3,773	3,730	3,695	3,646	60,800
Building material and garden supply dealers	6,675	6,630	6,601	6,575	44,543
Food and beverage stores	12,457	12,415	12,504	12,536	28,439
Health and personal care stores	7,405	8,053	8,683	9,196	41,265
Gasoline stations	2,007	2,069	2,091	2,079	25,389
Clothing and clothing accessories stores	5,756	6,284	6,205	6,093	25,577
Sporting goods, hobby, book, and music stores	2,677	2,888	3,041	3,121	28,660
General merchandise stores	12,617	12,716	12,387	12,075	29,725
Miscellaneous store retailers	4,838	5,200	5,344	5,459	31,187
Nonstore retailers	1,243	1,319	1,350	1,369	71,611
Transportation and warehousing	13,082	13,728	14,376	14,891	54,252
Truck transportation	3,834	3,924	3,999	3,996	59,747
Couriers and messengers	3,496	3,569	3,734	3,920	45,103
Warehousing and storage	1,464	1,574	1,594	1,591	78,064
Transportation and warehousing NEC	4,288	4,661	5,048	5,384	47,072
Utilities	1,581	1,607	1,618	1,637	149,343



## Appendix B:

**Forecast of Jobs in Oakland County by Detailed Industry**

	Estimate	Forecast			Average Annual Wage
	2021	2022	2023	2024	2020 \$
Information	13,286	13,700	13,970	14,125	96,377
Publishing	3,662	3,529	3,494	3,453	103,795
Telecommunications	3,853	3,786	3,750	3,699	92,914
Data processing, hosting, and related services	1,865	1,937	1,998	2,050	99,080
Information NEC	3,907	4,448	4,728	4,922	91,442
Financial activities	59,747	60,212	60,473	60,431	94,187
Finance and insurance	43,767	43,754	43,613	43,299	105,469
Credit intermediation and related activities	23,475	23,617	23,575	23,411	97,504
Insurance carriers and related activities	15,282	15,037	14,853	14,631	95,619
Finance and insurance NEC	5,009	5,100	5,185	5,257	171,893
Real estate and rental and leasing	16,006	16,458	16,860	17,132	64,248
Professional and business services	172,454	179,045	183,118	185,105	84,132
Professional and technical services	99,097	102,113	103,856	104,740	97,203
Legal services	12,290	12,589	12,807	12,970	101,651
Accounting and bookkeeping services	6,379	6,522	6,551	6,529	76,230
Architectural and engineering services	38,832	40,570	41,546	42,073	102,797
Specialized design services	2,193	2,281	2,322	2,336	118,446
Computer systems design and related services	18,985	18,997	18,965	18,859	96,532
Management and technical consulting services	9,066	9,531	9,742	9,873	98,970
Scientific research and development services	1,279	1,290	1,321	1,344	153,127
Advertising, PR, and related services	3,137	3,148	3,075	2,977	87,777
Other professional and technical services	6,934	7,185	7,527	7,778	62,570
Management of companies and enterprises	18,949	19,435	20,210	20,621	113,089
Administrative support and waste management	54,397	57,497	59,053	59,744	48,822
Private education and health services	108,817	110,955	115,417	118,677	55,300
Education services	10,017	10,632	11,236	11,582	46,965
Health care and social assistance	98,758	100,323	104,181	107,095	56,132
Ambulatory health care	40,750	41,304	43,168	44,316	61,232
Offices of physicians	13,658	13,700	14,360	14,835	87,161
Offices of dentists	6,592	6,771	7,073	7,075	56,216
Offices of other health practitioners	5,992	6,175	6,621	6,937	44,716
Home health care services	8,207	8,293	8,614	8,877	40,161
Other Ambulatory Health Care Services	6,301	6,365	6,501	6,593	53,829
Hospitals	31,768	32,076	32,913	33,545	69,886
Nursing and residential care facilities	15,009	14,980	15,287	15,698	34,560
Social assistance	11,232	11,962	12,814	13,537	28,580
Leisure and hospitality	57,145	66,760	71,228	73,982	22,643
Arts, entertainment, and recreation	8,304	9,775	10,601	11,203	31,513
Accommodation and food services	48,796	56,985	60,628	62,780	21,304
Accommodation	4,161	5,037	5,468	5,809	25,344
Food services and drinking places	44,635	51,948	55,160	56,971	20,922
Restaurants and other eating places	39,920	45,825	48,615	50,178	20,563
Full-service restaurants	19,788	24,181	25,823	26,731	22,675
Limited-service restaurants	16,815	17,995	18,972	19,542	18,225
Other Restaurants and Other Drinking Places	3,317	3,648	3,820	3,905	21,163
Special food services	2,623	3,417	3,630	3,722	26,945
Drinking places, alcoholic beverages	2,092	2,706	2,916	3,071	20,023
Other services	20,188	21,394	22,406	23,152	43,082
Private unclassified service-providing	2,096	2,231	2,276	2,321	55,988

Addendum

Unemployment Rate	4.7	3.1	3.0	3.0
Presentation Review				

# business Forward

OAKLAND COUNTY

**B**usiness Forward is the county's initiative to support small businesses throughout Oakland County. Our consultants work directly with entrepreneurs to access information, tools and the funding they need to move their BUSINESS FORWARD.

## SERVICES



One-on-one consultations



Educational seminars and workshops



Access to a network of local resources



[OakGov.com/  
BusinessForward](https://oakgov.com/BusinessForward)

[BusinessForward@OakGov.com](mailto:BusinessForward@OakGov.com)  
(248) 858-0783



**>>> All ways,  
MOVING FORWARD**





### **BUSINESS**

Fostering innovation, investment and growth in Oakland County, our Business Development team helps businesses locate and expand in our region.



### **COMMUNITY**

Providing community services for all of our cities, villages and townships in Oakland County.



### **WORKFORCE**

Helping our businesses with talent, and connecting talent with jobs.



### **VETERANS SERVICES**

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

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**Advantage  
Oakland.com**  
[Info@AdvantageOakland.com](mailto:Info@AdvantageOakland.com)

Executive Office Building 41W  
2100 Pontiac Lake Road  
Waterford, MI 48328-2762

  [@AdvantageOak](https://twitter.com/AdvantageOak)