



# Washtenaw County Economic Outlook

2023–2025  
March 2023



## **The Washtenaw County Economic Outlook for 2023–2025 Executive Summary**

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The past year has been a challenging one for both the national and local economies—initial strength and optimism about the pace of the recovery gave way to concerns about inflation and the risk of a downturn in the broader economy. Washtenaw County added 5,900 payroll jobs between December 2021 and July 2022, reaching a new post-COVID peak within 1.5 percent of the pre-pandemic employment level. Likewise, local unemployment fell one-half of a percentage point in that time to 2.9 percent, its lowest point since February 2020. Unfortunately, the local economy kicked into reverse during the second half of 2022, as the Federal Reserve’s efforts to tamp down inflation stoked recession fears. Between July and December, Washtenaw lost 2,400 payroll jobs, and the unemployment rate climbed back to 3.5 percent. The good news is that we expect these setbacks to be temporary and for the county to return to growth over the next few years.

Although Michigan as a whole has outperformed the county in recuperating its pandemic-era job losses to date, we are forecasting a reversal of fortunes ahead, with the county’s recovery slightly outpacing the state’s. Part of the reason for that switch is that we project government employment to grow more than twice as quickly in Washtenaw as it does statewide, driven largely by the University of Michigan and Michigan Medicine. Overall, we forecast payroll employment in Washtenaw County to return to its pre-pandemic level in the second quarter of 2024 and to exceed that level by 2.9 percent by

the end of 2025. In contrast, we expect employment in Michigan to fully recover in the third quarter of 2024 and grow another 1.8 percent by the end of 2025.

While the overall jobs picture in Washtenaw County is encouraging, there are large differences by industry. In general, industries that tend to employ highly educated workers had relatively fewer job losses during the pandemic and have also recovered the most quickly. We estimate that employment in the county's higher educational attainment services industries had recovered completely by the end of 2022. We project these industries to continue growing throughout the forecast, with employment climbing 6 percent above the pre-pandemic level by the end of 2025.

Washtenaw County's blue-collar industries were harder hit during the pandemic, but they still managed to recover nearly three-quarters of their initial job losses by the fourth quarter of 2020. Unfortunately, the recovery for these industries slowed during 2021 and 2022. We project blue-collar job growth to remain sluggish, with these industries ending 2025 just shy of a full recovery.

Service industries that tend to employ less educated workers—the lower educational attainment services group—were the hardest hit group of industries during the pandemic. This pattern held across the nation and the state, as well as in Washtenaw County. The rebound has been muted so far for this group—we estimate that these industries remained 9 percent below pre-pandemic employment levels at the end of last year. The lower educational attainment industries will continue to make slow and steady gains over the next few years, but they are not projected to recover completely by 2025.

Although we expect a national economic slowdown later this year or early in 2024, Michigan should be well-supported by the overall strength of the state's auto sector. We expect vehicle sales to continue growing as automakers maintain pricing discipline while fulfilling the backlog in consumer demand. Locally, we are forecasting that the national recession will take only a modest toll on the county's labor market, especially from a historical perspective. Unlike the Great Recession era, in which Washtenaw's unemployment rate peaked at 8.9 percent, we expect a cyclical peak of only 3.6 percent this time around. The local unemployment rate starts to fall again in late 2024 as economic growth picks up nationally, dropping to 3.0 percent by the end of 2025, compared to 3.9 percent in Michigan. The low unemployment rates that we are forecasting highlight an important theme of our forecast, that labor

shortages will be an enduring fact of life in Michigan, and especially in Washtenaw County, for the foreseeable future.

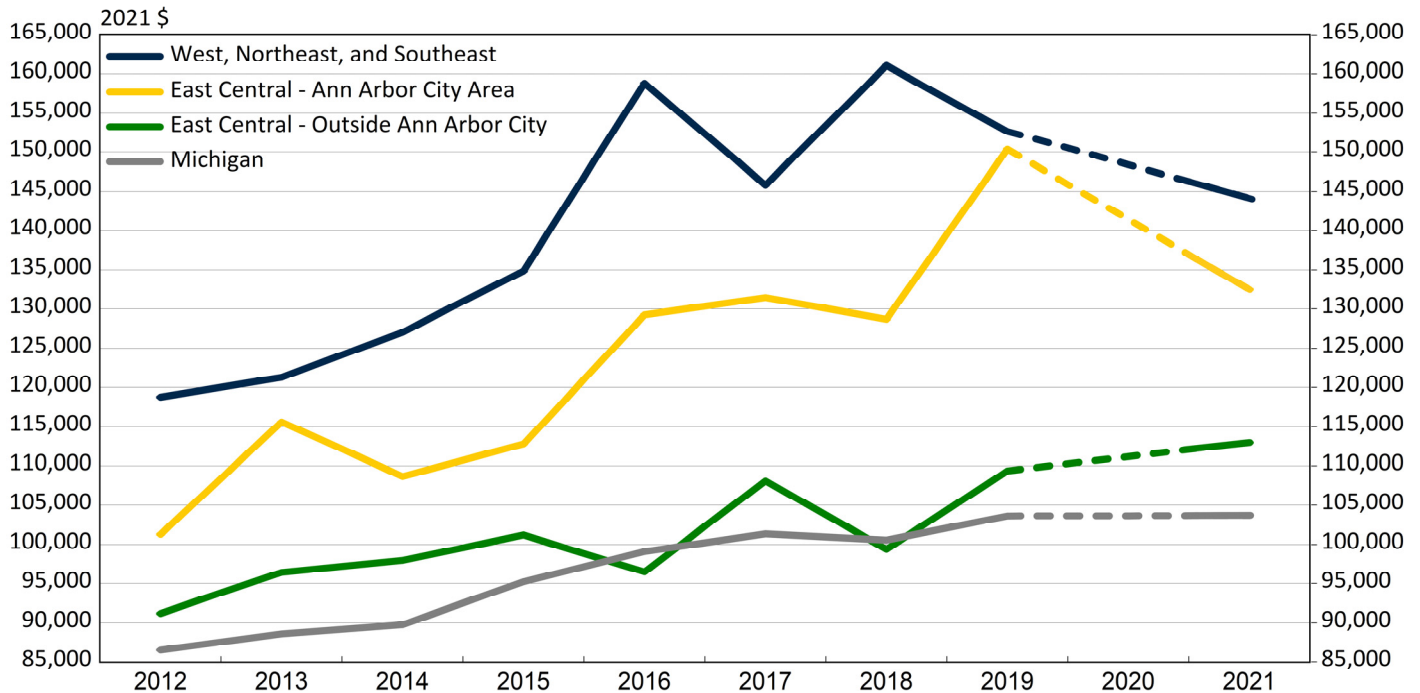
Inflation has been another enduring frustration over the past two years. Local prices jumped by 8.2 percent last year. Thankfully, we forecast inflation to slow to 3.2 percent this year and to 2.3 percent by 2025. That is good news for average real wages, which dropped sharply in Washtenaw County over the past two years, as nominal wage gains fell behind inflation. Even so, real wage growth is expected to be muted over the next three years, averaging only 0.4 percent per year.

We view stubbornly high inflation to be one of the main risks to our economic outlook for Washtenaw County. If the Federal Reserve needs to tighten monetary policy more than we expect to bring inflation under control, that would be bad news for Michigan's cyclically sensitive economy. Still, our baseline expectation is for economic growth in Washtenaw County to slow down but not reverse course amid the soft national economy we anticipate later this year.

For this year's outlook, we also examined how Washtenaw County's prosperity compares with the state's, and the extent to which that prosperity is shared across racial, ethnic, and sociodemographic dimensions. Over the past few years, lower-wage workers have seen larger wage gains than higher-wage workers, but despite these gains there remain wide disparities within the county along racial, ethnic, and geographic lines. Hispanic, Non-Hispanic Black, and Non-Hispanic Asian residents are far more likely to live in lower-income households than Non-Hispanic White households. Furthermore, there are dramatic differences between renters and homeowners in Washtenaw County. A full 48 percent of renters in the county live in lower-income households while only 10 percent of renters live in upper-income households. In contrast, only 12 percent of residents who own their homes live in a lower-income household, and many of those residents are senior citizens with limited income but who own their homes without a mortgage. Our analysis suggests the county still has room to improve when it comes to sharing our relative prosperity more widely.

Figure 1

## Average Annual Three-Person Equivalent Household Income in Washtenaw County



- Figure 1 shows the average annual three-person equivalent household income for residents of Washtenaw County and Michigan. Washtenaw County average incomes are shown separately for the county's three Public Use Microdata Areas (PUMAs) designated by the U.S. Census Bureau. Appendix C provides a map displaying those PUMA regions.
- Our income measures are calculated from the American Community Survey (ACS) microdata and are displayed for 2012–19 and 2021. Due to COVID-19 pandemic related disruptions, the traditional ACS microdata, and therefore our adjusted household income measures, are unavailable for 2020.
- We adjust household income for inflation, local cost of living, and household size. Our household size adjustments account for the greater expenses that larger households face. Our inflation and local cost of living adjustments account for differences by time period and geography; they allow us to report all households' incomes in 2021 dollars on a standard scale relative to the national average.
- Washtenaw County's relative prosperity is readily apparent. In 2021, the average three-person equivalent household income in Washtenaw County was \$129,000, significantly higher than the state's average of \$104,000. Without adjustments, the average household income in 2021 was \$111,000 in Washtenaw and \$86,000 in Michigan. Median household income was \$77,000 in Washtenaw and \$63,000 in Michigan.
- Large income discrepancies exist within Washtenaw County, however. The average adjusted income in the East Central - Outside Ann Arbor PUMA, which includes Ypsilanti and Ypsilanti Township, was \$113,000 in 2021, which was slightly above the state average but well below the City of Ann Arbor PUMA (\$132,000) and the West, Northeast, and Southeast PUMA (\$144,000).
- Household income disparities across the county shrank from 2019 to 2021. The East Central – Outside Ann Arbor region saw modest real household income growth in that period. However, the other two PUMAs saw a substantial drop in real household incomes from 2019 to 2021, likely due in part to the University of Michigan's hiring and salary freeze during the pandemic.
- Average adjusted household income in the county decreased from \$136,000 in 2019 to \$129,000 in 2021. The median adjusted household income increased from \$99,000 in 2019 to \$102,000 in 2021, suggesting that the recent decline in average household incomes was due to a decline in income among higher income households.



Table 1

**Population Distributions by Income Group in Washtenaw County, 2021**

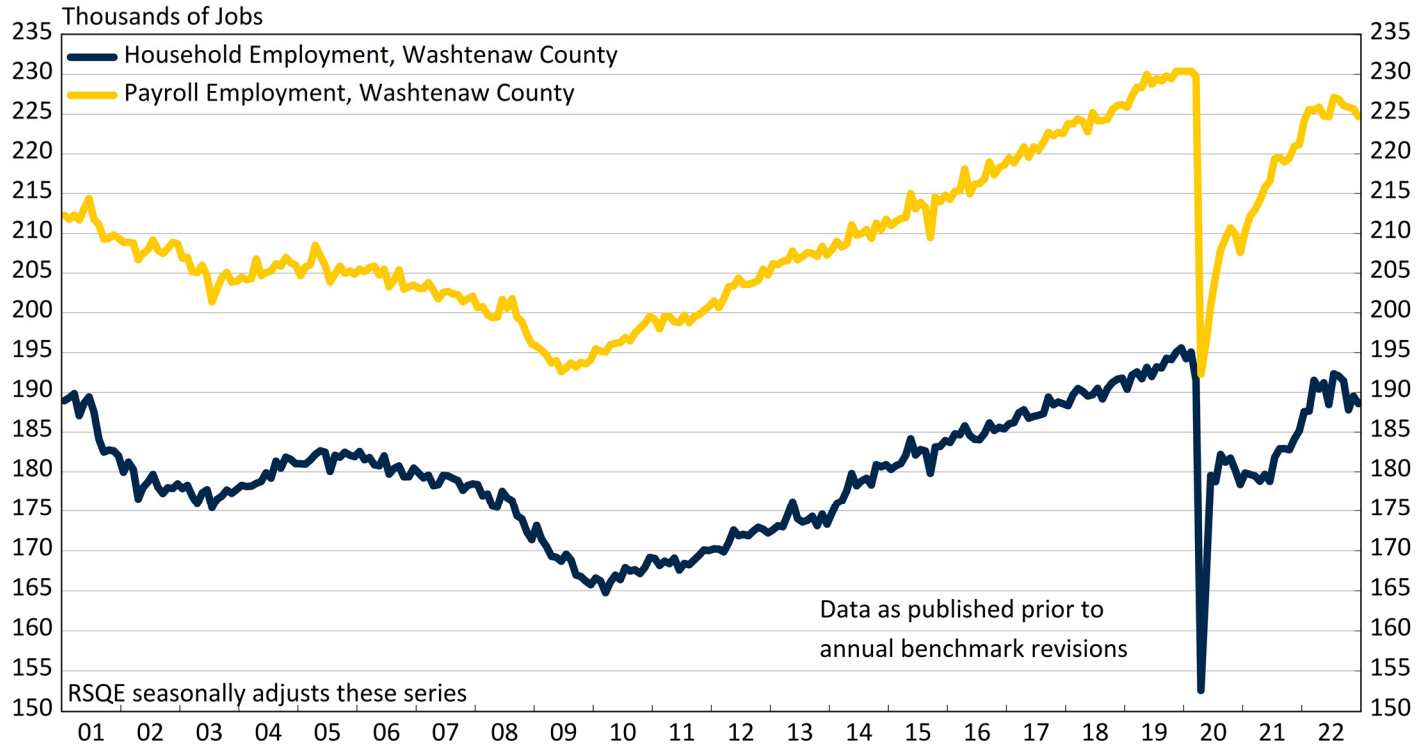
	Lower-Income Population	Middle-Income Population	Upper-Income Population	Population Share
Washtenaw County	23%	48%	30%	
Michigan	30%	53%	17%	
<b>Washtenaw County - Race/Ethnicity</b>				
Hispanic	29%	48%	23%	5%
Non-Hispanic Asian	27%	36%	37%	9%
Non-Hispanic Black	43%	40%	17%	11%
Non-Hispanic White	18%	51%	32%	68%
Non-Hispanic Other Races	26%	45%	30%	7%
<b>Washtenaw County - Home Ownership Status</b>				
Owner-Occupied	12%	55%	34%	63%
Rented	48%	43%	10%	37%

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

- Table 1 contains detailed information on the shares of Washtenaw County residents living in lower-, middle-, and upper-income households in 2021.
- 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 median national income.
- In areas where the cost of living was equal to the national average, we classify a three-person household as middle income if it had an adjusted household income between approximately \$54,300 and \$162,800. The range was \$44,300 to \$133,000 for a two-person household and \$31,300 to \$94,000 for a single-person household.
- Washtenaw County has fewer lower-income residents and more upper-income residents than Michigan. In Washtenaw County, 23 percent of residents live in low-income households, compared to 30 percent of Michigan residents. Conversely, the share of Washtenaw County residents living in higher-income households (30 percent) is almost double the share of Michigan residents (17 percent).
- Within Washtenaw County, there are large disparities along racial and ethnic lines. While 83 percent of non-Hispanic White residents live in middle- or upper-income households, only 57 percent of non-Hispanic Black residents live in middle- or upper-income households. The share of non-Hispanic Black residents living in lower-income households (43 percent) is significantly higher than the share for any other racial or ethnic group in the county.
- Non-Hispanic Asian residents, who make up 9 percent of county residents, are relatively overrepresented in both upper- and lower-income households and therefore underrepresented in middle-income households. Only 36 percent of non-Hispanic Asian residents live in middle-income households, compared to 48 percent of all county residents.
- Finally, there are dramatic differences between renters and homeowners in Washtenaw County. A full 48 percent of renters in the county live in lower-income households, while only 10 percent live in upper-income households. In contrast, only 12 percent of residents who own their homes are in lower-income households, and many of those residents are senior citizens with limited income but who own their homes without a mortgage.

Figure 2

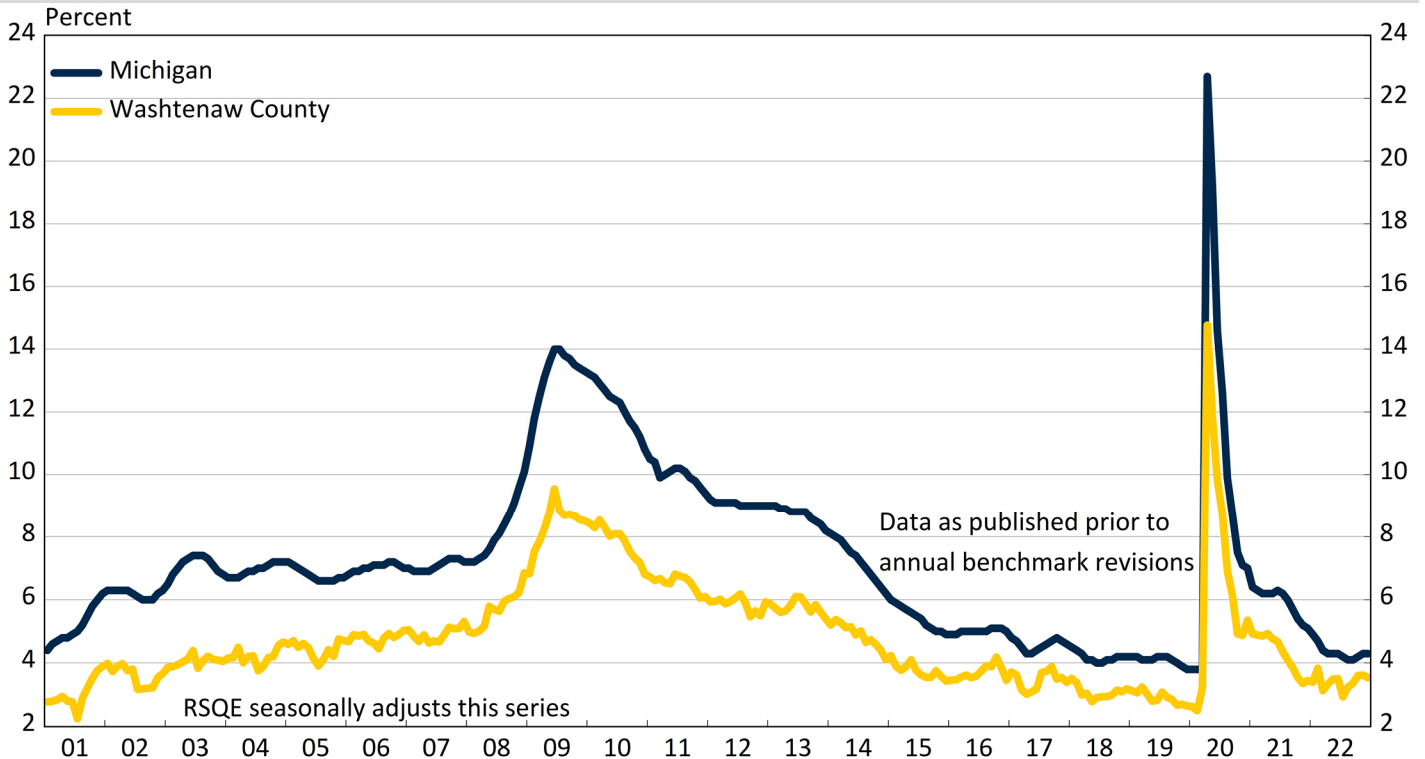
## Monthly Employment in Washtenaw County



- Figure 2 shows two different measures of employment in Washtenaw County. The yellow line displays payroll employment, which is the number of jobs at business and government establishments physically located in the county. The blue line depicts household employment, which is the count of employed Washtenaw County residents, whether they work inside or outside the county.
- The payroll employment data presented in this figure come from the Bureau of Labor Statistics' Current Employment Statistics program. The data for Washtenaw County is represented by the Ann Arbor Metropolitan Area, which comprises the entire county. The household employment data presented in this figure come from the Bureau of Labor Statistics' Local Area Unemployment Statistics program.
- We have seasonally adjusted both the payroll and the resident employment series ourselves.
- Payroll employment in the county fell by 38,100 jobs, or 16.5 percent, from February to April 2020 at the start of the COVID-19 pandemic. Employment among Washtenaw County residents fell by 42,500, or 21.8 percent, in that time.
- By December 2020, household employment in Washtenaw County had regained roughly 60 percent of its initial job losses. Payroll employment was slower to recover, recouping only 40 percent of its initial losses.
- The pace of growth shifted towards jobs located in the county during 2021, as lockdowns became less prominent and downtown areas began to fully reopen. By the end of 2021, payroll employment in Washtenaw County remained only 4.0 percent below its pre-pandemic level, while household employment remained 5.1 percent below its pre-pandemic level.
- The recovery continued for several months after December 2021, but both employment measures have stalled out after peaking in July 2022. Household and payroll employment had climbed to within 1.4 percent of their pre-pandemic levels before they began to reverse course in the second half of the year.
- Unfortunately, employment among Washtenaw County residents fell by 3,800 jobs from July to December 2022. Employment at jobs located in the county fell by 2,400 in that time. We expect that these declines will prove to be temporary, and the county will return to growth as the U.S. economy stabilizes over the next few years.

Figure 3

## Monthly Unemployment Rate, Michigan and Washtenaw County

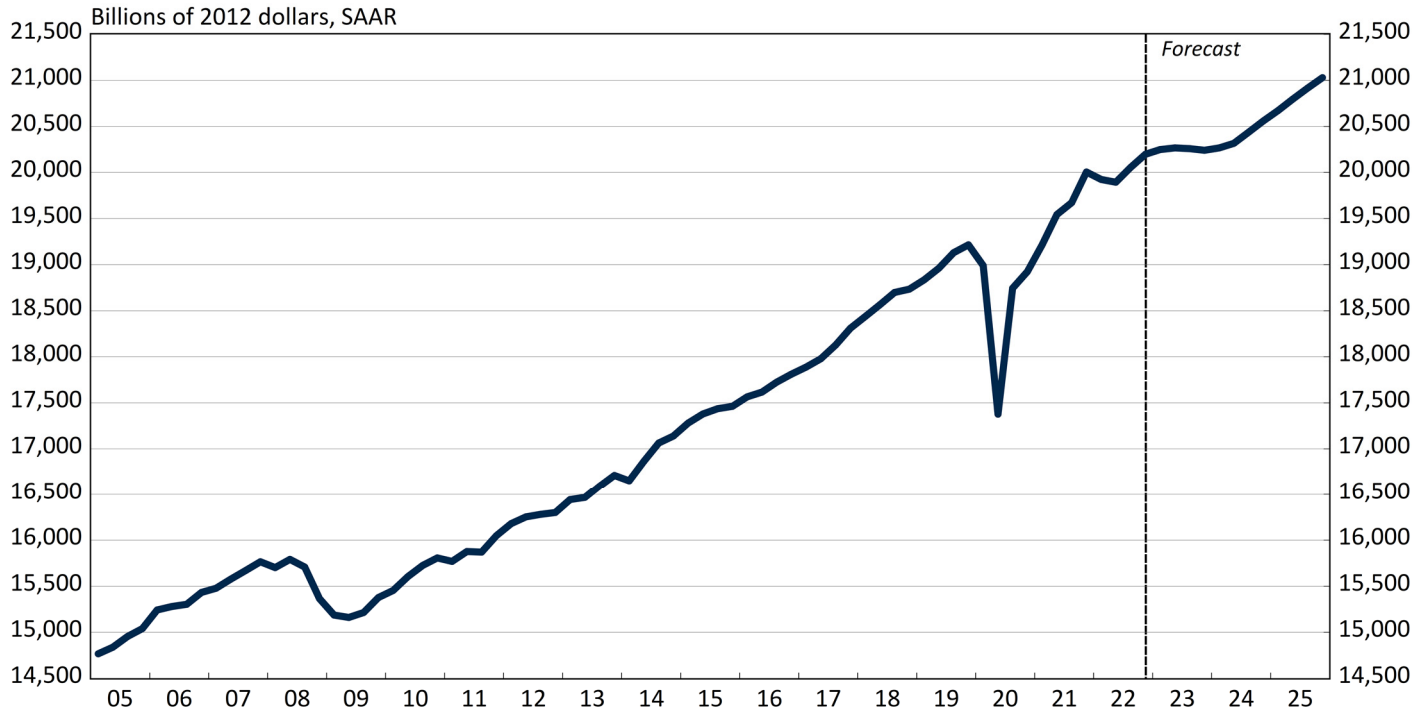


- Figure 3 shows unemployment rates for Michigan and Washtenaw County. Both series are seasonally adjusted; we have seasonally adjusted the Washtenaw unemployment series ourselves.
- Washtenaw County's labor market has run consistently hotter than the state's over the past twenty years. The statewide unemployment rate has averaged 7.2 percent since 2001, while Washtenaw's unemployment rate has averaged 4.8 percent.
- Although the local jobless rate spiked to a peak of 14.8 percent in April 2020, it declined to an average of 3.4 percent in 2022. It stood at 3.5 percent at the end of last year.
- For comparison, Michigan's unemployment rate ended last year at 4.3 percent, in line with its average for the year.
- Even though Washtenaw County's unemployment rate is lower than the state's, the county remains farther from a full recovery. In December 2022, Washtenaw's unemployment rate stood 1.0 percentage point higher than in February 2020, while Michigan's unemployment rate was only 0.5 percentage points higher.
- Washtenaw's unemployment rate reached its lowest point since the pandemic in July 2022, when it registered 2.9 percent. Although the monthly data can be noisy, the lack of progress since last summer is a cause for concern.
- The county's labor force is the sum of its unemployed residents and its employed residents, shown in the household employment count in Figure 2. Washtenaw County's labor force has barely grown since the beginning of 2022. That lack of progress has held down Washtenaw's unemployment rate, but it also intensifies the local labor shortage.



Figure 4

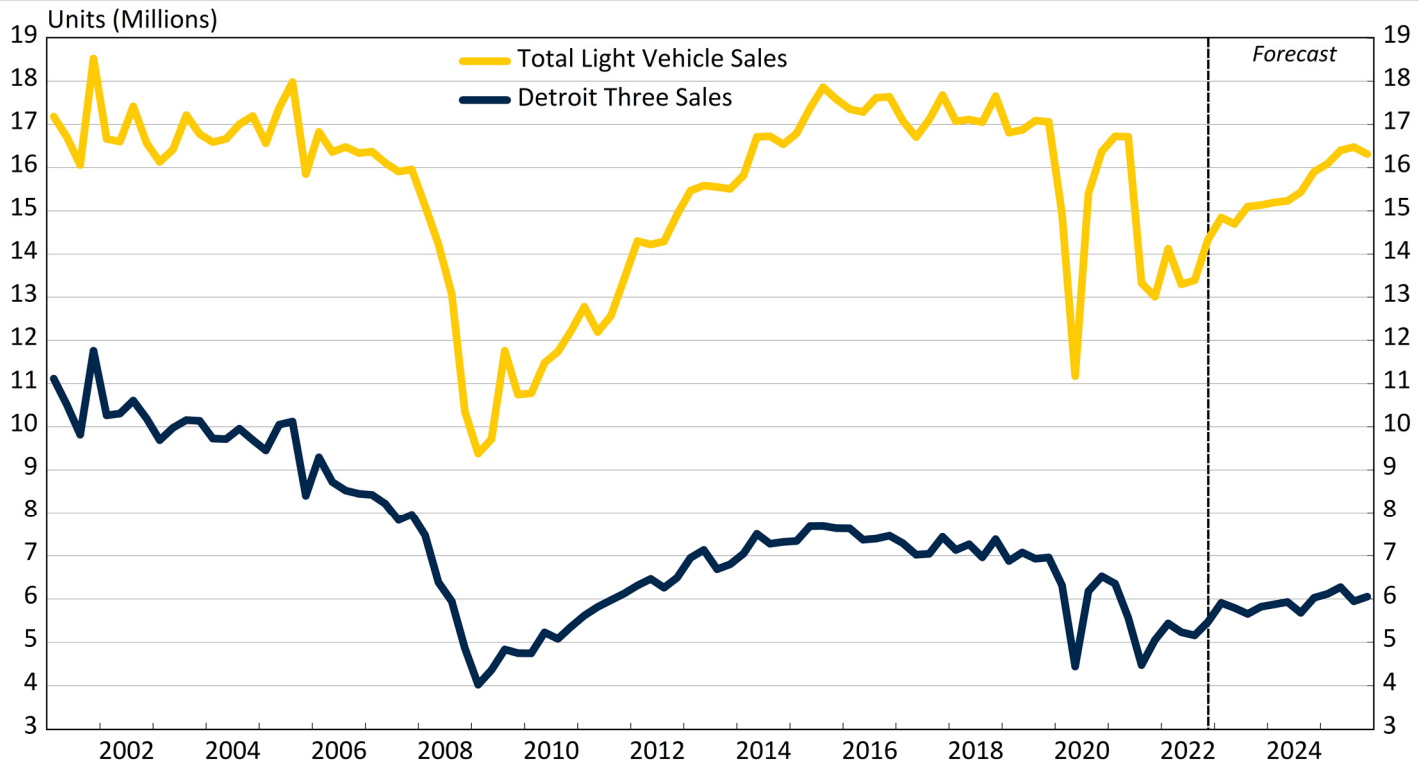
## U.S. Real GDP



- Washtenaw County’s economic future is closely tied to the overall health of the national economy. Figure 4 shows our February 2023 forecast for quarterly U.S. real GDP.
- Real GDP grew at a 2.9 percent annualized pace in the fourth quarter of 2022, but domestic final sales contributed only 0.9 percentage points to that growth. We interpret the overall data stream as suggesting the economy’s momentum is likely to slow this year.
- We project that real GDP will contract by a cumulative 0.1 percent during the second half of 2023, as the Fed continues fighting to tame inflation. We project consumption growth to stall under the weight of stagnant real incomes and tightening credit standards.
- We expect growth to return next year, reaching 2.4 percent in the second half of 2024 as monetary policy loosens, investment spending increases, and consumption growth picks up.
- We forecast that real GDP will increase by 2.2 percent in 2025 as interest rates continue to fall, inflation stabilizes below 2.5 percent, and real income growth increases. That would be the fastest rate of annual GDP growth since the rebound from the pandemic recession in 2021.
- The Fed’s target range for the federal funds rate currently stands at 4.5–4.75 percent. Our forecast assumes the Fed will raise the target range to a terminal range for this cycle of 5.0–5.25 percent during the next two FOMC meetings. We expect the Fed to hold that target range through the end of 2023 and begin decreasing the target range during the first quarter of next year. By the end of 2025, the target range is expected to decrease to 3.5–3.75 percent as inflation remains slightly above the Fed’s 2 percent target.
- With fiscal policy largely on cruise control owing to divided government, we anticipate that the federal deficit will increase from 4.4 percent of GDP in fiscal 2022 to an average of 5.0 percent in fiscal 2023–25. The increase in the deficit comes primarily from larger interest payments as new borrowing is met with higher interest rates.

Figure 5

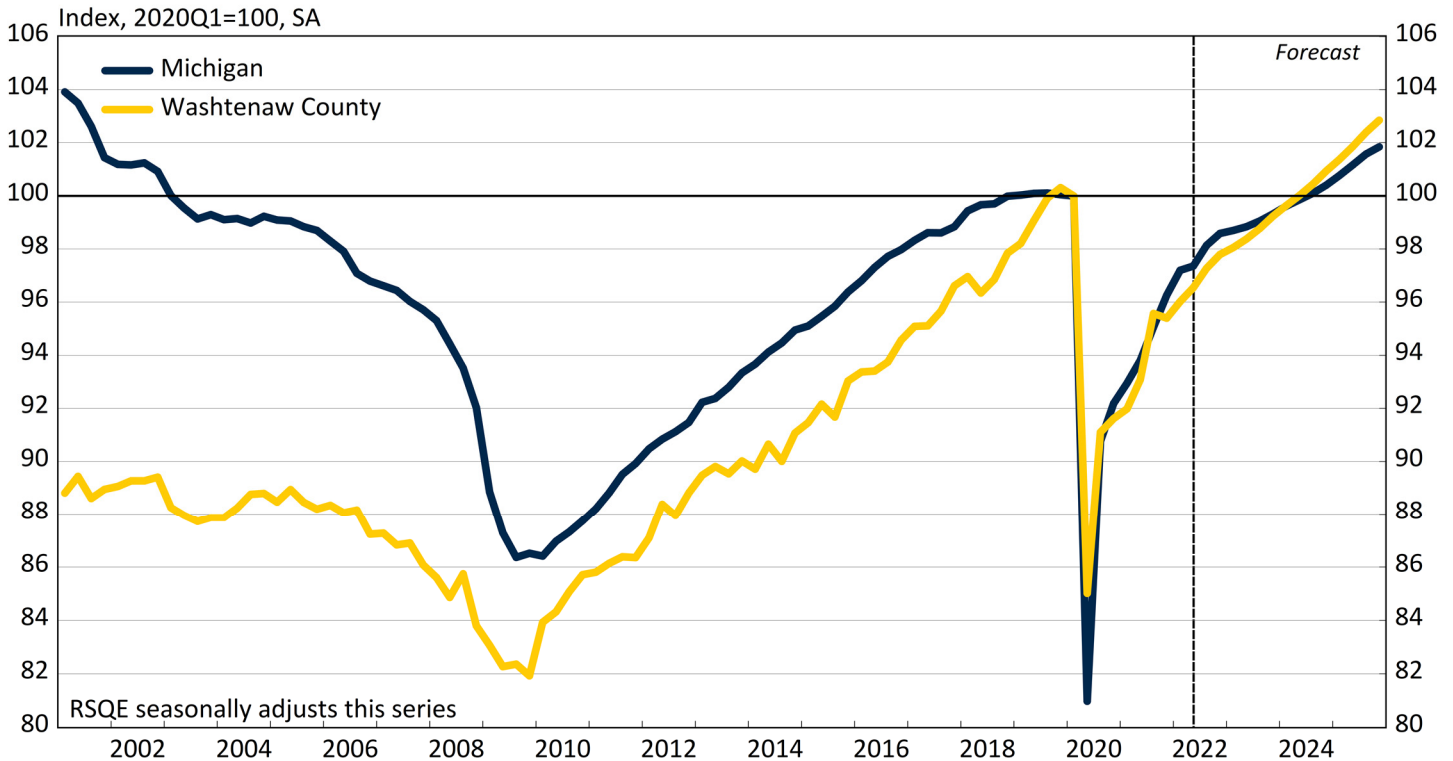
## U.S. and Detroit Three Light Vehicle Sales



- Figure 5 shows our quarterly forecast for total U.S. and Detroit Three light vehicle sales. Sales totaled 13.8 million units in 2022, the lowest annual count since 2011.
- The annualized pace of sales jumps to 14.8 million in the first quarter of 2023, as tax breaks on new battery and hybrid electric vehicles kick in.
- The pace of sales climbs above 15.0 million units by the third quarter of 2023, but we expect that pace to stagnate as high prices and interest rates finally put a dent in demand.
- As the economy begins to rev up during the second half of 2024, the pace of light vehicle sales continues to climb toward the 16-million-unit pace.
- We expect that light vehicle sales will increase to 16.4 million units in the second half of 2025 as interest rates continue to decline and broad economic growth resumes. That sales pace nonetheless remains nearly 600,000 units below the pre-pandemic level as high prices deter consumers.
- The Detroit Three's share of the market increased from 35.9 percent in 2021 to 38.6 percent in 2022 as supply constraints eased over the course of last year.
- We forecast that the Detroit Three's share of the market will tick up to 38.8 percent in 2023 as production volumes across the industry continue to normalize. Unfortunately, the Detroit Three's share of the market cannot defy gravity for too long, and we expect their share of the market to slip to 38.1 percent next year and 37.4 percent in 2025.
- Even though we are forecasting the Detroit Three's share of the market to decline, we expect that their unit sales pace will increase as the broader light vehicle market continues to recover.
- Our forecast calls for the Detroit Three sales pace to increase from 5.3 million units in 2022 to 6.1 million units in 2025. That sales pace would be roughly 900,000 units, or 12.4 percent, lower than in 2019.
- One reason we expect both total and the Detroit Three's sales to lag behind the pre-pandemic pace is an ongoing prioritization of pricing discipline relative to sales volumes.

Figure 6

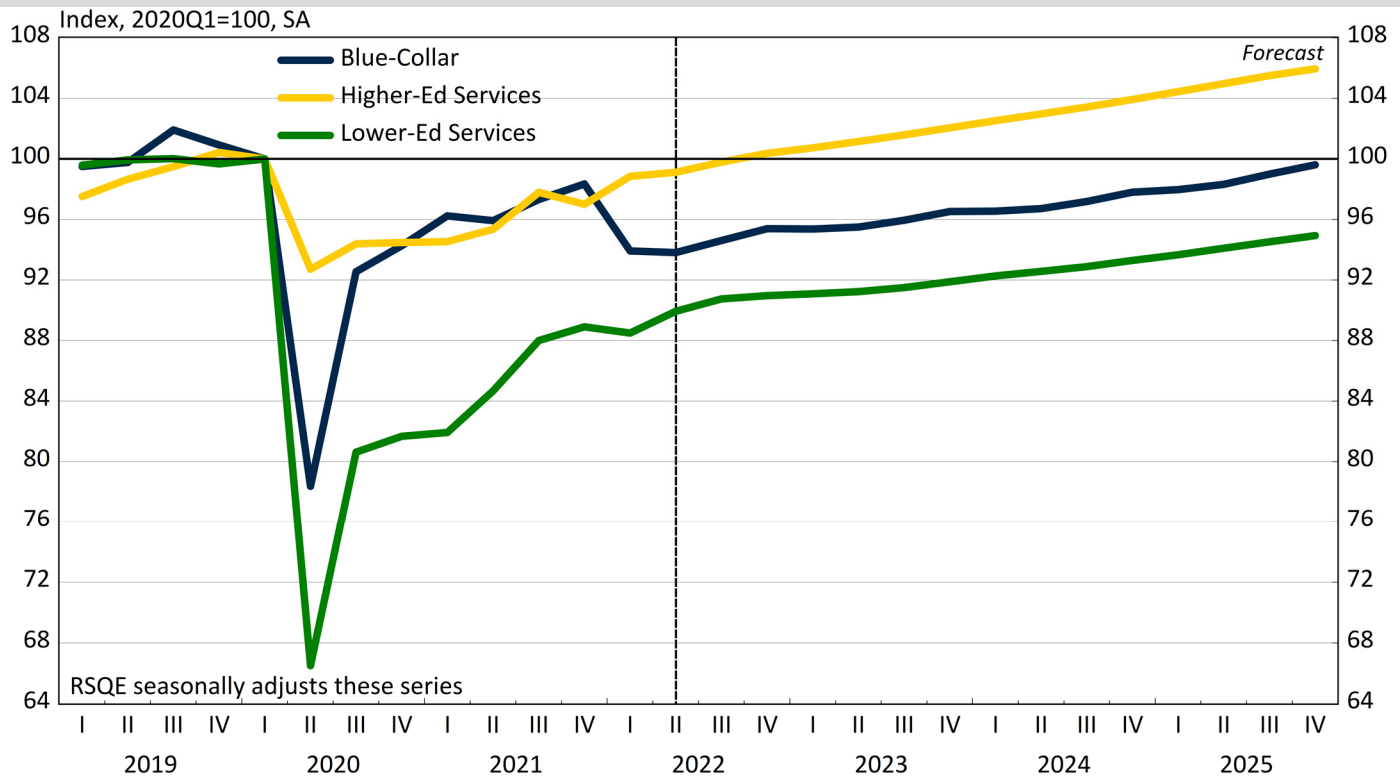
## Quarterly Payroll Employment Indices, Michigan and Washtenaw County



- Figure 6 displays our forecast for Michigan's and Washtenaw County's payroll employment levels, with values indexed to 100 in 2020q1.
- Our payroll employment and wage forecasts are based on the Bureau of Labor Statistics' Quarterly Census of Employment and Wages program. Using this data allows us to forecast more detailed industries than are published in the Current Employment Statistics program.
- From the end of the Great Recession (2009q3) to the beginning of the pandemic (2020q1), employment in Washtenaw County grew more quickly than in the state, averaging roughly 0.5 percent per quarter compared to the state's 0.3 percent per quarter.
- The COVID-19 recession led employment in the state of Michigan to decline by 844,600 jobs (19 percent) in the second quarter of 2020, while Washtenaw County lost 32,900 jobs (15 percent).
- Although the county's economy was better shielded from the initial downturn of the COVID-19 pandemic, the state has outperformed the county in recouping its job losses to date. By the end of 2022, Michigan had recovered 93 percent of its initial job losses, while we estimate that Washtenaw County had recovered only 85 percent.
- We are forecasting that growth differential to reverse course going forward, with the county's recovery slightly outpacing the state's over the next few years.
- One reason we expect Washtenaw's growth to pick up steam relative to the state's is that we project government employment to grow more than twice as quickly in Washtenaw as it does statewide. The bulk of the county's government job growth comes from state government, reflecting the resilience of Washtenaw County's higher-education sector, especially the University of Michigan and Michigan Medicine.
- We expect employment in Washtenaw County to return to its pre-pandemic level in the second quarter of 2024 and to exceed that level by 2.9 percent by the end of 2025.
- In contrast, we forecast employment in Michigan to return to its 2020q1 employment level in the third quarter of 2024 and to exceed that value by 1.8 percent by the end of 2025.

Figure 7

## Job Indices in Washtenaw County by Selected Industries



- On the chart above, we categorize each of Washtenaw’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 **blue-collar** industries comprise mining; construction; manufacturing; and wholesale trade, transportation and warehousing, and utilities. These industries’ job count declined by more than 20 percent in the second quarter of 2020, but they recovered 92 percent of those losses by the end of 2021. Employment in motor vehicle manufacturing dropped sharply in the first quarter of 2022, but that decline may reflect a reclassification of some business establishments rather than a true loss of jobs in the county.
- Blue-collar employment grew slowly during the remainder of 2022, and we expect modest continued growth (0.4 percent per quarter) over the next three years, leaving the blue-collar industries about 100 jobs below their pre-pandemic employment level at the end of our forecast.
- The **higher-educational** services industries comprise information; finance; professional, scientific, and technical services; management of companies and enterprises; private education and health services; and government (which includes public education). These are industries that tend to employ highly educated workers.
- The pandemic led to relatively few job losses in Washtenaw’s higher-education services industries, and consequently smaller job gains since 2020q2 than in the other categories. Nevertheless, we estimate that the higher-education services industries had more than recovered all of their initial job losses by the end of 2022.
- We forecast steady job growth for higher-educational attainment services industries going forward. This industry group averages 0.5 percent growth per quarter from 2023–25, taking its employment to 6 percent above the pre-pandemic level by the end of 2025.
- The **lower-education** services industries comprise retail trade; leisure and hospitality; administrative support services and waste management; and other services. These industries tend to employ less well-educated workers, and they suffered the worst of the pandemic’s impact, shrinking by one-third in 2020q2. Their rebound in employment so far has been muted, with employment remaining 9 percent below pre-pandemic levels in 2022q4. We are forecasting modest but continuous growth for these industries through 2025 (0.4 percent per quarter), but that performance is not enough to make up all of their initial pandemic losses.

Table 2

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

	2021	Forecast Employment				Average
		2022	2023	2024	2025	Annual Wage 2021 \$
<b>Total Jobs (Number of jobs)</b>	<b>206,680</b>	<b>213,051</b>	<b>216,795</b>	<b>220,410</b>	<b>224,501</b>	<b>68,116</b>
(Annual percentage change)	(2.3)	(3.1)	(1.8)	(1.7)	(1.9)	
<b>Blue-Collar</b>	<b>28,349</b>	<b>27,612</b>	<b>28,022</b>	<b>28,381</b>	<b>28,866</b>	<b>77,333</b>
Utilities	424	428	426	423	421	159,375
Wholesale trade	5,976	6,004	6,162	6,330	6,485	85,503
Transportation and warehousing	3,898	4,014	4,103	4,199	4,309	85,248
Other manufacturing	9,156	9,592	9,725	9,857	10,010	72,940
Construction	4,844	4,657	4,656	4,651	4,741	71,552
Transportation equipment (Motor Vehicles & Parts) manufacturing	3,768	2,576	2,607	2,580	2,565	68,167
Natural resources and mining	283	342	342	339	336	35,777
<b>Higher-Ed Services</b>	<b>136,398</b>	<b>141,169</b>	<b>143,786</b>	<b>146,385</b>	<b>149,225</b>	<b>76,218</b>
Management of companies and enterprises	1,471	2,109	2,166	2,179	2,216	148,625
Information	4,691	4,234	4,272	4,324	4,385	125,832
Professional, scientific, and technical services	18,181	18,725	19,116	19,471	19,923	105,811
Finance and insurance	3,955	4,000	4,040	4,109	4,175	104,013
Total Government	78,539	81,258	82,640	84,121	85,737	69,921
Private health and social services	24,434	25,323	25,927	26,410	26,874	61,582
Real estate and rental and leasing	2,228	2,500	2,469	2,489	2,520	58,254
Private education	2,899	3,019	3,158	3,282	3,396	43,443
<b>Lower-Ed Services</b>	<b>41,551</b>	<b>43,563</b>	<b>44,236</b>	<b>44,877</b>	<b>45,627</b>	<b>35,308</b>
Administrative support and waste management	8,066	8,087	8,193	8,301	8,432	45,459
Other services	4,486	4,651	4,714	4,783	4,856	40,902
Retail trade	15,141	15,094	15,013	14,967	14,934	38,243
Arts, entertainment and recreation	1,760	2,071	2,209	2,283	2,368	28,085
Accommodation and food services	12,098	13,659	14,107	14,543	15,036	23,843
Unclassified	382	707	752	768	784	59,437
<i>Addendum:</i>						
Total Private	128,140	131,792	134,156	136,289	138,764	67,009

- On an annual average basis, employment in Washtenaw County declined by 7.5 percent in 2020. The number of jobs grew by only 2.3 percent in 2021 as the government sector continued to shed jobs. We estimate that job growth accelerated in 2022, with employment growing by 3.1 percent for the year.
- We are forecasting that job growth in the county will slow to a pace of 1.8 percent in 2023 and 1.7 percent in 2024, before inching up to 1.9 percent in 2025. Washtenaw's payroll jobs count in 2025 is expected to exceed the 2019 level by 6,020.
- Most of the net job gains in the county between 2019 and 2025 are forecast to occur in the government sector (3,360), which includes public K-12 education as well as the University of Michigan, Michigan Medicine, Eastern Michigan University, and Washtenaw Community College. The private sector adds 2,660 jobs over that period.
- The federal government introduced an updated NAICS industry classification system in 2022, which appears to have created a large discontinuity between 2021 and 2022 for some industries.

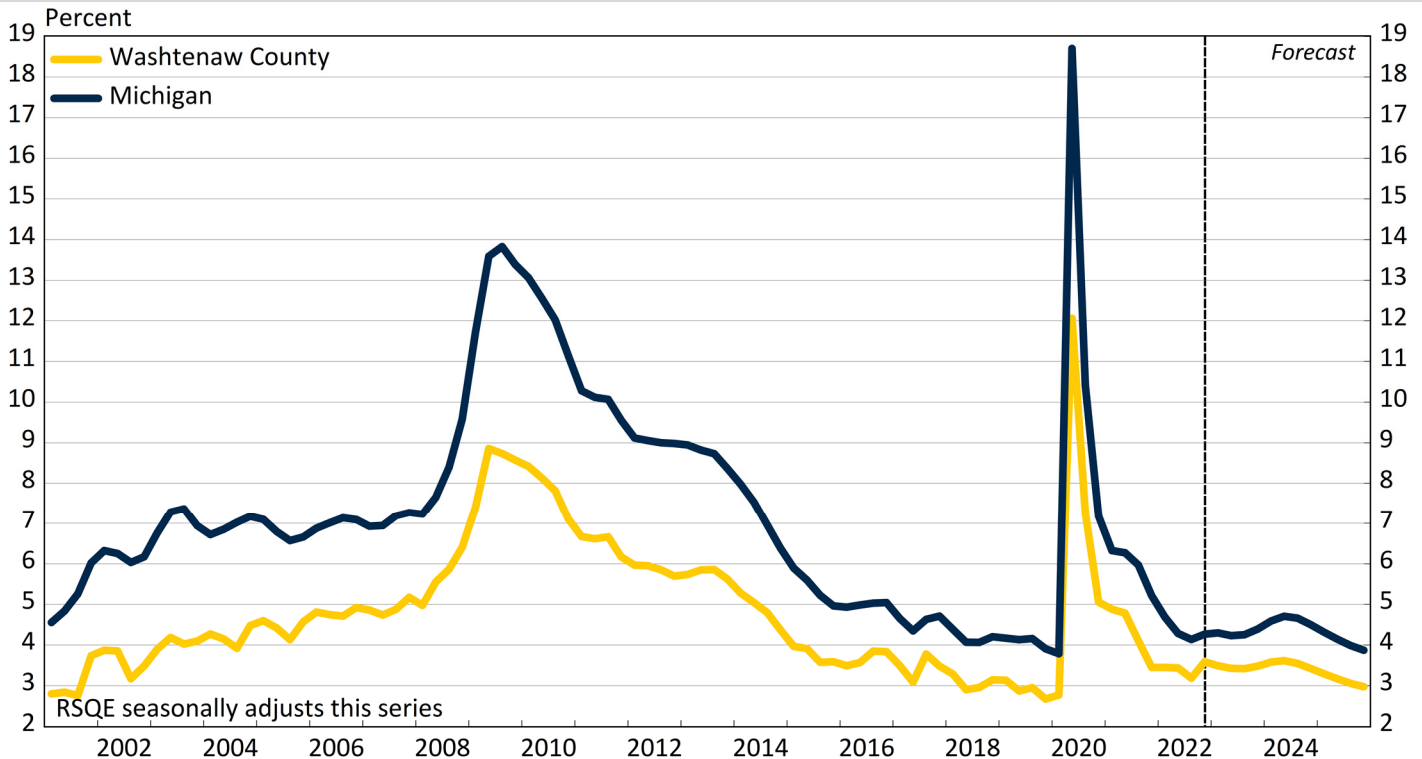


## Forecast of Jobs in Washtenaw County by Major Industry Division

- In Table 2, we divide Washtenaw's major private sector industries into the three industry categories` described previously. Within each category the major industries are listed in descending order based on their average annual wage in 2021. Appendix B displays a full list of roughly 80 industries, organized by NAICS code.
- Within the blue-collar industries category, wholesale trade and transportation and warehousing are expected to be the primary source of job growth over the next three years. Jobs in wholesale are expected to be up 10.4 percent (610) in 2025 compared to 2019 levels. Employment in transportation and warehousing is forecast to grow by 22.3 percent (790 jobs) over the same period.
- Non-automotive manufacturing has been steadily adding jobs since 2020, and we expect that growth to continue. By 2025, employment in non-automotive manufacturing is forecast to exceed 2019 levels by 0.8 percent (80 jobs).
- The construction industry added 530 jobs in 2021, but we estimate that it gave up 190 jobs in 2022. Employment remains flat in 2023 and 2024 before growing by 90 jobs in 2025. Compared to 2019 levels, employment is up by 60 jobs in 2025.
- The local motor vehicle manufacturing industry has been losing jobs for years. In 2002, it employed 14,500 people, but its job count fell all the way to 3,800 by 2021. In 2022, employment fell further to 2,600, but we suspect that decline was due to an establishment reclassification. Still, we do not expect any recovery over the next three years, leaving this once local powerhouse with only 2,600 employees in 2025.
- Within the higher-education attainment group, the management of companies industry saw a large jump in employment in 2022 (640 jobs or 43 percent). We suspect this spike may be due primarily to the reclassification of jobs in motor vehicle manufacturing. Over the next three years we are forecasting that this industry will add another 110 jobs.
- Employment in the information industry declined by 460 jobs in 2022 because of a loss of jobs in software publishing, which appears to be the result of industry reclassification. The industry recovers 150 of those jobs over the next three years.
- Employment in professional and technical services does not appear to have been distorted by establishment reclassification. We forecast that the industry gained 540 jobs in 2022 and will gain an additional 1,200 over the next three years. In 2025, employment in professional services is expected to be 2,300 jobs (12.9 percent) greater than it was in 2019. Most of the gains will be in scientific research and development services.
- The number of jobs in finance and insurance is expected to grow modestly over the next three years (170 jobs or 4.4 percent). We expect that employment will be 13 percent higher in 2025 than in 2019.
- Private health and social services are forecast to add 1,600 jobs over the next three years taking industry employment in 2025 to roughly 2,000 jobs (8.2 percent) greater than in 2019. Most of the job gains will be in physicians' offices.
- Most of the lower-educational attainment service industries are expected to enjoy moderate or rapid employment growth over the next three years. The major exception is retail trade.
- Employment in retail trade in Washtenaw County was 19,300 in 2001, but it declined all the way to 15,800 in 2019. After recovering roughly 800 of its 1,500 pandemic job losses in 2021, retail trade is forecast to lose another 160 jobs over the next three years. Our forecast would bring its total count to 14,900 jobs.
- Employment in accommodations and food services declined by 27.2 percent in 2020, with the greatest job losses in accommodations and full-service restaurants. We forecast that this sector will grow by 1,400 jobs (10.1 percent) over the next three years, but it still falls 550 jobs (3.5 percent) short of 2019 employment levels by 2025.
- The arts and recreation industry lost 36.5 percent of its jobs in 2020. Despite strong job gains over the next three years (300 jobs or 14.3 percent), we forecast that this industry will have 150, or 5.8 percent, fewer jobs in 2025 than in 2019.
- Administrative support services and other services are forecast to see moderate growth over the next three years. They nonetheless remain short of 2019 employment levels in 2025.

Figure 8

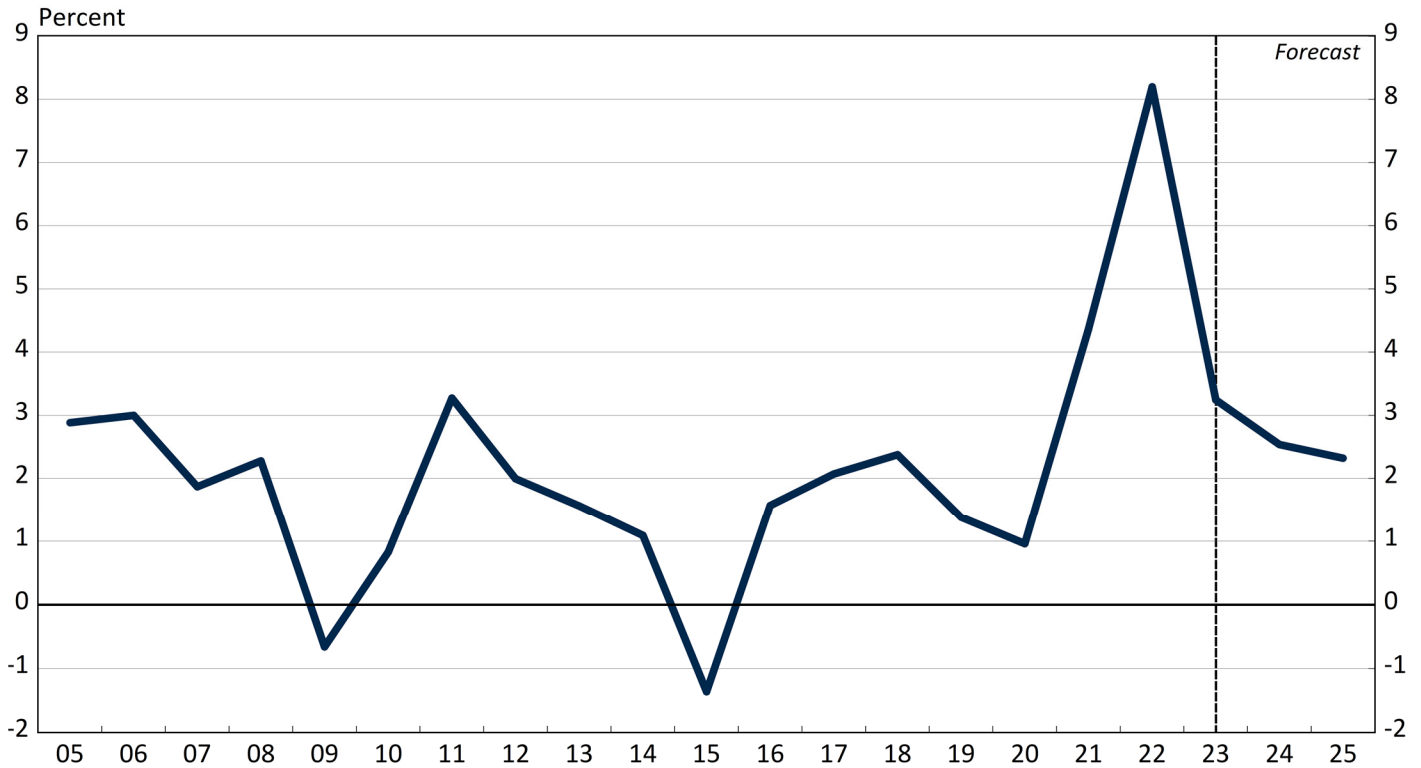
## Quarterly Unemployment Rate, Michigan and Washtenaw County



- We expect Washtenaw’s unemployment rate to begin this year on a gentle descent as the national and state economies continue to grow. It edges down from 3.6 percent in the fourth quarter of 2022 to 3.4 percent in the second and third quarters of 2023.
- Washtenaw’s unemployment rate then begins to tick back up as the national recession we are forecasting puts a slight chill into the local labor market. The jobless rate climbs back to 3.6 percent for the first three quarters of 2024.
- It is important to note that we expect the count of employed Washtenaw County residents to keep growing in every quarter of our forecast period, just as we do for wage and salary employment. Washtenaw’s unemployment rate rises modestly in late 2023 and early 2024 in our forecast because the local labor force grows more quickly than the number of employed residents.
- Michigan’s unemployment rate also ticks back down in the first half of 2023, declining to 4.2 percent in the second quarter. It then rises more sharply than Washtenaw’s beginning in the second half of the year. Michigan’s unemployment rate reaches a cyclical peak of 4.7 percent in the second and third quarters of 2024.
- Although we expect a national economic slowdown, we are forecasting that it will only take a modest toll on the local labor market, especially from a historical perspective. Unlike the Great Recession era, in which Washtenaw’s unemployment rate peaked at 8.9 percent, we expect that Washtenaw’s unemployment rate will reach a cyclical peak of only 3.6 percent this time around.
- The local unemployment rate starts to fall again in late 2024 as economic growth re-accelerates nationally. We project the county’s unemployment rate to fall to 3.0 percent by the end of 2025, when Michigan’s rate will stand at 3.9 percent.
- Despite that progress, the county’s unemployment rate at the end of our forecast would stand two-tenths of a percentage point above its average in the first quarter of 2020, prior to the COVID-19 pandemic.
- Perhaps the most important theme to take away from our forecast of the local unemployment rate is that labor shortages will be an enduring fact of life in Michigan, and especially in Washtenaw County, for the foreseeable future. Even the mild national recession we are projecting will not lead to a major reversal of that trend.

Figure 9

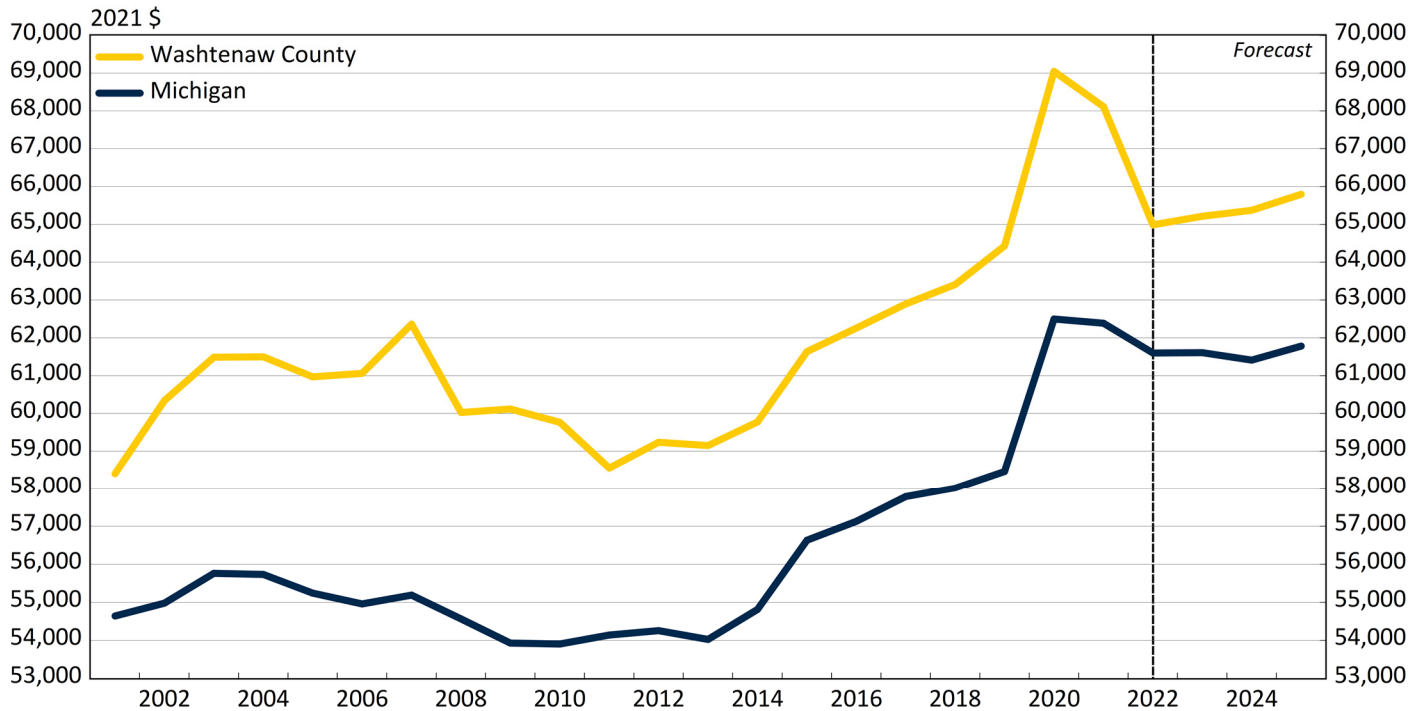
## Detroit CPI Inflation Rate



- Figure 9 shows history and our forecast of annual local inflation from 2005 to 2025. 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 spiked from 1.0 percent in 2020 to 4.4 percent in 2021 and a whopping 8.2 percent in 2022.
- Although the spike in energy and food prices following Russia's invasion in Ukraine was a significant contributor to last year's surge in inflation, it was far from the only cause. So-called core inflation, which strips out food and energy prices, clocked 6.1 percent nationally, far above the Federal Reserve's target.
- A small consolation is that inflation slowed down over the second half of last year. The annualized pace of quarterly local inflation slowed from an eye-popping 13.1 percent in the second quarter of 2022 to 3.1 percent in the fourth quarter.
- We nonetheless believe it is too early for the Federal Reserve to declare victory on inflation. Volatile readings, data revisions, and a labor market that remains hot all mean that the Fed has work left to do.
- We expect local inflation to average 3.2 percent this year. That would be a very welcome deceleration from last year's pace, although it would still be above the Fed's target of 2 percent per year.
- Local inflation then slows to 2.5 percent in 2024 and 2.3 percent in 2025. It nonetheless remains above its pre-pandemic trend over our forecast horizon. From 2010 to 2019, Detroit CPI inflation averaged only 1.5 percent per year.

Figure 10

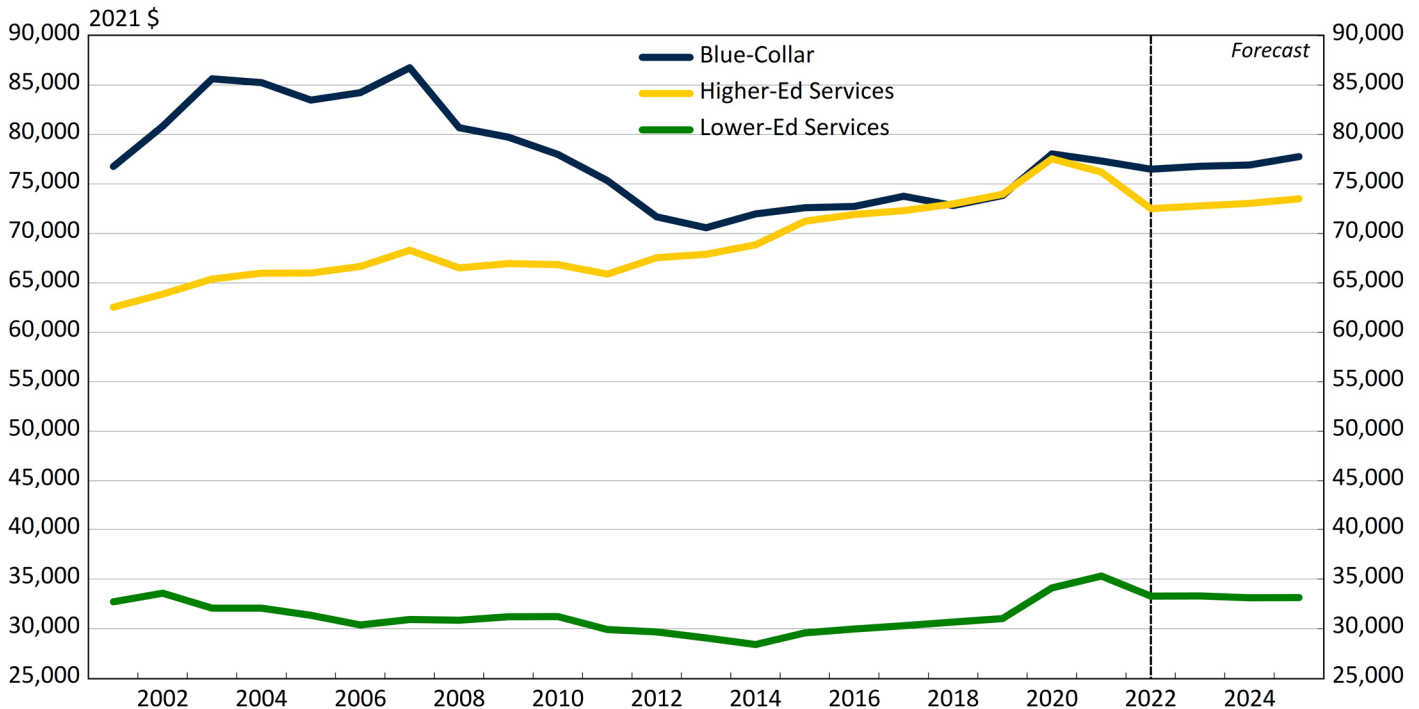
## Average Annual Real Wage, Michigan and Washtenaw County



- Figure 10 shows the average annual real wages for all workers in Washtenaw County and in Michigan from 2001 to 2025, adjusted for inflation to be expressed in 2021 dollars.
- The average real wage in Washtenaw County has consistently run about 8 to 10 percent higher than statewide.
- Both Washtenaw County and Michigan saw large jumps in average real wages during 2020. Real wages grew by 7.2 percent in Washtenaw 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.
- In 2021, real wages fell by 1.4 percent in Washtenaw County and by 0.2 percent in the state of Michigan. In 2022, real wages fell by an additional 4.6 percent in Washtenaw and 1.3 percent statewide. We estimate that as of 2022, the average real wage in Washtenaw County stood only 5.5 percent higher than in the state.
- The reason the average real wage declined much more in Washtenaw in 2021 and 2022 than in the state overall is primarily because growth in Washtenaw’s government-sector wages lagged far behind inflation. The average real wage in the government sector fell by 2.5 percent in 2021 and by an additional 5.7 percent in 2022.
- We expect real wage growth in both the county and the state to return to the positive side of the ledger in 2023, barely. We forecast that over the next three years, the average real wage will grow by 0.4 percent per year in Washtenaw County and 0.1 percent per year in Michigan.
- Despite the declines since 2020, real wages are forecast to average \$65,800 in Washtenaw and \$61,800 in Michigan by 2025. Thus, Washtenaw County’s average real wage in 2025 will stand 2.1 percent above 2019 levels, while average real wages statewide will stand 5.7 percent higher.

Figure 11

## Average Annual Real Wage in Washtenaw County by Selected Industry Group



- Figure 11 shows the average annual real wage in Washtenaw County for the same three industry categories as in Figure 7: 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: 5.7 percent in the blue-collar industries, 4.9 percent in the higher-education services industries, and 10.0 percent in the lower-education services industries.
- The relatively large increase in wages in the lower-education services industries reflects the fact that the lowest-paid industries within this group (arts and recreation and accommodations and food services) lost the greatest share of jobs in 2020.
- The average real wage declined in 2021 in the blue-collar industries and higher-education services industries, but it increased by 3.5 percent in the lower-education services industries even as inflation picked up.
- We estimate that inflation substantially exceeded wage growth in 2022, leading the average real wage to decline by 1.1 percent in the blue-collar industries, by 4.8 percent in the higher-education services industries, and by 5.8 percent in the lower-education services industries. The large decline in the lower-education services industries also reflects the changing industry mix, as employment gains are greatest in the lower-paying sub-industries.
- Over the next three years, the average real wage is forecast to grow by 0.6 percent per year in the blue-collar industries and 0.4 percent per year in the higher-education services industries. Real wages are forecast to decline by 0.1 percent per year in the lower-education services industries.
- By 2025, real wages are expected to stand around 5.3 percent higher than their 2019 levels in the blue-collar industries and 6.9 percent higher in the lower-education services industries, but 0.6 percent lower in the higher-education services industries. This decline reflects our forecast that real wages in government will remain 2.9 percent below 2019 levels in 2025.



## Review of the Forecast

Year of Forecast	% Forecast Error for Total Jobs	Year of Forecast	% Forecast Error for Total Jobs	Year of Forecast	% Forecast Error for Total Jobs
1986	- 1.4	1999	0.0	2012	- 0.4
1987	- 0.8	2000	0.0	2013	- 0.0
1988	- 1.2	2001	+ 0.3	2014	+ 1.1
1989	- 0.6	2002	+ 0.3	2015	+ 0.2
1990	+ 0.8	2003	+ 1.0	2016	- 0.3
1991	+ 1.4	2004	+ 0.2	2017	- 0.3
1992	+ 0.5	2005	+ 0.4	2018	+ 0.4
1993	+ 1.3	2006	+ 0.7	2019	- 1.8
1994	n.a.	2007	0.0	2020	+ 1.0
1995	+ 0.2	2008	+ 0.6	2021	- 0.0
1996	+ 0.3	2009	+ 1.0	2022	+ 0.9
1997	+ 0.4	2010	- 2.3		
1998	- 0.5	2011	- 0.6		

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

Average absolute forecast error 1986–2022: 0.6%

	Forecast 2022	Actual 2022
Unemployment rate	3.2%	3.4%
Consumer inflation rate	6.1%	8.2%

Forecast Date: March 2022

- In last year's report, we had forecast that Washtenaw County would gain 8,400 jobs in 2022, for an increase of 4.1 percent. We now estimate that the county gained 6,400 jobs last year, an increase of 3.1 percent. Due to revisions to the calendar 2021 job count, our forecast error for the 2022 employment level comes to an over-prediction of 2,000 jobs, or 0.9 percentage points after rounding.
- That forecast error was slightly above our average absolute error of 0.6 percent since 1986.
- As of the preparation of this report, QCEW employment data for the county was available through the second quarter of 2022. With the subsequent release of data for the third quarter of 2022, we now believe that Washtenaw County added nearly 7,000 jobs last year, which would translate to an over-estimate of 1,400 jobs, or 0.7 percent.
- We had forecast that Washtenaw's unemployment rate would decrease from 4.2 percent in 2021 to 3.2 percent in 2022. Washtenaw's unemployment rate actually decreased from 4.3 percent in 2021 to 3.4 percent in 2022.
- Last year, we forecast that local prices would increase by 6.1 percent from 2021 to 2022. Local prices ended up increasing by 8.2 percent last year amid continued supply shortages and spikes in energy and food prices following Russia's invasion of Ukraine.
- Although we slightly over-estimated the strength of Washtenaw County's economy in 2022, the county remains one of the most prosperous and economically healthy areas in the state and the country.

## Appendix B:

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

	Estimate	Forecast			Average Annual Wage
	2022	2023	2024	2025	2021 \$
Total Payroll Jobs (Number of jobs)	213,051	216,795	220,410	224,501	68,116
(Annual percentage change)	(3.1)	(1.8)	(1.7)	(1.9)	
Total Government	81,258	82,640	84,121	85,737	69,921
Federal Government	4,349	4,417	4,476	4,545	92,535
State Government	65,474	66,727	68,068	69,493	70,672
Local Government	11,435	11,497	11,576	11,699	56,896
Total Private	131,792	134,156	136,289	138,764	67,009
Private Goods-Producing	17,166	17,331	17,428	17,651	70,995
Natural resources and mining	342	342	339	336	35,777
Construction	4,657	4,656	4,651	4,741	71,564
Manufacturing	12,168	12,332	12,438	12,574	71,552
Printing and related support activities	1,159	1,166	1,191	1,215	49,505
Chemicals	591	603	617	631	82,429
Plastics and rubber products	725	767	819	874	99,572
Fabricated metals	1,058	1,040	1,027	1,017	61,388
Machinery	983	997	1,015	1,036	76,893
Computer and electronic products	1,524	1,564	1,571	1,583	89,107
Transportation equipment	2,576	2,607	2,580	2,565	68,167
Miscellaneous manufacturing	1,541	1,527	1,510	1,492	83,213
Manufacturing NEC	2,011	2,060	2,109	2,162	60,307
Private Service-Providing	114,626	116,825	118,861	121,113	66,356
Trade, transportation, and utilities	25,555	25,704	25,919	26,149	58,566
Wholesale trade	6,004	6,162	6,330	6,485	85,503
Merchant wholesalers, durable goods	3,581	3,645	3,744	3,847	88,730
Merchant wholesalers, nondurable goods	1,744	1,817	1,869	1,905	78,363
Wholesale electronic markets, agents, brokers	680	700	717	732	87,008
Retail trade	15,094	15,013	14,967	14,934	38,243
Motor vehicle and parts dealers	1,369	1,354	1,359	1,365	74,190
Building material and garden supply dealers	1,355	1,334	1,318	1,304	48,493
Food and beverage retailers	3,091	3,138	3,190	3,245	28,624
General merchandise retailers	3,023	2,963	2,915	2,869	30,661
Health and personal care retailers	1,321	1,341	1,374	1,408	36,373
Retail Trade NEC	4,934	4,882	4,811	4,743	34,977
Transportation and warehousing	4,014	4,103	4,199	4,309	85,248
Utilities	428	426	423	421	159,375
Information	4,234	4,272	4,324	4,385	125,832
Publishing	1,190	1,191	1,175	1,160	111,667
Telecommunications	591	566	542	521	77,922
Computing infrastructure providers	1,111	1,143	1,186	1,233	105,685
Information NEC	1,342	1,372	1,421	1,472	175,033
Financial activities	6,500	6,509	6,598	6,695	87,526
Finance and insurance	4,000	4,040	4,109	4,175	104,013
Credit intermediation and related activities	2,077	2,081	2,112	2,134	103,297
Insurance carriers and related activities	862	860	865	870	78,950
Finance and insurance NEC	1,061	1,099	1,132	1,170	128,933
Real estate and rental and leasing	2,500	2,469	2,489	2,520	58,254

## Appendix B:

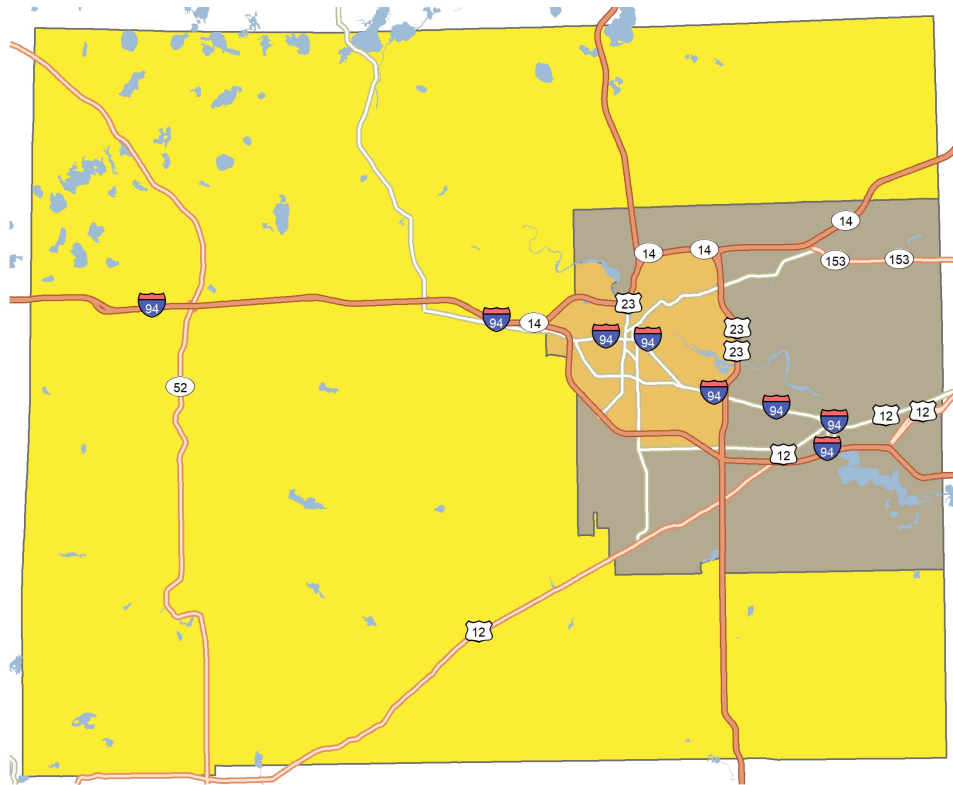
**Forecast of Jobs in Washtenaw County by Detailed Industry**

	Estimate	Forecast			Average Annual Wage
	2022	2023	2024	2025	2021 \$
Professional and business services	28,921	29,475	29,951	30,571	90,521
Professional and technical services	18,725	19,116	19,471	19,923	105,811
Legal services	976	968	975	984	92,918
Accounting and bookkeeping services	583	593	595	597	74,334
Architectural and engineering services	4,744	4,818	4,891	4,995	127,133
Specialized design services	237	240	242	244	75,870
Computer systems design and related services	3,237	3,339	3,467	3,635	118,319
Management and technical consulting services	2,582	2,647	2,697	2,749	103,625
Scientific research and development services	4,526	4,595	4,615	4,644	101,088
Advertising, PR, and related services	209	213	206	201	91,352
Other professional and technical services	1,631	1,703	1,781	1,873	57,988
Management of companies and enterprises	2,109	2,166	2,179	2,216	148,625
Administrative support and waste management	8,087	8,193	8,301	8,432	45,459
Private education and health services	28,342	29,084	29,692	30,270	59,658
Education services	3,019	3,158	3,282	3,396	43,443
Health care and social assistance	25,323	25,927	26,410	26,874	61,582
Ambulatory health care	12,140	12,538	12,896	13,247	82,007
Offices of physicians	5,983	6,187	6,384	6,595	111,596
Other Ambulatory Health Care Services	6,158	6,351	6,512	6,652	54,736
Hospitals, nursing and residential care facilities, and social assistance	13,182	13,389	13,514	13,627	43,648
Leisure and hospitality	15,731	16,316	16,826	17,404	24,382
Arts, entertainment, and recreation	2,071	2,209	2,283	2,368	28,085
Accommodation and food services	13,659	14,107	14,543	15,036	23,843
Accommodation	1,194	1,213	1,216	1,218	29,976
Food services and drinking places	12,465	12,894	13,327	13,818	23,344
Restaurants and other eating places	10,785	11,127	11,485	11,892	22,608
Full-service restaurants	5,406	5,582	5,792	6,046	26,437
Limited-service restaurants	4,606	4,749	4,899	5,055	19,848
Other Restaurants and Other Drinking Places	774	796	794	790	15,435
Special food services	711	781	838	899	31,276
Drinking places, alcoholic beverages	969	986	1,005	1,028	26,823
Other services	4,651	4,714	4,783	4,856	40,902
Private unclassified service-providing	707	752	768	784	59,437

Addendum

Unemployment Rate	3.4	3.5	3.5	3.1
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# Washtenaw County PUMA Regions



- East Central, Ann Arbor City
- East Central, Outside Ann Arbor City
- West, Northeast, & Southeast