Draft
Economic Analysis
The City of Royal Oak
Oct 23, 2023

Prepared by:

LandUseUSA
UrbanStrategies

In Collaboration with:

DPZ
C⚬DESIGN

Economic Analysis

Section 4-A

Economic Analysis   Acknowledgements

This Economic Analysis for the City of Royal Oak is the result of a collaborative planning effort among public and private stakeholders led by the city's Planning Commission and with considerable support and dedication by staff within the city's Department of Planning and Economic Development. It supports a significant planning initiative underway by the city's consultants, DPZ CoDesign, and has been used as an economic foundation in DPZ's development of the new citywide Master Plan.

This document is one of four that have been prepared during the planning process. It focuses on the Economic Analysis (Document 04) and is complemented by a separate Retail Market analysis (Document 02) and retail portions of a Real Estate Analysis (included in Document 03). In addition, Document 01 is designed to focus on a separate but correlated Residential Analysis that focuses on the Royal Oak's potential for new housing choices.

Four Documents	Industry
01 Residential Analysis	Housing
02 Retail Market Analysis	Retail Trade
03 Real Estate Analysis	Housing + Retail
04 Economic Analysis	All Industries

The market analyses listed above have all been prepared by Sharon Woods, President of LandUseUSA | Urban Strategies. The firm was founded in 2008 and is located within the Greater Lansing Metropolitan Area. Lansing also is home to the state's capital, department of treasury, land bank authority, economic development corporation (MEDC), housing and development authority (MSHDA), and community and economic development association (CEDAM). LandUseUSA's contact information is provided on the following page along with DPZ CoDesign's.

Prime Contractor and Planning Lead
DPZ CoDesign, Inc
Matthew Lambert, AICP, CNUa
Managing Partner
(305) 644-1023
info@dpz.com

Subcontractor and Market Analyst
LandUseUSA | Urban Strategies
Sharon Woods, CRE, CNUa, President
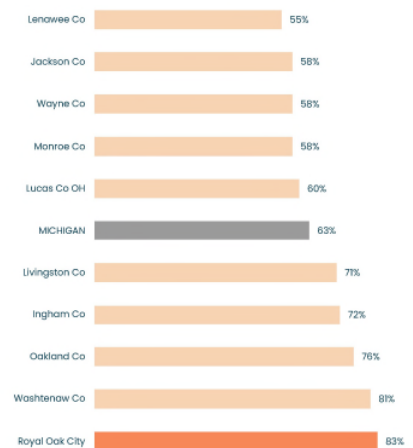(517) 290-5531
sharonwoods@landuseusa.com

Economic Analysis

Educational Attainment

The economic analysis for the City of Royal Oak focuses on a study of educational attainment, labor force participation and unemployment rates, employment and market share by industry, net worker outflow, working from home patterns, and place visits reported by Google. Most of the analysis focuses on the City of Royal Oak with comparisons to Oakland County and the Southeast Michigan region.

Education usually precedes employment, so it is discussed first. Based on the economic analysis, 83% of all adults over 24 years of age have some college education or a college degree. This is exceptionally high compared to Oakland County (75%) and the State of Michigan (63%).

Percent w/Some College | Royal Oak City
% of adults 25+ years w/some college or a degree for selected places, 2021.

Place	Percent
Lenawee Co	55%
Jackson Co	58%
Wayne Co	58%
Monroe Co	58%
Lucas Co OH	60%
MICHIGAN	63%
Livingston Co	71%
Ingham Co	72%
Oakland Co	76%
Washtenaw Co	81%
Royal Oak City	83%

Based on preliminary SAT tests among 8th graders, 69.5% of Royal Oak Schools' students have advanced or proficient scores in the English Language Arts (ELA). This is slightly higher than the average for Oakland County (67%) and surpassed only by the Washtenaw Intermediary School District (ISD, 71.1%) and Livingston Educational Service Agency (ESA, 73.4%).

SAT tests also indicate that 44.1% of Royal Oak 8th graders have advanced or proficient scores in Math, Science, and Social Studies. Again, this is higher than the average for Oakland County (40.5%) and surpassed only by the Washtenaw ISD (47.1%) and Livingston ESA (45.0%).

The relatively high SAT scores for Royal Oak's young students are an advantage for the city and will help it compete for new employers. When seeking new locations, employers will seriously consider their ability to effectively compete for skilled workers. In turn, migrating workers often will seek cities with good employment opportunities and short commutes.

Economic Analysis   Labor Force, Unemployment

The economic analysis also reveals that for the City of Royal Oak, 76% of all adults over 15 years of age are actively participating in the labor force. This is exceptionally high compared to averages for Oakland County (66%) and the State of Michigan (62%). Furthermore, the average of 66% for Oakland County is higher than every other county in the region, including Washtenaw (64%) and Livingston (65%) counties.

The City of Royal Oak also has an exceptionally low unemployment rate of just 3.1%, compared to 4.8% for Oakland County and 6.2% for the State of Michigan. Trendline data for Oakland County shows that unemployment had been 13% in 2010, declined to 5% by 2015, and reached a low of 4% in 2017, 2018, and 2019.

County unemployment rates increased slightly to 5% in 2020 and 6% in 2021, which probably was temporary and attributable to the recent Covid-19 health pandemic. Adjacent Livingston County followed a similar pattern, whereas Wayne County was more deeply impacted by the pandemic. In 2019, Wayne County's unemployment rate had fallen to 7% from a high of 21% in 2010. During the pandemic, it increased to 9% in 2020 and 11% in 2021 – but it probably has recovered since.

Percent Unemployment | Royal Oak City

% Labor Force Participation | Royal Oak
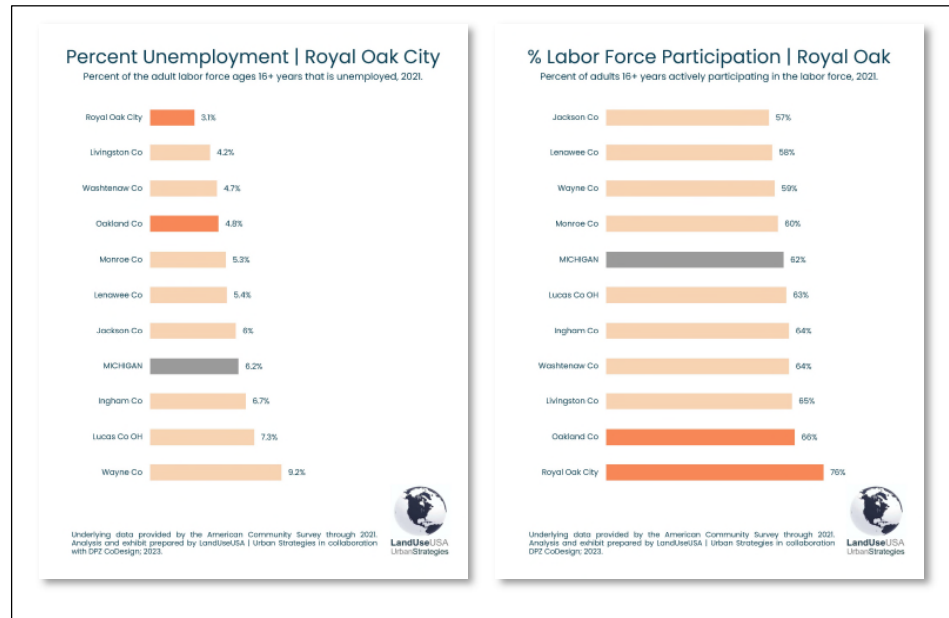
Economic Analysis   Introduction

Within the City of Royal Oak, the manufacturing industry has the largest number of full-time workers (6,776) over 15 years of age. The second largest sector is professional, scientific, and technical trades (4,329 full-time workers); followed by health care and social assistance (3,642 workers); and finance, insurance, and real estate (3,485). These also are the top four industry leaders for Oakland County overall.

Total Employment by Industry Sector
Full Time Only, Ages 16+
The City of Royal Oak, Michigan | 2021

Total Employment by Industry Sector
Full Time Only, Ages 16+
Oakland County, Michigan | 2021
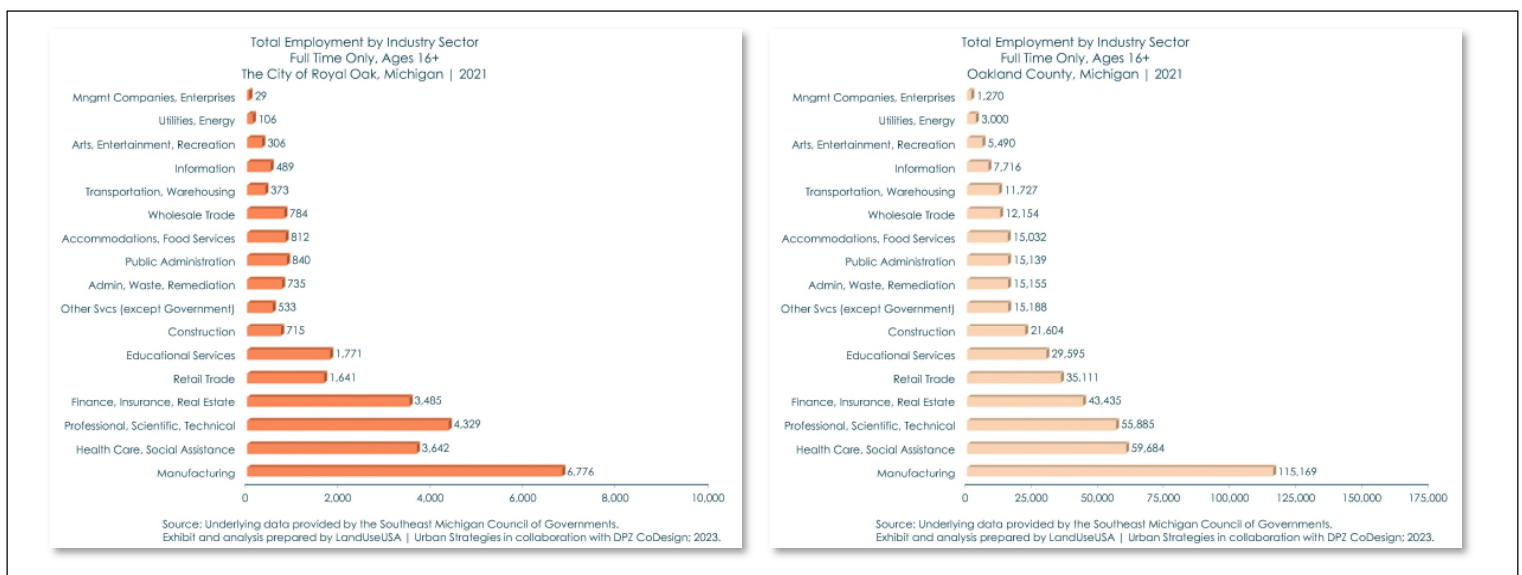
In comparison, several industries in Royal Oak appear to be under-represented compared to Oakland County, particularly educational services (1,771 full-time workers) and retail trade (1,641 workers). Although they are small industries, construction (715), transportation and warehousing (373), and other services excluding government (533) also seem under-represented in the city.

The study also includes an industry market share analysis that compares most cities in Michigan based on total reported revenues as a share of total personal income (revenues / total personal income = market share). Cluster charts are used in the analysis to demonstrate how Royal Oak compares to other cities of similar size (i.e., similar total personal income).

This narrative does not attempt to provide an in-depth explanation of the methodology behind the market share analysis, and instead focuses on key observations and conclusions. In general, the City of Royal Oak falls short of its full market potential in nearly every industry except restaurants and drinking establishments; and health care (including social assistance).

These results support earlier observations that there is an upside opportunity for economic growth in Royal Oak by attracting new employers with good paying jobs, and particularly in educational services and retail trade sectors. The city would benefit from having a community college or trade school; and that there also is an opportunity to improve retail shopping choices throughout the city – including destination stores in the downtown and conveniences at neighborhood nodes.
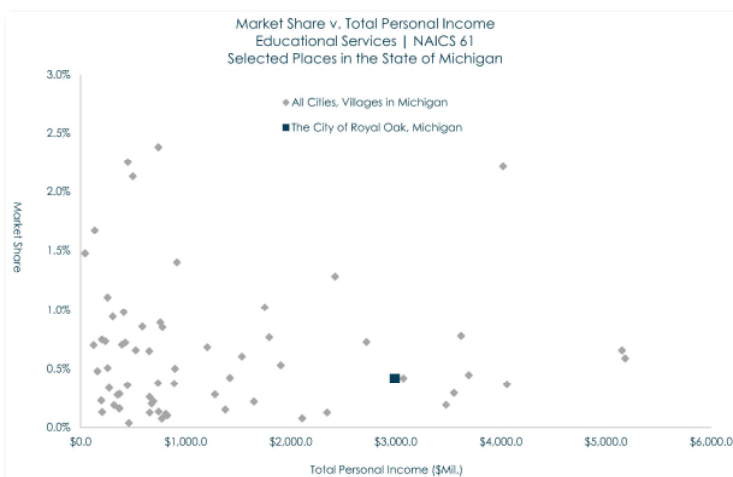
Economic Analysis   Net Worker Outflow

The City of Royal Oak currently has a net worker outflow of -3,345 daily commuters, representing about -9.5% of all local resident workers. The city is retaining over 5,600 of its resident workers (in other words, they both live and work in the city) and drawing +26,100 commuters to work in the city although they live in other places. However, the city also is losing -29,445 of its resident commuters to jobs located in competing markets places, resulting in a net outflow of -3,345 workers (26,100 - 29,445 = -3,345). This indicates an opportunity to close the gap with the creation of new jobs within the city, enabling it to retain more of its resident workers while achieving more worker inflow from beyond.

When local workers commute into the City of Royal Oak for local jobs, most are arriving from Detroit, Troy, Warren, Sterling Heights, Madison Heights, Berkley, and Southfield. When local residents commute out of Royal Oak for jobs in competing places, most are going to Detroit, Troy, Southfield, Birmingham, Warren, Auburn Hills, and Farmington Hills.

These results can be used by prospective employers to help identify their area of draw when competing for skilled workers. Results also can be used by the prospective developers when allocate marketing dollars and competing for new home buyers and renters.
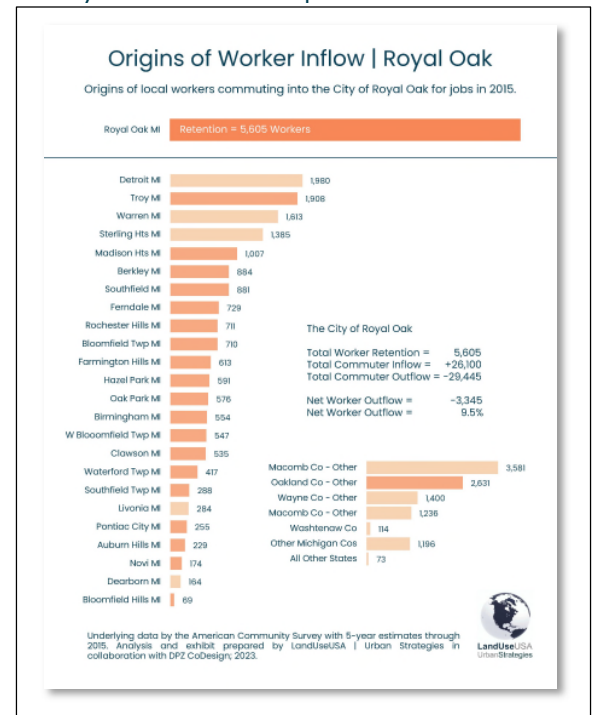
Economic Analysis   Working from Home

In the year 2019 and prior to the recent Covid-19 health pandemic, only 5% of Royal Oak's workers reported that they worked from home. The pandemic had its greatest impact on employment in the second quarter of 2020, but those impacts had mostly recovered by the end of that year. Even so, a remarkable 15% of the city's workers reported that they were working from home in 2021 – essentially tripling the rate.

The 15% work from home statistic is higher than Oakland County and the Southeast Michigan region. In Oakland County, working from home increased from 5% before the pandemic to 12% after. For the region, working from home increased from 4% to only 10%.

Depending on the perspective, these results could hint at decline in demand for office space. They also could suggest a need to add community (and especially downtown) amenities that help local workers stay socially connected while working from home. Examples include co-working space; small business and office support services; restaurants and eateries; and square, parks, and other public open spaces.
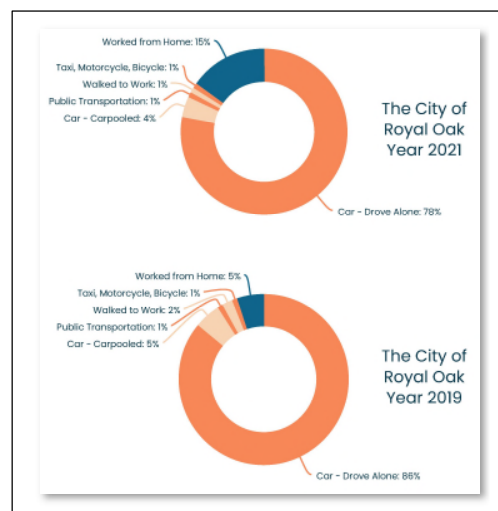
Economic Analysis   Place Visits by Google

Google collects data from handheld devices like mobile phones and iPads, and the results demonstrate how Google online visitors have spent their time in different types of places since the recent Covid-19 health pandemic. Based on the results, visitors throughout Oakland County used their mobile devices at workplaces about -35% less than they had prior to the pandemic. In other words, they are spending about -35% less of their time at offices away from home.

However, Oakland County visitors also are spending only +10% more of their time in residential places – suggesting that 20% are spending more time somewhere other than work or home. Deduction suggests that they might be going to other places to work, such as co-working spaces, public open spaces like parks, and/or cafes.

Additional Google data suggests that visitors triple their time spent at parks and similar types of places during peak summer months. As might be expected, those visits significantly decline during the winter months.

Again, this data points to a probable need and opportunity to create downtown and community amenities that help local workers feel socially connected while operating home-based businesses or otherwise working from home.
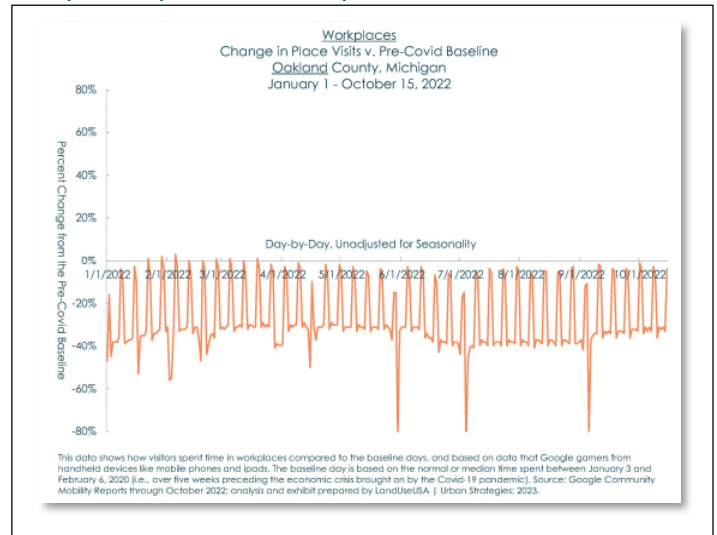
DRAFT
October 23, 2023

Section 4-B

Percent w/Some College | Royal Oak City

% of adults 25+ years w/some college or a degree for selected places, 2021.

Place	Percent
Lenawee Co	55%
Jackson Co	58%
Wayne Co	58%
Monroe Co	58%
Lucas Co OH	60%
MICHIGAN	63%
Livingston Co	71%
Ingham Co	72%
Oakland Co	76%
Washtenaw Co	81%
Royal Oak City	83%
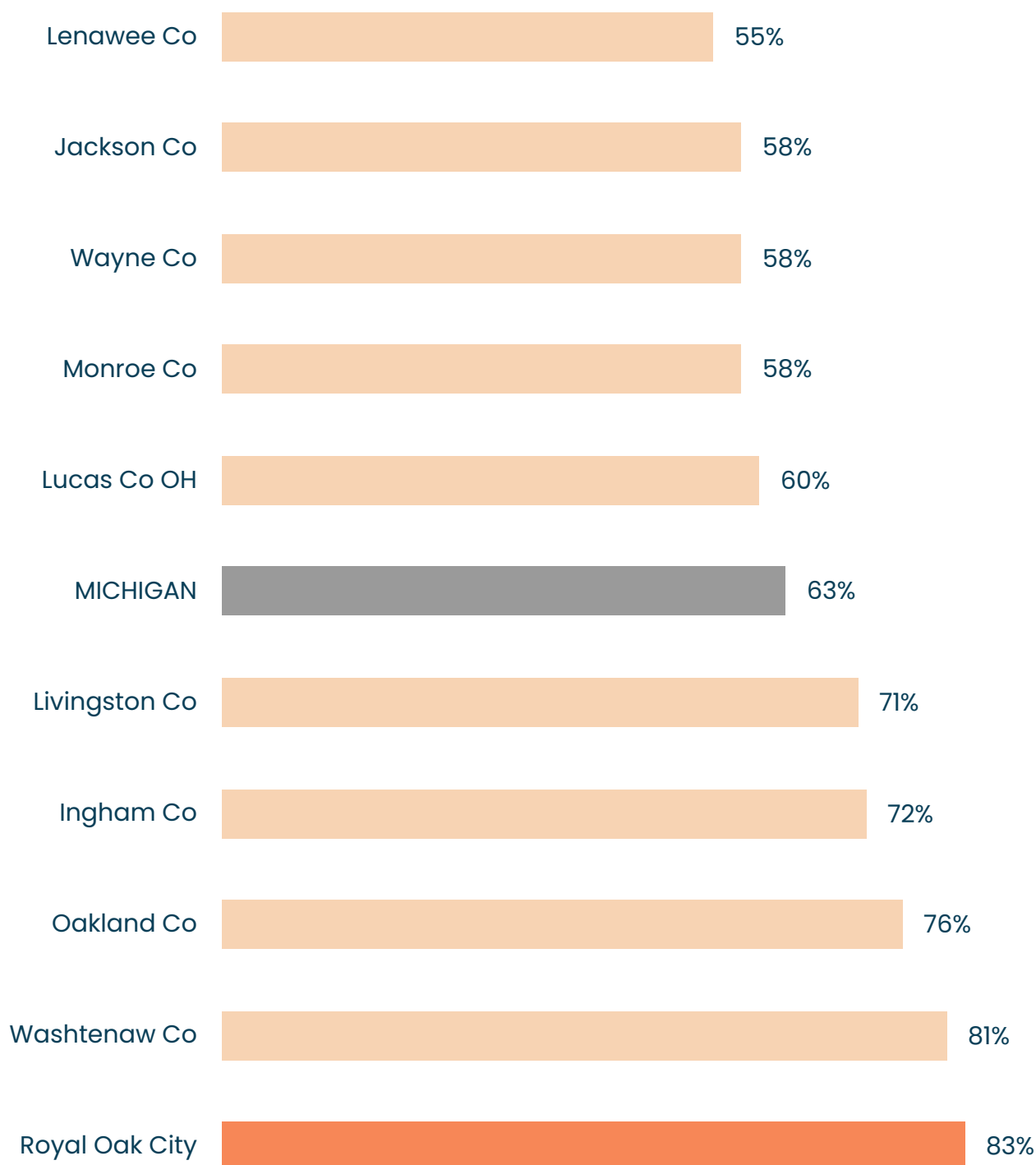
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Advanced or Proficient Scores from Preliminary SAT Tests
Share of 8th Graders | English Language Arts (ELA)
Selected Regional School Districts in Michigan | 2022

District	Share
Wayne RESA	48.0%
Muskegon Area ISD	50.9%
Calhoun ISD	52.1%
Hillsdale ISD	52.5%
Genesee ISD	54.9%
Saginaw ISD	55.0%
Shiawassee Region ISD	57.2%
Jackson ISD	57.3%
Ingham ISD	59.6%
Kalamazoo RESA	59.9%
Macomb ISD	60.5%
Lenawee ISD	62.1%
Monroe ISD	62.3%
Kent ISD	64.8%
Oakland Schools (Avg)	67.0%
Royal Oak Schools	69.5%
Washtenaw ISD	71.1%
Livingston ESA	73.4%

Share of Students Testing as Advanced or Proficient in English Language Arts (ELA)

Advanced or Proficient Scores from Preliminary SAT Tests
Share of 8th Graders | Math, Science, Social Studies
Selected Regional School Districts in Michigan | 2022

District	Share
Wayne RESA	22.8%
Muskegon Area ISD	25.1%
Calhoun ISD	25.6%
Hillsdale ISD	26.4%
Genesee ISD	26.4%
Saginaw ISD	27.3%
Shiawassee Region ISD	28.4%
Jackson ISD	27.6%
Ingham ISD	32.5%
Kalamazoo RESA	36.5%
Macomb ISD	31.0%
Lenawee ISD	32.4%
Monroe ISD	31.7%
Kent ISD	39.9%
Oakland Schools (Avg)	40.5%
Royal Oak Schools	44.1%
Washtenaw ISD	47.1%
Livingston ESA	45.0%

Share of Students Testing as Advanced or Proficient in Math, Science, Social Studies

Underlying data provided by the Michigan Department of Education through a portal provided by the Detroit News. Analysis and exhibit prepared by LandUseUSA | Urban Strategies; 2023. All figures are based on PSAT testing for eighth graders only.

Section 4-C

% Labor Force Participation | Royal Oak

Percent of adults 16+ years actively participating in the labor force, 2021.
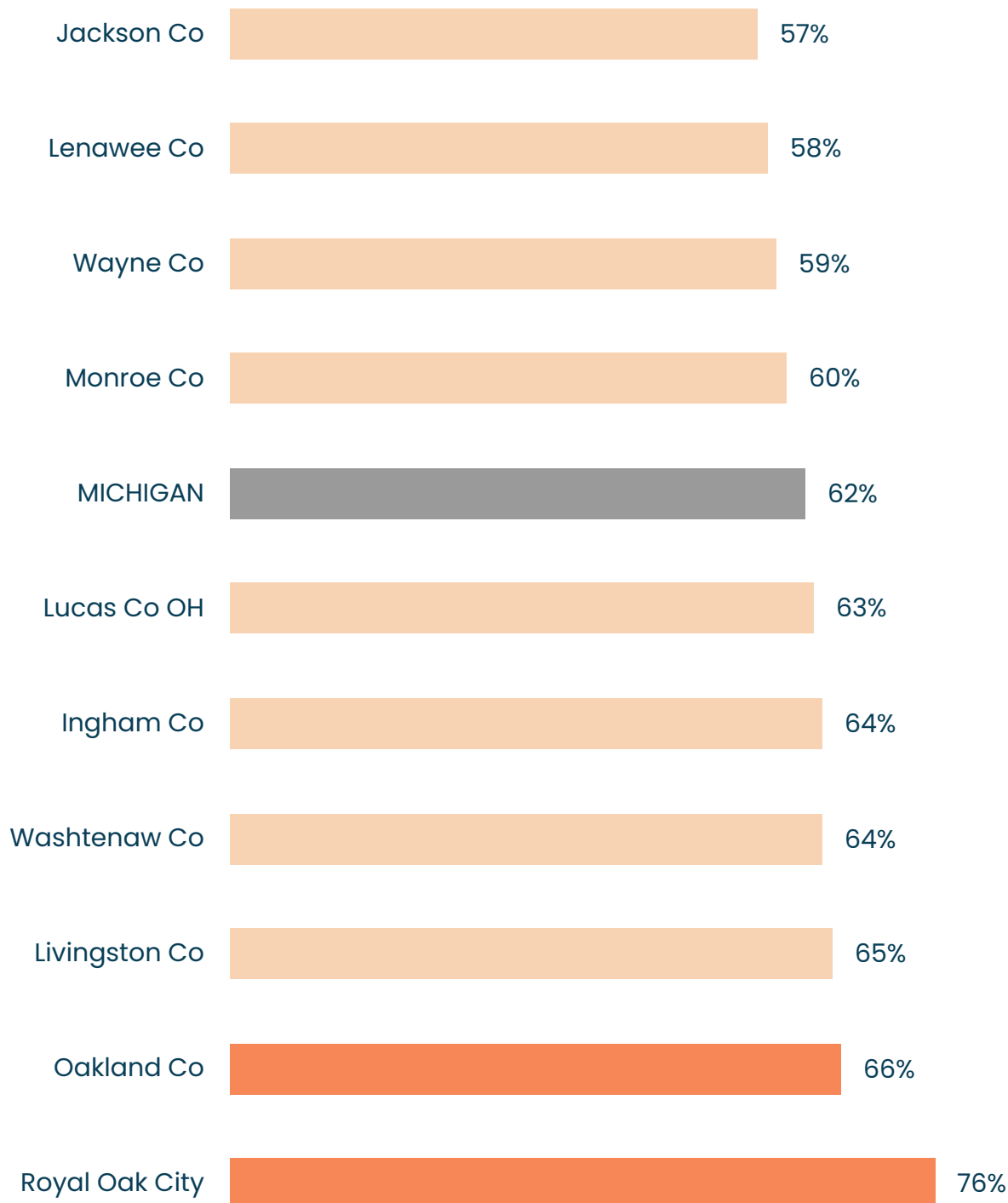
Jackson Co	57%
Lenawee Co	58%
Wayne Co	59%
Monroe Co	60%
MICHIGAN	62%
Lucas Co OH	63%
Ingham Co	64%
Washtenaw Co	64%
Livingston Co	65%
Oakland Co	66%
Royal Oak City	76%

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Percent Unemployment | Royal Oak City

Percent of the adult labor force ages 16+ years that is unemployed, 2021.
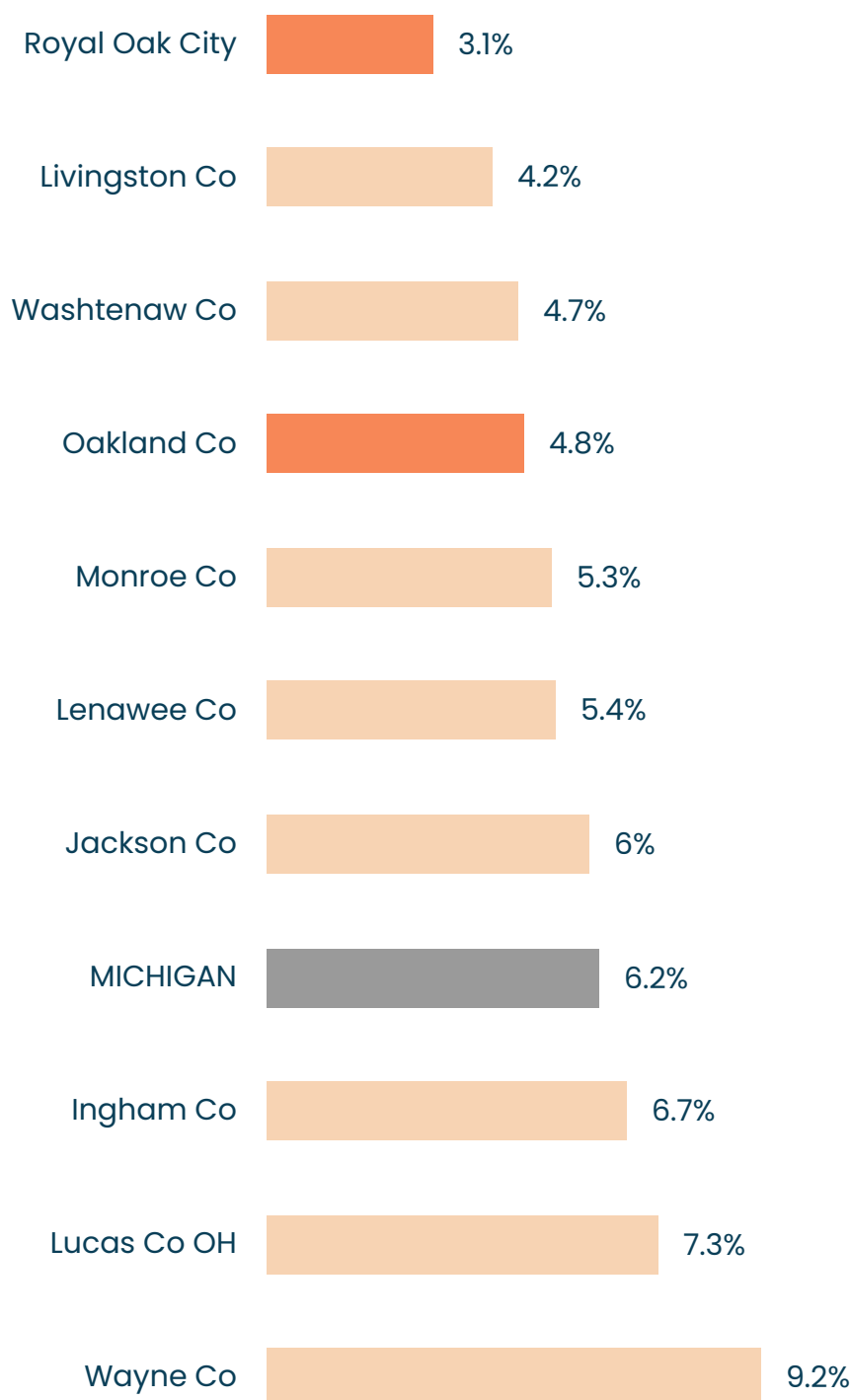
Royal Oak City	3.1%
Livingston Co	4.2%
Washtenaw Co	4.7%
Oakland Co	4.8%
Monroe Co	5.3%
Lenawee Co	5.4%
Jackson Co	6%
MICHIGAN	6.2%
Ingham Co	6.7%
Lucas Co OH	7.3%
Wayne Co	9.2%

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UrbanStrategies

Unemployment Rates | Oakland and Livingston Cos
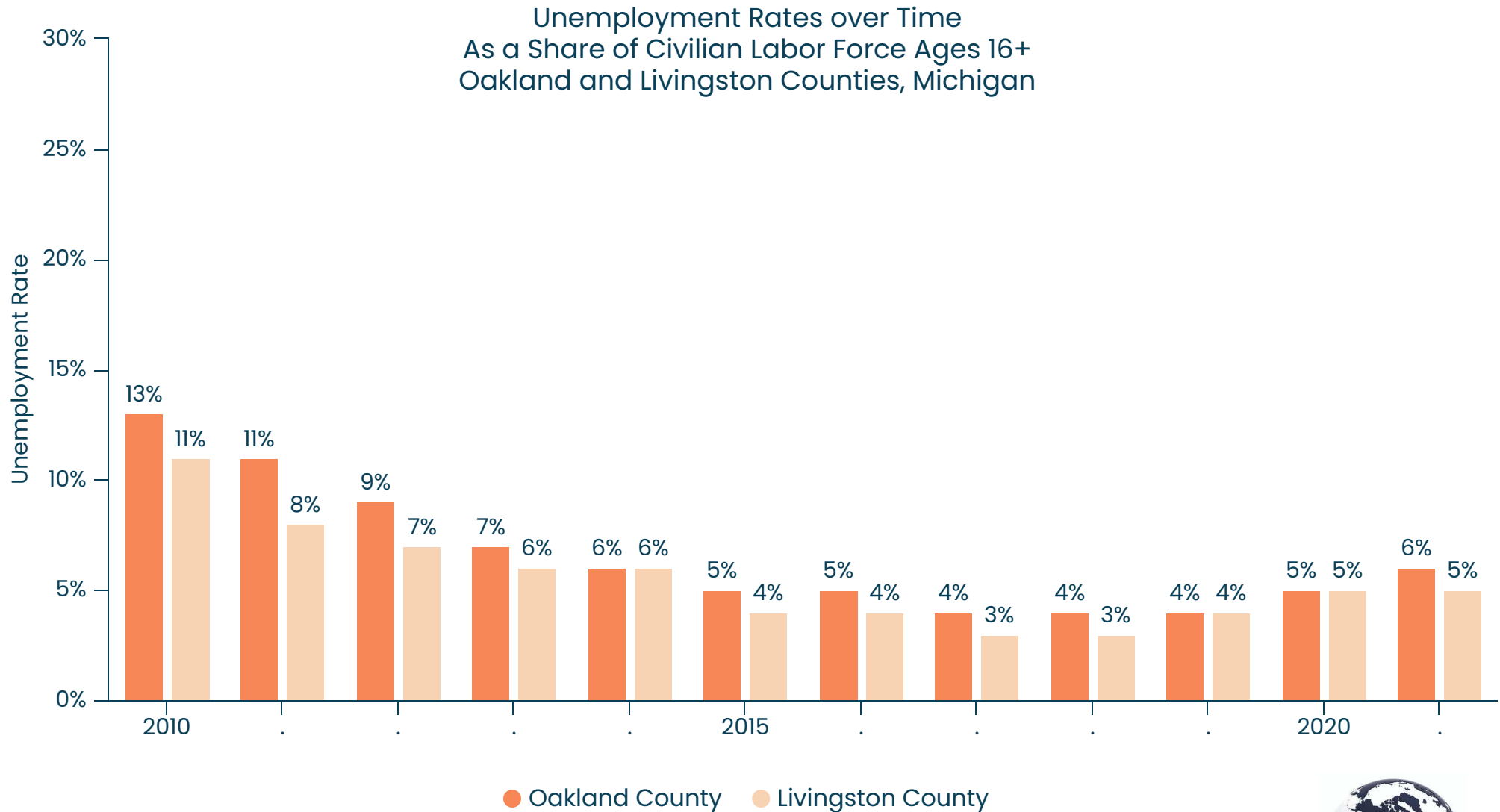
**Unemployment Rates over Time
As a Share of Civilian Labor Force Ages 16+
Oakland and Livingston Counties, Michigan**

● Oakland County ● Livingston County

Source: Underlying data by the American Community Survey with 1-year and 5-year estimates through 2021. Analysis & exhibit prepared by LandUseUSA | Urban Strategies in collaboration with DPZ CoDesign; 2023.

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Unemployment Rates | Oakland and Wayne Cos
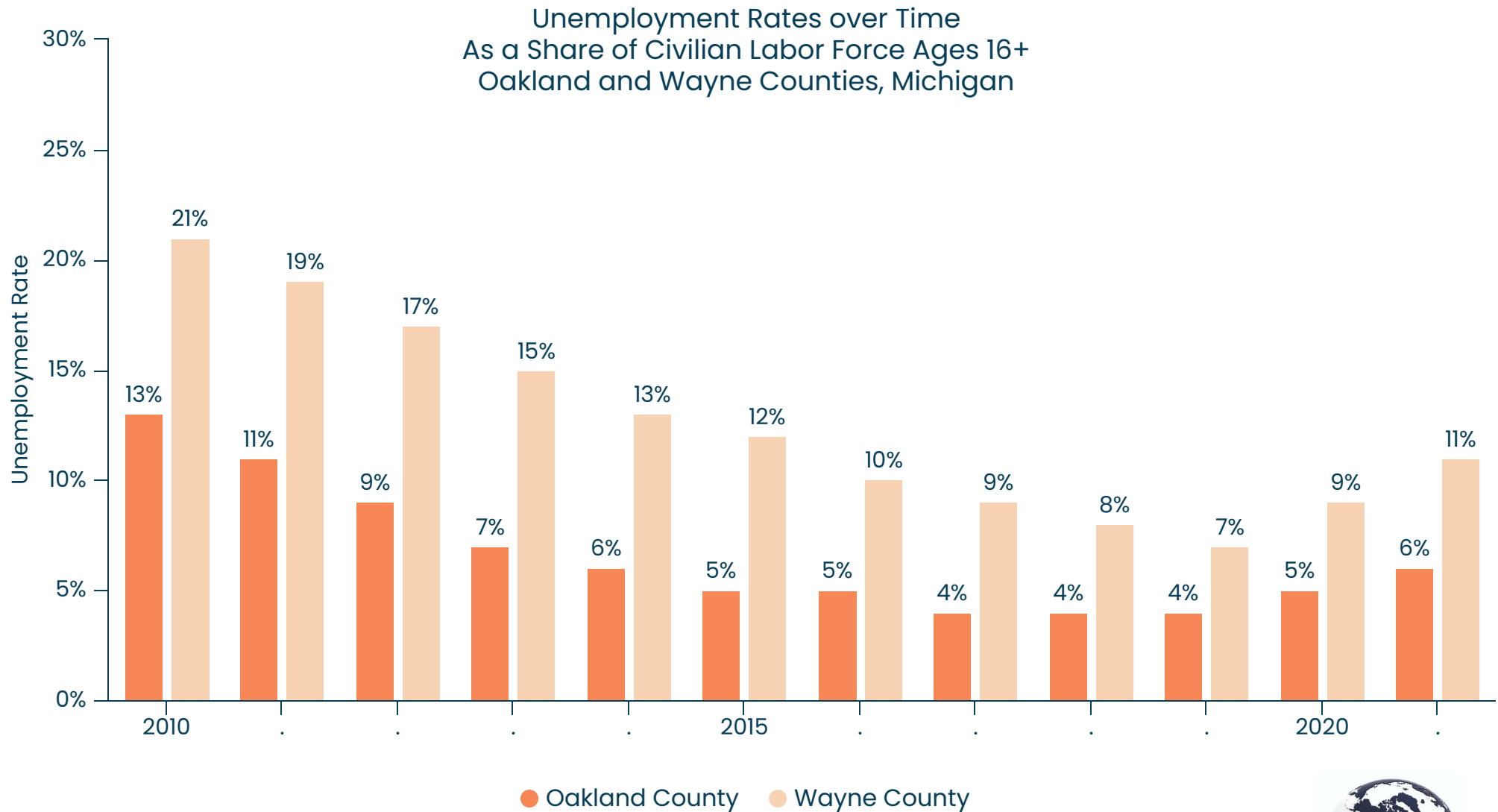
Unemployment Rates over Time
As a Share of Civilian Labor Force Ages 16+
Oakland and Wayne Counties, Michigan

Unemployment Rate

Year	Oakland County	Wayne County
2010	13%	21%
	11%	19%
	9%	17%
	7%	15%
	6%	13%
2015	5%	12%
	5%	10%
	4%	9%
	4%	8%
	4%	7%
2020	5%	9%
	6%	11%

● Oakland County   ● Wayne County

Source: Underlying data by the American Community Survey with 1-year and 5-year estimates through 2021. Analysis & exhibit prepared by LandUseUSA | Urban Strategies in collaboration with DPZ CoDesign; 2023.

LandUseUSA
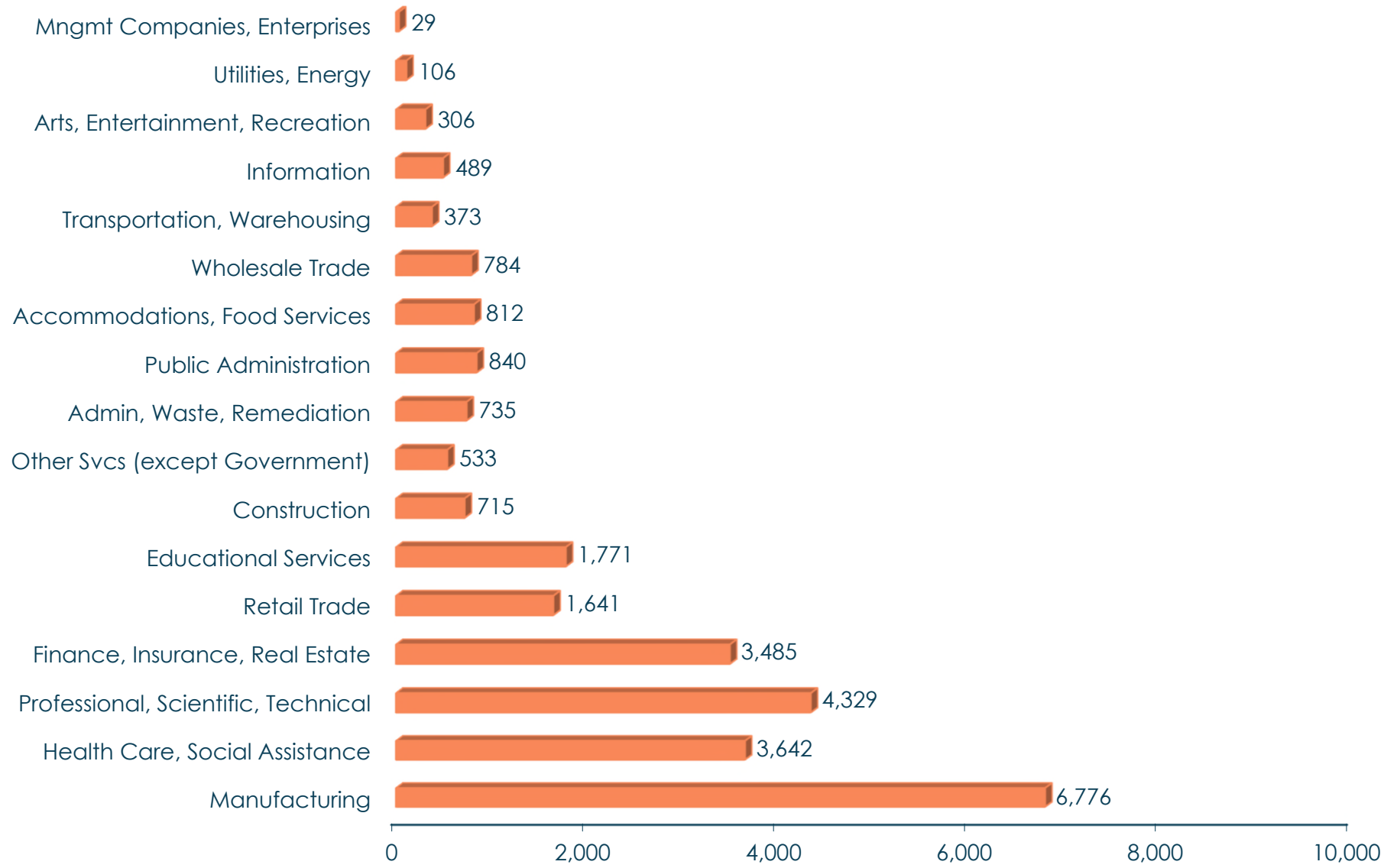UrbanStrategies

Section 4-D

Total Employment by Industry Sector
Full Time Only, Ages 16+
The City of Royal Oak, Michigan | 2021

Industry Sector	Employment
Mngmt Companies, Enterprises	29
Utilities, Energy	106
Arts, Entertainment, Recreation	306
Information	489
Transportation, Warehousing	373
Wholesale Trade	784
Accommodations, Food Services	812
Public Administration	840
Admin, Waste, Remediation	735
Other Svcs (except Government)	533
Construction	715
Educational Services	1,771
Retail Trade	1,641
Finance, Insurance, Real Estate	3,485
Professional, Scientific, Technical	4,329
Health Care, Social Assistance	3,642
Manufacturing	6,776

Source: Underlying data provided by the Southeast Michigan Council of Governments.
Exhibit and analysis prepared by LandUseUSA | Urban Strategies in collaboration with DPZ CoDesign; 2023.

Total Employment by Industry Sector
Full Time Only, Ages 16+
Oakland County, Michigan | 2021

| Industry Sector	Employment
Mngmt Companies, Enterprises	1,270
Utilities, Energy	3,000
Arts, Entertainment, Recreation	5,490
Information	7,716
Transportation, Warehousing	11,727
Wholesale Trade	12,154
Accommodations, Food Services	15,032
Public Administration	15,139
Admin, Waste, Remediation	15,155
Other Svcs (except Government)	15,188
Construction	21,604
Educational Services	29,595
Retail Trade	35,111
Finance, Insurance, Real Estate	43,435
Professional, Scientific, Technical	55,885
Health Care, Social Assistance	59,684
Manufacturing	115,169
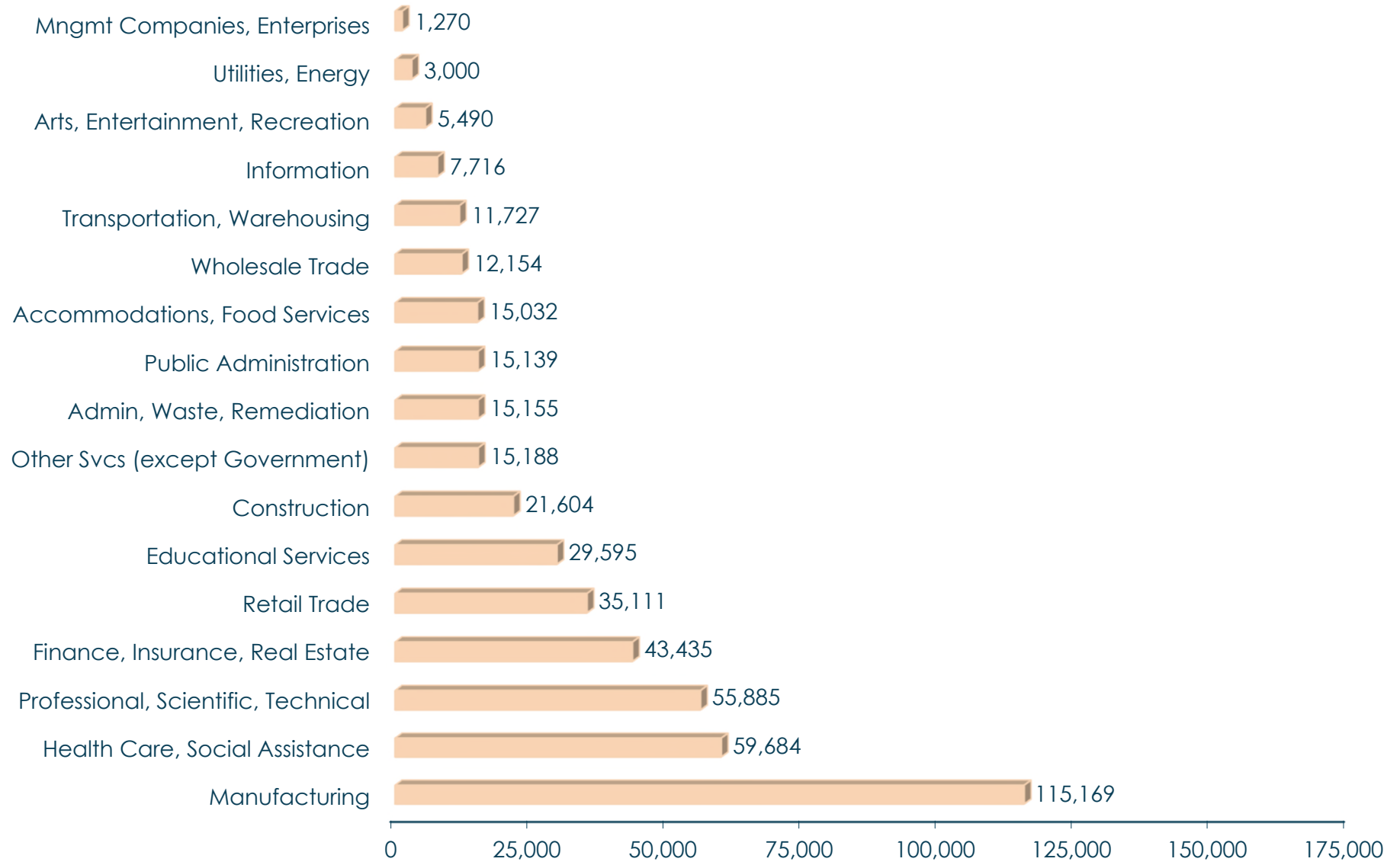
Source: Underlying data provided by the Southeast Michigan Council of Governments.
Exhibit and analysis prepared by LandUseUSA | Urban Strategies in collaboration with DPZ CoDesign; 2023.

Market Share v. Total Personal Income
Hotels, Overnight Accommodations | NAICS 721
Selected Places in the State of Michigan
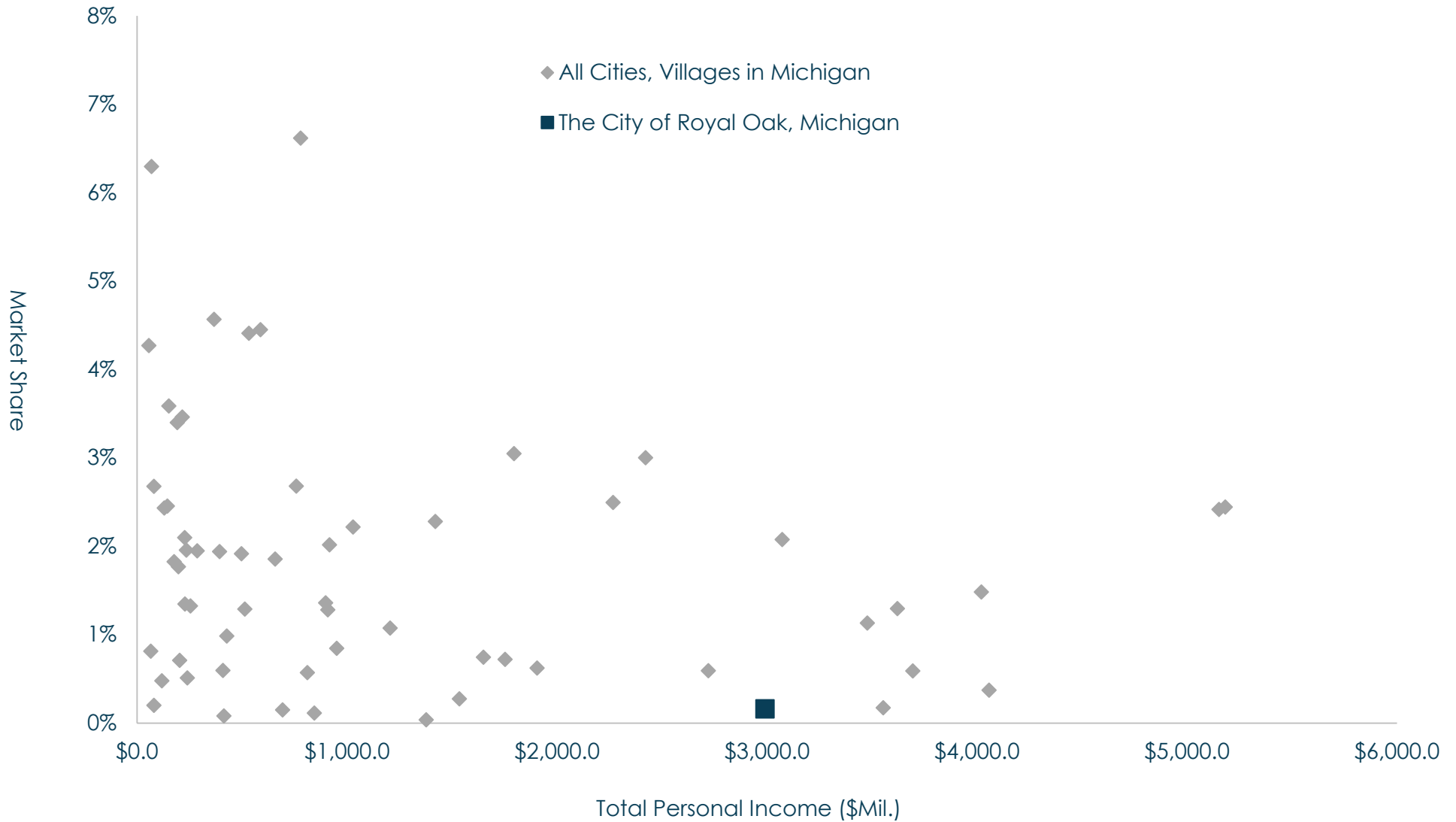
Market Share

◆ All Cities, Villages in Michigan

■ The City of Royal Oak, Michigan

Total Personal Income ($Mil.)

Market Share v. Total Personal Income
Total Retail Trade | NAICS 44-45
Selected Places in the State of Michigan
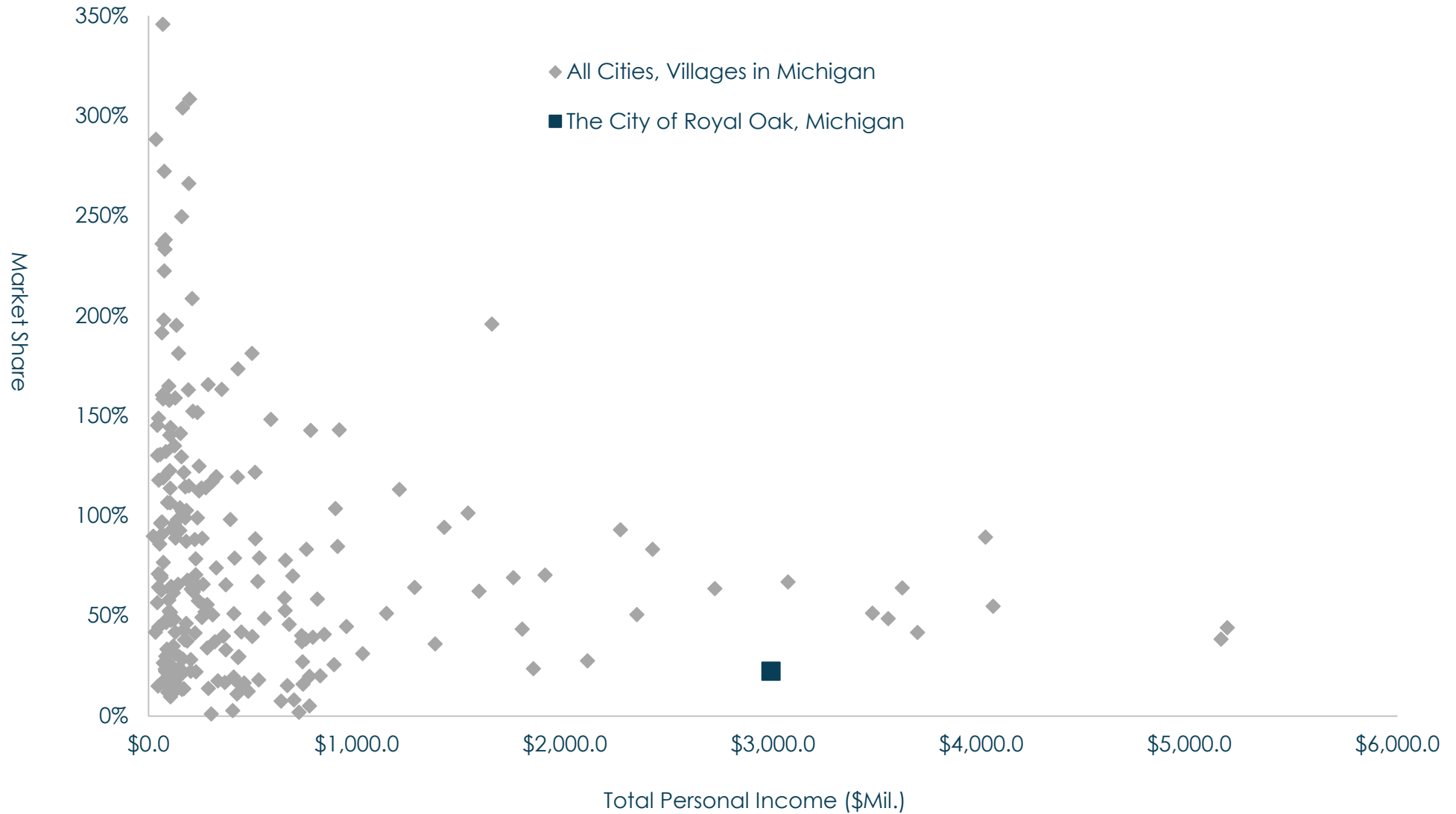
◆ All Cities, Villages in Michigan

■ The City of Royal Oak, Michigan

Market Share
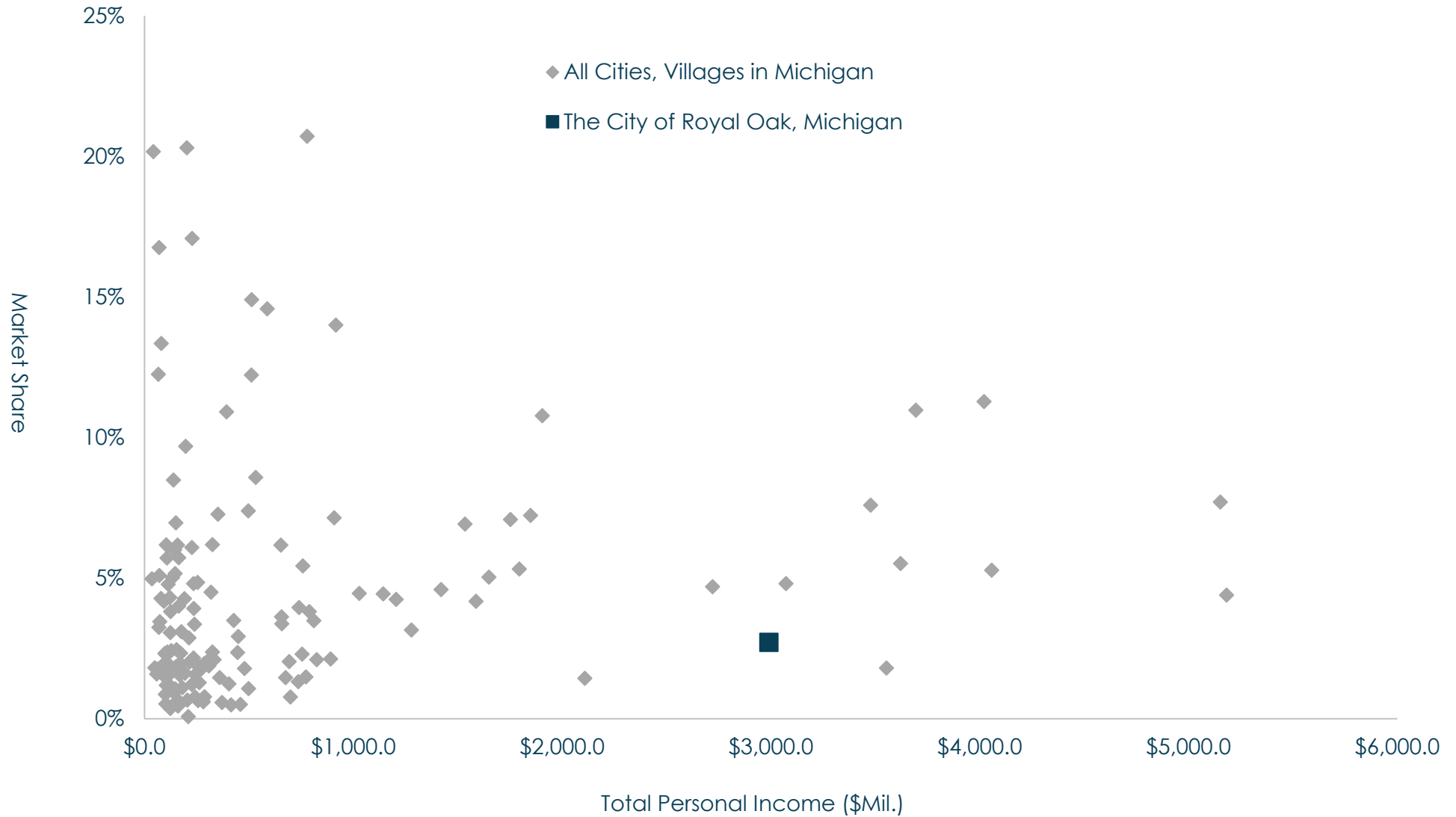
Total Personal Income ($Mil.)

Methodology, analysis, and exhibit prepared by LandUseUSA | Urban Strategies © 2023 with all rights reserved. Market share is a measure of sales (or revenues) as a share of Total Personal Income for each respective level of geography. Underlying data from the 2017 U.S. Economic Census; 2020 Decennial Census; and 2019 (5-yr) American Community Survey.

Market Share v. Total Personal Income
Real Estate, Rental, Leasing | NAICS 53
Selected Places in the State of Michigan

◆ All Cities, Villages in Michigan

■ The City of Royal Oak, Michigan

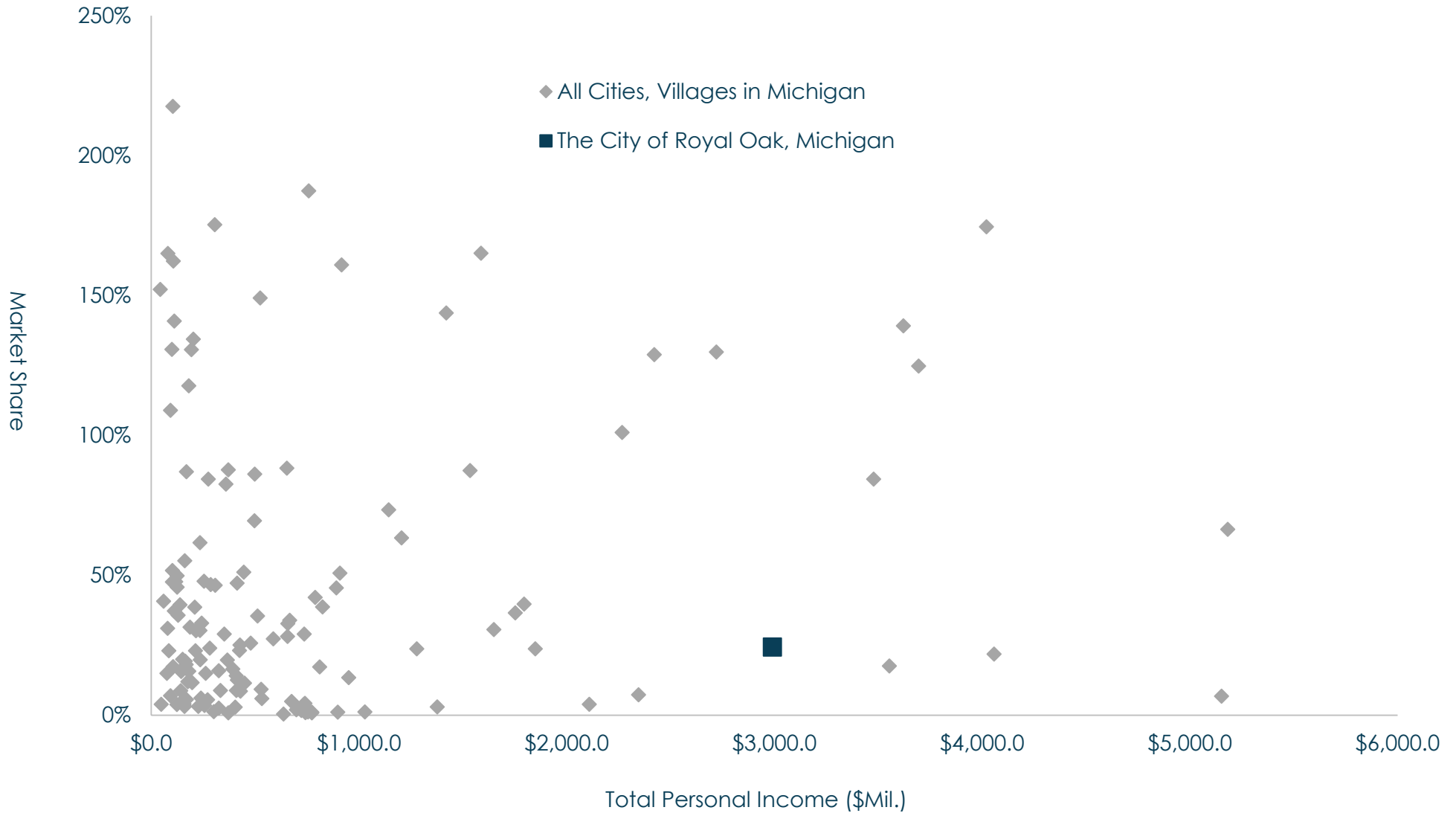Market Share

Total Personal Income ($Mil.)

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Market Share v. Total Personal Income
Wholesale Trade | NAICS 42
Selected Places in the State of Michigan

◆ All Cities, Villages in Michigan

■ The City of Royal Oak, Michigan

Market Share (y-axis): 0%, 50%, 100%, 150%, 200%, 250%

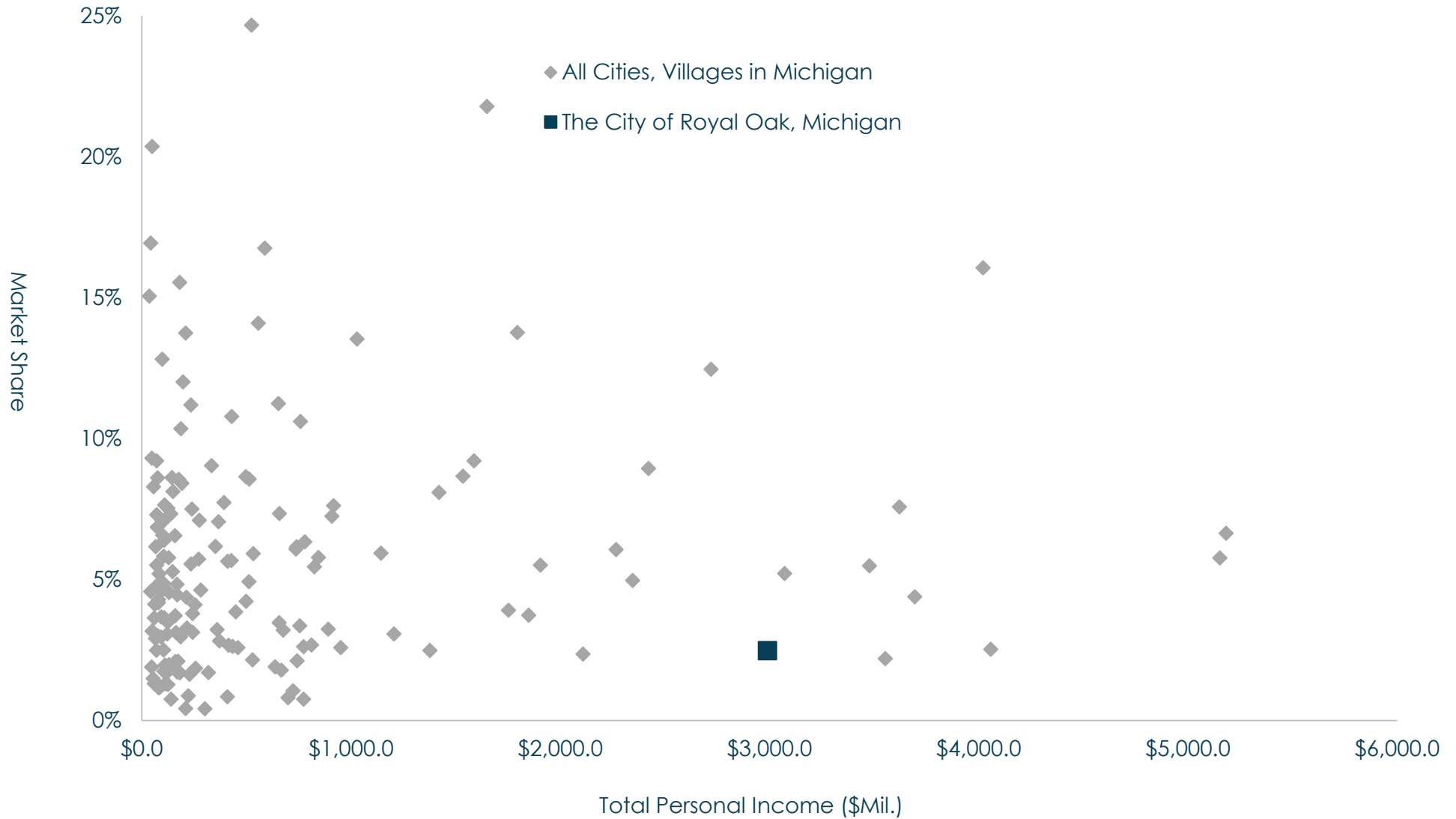Total Personal Income ($Mil.) (x-axis): $0.0, $1,000.0, $2,000.0, $3,000.0, $4,000.0, $5,000.0, $6,000.0

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Market Share v. Total Personal Income
Other Services excluding Public Admin | NAICS 81
Selected Places in the State of Michigan

Market Share (y-axis)

Total Personal Income ($Mil.) (x-axis)

◆ All Cities, Villages in Michigan
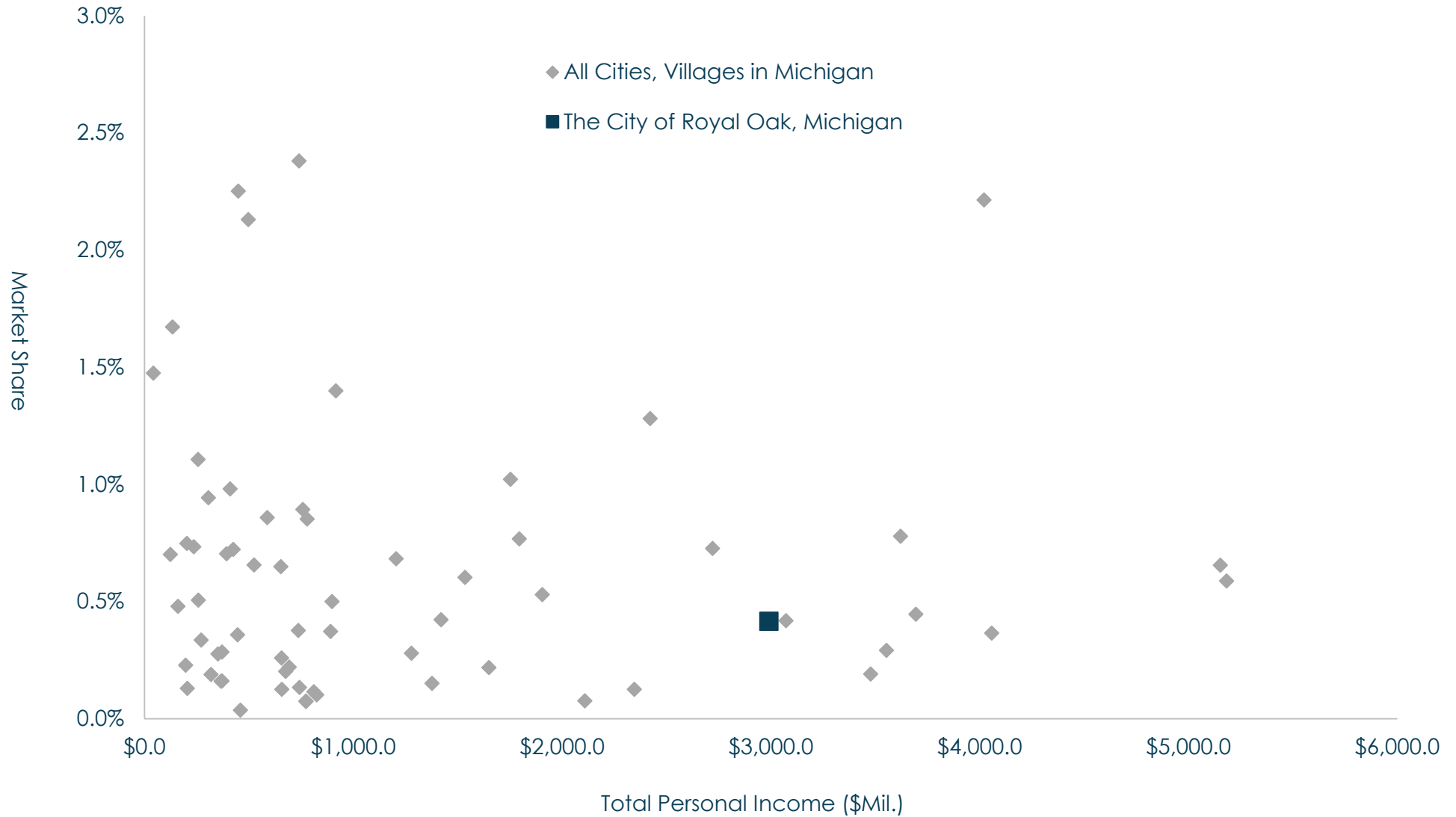
■ The City of Royal Oak, Michigan

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Market Share v. Total Personal Income
Educational Services | NAICS 61
Selected Places in the State of Michigan

◆ All Cities, Villages in Michigan

■ The City of Royal Oak, Michigan

Market Share (y-axis): 0.0%, 0.5%, 1.0%, 1.5%, 2.0%, 2.5%, 3.0%

Total Personal Income ($Mil.) (x-axis): $0.0, $1,000.0, $2,000.0, $3,000.0, $4,000.0, $5,000.0, $6,000.0
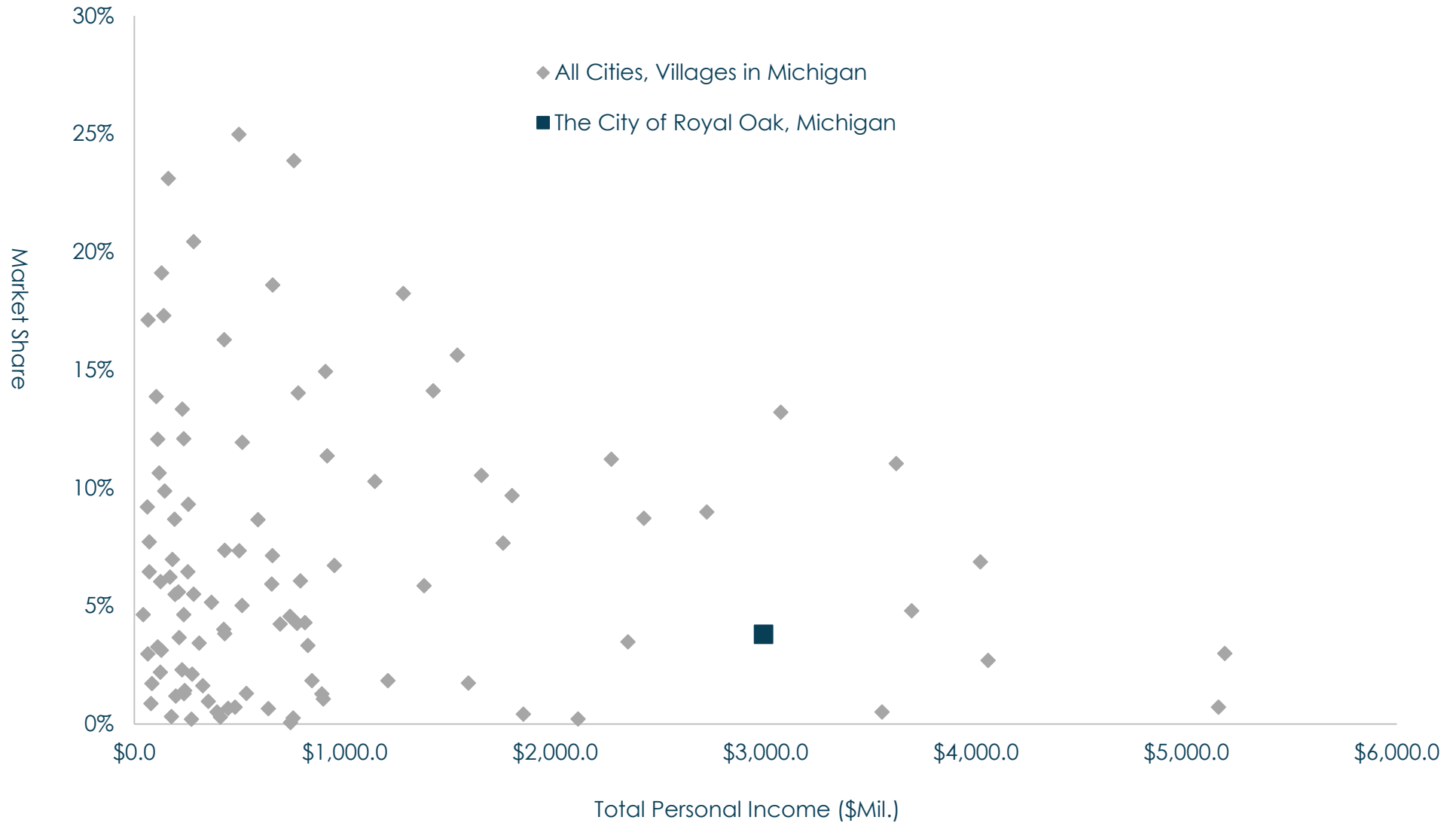
Methodology, analysis, and exhibit prepared by LandUseUSA | Urban Strategies © 2023 with all rights reserved. Market share is a measure of sales (or revenues) as a share of Total Personal Income for each respective level of geography. Underlying data from the 2017 U.S. Economic Census; 2020 Decennial Census; and 2019 (5-yr) American Community Survey.

Market Share v. Total Personal Income
Transportation, Warehousing | NAICS 48-49
Selected Places in the State of Michigan

Market Share

◆ All Cities, Villages in Michigan

■ The City of Royal Oak, Michigan

Total Personal Income ($Mil.)

Market Share v. Total Personal Income
Admin, Support, Waste, Remediation | NAICS 56
Selected Places in the State of Michigan

◆ All Cities, Villages in Michigan

■ The City of Royal Oak, Michigan

Market Share (y-axis: 0% to 50%)

Total Personal Income ($Mil.) (x-axis: $0.0 to $6,000.0)

Market Share v. Total Personal Income
Arts, Entertainment, Recreation | NAICS 71
Selected Places in the State of Michigan

◆ All Cities, Villages in Michigan

■ The City of Royal Oak, Michigan
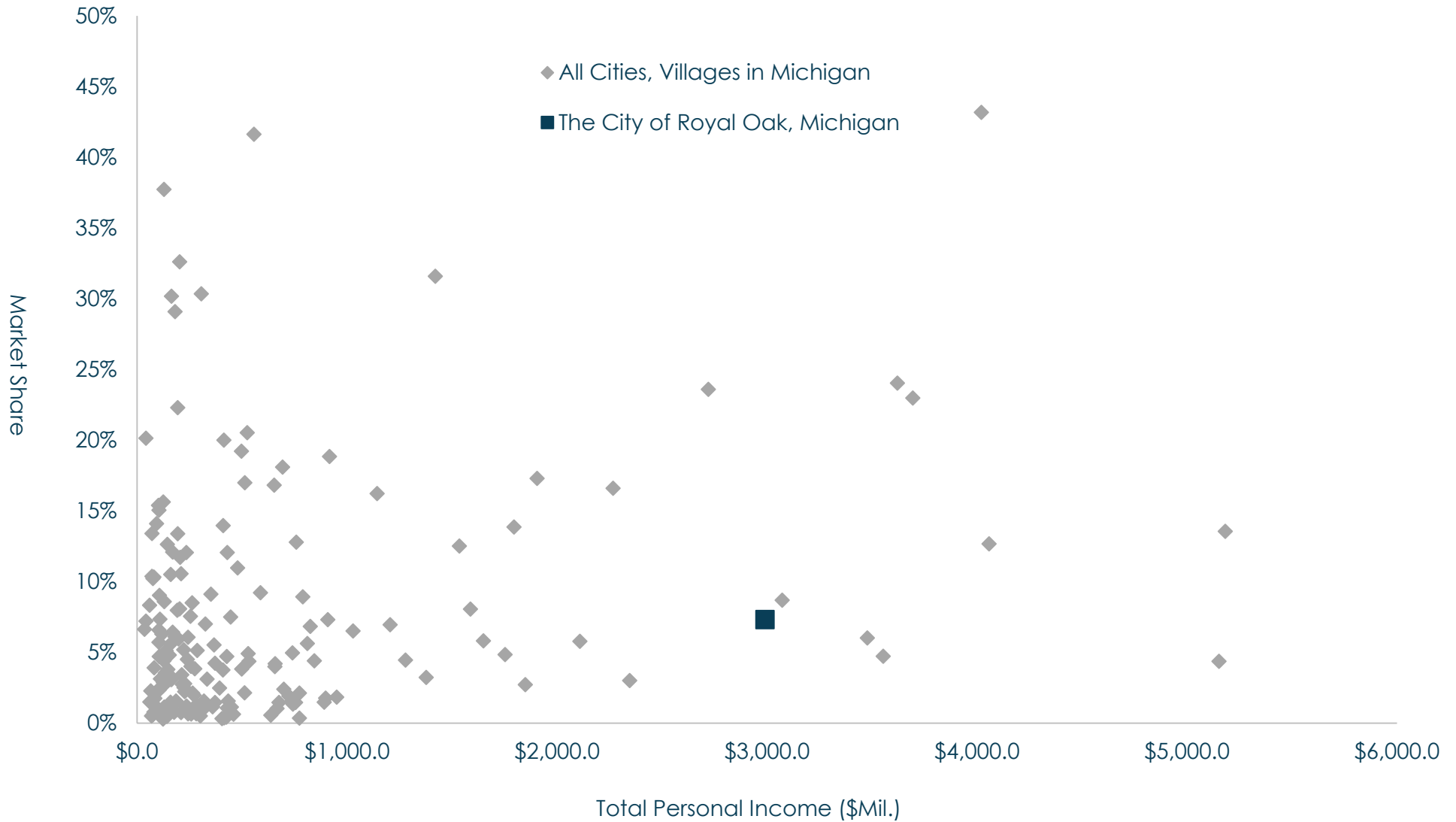
Market Share

Total Personal Income ($Mil.)

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Market Share v. Total Personal Income
Professional, Scientific, Technical | NAICS 54
Selected Places in the State of Michigan

Legend:
- ◆ All Cities, Villages in Michigan
- ■ The City of Royal Oak, Michigan

Y-axis: Market Share (0% to 60%)

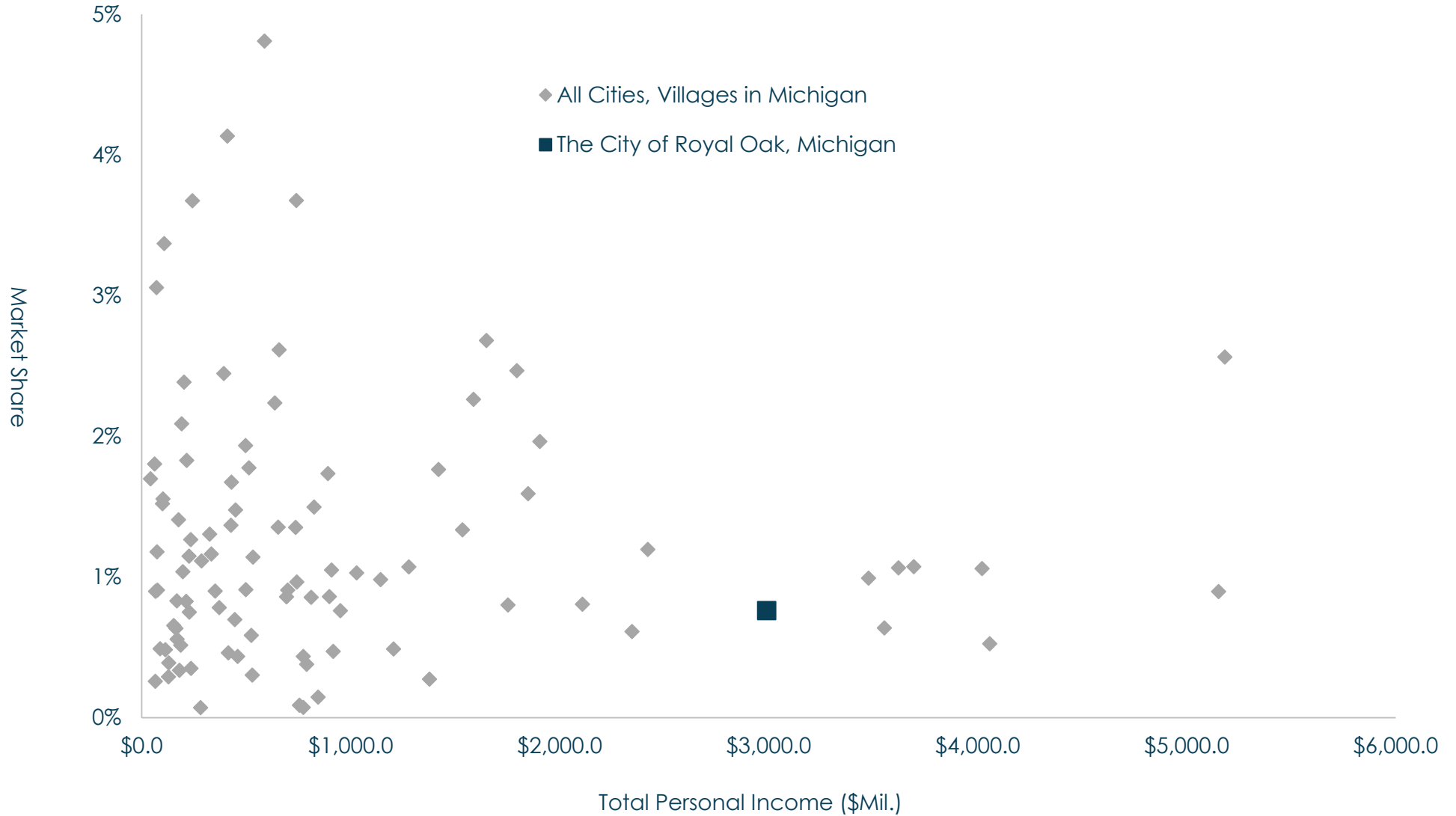X-axis: Total Personal Income ($Mil.) ($0.0 to $6,000.0)

Methodology, analysis, and exhibit prepared by LandUseUSA | Urban Strategies © 2023 with all rights reserved. Market share is a measure of sales (or revenues) as a share of Total Personal Income for each respective level of geography. Underlying data from the 2017 U.S. Economic Census; 2020 Decennial Census; and 2019 (5-yr) American Community Survey.

Market Share v. Total Personal Income
Restaurants, Drinking Establishments | NAICS 722
Selected Places in the State of Michigan

Market Share

◆ All Cities, Villages in Michigan

■ The City of Royal Oak, Michigan

Total Personal Income ($Mil.)

Market Share v. Total Personal Income
Health Care, Social Assistance | NAICS 62
Selected Places in the State of Michigan

Market Share

◆ All Cities, Villages in Michigan

■ The City of Royal Oak, Michigan

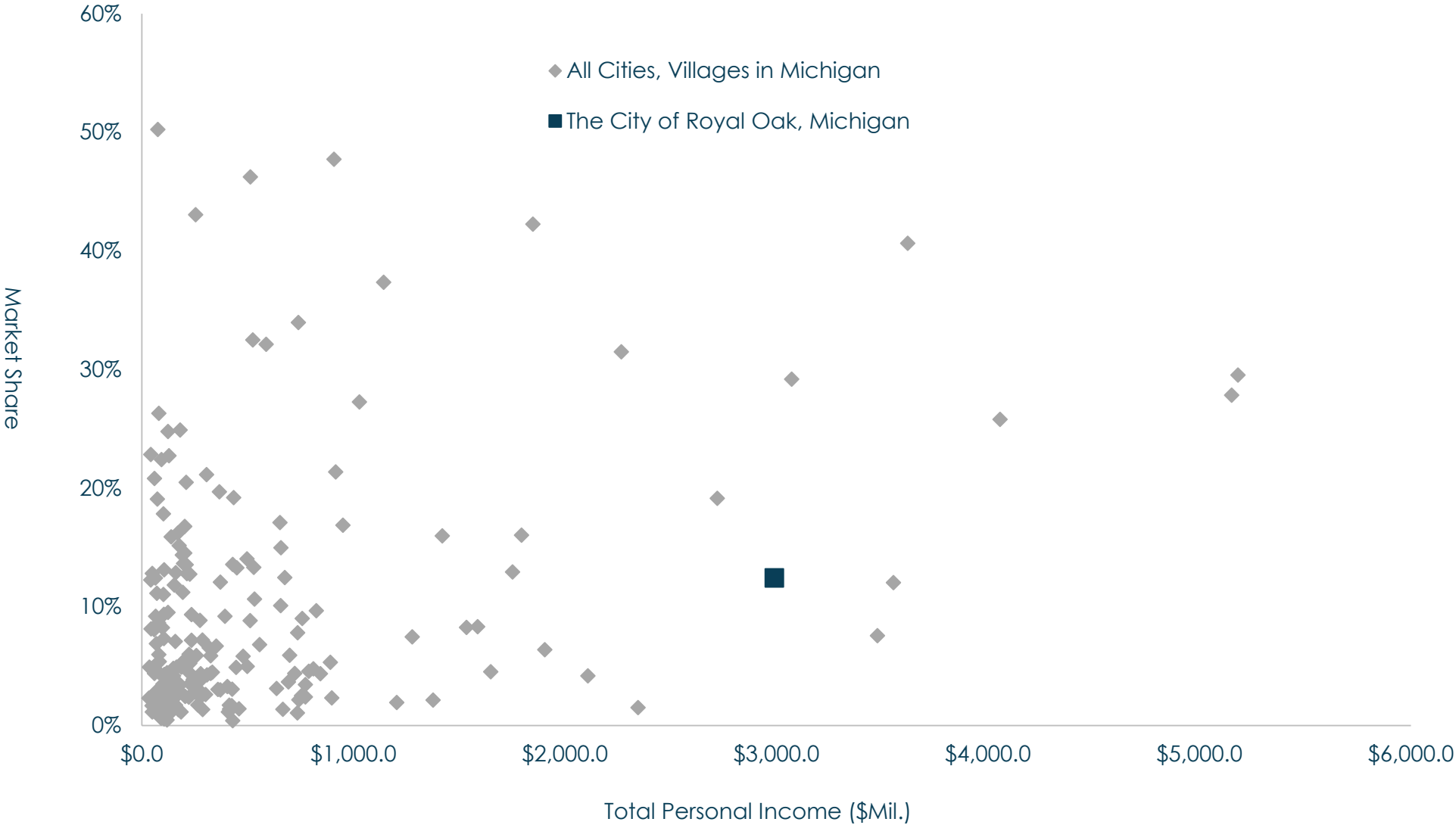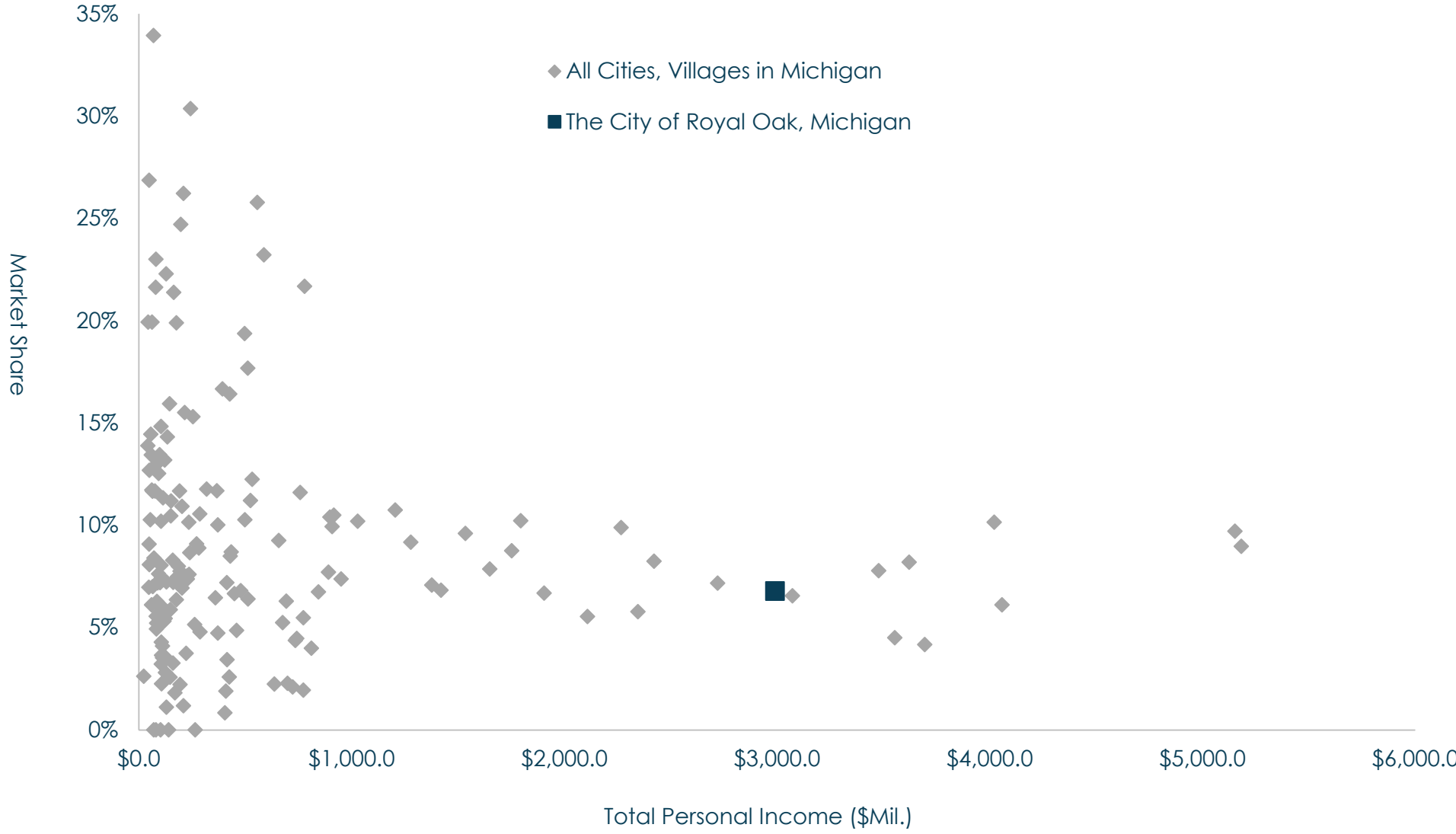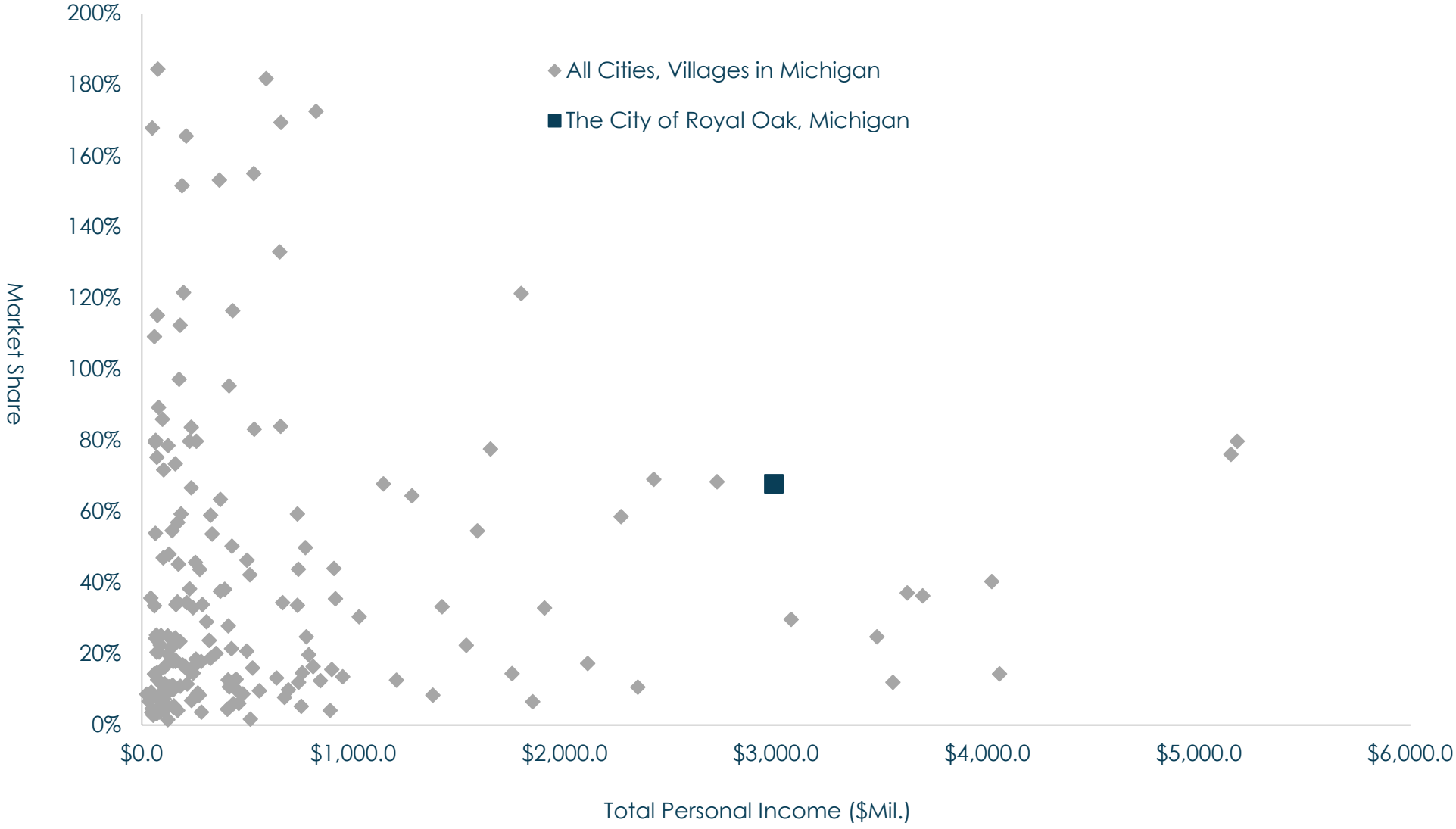Total Personal Income ($Mil.)

Methodology, analysis, and exhibit prepared by LandUseUSA | Urban Strategies © 2023 with all rights reserved. Market share is a measure of sales (or revenues) as a share of Total Personal Income for each respective level of geography. Underlying data from the 2017 U.S. Economic Census; 2020 Decennial Census; and 2019 (5-yr) American Community Survey.

Section 4-E

Origins of Worker Inflow | Royal Oak

Origins of local workers commuting into the City of Royal Oak for jobs in 2015.

Royal Oak MI — Retention = 5,605 Workers
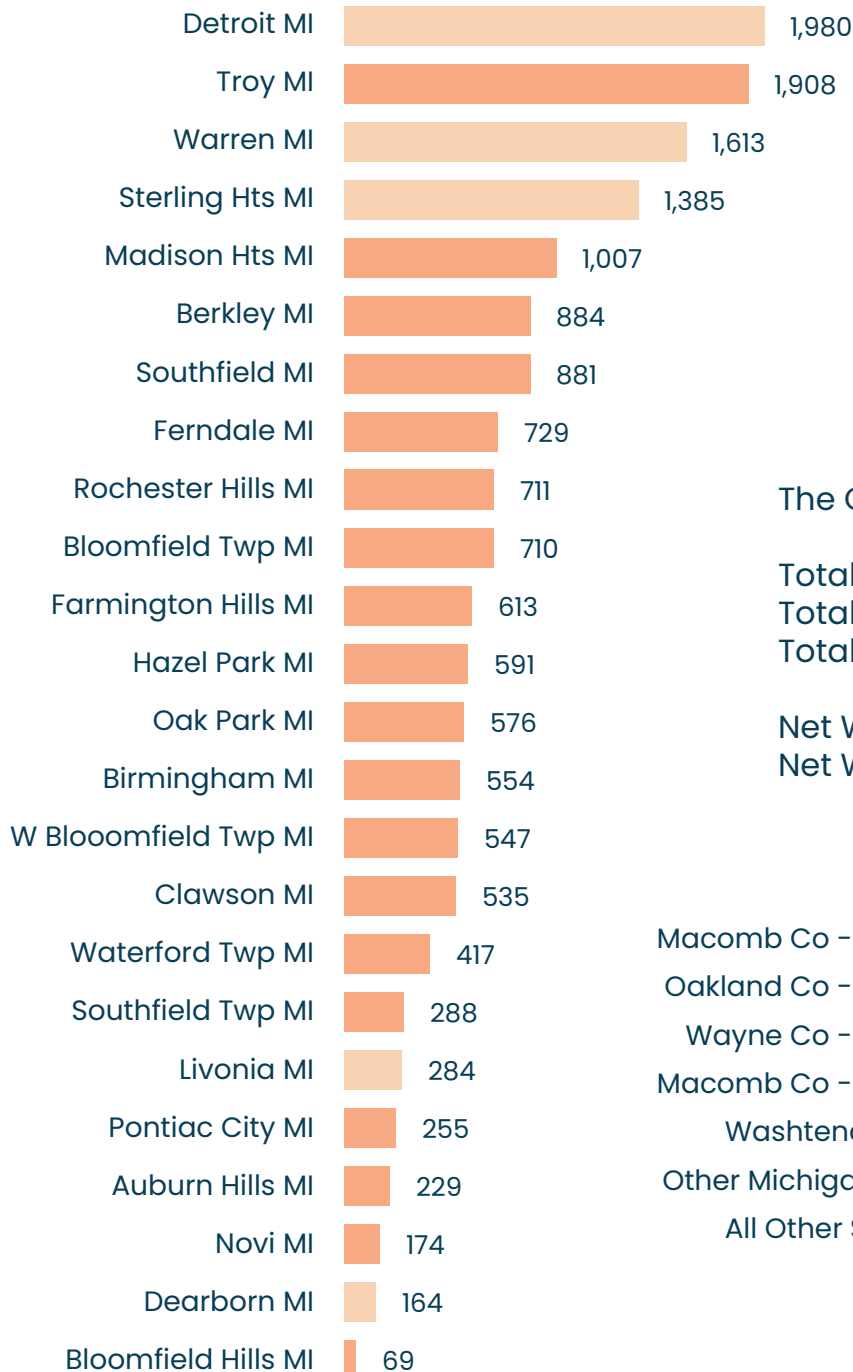
Origin	Workers
Detroit MI	1,980
Troy MI	1,908
Warren MI	1,613
Sterling Hts MI	1,385
Madison Hts MI	1,007
Berkley MI	884
Southfield MI	881
Ferndale MI	729
Rochester Hills MI	711
Bloomfield Twp MI	710
Farmington Hills MI	613
Hazel Park MI	591
Oak Park MI	576
Birmingham MI	554
W Blooomfield Twp MI	547
Clawson MI	535
Waterford Twp MI	417
Southfield Twp MI	288
Livonia MI	284
Pontiac City MI	255
Auburn Hills MI	229
Novi MI	174
Dearborn MI	164
Bloomfield Hills MI	69

The City of Royal Oak

Total Worker Retention = 5,605
Total Commuter Inflow = +26,100
Total Commuter Outflow = −29,445

Net Worker Outflow = −3,345
Net Worker Outflow = 9.5%

Origin	Workers
Macomb Co - Other	3,581
Oakland Co - Other	2,631
Wayne Co - Other	1,400
Macomb Co - Other	1,236
Washtenaw Co	114
Other Michigan Cos	1,196
All Other States	73
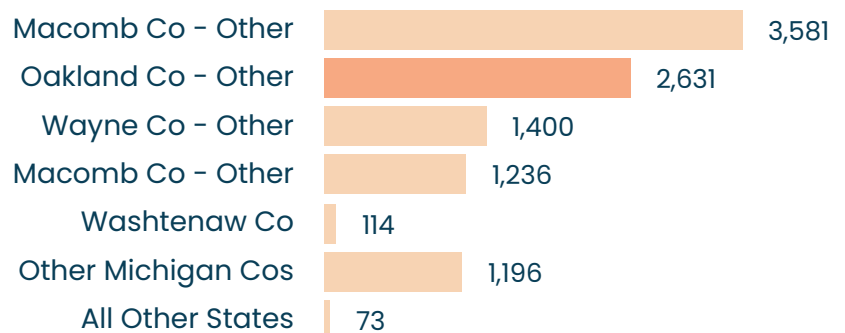
Underlying data by the American Community Survey with 5-year estimates through 2015. Analysis and exhibit prepared by LandUseUSA | Urban Strategies in collaboration with DPZ CoDesign; 2023.

LandUseUSA
UrbanStrategies

Origins of Worker Outflow | Royal Oak

Destinations of local commuters working outside of the City of Royal Oak in 2015.

Royal Oak MI — **Retention = 5,605 Workers**

Destination	Workers
Detroit MI	4,112
Troy MI	3,572
Warren MI	1,405
Sterling Hts MI	697
Madison Hts MI	787
Berkley MI	388
Southfield MI	2,198
Ferndale MI	487
Rochester Hills MI	430
Bloomfield Twp MI	629
Farmington Hills MI	1,077
Hazel Park MI	81
Oak Park MI	218
Birmingham MI	1,553
W Blooomfield Twp MI	297
Clawson MI	326
Waterford Twp MI	260
Southfield Twp MI	376
Livonia MI	623
Pontiac City MI	615
Auburn Hills MI	1,334
Novi MI	510
Dearborn MI	954
Bloomfield Hills MI	485

The City of Royal Oak

Total Worker Retention =	5,605
Total Commuter Inflow =	+26,100
Total Commuter Outflow =	−29,445
Net Worker Outflow =	−3,345
Net Worker Outflow =	9.5%

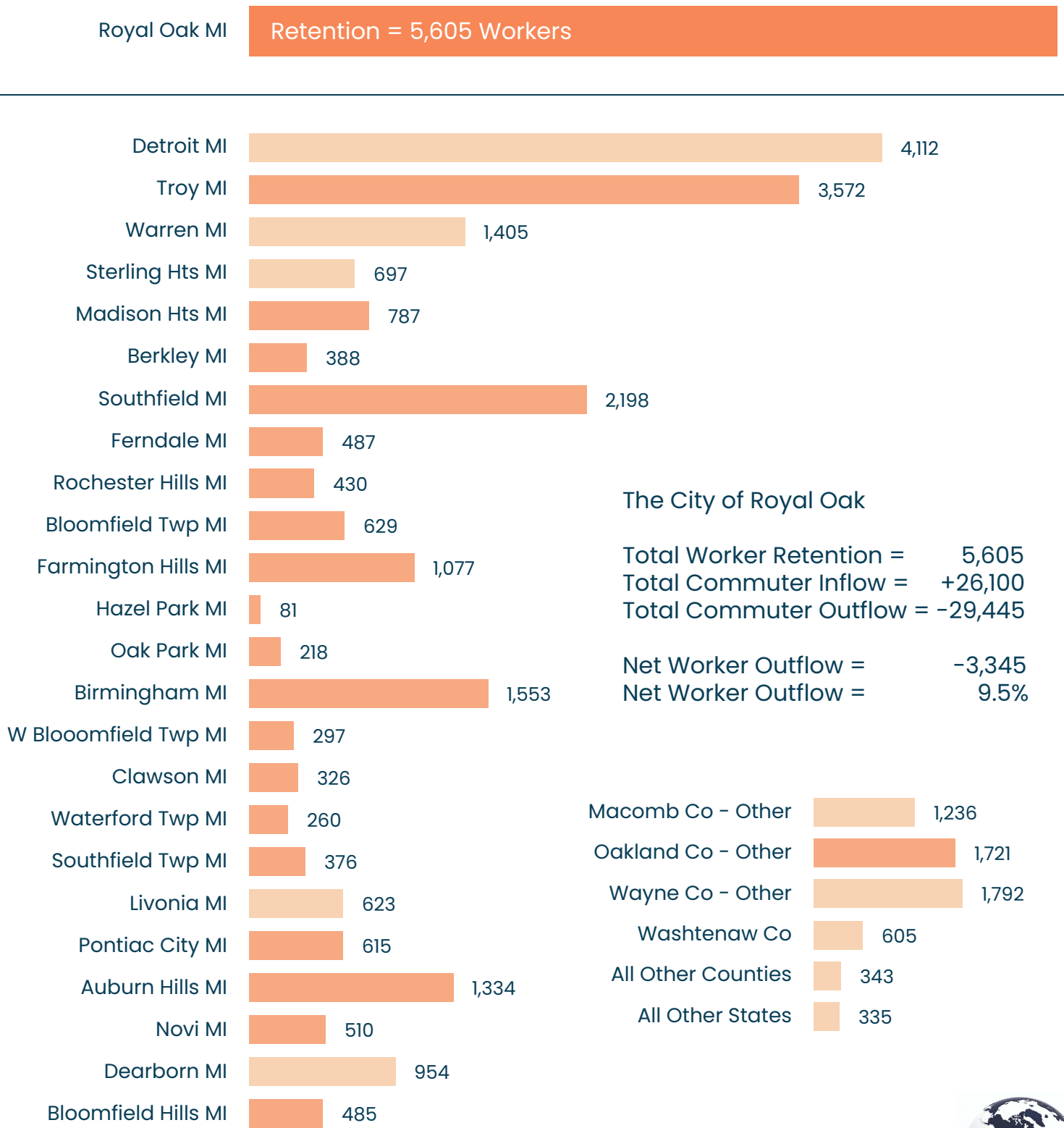|	
Macomb Co - Other	1,236
Oakland Co - Other	1,721
Wayne Co - Other	1,792
Washtenaw Co	605
All Other Counties	343
All Other States	335

Underlying data by the American Community Survey with 5-year estimates through 2015. Analysis and exhibit prepared by LandUseUSA | Urban Strategies in collaboration with DPZ CoDesign; 2023.

LandUseUSA
UrbanStrategies

Section 4-F

Share Working from Home | Royal Oak

Working from home is one indicator of the social and place impact of Covid-19.

Worked from Home: 15%

Taxi, Motorcycle, Bicycle: 1%

Walked to Work: 1%

Public Transportation: 1%

Car - Carpooled: 4%

The City of
Royal Oak
Year 2021

Car - Drove Alone: 78%

Worked from Home: 5%

Taxi, Motorcycle, Bicycle: 1%

Walked to Work: 2%

Public Transportation: 1%

Car - Carpooled: 5%

The City of
Royal Oak
Year 2019

Car - Drove Alone: 86%

Underlying data provided by the American Community Survey with five-year estimates through 2021. Represents the share of workers ages 16 and older. Analysis & exhibit prepared by LandUseUSA | Urban Strategies in collaboration with DPZ CoDesign; 2022 - 2023.
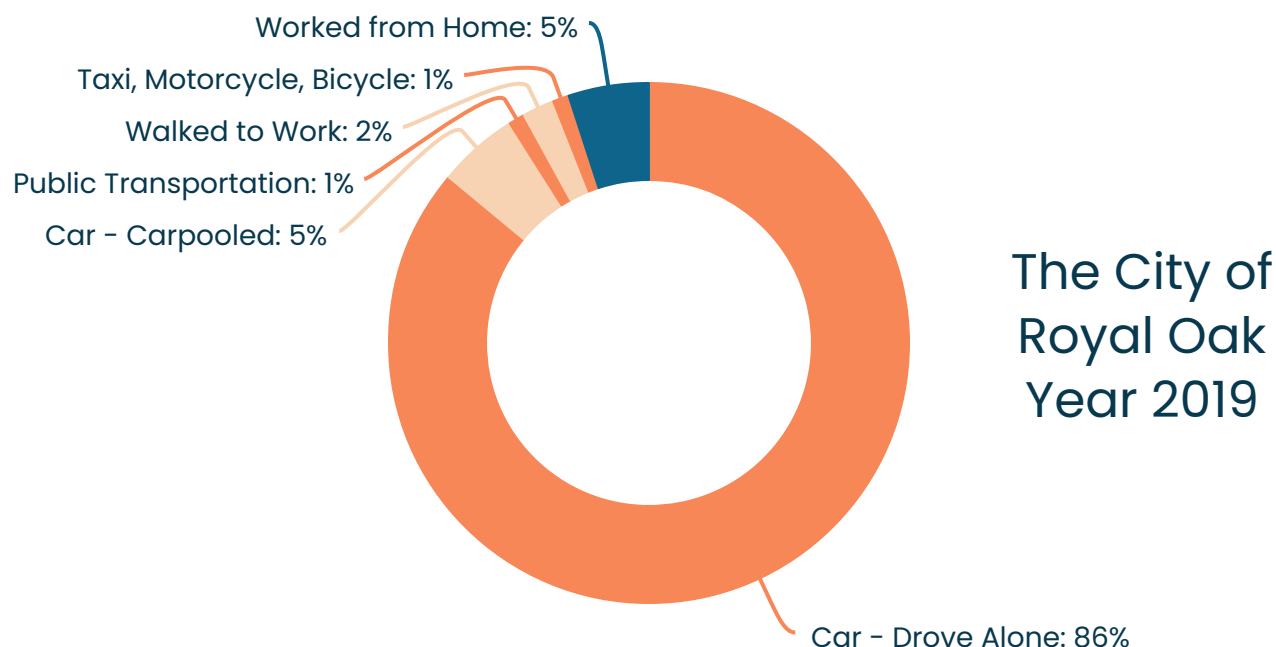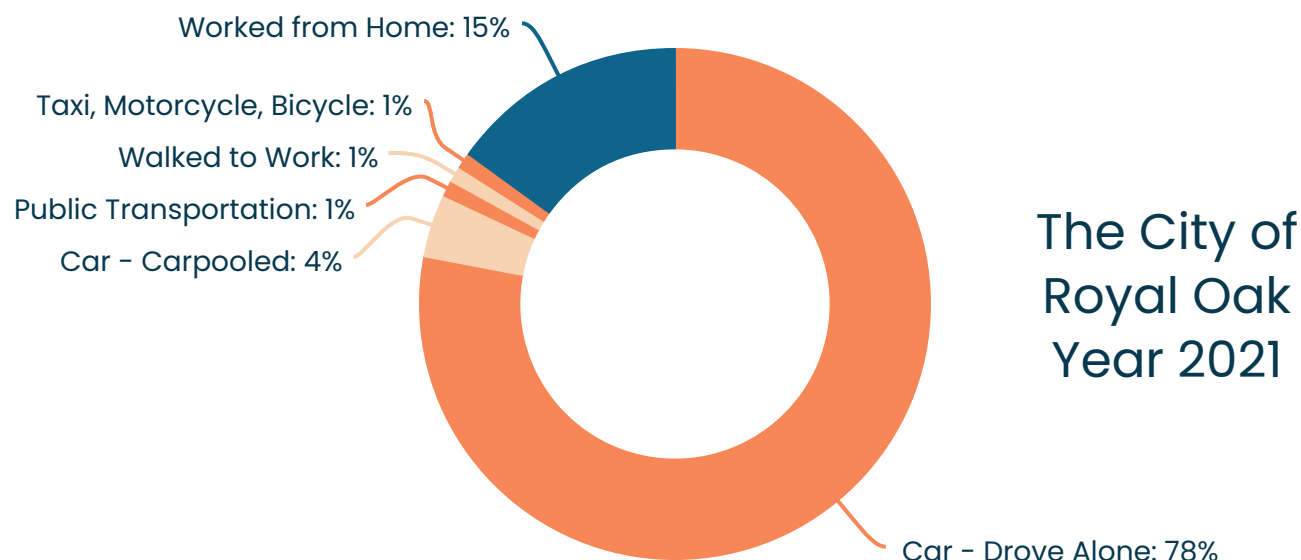
LandUseUSA
UrbanStrategies

Share Working from Home | Oakland Co

Working from home is one indicator of the social and place impact of Covid-19.
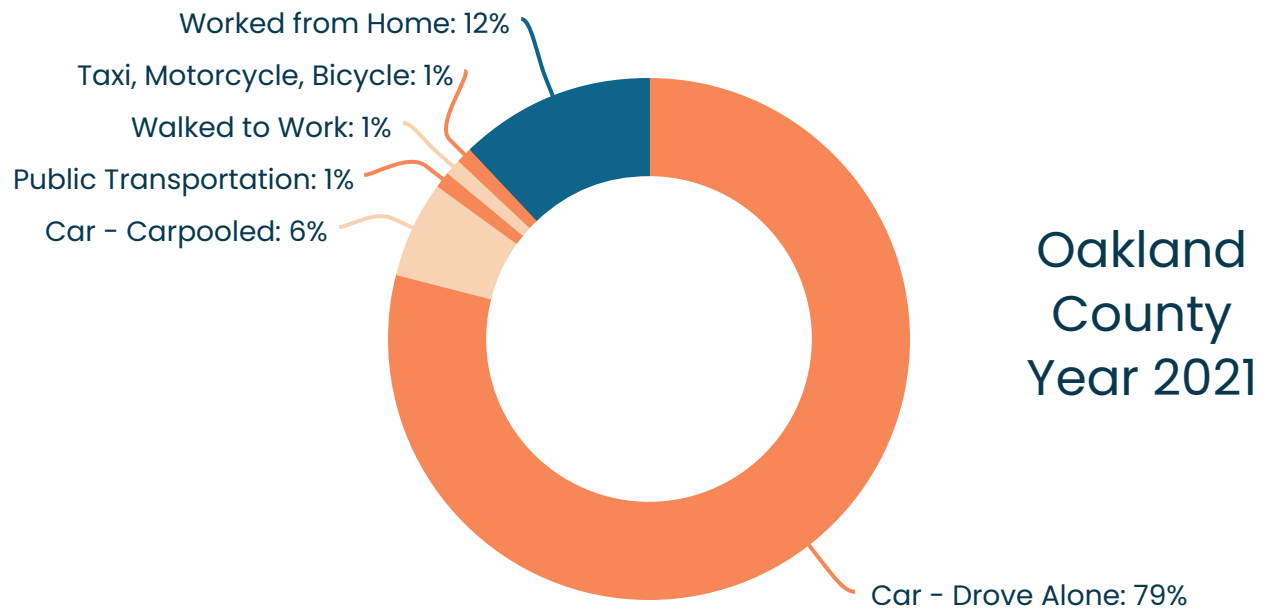
Worked from Home: 12%
Taxi, Motorcycle, Bicycle: 1%
Walked to Work: 1%
Public Transportation: 1%
Car - Carpooled: 6%

Oakland
County
Year 2021

Car - Drove Alone: 79%

Worked from Home: 5%
Taxi, Motorcycle, Bicycle: 1%
Walked to Work: 1%
Public Transportation: 1%
Car - Carpooled: 7%

Oakland
County
Year 2019

Car - Drove Alone: 85%

Underlying data provided by the American Community Survey with five-year estimates through 2021. Represents the share of workers ages 16 and older. Analysis & exhibit prepared by LandUseUSA | Urban Strategies in collaboration with DPZ CoDesign; 2022 - 2023.
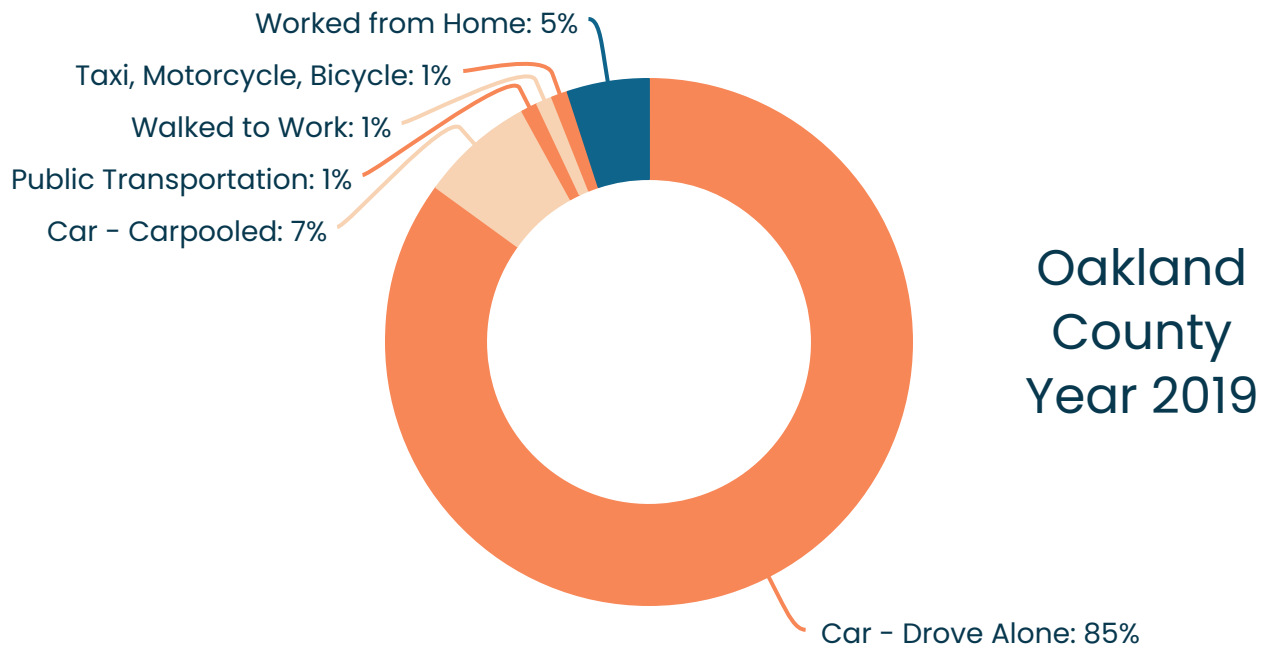
LandUseUSA
UrbanStrategies

Share Working from Home | SEMCOG

Working from home is one indicator of the social and place impact of Covid-19.

Worked from Home: 10%
Taxi, Motorcycle, Bicycle: 1%
Walked to Work: 2%
Public Transportation: 1%
Car - Carpooled: 8%

SEMCOG
Region
Year 2021

Car - Drove Alone: 78%

Worked from Home: 4%
Taxi, Motorcycle, Bicycle: 1%
Walked to Work: 2%
Public Transportation: 2%
Car - Carpooled: 8%

SEMCOG
Region
Year 2019

Car - Drove Alone: 83%

LandUseUSA
UrbanStrategies

Section 4-G

Workplaces
Change in Place Visits v. Pre-Covid Baseline
Oakland County, Michigan
January 1 - October 15, 2022

Percent Change from the Pre-Covid Baseline

Day-by-Day, Unadjusted for Seasonality

This data shows how visitors spent time in workplaces compared to the baseline days, and based on data that Google garners from handheld devices like mobile phones and ipads. The baseline day is based on the normal or median time spent between January 3 and February 6, 2020 (i.e., over five weeks preceding the economic crisis brought on by the Covid-19 pandemic). Source: Google Community Mobility Reports through October 2022; analysis and exhibit prepared by LandUseUSA | Urban Strategies; 2023.

Workplaces
Change in Place Visits v. Pre-Covid Baseline
Wayne County, Michigan
January 1 - October 15, 2022

Percent Change from the Pre-Covid Baseline

Day-by-Day, Unadjusted for Seasonality

This data shows how visitors spent time in workplaces compared to the baseline days, and based on data that Google garners from handheld devices like mobile phones and ipads. The baseline day is based on the normal or median time spent between January 3 and February 6, 2020 (i.e., over five weeks preceding the economic crisis brought on by the Covid-19 pandemic). Source: Google Community Mobility Reports through October 2022; analysis and exhibit prepared by LandUseUSA | Urban Strategies; 2023.

Workplaces
Change in Place Visits v. Pre-Covid Baseline
Michigan State Averages
January 1 - October 15, 2022

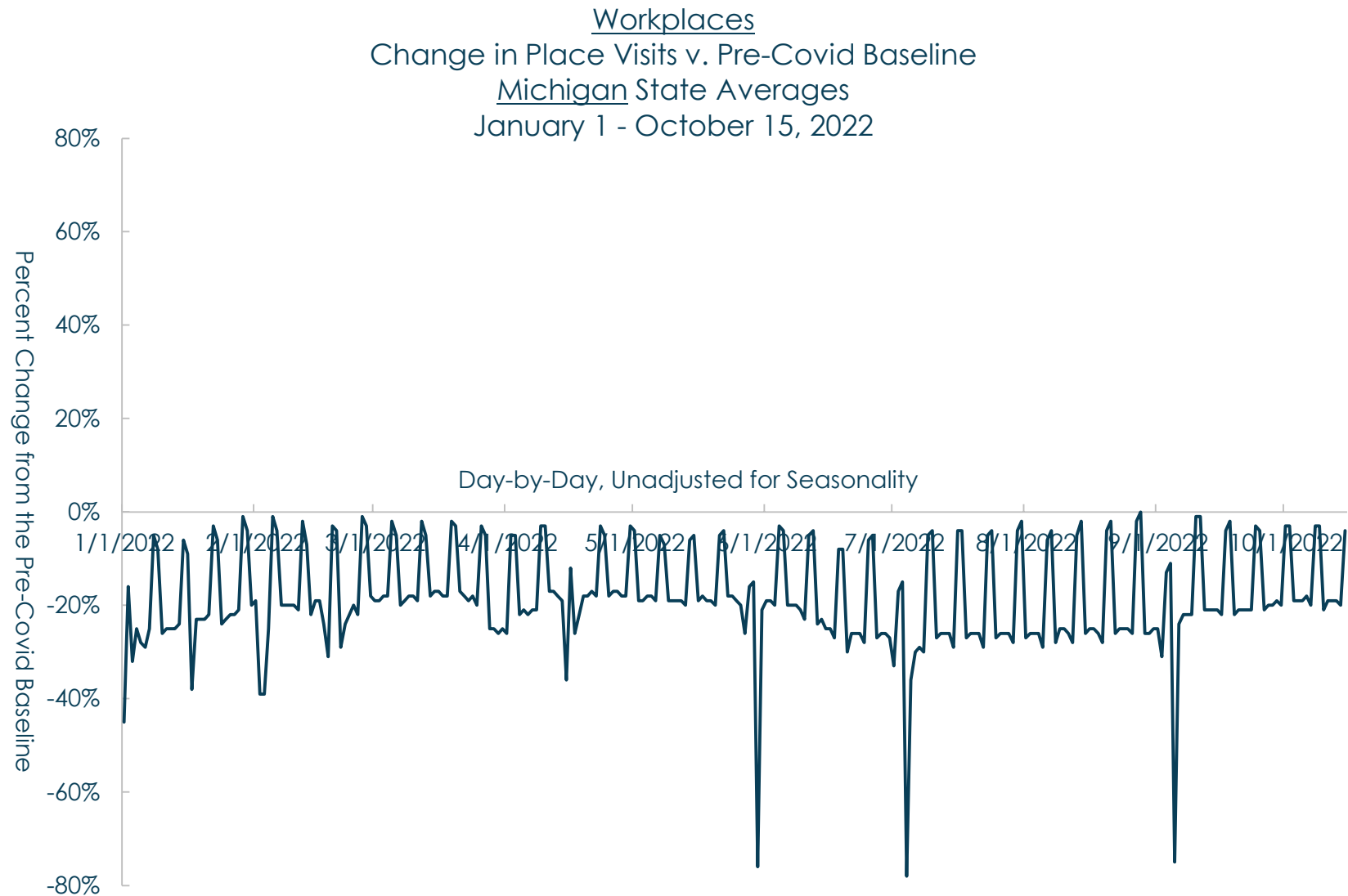Percent Change from the Pre-Covid Baseline

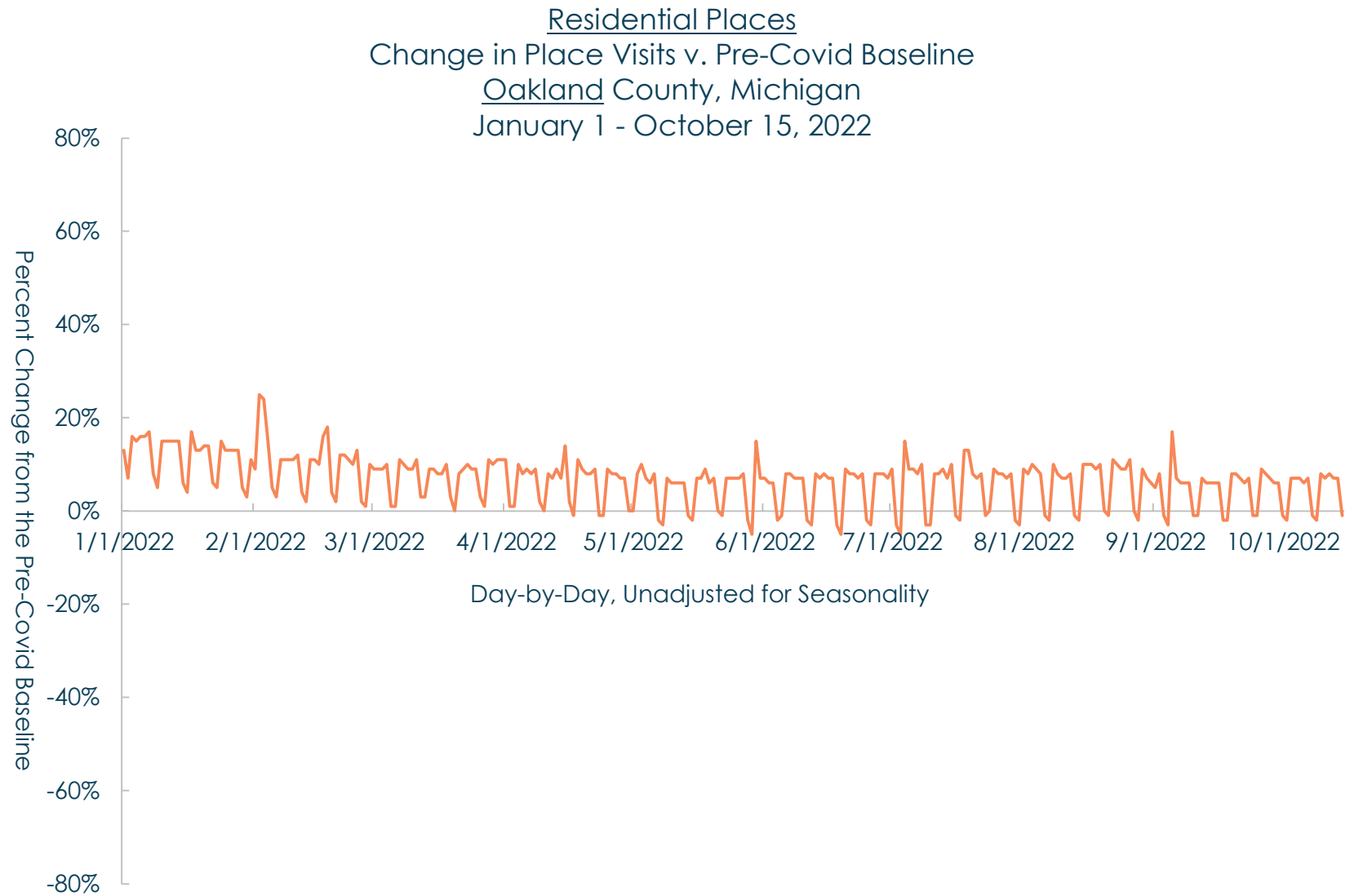Day-by-Day, Unadjusted for Seasonality

This data shows how visitors spent time in workplaces compared to the baseline days, and based on data that Google garners from handheld devices like mobile phones and ipads. The baseline day is based on the normal or median time spent between January 3 and February 6, 2020 (i.e., over five weeks preceding the economic crisis brought on by the Covid-19 pandemic). Source: Google Community Mobility Reports through October 2022; analysis and exhibit prepared by LandUseUSA | Urban Strategies; 2023.

Residential Places
Change in Place Visits v. Pre-Covid Baseline
Oakland County, Michigan
January 1 - October 15, 2022

Percent Change from the Pre-Covid Baseline

80%
60%
40%
20%
0%
-20%
-40%
-60%
-80%

1/1/2022 2/1/2022 3/1/2022 4/1/2022 5/1/2022 6/1/2022 7/1/2022 8/1/2022 9/1/2022 10/1/2022

Day-by-Day, Unadjusted for Seasonality

This data shows how visitors spent time in residential places compared to the baseline days, and based on data that Google garners from handheld devices like mobile phones and ipads. The baseline day is based on the normal or median time spent between January 3 and February 6, 2020 (i.e., over five weeks preceding the economic crisis brought on by the Covid-19 pandemic). Source: Google Community Mobility Reports through October 2022; analysis and exhibit prepared by LandUseUSA | Urban Strategies; 2023.
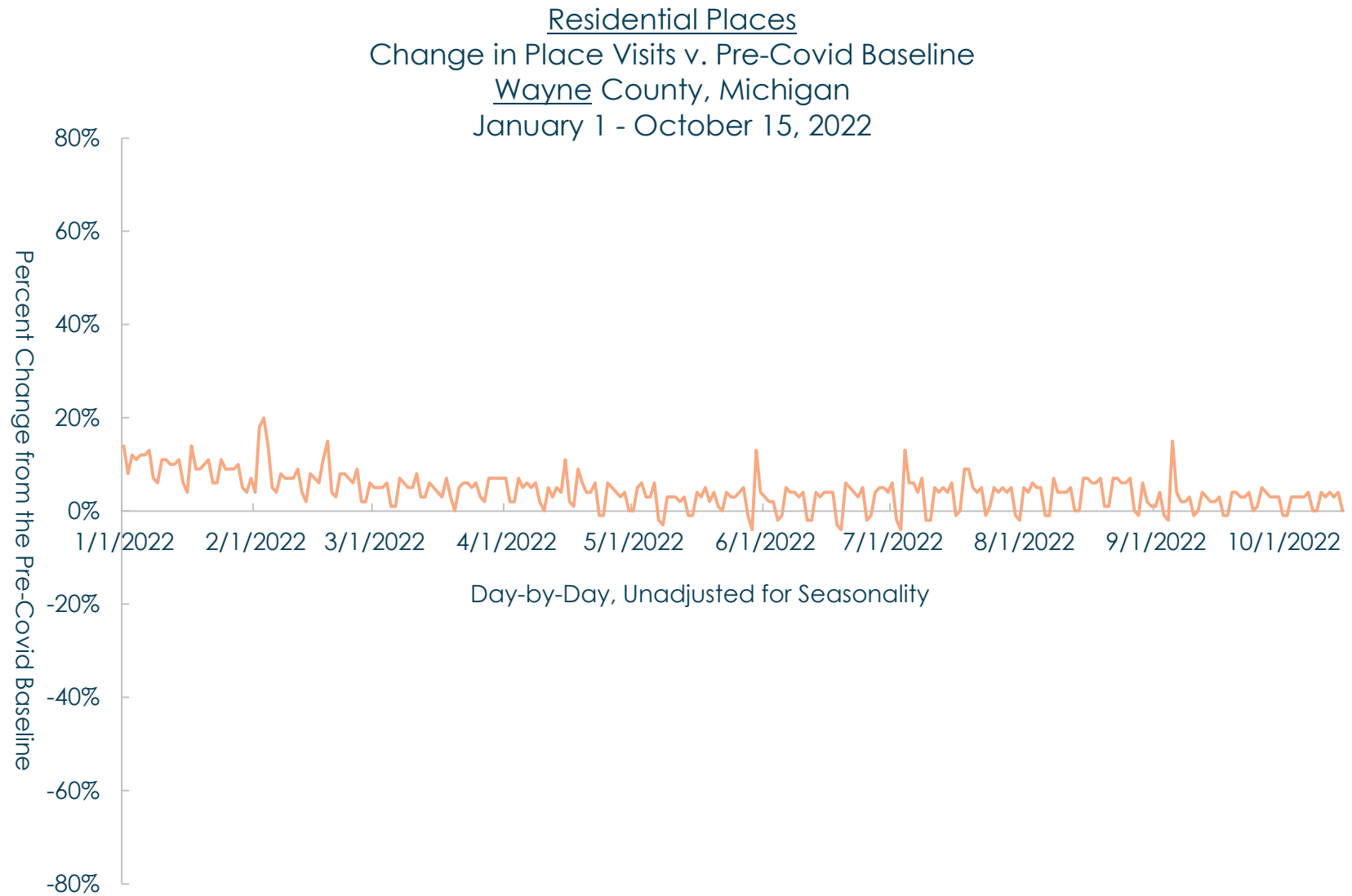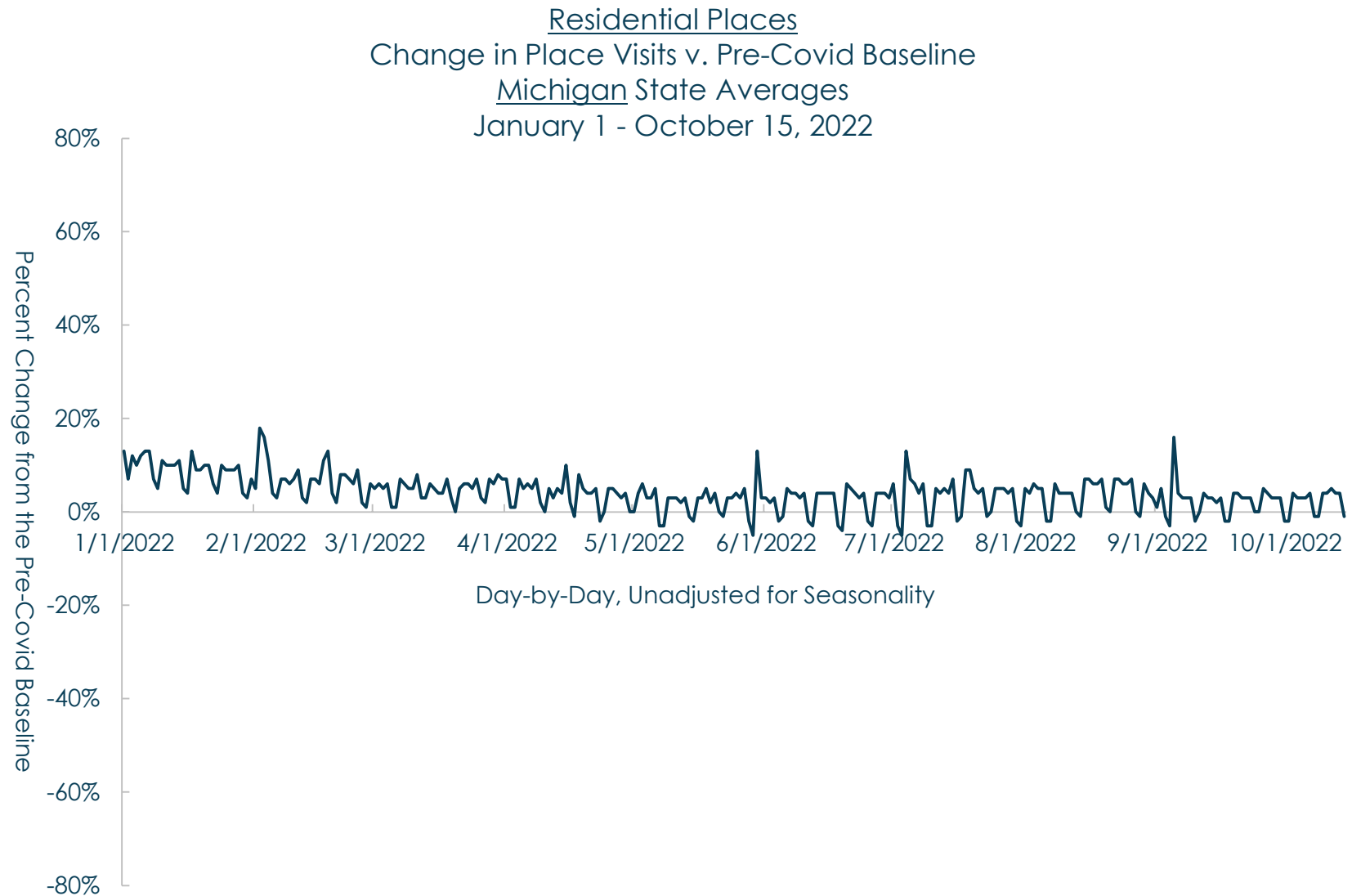
Residential Places
Change in Place Visits v. Pre-Covid Baseline
Wayne County, Michigan
January 1 - October 15, 2022

This data shows how visitors spent time in residential places compared to the baseline days, and based on data that Google garners from handheld devices like mobile phones and ipads. The baseline day is based on the normal or median time spent between January 3 and February 6, 2020 (i.e., over five weeks preceding the economic crisis brought on by the Covid-19 pandemic). Source: Google Community Mobility Reports through October 2022; analysis and exhibit prepared by LandUseUSA | Urban Strategies; 2023.

Residential Places
Change in Place Visits v. Pre-Covid Baseline
Michigan State Averages
January 1 - October 15, 2022

Percent Change from the Pre-Covid Baseline

Day-by-Day, Unadjusted for Seasonality

This data shows how visitors spent time in residential places compared to the baseline days, and based on data that Google garners from handheld devices like mobile phones and ipads. The baseline day is based on the normal or median time spent between January 3 and February 6, 2020 (i.e., over five weeks preceding the economic crisis brought on by the Covid-19 pandemic). Source: Google Community Mobility Reports through October 2022; analysis and exhibit prepared by LandUseUSA | Urban Strategies; 2023.
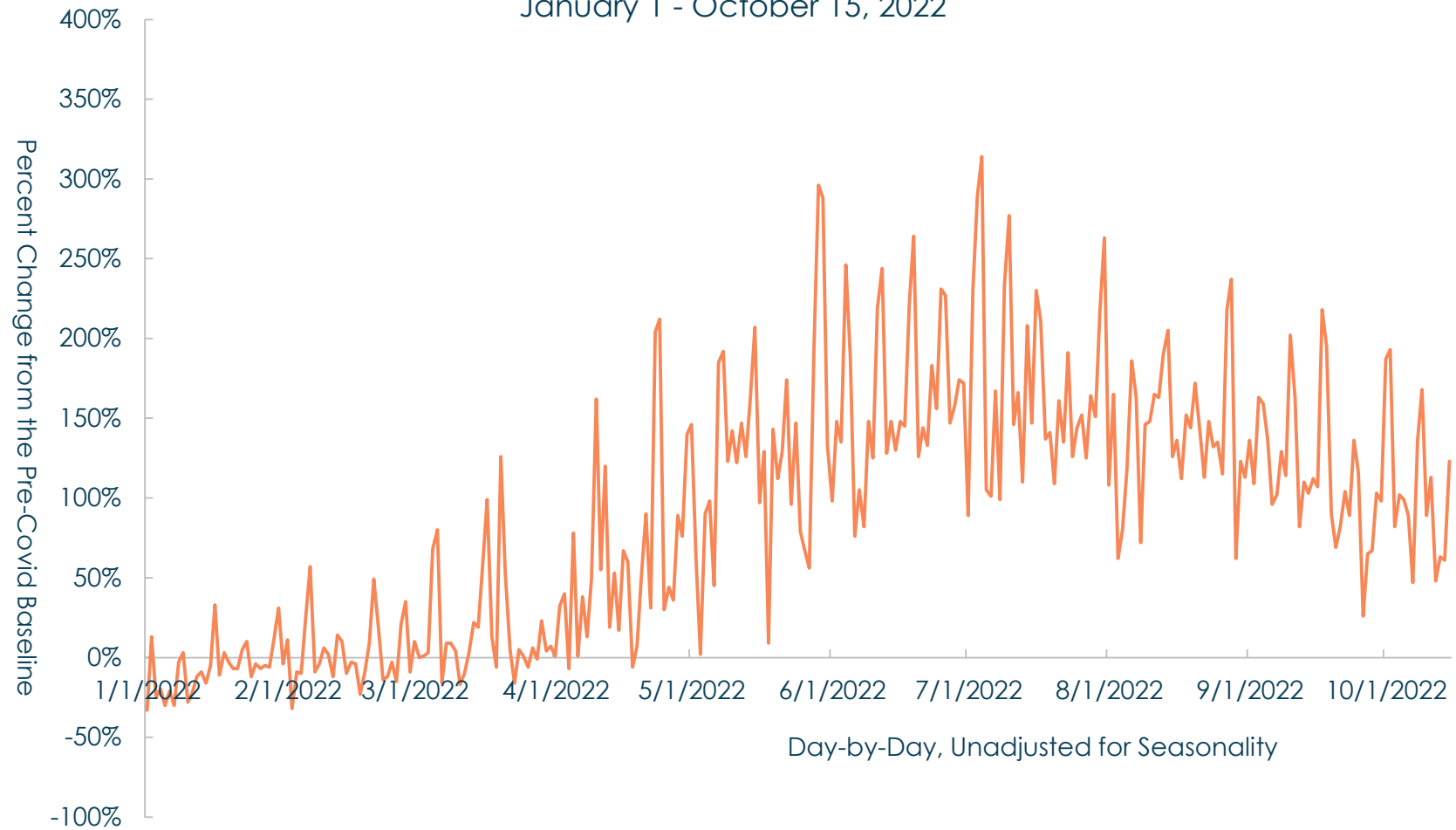
Parks and Similar Places
Change in Place Visits v. Pre-Covid Baseline
Oakland County, Michigan
January 1 - October 15, 2022

Percent Change from the Pre-Covid Baseline

Day-by-Day, Unadjusted for Seasonality

This data shows how visitors spent time in parks and similar places compared to the baseline days, and based on data that Google garners from handheld devices like mobile phones and ipads. The baseline day is based on the normal or median time spent between January 3 and February 6, 2020 (i.e., over five weeks preceding the economic crisis brought on by the Covid-19 pandemic). Source: Google Community Mobility Reports through October 2022; analysis and exhibit prepared by LandUseUSA | Urban Strategies; 2023.
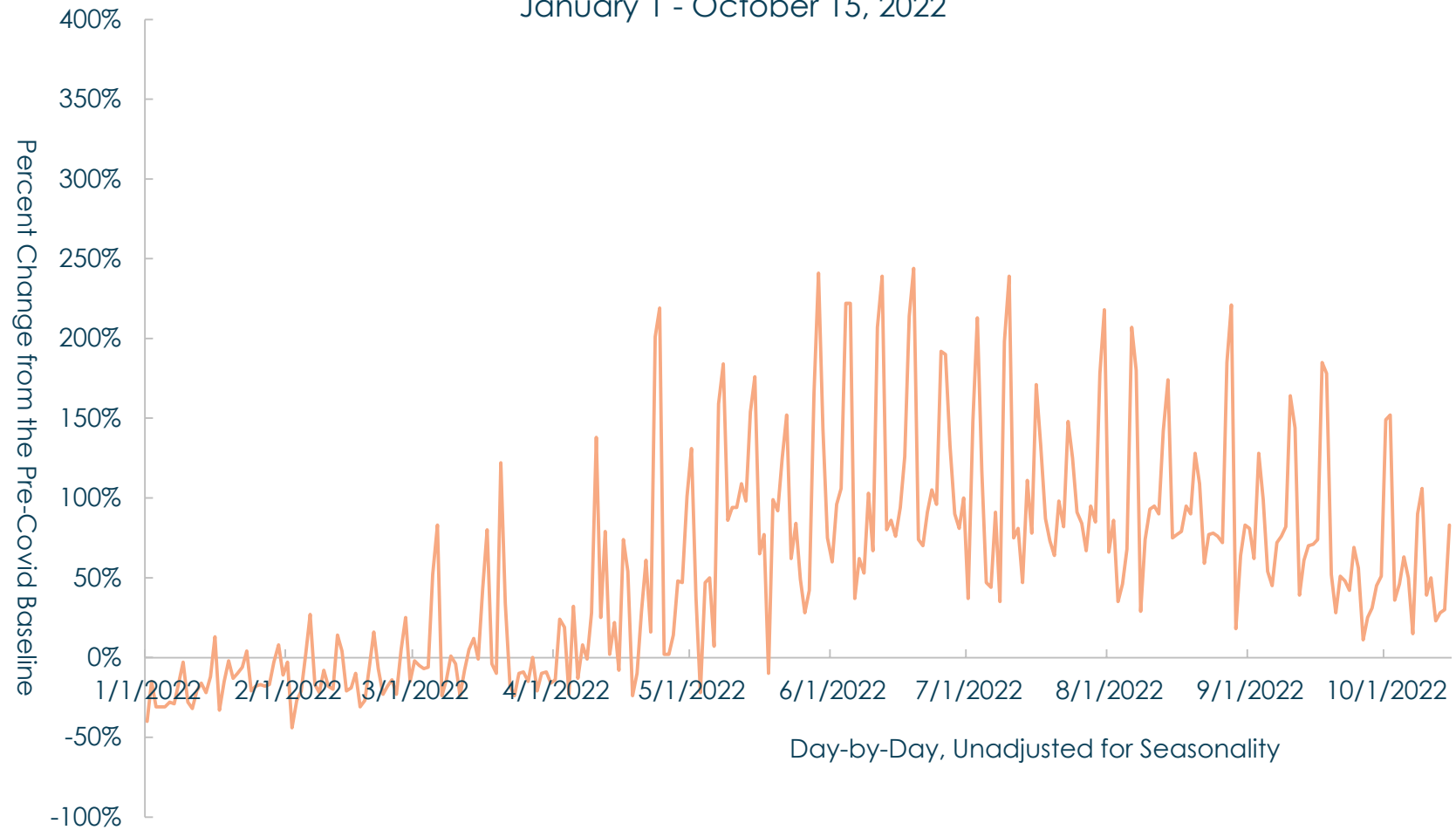
Parks and Similar Places
Change in Place Visits v. Pre-Covid Baseline
Wayne County, Michigan
January 1 - October 15, 2022

Day-by-Day, Unadjusted for Seasonality

This data shows how visitors spent time in parks and similar places compared to the baseline days, and based on data that Google garners from handheld devices like mobile phones and ipads. The baseline day is based on the normal or median time spent between January 3 and February 6, 2020 (i.e., over five weeks preceding the economic crisis brought on by the Covid-19 pandemic). Source: Google Community Mobility Reports through October 2022; analysis and exhibit prepared by LandUseUSA | Urban Strategies; 2023.

Parks and Similar Places
Change in Place Visits v. Pre-Covid Baseline
Michigan State Averages
January 1 - October 15, 2022

Percent Change from the Pre-Covid Baseline
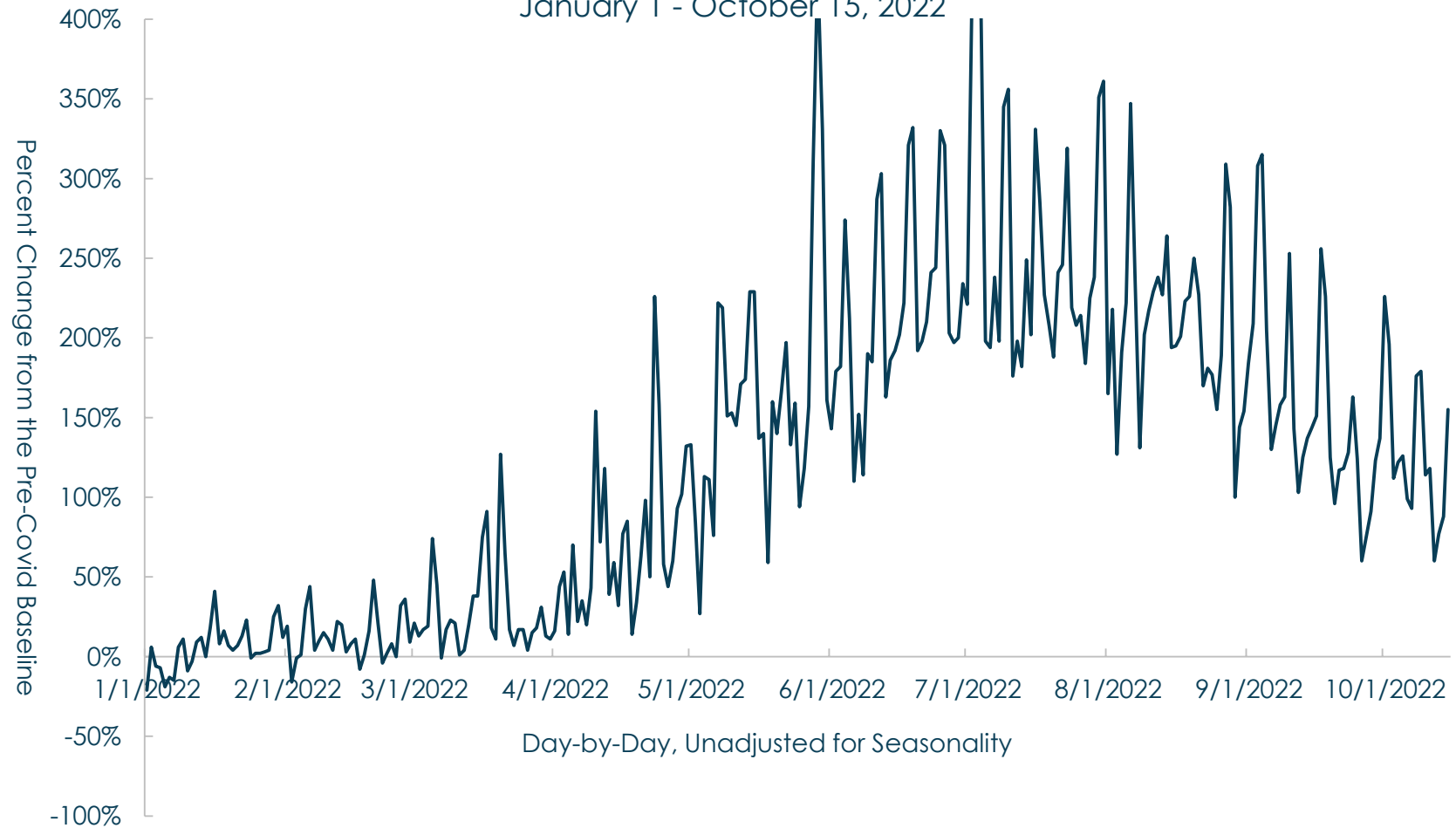
Day-by-Day, Unadjusted for Seasonality

This data shows how visitors spent time in parks and similar places compared to the baseline days, and based on data that Google garners from handheld devices like mobile phones and ipads. The baseline day is based on the normal or median time spent between January 3 and February 6, 2020 (i.e., over five weeks preceding the economic crisis brought on by the Covid-19 pandemic). Source: Google Community Mobility Reports through October 2022; analysis and exhibit prepared by LandUseUSA | Urban Strategies; 2023.
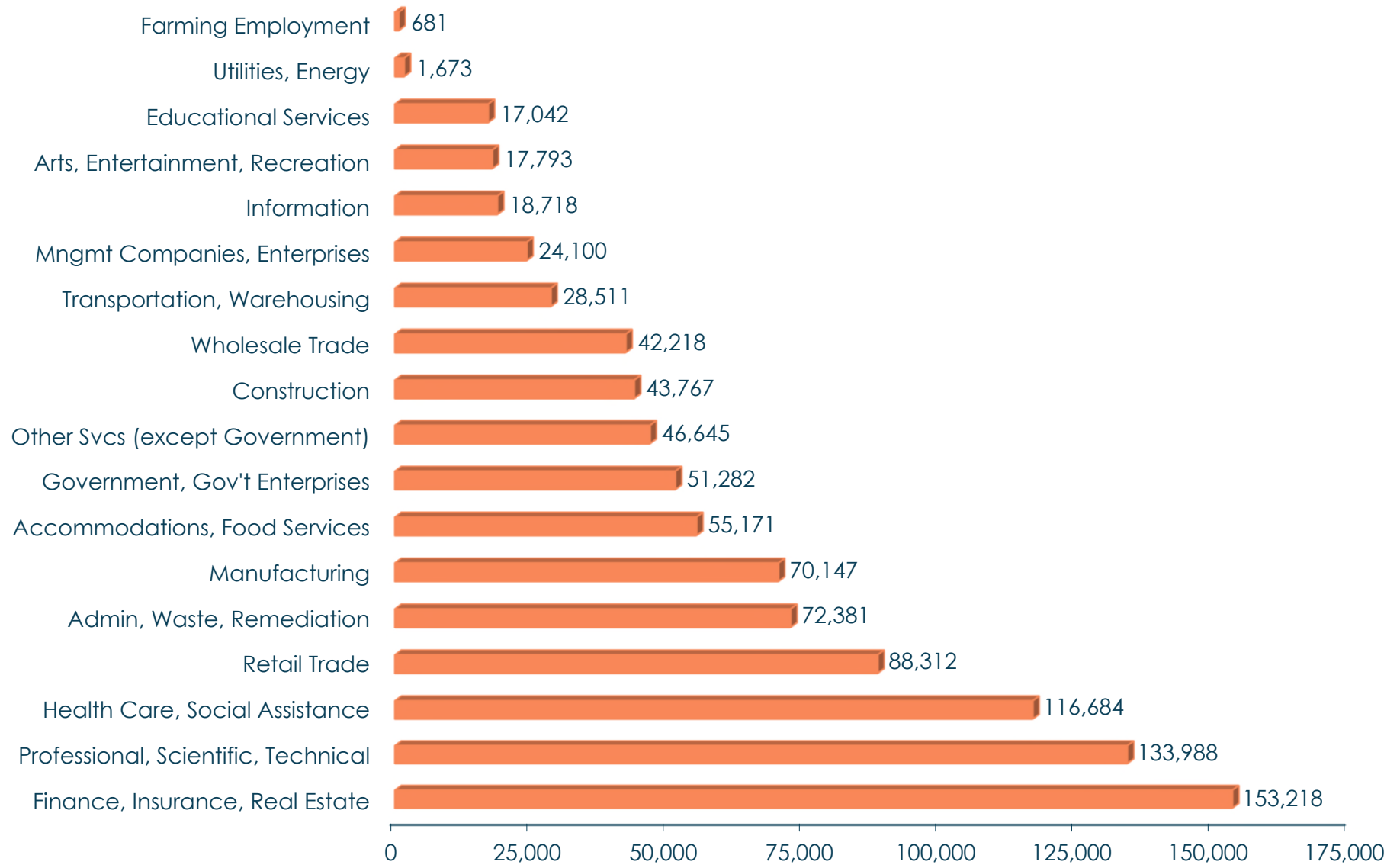
Section 4-H

Total Employment by Industry Sector
Full Time and Part Time, Ages 16+
Oakland County, Michigan | 2021

Industry Sector	Employment
Farming Employment	681
Utilities, Energy	1,673
Educational Services	17,042
Arts, Entertainment, Recreation	17,793
Information	18,718
Mngmt Companies, Enterprises	24,100
Transportation, Warehousing	28,511
Wholesale Trade	42,218
Construction	43,767
Other Svcs (except Government)	46,645
Government, Gov't Enterprises	51,282
Accommodations, Food Services	55,171
Manufacturing	70,147
Admin, Waste, Remediation	72,381
Retail Trade	88,312
Health Care, Social Assistance	116,684
Professional, Scientific, Technical	133,988
Finance, Insurance, Real Estate	153,218

Source: Underlying data provided by the Bureau of Economic Analysis.
Exhibit and analysis prepared by LandUseUSA | Urban Strategies; 2023.

Total Employment by Industry Sector
Full Time and Part Time, Ages 16+
Genesee County, Michigan | 2021

Industry Sector	Employment
Farming Employment	991
Utilities, Energy	444
Educational Services	3,372
Arts, Entertainment, Recreation	3,232
Information	1,501
Mngmt Companies, Enterprises	551
Transportation, Warehousing	4,770
Wholesale Trade	7,297
Construction	10,520
Other Svcs (except Government)	12,947
Government, Gov't Enterprises	19,172
Accommodations, Food Services	13,269
Manufacturing	13,981
Admin, Waste, Remediation	15,592
Retail Trade	22,416
Health Care, Social Assistance	26,267
Professional, Scientific, Technical	7,839
Finance, Insurance, Real Estate	15,459

Source: Underlying data provided by the Bureau of Economic Analysis.
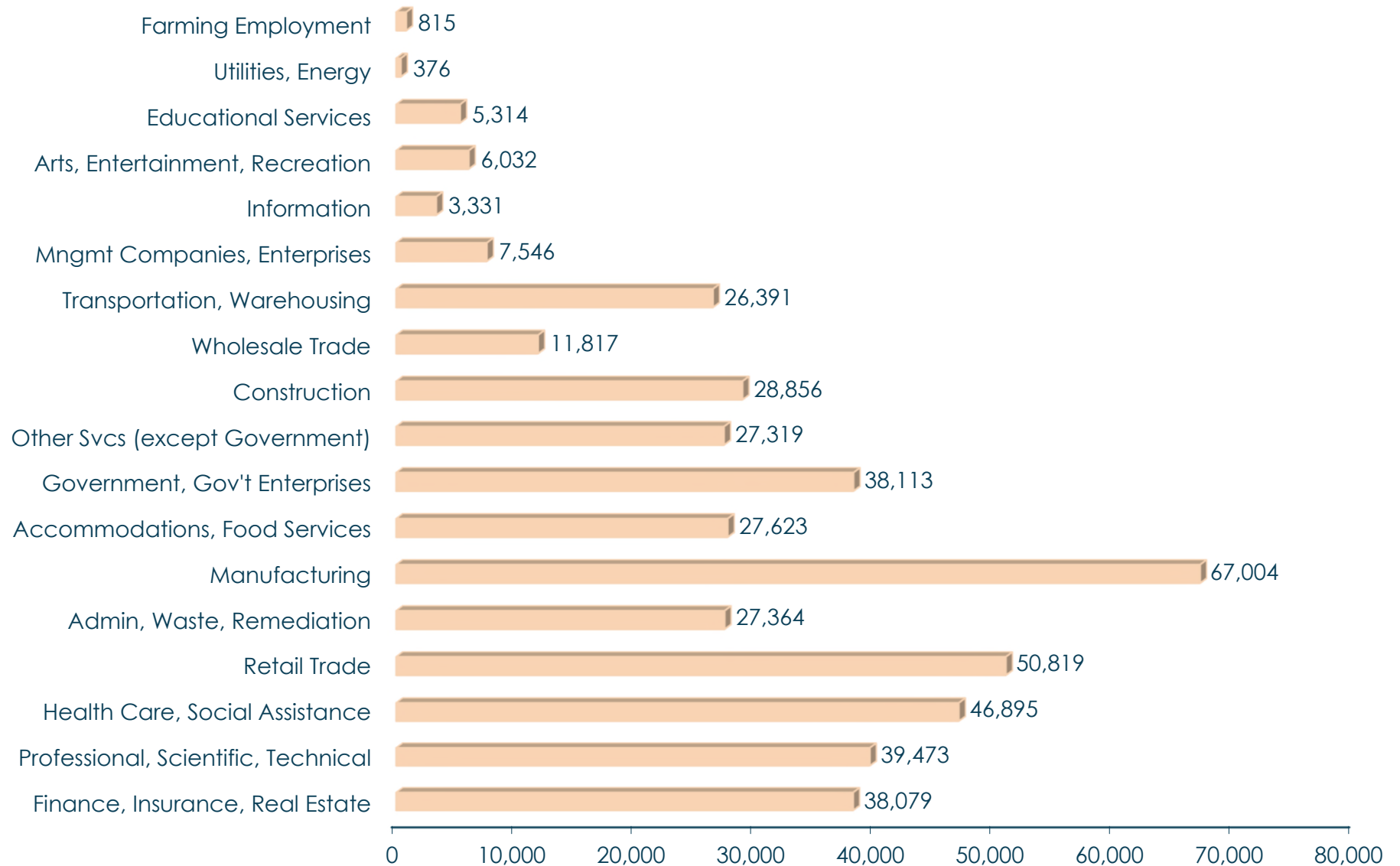Exhibit and analysis prepared by LandUseUSA | Urban Strategies; 2023.

Total Employment by Industry Sector
Full Time and Part Time, Ages 16+
Macomb County, Michigan | 2021

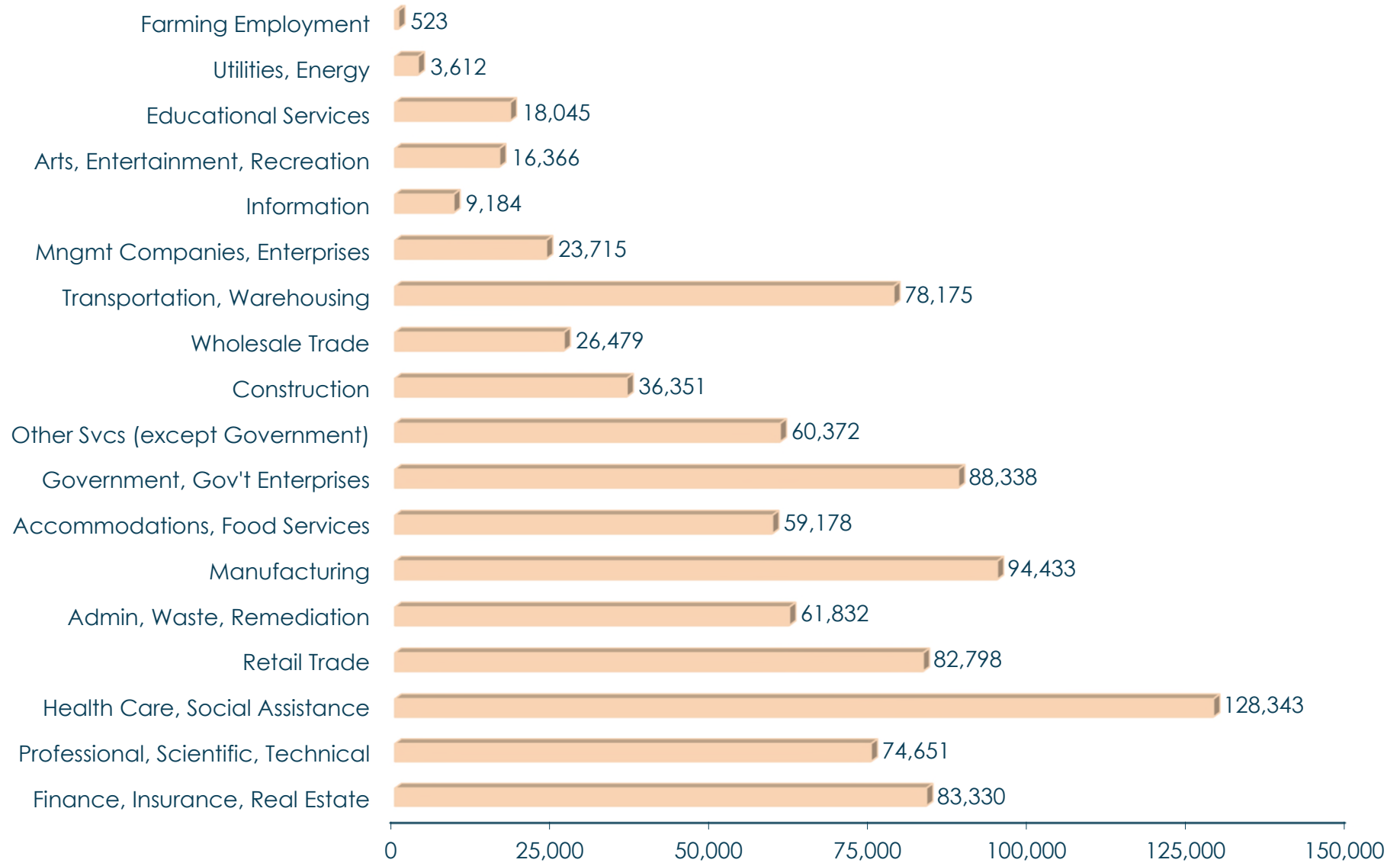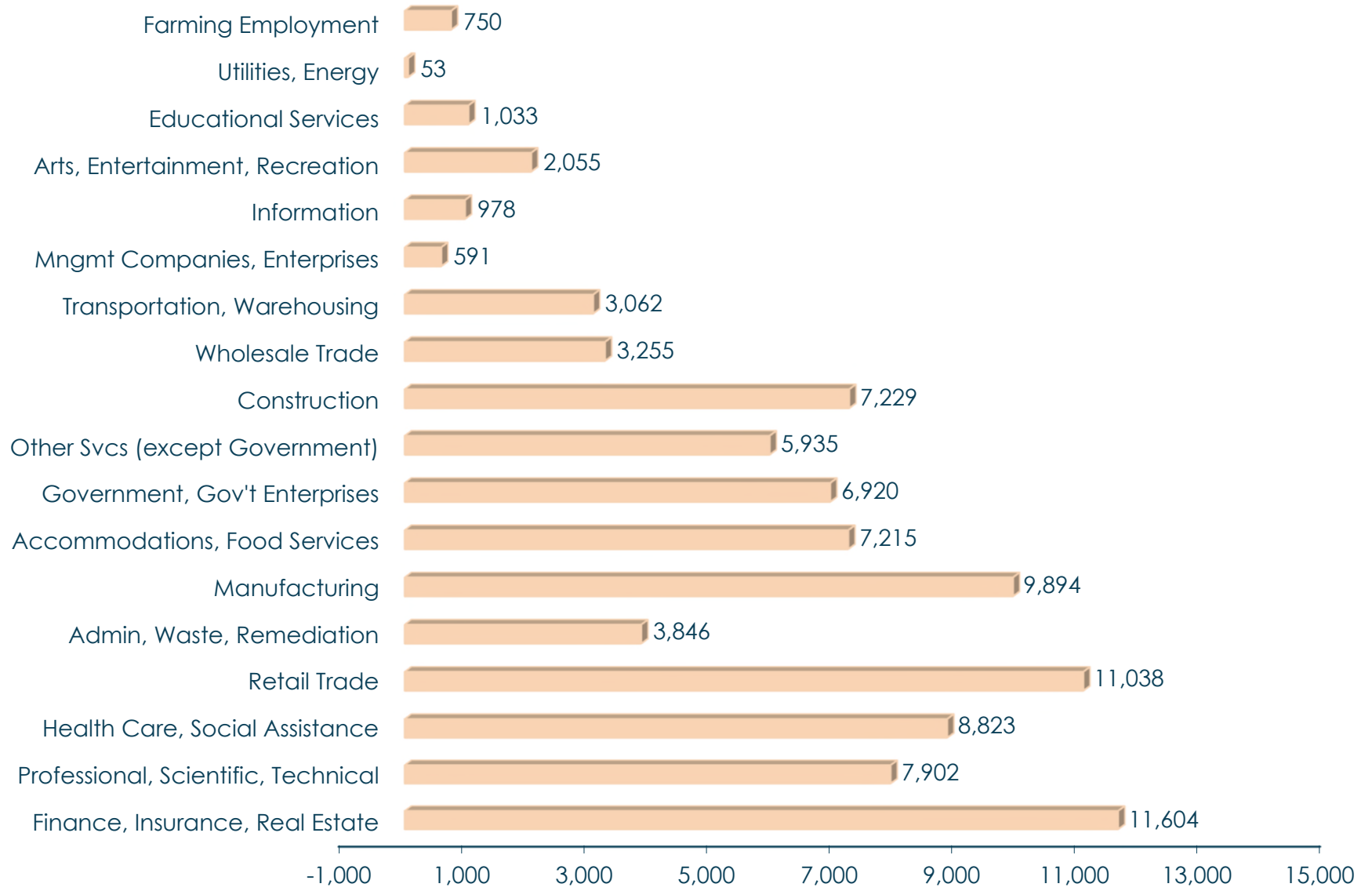| Industry Sector	Value
Farming Employment	815
Utilities, Energy	376
Educational Services	5,314
Arts, Entertainment, Recreation	6,032
Information	3,331
Mngmt Companies, Enterprises	7,546
Transportation, Warehousing	26,391
Wholesale Trade	11,817
Construction	28,856
Other Svcs (except Government)	27,319
Government, Gov't Enterprises	38,113
Accommodations, Food Services	27,623
Manufacturing	67,004
Admin, Waste, Remediation	27,364
Retail Trade	50,819
Health Care, Social Assistance	46,895
Professional, Scientific, Technical	39,473
Finance, Insurance, Real Estate	38,079

Source: Underlying data provided by the Bureau of Economic Analysis.
Exhibit and analysis prepared by LandUseUSA | Urban Strategies; 2023.

Total Employment by Industry Sector
Full Time and Part Time, Ages 16+
Wayne County, Michigan | 2021

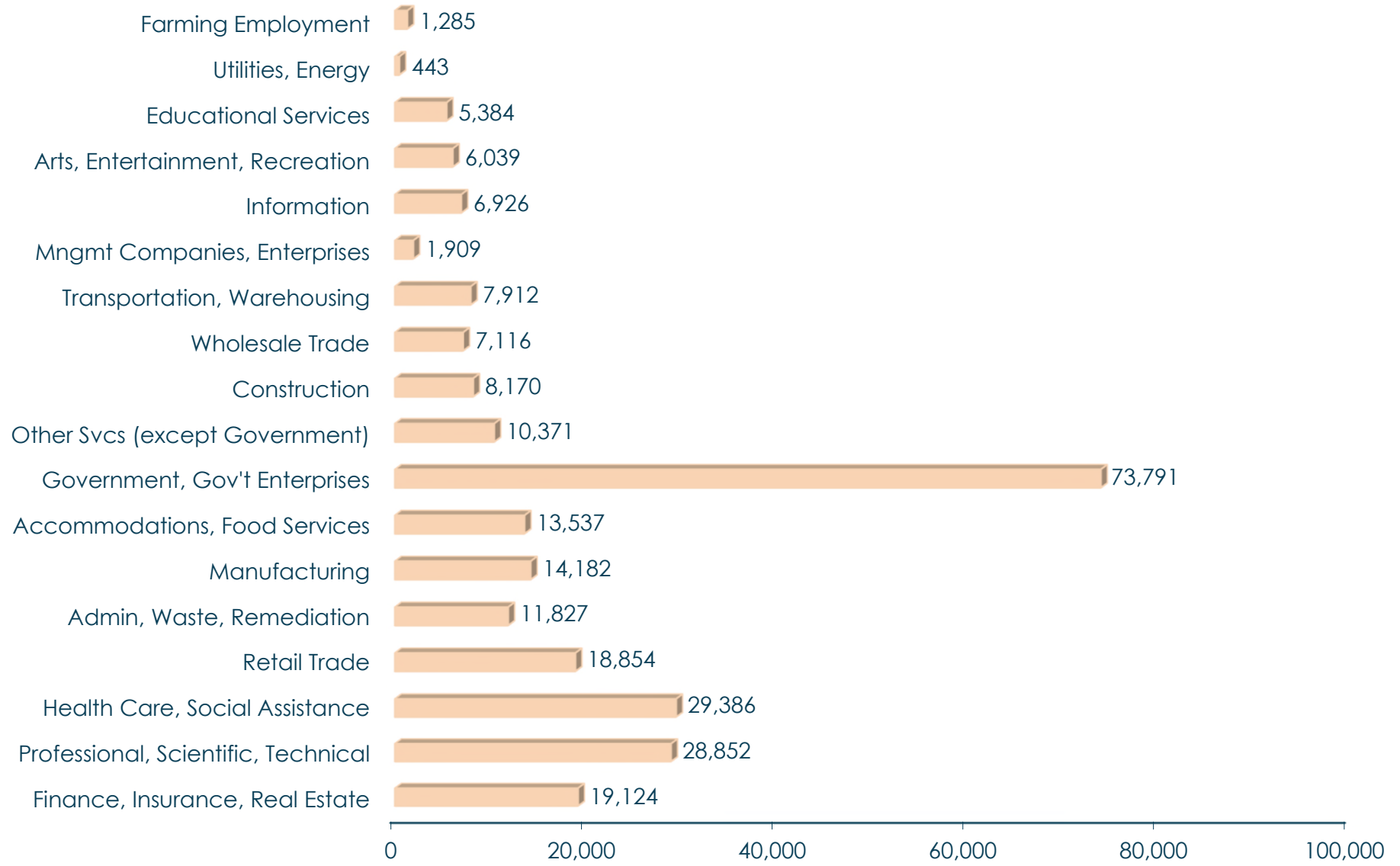| Industry Sector	Employment
Farming Employment	523
Utilities, Energy	3,612
Educational Services	18,045
Arts, Entertainment, Recreation	16,366
Information	9,184
Mngmt Companies, Enterprises	23,715
Transportation, Warehousing	78,175
Wholesale Trade	26,479
Construction	36,351
Other Svcs (except Government)	60,372
Government, Gov't Enterprises	88,338
Accommodations, Food Services	59,178
Manufacturing	94,433
Admin, Waste, Remediation	61,832
Retail Trade	82,798
Health Care, Social Assistance	128,343
Professional, Scientific, Technical	74,651
Finance, Insurance, Real Estate	83,330

Source: Underlying data provided by the Bureau of Economic Analysis.
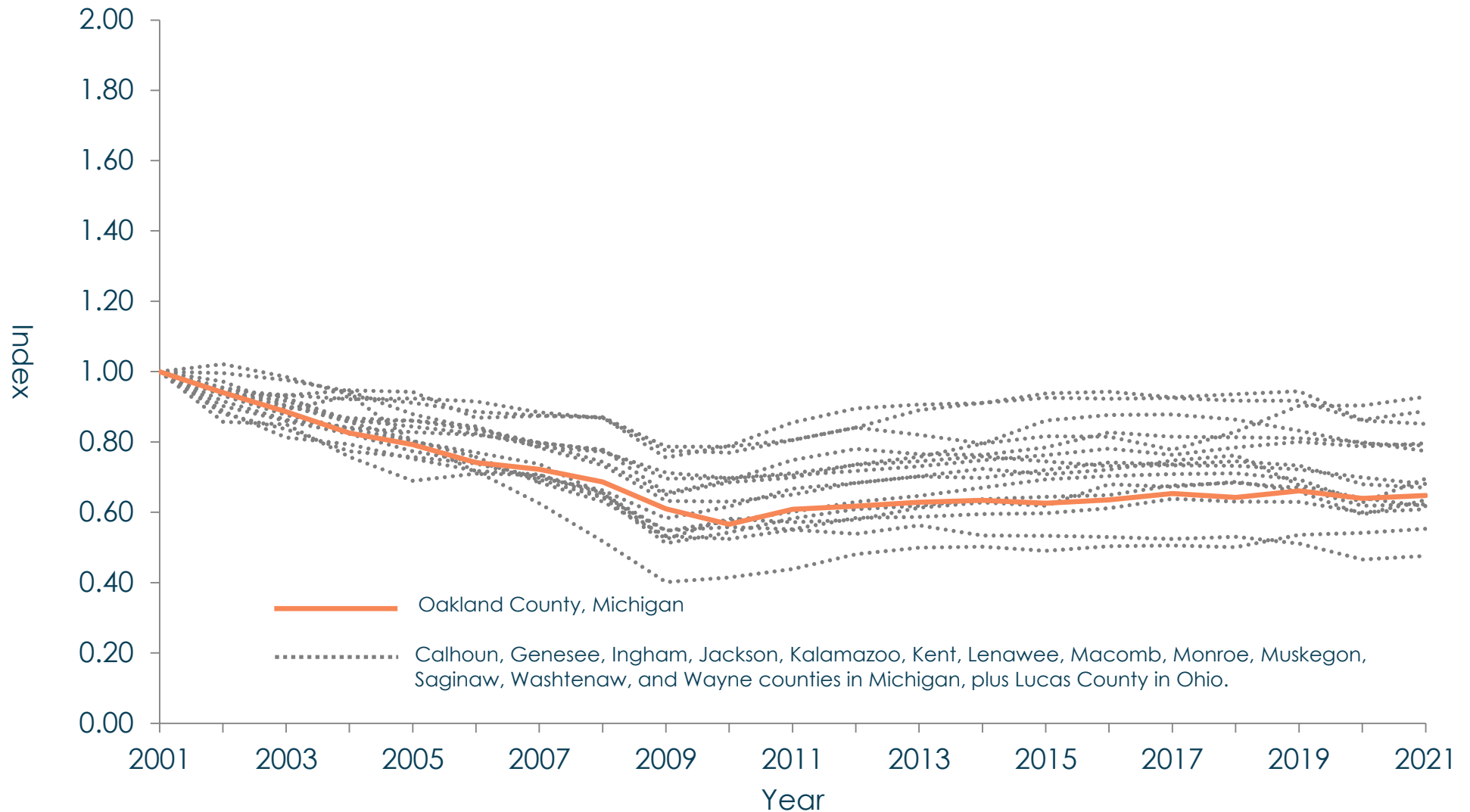Exhibit and analysis prepared by LandUseUSA | Urban Strategies; 2023.

Total Employment by Industry Sector
Full Time and Part Time, Ages 16+
Livingston County, Michigan | 2021

Industry Sector	Employment
Farming Employment	750
Utilities, Energy	53
Educational Services	1,033
Arts, Entertainment, Recreation	2,055
Information	978
Mngmt Companies, Enterprises	591
Transportation, Warehousing	3,062
Wholesale Trade	3,255
Construction	7,229
Other Svcs (except Government)	5,935
Government, Gov't Enterprises	6,920
Accommodations, Food Services	7,215
Manufacturing	9,894
Admin, Waste, Remediation	3,846
Retail Trade	11,038
Health Care, Social Assistance	8,823
Professional, Scientific, Technical	7,902
Finance, Insurance, Real Estate	11,604

Source: Underlying data provided by the Bureau of Economic Analysis.
Exhibit and analysis prepared by LandUseUSA | Urban Strategies; 2023.

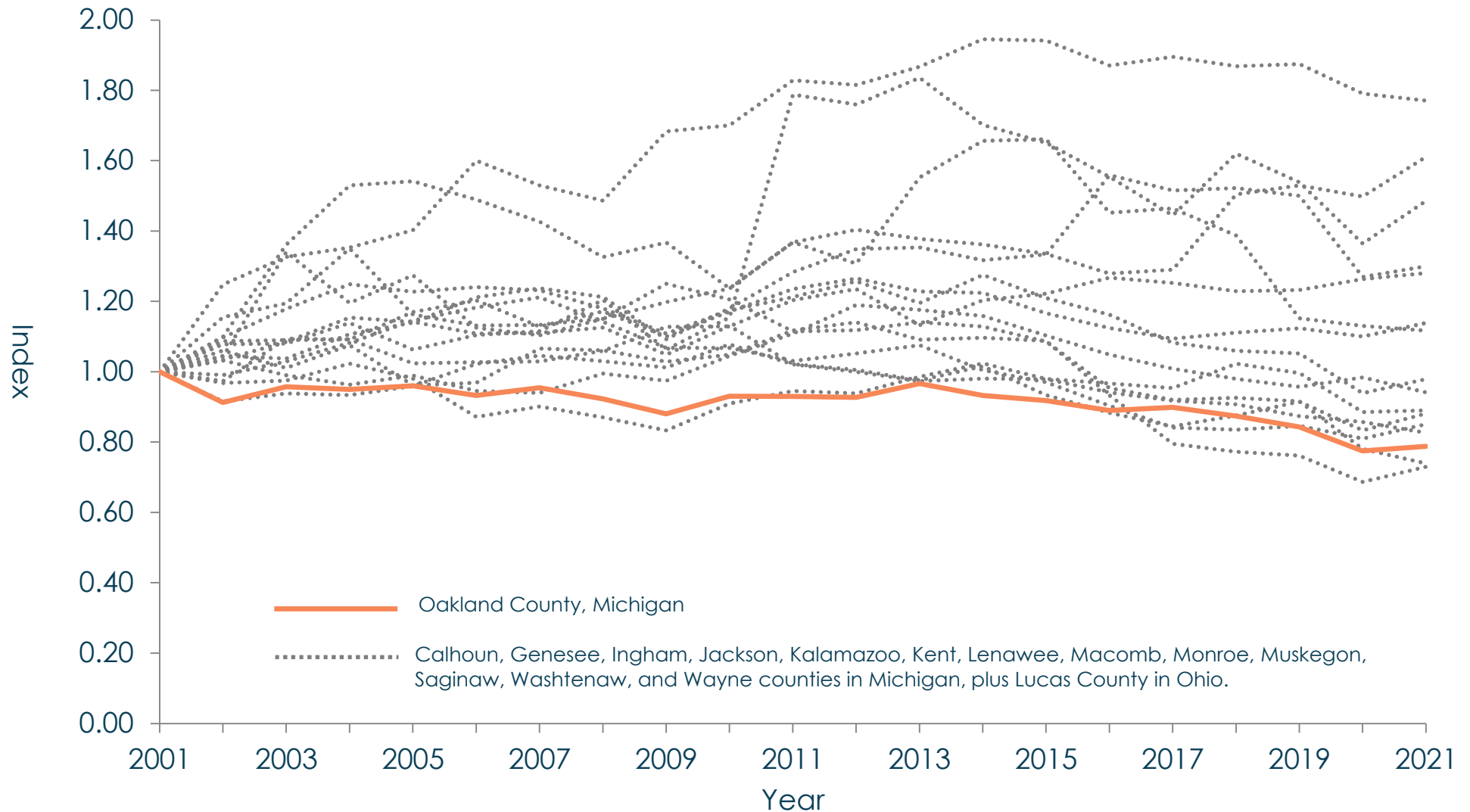## Total Employment by Industry Sector
Full Time and Part Time, Ages 16+
Washtenaw County, Michigan | 2021

Industry Sector	Value
Farming Employment	1,285
Utilities, Energy	443
Educational Services	5,384
Arts, Entertainment, Recreation	6,039
Information	6,926
Mngmt Companies, Enterprises	1,909
Transportation, Warehousing	7,912
Wholesale Trade	7,116
Construction	8,170
Other Svcs (except Government)	10,371
Government, Gov't Enterprises	73,791
Accommodations, Food Services	13,537
Manufacturing	14,182
Admin, Waste, Remediation	11,827
Retail Trade	18,854
Health Care, Social Assistance	29,386
Professional, Scientific, Technical	28,852
Finance, Insurance, Real Estate	19,124

Source: Underlying data provided by the Bureau of Economic Analysis.
Exhibit and analysis prepared by LandUseUSA | Urban Strategies; 2023.

Section 4-I

Manufacturing
Change in Share of Total Employment (Index)
Oakland County v. Selected Others

Index

2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00

—— Oakland County, Michigan

········· Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon, Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.

2001 2003 2005 2007 2009 2011 2013 2015 2017 2019 2021

Year

Admin Support, Waste Mngmt, Remediation
Change in Share of Total Employment (Index)
Oakland County v. Selected Others

Index

Year

—— Oakland County, Michigan

········· Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon, Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.

Wholesale Trade
Change in Share of Total Employment (Index)
Oakland County v. Selected Others
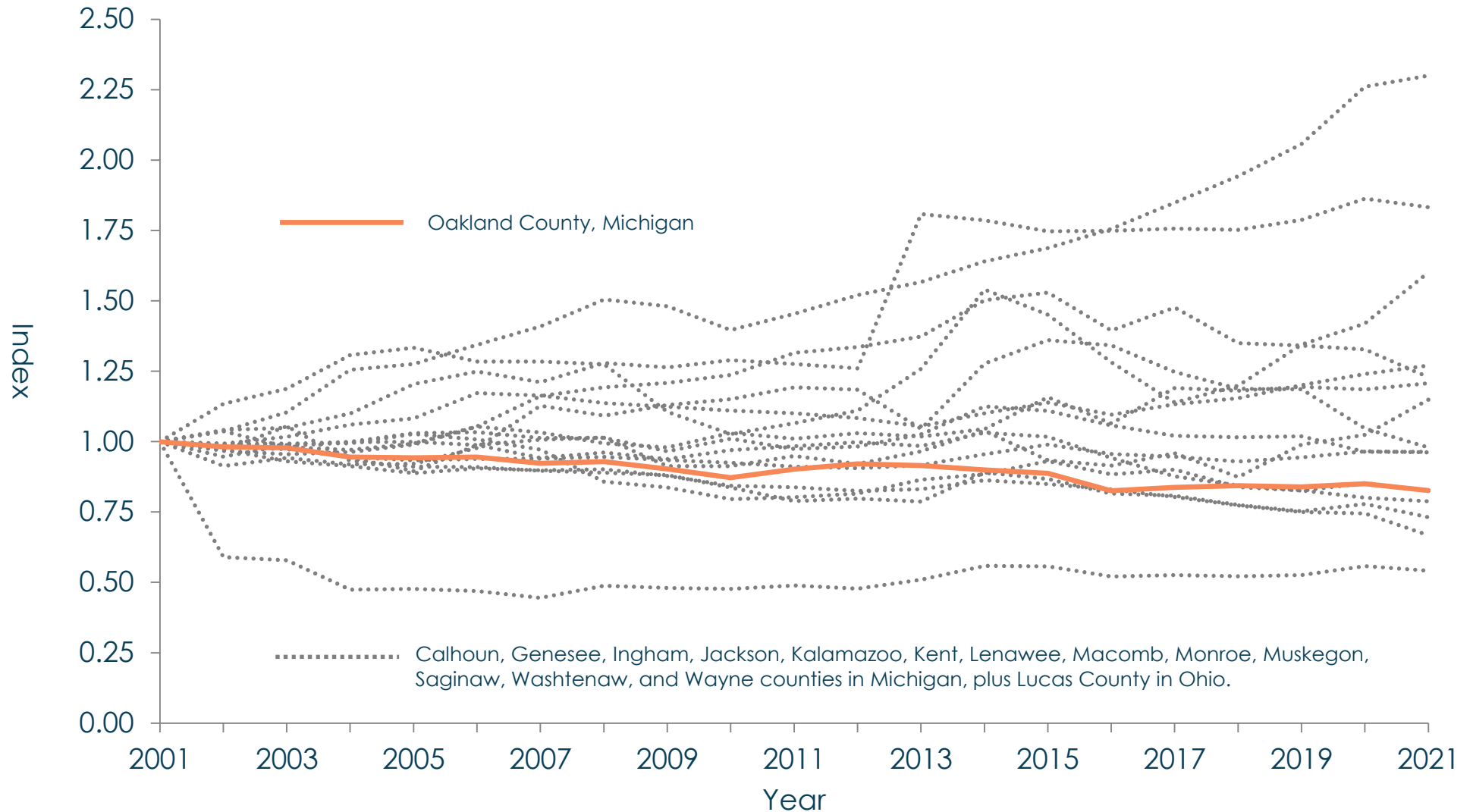
Index

—— Oakland County, Michigan

2.50

2.25

2.00

1.75

1.50

1.25

1.00

0.75

0.50

0.25

0.00

2001 2003 2005 2007 2009 2011 2013 2015 2017 2019 2021

Year

Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon, Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.

Retail Trade
Change in Share of Total Employment (Index)
Oakland County v. Selected Others
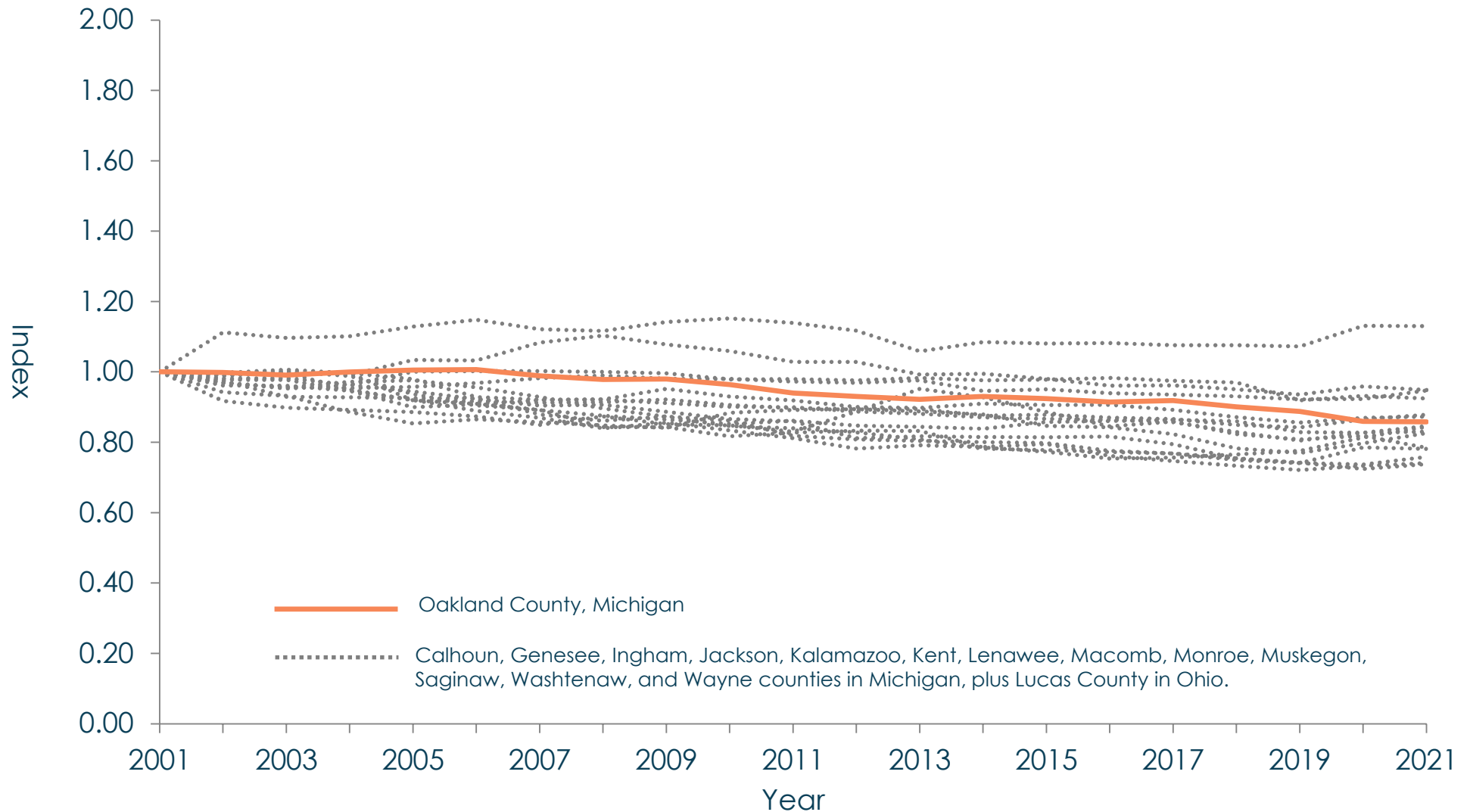
Index

2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00

—— Oakland County, Michigan

.... Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon, Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.

2001 2003 2005 2007 2009 2011 2013 2015 2017 2019 2021

Year

Government, Gov't Enterprises
Change in Share of Total Employment (Index)
Oakland County v. Selected Others

Index

Oakland County, Michigan

Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon, Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.

Year

Information
Change in Share of Total Employment (Index)
Oakland County v. Selected Others
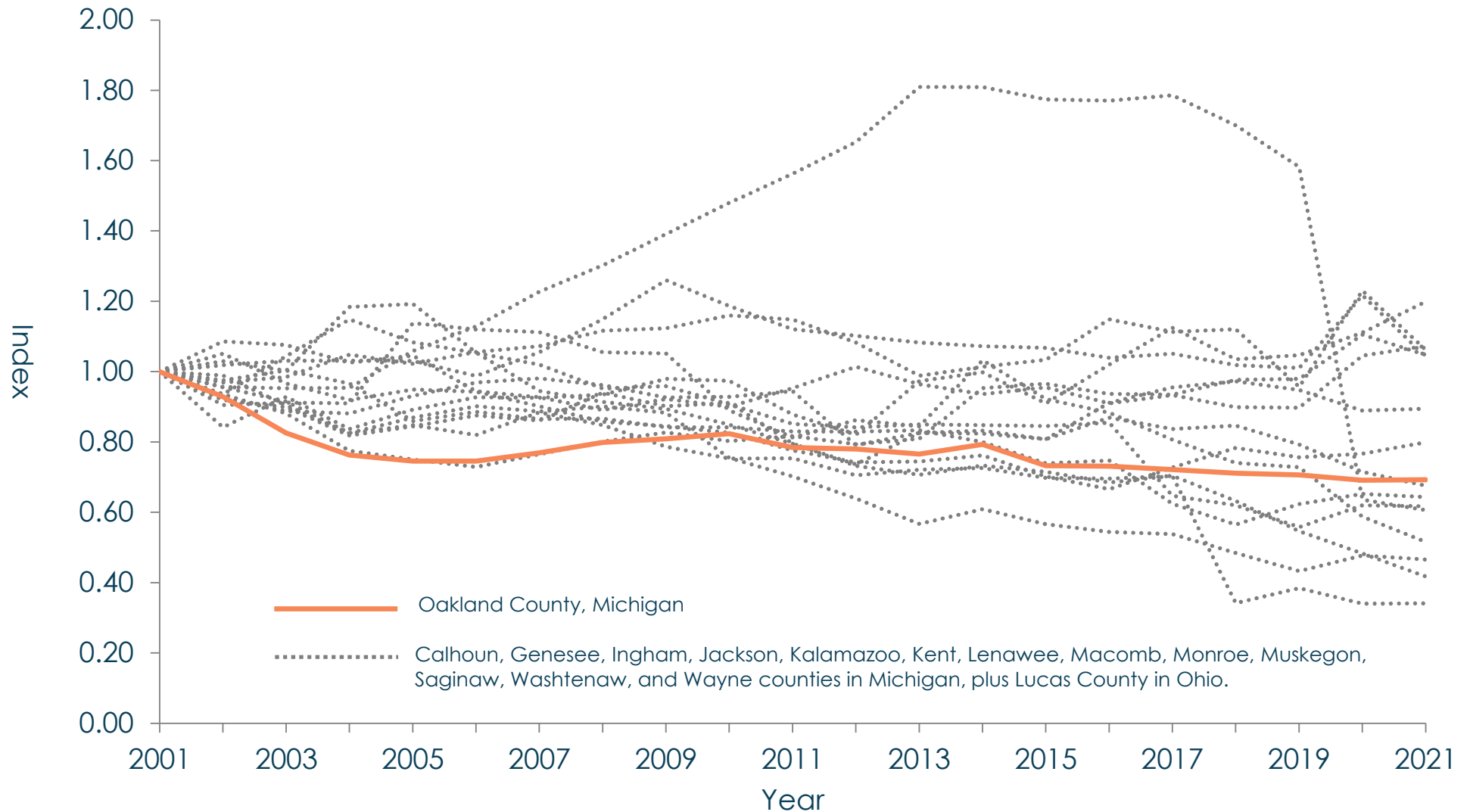
Index

2.00

1.80

1.60

1.40

1.20

1.00

0.80

0.60

0.40

0.20

0.00

—— Oakland County, Michigan

········· Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon, Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.

2001 2003 2005 2007 2009 2011 2013 2015 2017 2019 2021

Year

Construction Industry
Change in Share of Total Employment (Index)
Oakland County v. Selected Others
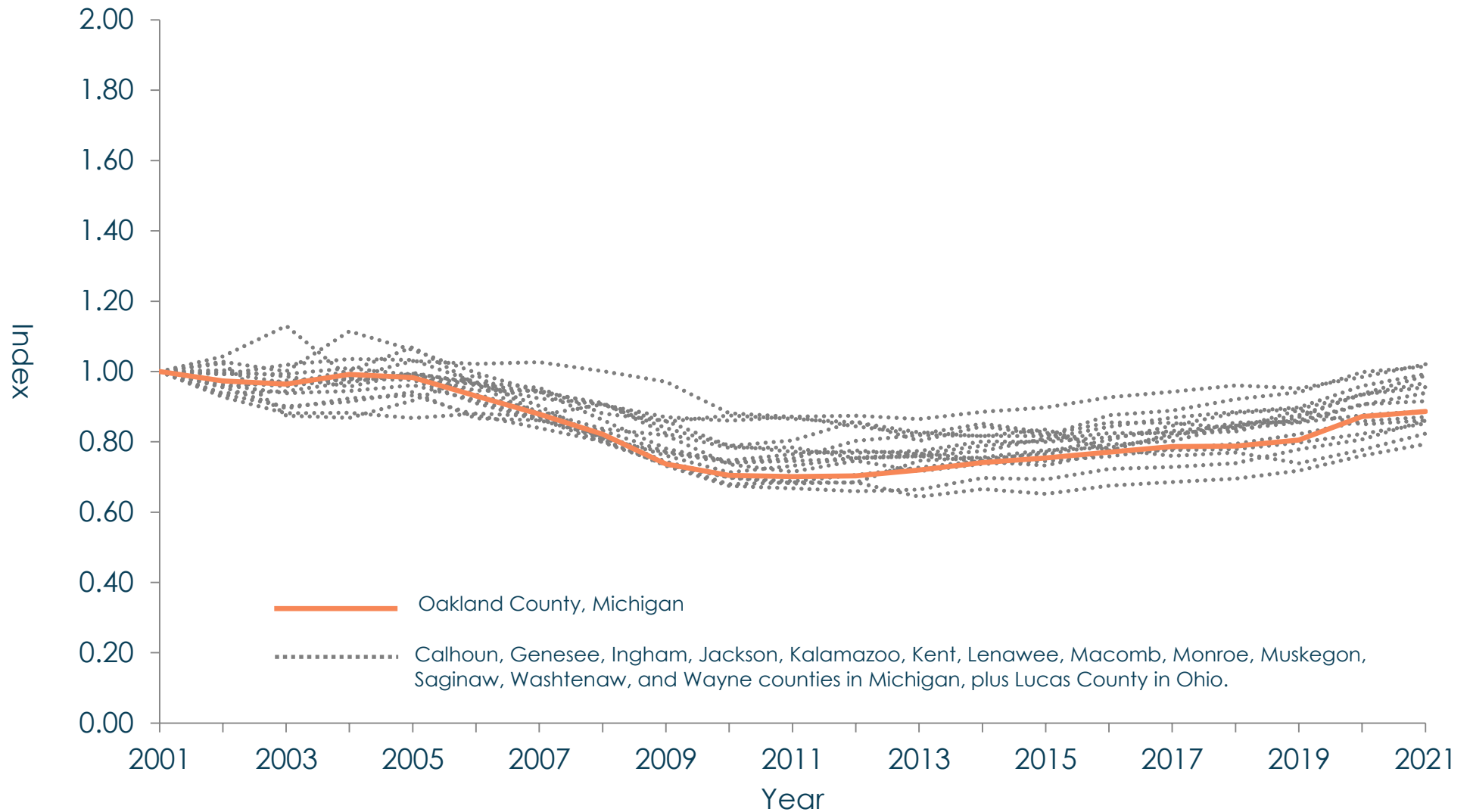
Index

Year

— Oakland County, Michigan

..... Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon, Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.
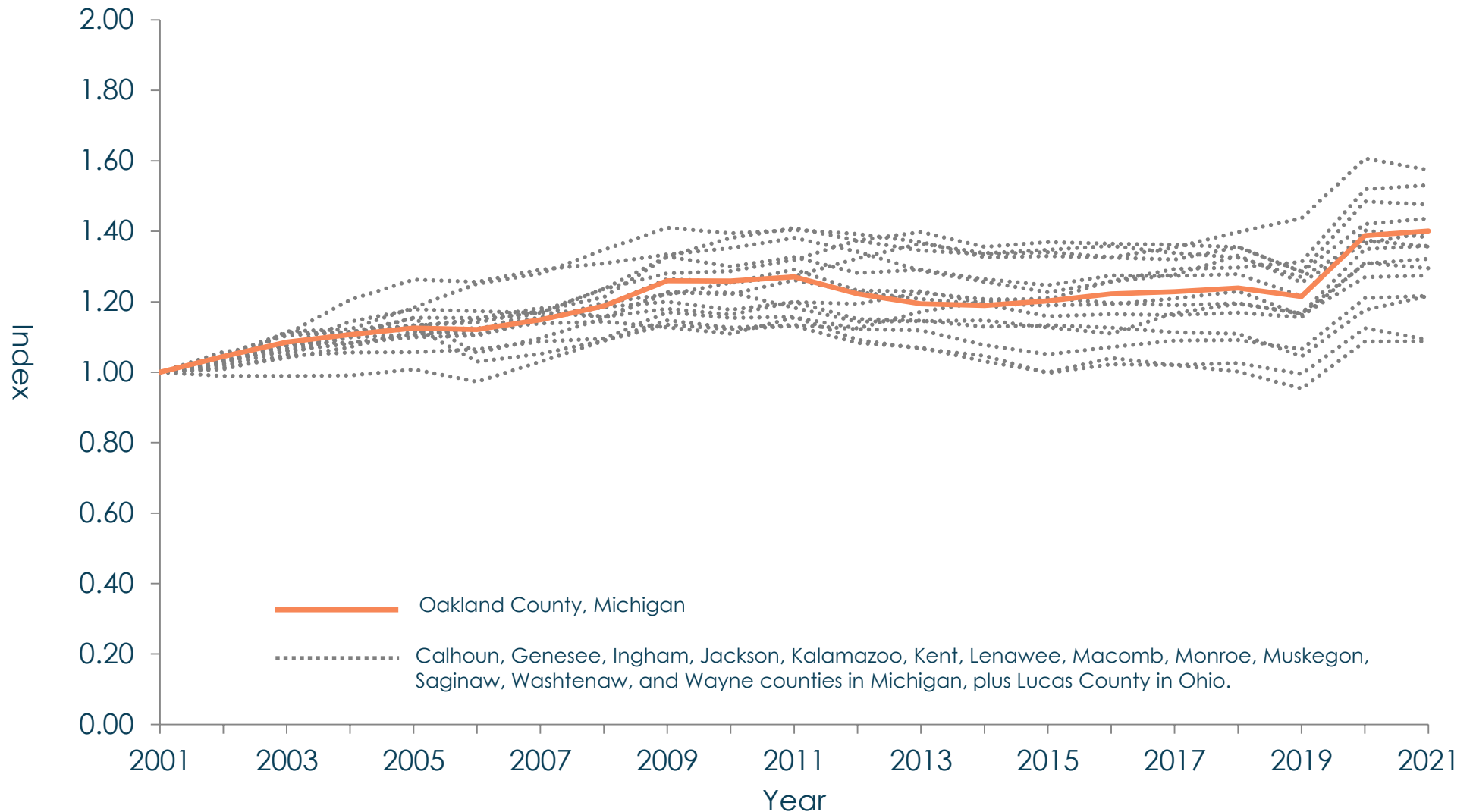
Source: Underlying data provided by the Bureau of Economic Analysis. Calculations, interpolations, analysis, and exhibit prepared by LandUseUSA | Urban Strategies in collaboration with DPZ CoDesign, 2023.

Overnight Accommodations, Food Services
Change in Share of Total Employment (Index)
Oakland County v. Selected Others
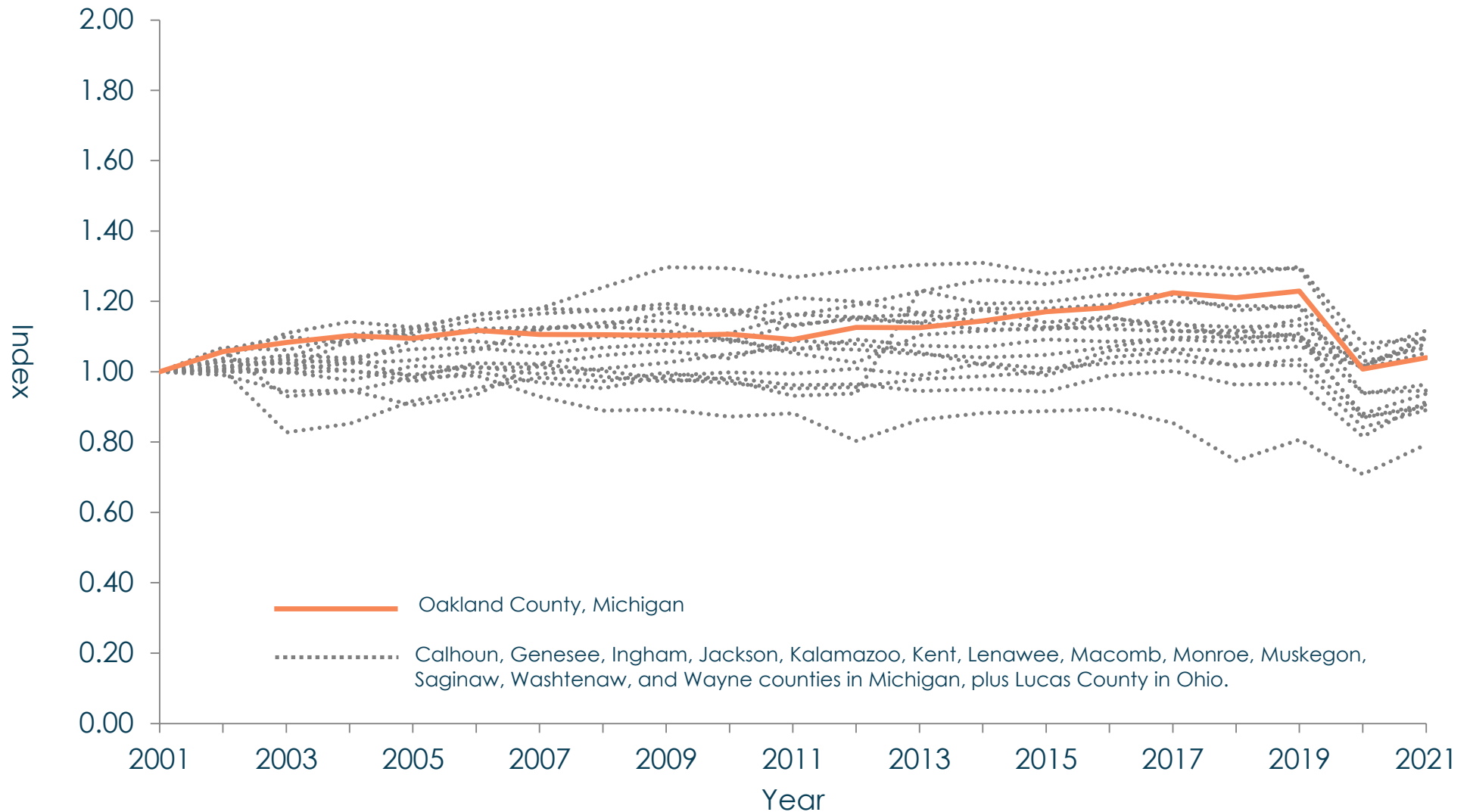
Index

	Oakland County, Michigan
	Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon, Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.

Year

Health Care, Social Assistance
Change in Share of Total Employment (Index)
Oakland County v. Selected Others
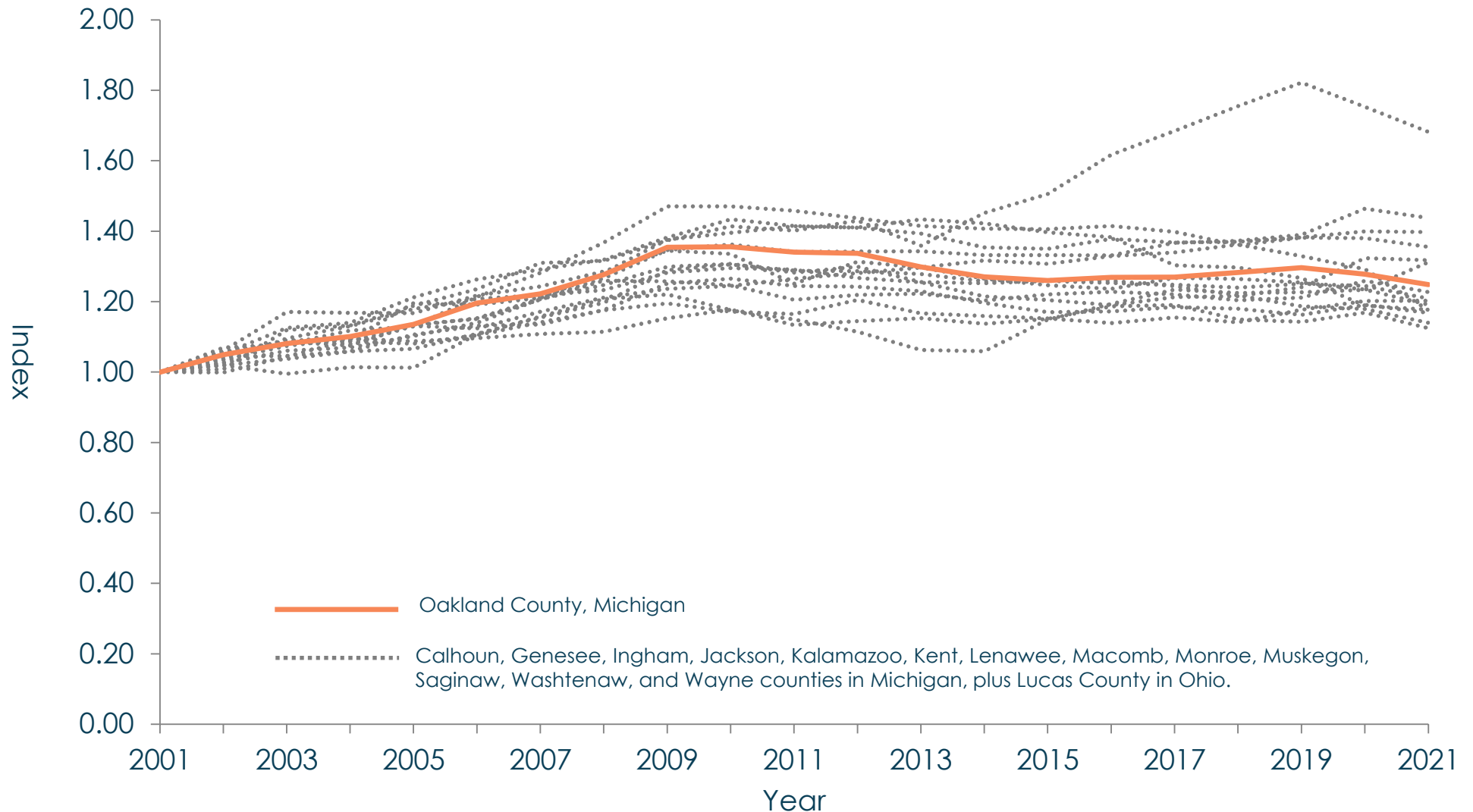
Index

Year

—— Oakland County, Michigan

········ Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon, Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.
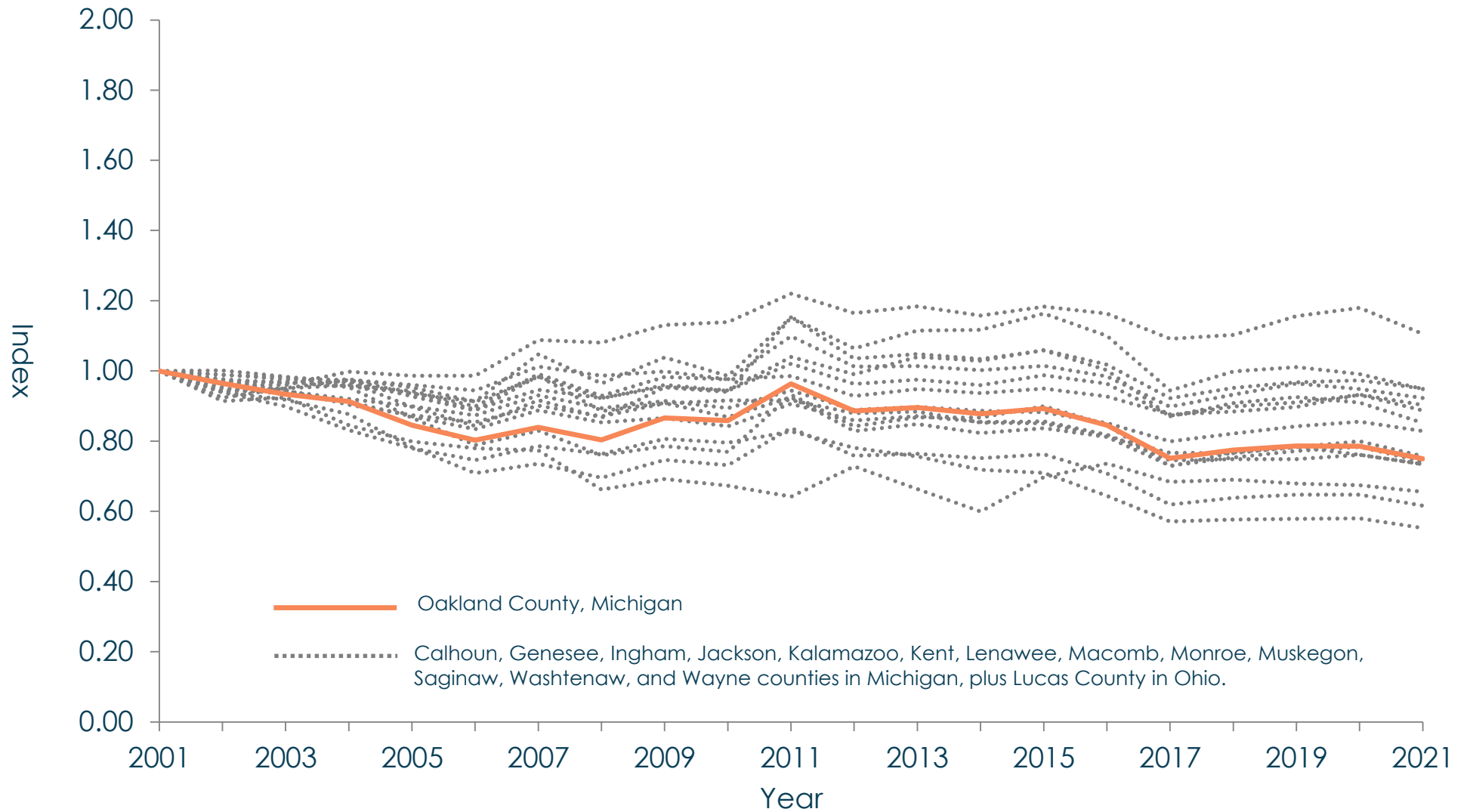
Source: Underlying data provided by the Bureau of Economic Analysis. Calculations, interpolations, analysis, and exhibit prepared by LandUseUSA | Urban Strategies in collaboration with DPZ CoDesign, 2023.
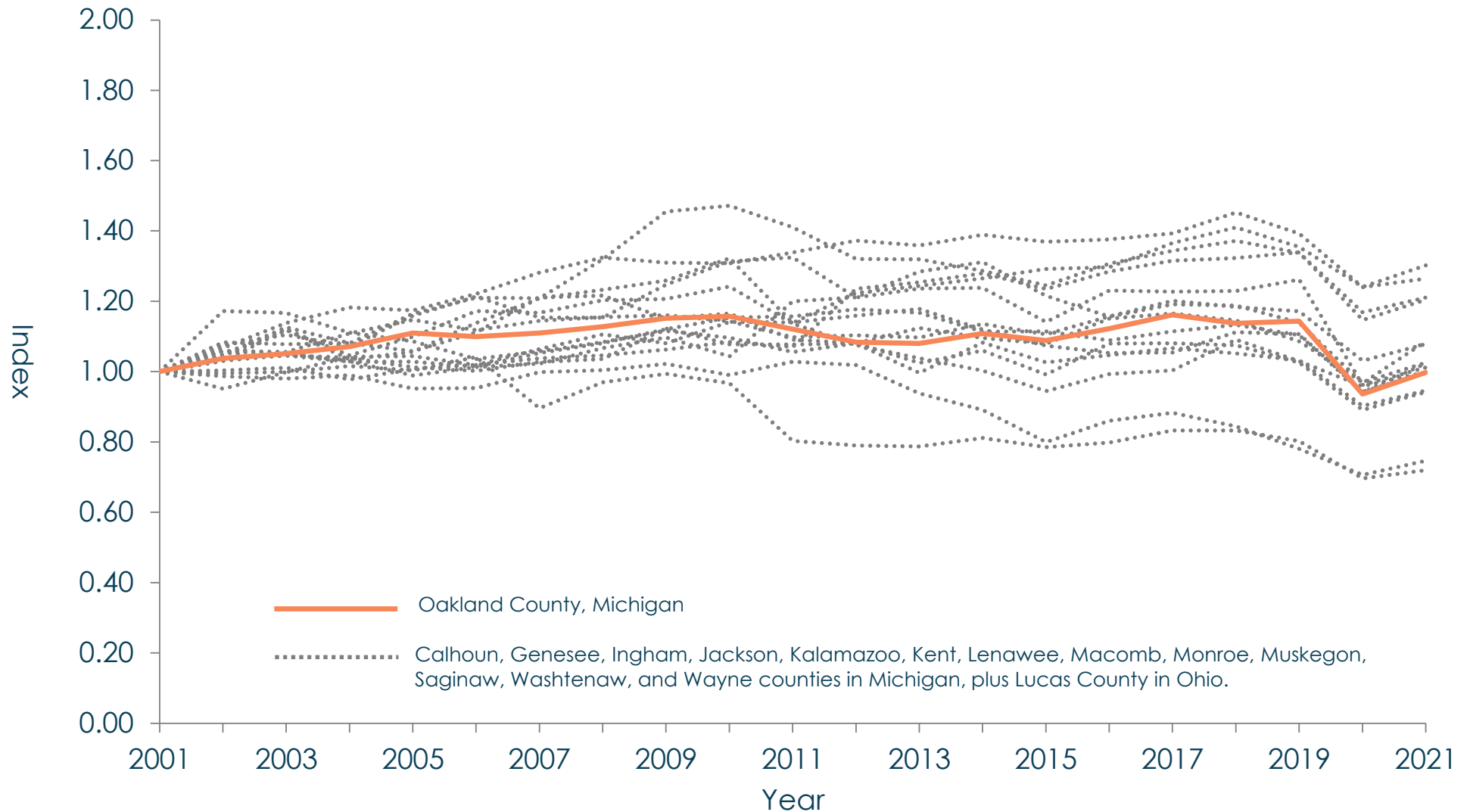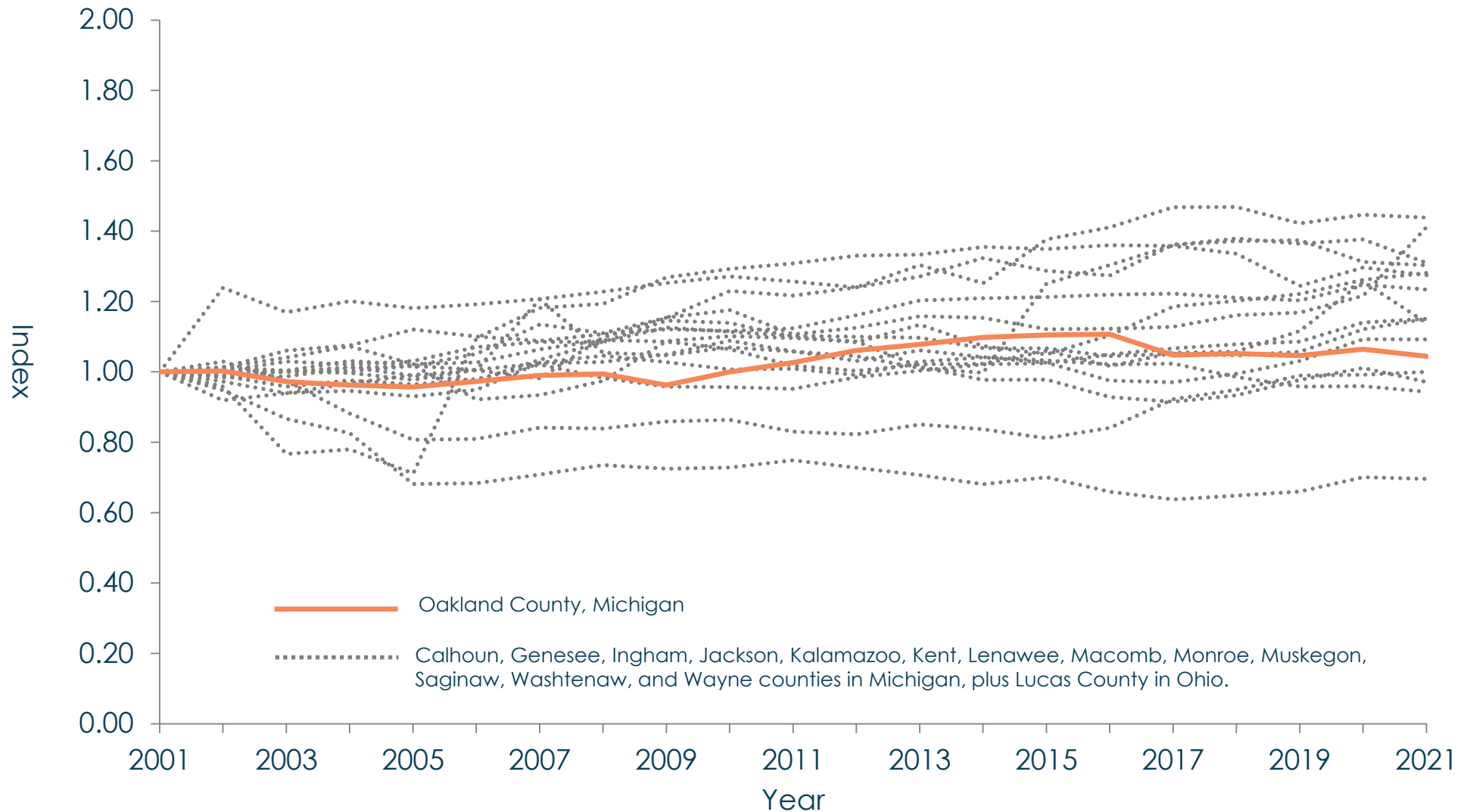
FIRE: Finance, Insurance, Real Estate
Change in Share of Total Employment (Index)
Oakland County v. Selected Others

Index

Year

—— Oakland County, Michigan

········ Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon, Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.

Farming
Change in Share of Total Employment (Index)
Oakland County v. Selected Others

Index

2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00

—— Oakland County, Michigan

.... Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon, Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.

2001   2003   2005   2007   2009   2011   2013   2015   2017   2019   2021

Year

Arts, Entertainment, Recreation
Change in Share of Total Employment (Index)
Oakland County v. Selected Others

Index

Year

—— Oakland County, Michigan

.... Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon, Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.

Professional, Scientific, Technical Services
Change in Share of Total Employment (Index)
Oakland County v. Selected Others

Index

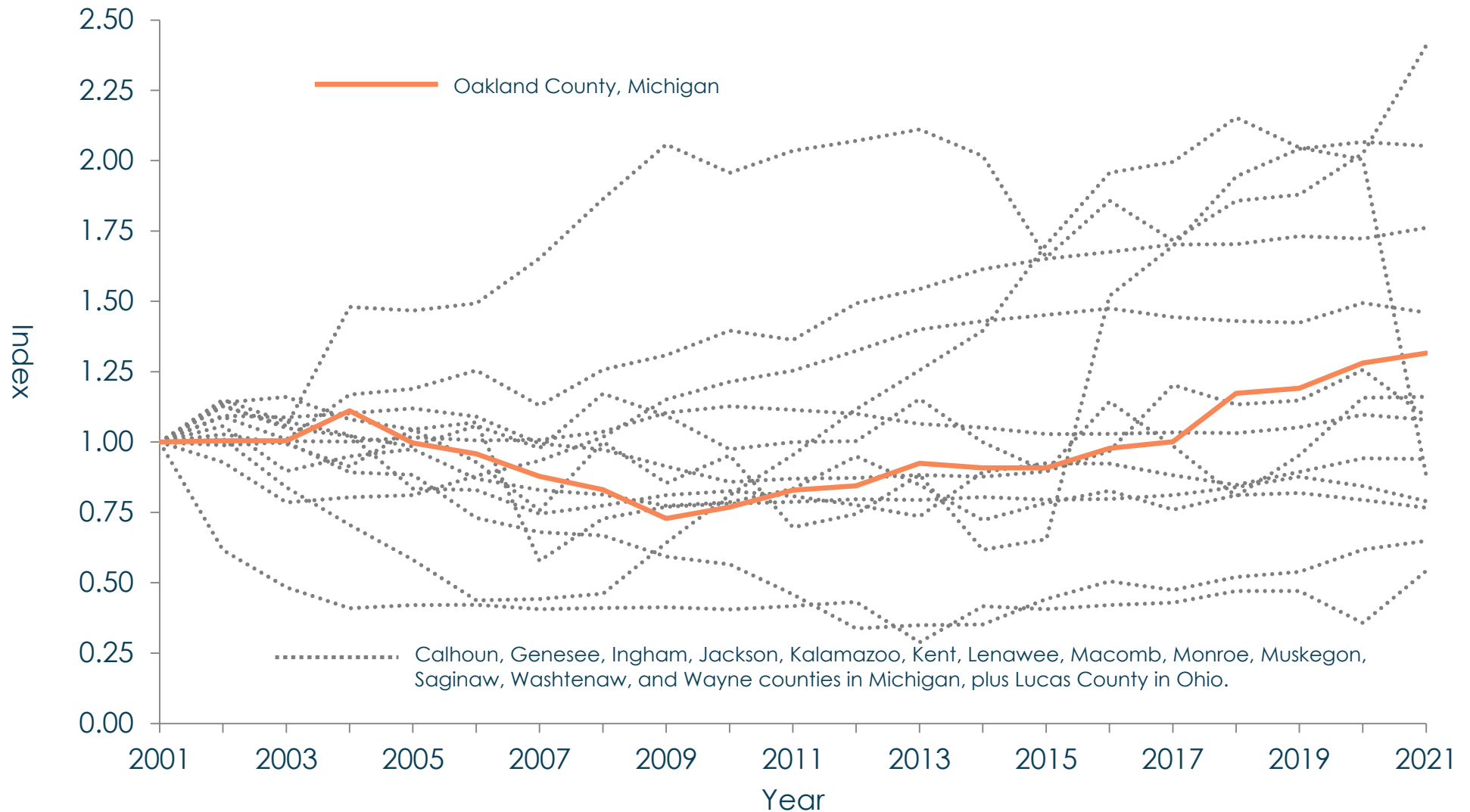Year

── Oakland County, Michigan

⋯⋯ Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon, Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.

Educational Services
Change in Share of Total Employment (Index)
Oakland County v. Selected Others
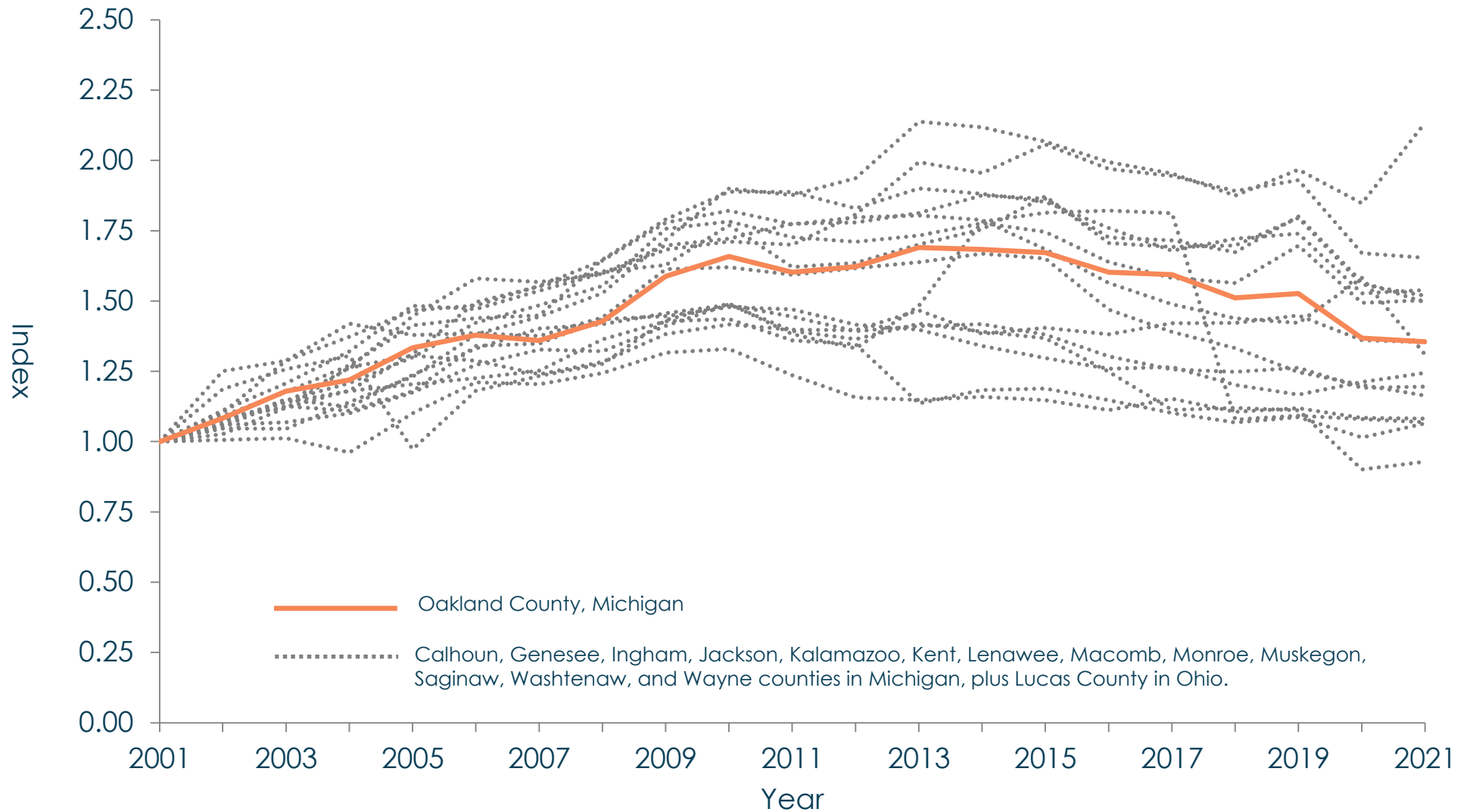
Index

2.50
2.25
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00

—— Oakland County, Michigan

········ Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon, Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.

2001 2003 2005 2007 2009 2011 2013 2015 2017 2019 2021

Year

Management of Companies and Enterprises
Change in Share of Total Employment (Index)
Oakland County v. Selected Others

Oakland County, Michigan

Index

Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon,
Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.

Year

Transportation, Warehousing
Change in Share of Total Employment (Index)
Oakland County v. Selected Others
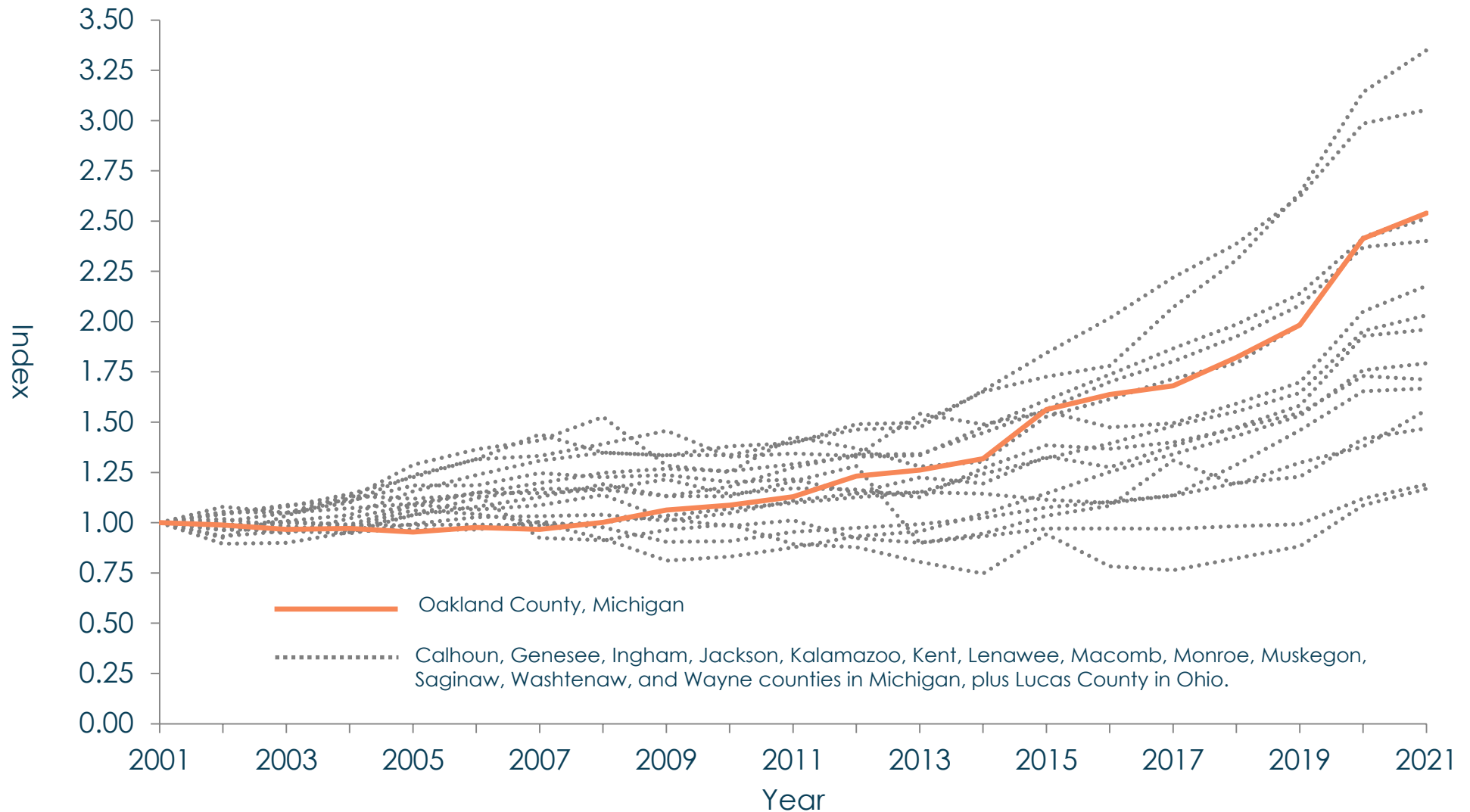
Index

Year

—— Oakland County, Michigan

····· Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon, Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.
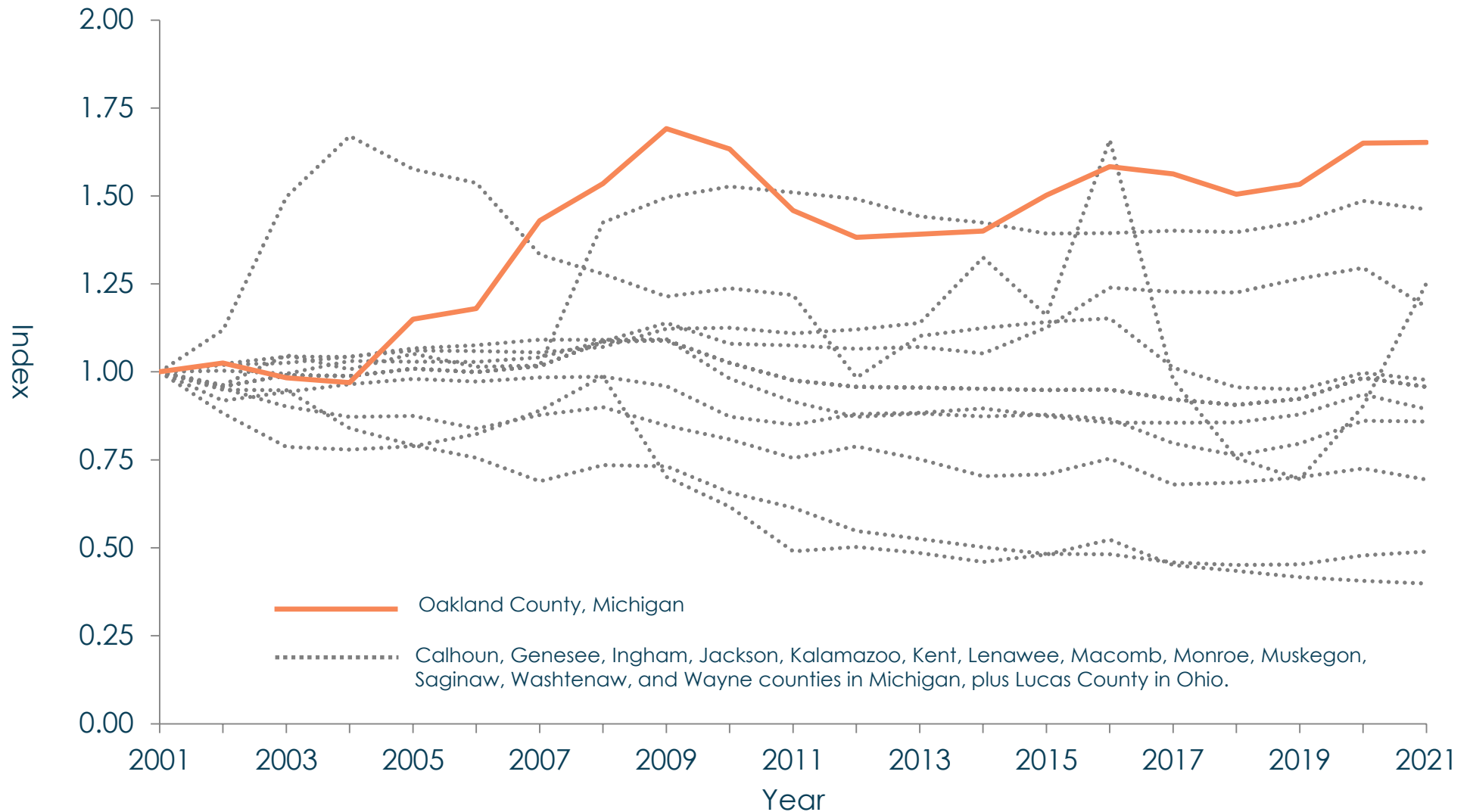
Source: Underlying data provided by the Bureau of Economic Analysis. Calculations, interpolations, analysis, and exhibit prepared by LandUseUSA | Urban Strategies in collaboration with DPZ CoDesign, 2023.

Utilities, Energy
Change in Share of Total Employment (Index)
Oakland County v. Selected Others

Index

2.00

1.75

1.50

1.25

1.00

0.75

0.50

0.25

0.00

———— Oakland County, Michigan

.... Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Lenawee, Macomb, Monroe, Muskegon, Saginaw, Washtenaw, and Wayne counties in Michigan, plus Lucas County in Ohio.

2001   2003   2005   2007   2009   2011   2013   2015   2017   2019   2021

Year