

**MEETING NOTICE**  
**ECONOMIC DEVELOPMENT COMMITTEE MEETING**  
**East Central Wisconsin Regional Planning Commission**

COMMITTEE MEMBERS: Alice Connors-Chair, Sam Kaufman, Kara Homan (Alt for Mayor Woodford), Nadine Miller, Gene Caldwell, DuWayne Federwitz, Steve Gueths, Jerry Bougie-Vice Chair (Perm Alt for Jon Doemel), Mark Rohloff (Perm Alt for Matt Mugerauer)

**Place:** East Central Offices (400 Ahnaip Street, Suite 100; Menasha)  
**Date:** Wednesday, July 12, 2023 (Rescheduled Date)  
**Time:** 1:00 p.m. (In-Person)

*Members - Please contact the East Central office if you are unable to attend and arrange for an alternate to be present.*

**AGENDA**

- 1. Welcome and Introductions**
- 2. Roll Call**
  - A. Introduction of Alternates, Staff, and Guests
- 3. Approval of Agenda / Motion to Deviate**
- 4. Public Comment**
- 5. Approval of the Minutes**
  - A. January 4, 2023 Economic Development Committee Meeting
- 6. Announcements**
- 7. New Business/Action Items**
  - A. **\*\* Election of Committee Chair and Vice-Chair**
- 8. Informational/Discussion Items**
  - A. Staff Report
    - i. Disaster Recovery and Economic Resiliency Plan
    - ii. Small Community Technical Assistance Program
    - iii. Comprehensive Economic Development Strategy Update
  - B. County Roundtable Discussion (*as time permits*)
- 9. Upcoming Meetings**
  - A. **Economic Development Committee Meeting:** The next Economic Development Committee meeting will take place on Wednesday, October 4<sup>th</sup> at 1:00 p.m. Further details will be forthcoming.
  - B. **Commission Meeting:** The next Commission meeting will be held on Friday, July 28, 2023 at 10:00 a.m. To be held at New London Municipal Building - Council Chambers 215 N. Shawano St., New London, WI 54961. An agenda and meeting materials will be forthcoming.
- 10. Adjourn**

*Any person wishing to attend this meeting or hearing, who, because of a disability, requires special accommodations should contact the East Central Wisconsin Regional Planning Commission at (920) 751-4770 at least three business days prior to the meeting or hearing so that arrangements, within reason, can be made.*

**MINUTES**  
**ECONOMIC DEVELOPMENT COMMITTEE MEETING**  
**East Central Wisconsin Regional Planning Commission**

COMMITTEE MEMBERS: *Alice Connors (Chair), Jerry Bougie (Alt for Jon Doemel)- (Vice Chair), Sam Kaufman, Kara Homan (Alt for Jake Woodford)*

**Date:** Wednesday, January 4, 2023 - Virtual

**1. Welcome and Introductions**

Chair Connors welcomed attendees to the meeting and called the meeting to order at 1:00 P.M.

**2. Roll Call**

Introduction of Alternates, Staff, and Guests.

**Committee Members Present:**

Alice Connors, Chair ..... Calumet County  
Sam Kaufman ..... Fond du Lac County  
Kara Homan (Alt. for Jake Woodford) ..... Outagamie County  
Jerry Bougie (Alt. for Jon Doemel), Vice Chair ..... Winnebago County

**Committee Members Absent:**

**ECWRPC Staff and Guests Present:**

Kevin Englebert ..... Deputy Director  
Colin Kafka ..... Associate Planner  
Leann Buboltz ..... Administrative Coordinator

- 3. Approval of Agenda / Motion to Deviate** A motion was made by Mr. Kaufman and second by Vice Chair Bougie to approve the Agenda as presented. Motion carried unanimously.

- 4. Public Comment** - There was no public comment.

- 5. Approval of the Minutes of the October 5, 2022 Economic Development Committee Meeting Minutes** A motion was made by Mr. Kaufman and second by Vice Chair Bougie to approve of the minutes as presented. Motion carried unanimously.

**6. Announcements**

- A. **2023 Economic Development Committee Meeting Schedule.** The Committee members acknowledged the meeting schedule, agreeing with the dates listed.

**7. New Business/Action Items**

- A. Approval of the 2023 Work Program & Budget – 1500 Element – Economic Development Program. Mr. Englebert highlighted a portion of the work program that staff will be working on in 2023. He noted that the Economic Development is divided into four categories; the Planning Partnership Grant, the Main Street Bounceback Grants Program (ended 12-31-22), the CARES Act Grant and Northeast Wisconsin Regional Economic Partnership (NEWREP) Administration. The primary deliverable will be the Comprehensive Economic Development Strategy (CEDS). Mr. Englebert stated that a five-year major update of the CEDS is due in 2023. Along with that he also shared the program outreach and technical assistance for communities and member counties will continue. It was noted that an addition to the deliverables is an economic development impact study to be completed for the Appleton International Airport. (Note-list of deliverables is not all inclusive).

A motion was made by Vice Chair Bougie and second was made by Mr. Kaufman to approve of the 2023 Work Program & Budget – 1500 Element - Economic Development Program. Motion carried unanimously.

8. Informational/Discussion items

A. Economic Development Program Update – presented by Mr. Englebert, Deputy Director.

i. EDA Grant Updates

1. Planning Partnership Grant - Mr. Englebert shared that in the month of December, the Commission hosted a visit of representatives from the Menominee Indian Tribe of Wisconsin, Menominee Tribal Enterprises, Wolf River Development Company, and Nijji Capital Partners. He noted that staff presented on the various programs that East Central offers. Mr. Englebert stated that in January, staff will facilitate an economic development workshop in Menominee County which will be hosted by the Menominee Indian Tribe.
2. CARES Act Grant – Technical Assistance Program. Mr. Englebert presented on the Economic Development Technical Assistance program. He stated that with approval of an extension to the CARES Act Grant earlier in 2022, ECWRPC has continued the partnership with Ayres Associates to provide free technical assistance to communities within the region. Mr. Englebert shared that last year's funding allowed four day-long workshops with selected communities. The technical assistance workshops took place the week of October 10th in the following locations; City of Shawano-Huckleberry Harbor Redevelopment Plan, City of New London-Wolf River Alleyway Pedestrian Access Plan, City of Berlin-Berlin Town Square Vision and the Village of Campbellsport-Eisenbahn Trailhead Design/Downtown Gateway. He noted that staff will be working with the communities after this initial visit assisting with applying for grants and implementation. With the success of this program, Mr. Englebert offered that efforts are being looked into on how to find a way to make these technical assistance visits a permanent program for our region.

- ii. Main Street Bounceback Program – Update. WEDC – Mainstreet Bounceback Grants Program. Mr. Englebert reported that staff awarded 900 grants to our region and received a total of at \$9.27 million to date in funding for awards and administration. He expressed that there will be a final report for the region which will contain information that was collected such as; business demographics, planned use of funds data, business product/service data, etc. The report will be finalized and released in April 2023. The GIS staff will be developing a map of the applicants receiving the awards, which will be included in the report. Mr. Englebert expressed his appreciation to the East Central team for the exemplary implementation of this program. Committee members appreciated the finalized reporting and look forward to the overview.

B. County Roundtable Discussion (*as time permits*) – None

9. Upcoming Meetings

- A. **Economic Development Committee Meeting:** *The next Economic Development Committee meeting will take place on Wednesday-April 5, 2023 at 1:00 p.m. Further details will be forthcoming.*
- B. **Commission Meeting:** *The next Commission meeting will be held on Friday, January 27, 2023 at 10:00-Virtual. An agenda and meeting materials will be forthcoming.*

10. **Adjourn** A motion was made by Vice Chair Bougie and second by Mr. Kaufman to adjourn the meeting with the time noted at 1:23 p.m.

Respectfully submitted by  
Leann Buboltz – ECWRPC Administrative Coordinator

**TO:** Economic Development Committee  
**FROM:** Colin Kafka, Associate Planner – Lead Staff for Economic Development  
**DATE:** July 12, 2023  
**RE:** Economic Development Program Update

---

Below are updates regarding the recent initiatives of the ECWRPC economic development program.

### **EDA CARES Act Grant – Disaster Recovery and Economic Resiliency Plan**

ECWRPC closed out the CARES Act Grant on June 30, 2023 and submitted the Disaster Recovery and Economic Resiliency Plan (DRERP) to the Economic Development Administration (EDA) prior to the closure of the grant. Initiated in 2020, the DRERP evaluates the economic condition, resiliency, and recovery of the regional economy prior to, during, and after the pandemic. Quantitative economic data was collected from Wisconsin Department of Workforce Development and Lightcast software datasets to objectively examine the economic impact of the pandemic. In addition, stakeholder interviews, which were conducted throughout 2021, also provide further context to the dynamic challenges experienced by the private and public sector throughout the pandemic. These datasets serve as the foundation for the plan and provide insight on the economic environment of the East Central region throughout the duration of the pandemic. The full report is included in the meeting materials.

### **EDA Planning Partnership Grant – Small Community Technical Assistance**

The Small Community Technical Assistance program was conducted in 2021 and 2022 by ECWRPC with the support of Ayres Associates. This program, funded through the EDA CARES Act Grant, provided day-long technical assistance workshops for selected communities under 12,000 residents. Communities applied for technical assistance on economic development projects that fit the scope of the program, resulting in eight selected in 2021 and four selected in 2022:

#### **2021 Selected Communities for Technical Assistance**

- Village of Scandinavia
- Village of Winneconne
- City of Kaukauna
- City of Ripon
- Village of Hortonville
- Marquette County
- City of Seymour
- City of Omro

#### **2022 Selected Communities for Technical Assistance**

- City of New London
- City of Berlin
- Village of Campbellsport
- City of Shawano

To continue the success of this program we have amended our Planning Partnership Grant with EDA to secure \$35,000 for a third round of assistance. Currently, by working with a Core Team

of local stakeholders representing public and private Economic Development Organizations (EDOs), we have selected a consultant and anticipate signing a contract in July. To move ahead with the program, the ECWRPC Executive Committee will need to approve of a work program and budget amendment for the economic development program, followed by an approval of the contract. If approved, we will have funding sufficient to provide four, day-long workshops with selected communities. There will be a competitive application for this assistance distributed across the region in July-August. Applications will then be scored in August-September with preparation for the visits occurring during September. The technical assistance workshops would be conducted the week of October 9-13. Lastly, a final report will be provided by the consultant in December 2023.

### **EDA Planning Partnership Grant – Comprehensive Economic Development Strategy (CEDS) Update**

The Comprehensive Economic Development Strategy (CEDS) is a regionally-focused economic development plan that inventories key economic data, identifies strengths and weaknesses, and brings together a diverse set of private and public stakeholders to develop strategies and actions that enhance regional economic resiliency and generate growth. The ECWRPC CEDS is a requirement of the Planning Partnership Grant and is updated annually with major updates occurring every 5 years. With the last major update occurring in 2018, staff is currently working on the 2023-2028 CEDS. The main components of the CEDS required by EDA include:

- Summary Background: An inventory of key economic markers and conditions of the regional economy
- SWOT Analysis: A Strengths, Weaknesses, Opportunities, and Threats analysis is an exercise conducted with public and private stakeholders to discuss the health, competitiveness, and challenges inherent of the regional economy
- Strategic Direction and Action Plan: Using the data from the summary background and SWOT analysis, a strategic direction and action plan identifies a regional vision, goals and objectives, and framework for implementation
- Evaluation Framework: Performance measures for the region and ECWRPC are developed to evaluate the implementation of the strategic direction and action plan

In addition to these main components, we want to further explore the challenges, priorities, and opportunities within the region and have decided to conduct county input sessions. These sessions consist of inviting and meeting with county, municipal, and EDO staff within each county to discuss economic challenges and priorities in the respective county. These sessions also allow us to better understand the current role the ECWRPC economic development program plays for the counties in our region as well as identify potential future opportunities for collaboration. Staff held input sessions in Outagamie and Waupaca counties this June with future sessions scheduled throughout July.

The CEDS will be completed prior to the EDA submission date of October 31, 2023, and work remains on schedule to meet this deadline.



EAST CENTRAL WISCONSIN

# DISASTER RECOVERY AND ECONOMIC RESILIENCY PLAN

DRAFT



Submitted for adoption on Month XX, XXXX

**Prepared by**

East Central Wisconsin Regional Planning Commission

Colin Kafka, Associate Planner

Rachel Roth, GIS Analyst I

# TABLE OF CONTENTS

## Introduction

- 2 Overview

## Regional Economic Background

- 5 Per Capita Income
- 7 Average Annual Wage
- 11 Labor Force Dynamics
- 16 Gross Regional Product
- 21 Overview of Economic Trends
- 22 Overview of Stakeholder Engagement

## Figures and Tables

- 5 Figure 1. East Central Region, State, and National Real Per Capita Income (RPCI) 2015-2020
- 9 Figure 2. Real Average Annual Wage by NAICS 2- Code Sector 2015-2021
- 13 Figure 3. East Central Region, State, and National Annual Unemployment Rate 2015-2021
- 14 Figure 4. Change in Regional Total Average Monthly Employment by NAICS 2-Code Sector 2019-2021
- 18 Figure 5. Change in Total RGRP and Real Average Annual Wage 2015-2021 by Sector, and Total 2021 RGRP by Sector
- 20 Figure 6. Change in Total RGRP and Real Average Annual Wage 2015-2021 by Sector, and Total 2021 RGRP by County
- 6 Table 1. Real Per Capita Income by County 2015-2020
- 7 Table 2. East Central Regional Real Average Annual Wage by NAICS 2-Code Sector 2015-2021
- 10 Table 3. Real Average Annual Wage by County 2015-2021
- 11 Table 4. Total Labor Force Size by County 2015-2021
- 12 Table 5. Unemployment Rate 2015-2021
- 13 Table 6. Regional Total Average Monthly Employment by NAICS 2-Code 2015-2021
- 16 Table 7. Total Real Gross Regional Product by Sector 2015-2021
- 19 Table 8. Total Real Gross Regional Product by County 2015-2021



## TABLE OF CONTENTS

### **Specialized Sector Impacts**

25	NAICS 11: Agriculture, Forestry, Fishing and Hunting
32	NAICS 23: Construction
39	NAICS 31-33: Manufacturing
47	NAICS 44-45: Retail Trade
55	NAICS 51: Information
62	NAICS 53: Real Estate and Rental and Leasing
70	NAICS 61: Educational Services

78	<b>Conclusion</b>
----	-------------------

81	<b>Bibliography</b>
----	---------------------

### **Figures and Tables**

27	Figure 7. East Central Wisconsin NAICS 11 Overview 2015-2021
28-29	Figures 8 and 9. NAICS 11 Overview by County 2015-2021
34	Figure 10. East Central Wisconsin NAICS 23 Overview 2015-2021
35-36	Figures 11 and 12. NAICS 23 Overview by County 2015-2021
41	Figure 13. East Central Wisconsin NAICS 31-33 Overview 2015-2021
42-43	Figures 14 and 15. NAICS 31-33 Overview by County 2015-2021
49	Figure 16. East Central Wisconsin NAICS 44-45 Overview 2015-2021
50-51	Figures 17 and 18. NAICS 44-45 Overview by County 2015-2021
57	Figure 19. East Central Wisconsin NAICS 51 Overview 2015-2021
58-59	Figures 20 and 21. NAICS 51 Overview by County 2015-2021
64	Figure 22. East Central Wisconsin NAICS 53 Overview 2015-2021
65-66	Figures 23 and 24. NAICS 53 Overview by County 2015-2021
72	Figure 25. East Central Wisconsin NAICS 61 Overview 2015-2021
73-74	Figures 26 and 27. NAICS 61 Overview by County 2015-2021

# INTRODUCTION

---



# INTRODUCTION

## Overview

### *ECWRPC Overview*

The East Central Wisconsin Regional Planning Commission (ECWRPC) was established in 1972 and is an association of counties and other local units of government with statutory responsibility to plan and coordinate the physical and economic development of the region. The region consists of 10 counties, 27 cities, 57 villages and 154 towns. ECWRPC is governed by 28 commissioners. All county executives and county board chairs are commissioners as well as other local representatives. ECWRPC maintains four formal subcommittees: Executive, Transportation, Environmental Management, and Economic Development.

The East Central Wisconsin Regional Planning Commission was designated as an Economic Development District (EDD) in 1984 by the U.S. Department of Commerce, Economic Development Administration (EDA).

Since 1984, ECWRPC has administered the EDD to implement and update the Comprehensive Economic Development Strategy (CEDs) to guide regional economic development, partnered with local communities to secure federal grants that benefit the regional economy, and has fostered constructive relationships with local public and private stakeholders throughout the region.

### *EDA CARES ACT Grant Overview*

In 2019, the Coronavirus (also known as COVID-19) was declared a global pandemic.

The COVID-19 pandemic significantly impacted business, communities, and tourism throughout the East Central region and the region continues to recover from the wide-ranging economic impacts of COVID-19. The East Central Wisconsin Regional Planning Commission was awarded a CARES Act Grant by the U.S. Economic Development Administration (EDA) in 2020 to implement several programs and initiatives to examine or address the economic impacts of COVID-19 across the East Central region. One important initiative identified by the Commission was to review, compile, and analyze the economic impacts to key sectors of the regional economy caused by the pandemic. The Disaster Recovery and Economic Resiliency Report (DRERP) is the result of this initiative.

### *Purpose and Structure of the DRERP*

The pandemic significantly impacted the East Central regional economy, causing all economic sectors to be impacted in numerous and unique ways. To understand these abundant impacts, an inventory of economic data between 2015 and 2021 for the East Central region, its ten counties, and all NAICS 2-code sectors was conducted. In tandem with this data analysis, an outreach effort to interview private, public, and non-profit stakeholders throughout the region was conducted, culminating in 46 interviews conducted with stakeholder regarding their experiences during the pandemic and their efforts towards remaining resilient in the face of numerous challenges.



INTRODUCTION

To further explore the dynamics of economic resilience and recovery in the region, seven NAICS 2-code sectors vital to the regional economy would be examined further by researching additional, sector specific economic data, and relating information gleaned from the interviews.

The combination of quantitative and qualitative data grants insight into the situation of the economy prior to, during, and after the pandemic while providing greater detail of the unique, and also common, impacts experienced by each of the selected economic sectors. The seven key sectors of the East Central regional economy, according to the NAICS definitions of

activities, were identified and examined in the report due either to their intense employment concentration within the region relative to the nation or their general importance to the regional quality of life. The seven sectors identified and examined in the DRERP are listed at the bottom of the page.

Representing or understanding these seven vital sectors of the regional economy, 46 stakeholders were interviewed between November 2020 and March 2022. Stakeholders provided reflections on their struggle and achievements during the pandemic, and granted valuable insight on the challenges faced by these sectors.

Through these efforts in collecting quantitative and qualitative data, the recovery and resiliency of the East Central regional economy to the COVID-19 pandemic can be understood. While the pandemic would bring forth great uncertainty and never before seen challenges, the East Central region would, in-fact, meet many of the challenges and remain resilient. Recovery from the pandemic would not be simple nor uniformly felt, however, the businesses, organizations, and people of the East Central Wisconsin region would deliver to emerge into a strong, although unexpected, economic future.

Economic Sectors Examined in the DRERP

- 1

NAICS 11  
Agriculture, Forestry, Fishing and Hunting
- 2

NAICS 23  
Construction
- 3

NAICS 31-33  
Manufacturing
- 4

NAICS 44-45  
Retail Trade

- 5

NAICS 51  
Information
- 6

NAICS 53  
Real Estate and Rental and Leasing
- 7

NAICS 61  
Educational Services

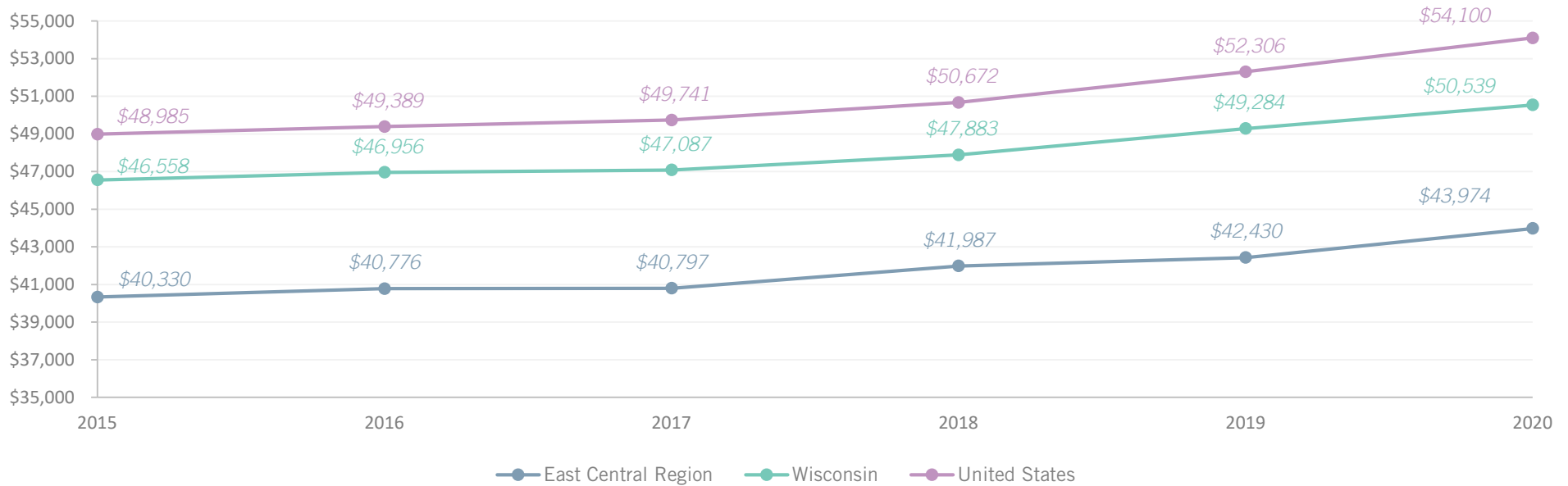
# REGIONAL ECONOMIC BACKGROUND

---



## REGIONAL ECONOMIC BACKGROUND

**Figure 1:** East Central Region, State, and National Real Per Capita Income (RPCI) 2015-2020



This chapter examines trends in four economic markers between 2015 and 2021 across the entire East Central region – Real Per Capita Income, Real Average Annual Wages, Labor Force Dynamics, and Real Gross Regional Product by Sector – and provides an overview of the stakeholder engagement process to explain the conventions behind the data intention and process of the interviews.

### Per Capita Income

Per Capita Income (PCI) is a useful economic indicator that highlights the economic well-being of a population by evaluating whether that population is becoming more or less

wealthy when compared to regional or national benchmarks. PCI is calculated by dividing the aggregate of all income sources including wages and salaries, asset income, and transfer payments of all residents in a given area by the area's total population. Inflation can present a misleading picture of PCI across time; therefore, this report adjusts PCI data for inflation by deflating the data to a base year of 2015, transforming the PCI into Real PCI (RPCI). Adjusting for inflation provides a clearer view of annual PCI changes across the region, state, and nation between 2015 and 2020. Nominal PCI data for each county is collected by the Bureau of Economic Analysis (BEA) annually and is provided by the Wisconsin Department of Workforce Development.<sup>1 2</sup>

### Region

Real Per Capita Income in the East Central region, calculated by averaging the RPCI of all ten Counties in the region, increased yearly between 2015 and 2020 (Table 1) (Figure 1). The regional RPCI increased 9.0%, from \$40,330 in 2015 to \$43,974 in 2020, performing better than the state, which saw RPCI increase by 8.6%.

<sup>1</sup> United States Bureau of Economic Analysis. 2023. "Data." *United States Department of Commerce*. <https://www.bea.gov/>

<sup>2</sup> Wisconsin Department of Workforce Development. 2023. "Wisconsin LMI Data Access." *State of Wisconsin Department of Workforce Development*. <https://jobcenterofwisconsin.com/WisConomy/query>

## REGIONAL ECONOMIC BACKGROUND

### *County*

Nine out of ten counties in the East Central region recorded an annual increase in RPCI between 2015 and 2020 while only one county, Green Lake, recorded an annual decrease. Real Per Capita Income in Calumet, Fond du Lac, Green Lake, Outagamie, Waupaca, and Winnebago counties was consistently greater than yearly average regional RPCI, while the remaining four counties of Marquette, Menominee, Shawano, and Waushara recorded annual RPCI under the regional average. Additionally, between 2015 and 2020, percent change in RPCI would vary by county ranging

from -5% in Green Lake County to 18% in Menominee County.

### *Implications*

It is difficult to infer the impact of the pandemic on Real Per Capita Income in the East Central region as the most recent nominal PCI data was recorded at the end of 2020, reflecting just seven months of the pandemic's impact from March 2020 to December 2020. Nominal PCI from 2021 may paint a clearer picture of the pandemic's impact on this economic indicator, but at the time of writing this report nominal PCI data for 2021 was not available. Additionally,

numerous relief programs were implemented by the State of Wisconsin and Federal Government to provide income supplementation and unemployment benefits, among others, that may have been recorded as components of nominal PCI in 2020. Regardless, regional Real Per Capita Income would grow each year between 2015 and 2020, showcasing the region's continual healthy economic growth prior to the pandemic. Consistent RPCI growth between 2019 and 2020 may hint at the overall resiliency of the regional economy immediately following the pandemic, although more data is needed to verify this interpretation.

**Table 1:** Real Per Capita Income by County 2015-2020

County	2015	2016	2017	2018	2019	2020	2015-2020 Percent Change
Calumet	\$44,892	\$45,118	\$46,077	\$47,902	\$48,944	\$50,418	12.3%
Green Lake	\$45,805	\$44,316	\$42,343	\$43,540	\$42,833	\$43,544	-4.9%
Marquette	\$35,995	\$36,791	\$37,827	\$38,851	\$39,364	\$41,265	14.6%
Menominee	\$27,013	\$27,631	\$27,655	\$28,652	\$28,682	\$31,893	18.1%
Outagamie	\$45,429	\$46,350	\$47,299	\$48,330	\$48,741	\$49,875	9.8%
Shawano	\$37,167	\$37,673	\$38,805	\$39,896	\$40,922	\$42,788	15.1%
Waupaca	\$42,216	\$43,018	\$42,316	\$43,046	\$43,551	\$45,192	7.0%
Waushara	\$38,620	\$39,435	\$37,562	\$38,872	\$39,393	\$40,540	5.0%
Fond du Lac	\$43,764	\$44,223	\$43,993	\$45,402	\$46,249	\$48,012	9.7%
Winnebago	\$42,399	\$43,209	\$44,088	\$45,378	\$45,626	\$46,218	9.0%
<b>Region</b>	\$40,330	\$40,776	\$40,797	\$41,987	\$42,430	\$43,974	9.0%
<b>Wisconsin</b>	\$46,558	\$46,956	\$47,087	\$47,883	\$49,284	\$50,539	8.6%
<b>United States</b>	\$48,985	\$49,389	\$49,741	\$50,672	\$52,306	\$54,100	10.4%



## REGIONAL ECONOMIC BACKGROUND

### Average Annual Wage

Nominal Average Annual Wage (NAAW) is a statistic that records the average annual wage of those employed in a NAICS sector. To account for yearly inflation, the Nominal Average Annual Wage has been deflated in this report to a base year of 2015, transforming the NAAW into Real Average Annual Wage (RAAW). Adjusting for inflation provides a clearer view of annual wage changes by sector between 2015 and 2021.

RAAW can also be compared to trends in Real Per Capita Income to better understand income dynamics across economic sectors. Nominal Average Annual Wage data is collected quarterly by the QCEW program administered by the BLS and is made available by the Wisconsin Department of Workforce Development.

### Region

The regional Real Average Annual Wage, calculated as the average annual wage of all

twenty sectors across the East Central region, rose from \$39,579 in 2015 to \$44,432 in 2021, an increase of 12%. Real Average Annual Wage figures would increase in 19 of the 20 NAICS 2-code sectors in the East Central region between 2015 and 2021. Most sectors experienced a slight increase in RAAW while several sectors recorded significant increases (Table 2).

**Table 2:** East Central Regional Real Average Annual Wage by NAICS 2-Code Sector 2015-2021

NAICS	Sector	2015	2016	2017	2018	2019	2020	2021	2015-2021 Percent Change
11	Agriculture, Forestry, Fishing and Hunting	\$34,137	\$33,471	\$33,546	\$34,165	\$34,271	\$34,601	\$35,534	4.1%
21	Mining, Quarrying, and Oil and Gas Extraction	\$55,286	\$53,936	\$51,788	\$55,378	\$52,480	\$53,879	\$58,074	5.0%
22	Utilities	\$68,537	\$68,891	\$68,554	\$68,313	\$70,029	\$70,271	\$70,936	3.5%
23	Construction	\$50,006	\$50,633	\$49,654	\$50,438	\$52,457	\$52,258	\$54,489	9.0%
31-33	Manufacturing	\$48,377	\$48,446	\$48,713	\$49,050	\$50,097	\$49,958	\$51,729	6.9%
42	Wholesale Trade	\$45,674	\$45,845	\$48,223	\$47,109	\$48,311	\$48,468	\$51,307	12.3%
44-45	Retail Trade	\$23,165	\$23,442	\$23,580	\$23,802	\$24,094	\$25,626	\$26,728	15.4%
48-49	Transportation and Warehousing	\$37,385	\$37,329	\$37,142	\$37,865	\$37,870	\$38,573	\$39,994	7.0%
51	Information	\$36,514	\$45,529	\$40,658	\$43,115	\$43,264	\$45,531	\$47,345	29.7%
52	Finance and Insurance	\$48,360	\$48,651	\$48,207	\$48,234	\$50,404	\$54,987	\$57,958	19.8%
53	Real Estate and Rental and Leasing	\$25,507	\$26,291	\$26,768	\$28,400	\$28,591	\$31,802	\$33,906	32.9%
54	Professional, Scientific, and Technical Services	\$46,974	\$49,553	\$52,375	\$49,626	\$58,738	\$52,338	\$57,063	21.5%
55	Management of Companies and Enterprises	\$74,913	\$79,387	\$70,202	\$70,333	\$81,540	\$84,772	\$91,475	22.1%
56	Administrative and Support and Waste Management and Remediation Services	\$31,144	\$31,838	\$30,430	\$29,783	\$30,770	\$31,989	\$34,071	9.4%
61	Educational Services	\$38,015	\$37,815	\$37,418	\$37,538	\$37,470	\$39,937	\$39,365	3.6%
62	Health Care and Social Assistance	\$38,969	\$37,877	\$37,308	\$37,643	\$37,863	\$39,568	\$40,544	4.0%
71	Arts, Entertainment, and Recreation	\$16,755	\$16,513	\$16,560	\$15,039	\$14,774	\$15,992	\$16,121	-3.8%
72	Accommodation and Food Services	\$11,781	\$12,010	\$12,186	\$12,960	\$13,129	\$13,683	\$14,821	25.8%
81	Other Services (except Public Administration)	\$22,945	\$23,338	\$24,115	\$25,273	\$25,703	\$27,844	\$28,574	24.5%
92	Public Administration	\$37,143	\$35,931	\$36,409	\$36,155	\$37,283	\$38,199	\$38,599	3.9%
<b>Average Annual Wage of All Sectors</b>		\$39,579	\$40,336	\$39,692	\$40,011	\$41,457	\$42,514	\$44,432	12.3%





## REGIONAL ECONOMIC BACKGROUND

At the regional level, the sector with the greatest increase in RAAW between 2015 and 2021 was the Real Estate and Rental and Leasing (NAICS 53) sector where RAAW increased from \$25,507 to \$33,906, a change of 33%. The Information (NAICS 51) sector would record the second greatest increase in RAAW at the regional level, increasing from \$36,514 in 2015 to \$47,345 by 2021, an increase of 30%. Several other sectors in the East Central region would record a positive change in RAAW, ranging from a 4% increase in the Public Administration (NAICS 92) sector to a 26% percent increase in the Accommodation and Food Services (NAICS 72) sector. The Arts, Entertainment, and Recreation (NAICS

71) sector was the only sector where RAAW declined between 2015 and 2021, with RAAW decreasing every year following 2015.

The Management of Companies and Enterprises (NAICS 55) sector would consistently be the highest paying sector in the region during the period according to RAAW figures and recorded a positive 22% increase in RAAW from \$74,913 in 2015 to \$91,475 in 2021 (Figure 2). In contrast, the lowest paying sector in the region every year between 2015 and 2021, despite a positive percent change in RAAW over the time period, was the Accommodation and Food Services (NAICS 72) sector. Overall, the steady increase in regional RAAW for many

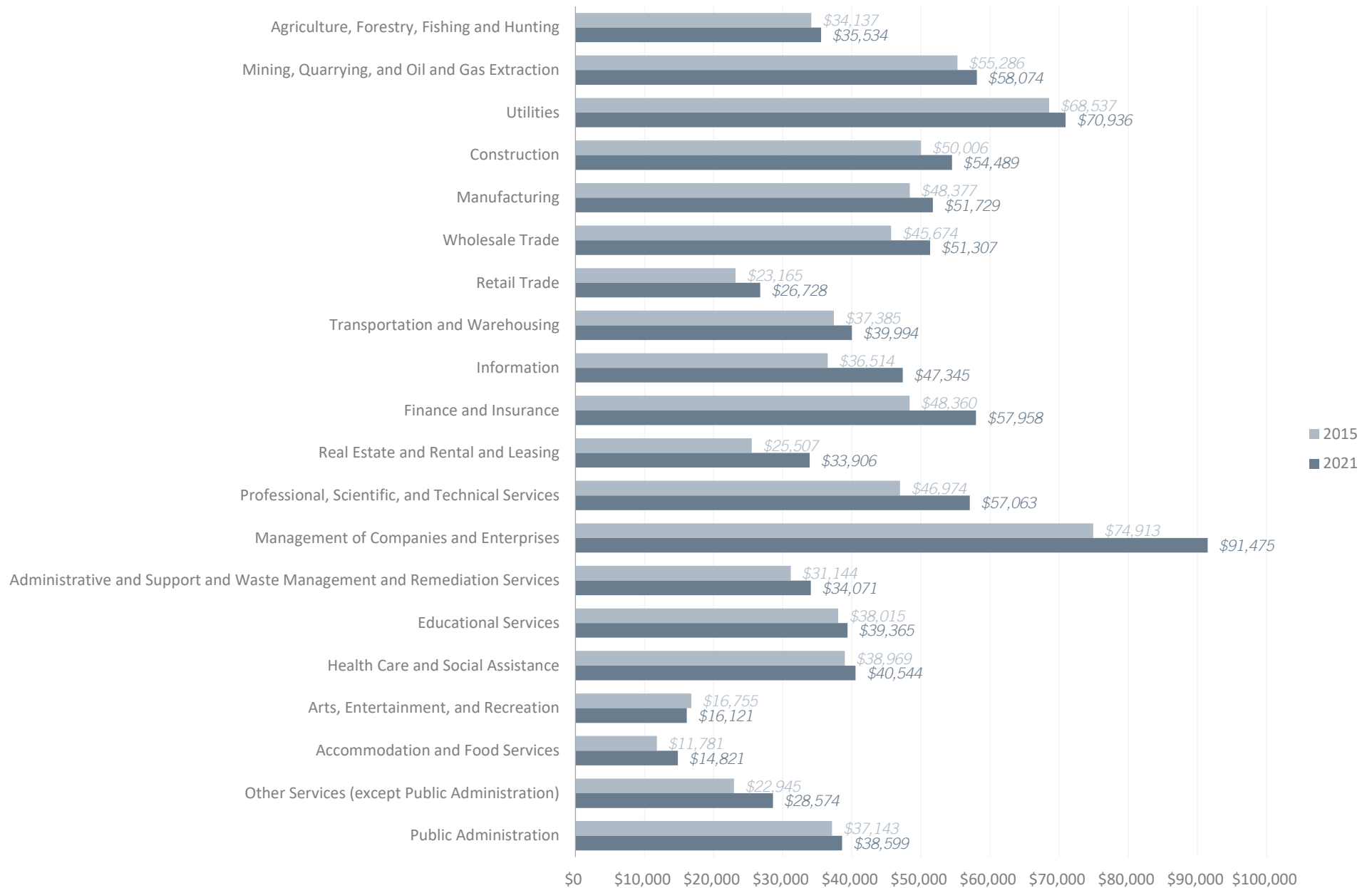
sectors also closely reflects regional trends in Per Capita Income.

### *County*

All counties in the East Central region recorded an increase in county Real Average Annual Wage, calculated as the average annual wage of all sectors in an individual county, between 2015 and 2021 (Table 3). The counties with the greatest increase in Real Average Annual Wage for all sectors were Fond du Lac County and Green Lake County, both recording a 28% increase. The county with the smallest increase was Waupaca County where RAAW increased by 1% from \$33,484 in 2015 to \$35,480 in 2021.

## REGIONAL ECONOMIC BACKGROUND

**Figure 2:** Real Average Annual Wage by NAICS 2- Code Sector 2015-2021



## REGIONAL ECONOMIC BACKGROUND

The remaining counties experienced RAAW increase anywhere from 6% in Waushara and Menominee counties, to 17% increase in Shawano County. Aside from the increase in RAAW but decline in RPCI recorded in Green Lake County, RAAW and RPCI trends for each county tended to mirror one another.

County trends in Real Average Annual Wage between 2015 and 2021 reflected steady, and in some cases significant, growth in wages across most sectors. However, several sectors saw minimal or negative growth depending on the county. In addition, there was a relative degree of variability per sector depending on the county, as some sectors saw RAAW increase in one county and decrease in another during the same time period. Some sectors did experience a decline in RAAW and data variability in RAAW by sector and county may present a misleading

picture, especially for dramatic positive trends. Variability in RAAW data by county and by year stems from two elements. First, wage data is not always available for certain sectors as the BLS may suppress relevant employment data for several reasons.<sup>3</sup> This may result in no wage data for certain sectors in a county, notably in counties and/or sectors with a small labor force, or the wage data may be available one year and not the next, making it difficult to infer any trends. Second, it should be noted that RAAW is not adjusted for county population or sector employment size, which can result in a county's average RAAW to be influenced by a high paying sector with a small employment base relative to other sectors in the county. Nevertheless, Real Average Annual Wage by sector at the county level provides valuable insight on the general economic health of sectors that make up the East Central regional economy by presenting

data on the degree that wages have or have not increased by sector.

### *Implications*

Real Average Annual Wage data demonstrates that most sectors in the East Central region were resilient to the challenges of the COVID-19 pandemic, although there were some exceptions. Several counties saw positive growth in RAAW figures for the majority of their sectors, while others noted more variability. The absence of a drastic decline or collapse in RAAW by sector across the East Central region in 2020 or 2021 hints at the relative resiliency of sector wages at the regional and county levels to the economic disruption induced by the pandemic.

<sup>3</sup> United States Bureau of Labor Statistics. 2023. "Quarterly Census of Employment and Wages: Questions and Answers (Q&A)." *United States Department of Labor* <https://www.bls.gov/cew/questions-and-answers.htm>

**Table 3: Real Average Annual Wage by County 2015-2021**

County	2015	2016	2017	2018	2019	2020	2021	2015-2021 Percent Change
Calumet	\$34,798	\$38,887	\$37,409	\$39,621	\$40,159	\$38,459	\$44,488	27.8%
Fond du Lac	\$42,015	\$42,831	\$42,274	\$42,906	\$43,630	\$46,343	\$48,080	14.4%
Green Lake	\$39,181	\$37,712	\$37,680	\$38,936	\$44,248	\$47,278	\$50,268	28.3%
Marquette	\$31,029	\$31,231	\$30,975	\$31,713	\$31,986	\$33,262	\$34,312	10.6%
Menominee	\$29,902	\$28,859	\$29,498	\$29,776	\$29,879	\$31,252	\$31,592	5.7%
Outagamie	\$47,170	\$46,930	\$46,402	\$47,740	\$48,187	\$49,753	\$51,589	9.4%
Shawano	\$32,976	\$33,494	\$35,975	\$35,833	\$34,692	\$37,505	\$38,604	17.1%
Waupaca	\$36,571	\$33,667	\$33,789	\$34,788	\$35,156	\$36,034	\$36,931	1.0%
Waushara	\$33,484	\$34,060	\$32,851	\$32,630	\$33,630	\$34,435	\$35,480	6.0%
Winnebago	\$46,359	\$47,889	\$47,385	\$47,071	\$48,421	\$48,612	\$49,490	6.8%
<b>Region</b>	\$39,579	\$40,336	\$39,692	\$40,011	\$41,457	\$42,514	\$44,432	12.3%

## REGIONAL ECONOMIC BACKGROUND

**Table 4:** Total Labor Force Size by County 2015-2021

County	2015		2016		2017		2018		2019		2020		2021	
	Total LF	Share	Total LF	Share	Total LF	Share	Total LF	Share	Total LF	Share	Total LF	Share	Total LF	Share
Calumet	27,398	7.7%	27,650	7.7%	27,994	7.7%	27,802	7.7%	27,614	7.7%	27,404	7.7%	27,758	7.7%
Fond du Lac	56,896	16.0%	56,786	15.8%	57,223	15.8%	57,429	16.0%	57,497	16.1%	56,385	15.8%	57,149	15.8%
Green Lake	9,966	2.8%	9,733	2.7%	9,740	2.7%	9,739	2.7%	9,494	2.7%	9,328	2.6%	9,386	2.6%
Marquette	7,476	2.1%	7,532	2.1%	7,628	2.1%	7,721	2.1%	7,763	2.2%	7,758	2.2%	7,840	2.2%
Menominee	1,598	0.4%	1,569	0.4%	1,612	0.4%	1,631	0.5%	1,598	0.4%	1,666	0.5%	1,593	0.4%
Outagamie	101,717	28.6%	103,617	28.8%	104,295	28.8%	103,706	28.8%	103,721	29.0%	104,152	29.2%	105,055	29.1%
Shawano	21,231	6.0%	21,235	5.9%	21,510	5.9%	21,475	6.0%	21,147	5.9%	20,976	5.9%	21,183	5.9%
Waupaca	26,970	7.6%	26,902	7.5%	26,675	7.4%	26,345	7.3%	26,015	7.3%	25,800	7.2%	26,182	7.3%
Waushara	11,454	3.2%	11,447	3.2%	11,445	3.2%	11,641	3.2%	11,470	3.2%	11,116	3.1%	11,394	3.2%
Winnebago	91,233	25.6%	92,838	25.8%	93,894	25.9%	92,461	25.7%	91,860	25.6%	92,380	25.9%	93,109	25.8%
<b>Region</b>	355,939	11.5%	359,309	11.6%	362,016	11.5%	359,950	11.5%	358,179	11.5%	356,965	11.5%	360,649	11.5%
<b>Wisconsin</b>	3,084,207	-	3,110,466	-	3,141,757	-	3,129,386	-	3,120,590	-	3,105,882	-	3,134,439	-

### Labor Force Dynamics

Labor Force trends at county and sector levels between 2015 and 2021 in the East Central region provide insight on impacts to the regional labor force and to each sector. General labor force trends, specifically the size of the labor force and the yearly unemployment rate, highlight the size and proportion of employed and unemployed persons in the regional labor force relative to the State of Wisconsin and United States. Sector labor force trends are examined by reviewing changes in total regional average monthly employment figures by NAICS 2-Code sector from 2015 and 2021. Labor

force size and yearly unemployment rate data is collected monthly and annually by the Local Area Unemployment Statistics (LAUS) program conducted by the Bureau of Labor Statistics (BLS).<sup>4</sup> Total average monthly employment by sector data is collected quarterly by the Quarterly Census of Employment and Wages (QCEW) program also administered by the BLS. Data from both programs is compiled and made readily available through the Wisconsin Department of Workforce Development.

#### Region

The size of the regional labor force, which is the sum of employed and unemployed persons,

remained relatively consistent between 2015 and 2021. The East Central regional labor force consistently made up approximately 11.5% of the State of Wisconsin's total labor force (Table 4). The total regional labor force, the aggregate labor force of all ten counties, grew from 355,939 in 2015 to 360,649 in 2021. The regional labor force peaked in size in 2017 with a total of 362,016 labor force participants, would drop to 356,965 in 2020, and would rebounded to 360,649 by 2021.

<sup>4</sup> United States Bureau of Labor Statistics. 2023. "Local Area Unemployment Statistics." *United States Department of Labor*. <https://www.bls.gov/lau/>

## REGIONAL ECONOMIC BACKGROUND

While the size of the regional labor force generally remained stable between 2015 and 2021, the proportion of persons unemployed in the labor force would fluctuate. From 2015 to 2019, the regional unemployment rate consistently declined from 4.2% to 3%. Unemployment would then spike in 2020 to 5.7%, but declined to 3.3% in 2021 (Table 5) (Figure 3). East Central regional unemployment rate trends mirrored State of Wisconsin and National unemployment rate trends, both of which also steadily declined between 2015 and 2019, spiked in 2020, and quickly recovered to pre-2020 rates in 2021.

Regional total average monthly employment per year across all sectors between 2015 and 2021 would overall trend in a similar fashion as the regional unemployment rate. Prior to 2020, all sectors recorded either stable or increased average monthly employment (Table 6). Following the beginning of the pandemic in 2020, total average monthly employment declined in all sectors in the East Central region. Declines were either slight or dramatic depending on sector. By 2021, total average monthly employment figures increased from 2020 in the majority of sectors, however, total employment figures in most sectors would not recover to 2019 figures. Figure 4 showcases

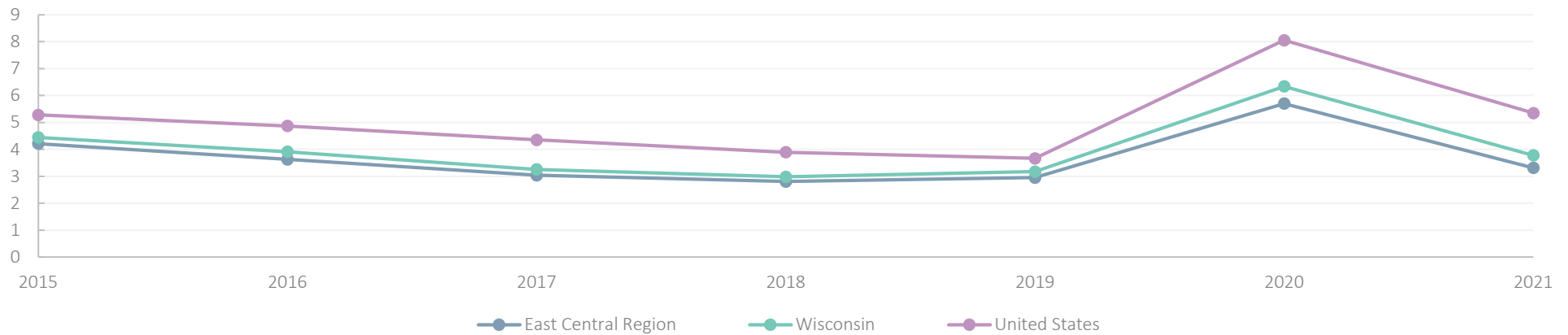
the change in regional total average monthly employment for each sector between 2019 and 2021, with figures shrinking during the period in most sectors. However, when compared with 2015, average monthly employment figures by sector in 2021 would fare better, with most sectors throughout the region showcasing minimal declines and even strong increases in average monthly employment (Figure 4). The largest sectors by average monthly employment throughout the time period were consistently Manufacturing (NAICS 31-33), Retail Trade (NAICS 44-45), and Health Care and Social Assistance (NAICS 62), respectively.

**Table 5: Unemployment Rate 2015-2021**

County	2015	2016	2017	2018	2019	2020	2021
Calumet	3.5%	3.1%	2.8%	2.6%	2.7%	4.7%	2.8%
Fond du Lac	4%	3.4%	2.8%	2.6%	2.8%	5.9%	3.2%
Green Lake	5.3%	4.8%	3.7%	3.3%	3.7%	6.9%	4.3%
Marquette	6.0%	5.0%	3.8%	3.5%	3.7%	6.7%	4.4%
Menominee	9.4%	7.5%	5.9%	5.8%	7.8%	15.5%	8.6%
Outagamie	3.9%	3.5%	3.0%	2.8%	2.8%	5.5%	3.1%
Shawano	4.8%	4.0%	3.2%	3.0%	3.1%	6.4%	3.7%
Waupaca	4.5%	3.9%	3.2%	2.9%	3.1%	5.6%	3.5%
Waushara	6.1%	4.9%	3.9%	3.4%	3.9%	6.4%	4.2%
Winnebago	4.1%	3.5%	3.0%	2.7%	2.9%	5.5%	3.2%
<b>Region</b>	4.2%	3.6%	3.0%	2.8%	3.0%	5.7%	3.3%
<b>Wisconsin</b>	4.4%	3.9%	3.3%	3.0%	3.2%	6.3%	3.8%
<b>United States</b>	5.3%	4.9%	4.4%	3.9%	3.7%	8.1%	5.3%

## REGIONAL ECONOMIC BACKGROUND

**Figure 3:** East Central Region, State, and National Annual Unemployment Rate 2015-2021



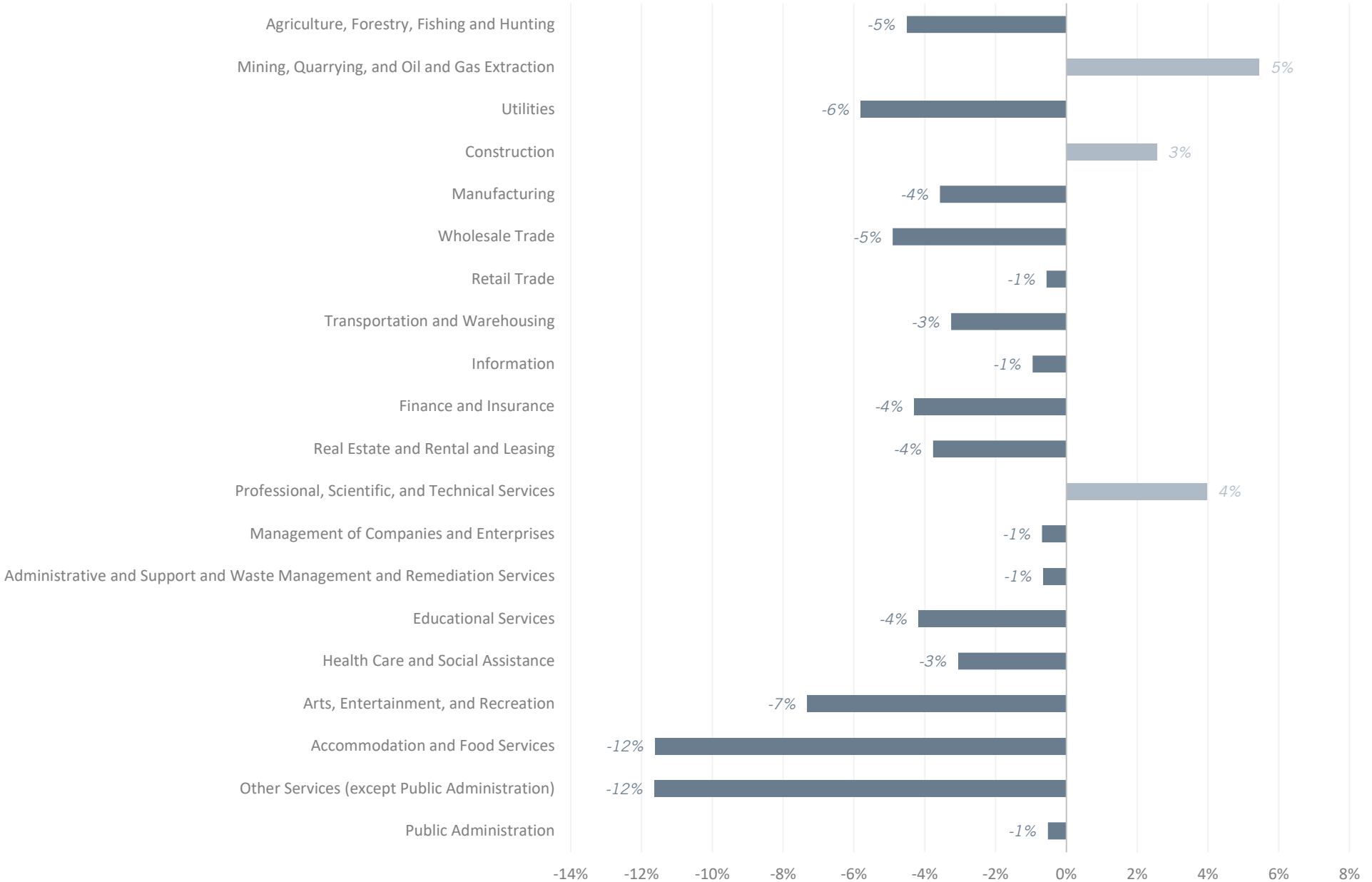
**Table 6:** Regional Total Average Monthly Employment by NAICS 2-Code 2015-2021

NAICS	Sector	2015	2016	2017	2018	2019	2020	2021
11	Agriculture, Forestry, Fishing and Hunting	1,701	3,564	3,802	3,949	4,058	3,961	3,875
21	Mining, Quarrying, and Oil and Gas Extraction	218	469	479	494	606	587	639
22	Utilities	824	820	813	819	809	787	762
23	Construction	15,874	17,103	17,809	18,596	18,933	18,825	19,417
31-33	Manufacturing	68,055	67,395	67,743	69,782	70,138	66,573	67,635
42	Wholesale Trade	11,250	11,304	11,516	11,491	11,665	11,203	11,093
44-45	Retail Trade	33,707	34,582	34,434	34,042	33,409	32,322	33,223
48-49	Transportation and Warehousing	10,275	10,272	10,303	10,858	11,214	10,656	10,849
51	Information	745	4,510	4,426	4,506	4,292	4,134	4,251
52	Finance and Insurance	12,235	12,232	12,224	12,136	12,052	12,037	11,534
53	Real Estate and Rental and Leasing	2,049	2,089	2,281	2,354	2,525	2,371	2,430
54	Professional, Scientific, and Technical Services	7,773	8,007	8,608	8,960	9,068	9,074	9,428
55	Management of Companies and Enterprises	5,133	6,339	6,555	6,079	5,822	5,809	5,782
56	Administrative and Support and Waste Management and Remediation Services	15,176	15,420	15,373	14,740	13,946	13,770	13,855
61	Educational Services	20,385	20,253	20,293	20,392	20,540	19,086	19,683
62	Health Care and Social Assistance	39,595	39,926	39,860	40,120	40,592	39,620	39,351
71	Arts, Entertainment, and Recreation	4,009	4,159	3,944	3,380	3,580	2,817	3,318
72	Accommodation and Food Services	25,100	25,071	25,067	25,935	25,932	21,525	22,918
81	Other Services (except Public Administration)	9,615	10,027	9,903	9,889	9,980	8,452	8,818
92	Public Administration	13,184	13,975	13,581	13,778	13,563	13,538	13,492



REGIONAL ECONOMIC BACKGROUND

Figure 4: Change in Regional Total Average Monthly Employment by NAICS 2-Code Sector 2019-2021





## REGIONAL ECONOMIC BACKGROUND

### *County*

The overall change in the size of the labor force by county between 2015 and 2021 was generally slight, matching the regional trend (Table 4). Outagamie, Winnebago, and Fond du Lac counties consistently made up the largest share of the regional labor force during the time period at 29%, 26%, and 16%, respectively. These three counties, in addition to Calumet, Marquette, Menominee, and Shawano counties, recorded a stable or increased labor force size between 2015 and 2021. Green Lake, Waupaca, and Waushara counties experienced a decline in the size of their labor force between 2015 and 2021, although the declining trend had been recorded since 2015 and is likely not a sole result of the pandemic.

County unemployment rates trended in a similar manner to the regional, state, and national unemployment rates during the time period (Figure 4) (Table 5). Menominee County had the highest unemployment rate in the region, peaking at 15.5% during the pandemic in 2020, while Calumet County would consistently retain the lowest unemployment rate in the region between 2015 and 2021. Aside from Menominee County, all counties in the East Central region continually had unemployment rates below the national yearly average and Calumet, Fond du Lac, Outagamie, and Winnebago consistently remained below Wisconsin's yearly average as well. All county unemployment rates in 2021 were higher than 2019 rates, but were lower than 2015 rates,

suggesting a return to a more stable pre-pandemic unemployment rate throughout the East Central region. Sector total average monthly employment by county is examined for selected key sectors later in the report.

### *Implications*

Changes in labor force size, unemployment rate, and total average monthly employment figures between 2015 and 2021 highlight a resilient labor force that, in most cases, recovered following the pandemic. At a regional level, these figures show a promising recovery, yet labor force dynamics vary both by county and sector, several of which have yet to recover, a topic explored later in the report.



## REGIONAL ECONOMIC BACKGROUND

### Gross Regional Product

Nominal Gross Regional Product (NGRP) is a measure of all goods and services produced in a given geography and is a useful indicator to gauge the general economic health and productivity of a region. NGRP is the yearly aggregate of total industry earning, taxes, and profits minus subsidies and is not adjusted for inflation.<sup>5</sup> Nominal GRP is compiled and calculated by Lightcast (formerly EMSI and Burning Glass) a labor market data company that utilizes BLS

and BEA data, as well as other data sources, to create economic datasets.<sup>6</sup> NGRP data from Lightcast was adjusted for inflation with a base year of 2015. It is referred to as Real Gross Regional Product (RGRP) throughout the report.

### Region

The Total Real Gross Regional Product of all sectors in the East Central region increased from \$31.87 Billion in 2015 to \$34.33 Billion in 2021, an increase of over \$2.46 Billion and a percent change of 7.7% (Table 7). RGRP in

the East Central region would steadily grow between 2015 and 2019 with the exception of a slight decrease between 2016 and 2017. The impact of the pandemic caused RGRP to drop in nearly every sector between 2019 and 2020.

<sup>5</sup> United States Bureau of Labor Statistics. 2023. "Quarterly Census of Employment and Wages." *United States Department of Labor*. <https://www.bls.gov/cew/>

<sup>6</sup> EMSIkb. 2023. "Gross Regional Product (GRP)." *Economic Modeling Specialists, Intl.* [https://kb.emsidata.com/glossary/gross-regional-product-or-grp-i0/#:~:text=Gross%20Regional%20Product%20\(GRP\)%20is,in%20the%20region%20of%20study](https://kb.emsidata.com/glossary/gross-regional-product-or-grp-i0/#:~:text=Gross%20Regional%20Product%20(GRP)%20is,in%20the%20region%20of%20study)

**Table 7: Total Real Gross Regional Product by Sector 2015-2021**

NAICS	Sector	2015	2016	2017	2018	2019	2020	2021	2015-2021 Percent Change
11	Agriculture, Forestry, Fishing and Hunting	\$682M	\$627M	\$645M	\$657M	\$633M	\$685M	\$737M	8%
21	Mining, Quarrying, and Oil and Gas Extraction	\$78M	\$84M	\$98M	\$89M	\$92M	\$92M	\$107M	37%
22	Utilities	\$248M	\$255M	\$262M	\$260M	\$240M	\$234M	\$249M	0%
23	Construction	\$1,720M	\$1,869M	\$1,952M	\$2,025M	\$2,116M	\$2,080M	\$2,295M	33%
31-33	Manufacturing	\$8,558M	\$8,215M	\$8,059M	\$8,392M	\$8,907M	\$8,296M	\$9,265M	8%
42	Wholesale Trade	\$1,633M	\$1,641M	\$1,753M	\$1,728M	\$1,837M	\$1,723M	\$1,934M	18%
44-45	Retail Trade	\$1,959M	\$2,045M	\$1,990M	\$1,981M	\$1,984M	\$1,994M	\$2,189M	12%
48-49	Transportation and Warehousing	\$866M	\$852M	\$851M	\$902M	\$910M	\$774M	\$841M	-3%
51	Information	\$826M	\$820M	\$742M	\$742M	\$741M	\$721M	\$786M	-5%
52	Finance and Insurance	\$2,309M	\$2,307M	\$2,164M	\$2,255M	\$2,293M	\$2,321M	\$2,400M	4%
53	Real Estate and Rental and Leasing	\$912M	\$955M	\$865M	\$876M	\$1,019M	\$913M	\$954M	5%
54	Professional, Scientific, and Technical Services	\$1,021M	\$1,035M	\$1,115M	\$1,136M	\$1,170M	\$1,106M	\$1,212M	19%
55	Management of Companies and Enterprises	\$724M	\$980M	\$945M	\$891M	\$876M	\$812M	\$836M	16%
56	Administrative and Support and Waste Management and Remediation Services	\$852M	\$860M	\$868M	\$831M	\$840M	\$803M	\$942M	11%
61	Educational Services	\$171M	\$171M	\$154M	\$153M	\$156M	\$130M	\$136M	-21%
62	Health Care and Social Assistance	\$2,350M	\$2,376M	\$2,363M	\$2,374M	\$2,373M	\$2,222M	\$2,383M	1%
71	Arts, Entertainment, and Recreation	\$140M	\$138M	\$124M	\$124M	\$131M	\$101M	\$116M	-17%
72	Accommodation and Food Services	\$654M	\$661M	\$652M	\$660M	\$683M	\$549M	\$677M	4%
81	Other Services (except Public Administration)	\$592M	\$591M	\$604M	\$629M	\$634M	\$570M	\$604M	2%
92	Public Administration	\$2,897M	\$2,908M	\$2,814M	\$2,892M	\$2,893M	\$2,907M	\$2,969M	2%
	Other Sectors	\$2,680M	\$2,724M	\$2,618M	\$2,660M	\$2,737M	\$2,678M	\$2,701M	1%
	<b>Total RGRP</b>	<b>\$31,871M</b>	<b>\$32,114M</b>	<b>\$31,638M</b>	<b>\$32,259M</b>	<b>\$33,265M</b>	<b>\$31,712M</b>	<b>\$34,333M</b>	<b>8%</b>

## REGIONAL ECONOMIC BACKGROUND

Effects on RGRP by sector varied, as some recorded minimal declines while others fared worse, most notably the Arts, Entertainment, and Recreation (NAICS 71) sector where RGRP fell by nearly -22.8%. In contrast, a handful of sectors – Agriculture, Forestry, Fishing and Hunting (NAICS 11), Retail Trade (NAICS 44-45), and Government (NAICS 90) – noticed no change or a slight increase in sector RGRP during this time. Similar other economic statistics, regional and individual sector RGRP would decline in 2020, but RGRP figures for most sectors and the East Central region as a whole would recover by 2021. In fact, the total

Real Gross Region Product in the East Central region reached its highest recorded amount in 2021 in comparison to all years since 2015.

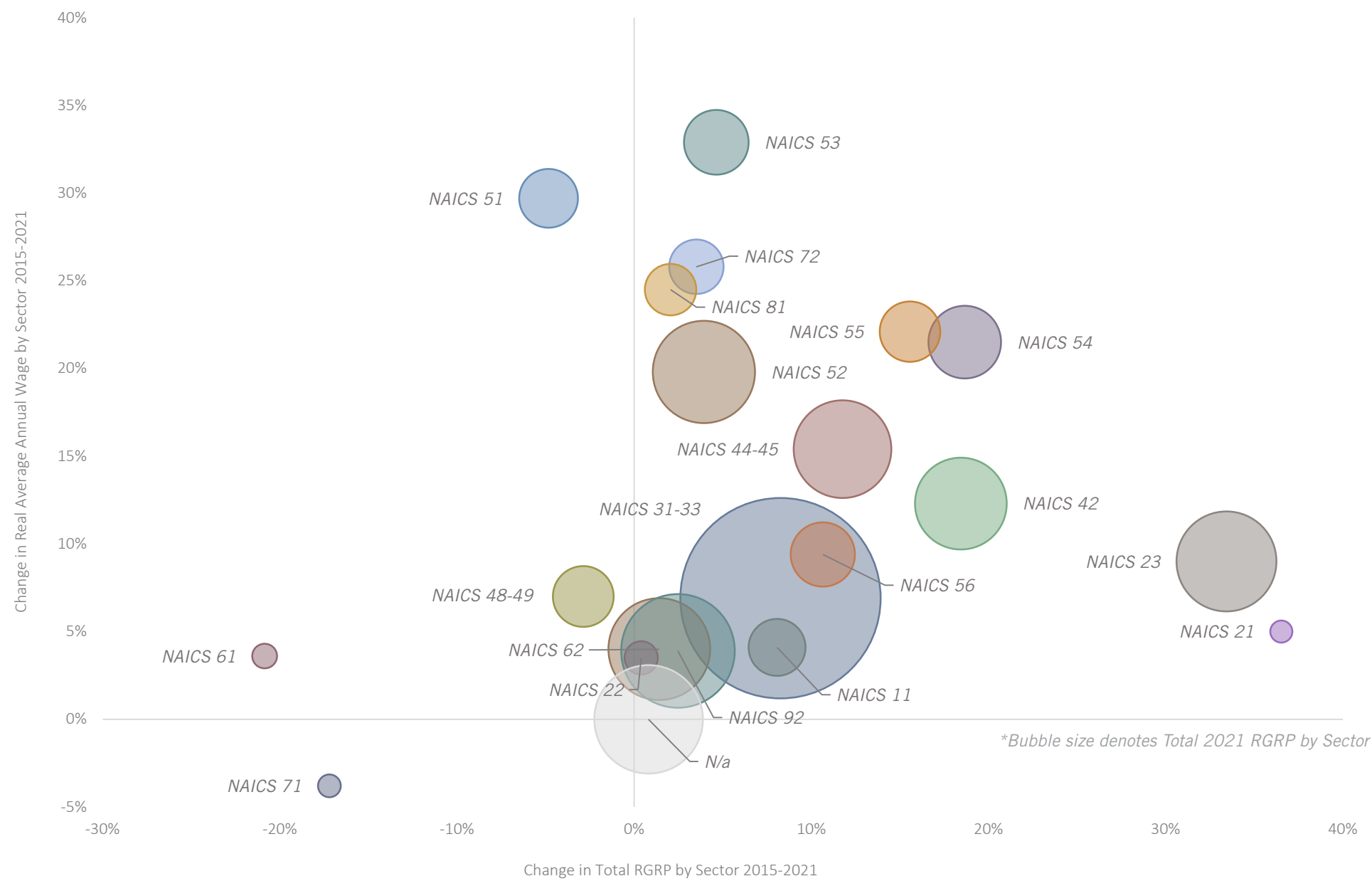
Between 2015 and 2021, seventeen sectors would see RGRP figures remain stable or grow. The Construction (NAICS 23) and the Mining, Quarrying, and Oil and Gas Extraction (NAICS 21) sectors would display the greatest growth during the period at 33% and 37%, respectively (Figure 5). Four sectors recorded decline in RGRP with the largest declines experienced in the Educational Services (NAICS 61) and the Art, Entertainment, and Recreation (NAICS

71) sectors, recording a decline in RGRP of 21% and 17%, respectively. In comparison, all sectors but one would see Real Average Annual Wages increase between 2015 and 2021, with the greatest change recorded in the Real Estate and Rental and Leasing (NAICS 53) sector by 33%, and the Information (NAICS 51) sector by 30%. The Art, Entertainment, and Recreation (NAICS 71) sector would see RAAW contract by roughly 4% during the period. Nonetheless, most sectors would see RGRP, as well as wage, figures grow or remain stable to some degree between 2015 and 2021.



REGIONAL ECONOMIC BACKGROUND

Figure 5: Change in Total RGRP and Real Average Annual Wage 2015-2021 by Sector, and Total 2021 RGRP by Sector



## REGIONAL ECONOMIC BACKGROUND

### County

Total Real Gross Regional Product for each of the ten counties in the region would follow closely with the regional trend, each recording steady growth between 2015 and 2019, drop in 2020, and recovery in 2021 (Table 8). The three largest county contributors to the East Central regional RGRP between 2015 and 2021 were Outagamie, Winnebago, and Fond du Lac counties, which all had a yearly RGRP greater than \$2 Billion (Figure 6). The remaining seven counties had a yearly RGRP less than \$2 Billion yet trended similar fashions. The most notable change would be recorded in Calumet County, where RGRP would grow by 30.4%.

The smallest economy by RGRP in the region was Menominee County, which saw RGRP shrink from \$167 Million in 2015 to \$162 Million in 2021, a decrease of 2.8%. However, Real Average Annual Wages would increase in Menominee County by approximately 5% and, in fact, Real Average Annual Wages would increase in all counties between 2015 and 2021. Generally, counties in the East Central region recorded stable or steady growth in Real Gross Regional Product between 2015 and 2021.

### Implications

Real Gross Regional Product figures in the East Central region between 2015 and 2021 grant

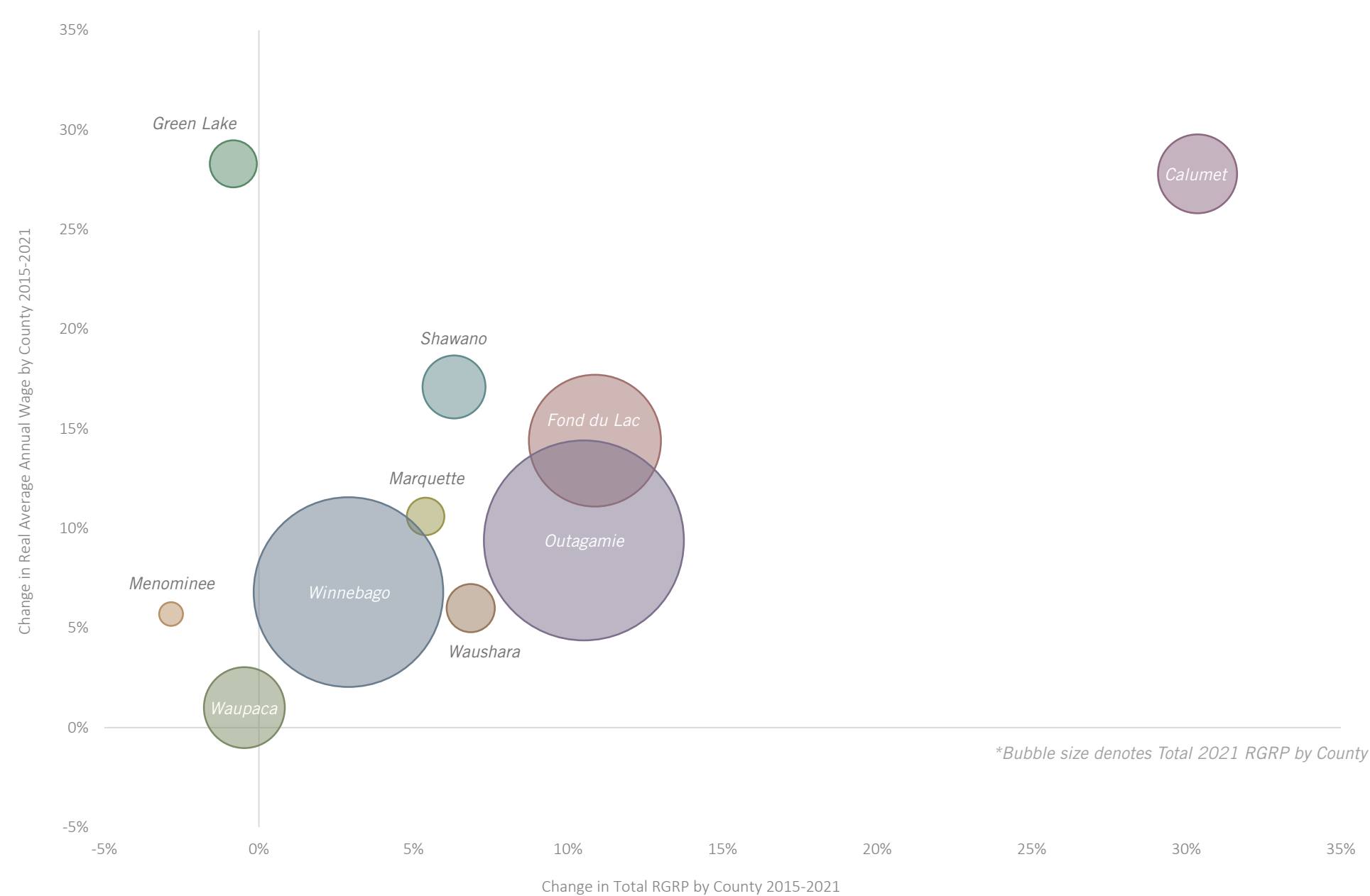
a wholistic overview of the regional economy. Correlations between RGRP can easily be drawn to trends in Real Per Capita Income, Real Average Annual Wages, and labor force dynamics at the regional, county, and sector levels. Broadly speaking, trends in RGRP figures highlight the economic impact of the pandemic and the subsequent resiliency and recovery of the regional economy. Certain counties and sectors managed to display impressive recovery trends, while other counties and sectors were witness stagnation or worse. These unique resiliency and recovery dynamics throughout the region are further examined at the sector and county level throughout the report.

**Table 8:** Total Real Gross Regional Product by County 2015-2021

County	2015	2016	2017	2018	2019	2020	2021	2015-2021 Percent Change
Calumet	\$1.40 B	\$1.531 B	\$1.456 B	\$1.532 B	\$1.618 B	\$1.612 B	\$1.824 B	30.4%
Fond du Lac	\$4.621 B	\$4.646 B	\$4.635 B	\$4.805 B	\$4.907 B	\$4.733 B	\$5.123 B	10.9%
Green Lake	\$.652 B	\$.609 B	\$.602 B	\$.617 B	\$.617 B	\$.607 B	\$.646 B	-0.8%
Marquette	\$.386 B	\$.383 B	\$.386 B	\$.395 B	\$.415 B	\$.387 B	\$.407 B	5.4%
Menominee	\$.167 B	\$.156 B	\$.123 B	\$.165 B	\$.166 B	\$.151 B	\$.162 B	-2.8%
Outagamie	\$10.679 B	\$10.803 B	\$10.739 B	\$11.037 B	\$11.367 B	\$10.819 B	\$11.801 B	10.5%
Shawano	\$1.092 B	\$1.093 B	\$1.085 B	\$1.106 B	\$1.112 B	\$1.078 B	\$1.161 B	6.3%
Waupaca	\$1.929 B	\$1.898 B	\$1.867 B	\$1.889 B	\$1.869 B	\$1.791 B	\$1.919 B	-0.5%
Waushara	\$.631 B	\$.623 B	\$.635 B	\$.648 B	\$.643 B	\$.615 B	\$.674 B	6.8%
Winnebago	\$10.315 B	\$10.372 B	\$10.111 B	\$10.064 B	\$10.551 B	\$9.921 B	\$10.614 B	2.9%
<b>Region</b>	\$31.871 B	\$32.114 B	\$31.638 B	\$32.259 B	\$33.265 B	\$31.712 B	\$34.333 B	7.7%
<b>Wisconsin</b>	\$299.262 B	\$302.207 B	\$298.429 B	\$305.534 B	\$310.955 B	\$298.877 B	\$321.630 B	7.5%
<b>United States</b>	\$17,828.025 B	\$18,129.503 B	\$18,348.245 B	\$18,960.640 B	\$19,371.924 B	\$18,614.376 B	\$20,196.416 B	13.3%

REGIONAL ECONOMIC BACKGROUND

Figure 6: Change in Total RGRP and Real Average Annual Wage 2015-2021 by Sector, and Total 2021 RGRP by County





## REGIONAL ECONOMIC BACKGROUND

### Overview of Economic Trends

Several brief conclusions and inferences can be made regarding the general composition, health, resiliency, and recovery of the regional economy prior to, during, and after the pandemic. When evaluated as a whole, the regional economy

appeared to be largely resilient to the pandemic, recovering to pre-2020 trends according to most figures by 2021. However, further exploring economic data and stakeholder interviews at the county and sector levels data tell a more complicated story of resiliency and recovery, revealing the unique impacts and residual effects

caused by the pandemic. Understanding these nuances is a focus of the following chapters, where seven key sectors in the East Central region will be analyzed and discussed at a more granular and relevant scale. These chapters benefit greatly from knowledge imparted by sector stakeholders who experienced challenges firsthand.

**Between 2015 and 2019, the regional economy was defined by slight, yet steady, economic growth.**

1. Real Per Capita Income increased in most counties in the region and matched trends similar to Wisconsin and United States.
2. Real Average Annual Wage per sector generally saw gradual growth.
3. The size of the labor force remained stable and unemployment rates were on a continual downward trend at the regional and county levels. Additionally, total average monthly employment for most sectors in the region also remained consistent.
4. Real Gross Regional Product was either stable or saw steady growth at the regional and county levels.

**Between 2019 and 2020, downturns would appear across the regional economy.**

1. Real Per Capita Income was a unique indicator as it was not seriously impacted and did not decrease for any county in the region. However, this indication has flaws, as discussed above.
2. Real Average Annual Wages in the region remained stable in some sectors but dropped in the majority of sectors.
3. The size of the labor force shrank and the unemployment rate spiked at both the regional and county level. Additionally, total average monthly employment rates dropped in every sector across the region, with some sectors recording over a 10% decrease.
4. Real Gross Regional Product declined in every county in the region, in some cases dropping by over 5%.

**Since 2021, some regional economic indicators would outperformed pre-pandemic trends while others would remain stagnant.**

5. Real Per Capita Income increased in all counties from 2020 and declined in only one between 2015 and 2021.
6. Real Average Annual Wages recovered from 2020 figures and increased slightly in all sectors but one from pre-pandemic wages.
7. The labor force size increased and unemployment rates decreased relative to 2020 regional and county figures. However, neither the size of the labor force nor unemployment rates rebounded to levels recorded prior to the pandemic. Additionally, total average monthly employment for most sectors recovered to pre-pandemic levels, although some sectors continued to experience a decline in employment.
8. Real Gross Regional Product grew from 2020 figures for all counties and surpassed pre-pandemic figures for most counties. However, RGRP figures for a handful of counties did not return to pre-pandemic figures.

## REGIONAL ECONOMIC BACKGROUND

### Overview of Stakeholder Engagement

Public and private sector stakeholders across the region were interviewed to gain insight on the unique dynamics and impacts of the pandemic across different economic sectors and geographies. Interviews with stakeholders were held virtually and were either one-on-one or in small groups to create a conversational atmosphere. Stakeholders were interviewed for one to two hours and were asked several or all of the following questions listed at the bottom of the page.

Between November 2020 and March 2022, ECWRPC held 38 interviews with 46 professionals for a total of 36.5 hours of conversation. The stakeholders interviewed represented or interacted regularly with the

seven sectors discussed in the following chapters, holding positions in various public, private, and non-profit organizations like:

- Manufacturing Firms
- Business and/or Government Consulting Firms
- Construction Firms
- Educational Institutions (School Districts, Day Cares, Universities)
- Health Departments and Health Care Providers
- Workforce Development Boards
- Local and State Government Professionals
- Economic Development Organizations
- Real Estate Firms
- Chambers of Commerce
- Convention and Visitor Bureaus
- Transit Agencies
- Art and Entertainment Organizations

### *Reflections and Implications*

The stakeholder interviews would prove invaluable, point-in-time information regarding the varying and complicated trends across economic sectors. For nearly all stakeholders, the initial impacts in the first several months of the pandemic would be an unwelcome, unpredictable jolt. General uncertainty would be the main reflection mentioned by stakeholders when discussing much of 2020. Many would note that both internal and external challenges would burden their efforts to navigate the impacts of the pandemic. Several common Internal challenges identified were clear communication from leadership, staff capacity, and technology adjustments to work from home.

### Stakeholder Interview Questions

1. Describe the initial impact of COVID-19 on your industry or organization's operations.
2. How have the impacts of COVID-19 changed over time in regards to your industry or organization?
3. How would you assess your organization or industries preparedness level entering the pandemic? How about now?
4. What tools or resources made dealing with COVID-19 easier or would have made it easier?
5. How has communication been throughout the pandemic?
6. Did/do you feel like you had the right data to address COVID-19 impacts?
7. What would make you/or the local economy better prepared for an economic disruption in the future?
8. What is something you believe East Central could do to help you out?
9. Who else should I talk to about COVID-19 impacts?

## REGIONAL ECONOMIC BACKGROUND

External challenges would be abundant, however, and most would be completely out of the purview of the stakeholder and their organization. Notable and all too common external challenges would include supply chain issues, demand shifts, labor shortages, and health-oriented restrictions.

Yet, stakeholders would point out the many efforts made during 2020 to remain resilient by addressing the challenges that they could, and ignoring those they could not. While the efficacy of each effort would vary by circumstance, stakeholders expressed pride in the ability of their organization to remain

resilient to the challenges. Ever nuanced, the stakeholder interviews made one thing clear, the pandemic brought forth incredible challenges that, in many cases, was met head-on, highlighting the resiliency of the East Central region and its people.





# **SPECIALIZED SECTOR IMPACTS**

---



NAICS 11

# AGRICULTURE, FORESTRY, FISHING, AND HUNTING

## Introduction

The Agriculture, Forestry, Fishing, and Hunting sector is at the very forefront of the supply chain, making it a key sector of the economy. Farms, ranches, dairies, greenhouse, nurseries, orchards, and hatcheries are all establishments which grow, raise, or harvest crops, produce, livestock, or timber.<sup>1</sup> Establishments in the sector provide either direct production activities conducted by owner or tenant operators, or support activities undertaken by contractors. The sector plays a vital role in the state and regional economy, having both an historic and contemporary significance to the cultural identity of the region.

Although well established in the regional economy and experienced in confronting an array of economic disruptions, the pandemic introduced new and immediate stressors to the sector drastically affecting producers their employees. Prior to 2020, the sector was generally stagnant, recording minimal growth or decline, and consistently contributed greatly to the state and regional economy.<sup>2</sup> The pandemic introduced economic challenges that would considerably disturb the stability of the sector. Identified during stakeholder interviews, sector resiliency would be tested by unique supply chain bottlenecks and unpredictable supply and demand changes at the beginning 2020.

---

<sup>1</sup> United States Census Bureau. 2022. "North American Industrial Classification System." *United States Census Bureau*. Pg. 77. [https://www.census.gov/naics/reference\\_files\\_tools/2022\\_NAICS\\_Manual.pdf](https://www.census.gov/naics/reference_files_tools/2022_NAICS_Manual.pdf)

<sup>2</sup> Deller, C., S. 2019, August. "The Contribution of Agriculture to the Wisconsin Economy: An Update for 2017." *Department of Agricultural and Applied Economics Center for Community Economic Development University of Wisconsin-Madison*. <https://economicdevelopment.extension.wisc.edu/files/2019/08/Contribution-of-Ag-to-WI-Econ-4-Update.pdf>

## AGRICULTURE, FORESTRY, FISHING, AND HUNTING

Although many challenges would appear insurmountable at the beginning, the sector held firm and even reversed several negative trends recorded prior to the pandemic.

### 2015-2019 Background

#### *Region*

The Agriculture, Forestry, Fishing, and Hunting sector at the regional level was stagnant yet stable in the years prior to the pandemic according to Real Gross Regional Product, Total Average Annual Establishments, Total Average Monthly Employment, and Real Average Annual Wage figures. Accounting for about 2% annually of total RGRP in the East Central region, Agriculture, Forestry, Fishing, and Hunting RGRP figures decreased slightly from \$682.2 million in 2015 to \$632.8 million by 2019. Sector figures for Total Average Annual

Establishments and Total Average Monthly Employment increased slightly between 2015 and 2019, indicating a fair degree of stability. By 2019, about 1% of those actively employed in the regional labor force worked in the Agriculture, Forestry, Fishing, and Hunting sector. Real Average Annual Wage in the sector remained relatively stagnant, with regional figures ranging from \$34,100 in 2015 to \$34,300 in 2019. Despite the stagnant trends in RGRP and Real Average Annual Wage figures, the slight growth in Total Average Annual Establishments and steady Total Average Monthly Employment figures at the regional level suggests that the sector was in a relatively stable condition prior to 2020.

#### *County*

Sector trends at the county level in the East Central region were similar to those experienced

at the regional level. Sector RGRP figures for all counties between 2015 and 2019 either declined or were stagnant. Fond du Lac, Shawano, and Outagamie counties, the three largest contributors to sector RGRP which annually contributed around 18%, 16%, and 14% to sector total RGRP each year, respectively, also recorded either a marginal decline or stagnation in sector RGRP figures during the time period. In contrast, sector figures for Total Average Annual Establishments, Total Average Monthly Employment, and Real Average Annual Wage for counties in the East Central region remained largely consistent during the time period. Overall, most figures at the county level for the Agriculture, Forestry, Fishing, and Hunting sector recorded minimal growth yet remained generally stable in the years prior to the pandemic.



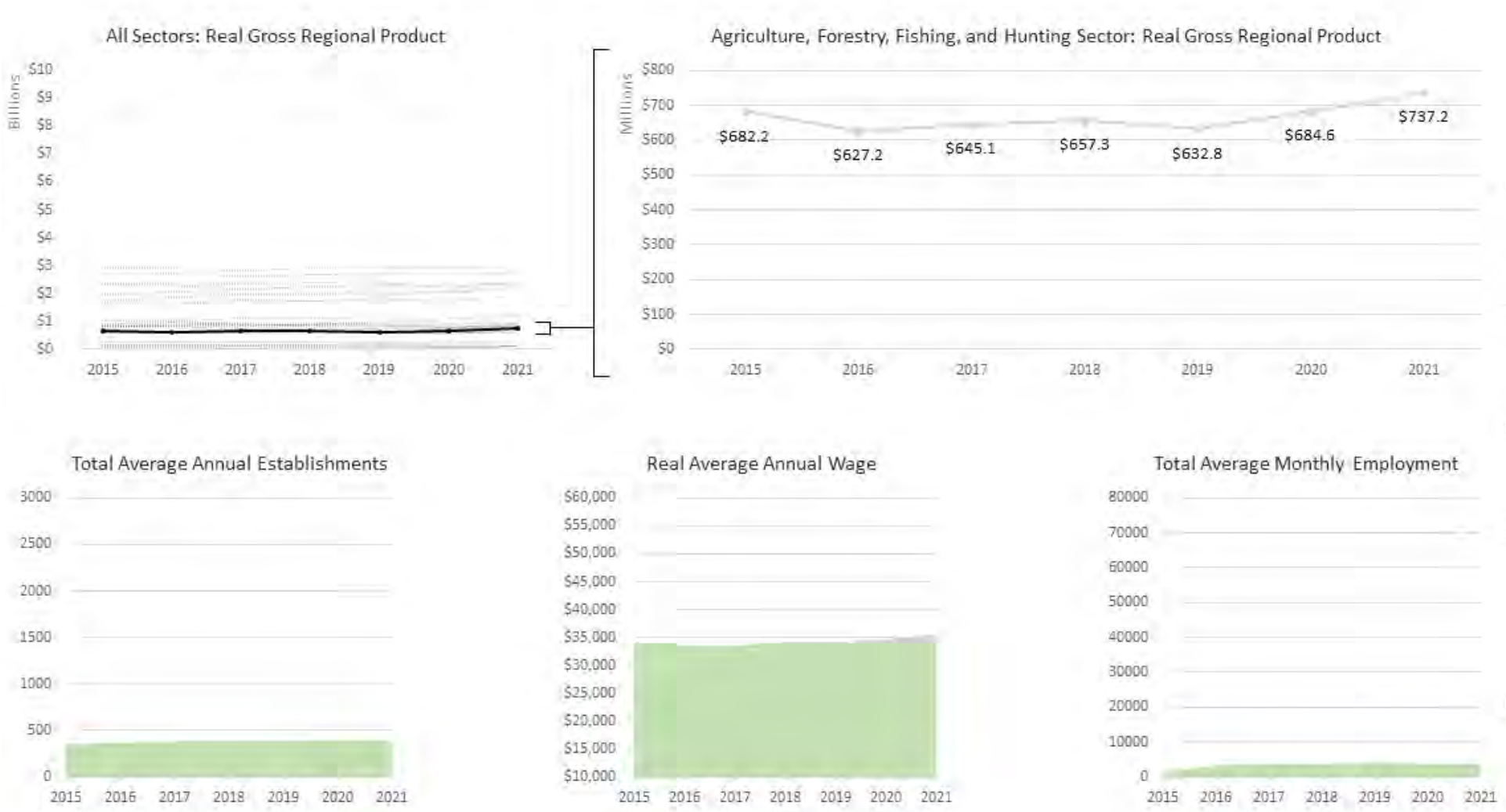






Figure 9: NAICS 11 Overview by County 2015-2021



## AGRICULTURE, FORESTRY, FISHING, AND HUNTING

### 2020 Impact and Response

In the first months of 2020, the State of Wisconsin identified essential businesses and operations that were allowed to remain open and many establishments in the Agriculture, Forestry, Fishing, and Hunting sector meet the criteria.<sup>3</sup> Yet serious shifts to supply and demand and sporadic supply chain issues across the economy contributed to immediate challenges for the sector. In the first and second quarter of 2020, impacts on the sector across the state and in the East Central region caused significant agricultural production losses in crops, produce, livestock, and dairy.<sup>4</sup> Stakeholder interviews gleaned further understanding of these impacts. One stakeholder interviewed represented the Cheese Manufacturing (NAICS 311513) sub-sector, which, although a sub-sector within the Manufacturing (NAICS 31-33) sector, is deeply tied to the operations in the Agriculture, Forestry, Fishing, and Hunting sector. Another stakeholder within the Forestry and Logging (NAICS 113) sub-sector, a distinct component of the sector, identified the challenges that perturbed such establishments. These interviews showcase the unique challenges, efficacy of implemented responses, and degree of resiliency noted across the sector during 2020.

#### *Impact*

Directly related to several sub-sectors in the Agriculture, Forestry, Fishing, and Hunting sector, impacts which took place downstream in the Cheese Manufacturing (NAICS 311513) serve as an appropriate proxy to evaluate the effects of the pandemic to agriculture. A stakeholder noted that in the initial months of

the pandemic, an oversupply of product caused by a lack of demand was perhaps the greatest of all challenges. The initial closure of restaurants halted about half of all sale channels for producers, but cheese continued to be produced as it was an essential business operation and had the ability to be warehoused for long periods of time. With a steep drop in demand yet steady supply, cheese prices fell to a 30-year low and tightened the bottom line of producers. In addition to significantly reduced revenues, the lack of demand and over supply found producers struggling to secure refrigerated transportation and warehouse space to haul and store such large amounts of product. These downstream bottlenecks and challenges would prove to have upstream effects on agricultural establishments, particularly those in the Cattle Ranching and Farming (NAICS 1121) sub-sector. Impacts to dairy producers in the sub-sector would be significant, in some cases causing farmers to dump milk products right on sight.<sup>5</sup>

#### *Response*

Downstream, cheese producers adapted to the best of their ability and some reconfigured packaging and oriented marketing efforts to households to make up for the drop-in demand from restaurants. However, not all producers had the ability to quickly change plant production lines and, once cold storage facilities were at capacity, many ended up donating large amounts of cheese to local food banks. While local and regional food banks welcomed donations, the amount of product donated was difficult to properly store, resulting in distribution inefficiencies and waste. Despite such challenges, most state and

regional cheese producers were able to weather the initial impact of the pandemic by responding with the most practical solutions available at the time, and displayed adequate resilient. The ability of downstream cheese manufactures to stay afloat, allowed agriculture establishments to maintain livelihoods and operations.

#### *Impact*

Another major component of the sector, the Forestry and Logging (NAICS 113) sub-sector also faced immediate challenges. The sub-sector is vital to the Agriculture, Forestry, Fishing, and Hunting sector, and has dynamic direct, indirect, and induced impacts on the state and regional economy.<sup>6</sup> Given its importance, establishments in the sub-sector were deemed essential and continued production and, while able to avoid the direct impacts of a shutdown, impacts were felt due to external disruptions outside of the sector. According to stakeholders, the most substantial external disruptions came from an amalgamation of shifting demand and supply chain blockage throughout the state and regional economy.

<sup>3</sup> State of Wisconsin Department of Health Services. 2020, March 25. "Emergency Order #12 Safer at Home Order." *State of Wisconsin Department of Health Services*. <https://evers.wi.gov/Documents/COVID19/EMO12-SaferAtHome.pdf>

<sup>4</sup> Wisconsin Economic Development Corporation. 2020, June 30. "Wisconsin Tomorrow an Economy for All." *Wisconsin Economic Development Corporation*. Pg. 58. [https://wedc.org/wp-content/uploads/2020/06/Wisconsin\\_Tomorrow\\_Single\\_Page\\_Layout.pdf](https://wedc.org/wp-content/uploads/2020/06/Wisconsin_Tomorrow_Single_Page_Layout.pdf)

<sup>5</sup> Spaeth-Bauer, C. 2020, April 1. "Stark Reality on Wisconsin Dairy Farms Impacted by COVID-19." *Wisconsin State Farmer*. <https://www.wisfarmer.com/story/news/2020/04/01/stark-reality-dairy-farms-wisconsin-impacted-covid-19/5107329002/>

<sup>6</sup> Wisconsin Department of Natural Resources. 2020. "Impact of COVID-19 on Wisconsin Forest Products Industry." *Wisconsin Department of Natural Resources*. [https://dnr.wisconsin.gov/sites/default/files/topic/ForestBusinesses/economicImpact\\_covid19.pdf](https://dnr.wisconsin.gov/sites/default/files/topic/ForestBusinesses/economicImpact_covid19.pdf)

## AGRICULTURE, FORESTRY, FISHING, AND HUNTING

There were many external disruptions, but perhaps the most notable for both the region and state was the closing of the Verso Mill in Wisconsin Rapids, which immediately dropped demand for products from the sub-sector and caused uncertainty.

The impact of a rapid shift in demand and distress of logistical capabilities across all sectors resulted in the sub-sector, essential in supplying pulp for paper packaging to lumber for building materials, to experience significant variability in budget and availability of labor. The external disruptions would impact establishments in the sub-sectors differently, largely depending on downstream demand for specific types of forestry products. Ultimately, the initial impact of the pandemic on the sub-sector caused the reshuffling of a generally stable industry and resulted in the sub-sector making attempts to adjust with varying success.

### *Response*

The ability of the Forestry and Logging (NAICS 113) sub-sector to respond to the initial economic impact was limited given that many challenges were beyond the its purview and could not be directly addressed. One of the few options available to the sub-sector was to find ways to adjust products to meet shifts in demand. Making such adjustments while simultaneously navigating labor shortages and supply chain issues, proved to be a challenge for many and resulted in mixed outcomes. However, the sub-sector would showcase its resiliency and continue to perform within its niche in the regional economy following the pandemic.

### **2021 Recovery and Resiliency**

There was no shortage of stress and anxiety experienced across all sectors of the regional economy in 2020. The resiliency and adaptability of employers and employees alike in the Agriculture, Forestry Fishing, and Hunting sector was greatly tested. Forced to adapt, the success of sub-sectors within the sector varied considerably, some capitalized on opportunities to expand while others had no option left but to close permanently. Yet, overall, the sector as a whole showcased an impressive degree of adaptability and economic resiliency. In fact, the sector experienced growth in several indicators both before and after 2020, surpassing figures recorded between 2015 and 2019. Sector Real Gross Regional Product figures for the region grew in both 2020 and 2021, a reversal of the declining RGRP trend between 2015 and 2019, with Fond du Lac, Shawano, and Outagamie counties continuing to contribute the largest share to sector RGRP respectively. Another indicator to record growth, sector Real Average Annual Wage in the region grew in both 2020 and 2021 to \$35,534, again reversing the previously stagnant trend in wages recorded between 2015 and 2019. The range of increase for 2021 Real Average Annual Wage figures varied at the county level, for example Outagamie County and Shawano County sector wages increased to a greater extent than those in Fond du Lac County. Other sector indicators at the regional and county levels also varied in their degree of change. The sector Total Average Annual Establishments in the region also grew slightly in 2020 and 2021 to nearly 400, with most counties following this trend.

Total Average Monthly Employment at the regional level was the only indicator to decline following the pandemic, shrinking from a peak of 4,058 in 2019 to 3,875 in 2021. The decline in employment figures in 2020 and 2021 was also recorded in Outagamie, Shawano, and Fond du Lac counties. The decline is not isolated to the sector or region and is instead a dilemma experienced at the state and national levels stemming from a shrinking labor force.

### *Conclusion*

Throughout 2020 and 2021 the sector displayed a fair degree of resiliency both at the state and regional level. Not only did the sector recover to pre-pandemic figures in several measures but, in some cases, displayed modest growth, reversing previously stagnant trends. The sector responded with the best options available at the time and resiliency of those throughout the sector was varied, some endured while others did not. The greatest limit to sector resiliency was its reliance on other sectors down the supply chain responsible for transporting and processing its raw products. Anxieties for those in the sector throughout 2020 would be rooted in the inability to address the logistical bottlenecks and numerous operational challenges outside of the sector. While tacit that all sectors in the economy are interlinked and dependent on one another, the position of the Agriculture, Forestry, Fishing, and Hunting sector at the forefront of the supply chain made its resiliency largely contingent on the ability of other sectors to handle challenges.

---

<sup>7</sup> Ibid.



## Introduction

The Construction sector is foundational to the economy as it is responsible for the development of buildings and infrastructure for every economic activity at any scale. The sector is comprised of establishments which handle a portion or the entirety of the design, management, and construction processes of residential, nonresidential buildings, utility, and transportation projects.<sup>1</sup> Services for projects are provided by an intricate combination of general contractors, who manage all aspects of a construction project, and specialty trade contractors, or sub-contractors, who provide a specific service for the overall project. The diverse array and scale of services provided by contractors results in highly specialized establishments that have significant differences in their requirements for equipment, material, and workforce skills. The diversity of services provided, combined with unique demands, creates a network of establishments that are dependent on one another in order to complete any particular project.

Significant to the East Central regional economy, the Construction sector and its network of establishments provide specialized, timely, and quality services. When market trends are healthy and supply chains move seamlessly, the sector thrives. However, when major economic disruptions occur, the sector is afflicted by an environment of project delays, unreliability, and frustration.

---

<sup>1</sup> United States Census Bureau. 2022. "North American Industrial Classification System." *United States Census Bureau*. Pg. 119 [https://www.census.gov/naics/reference\\_files/tools/2022\\_NAICS\\_Manual.pdf](https://www.census.gov/naics/reference_files/tools/2022_NAICS_Manual.pdf)

## NAICS 23 CONSTRUCTION

---



## CONSTRUCTION

Prior to 2020, the sector recorded steady growth across multiple figures at the state, regional, and county levels.<sup>2</sup> The pandemic greatly disrupted the previously healthy economic environment. Supply chain issues would result in material shortages that increased material costs and delayed projects, while an atmosphere of economic uncertainty and pessimism would halt new development plans, concurrently creating a shortage of work available for the sector. The adaptability of the sector was seriously tested as most challenges were external and could not be addressed, severely limiting practical responses available to the sector. Recovery following the pandemic has been tenuous and figures portray a stable, although seriously strained, sector.

### 2015-2019 Background

#### *Region*

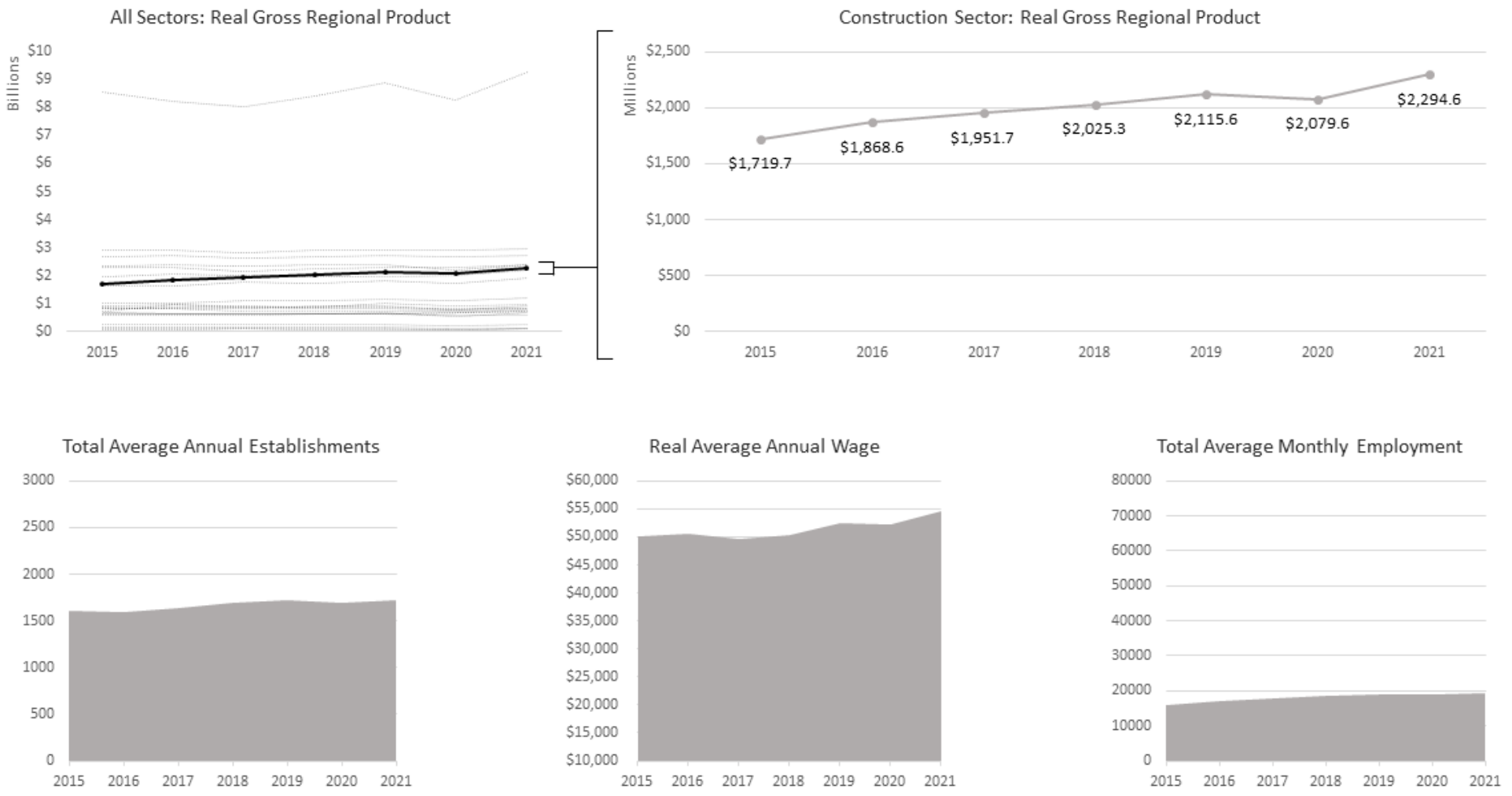
Real Gross Regional Product, Total Average Annual Establishments, Total Average Monthly Employment, and Real Average Annual Wage figures all increased in the sector at the regional level between 2015 and 2019. Annually accounting for approximately 5% of the total East Central regional RGRP, Construction sector RGRP grew from \$1.72 billion in 2015 to \$2.12 billion by 2019. In addition, Total Average Annual Establishments and Total Average Monthly Employment figures experienced a slight yet steady increase between 2015 and 2019 in the region. By 2019, nearly 5% of those actively employed in the regional labor force worked in the Construction sector. Real Average Annual Wage figures also displayed healthy trends at the

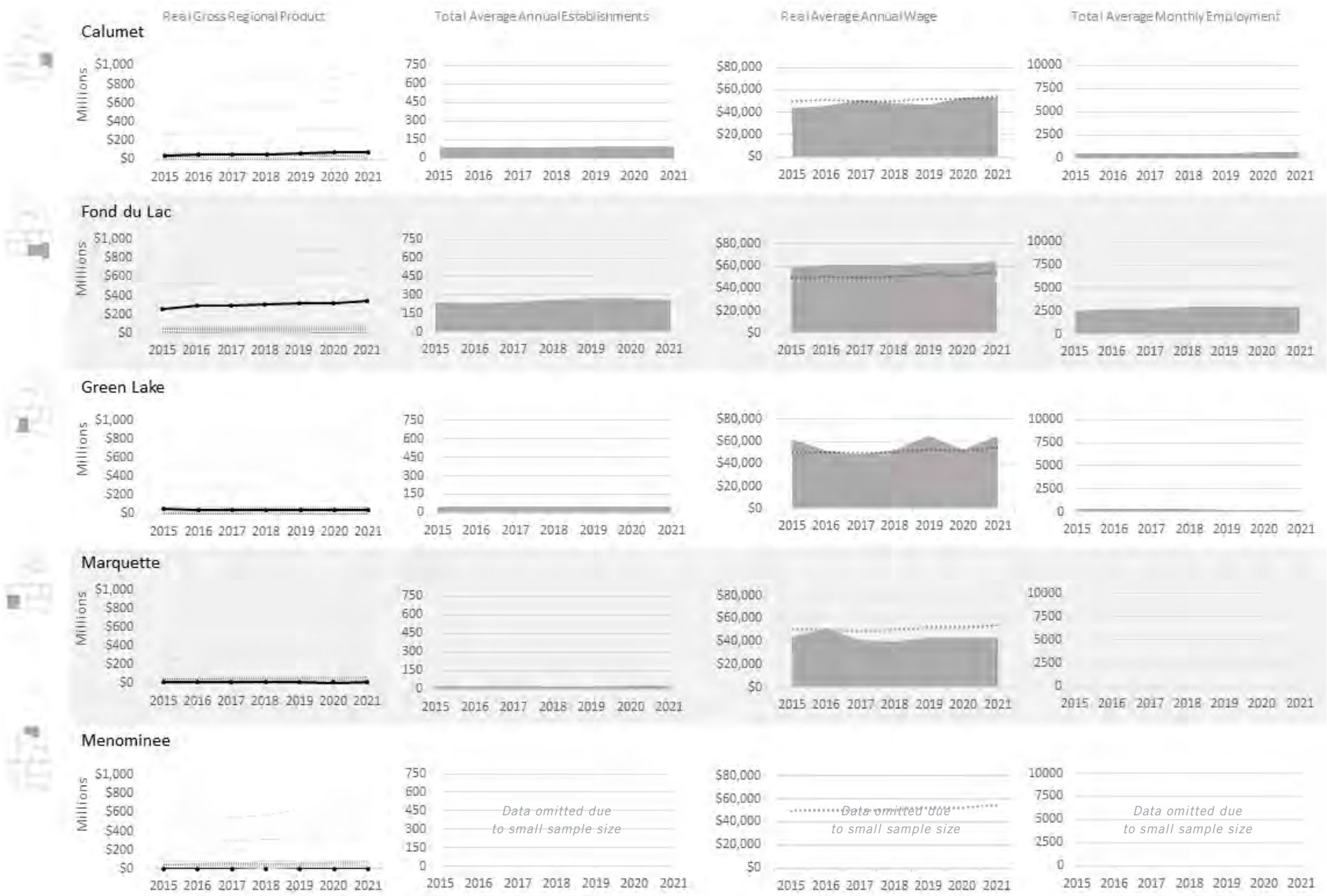
regional level, growing from \$50,000 in 2015 to \$52,300 in 2019. Overall, the East Central Construction sector experienced steady growth and a healthy economic environment in the years prior to the pandemic.

#### *County*

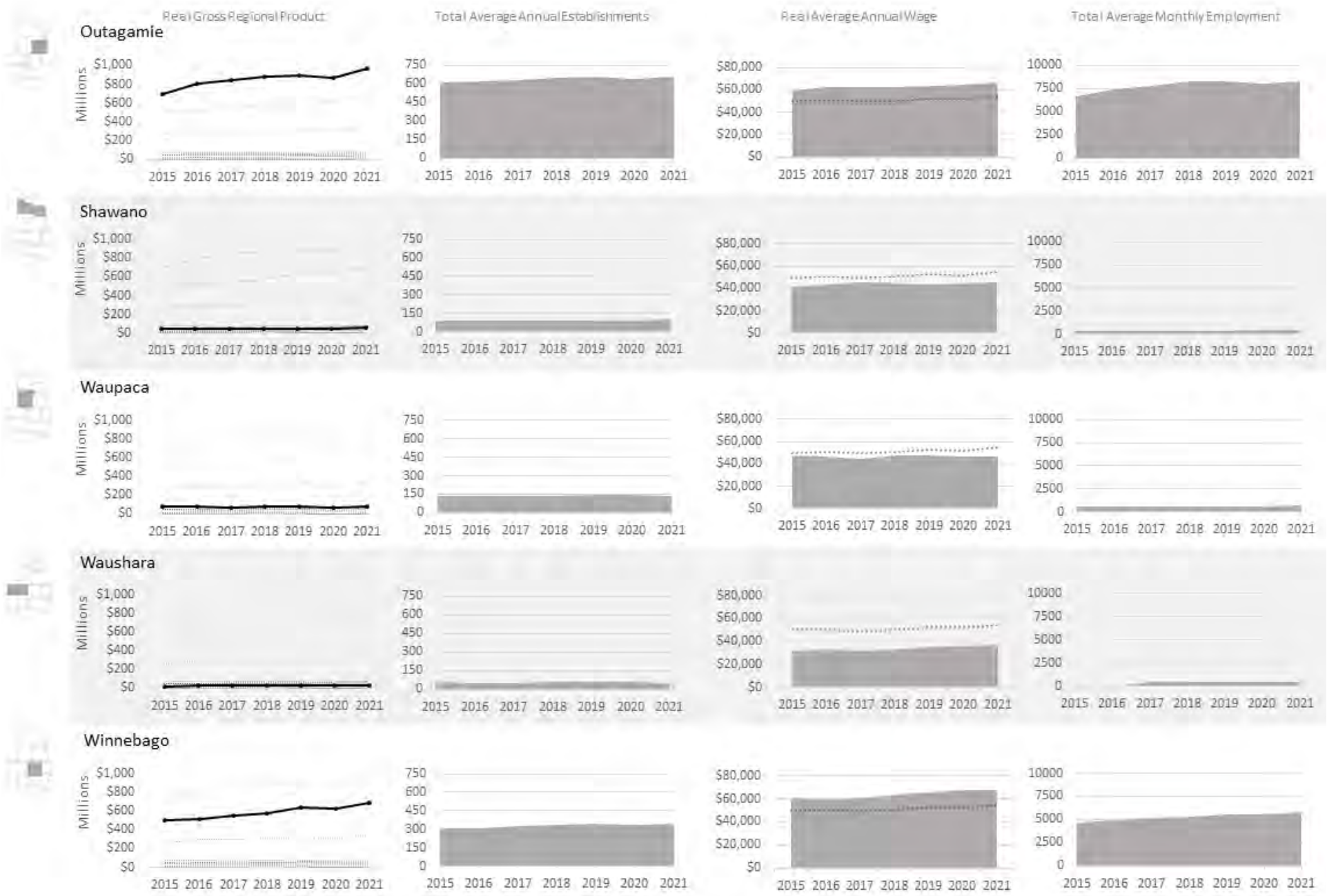
The Construction sector also recorded positive trends across many counties in the East Central region. Sector RGRP figures at the county level were either stable or increased between 2015 and 2019. Outagamie, Winnebago, and Fond du Lac counties accounted for about 40%, 30%, and 15% of total sector RGRP each year, respectively, with each county consistently recording annual growth between 2015 and 2019. Total Average Annual Establishments and Total Average Monthly Employment figures remained stable for many counties in the region during the time period. Real Average Annual Wage figures, however, varied in each county and were more susceptible to change. Sector wages in Outagamie, Winnebago, and Fond du Lac consistently saw growth and exceeded the regional average between 2015 to 2019. In other counties, the sector tended to pay less than the regional average wage, with averages contracting in various years during the time period. Aside from variability in county Real Average Annual Wage, figures prior to 2020 highlight its prominence and stability at the regional and county levels, particularly in Outagamie, Winnebago, and Fond du Lac counties.

<sup>2</sup> Simonson, K. 2020. "The Economic Impact of Construction in the United States and Wisconsin." *Associated General Contractors of America*. <https://www.agc.org/sites/default/files/Files/Construction%20Data/WI.pdf>









## CONSTRUCTION

### 2020 Impact and Response

#### *Impact*

The Construction sector across the United States experienced a multitude of impacts in the first year of the pandemic. In the East Central region, while the severity and scale of impacts would vary, the general sequence and dynamics of these impacts to the sector would play out in a similar fashion across the nation. Consistent with the narrative told across the nation, the East Central Construction sector would witness supply chain issues, material shortages, project delays, material cost increases, and labor shortages all amalgamate into a trying situation.

Although construction activities were deemed as essential businesses and operations in Wisconsin under Emergency Order #12, the overall disruption to the global economy and supply chains would result in significant material shortages, delayed projects, and dramatically increased prices.<sup>3</sup>

According to the U.S. Chamber of Commerce Commercial Construction Index (CCI), 45% of U.S. contractors experienced material shortages in Q2 of 2020, a figure consistent with trends in Q2 of 2019. However, by Q4 of 2020, nearly 71% of contractors reported experiencing material shortages.<sup>4</sup> Lumber and steel were the primary material shortages throughout the nation in Q4 of 2020, with nearly 31% of contractors reporting a serious shortage of lumber/wood materials. Material shortages in the East Central region would be consistent

with national trends, as the supply of steel, lumber, and copper materials were unreliable throughout 2020, according to a large contractor in the region. Material shortages not only caused delays but also drastically increased project costs.

In addition to material shortages, economic slowdown would have an impact on project timelines established both prior to and during the pandemic. In Q2 of 2020, project delays would be the largest obstacle for the sector to overcome, with 87% of contractors across the United States experiencing a delay on at least one of their projects while an average of 40% of total projects were delayed to some extent.<sup>5</sup> Project delays would slightly improve during the year, and by Q4 2020 83% recorded a delay on at least one project, with the overall share of delayed projects dropping to 26%.<sup>6</sup> Stakeholders would express that these national trends were ever present in the East Central region. While the number of projects delayed by uncertainty and material shortages would wane over the course of 2020, the sector would be severely impacted by yet another disruption, increased project costs.

Rapid inflation would begin to afflict the national economy by the end of 2020 largely influenced by chronic product shortages. Across the United States, the impact of material costs fluctuations on contractors would increase every quarter throughout 2020, 59% reported a moderate or high impact on their business in Q2, growing to 74% by Q4.<sup>7</sup> In addition, inflation distress would cause overall project

costs to exceed bid estimates that were developed at the start of a project. Material input costs would increase by 5% by the end of 2020, yet bid prices would remain flat, barely increasing by 1% and cutting into revenue streams for many establishments throughout the sector.<sup>8</sup> One large construction stakeholder in the East Central region had to react to revenue estimates off by 30%, resulting in an unexpected loss of \$250 million and 500 employees being taken off payroll by the end of 2020. This mismatch would drastically impact project proformas, tighten revenue margins, and delay projects. These challenges would spill over to exacerbate economic uncertainty, slowing both residential and commercial development and passing costs onto other sectors.

#### *Response*

Responses available to the sector to address the array of challenges would be limited as most impacts were felt throughout the economy.

<sup>3</sup> State of Wisconsin Department of Health Services. 2020, March 25. "Emergency Order #12 Safer at Home Order." *State of Wisconsin Department of Health Services*. <https://evers.wi.gov/Documents/COVID19/EMO12-SaferAtHome.pdf>

<sup>4</sup> United States Chamber of Commerce. 2020, December. "Commercial Construction Index: Q4 2020." *United States Chamber of Commerce*. [https://www.uschamber.com/assets/archived/images/2020\\_cci\\_q4.final\\_.pdf](https://www.uschamber.com/assets/archived/images/2020_cci_q4.final_.pdf)

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

<sup>7</sup> Associated General Contractors of America. 2021, May. "Construction Inflation Alert." *Associated General Contractors of America*. [https://www.agc.org/sites/default/files/AGC%202021%20Inflation%20Alert\\_Version2\\_1.pdf](https://www.agc.org/sites/default/files/AGC%202021%20Inflation%20Alert_Version2_1.pdf)

<sup>8</sup> Ibid.



## CONSTRUCTION

One such challenge was difficulty finding skilled labor, an issue present prior to the pandemic.<sup>9</sup> The pandemic would exacerbate the underlying labor shortage and by Q4 of 2020, 83% of contractors reported moderate to high levels of difficulty in finding skilled workers.<sup>10</sup> The combination of layoffs due to economic uncertainty and workforce shortages created a dynamic challenge that would continue to impact the sector across the nation, state, and region in the years following 2020. For most establishments, the only available response was to weather the storm.

### 2021 Recovery and Resiliency

Across the United States, material shortages and cost fluctuations would continue to have a drastic effect on the sector, with 95% of contractors reporting experiencing chronic material shortages and 97% expressing a moderate or high impact of material cost inflation by Q4 of 2021.<sup>11</sup> A lack of skilled labor would also continue to afflict the sector and by Q4 2021 91% of contractors reported a moderate to high level of difficulty finding skilled workers.<sup>12</sup> However, not all was bleak for the sector, at the national level 66% of contractors reported that they had at least one project delayed with an average of 18% of their total projects delayed in Q4 of 2021.<sup>13</sup> In addition, demand for new construction rebounded in 2021 and the amount of new residential construction across the nation increased. New Single-family home construction grew by 8% while new apartment construction reflected a similar trend.<sup>14</sup> Sector stakeholders in

the East Central region would express optimism regarding these national and regional trends.

New demand for residential and commercial development in the East Central region would be significant drivers behind healthy growth reflected in sector Real Gross Regional Product and Real Average Annual Wages as well as slight gains in Total Average Annual Establishments and Average Monthly Employment figures. Construction sector RGRP in the East Central region grew from \$2.08 billion in 2020 to \$2.29 billion in 2021, continuing the growth trend recorded in the years prior to the pandemic. Outagamie, Winnebago, and Fond du Lac recorded similar growth in sector RGRP in 2021 and continued to contribute greatly to sector regional RGRP. Real Average Annual Wage figures would increase throughout the region between 2020 and 2021 to an average of \$54,489, growing in all counties but Marquette. Figures for Total Average Annual Establishments and Total Average Monthly Employment would also record slight growth between 2020 and 2021. The Total Average Annual Establishments in the region would grow to 1722 in 2021, a slight increase from 1699 in 2020. Total Average Monthly Employment figures for the sector would increase only slightly in the region between 2020 and 2021, plateauing available workforce numbers and causing difficulty finding skilled labor. Overall, recovery would be most notable in Outagamie, Winnebago, and Fond du Lac counties, while other counties would be more see more variability in sector recovery, with RGRP, employment, wage, and establishment figures flattening or even regressing since 2020.

### Conclusion

The pandemic greatly impacted the Construction sector in the East Central region by inflaming existing challenges and generating new ones. Cost inflation and labor shortages would persist to a substantial degree for the sector following 2020. Inflation would increase for nearly all products well into 2022 across the economy, hampering revenue and profit margins for establishments while increasing costs on residential, commercial, and industrial property developers, owners, and renters alike throughout the nation. Labor shortages in the Construction sector, already an issue identified prior to the pandemic, would drastically impact the ability of the sector to meet the rebounding demand for new construction following the initial turmoil and uncertainty. Nonetheless, as displayed by record RGRP figures in the East Central region as well as new residential and commercial construction, the sector was able to persevere in spite of major challenges and set-backs.

<sup>9</sup> United States Chamber of Commerce. 2020, July. "Commercial Construction Index: Q2 2020." *United States Chamber of Commerce*. [https://www.uschamber.com/assets/documents/2020\\_cci\\_q2.final.pdf](https://www.uschamber.com/assets/documents/2020_cci_q2.final.pdf)

<sup>10</sup> United States Chamber of Commerce. 2020, December. "Commercial Construction Index: Q4 2020." *United States Chamber of Commerce*. [https://www.uschamber.com/assets/archived/images/2020\\_cci\\_q4.final\\_.pdfhttps://www.agc.org/sites/default/files/AGC%202021%20Inflation%20Alert\\_Version2\\_1.pdf](https://www.uschamber.com/assets/archived/images/2020_cci_q4.final_.pdfhttps://www.agc.org/sites/default/files/AGC%202021%20Inflation%20Alert_Version2_1.pdf)

<sup>11</sup> United States Chamber of Commerce. 2021, December. "Commercial Construction Index: Q4 2021." *United States Chamber of Commerce*. <https://www.uschamber.com/assets/documents/Q4-2021-CCI-Report.pdf>

<sup>12</sup> Ibid.

<sup>13</sup> Ibid.

<sup>14</sup> Wisconsin Builders Association. 2021. "Badger Builder." *Wisconsin Builder Association. Issues 2, 4*. <https://www.wisbuild.org/badger-builder>

NAICS 31-33

# MANUFACTURING

## Introduction

The Manufacturing sector is comprised of plant, factory, and mill establishments that use machinery and equipment to transform raw or intermediate goods into either semi-finished or finished products.<sup>1</sup> The sector processes raw or intermediate goods from establishments in other sectors, like agriculture (NAICS 11) or mining (NAICS 21), or from establishments within the sector itself, and then provides processed goods to other sectors further down the supply chain. Comprised of numerous sub-sectors, the sector is an intricate and significant component to the national economy. Manufacturing is vital to the State of Wisconsin, which contains the second highest Manufacturing employment concentration in the United States.<sup>2</sup> Comprised of numerous and diverse sub-sectors, the Manufacturing sector is ever-present across the state and the East Central region.

The Manufacturing sector, the largest sector in the East Central region by multiple measures, was presented with several major challenges during the pandemic, many of which would be difficult to address due to their complex and global nature. The impacts of, responses to, and recovery from the pandemic would vary greatly across the many sub-sectors of the East Central Manufacturing sector.

---

<sup>1</sup> United States Census Bureau. 2022. "North American Industrial Classification System." *United States Census Bureau*. Pg. 141 [https://www.census.gov/naics/reference\\_files\\_tools/2022\\_NAICS\\_Manual.pdf](https://www.census.gov/naics/reference_files_tools/2022_NAICS_Manual.pdf)

<sup>2</sup> Wisconsin Economic Development Corporation. 2021, June 2. "Manufacturing Tomorrow." *Wisconsin Economic Development Corporation*. <https://inwisconsin.com/key-industries-in-wisconsin/Manufacturing/>

## MANUFACTURING

Numerous challenges would present themselves to the sector during 2020, ranging from supply chain issues experienced universally to record setting, or non-existent, revenue streams varying by sub-sector, spelling disaster for some yet opportunities for others. Although dilemmas would be plentiful, many Manufacturing sub-sectors would persevere and remain a fundamental component to the state and regional economy.

### 2015-2019 Background

#### *Region*

The East Central Manufacturing sector was relatively stable between 2015 and 2019, with figures waning and rebounding over the course of the period. Real Gross Regional Product fell from \$8.56 billion in 2015 to \$8.06 billion in 2017, however, rebounded to \$8.91 billion by 2019. The Manufacturing sector annually accounted for approximately 25% of total RGRP in the East Central region, making it the largest component of the regional economy. Total Average Annual Establishment figures plateaued around 1100 while Total Average Monthly Employment grew from 68,000 to 70,100 between 2015 and 2019, recording a slight decline in figures in 2016 and 2017. Employment figures for the sector were generally stable, indicating sector maturity yet possibly implying the early stages of a labor shortage. In 2019, around 20% of those actively employed in the regional labor force worked in the Manufacturing sector. Sector Real Average Annual Wage in the region increased each year between 2015 and 2019, growing from \$48,400 to \$50,000. Although variability in RGRP and Average Monthly Employment

figures was recorded, the Manufacturing sector consistently remained the largest component of the regional economy in the years immediately prior to the pandemic.

#### *County*

Manufacturing sector trends at the county level between 2015 and 2019 mirrored regional trends, with many counties witness stagnancy across several indicators. During this time period, Winnebago, Outagamie, and Fond du Lac counties collectively accounted for roughly 82% of total sector RGRP in the East Central region, comprising of 40%, 28%, and 14% of total sector RGRP, respectively. While primarily concentrated within these three counties, the Manufacturing sector also had an important presence in Waupaca County where, although accounting for just 7% of sector total RGRP in the entire region, annually accounted for 30% of Waupaca County's total RGRP. Sector RGRP would drop each year between 2015 and 2018 in Winnebago County and grow only in 2019, while RGRP in Outagamie and Fond du Lac counties would also ebb and flow during the period. Total Average Annual Establishments for the sector across counties in the East Central region would remain stable, with little change in the number of establishments between 2015 and 2019. Total Average Monthly Employment and Real Average Annual Wage figures would also stagnate and at times wane, although rarely to a significant extent, across all counties in the East Central region during the period. Overall, the Manufacturing sector, a key component of the East Central economy, experienced minimal growth but remained largely stable in the years prior to the pandemic.



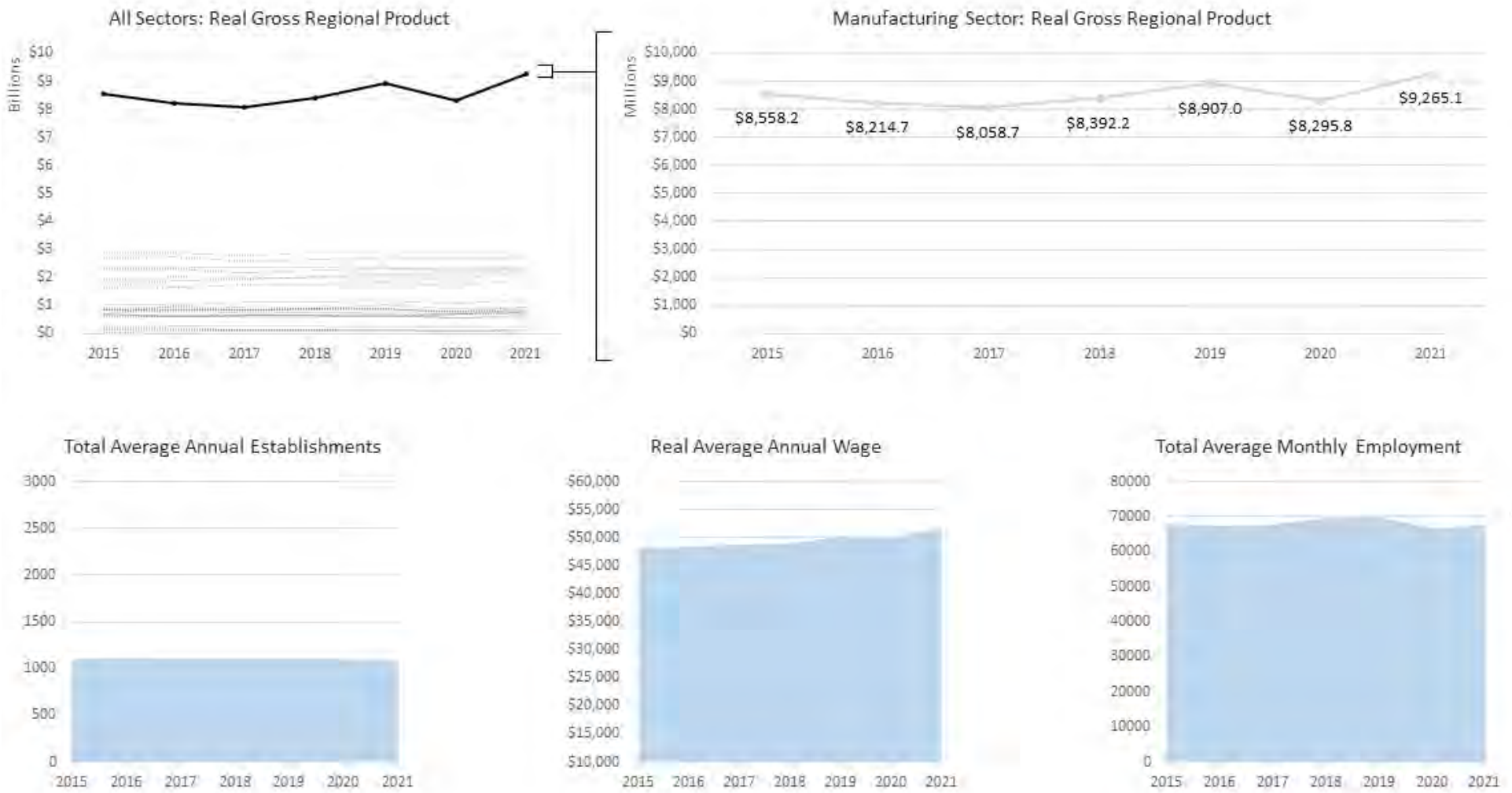




Figure 14: NAICS 31-33 Overview by County 2015-2021







## MANUFACTURING

### 2020 Impact and Response

Major challenges placed on the Manufacturing sector in the East Central region would be consistent with those that afflicted all sectors across the national economy in 2020. Supply chain issues, fluctuation in sale patterns and revenue streams, and labor force difficulties would emerge as the primary impacts to the sector.

#### *Impact*

The disruption of supply chains would be universally experienced by every sector in 2020, and the Manufacturing sector, with its diverse array of input demands, was especially hard hit by material delays and blockages. Interviews with three Manufacturing sector sub-sector stakeholders from the East Central region, a pre-press establishment (NAICS 332812), a machine shop establishment (NAICS 332710), and a printed circuit board manufacturer (NAICS 334412), would confirm that a major issue during the early months of the pandemic was disruption to the supply chain. The disruptions would cause unpredictable sale patterns and increase input costs, with some material cost estimates changing from 30-day guarantees to 24-hour guarantees, grossly affecting budgets.

Sudden and unpredictable shifts in demand resulted in peculiar sale patterns for the various sub-sectors in the sector. Respondents to a 2020 survey by the NEW Manufacturing Alliance given to manufacturers in Northeast Wisconsin, of which the East Central region is a part of, identified significant variability in sale

patterns during 2020, with 41% of respondents reporting a decrease in sales while 40% reported an increase in sales.<sup>3</sup> East Central Manufacturing stakeholders confirmed that the dramatic shifts in demand caused substantial variability in sale trends and revenues. One stakeholder noted that sales would peak in April of 2020 due to demand shifts from grocery retail followed by declining sales in May and throughout the remainder of the year to levels below 2019 figures. Other stakeholders conveyed that sales were positively impacted, one establishment, a supplier of several healthcare related products, recorded their best year in 2020, while sales were equally healthy for the other establishment. Variability in the growth or decline in sales and revenues would depend on the sub-sector, the demand for its products, and its ability to quickly respond to shifting demand. While some sub-sectors would experience positive sale and revenue trends, others would experience hardship and decline. Another impact, labor challenges, would also afflict the Manufacturing sector and its many unique sub-sectors.

Although labor supply challenges were not unusual across the sector prior to 2020, the pandemic would exacerbate the issue, especially within the East Central region. Inflamed by the economic inconsistency and uncertainty brought forth by the pandemic, Manufacturing establishments found themselves cutting employment at times while also searching for skilled labor, in some cases simultaneously. While not unique to the sector, the paradoxical challenge would result from a need for establishments to preserve liquidity

and adapt to rapid changes yet also attract and maintain skilled labor to remain competitive and operational. A Q2 2020 survey conducted by WEDC and UW-Oshkosh of Manufacturing establishments in the State of Wisconsin found that over half of respondents temporarily cut hours, furloughed, or permanently dislocated employees by May of that year.<sup>4</sup> A similar trend was experienced by some establishments in the East Central region and one sector stakeholder stated that staff was reduced by 10% in Q4 of 2020. In contrast, 47% of sector establishments surveyed by NEW Manufacturing Alliance in Q4 of 2020 anticipated hiring new personnel in Q1 of 2021, while 70% expressed difficulty finding skilled labor.<sup>5</sup> This difficulty, rooted in supply chain disruptions, an overall decrease in employment levels, and a demand for skilled over unskilled labor, was experienced across all sectors in the East Central region in 2020 but was especially pronounced in the Manufacturing sector. Stakeholder interviews conveyed the difficulties establishments had finding skilled workers, with one in particular disclosing that they constantly struggled to hire workers despite raising wages twice in three years.

---

<sup>3</sup> North East Wisconsin Manufacturing Alliance. 2020, December. "2021 Manufacturing Vitality Index." *NEW Manufacturing Alliance*. <https://newmfgalliance.org/wp-content/uploads/2020/12/Vitality-Study-12-8-2020.pdf>

<sup>4</sup> Godfrey, M., & Woldt, J. 2020. "An Update to Manufacturing in Wisconsin through the Coronavirus – The Good, The Bad and The Cautiously Optimistic." *University of Wisconsin-Oshkosh Center for Customized Research and Services*. <https://uwosh.edu/ccrs/an-update-to-Manufacturing-in-wisconsin-through-the-coronavirus/>

<sup>5</sup> North East Wisconsin Manufacturing Alliance. 2020, December. "2021 Manufacturing Vitality Index." *NEW Manufacturing Alliance*. <https://newmfgalliance.org/wp-content/uploads/2020/12/Vitality-Study-12-8-2020.pdf>



## MANUFACTURING

In many cases, responses available to the sector to address labor challenges, variability in sales and revenues, and supply chain disruptions would be passive, with many having no option other than to weather the crisis. However, some sub-sectors would be proactive, implementing new business strategies or changing product lines over the course of 2020.

### *Response*

The numerous sub-sectors that comprise the Manufacturing sector would witness rapid shifts in consumer demand for their immense array of semi-finished and finished products. Outside of passively enduring the initial impact, some sub-sectors within the sector were able to proactively respond by nimbly adjusting products where possible and acquiring new suppliers to meet demand. Where possible, establishments in several sub-sectors found creative ways to modify their output, 24% of establishments surveyed by the NEW Manufacturing Alliance reported making new or modified products in 2020 to meet demand.<sup>6</sup> In addition, by the end of 2020, 25% found new suppliers to navigate supply chain disruption and 54% expected to add customers in 2021.<sup>7</sup> All three Manufacturing stakeholders interviewed reported that adjusting their product lines and output to meet the rapid shifts in demand,

although stressful, resulted in stable budgets at worst and record profits at best.

Success within sub-sectors would vary, notably the East Central paper industry (NAICS 322) would see Neenah Paper Inc. and Clearwater Paper Corp. close their doors while Kimberly-Clark, unable to keep up with demand, would invest \$115 million to complete a new warehouse with four additional product lines.<sup>8</sup> The degree of success and failure would be unique across every sub-sector and every establishment across the Manufacturing sector. Those that could seize the opportunity of shifting demand in 2020 did and some managed to expand and modernize their facilities. In 2020, 32% of Manufacturing establishments surveyed in Northeast Wisconsin planned to expand their plants, an increase of 12% in 2011.<sup>9</sup> Modernization efforts would also be undertaken, 68% of establishments implemented plant modernization efforts in 2020, well over half intended to continue modernization efforts over the following years.

The success of both passive and proactive responses would vary within the Manufacturing sector and its sub-sectors. The combination of complex challenges would prove too harsh for

some establishments in the sector, while others would witness favorable outcomes. Many of the challenges introduced or exacerbated in 2020 would continue to afflict the sector in unique ways in the following years across the nation, state, and region.

### **2021 Recovery and Resiliency**

The Manufacturing sector would remain resilient despite the impacts of the pandemic, surviving or outright recovering in the years following 2020 across the state and within the East Central region. Although recovery would not be absolute, as it would vary by sub-sector, establishment size, and geography among other factors, many Manufacturing establishments across the state expressed confidence in sector recovery in both 2021 and 2022.

---

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Matzek, M. 2021, September. "Driving Forward." *Insight on Manufacturing* 15, no. 5. [https://www.insightonbusiness.com/insightonManufacturing/articles/coverstory/driving-forward/article\\_e2e409c2-14ab-11ec-b129-df99afe05fc6.html](https://www.insightonbusiness.com/insightonManufacturing/articles/coverstory/driving-forward/article_e2e409c2-14ab-11ec-b129-df99afe05fc6.html)

<sup>9</sup> North East Wisconsin Manufacturing Alliance. 2020, December. "2021 Manufacturing Vitality Index." *NEW Manufacturing Alliance*. <https://newmfgalliance.org/wp-content/uploads/2020/12/Vitality-Study-12-8-2020.pdf>



## MANUFACTURING

In February of 2021, a survey of numerous Manufacturing establishments in the State of Wisconsin by the Wisconsin Manufacturing Extension Partnership (WMEP) found that 49% of respondents expected an increase in company profits and 71% anticipated an increase in product demand within 6 months.<sup>10</sup> Although asking a different array of questions, a follow up survey conducted in April of 2022 by WMEP found continued confidence in recovery among sector leaders, 47% of respondents believed the state economy to be growing and 89% felt somewhat or very confident on the financial future of their company.<sup>11</sup> Closer to the regional level, the NEW Manufacturing Alliance also found similar confidence among sector establishments in 2021 and 2022 according to the 12th and 13th Annual NEW Manufacturing Vitality Index, respectively. The 12th annual Vitality Index found that 70% of those surveyed reported increased sales from the 2020, 98% expected their company's financial health to be healthy or quite healthy within 6-12 months, and 70% planned to invest in plant modernization within 12-24 months.<sup>12</sup> Positive outlook would continue in 2022, with the 13th annual Vitality Index finding 76% of respondents experiencing sales increases from 2021, 98% expecting healthy or quite healthy finances within 6-12 months, and 75% planning to modernize plants within 12-24 months.<sup>13</sup> Challenges would still exist, however, with both surveys identifying workforce shortages as the dominant issue afflicting the sector in 2021 and 2022. At the regional level, NEW Manufacturing Alliance found that in 2021 and 2022, 91% of respondents anticipated difficulty locating and acquiring talent, an issue which

existed prior to 2020 but would be exacerbated by the pandemic.

By 2021, the East Central regional Manufacturing sector would remain resilient and recover to pre-pandemic trends per most figures. Sector RGRP would display impressive recovery at the regional level, rebounding in 2021 to \$9.27 billion, the highest figure recorded between 2015 and 2021. In addition, Real Average Annual Wages would increase to a regional average of \$51,729 in 2021, greater than any year between 2015 and 2021. The recovery of Total Average Annual Establishment figures to pre-pandemic trends would be tepid, in fact shrinking from 1098 establishments in 2020 to 1090 in 2021. Recovery of Total Monthly Employment figures to pre-pandemic levels would increase only slightly between 2020 and 2021. At the county level, 2021 sector figures would indicate recovery and resiliency, although figure recovery would be less impressive.

Sector RGRP figures for Outagamie and Fond du Lac counties would trend in a similar fashion with regional figures in 2021 by rebounding to new heights. However, in Winnebago County, the largest contributor to sector RGRP in the region, while 2021 RGRP figures would increase in 2020, would not surpass figures recorded between 2015 and 2019. Likewise, mediocre trends would also be reflected in Real Average Annual Wages, Total Average Annual Establishments, and Average Annual Employment figures for the sector across all counties. In general, 2021 figures at the county level would rebound from the shock of 2020, but would generally not surpass 2015 to 2019 figure trends.

### Conclusion

The East Central Manufacturing sector is an historic, mature, and indisputably vital component of the regional economy. Events during and following 2020 would challenge the time-tested sector once again in unusual ways, with ripple effects impacting sub-sectors in unprecedented ways. Supply chain issues, sales pattern and revenue stream instability, and labor force difficulties would emerge as significant impacts. Across the region, the sector would respond to the best of its ability, adapting where possible by finding new supply chains and diversifying product outputs to meet demand shifts. Some challenges would remain despite response efforts, most notably struggles finding and retaining skilled labor, a previously uncomfortable pressure point for the sector prior to the pandemic which developed into a painful pressure point following the pandemic. A resilient sector, the East Central Manufacturing sector must continue to address such challenges exacerbated or created by the pandemic in order to remain a foundational cornerstone of the regional economy.

<sup>10</sup> Bureau, G. & Stampen, J. 2021, February 25. "Economic Crisis/COVID-19 5th Manufacturer Pulse Survey." *Wisconsin Manufacturing Extension Partnership (WMEP)*. [https://www.wpr.org/sites/default/files/5th\\_pulse\\_survey\\_presentation\\_-\\_wmeppulseapril2022.pdf](https://www.wpr.org/sites/default/files/5th_pulse_survey_presentation_-_wmeppulseapril2022.pdf)

<sup>11</sup> Bureau, G. 2022, April 29. "Wisconsin Manufacturer Report April 2022 Follow-up Pulse Survey." *Wisconsin Manufacturing Extension Partnership (WMEP)*. <https://www.wpr.org/sites/default/files/wmeppulseapril2022.pdf>

<sup>12</sup> North East Wisconsin Manufacturing Alliance. 2021, December. "2022 Manufacturing Vitality Index." *NEW Manufacturing Alliance*. [https://newmfgalliance.org/wp-content/uploads/2021/12/2022\\_Vitality\\_Index.pdf](https://newmfgalliance.org/wp-content/uploads/2021/12/2022_Vitality_Index.pdf)

<sup>13</sup> North East Wisconsin Manufacturing Alliance. 2022, December. "2023 Manufacturing Vitality Index." *NEW Manufacturing Alliance*. <https://newmfgalliance.org/wp-content/uploads/2022/12/2023-Vitality-Index.pdf>

NAICS 44-45

# RETAIL TRADE

## Introduction

Retail Trade is made up of establishments that sell merchandise and render related services in small quantities to the general public.<sup>1</sup> The final stage in the distribution of goods and services, Retail establishments operate as either store or non-store entities to sell merchandise and/or provide services. The sector is comprised of a total of 27 sub-sectors which offer numerous products and services to meet the vast array of consumer demands. Products and services are provided in both domestic and international markets, resulting in an intricate supply chain. The Retail sector is crucial to the consumer economy and endeavors to meet the daily necessities and wants of households.

The Retail Trade sector, with its abundant and unique supply of products and services, is experienced in adapting to economic challenges and variability. Given the abundant array of products and services provided by the sector to meet diverse consumer demands, a fair degree of resiliency exists within the sector. However, the pandemic would produce unfamiliar challenges that would impact all retail establishments. Impacts following the onset of the pandemic would range in severity and duration for individual Retailers depending on the products and services they provided. Broadly afflicting the entire sector, the years following the pandemic would provoke challenges yet also provide opportunities depending on the establishment, its products and services, and general market conditions.

---

<sup>1</sup> United States Census Bureau. 2022. "North American Industrial Classification System." *United States Census Bureau*. Pg. 339 [https://www.census.gov/naics/reference\\_files\\_tools/2022\\_NAICS\\_Manual.pdf](https://www.census.gov/naics/reference_files_tools/2022_NAICS_Manual.pdf)



## RETAIL TRADE

While some establishments would unfortunately never recover from the initial economic halt and subsequent supply chain issues, others would thrive by adapting their products and services to meet rapidly shifting demand.

### 2015-2019 Background

#### *Region*

The East Central regional Retail trade sector was largely stagnant in the five years prior to 2020 according to most metrics. Annually accounting for approximately 6% of Total Real Gross Regional Product in the East Central region, sector RGRP would peak at approximately \$2 billion in 2016 and plateau at the figure through 2019. Other figures would also stagnate, Total Average Annual Establishments would grow slightly from 840 in 2015 to 898 by 2019 while Total Average Monthly Employment figures would decrease

marginally each year, from 33,700 in 2015 to 33,400 by 2019. By 2019, the sector employed approximately 9% of the East Central region's active labor force, making it the sector the second largest employer behind the manufacturing sector. Despite its significant share of regional employment, regional sector Real Average Annual Wage figures were the second lowest when compared to all sectors during the period. Wage figures did increase ever so slightly between 2015 and 2019, however, growing from \$23,200 to \$24,000. Sector figures at the county level would mirror regional trends.

#### *County*

Outagamie, Winnebago, and Fond du Lac counties consistently accounted for nearly 76% of total sector RGRP in the East Central region between 2015 and 2019, with each contributing 36%, 25%, and 15%, respectively.

Aside from Outagamie and Winnebago county, where RGRP for the sector declined each year between 2015 and 2019, most counties in the region witnessed RGRP figures plateau during the period. Despite the decline in RGRP figures for Outagamie and Winnebago counties, Total Average Annual Establishment figures for the Retail sector would increase annually in the two counties while remaining stagnant in the other counties. Real Average Annual Wage and Total Average Monthly Employment figures at the county level would display a largely inverse relationship between prior to the pandemic. Retail sector Real Average Annual Wages increased in every county but Marquette between 2015 and 2019, while Total Average Monthly Employment figures declined or remained stagnant in all counties. In summation, Retail sector figures at the county level throughout the East Central region reflected a largely stagnant, although stable, economic environment.



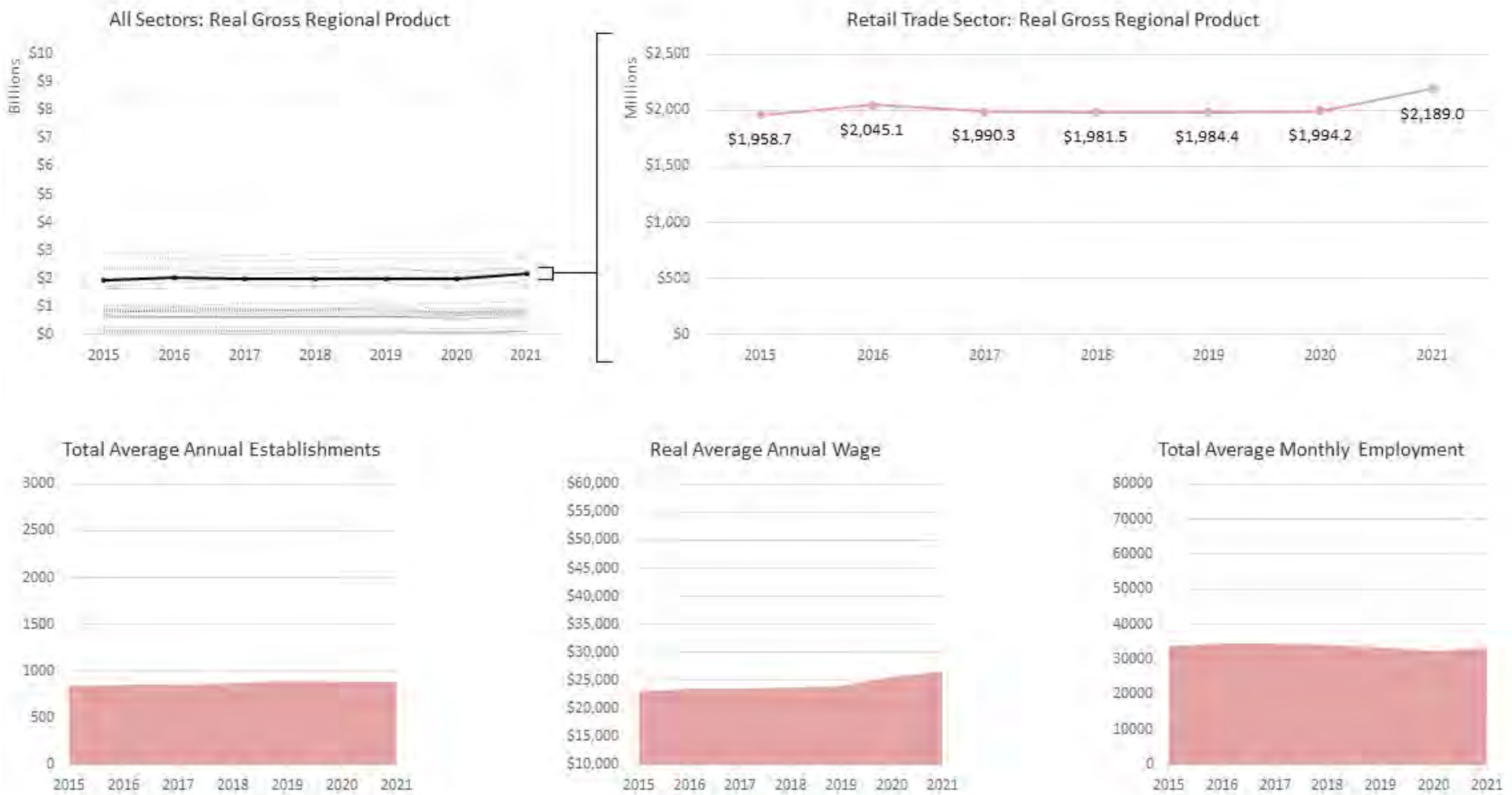




Figure 17: NAICS 44-45 Overview by County 2015-2021





## RETAIL TRADE

### 2020 Impact and Response

#### *Impact*

The Retail sector would undergo drastic changes in 2020 due to impacts that would vary in intensity and duration depending on the goods and services provided by sub-sectors, and, to an extent, the ability to adapt. Throughout 2020, the impact of intense consumer demand shifts would force the sector to respond accordingly across the state and within the East Central region.

The initial economic impact would be intense, with state Retail sector sale figures in March, April, and May of 2020 dropping significantly when compared to 2019 figures for the same months. According to the monthly state Retail sale model developed by the U.S. Census, total Retail sale figures in Wisconsin in March 2020 would drop by 3.5% when compared with March 2019, while April 2020 total sales would be 17.5% lower than April 2019.<sup>2</sup> In addition, May 2020 would record a 1.1% decline in sales from the previous year.

Retail sub-sectors would experience various impacts to business sales and product demand in dramatic ways during the initial months of the pandemic, depending on whether an activity was deemed by Emergency Order #12 as essential as well as general consumer demand trends. Significant negative impacts would be placed on both small, local businesses and big-box establishments which sold goods and services on-sites and were within sub-sectors not defined by the order as essential businesses

or operations.<sup>3</sup> Using taxable sale data from the Wisconsin Department of Revenue in March and April of 2020 as a proxy for evaluating sector sales, the Clothing and Clothing Accessories Store (NAICS 448) sub-sector would witness taxable sales drop by 56.9% from the year prior.<sup>4</sup> Other sub-sectors, like Electronics and Appliance Stores (NAICS 443), Automobile Dealers (NAICS 441), Furniture and Home Furnishing Stores (NAICS 442), depended largely on in-store sales and would record a decrease in sales in March and April 2020, with taxable sales dropping by half from the previous year for some.<sup>5</sup> Stakeholders would express that sub-sector specific negative trends witnesses across the state would be mirrored in the East Central region.

However, other sub-sectors would benefit from the dramatic shift. Taxable sales for the Wisconsin Food and Beverage Store (NAICS 445) sub-sector in March and April 2020 would increase by 23.4% from the year prior.<sup>6</sup> Likewise, during the same period, taxable sales for the Building Material and Garden Equipment and Supplies Dealer (NAICS 444) sub-sector would increase by 16.2% from the previous year.<sup>7</sup> These positive gains were the result of demand shift from the initial lockdowns and the 'essential' labelling of establishments in these sub-sectors. Grocery stores benefited from a consumer demand shift away from closed restaurants while consumers also spent more on outdoor and home improvement actives. Perhaps the most substantial positive change, both at the beginning and sustained throughout the pandemic, was experienced by the Non-

Store (NAICS 454) sub-sector, comprised of establishments which had the flexibility and means to continue providing their goods and services without the use of physical storefronts. Taxable income for Non-Store establishments increased by 66% in March and April of 2020 from the previous year.<sup>8</sup> Many East Central retail stakeholders confirmed that, when possible, maintaining sales without a physical storefront would be vital to surviving the initial challenges of 2020.

Throughout the pandemic, consumer demand for the plethora of products and services would pendulum to extremes at any time for any given sub-sector. Some sub-sectors that initially performed poorly would experience a surge in consumer demand and sales in the second half of 2020, as initial economic restrictions would be reduced and consumer demand would shift.

---

<sup>2</sup> United State Census Bureau. 2023, June 12. "Monthly State Retail Sales." *United State Census Bureau*. <https://www.census.gov/library/visualizations/interactive/monthly-state-retail-sales.html>

<sup>3</sup> State of Wisconsin Department of Health Services. 2020, March 25. "Emergency Order #12 Safer at Home Order." *State of Wisconsin Department of Health Services*. <https://evers.wi.gov/Documents/COVID19/EMO12-SaferAtHome.pdf>

<sup>4</sup> Knapp, D. 2020, June. "Economic Activity in a Pandemic: Wisconsin Taxable Sales in March & April." *Forward Analytics*. <https://www.forward-analytics.net/wp-content/uploads/2020/06/2020-Economic-Activity-in-a-Pandemic.pdf>

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.





## RETAIL TRADE

For example, the Sporting Goods, Hobbies, Book, and Music Store (NAICS 451) sub-sector at the state level would struggle at the beginning of the pandemic, its taxable sales in March and April 2020 decreased by 19.4% from 2019 figures.<sup>9</sup> However, by July 2020, sub-sector sales would grow by 25.3% from the previous year, according to the U.S. Census monthly state Retail sale model.<sup>10</sup> A rebound in sales in the remaining months of 2020 would be recorded in several other sub-sectors across the state and within the region. Not all sub-sectors would recover as extensively or quickly as others in 2020, monthly sale figures for the remainder of 2020 in the Electronics and Appliances (NAICS 443) sub-sector would consistently be lower than the same period in the previous year.<sup>11</sup> Nonetheless, many sub-sectors experienced improvements in sale figures from March, April, and May 2020, with some surpassing figures from 2019, demonstrating the adaptability and resiliency of the Retail sector throughout the state and within the East Central region.

### *Response*

Tasked with adapting to unprecedented challenges, Retail businesses large and small would respond with various strategies throughout 2020 to remedy the loss of in-

store sales while remaining nimble financially. Responses from the Retail sector across the state and region would include shifting from business continuity to crisis management, scenario planning, cooperating with other Retailors to ensure continuation of services, establishing or strengthening online storefront presence, and planning short- and long-term financial situations.<sup>12</sup> Many examples of agile adaptability arose from the sector across the state and in the region, but ultimately the success of responses would be dependent on the dynamics of the economy as a whole, specifically consumer demand and the efficacy of supply chains. Following 2020, a year of unparalleled challenges and stress, the Retail sector would emerge and adjust to an altered economic environment.

### **2021 Recovery and Resiliency**

The Wisconsin Retail sector would rebound significantly following the turmoil of 2020, with year-over-year monthly total retail sales increasing each month of 2021 when compared with 2020 monthly retail sales.<sup>13</sup> Notably, April 2021 total retail sales would more than double in comparison to April 2020 sales.<sup>14</sup> Wisconsin total Retail growth from 2021 would be sustained in every

month of 2022, albeit less intense as much of the sector rebounded to pre-pandemic sale figures during 2021. Although the extent and intensity of year-over-year monthly sales growth in 2021 and 2022 would vary according to sub-sector, none would witness the drastic decline in sales during 2020. These state level figures denote the considerable resiliency of the sector, adapting to harsh economic conditions to quickly recover to pre-pandemic trends. In addition to the individual efforts of establishments to recover from the pandemic, federal, state, and local government programs would be developed to provide financial assistance to both large and small Retail establishments.

---

<sup>9</sup> Ibid.

<sup>10</sup> United State Census Bureau. 2023, June 12. "Monthly State Retail Sales." *United State Census Bureau*. <https://www.census.gov/library/visualizations/interactive/monthly-state-retail-sales.html>

<sup>11</sup> Ibid.

<sup>12</sup> Brewer, D., Gregory, R., O'Neill, D. 2020. "Responding to COVID-19: Six Things Retailers Should do to Keep Calm and Carry On." *Oliver Wyman*. [https://www.marshmcclennan.com/content/dam/mmc-web/insights/publications/2020/march/OW\\_Retailers\\_Responding\\_to\\_COVID19.pdf](https://www.marshmcclennan.com/content/dam/mmc-web/insights/publications/2020/march/OW_Retailers_Responding_to_COVID19.pdf)

<sup>13</sup> United State Census Bureau. 2023, June 12. "Monthly State Retail Sales." *United State Census Bureau*. <https://www.census.gov/library/visualizations/interactive/monthly-state-retail-sales.html>

<sup>14</sup> Ibid.

## RETAIL TRADE

The Main Street Bounceback Program would be one such example of state and regional efforts to energize Retail establishments, with \$9 million allocated in grants across the East Central region alone between 2021 and 2022.<sup>15</sup> The tandem efforts of both retailers and public programs would be pivotal to the resiliency of the sector in the East Central region following the pandemic.

Highlighting the sector's strong resiliency and recovery from the pandemic, Real Gross Regional Product would grow to \$2.19 billion in 2021, the highest witnessed during the seven-year period in the East Central region. Likewise, RGRP for the sector in most counties would be the highest during the period, with Winnebago and Menominee recording growth following 2020 and surpassing the high water mark for most, but not all, annual RGRP figures between 2015 and 2019. Regional Total Average Establishments in 2021 would increase slightly from 2020, although would not surpass the largest figure of 898 recorded prior to the pandemic, with most counties following a similar trend. Real Average Annual Wages in the region would increase significantly in 2021, growing to a regional average of \$26,700, with Calumet, Fond du Lac, Green Lake, and Outagamie counties recording healthy growth in Real Average Annual Wage figures, each exceeding the regional average. An issue experienced across all sectors of the economy, the East Central Retail sector would witness Total Average Monthly Employment figures grow slightly from 2020, yet fail to rebound to pre-pandemic levels. Calumet County would be the

only county in the region to record growth in 2021 Total Monthly Employment figures beyond 2015 to 2019 figures.

### *Conclusion*

The diverse array of impacts resulting from the pandemic would certainly challenge the Retail sector across the state and region. While labor and supply chain troubles would be universally experienced by all sectors, other challenges would be entirely unique to each Retail sub-sector. The extent and severity of these impacts would be in continual fluctuation, morphing throughout the duration of the pandemic. Retailers who could meet rapidly shifting consumer demand through shrewd and clever ways would exemplify the concerted resiliency efforts of the sector. Furthermore, others would demonstrate the inherent resiliency of the sector by simply carrying on business with only a few changes to provide products and services less susceptible to aggressive demand shifts. Overall, the Retail sector proved to be resilient in the face of economic uncertainty, implementing nibble strategies to endure through never before seen challenges.

<sup>15</sup> ECWRPC. 2023, May. "Main Street Bounceback Grant Program Final Report." *East Central Wisconsin Regional Planning Commission*. <https://www.ecwrpc.org/wp-content/uploads/2023/05/Main-Street-Bounceback-Grant-Program-Final-Report.pdf>



NAICS 51

# INFORMATION

## Introduction

The Information sector complements the everyday functions of many economic sectors and is integral to modern communication. The sector is comprised by establishments that produce, transmit, or distribute information and data for a wide range of consumers.<sup>1</sup> In addition, the sector consists of establishments that produce media products via motion pictures, recordings, and broadcasting, and also consists of establishments that build and maintain the physical infrastructure required for transmitting the many forms of communication.

The sector would play a considerable role in the post-pandemic world. Information sub-sectors that provide entertainment media would scramble to meet a massive shift in consumer demand trends and dynamics, while other sub-sectors that provide the infrastructure for telecommunications would be at the forefront of discussions regarding the adequacy of such infrastructure across the nation, state, and region. A comparatively small sector within the East Central regional economy, the demand placed on Information establishments would be immense, brought forth by other sectors running into challenges from a rapid shift to online environments. However, this aggressive demand would also provide many new opportunities for the Information sector to grow. Overall, the sector would be quite resilient in the face of the pandemic, nimbly navigating challenges to the continuation of existing services while also expanding into new opportunities, a dynamic not seen by most other sectors at the time.

---

<sup>1</sup> United States Census Bureau. 2022. "North American Industrial Classification System." *United States Census Bureau. Pg. 401* [https://www.census.gov/naics/reference\\_files\\_tools/2022\\_NAICS\\_Manual.pdf](https://www.census.gov/naics/reference_files_tools/2022_NAICS_Manual.pdf)



## INFORMATION

### 2015-2019 Background

#### *Region*

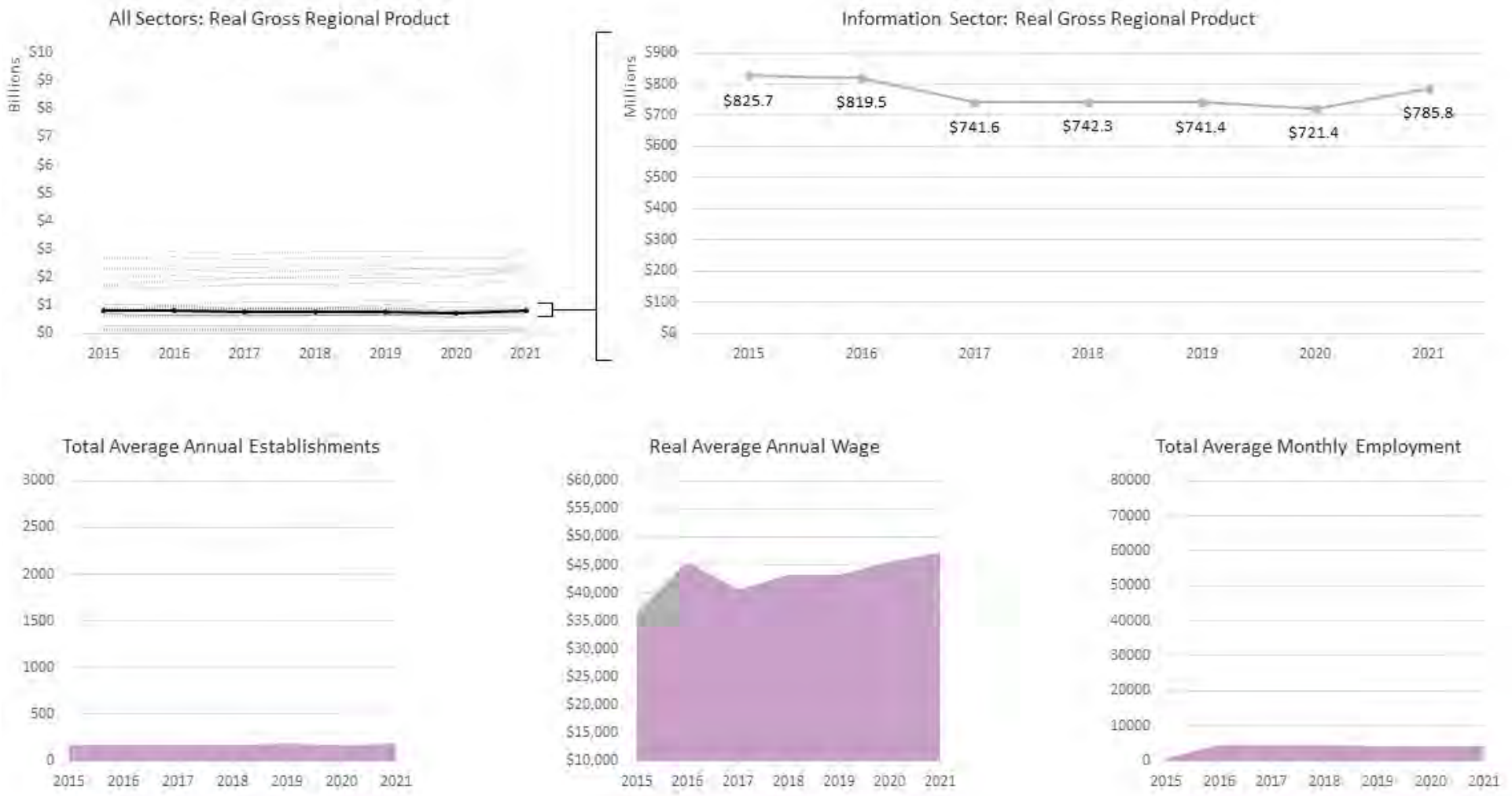
The Information sector in the East Central region shrank each year between 2015 and 2019 across most indicators. A relatively small sector when compared to other sectors of the regional economy, the Information sector accounted for 2% to 3% of Total Real Gross Regional product in the region annually between 2015 and 2019. Between 2015 and 2019 sector RGRP would decline each year, peaking at approximately \$825 million in 2015 and declining to \$741 million by 2019. Although one of the highest paying sectors in the region, Real Average Annual Wage figures would diminish during the period, peaking at \$45,500 in 2016 and dropping to \$43,300 by 2019. Stagnation would be recorded in both Total Average Monthly Employment and Total Average Annual Establishment figures for the sector across the region. Employing less than one percent of the region's active labor force, Total Average Monthly Employment figures would stabilize between 4,200 and 4,500 between 2016 and 2019, although it should be noted that the 2015 figure is inaccurate due to data suppression that year. During the five-year period, the total number of Information establishments in the East Central region would plateau around 170. At the county level, sector trends would be more variable, showcasing both healthy and poor figures depending on county.

#### *County*

Winnebago, Fond du Lac, and Outagamie counties would contribute nearly 80% to total

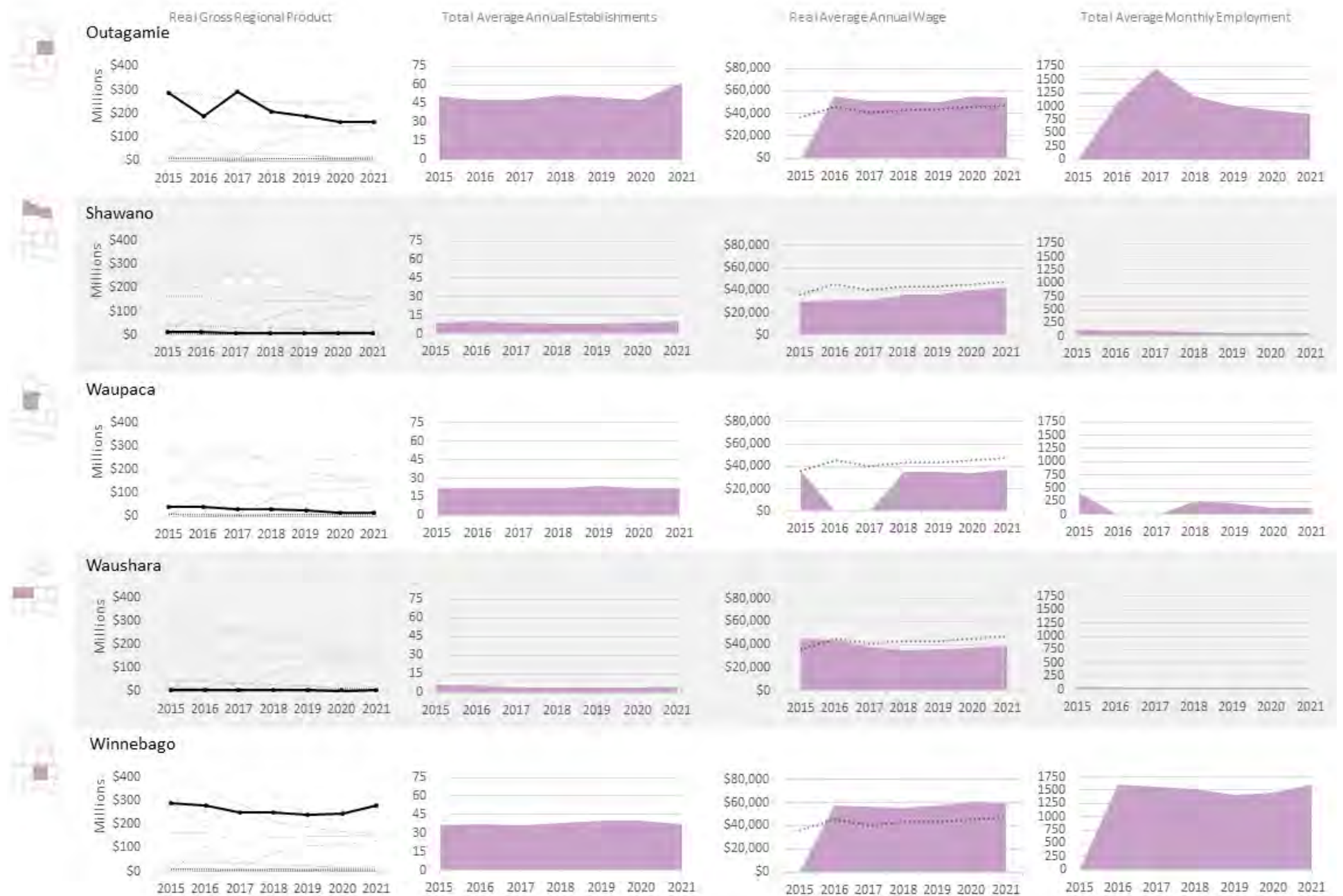
sector RGRP in the region annually between 2015 and 2019. Winnebago and Fond du Lac counties would contribute about 35% and 20% annually, respectively, with figures stagnating in both counties throughout the period. In Outagamie County the sector would witness great variability with RGRP figures dropping sharply between 2015 and 2016, rebounding in 2017, and then dwindling in the following years. Some variability may be explained by the location of the Fox Cities in Outagamie and Calumet counties, as an inverse relationship in RGRP figures between the two counties is present in the data set. Regardless, the Information sector in all ten counties consistently recorded stagnation or decline in RGRP figures during the time period. Sector Real Average Annual Wage figures would also stagnate in most counties in the region between 2015 and 2019. Even in counties where sector wages were consistently higher than the regional average, namely Marquette, Outagamie, and Winnebago, Real Average Annual Wages still declined between 2015 and 2019. Only two counties, Shawano and Green Lake, witnessed growth in Real Average Annual Wage figures during the period. Sector Total Average Annual Establishment and Average Monthly Employment figures would remain stable. Establishment figures would remain flat in nearly all counties while employment figures would generally decline, a common trend across most sectors of the regional economy prior to the pandemic. Overall, the Information sector within the East Central region prior to 2020 was small and stagnant by most measures.











## INFORMATION

### 2020 Impact and Response

#### *Impact*

Information establishments within the East Central region and throughout the state, would initially find revenues impacted and an environment of economic uncertainty, challenges similar to those in other sectors. Although most establishments in the sector would be defined as essential businesses according to Emergency Order #12, external disruptions would result in immediate and widely varying impacts.<sup>2</sup> A sharp cut to advertisement revenues, caused by cost cutting efforts in other sectors, would drastically impact Information establishments oriented toward producing entertainment and media. For example, six large national establishments within the Newspaper Publishers (NAICS 513110) sub-sector, although able to continue writing and printing activities, would observe advertising and circulation revenues drop sharply in Q2 2020.<sup>3</sup> National cable news companies, encompassed within the Media Streaming Distribution Services, Social Networks, and Other Media Networks and Content Providers (NAICS 516210) sub-sector, would be less impacted, with several setting rating records in early 2020.<sup>4</sup> Challenges would also present themselves to establishments in the Telecommunications

(NAICS 517) sub-sector, which is comprised of establishments essential to the provision and operation of communication infrastructure. As the world increased its online presence, Telecommunication providers would be called upon to not only maintain, but enhance the infrastructure and services vital to connecting and sustaining services for businesses and households alike.<sup>5</sup> Impacts to the Telecommunication sub-sector in the East Central region would mirror those at the state, national, and even global levels, notably, labor capacity challenges and supply chain issues would place stress on maintaining services and infrastructure. The pandemic would make weaknesses in telecommunication infrastructure, specifically broadband infrastructure, readily apparent. Households and business in many rural or disadvantaged communities in the East Central region would be significantly impacted during and after the pandemic by poor or absent broadband infrastructure. Reliable access to remote work would be a significant challenge for rural and disadvantaged households. Stakeholder interviews from many other sectors in the region would confirm that reliable broadband access for employees working remotely in rural or disadvantaged areas was a major limitation for their employees and business operations. In addition, the ability of households to access

education in rural or disadvantaged areas would be negatively impacted by physical gaps in broadband infrastructure.<sup>6</sup>

#### *Response*

Already at capacity to maintain existing broadband services and infrastructure, the Telecommunication sub-sector would require assistance for expansion efforts, resulting in state and regional level initiatives to begin researching and analyzing the situation.

---

<sup>2</sup> State of Wisconsin Department of Health Services. 2020, March 25. "Emergency Order #12 Safer at Home Order." *State of Wisconsin Department of Health Services*. <https://evers.wi.gov/Documents/COVID19/EMO12-SaferAtHome.pdf>

<sup>3</sup> Barthel, M., Matsa, K. E., Worden, K. 2020, October 29. "Coronavirus-Driven Downturn Hits Newspapers Hard as TV News Thrives." *Pew Research Center*. <https://www.pewresearch.org/journalism/2020/10/29/coronavirus-driven-downturn-hits-newspapers-hard-as-tv-news-thrives/#:~:text=Newspaper%20companies%20have%20been%20hit,the%20second%20quarter%20of%202019>

<sup>4</sup> Ibid.

<sup>5</sup> Veligura, N., Chan, K., Cufre, G., Ingen, F. 2020, May. "COVID-19's Impact on the Global Telecommunications Industry." *Global Infrastructure Department International Finance Corporation*. [https://www.ifc.org/wps/wcm/connect/1d490aec-4d57-4cbf-82b3-d6842eecd9b2/IFC-Covid19-Telecommunications\\_final\\_web\\_2.pdf?MOD=AJPERES&CVID=n9nxogP](https://www.ifc.org/wps/wcm/connect/1d490aec-4d57-4cbf-82b3-d6842eecd9b2/IFC-Covid19-Telecommunications_final_web_2.pdf?MOD=AJPERES&CVID=n9nxogP)

<sup>6</sup> Cameron, P. 2020, October 20. "Wisconsin Schools 'Whipsawing' as COVID-19 Hits Rural Districts." *Wisconsin Watch*. <https://wisconsinwatch.org/2020/10/wisconsin-schools-whipsawing-as-covid-19-hits-rural-districts/>



## INFORMATION

Several organizations throughout the state would aid the sub-sector in responding to the pandemic by initiating studies to identify infrastructure gaps and limitations and ascertain next steps.

In northeast Wisconsin, public and private stakeholders from 18-counties, of which included all counties in the East Central region, determined that a broadband access study would be a crucial first step to address broadband infrastructure gaps and challenges. Coordinating these efforts would be the non-profit organization New North Inc., which received a CARES Act grant from the Economic Development Administration and developed the New North Regional Broadband Access Study which would analyze and address limitations of broadband infrastructure in the region.<sup>6</sup> While these efforts were underway, the Telecommunication sub-sector would respond throughout 2020 to the best of its abilities to keep a physically isolated world virtually connected. Likewise, the other sub-sectors within the Information sector would also continue to address challenges as they appeared to keep the world informed of the ever-evolving dynamics of the pandemic.

### 2021 Recovery and Resiliency

The Information sector in the East Central region would emerge from 2020 with stable, yet healthy, figures. Real Gross Regional Product would increase to \$785.8 million in 2021, the first time the figure grew in the seven-year time period, although still lower than the highest

year, 2015. Winnebago, Outagamie, and Fond du Lac counties would continue to contribute a significant majority to total regional RGRP. Winnebago County and Fond du Lac counties would witness RGRP increase slightly in 2021 from the year prior, hinting at a balanced recovery. The Outagamie County Information sector, however, would continue to witness RGRP figures decline, dropping to their lowest during the time period. Also notable was the continued growth of the sector in Calumet County, where, despite the disruption, RGRP figures grew in both 2020 and 2021 to nearly surpass Fond du Lac County. Regional Real Average Annual Wage figures would remain stable following the pandemic, growing to \$47,300 in 2021. At the county level, sector Real Average Annual Wage figures would largely flatten in 2021, with several counties recording a slight decline from 2020. Figures for Total Average Annual Establishments and Total Average Monthly Employment for the sector at the regional level would remain stable in 2021, a continuation of the trends recorded prior to the pandemic. Most counties would also see establishment and employment figures trend similar to regional figures in 2021, being generally stagnant yet stable. Overall, while regional and county level figures for the sector would witness only marginal gains following the pandemic, figures would also not significantly decline. The sector would prove that, despite being a relatively small sector tasked with maintaining vital infrastructure throughout the East Central region, it nonetheless could capably navigate the many challenges brought forth by the pandemic.

### Conclusion

The Information sector would remain resilient in the face of many challenges following the onset of the pandemic in 2020. Information sub-sectors experienced in providing products and services through specific mediums, namely broadcasting and the internet, would manage to recover from initial impacts, with some establishments witnessing significant gains. However, the resiliency of Information sub-sectors that provide physical infrastructure for communication would be tested to a greater extent. With a dramatic shift to online spaces as a result of the pandemic, broadband infrastructure providers would face many challenges in simply maintaining, let alone expanding, infrastructure. The pandemic would make it abundantly clear that adequate internet access for all households in the region would be a necessity, regardless of their location. Understanding this importance, key sector stakeholders would coordinate with public and private stakeholders to initiate the NEW North Broadband Access Study. Completed in December of 2021, the study would identify gaps and weaknesses of existing broadband infrastructure across the region and begin the discussion for opportunities to expand the network in the region. Overall, the initiative taken by those within the various Information sub-sectors would highlight its resilient nature and ability for forward thinking. From this foundation, further work can be conducted to enhance the Information sector and its vital infrastructure.

<sup>7</sup> New North. 2022. "Regional Broadband Access Study." *New North*. [https://www.thenewnorth.com/wp-content/uploads/2022/02/Final\\_NN\\_Regional\\_Broadband\\_Access\\_Study\\_220223-1.pdf](https://www.thenewnorth.com/wp-content/uploads/2022/02/Final_NN_Regional_Broadband_Access_Study_220223-1.pdf)

## INTRODUCTION

The Real Estate and Rental and Leasing sector consists of establishments that provide services for the management, sale, and rental or leasing of tangible assets, like real estate and equipment, and intangible assets, such as patents and trademarks.<sup>1</sup> The sector is comprised of three main sub-sectors; Real Estate (NAICS 531), Rental and Leasing Services (NAICS 532), and Lessors of Nonfinancial Intangible Assets (NAICS 533). The Real Estate (NAICS 531) sub-sector is primarily made up of establishments that either rent or lease real estate to others or appraise, sell, purchase or manage real estate for others. The Rental and Leasing Services (NAICS 532) sub-sector is made up of establishments that rent consumer goods and equipment or lease machinery and equipment for establishments in other sectors. The Lessors of Nonfinancial Intangible Assets (NAICS 533) sub-sector consists of activities related to the leasing of patents, trademarks, brand names, or franchise agreements. It is important to note that impacts to each of these sub-sectors would be unique given the diverse array of activities within each. While the chapter touches on the impact of the pandemic on the sector as a whole, much of the chapter focuses on the impact to the Real Estate (NAICS 531) sub-sector given its fundamental role within the economy as a whole.

---

<sup>1</sup> United States Census Bureau. 2022. "North American Industrial Classification System." *United States Census Bureau. Pg. 441*  
[https://www.census.gov/naics/reference\\_files\\_tools/2022\\_NAICS\\_Manual.pdf](https://www.census.gov/naics/reference_files_tools/2022_NAICS_Manual.pdf)

## NAICS 53

# REAL ESTATE AND RENTAL AND LEASING

---





## REAL ESTATE AND RENTAL AND LEASING

The Real Estate and Rental and Leasing sector is an incredibly important component of the economy as it plays a major role in the management, leasing, and exchange of residential, commercial, and industrial real estate. As commercial and industrial businesses require physical assets to provide services and products, and home owners and renters need homes, the sector is involved with nearly every sector of the economy. Therefore, any internal or external impacts to the sector can cause ripple effects across the economy into other sectors, in turn, drastically influencing the quality of life residents and health of the local economy. In the period following the 2008 Recession, real estate activities in these markets, especially the residential market, would gradually recover and flourish in the region. However, the pandemic would cause a cascade of challenges and frustrations both within the sector and across others. Challenges would especially abound in the Real Estate (NAICS 531) sub-sector, where the residential, commercial, and industrial real estate markets would each be impacted, sending waves through all sectors of the economy.

### 2015-2019 Background

#### *Region*

The Real Estate and Rental and Leasing sector

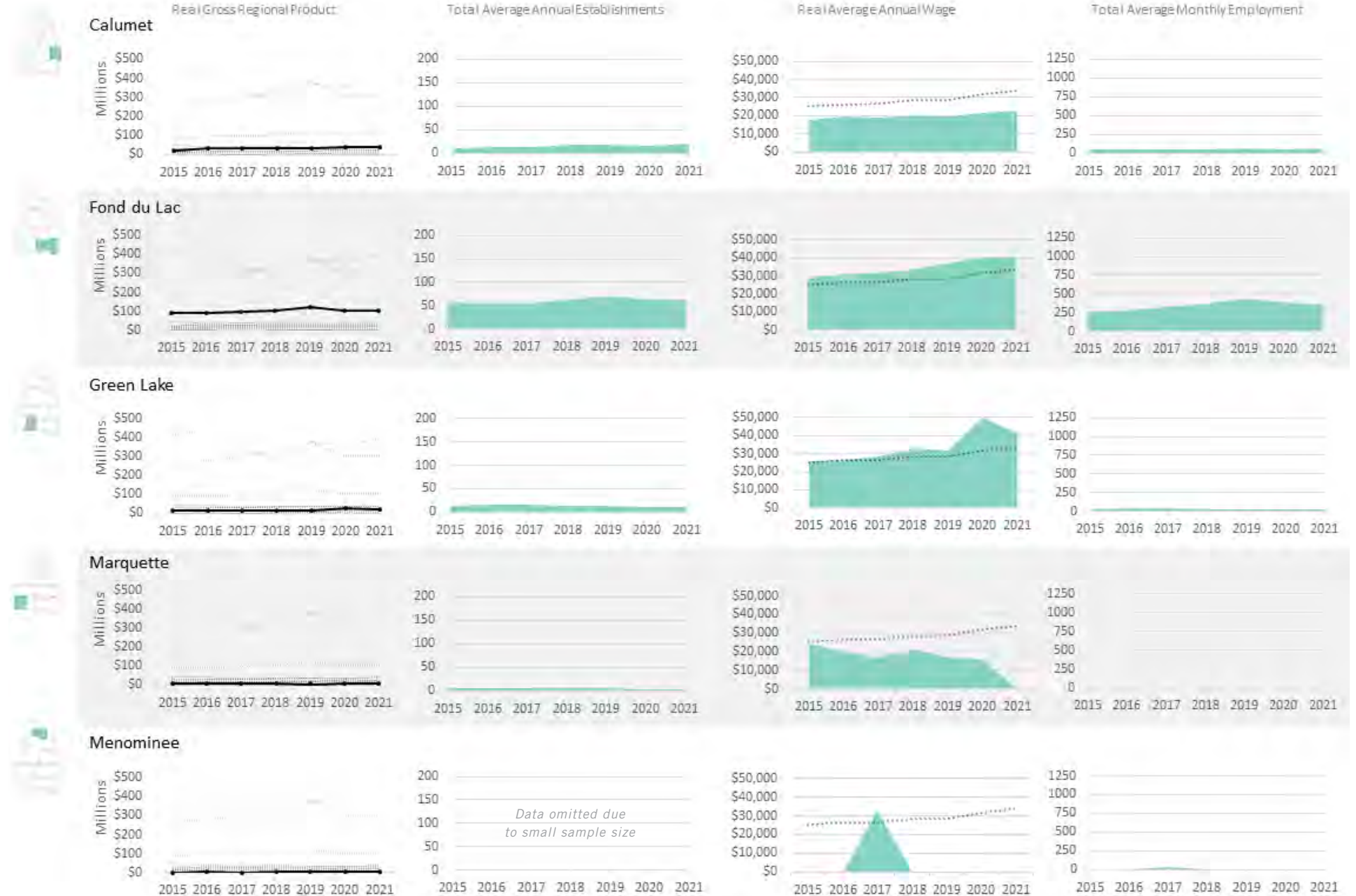
in the East Central region in the years prior to 2020 was relatively small, annually accounting for about 3% of Total Real Gross Regional Product in the East Central region, and only .5% of the region's active labor force. However, despite its size, the sector was quite stable during the period according to most figures. RGRP would peak at approximately \$1 billion in 2019 growing from \$910 million in 2015 despite a slight decline in RGRP between these years. In addition, Total Average Annual Establishment and Real Average Annual Wage figures would also gradually increase between 2015 and 2019 at the regional level. Total sector establishments in the region would grow from 392 to 494 during the period, while Real Average Annual Wage figures would increase from \$25,500 in 2015 to \$28,600 by 2019. Although fairly small when compared with other sectors, Total Average Monthly Employment figures would also annually increase from about 2,000 in 2015 to 2,500 in 2019. Sector trends at the county level would mirror regional trends, especially in counties where the sector would concentrate.

#### *County*

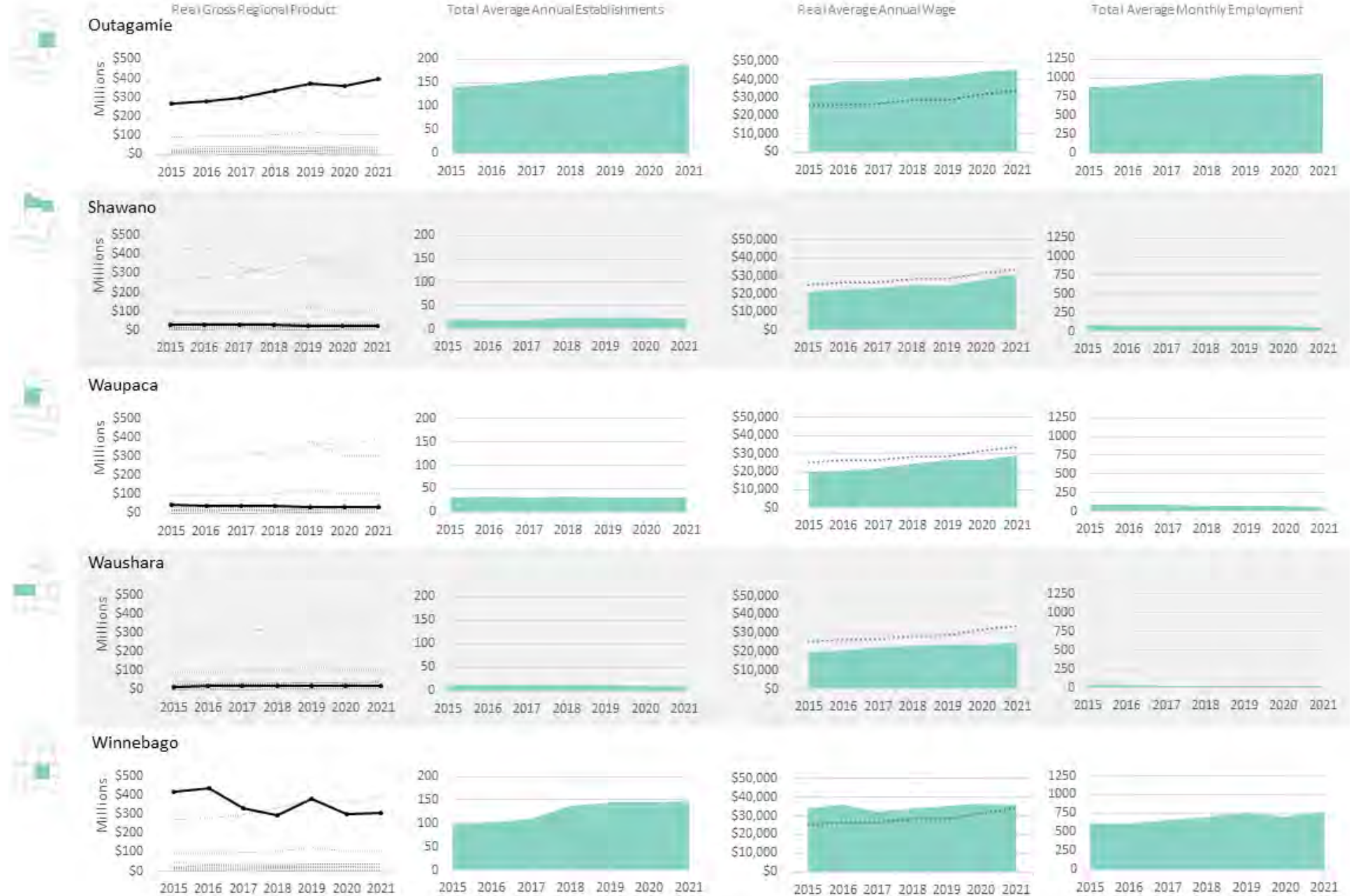
Winnebago and Outagamie counties, which combined, annually accounted for 75% of total sector RGRP in the East Central region.

Sector RGRP figures between 2015 and 2019 would trend differently in the two counties, however, growing in Outagamie County from \$269 million to \$375 million and declining in Winnebago County from \$416 million to \$379 million. RGRP figures for the remaining counties would largely remain stable during the period. Total Average Annual Establishment and Total Average Monthly Employment figures during the period would either slightly increase or stagnate across all counties, with the greatest concentration of establishments and employment in Outagamie and Winnebago counties. Real Average Annual Wage figures would slightly increase in almost all counties between 2015 and 2019, with sector wage figures in Outagamie, Winnebago, Fond du Lac, and Green Lake counties consistently greater than the East Central regional Real Average Annual Wage on an annual basis. The only county to record a decline in Real Average Annual Wage would be Marquette County, although this trend could be a result of data suppression due to the sector's small size within the county. Overall, the Real Estate and Rental and Leasing sector would be heavily concentrated in Outagamie and Winnebago counties and displayed healthy economic trends between 2015 and 2019 despite its relatively small size.









## REAL ESTATE AND RENTAL AND LEASING

### 2020 Impact and Response

#### *Impact*

The rapid economic disruption caused by the pandemic would cause dramatic ripples across the Real Estate and Rental and Leasing sector, with the Real Estate (NAICS 531) sub-sector in particular being significantly impacted in several ways. The sub-sector is comprised of establishments that either rent or lease real estate to others or appraise, sell, purchase or manage real estate for others within the residential, commercial, or office, or industrial real estate markets, making it an integral component of both the sector and regional economy. Impacts to these real estate markets during 2020 would be sporadic, as markets would experience significant upturns and downturns in asset supply and demand.

Across the state and regional residential real estate markets, impacts would manifest differently for establishments involved in leasing and managing multi-family rental real estate compared with those involved in appraising and selling owner-occupied real estate.

Across the state, despite initial fears caused by the surge in unemployment, establishments involved in multi-family residential real estate would largely see revenue streams stabilize throughout 2020 in part due to CARES Act assistance through Federal Unemployment Benefits and an eviction moratorium allowing renters to continue paying rent.<sup>2</sup> Efforts by organizations like Freddie Mac would also provide general stability to the multi-family rental

market.<sup>3</sup> Interviews with regional stakeholders in the sub-sector reiterated that support from the state and federal levels in 2020 for the multi-family market provided adequate stabilization for both lessors and lessees.

Real Estate (NAICS 531) sub-sector establishments involved in the owner-occupied residential real estate market would also witness unexpected trends. Throughout the East Central region, total sales and median sale prices would surge each quarter of 2020. Aside from a brief pause in sales in Q2 of 2020, total sales of owner-occupied homes would gradually increase over the remainder of the year, resulting in a total of 9,573 home sales in the East Central region by end of 2020, 400 more total sales than in 2019.<sup>4</sup> In addition, despite economic uncertainty in the initial months of the pandemic, housing demand would continue to drive a steady volume of home sales in the East Central region, outpacing supply due to challenges in construction and causing nominal median sale prices to ascend throughout 2020. In the East Central region, nominal median sale prices would climb from a regional average of \$165,800 in 2019 to \$178,000 by the end of 2020.<sup>5</sup> Regional stakeholders in the Real Estate (531) sub-sector would convey that homes would go thousands of dollars over asking prices, with buyers waiving contingencies and foregoing inspections on properties as supply could simply not meet demand.

The pandemic would impact sub-sector establishments involved in the residential real estate market in a generally positive way,

continuing pre-pandemic growth trends in sale volume and price recorded at the state and regional levels. However, establishments involved in other real estate markets at the state and regional level would be impacted in drastic, and usually negative, ways.

Real Estate (NAICS 531) establishments involved in leasing and managing real estate in these markets would find the pandemic to be an unwelcome disruption. At the state level, the sale of commercial real estate would drop by 7% in the first half of 2020 when compared to the same period in 2019, with 70% of sales closed prior to March 2020.<sup>6</sup> Across both the state and East Central region, commercial real estate establishments who leased property would be impacted to varying degrees depending on whether lessees were classified as essential or non-essential.<sup>7</sup>

---

<sup>2</sup> Colliers International. 2020. "Research Market Report Wisconsin 2020 Mid-Year Investment Report." *Colliers International*. <https://s3.documentcloud.org/documents/7043070/2020-MidYear-Investment-Report.pdf>

<sup>3</sup> Freddie Mac. 2021, March 16. "Annual Housing Activities Report 2020." *Federal Home Loan Mortgage Corporation*. [https://www.freddiemac.com/about/pdf/AHAR2020\\_Report.pdf](https://www.freddiemac.com/about/pdf/AHAR2020_Report.pdf)

<sup>4</sup> Wisconsin Realtors Association. 2020. "Wisconsin Housing Statistics." *Wisconsin Realtors Association*. <https://www.wra.org/HousingStatistics/>

<sup>5</sup> Ibid.

<sup>6</sup> Colliers International. 2020. "Research Market Report Wisconsin 2020 Mid-Year Investment Report." *Colliers International*. <https://s3.documentcloud.org/documents/7043070/2020-MidYear-Investment-Report.pdf>

<sup>7</sup> State of Wisconsin Department of Health Services. 2020, March 25. "Emergency Order #12 Safer at Home Order." *State of Wisconsin Department of Health Services*. <https://evers.wi.gov/Documents/COVID19/EMO12-SaferAtHome.pdf>



## REAL ESTATE AND RENTAL AND LEASING

Non-essential lessees would struggle to meet rents in the early months of the pandemic, particularly restaurants and bar lessees in the Accommodation and Food Services (NAICS 72) sector ordered to close or given capacity limitations. Although conditions would eventually allow for limited non-essential opening and higher capacity limits over the course of 2020, many of these lessees would struggle to find employees.<sup>8</sup> These trends would make both investing and managing assets in the commercial real estate market quite challenging in 2020.

Likewise, state level trends in the office real estate market would mimic the commercial market, with 67% fewer office real estate sales in the first half of 2020 compared to the second half of 2019.<sup>9</sup> This decrease in sales would largely be due to many office-based establishments in multiple NAICS sectors transitioning to remote work options for their employees in the first months of the pandemic, resulting in many reconsidering their pre-pandemic leases. While the decision to make remote work was initially one of necessity, numerous office-based employers would find that remote work was convenient or even preferable for their business model and their employees. East Central stakeholders would express that their transition to fully or partially remote work allowed them to re-evaluate office square footage needs, with several downsizing office space significantly throughout 2020. This transition and downsizing would significantly impact sub-sector establishments involved in office real estate investments and property management, affecting investment decisions and revenue streams.

The industrial real estate market, while just as complex and nuanced as the aforementioned real estate markets, would generally remain stable throughout 2020 despite the drastic economic shock. In the State of Wisconsin, total square footage sold, the number of transactions, and cumulative dollar value traded for industrial real estate in the first half of 2020 would be greater than in the last half of 2019.<sup>10</sup> This increase would be attributed to the expansion of warehousing and movement of products bought online and the continuation of production in the Manufacturing sector despite economic challenges. Given the ability of the East Central region Manufacturing sector to remain afloat during 2020, sub-sector establishments involved in managing and investing in industrial real estate would also witness general stability according to interviews with several stakeholders.

### *Response*

The Real Estate and Rental and Leasing sector would respond to the pandemic by providing services to the best of its ability. While each sub-sector would face unique impacts in 2020, the establishments within them would remain relevant and active throughout the pandemic. The Real Estate (NAICS 531) sub-sector, largely influenced by external dynamics faced by other sectors of the economy and respective real estate markets, would respond to the pandemic by diversifying real estate investments, conducting sales as needed, and providing property management services for residential and non-residential properties alike. Establishments in the sub-sector

involved in the owner-occupied residential real estate market would respond favorably to the consistent increase in home volume and price throughout 2020 as pointed out during stakeholder interviews.

### **2021 Recovery and Resiliency**

The Real Estate and Rental and Leasing sector and its three sub-sectors would adequately recover in 2021 according to real estate markets trends and key sector figures. The Real Estate (NAICS 531) sub-sector would display the most notable recovery. Throughout 2020 and into 2021, sale price and volume would continue to surge in the Wisconsin residential real estate market for both owner-occupied and renter occupied properties.<sup>11</sup>

In the East Central region, 9,631 owner-occupied homes would be sold by the end of 2021, 100 more than in 2020.<sup>12</sup>

---

<sup>8</sup> Wisconsin Restaurant Association. 2021, March 2. "Survey Shows Devastating Impact of Pandemic on Restaurants Continues." *Wisconsin Restaurant Association*. <https://web.wirerestaurant.org/news/newsarticledisplay.aspx?ArticleID=7>

<sup>9</sup> Colliers International. 2020. "Research Market Report Wisconsin 2020 Mid-Year Investment Report." *Colliers International*. <https://s3.documentcloud.org/documents/7043070/2020-MidYear-Investment-Report.pdf>

<sup>10</sup> Ibid.

<sup>11</sup> Colliers International. 2021. "Research Market Report Wisconsin 2021 Mid-Year Investment Report." *Colliers International*. <https://www.colliers.com/en/research/milwaukee/2021-midyear-investment-market-report>

<sup>12</sup> Wisconsin Realtors Association. 2020. "Wisconsin Housing Statistics." *Wisconsin Realtors Association*. <https://www.wra.org/HousingStatistics/>

## REAL ESTATE AND RENTAL AND LEASING

The continued high demand would result in the regional nominal median sale price of owner-occupied homes climb from \$178,000 at the end of 2020 to \$212,100 by the end of 2021. In addition to an increase in nominal median sale price, average rental rates in the region would also increase during 2021, increasing financial strain on households and prompting regional and county discussions regarding housing affordability issues for both renters and owners.

The commercial and office real estate markets would slowly recover throughout 2021. Across the state, establishments in the Retail (NAICS 44-45) and Accommodation and Food Services (NAICS 72) sectors would endeavor to keep stores open, resulting in commercial real estate sales increasing by 16% for relevant establishments in the Real Estate (NAICS 531) sub-sector. At the state level, by mid-2021 office real estate sale volume and vacancy rates would remain stable when compared to mid-2020. However, as office-based establishments within other sectors reconsidered their office space needs in the years following 2020, reduced demand for office space would slow the office real estate market and cause investors to be cautious well into 2023. These trends in the commercial and office real estate markets would generally be mirrored in the East Central region.

The industrial real estate market across the state would recover quite well by mid-2021, with sale price, volume, and total transaction figures ascending from the previous year. Real Estate (NAICS 531) sub-sector establishments involved in managing and investing in industrial real estate

in the region would welcome the 2021 trends.

The East Central Real Estate and Rental and Leasing sector would remain resilient following 2020, with sector Real Gross Regional Product rebounding to \$954.2 million in 2021 from \$913.4 million in 2020. Sector RGRP would remain concentrated in Outagamie and Winnebago counties, with figures increasing in the former but decreasing in the latter between 2020 and 2021. RGRP for the sector would remain largely stable in the remaining counties, with figures only growing slight from 2020. Between 2020 and 2021, Total Average Annual Establishment and Total Average Monthly Employment figures would generally stagnate at the regional and county levels. Sector Total Average Annual Establishment figures would grow only in Outagamie County between 2020 and 2021, with the figure either slightly receding or remaining stagnant in all other counties. Outagamie and Winnebago counties would also be the only two counties to record growth in sector Total Average Monthly Employment figures from 2020 to 2021. At the regional level, sector Real Average Annual Wage figures would perform well, growing from an average of \$31,800 in 2020 to \$33,900 in 2021. Sector average wage figures in Outagamie, Winnebago, Fond du Lac, and Green Lake counties would be consistently greater than the East Central regional Real Average Annual Wage following 2020, continuing a trend identified prior to the pandemic. Despite its small stature when compared to other sectors of the East Central regional economy, the Real Estate and Rental and Leasing sector remained resilient during the pandemic, recovering to stability rather quickly by 2021.

### *Conclusion*

Establishments in the Real Estate and Rental and Leasing sector in the East Central region would remain buoyant despite the turbulence of 2020 and emerge into new market environments. Although most figures for the sector would not break records when compared to the years prior to the pandemic, the sector would remain stable and resilient through 2020 and in the following years. As the economy continues to experience ripples induced by the pandemic, the sector, in particular the Real Estate (NAICS 531) sub-sector, will need to navigate market shifts in each real estate market to provide adequate management and investment services. Notably, housing affordability issues within the residential real estate market emerging from the pandemic continue to sour the economic recovery of, not only the sector, but the East Central region. Although the issue has risen to the forefront of local and regional discussion, properly addressing the problem will necessitate the focused effort of public and private stakeholders.

---

<sup>13</sup> Ibid.

<sup>14</sup> Outagamie County Department of Development and Land Services. 2022, June. "Fox Cities and Greater Outagamie County Regional Housing Strategy." Outagamie County Department of Development and Land Services. <https://www.outagamie.org/home/showpublisheddocument/89815/637903702165130000>

<sup>15</sup> Colliers International. 2021. "Research Market Report Wisconsin 2021 Mid-Year Investment Report." Colliers International. <https://www.colliers.com/en/research/milwaukee/2021-midyear-investment-market-report>

<sup>16</sup> Ibid.

<sup>17</sup> Horowitz, J. 2023, April 10. "American Offices are Half-Empty. That Could be the Next Big Risk for Banks." Cable News Network. <https://www.cnn.com/2023/04/10/business/commercial-real-estate-banks-offices/index.html>

<sup>18</sup> Colliers International. 2021. "Research Market Report Wisconsin 2021 Mid-Year Investment Report." Colliers International. <https://www.colliers.com/en/research/milwaukee/2021-midyear-investment-market-report>

## Introduction

The Educational Services sector is made up of establishments that may be publicly or privately owned and provide specialized instruction or training on a plethora of subjects.<sup>1</sup> Sector establishments employ teachers or instructors who are qualified to educate on numerous subjects in a variety of settings and mediums. Instruction or training may take place at institutions operated by sector establishments, in the workplace, over the internet, or through other methods. The sector is comprised of seven 4-digit sub-sectors which provide various services like K-12 education, post-secondary education, other instruction types, and educational support. Contrary to most assumptions about the sector, childcare services are not included in the sector as NAICS does not define childcare activities as providing instructional or training services. Childcare services are instead classified within Health Care and Social Assistance (NAICS 62) sector and are not discussed in this chapter.

Educational establishments, educators, and students would all be impacted by the pandemic in various yet significant ways. K-12 schools and districts, technical colleges, and public and private universities, would have the quality of their services, budgets, and operations considerably impacted. Educators would find themselves placed in the middle of complicated guidelines for providing instruction and the needs of their students.

---

<sup>1</sup> United States Census Bureau. 2022. "North American Industrial Classification System." *United States Census Bureau*. Pg. 401 [https://www.census.gov/naics/reference\\_files\\_tools/2022\\_NAICS\\_Manual.pdf](https://www.census.gov/naics/reference_files_tools/2022_NAICS_Manual.pdf)

## NAICS 61 EDUCATIONAL SERVICES





## EDUCATIONAL SERVICES

Students, whether in elementary school or pursuing advanced degrees, would be challenged by shifts to different, and even experimental, instruction methods. While the immediate disruptions to the sector would subside in the years following 2020, problematic ripples would continue to impact educational institutions, educators, and students.

### 2015-2019 Background

#### *Region*

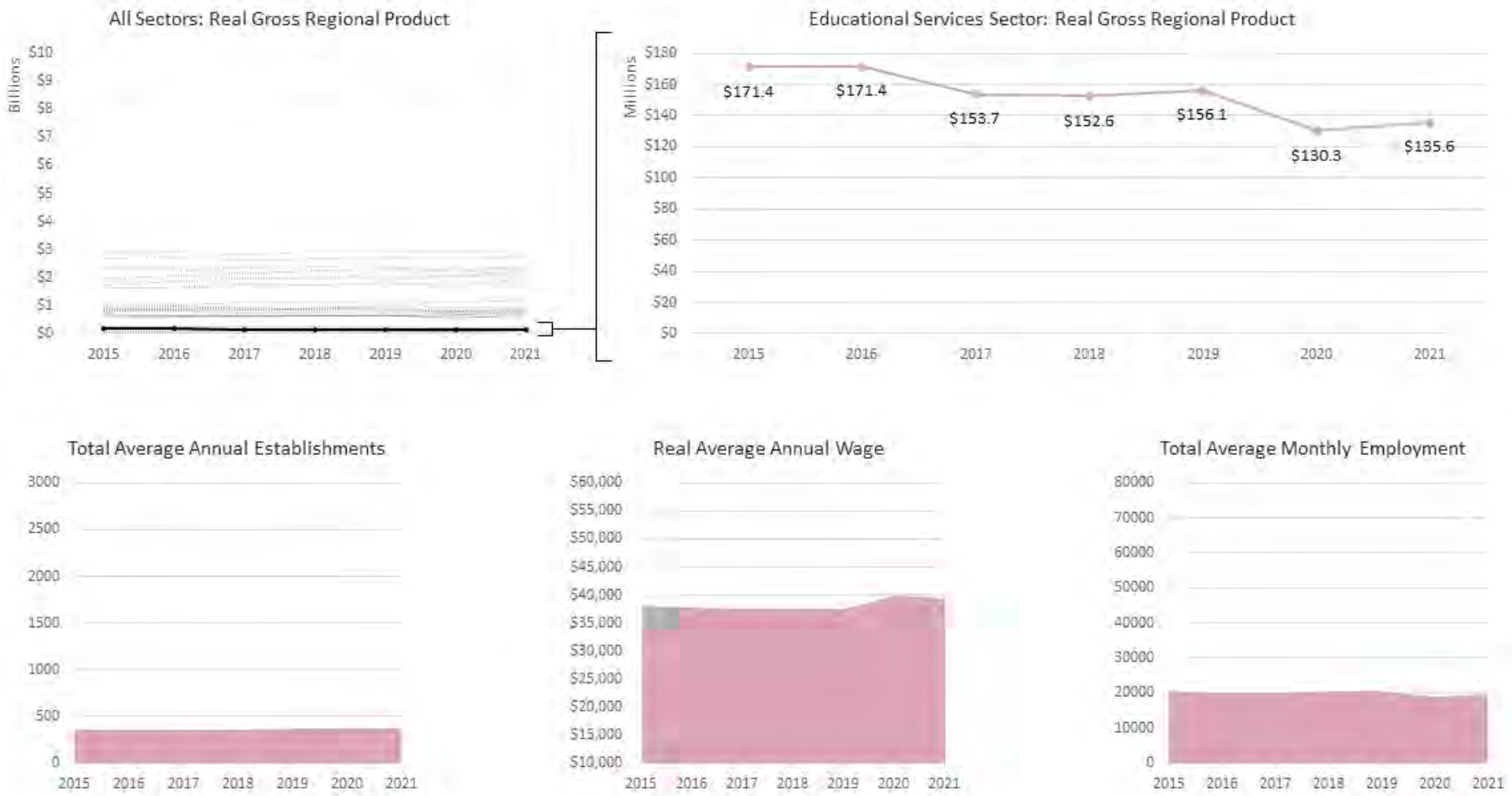
The Educational Services sector was one of the smallest sectors in the East Central region, accounting for just a fraction of a percent of total regional Real Gross Regional Product annually between 2015 and 2019. However, this statistic slightly misrepresents the true contribution of the sector to the regional economy, as many of the establishments in the sector are publicly owned and tax-exempt, underrepresenting the sector in the statistic and causing difficulty when comparing it with other sectors. Regardless, RGRP figures for the sector performed poorly during the period, declining from \$171.4 million in 2015 to \$156.1 million by 2019. The sector would comprise a substantial amount of the regional labor force, consistently making up approximately 6% of the total regional labor force annually between 2015 and 2019. Sector Total Average Monthly Employment figures would remain stable during the period, slightly increasing from 20,400 in 2015 to 20,500 in 2019. In addition, Total Average Annual Establishment figures would remain stable, hovering around 350 total establishments between 2015 and 2019. Real Average Annual Wage figures would slightly

decline for the sector, dropping from a regional average of \$38,000 in 2015 to \$37,500 in 2019.

#### *County*

Due to their large share of the total regional population, the presence of several public and private universities, and large number of school districts, the Educational Services sector would be most concentrated in Outagamie, Fond du Lac, and Winnebago counties. Outagamie and Fond du Lac would annually contribute over 75% to total sector RGRP in part due to the presence of Lawrence University, Marion University, and Ripon College. These private universities are factored into GRP calculations to a further extent than public universities, explaining why RGRP figures for Winnebago County, the home of the University of Wisconsin-Oshkosh, were relatively lower in comparison to the other two counties. In general, across the ten counties sector RGRP figures would either plateau or slightly decline between 2015 and 2019. Total Average Annual Establishment and Total Average Monthly Employment figures would generally remain stable in all counties, with both figures having the greatest concentration in Outagamie, Winnebago, and Fond du Lac, respectively. Across all counties Real Average Annual Wage figures would be distributed tightly around the regional average between 2015 and 2019. By 2019, sector Real Average Annual Wage would be the greatest in Outagamie County at \$42,600, and lowest in Shawano County at \$31,900. Taken as whole, sector trends at the county level would share many similarities with regionwide trends, with employment and establishment figures concentrated in counties with larger populations.









## EDUCATIONAL SERVICES

### 2020 Impact and Response

#### *Impact*

The pandemic would impact every educational establishment, educator, and student throughout the United States in 2020, specifically during the 2019-2020 school year. Impacts to the sector in the East Central region would not be unique and challenges experienced across the nation would largely be mirrored across the region. Whether public or private, K-12 schools, technical colleges, four-year universities, and other specialized education establishments would be struck by many challenges which would impact the abilities of educators and the success of students. Perhaps the most impactful challenge across the entire sector would be the complete or partial switch from in-person learning to online learning, which would indiscriminately impact institution, educator, and student alike. Unprecedented and immediate, the transition to online learning would challenge the capabilities and confidence of institutions and their educators to provide the very best for students at all levels of learning. The end of the 2020 school year would be conducted virtually and with limited success. However, by the first half of the 2020-2021 school year, the sector would learn from mistakes and respond with new tools and strategies to provide conventional learning in an unconventional way.

Among many challenges, the largest to develop for public and private educational establishments would be the significant impacts to their operating budgets at both the end of the

2019-2020 and at the beginning of the 2020-2021 school year. Across the state, four-year UW-System universities would have operating budgets drastically impacted at the end of the 2019-2020 school year due to the closure of campuses.<sup>2</sup> In the East Central region, the University of Wisconsin-Oshkosh, with three campuses within the City of Oshkosh, City of Fond du Lac, and City of Menasha, would furlough employees, delay planned purchases, and reimburse students who were sent home during the 2019-2020 school year.<sup>3</sup> Likewise, private four-year universities in Wisconsin would close prior to the completion of the 2019-2020 school year, resulting in financial uncertainty for budgets and staffing levels for 2020 summer and fall programs.<sup>4</sup> In the East Central region, the three private four-year universities, Lawrence University, Ripon College, and Marion University, would face challenges similar to public and private four-year universities across Wisconsin. Challenges would continue to manifest for both public and private four-year universities at the beginning of the 2020-2021 school year, with a mix of in-person and online instruction, mass COVID-19 testing, and stringent distancing and cleaning rules inflating expenses and reducing revenues.<sup>5</sup> In addition to the budgetary challenges experienced by the higher education system, the K-12 education system find an abundance of challenges associated with the switch to unconventional learning methods.

The closure of public and private elementary, middle, and high schools, and immediate switch to virtual learning methods in

March of 2020 would greatly disrupt K-12 establishments. Across Wisconsin, K-12 schools, on average, would fail to complete about 12.5% of curriculum during the spring of 2020.<sup>6</sup> Within the East Central region, stakeholders would identify that, despite many other challenges, an unexpected and disjointed switch to online learning at the end of the 2019-2020 school year emerged as the greatest challenge for the K-12 system. A lack of resources to adequately supply technology for virtual learning, combined with a lack of experience with online learning platforms, would exacerbate the dilemma.<sup>7</sup>

---

<sup>2</sup> University of Wisconsin System. 2020. "Annual Financial Report 2020." *Office of Finance University of Wisconsin System*. [https://www.wisconsin.edu/financial-administration/download/university\\_of\\_wisconsin\\_system\\_annual\\_financial\\_reports/University-of-Wisconsin-System---AFR-2020-Final.pdf](https://www.wisconsin.edu/financial-administration/download/university_of_wisconsin_system_annual_financial_reports/University-of-Wisconsin-System---AFR-2020-Final.pdf)

<sup>3</sup> Board of Regents of the University of Wisconsin System. 2021, October 7. "Business and Finance Committee." *University of Wisconsin System*. [https://www.wisconsin.edu/regents/download/meeting\\_materials/2021\\_meeting\\_materials/Meeting-Book-Business-&Finance-Committee-Meeting-\(October-7,-2021\).pdf](https://www.wisconsin.edu/regents/download/meeting_materials/2021_meeting_materials/Meeting-Book-Business-&Finance-Committee-Meeting-(October-7,-2021).pdf)

<sup>4</sup> Wegenke, R. & Larson, R. 2020. "Impact of COVID-19 on Wisconsin Private, Nonprofit College and Universities." *Wisconsin Association of Independent Colleges and Universities*. [https://www.wpr.org/sites/default/files/waicu\\_covid-19\\_losses\\_infographic.pdf](https://www.wpr.org/sites/default/files/waicu_covid-19_losses_infographic.pdf)

<sup>5</sup> University of Wisconsin System. 2021. "Annual Financial Report 2021." *Office of Finance University of Wisconsin System*. [https://www.wisconsin.edu/financial-administration/download/university\\_of\\_wisconsin\\_system\\_annual\\_financial\\_reports/University-of-Wisconsin-System---AFR-2021-Final.pdf](https://www.wisconsin.edu/financial-administration/download/university_of_wisconsin_system_annual_financial_reports/University-of-Wisconsin-System---AFR-2021-Final.pdf)

<sup>6</sup> Flanders, W. 2021, February. "Policy Brief Dreams Deferred: The Economic Cost of Learning Loss In Wisconsin." *Wisconsin Institute for Law & Liberty*. <https://will-law.org/wp-content/uploads/2021/02/COVID-Learning-Loss-2021-final.pdf>

<sup>7</sup> Fath, E., Meyer, J., Bush, D., Kammerud, J., Soldner, R. 2020, December. "Report on Virtual Instruction and School Operations During the Public Health Emergency." *Wisconsin Department of Public Instruction*. [https://dpi.wi.gov/sites/default/files/imce/policy-budget/pdf/Report\\_on\\_Virtual\\_Instruction\\_and\\_School\\_Ops.pdf](https://dpi.wi.gov/sites/default/files/imce/policy-budget/pdf/Report_on_Virtual_Instruction_and_School_Ops.pdf)





## EDUCATIONAL SERVICES

While the K-12 system in the East Central region would be better prepared for providing virtual learning in the 2020-2021 school year, stakeholders would articulate that providing quality and consistent education for rural or lower-income students would remain a challenge. While online learning would generally negatively affect all students, those living in rural or lower-income communities or school districts would have their learning further impacted by limited access to technology and internet.<sup>8</sup> Overall, challenges and limitations with implementing and providing virtual learning would frustrate both educators and students throughout 2020 and articulate the benefits of in-person learning.

While the abilities of educational establishments to effectively educate an array of students differing in socio-economic background, age, and learning ability would be a major challenge for establishments, further impacts would confront both educators and students as well. Across the nation, state, and region, stressors imposed on educators at all levels of instruction in 2020 would result in mental health impacts, causing burnout for many and career departure for some.<sup>9</sup> Virtual learning would affect student mental well-being and would result in learning loss, both factors

with lifetime consequences.<sup>10</sup> These impacts to both educators and students would have complex residual effects in the years following 2020 for both the sector and communities throughout the East Central region.

### *Response*

Virtual learning, in spite of its limitations, would be better than none and would be received or mandated as the only option for learning during 2020. In the East Central region, despite monumental challenges surrounding virtual learning, establishments and educators within the Educational Services sector would toil to make the best of the situation. Multifaceted challenges would be taken head-on by administrative and education staff alike across all levels of education and support from federal and state resources would prove to be instrumental in the resiliency of the sector. Between 2020 and 2021, more than \$200 billion for K-12 education alone would be allocated by the federal government throughout the nation via the Coronavirus Aid, Relief, and Economic Security Act (CARES ACT), the Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA), and the American Rescue Plan Act (ARPA).<sup>11</sup> In the East Central region, this relief funding would prove vital to continuing educational services for the

next generation by purchasing and upgrading technology and training staff and students to adjust to new teaching methods. Overall, in 2020, the Educational Service sector responded with intentionality to mitigate the impacts of learning loss and provide quality education to students in difficult times.

## 2021 Recovery and Resiliency

The East Central Educational Services sector would have difficulty recovering to pre-pandemic trends across several economic markers. Regional and county figures for Total Real Gross Regional Product and Total Average Monthly Employment figures would either stagnant or decline from 2019 figures.

<sup>8</sup> Dorn, E., Hancock, B., Sarakatsannis, J. Viruleg, E. 2021, July 27. "COVID-19 and Education: The Lingering Effects of Unfinished Learning. *McKinsey & Company*. <https://www.mckinsey.com/industries/education/our-insights/covid-19-and-education-the-lingering-effects-of-unfinished-learning>

<sup>9</sup> Hirshberg, M., Davidson, R., Goldberg, S. 2022. "Educators Are Not Alright: Mental Health During COVID-19." *Center for Healthy Minds*. <https://centerhealthyminds.org/assets/files-publications/Hirshberg-et-al-2022-Educators-are-not-alright-Author-accepted-copy.pdf>

<sup>10</sup> Dorn, E., Hancock, B., Sarakatsannis, J. Viruleg, E. 2021, July 27. "COVID-19 and Education: The Lingering Effects of Unfinished Learning. *McKinsey & Company*. <https://www.mckinsey.com/industries/education/our-insights/covid-19-and-education-the-lingering-effects-of-unfinished-learning>

<sup>11</sup> Ibid.

## EDUCATIONAL SERVICES

The East Central Educational Services sector would have difficulty recovering to pre-pandemic trends across several economic markers. Regional and county figures for Total Real Gross Regional Product and Total Average Monthly Employment figures would either stagnant or decline from 2019 figures. Regional RGRP figures for the sector would decline from \$156.1 million in 2019 to \$130.3 million in 2020, rebounding just slightly in 2021 to \$135.6 million. RGRP would decline in both Outagamie and Fond du Lac counties during the period as well, in part, highlighting the impact the pandemic had on private universities in those counties. Sector RGRP in Winnebago County would remain stable, although, due to its status as a public university, impacts to UW-Oshkosh are likely not reflected in this figure. Most other counties would see RGRP figures remain flat. Regional Total Average Monthly Employment figures, which were consistently

above 20,000 prior to 2020, would decline following the pandemic to 19,000 in 2020 and 19,700 in 2021. Employment would remain concentrated in Outagamie, Winnebago, and Fond du Lac counties but figures would decline in them as well. Annual Average Establishment figures would remain stable in the region, suggesting that many educational establishments were able to weather the pandemic. In contrast with declining trends, Real Average Annual Wage figures at both the regional and county levels would fortunately recovery, with the regional average increasing in 2020 to \$39,900, although slightly diminishing to \$39,400 in 2021. All counties in the region but Menominee would witness Real Average Annual Wages increase between 2020 and 2021. The increase in real wage figures would be the only economic marker to trend positively, highlighting the difficulty faced by the sector to adequately recover from the pandemic.

### *Conclusion*

Education is a cornerstone to the economic vitality and well-being of any community. The pandemic would significantly impact this cornerstone, causing the Educational Services sector in the East Central region to under-go a rapid reconfiguration to continue providing the crucial services for students at all levels of education. Despite such challenges, the sector would remain resilient, continuing to provide services during the school year and adapting to the situation as needed. Although some strategies would be less successful than others, the unexpected challenges would result in limited options available to address them. Ultimately, the sector would endure the pandemic to emerge strained but coherent, however, the extent of educational impact to an entire generation remains to be seen.





# CONCLUSION

---



# CONCLUSION

## Conclusion

### *Summation of Challenges*

As a whole, the East Central regional economy would largely persevere and emerge from the pandemic shaken but coherent. Across the ten-county region each economic sector would face a plethora of impacts ranging in commonality, duration, and severity. While each sector would experience their own individual and unique challenges, the pandemic would also exacerbate or develop universal challenges which would encompass all sectors of the regional economy. Identified through stakeholder interviews and economic data, these universal, all-encompassing challenges would include:

#### Capacity and Labor Availability

- Limited capacity to implement needed responses across both public and private sectors
- Limited availability of specific and valuable skill-sets
- Labor shortages across both public and private sectors

#### Communication and Collaboration

- Lack of communication or miscommunication between the public and private sectors
- Internal lack of collaboration and communication within each sector and its respective sub-sectors and establishments
- Limited collaboration or communication across public-public, private-private, and public-private channels

#### External Market Forces

- Market-wide disruption to demand and/or supply of nearly all products and services
- Supply chain mismanagement and/or bottlenecks at key logistical intersections

#### Technological Capabilities

- Unequal access to reliable broadband infrastructure
- Undeveloped or underdeveloped technological infrastructure or literacy for the continuation of production, services, or operations across both public and private sectors

These challenges, while varying in duration and severity by sector and geography, would nevertheless be universally faced by all sectors in the regional economy. As the pandemic progressed and its economic impacts rippled across all facets of the economy, each sector would implement responses to react to and address ever evolving challenges. The efficacy of responses would depend on their scope, feasibility, motivation, and, in some cases, fortune.

### *Evaluation of Sector Responses and Economic Recovery and Resiliency*

While challenges would necessitate creative and individualized responses, some of the most successful types of responses could be easily replicated, coordinated, implemented, and improved by all sectors of the regional economy. Expressed by many stakeholders, the most common and easily replicable successful

strategies would be flexible, incremental, and clearly communicated. While the efficacy of numerous responses requires further study, evaluation, and discussion to adequately glean lessons from, every successful response would be rooted in internal and external communication and collaboration.

The ability of establishments to successfully implement responses, regardless of their scale or duration, would play a major role in the resiliency and recovery of the regional economy as a whole. The resiliency of the regional economy is owed to the efforts and risks taken by establishments at the micro level.

The health and performance of the regional economy has certainly improved since the pandemic no doubt due to these response efforts. However, economic challenges still clearly remain and, whether induced, exacerbated, or exposed by the pandemic, several deep-rooted issues continue to hinder the recovery of the regional economy.

### *Furthering Economic Recovery, Addressing Root Causes, and Stoking Resiliency*

Economic challenges, whether caused, exacerbated, or exposed by the pandemic, continue to have non-linear consequences across the regional economy. Regional networks for collaboration and communication remain the most efficient way to monitor and address such challenges and initiatives should be made to both maintaining and further developing these networks.





## CONCLUSION

Overall, economic challenges can continue to be addressed throughout the region by:

- Monitoring economic trends through the inventory and analysis of quantitative data
- Enhancing regional channels of collaboration and communication
- Identifying best practices of economic recovery efforts and strategies

While monitoring and addressing the ripples caused by each of these challenges continues to be a priority, it is imperative to also treat the cause of these symptoms. Several deep-rooted issues have been identified as the cause of the many challenges that continue to irritate the health and recovery of the regional economy. Several deep-rooted demographic and economic issues that must be addressed include:

- Aging and shrinking of the labor force
- Unaffordability in housing
- Dated land use practices
- Lacking or insufficient transportation and communication infrastructure
- Inadequate funding of public organizations and institutions
- Ineffective or non-existent communication and collaboration across public and private sectors

Additional issues exist beyond this list; however, stakeholder interviews commonly identified these issues as root the causes to many regional economic challenges that existed prior to or as after the pandemic. Each issue has a cyclical effect on the other, where the worsening of one issue aggravates and increases strain on all the other issues. If these issues are not properly addressed demographic and economic conditions will continue to be negatively impacted and challenges to economic recovery will continue to abound. Followed to its logical conclusion, if the quality of life for residents continues to degrade and the economic environment becomes unhealthy for the private sector, the ability to attract and retain people and businesses will become difficult, further feeding into a harmful loop. In addition, the inability to properly address existing challenges and treat root causes may also result in the development of new challenges, further taxing recovery and contributing to the worsening of the root issues.

These root issues and their residual effects not only obstruct efforts to recover to the economic environment experienced prior to the pandemic, but also hinder the advancement of the regional quality of life. As a result, regional public and private stakeholders and organizations have taken the first steps in identifying these issues

and have also begun to coordinate efforts to strategize ways to address them. While addressing these issues will take a considerable amount of coordination, collaboration, resources, effort, and time, the awareness and acknowledgement of these issues is an important and foundational step.

While confronting these root issues and their symptoms will be difficult, and at times may be impractical to fully tackle given their complex nature and scope, the last several years have proven that the public and private sectors, stakeholders, and organizations of the East Central region are nevertheless equipped with the professional and technical wherewithal to address them. In support of these efforts, ECWRPC must continue to encourage investment in the region's communities, monitor data indicative of challenges, and consistently coordinate public and private efforts at the regional, county, and local levels. Made evident during and following the pandemic, the East Central region is comprised of resilient businesses, organizations, and people. Despite the challenges placed on all sectors of the regional economy by the pandemic, this network of resiliency was, and continues to be, the impetus for the gradual recovery and further development of the regional economy.

## BIBLIOGRAPHY

- Associated General Contractors of America. 2021, May. "Construction Inflation Alert." *Associated General Contractors of America*. [https://www.agc.org/sites/default/files/AGC%202021%20Inflation%20Alert\\_Version2\\_1.pdf](https://www.agc.org/sites/default/files/AGC%202021%20Inflation%20Alert_Version2_1.pdf)
- Barthel, M., Matsa, K. E., Worden, K. 2020, October 29. "Coronavirus-Driven Downturn Hits Newspapers Hard as TV News Thrives." *Pew Research Center*. <https://www.pewresearch.org/journalism/2020/10/29/coronavirus-driven-downturn-hits-newspapers-hard-as-tv-news-thrives/#:~:text=Newspaper%20companies%20have%20been%20hit,the%20second%20quarter%20of%202019>
- Board of Regents of the University of Wisconsin System. 2021, October 7. "Business and Finance Committee." *University of Wisconsin System*. [https://www.wisconsin.edu/regents/download/meeting\\_materials/2021\\_meeting\\_materials/Meeting-Book\\_-\\_Business-&Finance-Committee-Meeting-\(October-7,-2021\).pdf](https://www.wisconsin.edu/regents/download/meeting_materials/2021_meeting_materials/Meeting-Book_-_Business-&Finance-Committee-Meeting-(October-7,-2021).pdf)
- Brewer, D., Gregory, R., O'Neill, D. 2020. "Responding to COVID-19: Six Things Retailers Should do to Keep Calm and Carry On." *Oliver Wyman*. [https://www.marshmcclennan.com/content/dam/mmc-web/insights/publications/2020/march/OW\\_Retailers\\_Responding\\_to\\_COVID19.pdf](https://www.marshmcclennan.com/content/dam/mmc-web/insights/publications/2020/march/OW_Retailers_Responding_to_COVID19.pdf)
- Bureau, G. & Stampen, J. 2021, February 25. "Economic Crisis/COVID-19 5th Manufacturer Pulse Survey." *Wisconsin Manufacturing Extension Partnership (WMEP)*. [https://www.wpr.org/sites/default/files/5th\\_pulse\\_survey\\_presentation\\_-\\_wmeep\\_webinar\\_2-24-21\\_final\\_full\\_deck.pdf](https://www.wpr.org/sites/default/files/5th_pulse_survey_presentation_-_wmeep_webinar_2-24-21_final_full_deck.pdf)
- Bureau, G. 2022, April 29. "Wisconsin Manufacturer Report April 2022 Follow-up Pulse Survey." *Wisconsin Manufacturing Extension Partnership (WMEP)*. <https://www.wpr.org/sites/default/files/wmeppulseapril2022.pdf>
- Cameron, P. 2020, October 20. "Wisconsin Schools 'Whipsawing' as COVID-19 Hits Rural Districts." *Wisconsin Watch*. <https://wisconsinwatch.org/2020/10/wisconsin-schools-whipsawing-as-covid-19-hits-rural-districts/>
- Colliers International. 2020. "Research Market Report Wisconsin 2020 Mid-Year Investment Report." *Colliers International*. <https://s3.documentcloud.org/documents/7043070/2020-MidYear-Investment-Report.pdf>
- Colliers International. 2021. "Research Market Report Wisconsin 2021 Mid-Year Investment Report." *Colliers International*. <https://www.colliers.com/en/research/milwaukee/2021-midyear-investment-market-report>
- Deller, C., S. 2019, August. "The Contribution of Agriculture to the Wisconsin Economy: An Update for 2017." *Department of Agricultural and Applied Economics Center for Community Economic Development University of Wisconsin-Madison*. <https://economicdevelopment.extension.wisc.edu/files/2019/08/Contribution-of-Ag-to-WI-Econ-4-Update.pdf>
- Dorn, E., Hancock, B., Sarakatsannis, J. Viruleg, E. 2021, July 27. "COVID-19 and Education: The Lingering Effects of Unfinished Learning." *McKinsey & Company*. <https://www.mckinsey.com/industries/education/our-insights/covid-19-and-education-the-lingering-effects-of-unfinished-learning>
- ECWRPC. 2023, May. "Main Street Bounceback Grant Program Final Report." *East Central Wisconsin Regional Planning Commission*. <https://www.ecwrpc.org/wp-content/uploads/2023/05/Main-Street-Bounceback-Grant-Program-Final-Report.pdf>
- EMSIkb. 2023. "Gross Regional Product (GRP)." *Economic Modeling Specialists, Intl*. [https://kb.emsidata.com/glossary/gross-regional-product-or-grp-i0/#:~:text=Gross%20Regional%20Product%20\(GRP\)%20is,in%20the%20region%20of%20study](https://kb.emsidata.com/glossary/gross-regional-product-or-grp-i0/#:~:text=Gross%20Regional%20Product%20(GRP)%20is,in%20the%20region%20of%20study)
- Fath, E., Meyer, J., Bush, D., Kammerud, J., Soldner, R. 2020, December. "Report on Virtual Instruction and School Operations During the Public Health Emergency." *Wisconsin Department of Public Instruction*. [https://dpi.wi.gov/sites/default/files/imce/policy-budget/pdf/Report\\_on\\_Virtual\\_Instruction\\_and\\_School\\_Ops.pdf](https://dpi.wi.gov/sites/default/files/imce/policy-budget/pdf/Report_on_Virtual_Instruction_and_School_Ops.pdf)
- Flanders, W. 2021, February. "Policy Brief Dreams Deferred: The Economic Cost of Learning Loss In Wisconsin." *Wisconsin Institute for Law & Liberty*. <https://will-law.org/wp-content/uploads/2021/02/COVID-Learning-Loss-2021-final.pdf>

## BIBLIOGRAPHY

- Freddie Mac. 2021, March 16. "Annual Housing Activities Report 2020." *Federal Home Loan Mortgage Corporation*. [https://www.freddiemac.com/about/pdf/AHAR2020\\_Report.pdf](https://www.freddiemac.com/about/pdf/AHAR2020_Report.pdf)
- Godfrey, M., & Woldt, J. 2020. "An Update to Manufacturing in Wisconsin through the Coronavirus – The Good, The Bad and The Cautiously Optimistic." *University of Wisconsin-Oshkosh Center for Customized Research and Services*. <https://uwosh.edu/ccrs/an-update-to-Manufacturing-in-wisconsin-through-the-coronavirus/>
- Hirshberg, M., Davidson, R., Goldberg, S. 2022. "Educators Are Not Alright: Mental Health During COVID-19." *Center for Healthy Minds*. <https://centerhealthyminds.org/assets/files-publications/Hirshberg-et-al-2022-Educators-are-not-alright-Author-accepted-copy.pdf>
- Horowitz, J. 2023, April 10. "American Offices are Half-Empty. That Could be the Next Big Risk for Banks." *Cable News Network*. <https://www.cnn.com/2023/04/10/business/commercial-real-estate-banks-offices/index.html>
- Knapp, D. 2020, June. "Economic Activity in a Pandemic: Wisconsin Taxable Sales in March & April." *Forward Analytics*. <https://www.forward-analytics.net/wp-content/uploads/2020/06/2020-Economic-Activity-in-a-Pandemic.pdf>
- Lightcast. 2023. "How We Do It." *Lightcast*. <https://www.economicmodeling.com/company/>
- Matzek, M. 2021, September. "Driving Forward." *Insight on Manufacturing* 15, no. 5. [https://www.insightonbusiness.com/insightonManufacturing/articles/coverstory/driving-forward/article\\_e2e409c2-14ab-11ec-b129-df99afe05fc6.html](https://www.insightonbusiness.com/insightonManufacturing/articles/coverstory/driving-forward/article_e2e409c2-14ab-11ec-b129-df99afe05fc6.html)
- New North. 2022. "Regional Broadband Access Study." *New North*. [https://www.thenewnorth.com/wp-content/uploads/2022/02/Final\\_NN\\_Regional\\_Broadband\\_Access\\_Study\\_220223-1.pdf](https://www.thenewnorth.com/wp-content/uploads/2022/02/Final_NN_Regional_Broadband_Access_Study_220223-1.pdf)
- North East Wisconsin Manufacturing Alliance. 2020, December. "2021 Manufacturing Vitality Index." *NEW Manufacturing Alliance*. <https://newmfgalliance.org/wp-content/uploads/2020/12/Vitality-Study-12-8-2020.pdf>
- North East Wisconsin Manufacturing Alliance. 2021, December. "2022 Manufacturing Vitality Index." *NEW Manufacturing Alliance*. [https://newmfgalliance.org/wp-content/uploads/2021/12/2022\\_Vitality\\_Index.pdf](https://newmfgalliance.org/wp-content/uploads/2021/12/2022_Vitality_Index.pdf)
- North East Wisconsin Manufacturing Alliance. 2022, December. "2023 Manufacturing Vitality Index." *NEW Manufacturing Alliance*. <https://newmfgalliance.org/wp-content/uploads/2022/12/2023-Vitality-Index.pdf>
- Outagamie County Department of Development and Land Services. 2022, June. "Fox Cities and Greater Outagamie County Regional Housing Strategy." *Outagamie County Department of Development and Land Services*. <https://www.outagamie.org/home/showpublisheddocument/89815/637903702165130000>
- Simonson, K. 2020. "The Economic Impact of Construction in the United States and Wisconsin." *Associated General Contractors of America*. <https://www.agc.org/sites/default/files/Files/Construction%20Data/WI.pdf>
- Spaeth-Bauer, C. 2020, April 1. "Stark Reality on Wisconsin Dairy Farms Impacted by COVID-19." *Wisconsin State Farmer*. <https://www.wisfarmer.com/story/news/2020/04/01/stark-reality-dairy-farms-wisconsin-impacted-covid-19/5107329002/>
- State of Wisconsin Department of Health Services. 2020, March 25. "Emergency Order #12 Safer at Home Order." *State of Wisconsin Department of Health Services*. <https://evers.wi.gov/Documents/COVID19/EMO12-SaferAtHome.pdf>
- United States Bureau of Economic Analysis. 2023. "Data." *United States Department of Commerce*. <https://www.bea.gov/>
- United States Bureau of Labor Statistics. 2023. "Local Area Unemployment Statistics." *United States Department of Labor*. <https://www.bls.gov/lau/>

## BIBLIOGRAPHY

- United States Bureau of Labor Statistics. 2023. "Quarterly Census of Employment and Wages: Questions and Answers (Q&A)." *United States Department of Labor*. <https://www.bls.gov/cew/questions-and-answers.htm>
- United States Census Bureau. 2022. "North American Industrial Classification System." *United States Census Bureau*. [https://www.census.gov/naics/reference\\_files\\_tools/2022\\_NAICS\\_Manual.pdf](https://www.census.gov/naics/reference_files_tools/2022_NAICS_Manual.pdf)
- United State Census Bureau. 2023, June 12. "Monthly State Retail Sales." *United State Census Bureau*. <https://www.census.gov/library/visualizations/interactive/monthly-state-retail-sales.html>
- United States Chamber of Commerce. 2020, July. "Commercial Construction Index: Q2 2020." *United States Chamber of Commerce*. [https://www.uschamber.com/assets/documents/2020\\_cci\\_q2.final.pdf](https://www.uschamber.com/assets/documents/2020_cci_q2.final.pdf)
- United States Chamber of Commerce. 2020, December. "Commercial Construction Index: Q4 2020." *United States Chamber of Commerce*. [https://www.uschamber.com/assets/archived/images/2020\\_cci\\_q4.final\\_.pdf](https://www.uschamber.com/assets/archived/images/2020_cci_q4.final_.pdf)
- United States Chamber of Commerce. 2021, December. "Commercial Construction Index: Q4 2021." *United States Chamber of Commerce*. <https://www.uschamber.com/assets/documents/Q4-2021-CCI-Report.pdf>
- University of Wisconsin System. 2020. "Annual Financial Report 2020." *Office of Finance University of Wisconsin System*. [https://www.wisconsin.edu/financial-administration/download/university\\_of\\_wisconsin\\_system\\_annual\\_financial\\_reports/University-of-Wisconsin-System---AFR-2020-Final.pdf](https://www.wisconsin.edu/financial-administration/download/university_of_wisconsin_system_annual_financial_reports/University-of-Wisconsin-System---AFR-2020-Final.pdf)
- University of Wisconsin System. 2021. "Annual Financial Report 2021." *Office of Finance University of Wisconsin System*. [https://www.wisconsin.edu/financial-administration/download/university\\_of\\_wisconsin\\_system\\_annual\\_financial\\_reports/University-of-Wisconsin-System---AFR-2021-Final.pdf](https://www.wisconsin.edu/financial-administration/download/university_of_wisconsin_system_annual_financial_reports/University-of-Wisconsin-System---AFR-2021-Final.pdf)
- Veligura, N., Chan, K., Cufre, G., Ingen, F. 2020, May. "COVID-19's Impact on the Global Telecommunications Industry." *Global Infrastructure Department International Finance Corporation*. [https://www.ifc.org/wps/wcm/connect/1d490aec-4d57-4cbf-82b3-d6842eecd9b2/IFC-Covid19-Telecommunications\\_final\\_web\\_2.pdf?MOD=AJPERES&CVID=n9nxogP](https://www.ifc.org/wps/wcm/connect/1d490aec-4d57-4cbf-82b3-d6842eecd9b2/IFC-Covid19-Telecommunications_final_web_2.pdf?MOD=AJPERES&CVID=n9nxogP)
- Wegenke, R. & Larson, R. 2020. "Impact of COVID-19 on Wisconsin Private, Nonprofit College and Universities." *Wisconsin Association of Independent Colleges and Universities*. [https://www.wpr.org/sites/default/files/waicu\\_covid-19\\_losses\\_infographic.pdf](https://www.wpr.org/sites/default/files/waicu_covid-19_losses_infographic.pdf)
- Wisconsin Builders Association. 2021. "Badger Builder." Wisconsin Builder Association. Issues 2, 4. <https://www.wisbuild.org/badger-builder>
- Wisconsin Department of Natural Resources. 2020. "Impact of COVID-19 on Wisconsin Forest Products Industry." *Wisconsin Department of Natural Resources*. [https://dnr.wisconsin.gov/sites/default/files/topic/ForestBusinesses/economicImpact\\_covid19.pdf](https://dnr.wisconsin.gov/sites/default/files/topic/ForestBusinesses/economicImpact_covid19.pdf)
- Wisconsin Department of Workforce Development. 2023. "Wisconsin LMI Data Access." *State of Wisconsin Department of Workforce Development*. <https://jobcenterofwisconsin.com/WisConomy/query>
- Wisconsin Economic Development Corporation. 2021, June 2. "Manufacturing Tomorrow." *Wisconsin Economic Development Corporation*. <https://inwisconsin.com/key-industries-in-wisconsin/Manufacturing/>
- Wisconsin Economic Development Corporation. 2020, June 30. "Wisconsin Tomorrow an Economy for All." *Wisconsin Economic Development Corporation*. Pg. 58. [https://wedc.org/wp-content/uploads/2020/06/Wisconsin\\_Tomorrow\\_Single\\_Page\\_Layout.pdf](https://wedc.org/wp-content/uploads/2020/06/Wisconsin_Tomorrow_Single_Page_Layout.pdf)
- Wisconsin Realtors Association. 2020. "Wisconsin Housing Statistics." *Wisconsin Realtors Association*. <https://www.wra.org/HousingStatistics/>
- Wisconsin Restaurant Association. 2021, March 2. "Survey Shows Devastating Impact of Pandemic on Restaurants Continues." *Wisconsin Restaurant Association*. <https://web.wirerestaurant.org/news/newsarticledisplay.aspx?ArticleID=7>



