The Power of Partnerships: Cross-Sector Insights Shaping Michigan's Energy Workforce

June 17, 2025

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MICHIGAN
**Center for Data
and Analytics**

Who We Are

The Michigan Center for Data and Analytics provides the state with the expertise to analyze data, understand challenges, and evaluate solutions.

Through data, reporting, and analysis, the MCDA provides partners with the information and insights they need to make evidence-based decisions.

Agenda

- Economic Context
- Energy/Utilities Focus
- Staffing Patterns and Allied Sectors
- Projections and Education
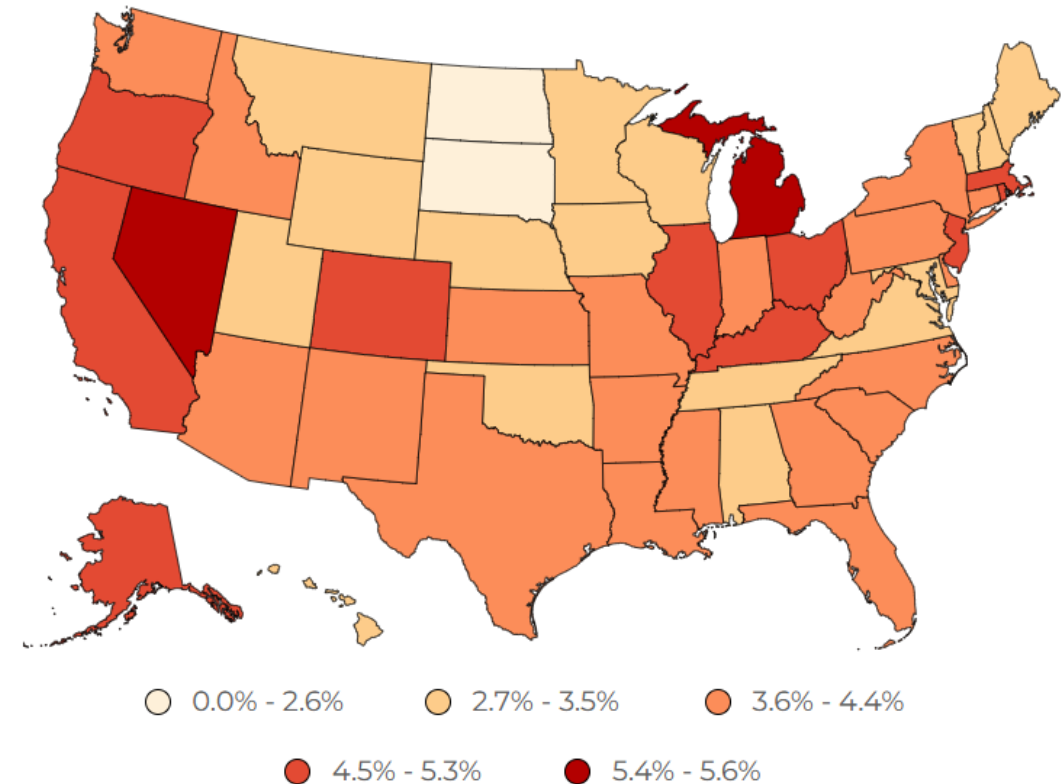- Other State Products

Who We Are

- The **research and analytics** teams focus on leveraging data to drive informed decisions through advanced research and cross-agency collaboration.

- The **demography** team advises on Michigan's population and demographic data and manages the state's relationship with the U.S. Census Bureau.

- The **labor market information** team produces Michigan employment, occupation, and industry data through partnerships with U.S. Department of Labor.

- The **Chief Privacy Officer and team** are responsible for: legal compliance, data sharing agreements; developing, implementing, and maintaining a statewide privacy program; developing policies, procedures, and guidelines for data management.
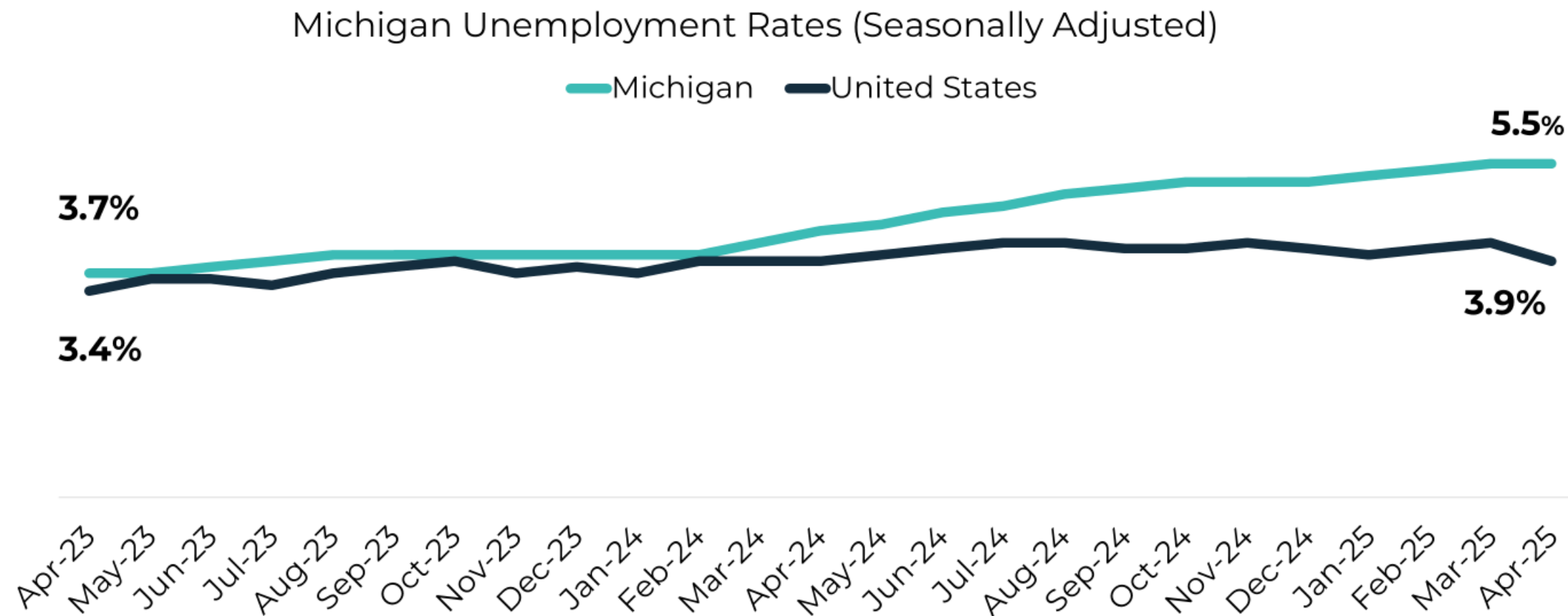
Economic Context

Unemployment Rate

- Michigan's unemployment rate measured 5.5 percent in April 2025.

- The national unemployment rate was 3.9 percent in April 2025.

- Michigan had the second highest unemployment rate in the nation. Only Nevada had a greater rate (5.6 percent).

- Ohio had a rate of 4.9 percent, top among neighboring states.
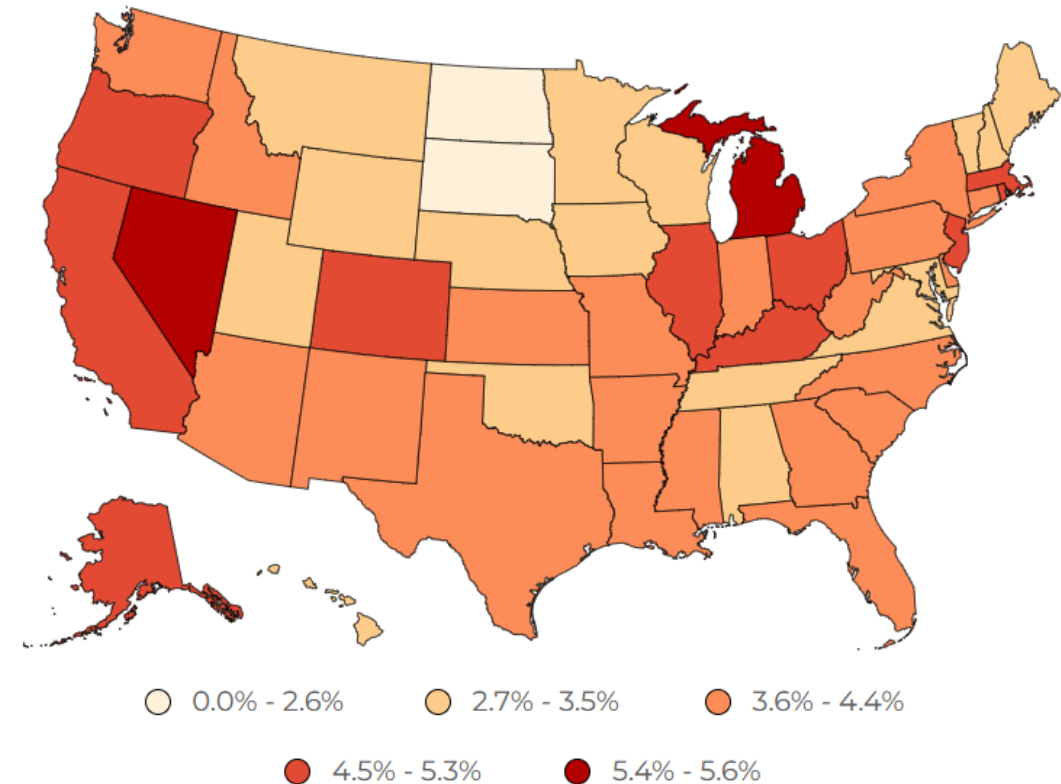
Unemployment Rate by State

- 0.0% - 2.6%
- 2.7% - 3.5%
- 3.6% - 4.4%
- 4.5% - 5.3%
- 5.4% - 5.6%

Source: *Current Population Survey (CPS), Michigan Center for Data and Analytics, DTMB*

Michigan's unemployment rate has continued to steadily increase since the lows of April 2023 to May 2023, when rates were at 3.7 percent.

Michigan Unemployment Rates (Seasonally Adjusted)

—— Michigan —— United States

5.5%

3.7%

3.4%

3.9%

Apr-23 May-23 Jun-23 Jul-23 Aug-23 Sep-23 Oct-23 Nov-23 Dec-23 Jan-24 Feb-24 Mar-24 Apr-24 May-24 Jun-24 Jul-24 Aug-24 Sep-24 Oct-24 Nov-24 Dec-24 Jan-25 Feb-25 Mar-25 Apr-25

Unemployment Rate (Why?)

- Several factors impact unemployment rates.

- Michigan has historically had a higher rate than most states.

- Recent increases vary across demographics and industries.

- Link to recent "insights" article on the topic

Unemployment Rate by State

Legend:
- 0.0% - 2.6%
- 2.7% - 3.5%
- 3.6% - 4.4%
- 4.5% - 5.3%
- 5.4% - 5.6%

Source: Current Population Survey (CPS), Michigan Center for Data and Analytics, DTMB
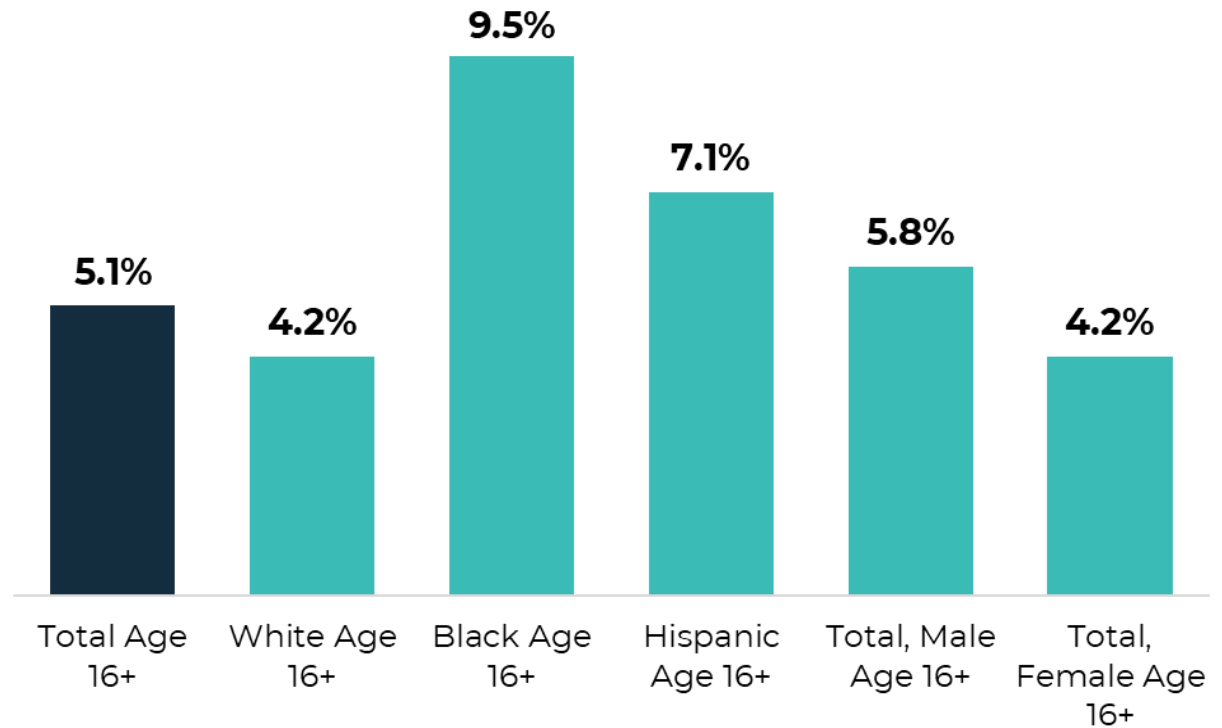
Unemployment Demographics

- Rates vary by demographics.

- This is partially due to geographic and industrial variations across groups.

- Gaps between groups narrowed during the post-covid recovery but have since grown slightly again.

Unemployment Rate by Demographic, April 2025

Total Age 16+	White Age 16+	Black Age 16+	Hispanic Age 16+	Total, Male Age 16+	Total, Female Age 16+
5.1%	4.2%	9.5%	7.1%	5.8%	4.2%

Source: Current Population Survey (CPS), Michigan Center for Data and Analytics, DTMB

Those ages 16 to 24 had the highest unemployment rate in Michigan. Those ages 55 to 64 had the lowest unemployment rate at 2.7 percent.

Michigan Unemployment Rates by Age Group, April 2025

Age Group	Rate
16-24	11.9%
25-34	4.9%
35-44	4.6%
45-54	2.9%
55-64	2.7%
65+	4.6%
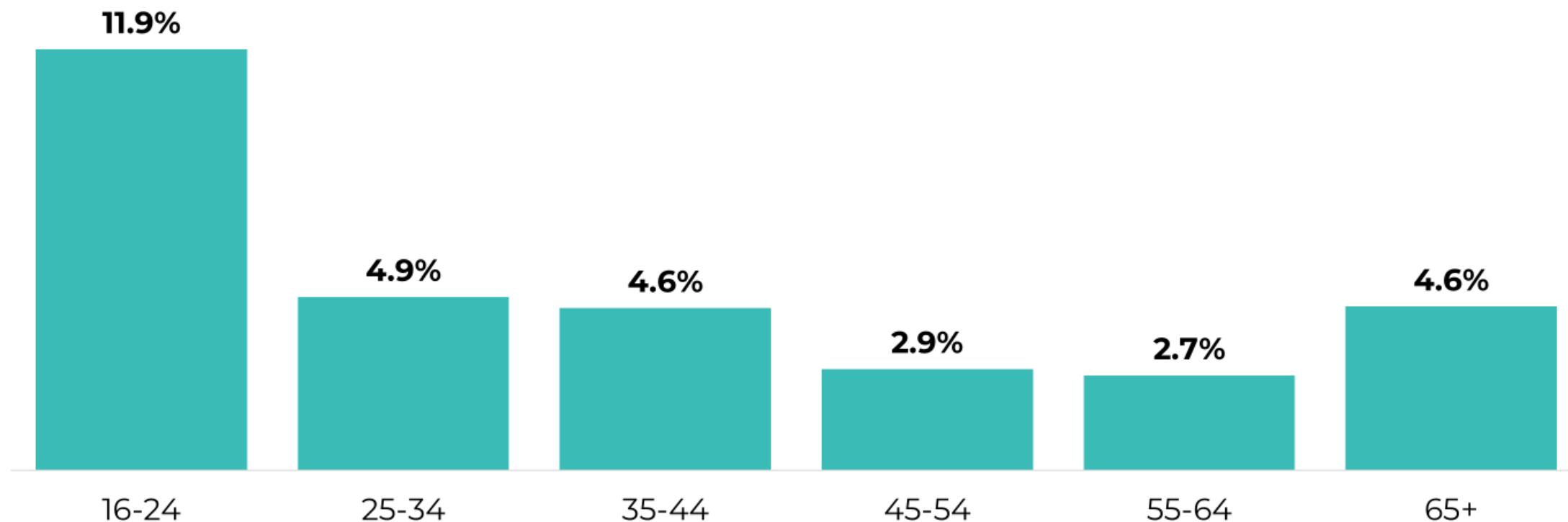
Unemployment Rate by Education (25+)

- Individuals with higher levels of education continue to have better economic outcomes.

- These data look at those 25 and above to allow for the completion of educational programs.

- Labor Force Participation Rates also climb with education.

- Data remains thin for training.

Unemployment Rate by Education, April 2025

Source: Current Population Survey (CPS), Michigan Center for Data and Analytics, DTMB
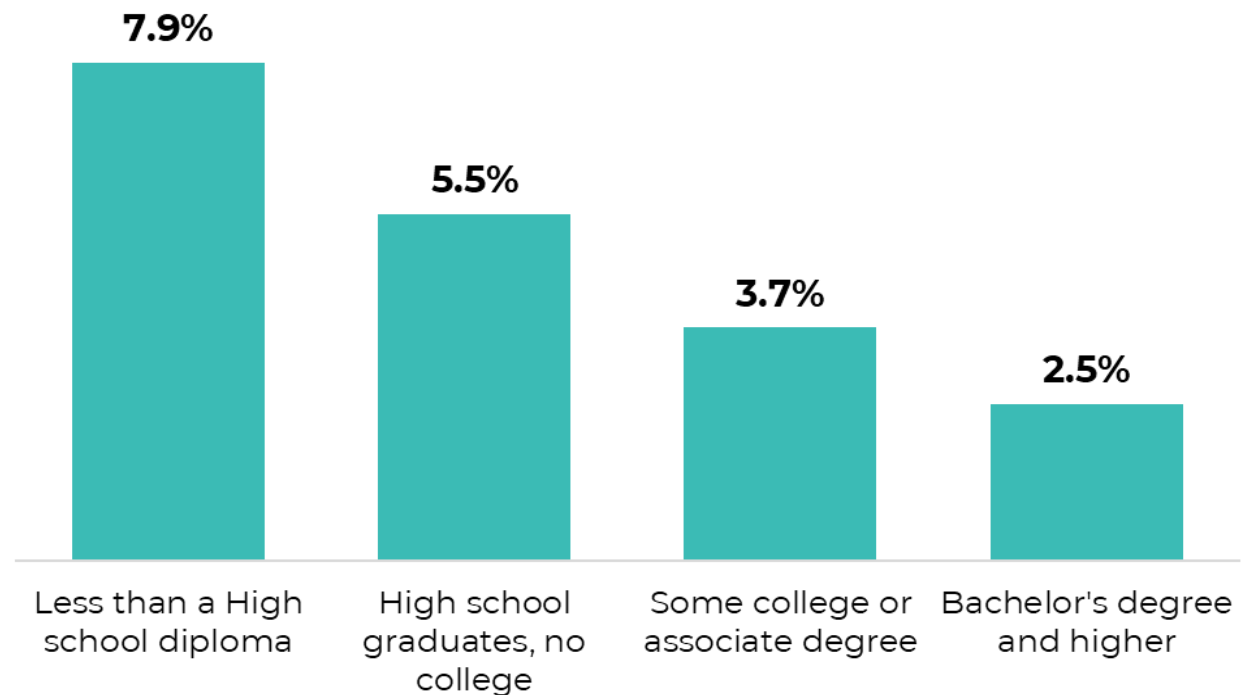
Utilities Employment

- Employment in *Utilities* has dipped slightly since 2024, decreasing 1.0 percent over the year.
    - Total nonfarm employment has increased 0.8 percent.

- *Utilities* employment has dropped 5.8 percent since April 2023.
    - Total nonfarm employment has increased 1.6 percent.

Utilities Employment by Year

| April 2023 | April 2024 | April 2025 |
| 20,800 | 19,800 | 19,600 |
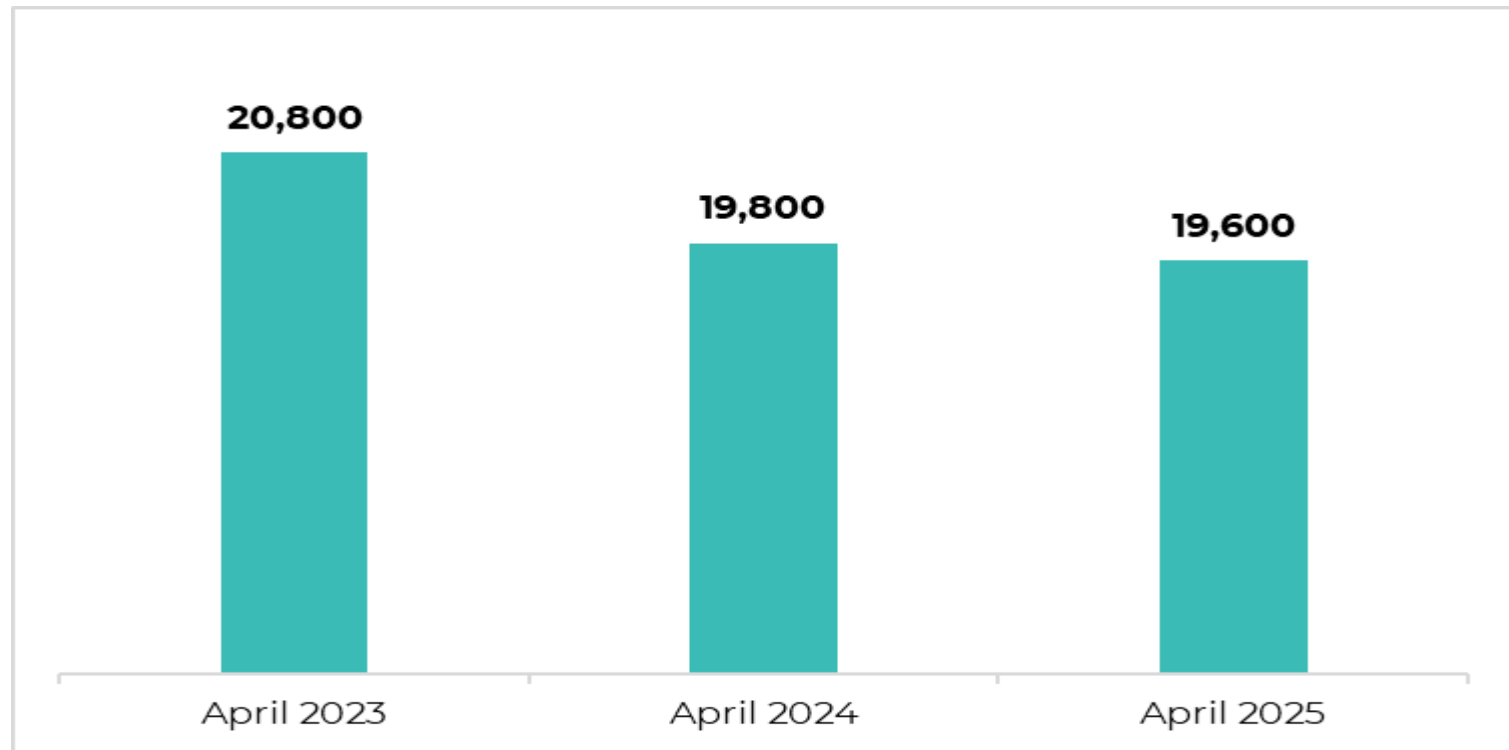
Source: Current Employment Statistics, Michigan Center for Data and Analytics

In January 2025, continued unemployment insurance claims filed by *Utilities* industry workers reached the highest level since March 2023.
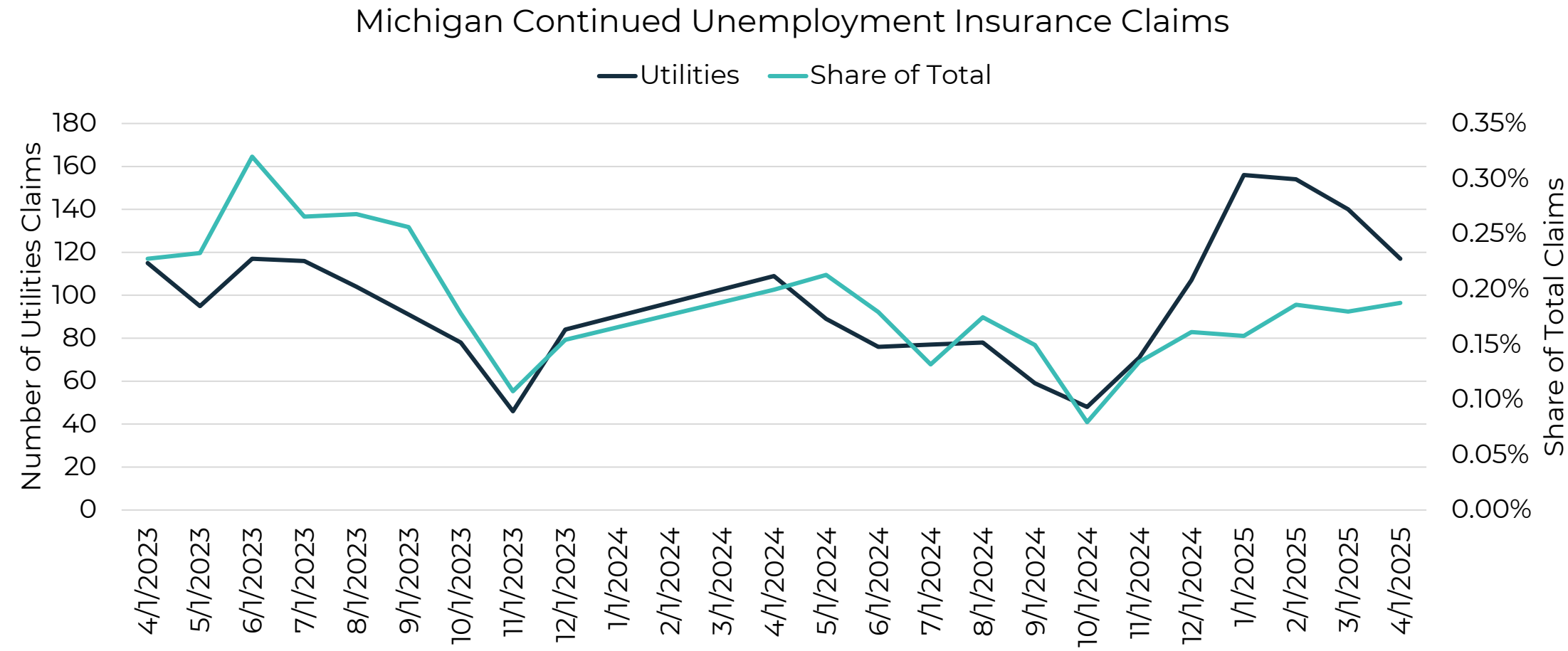
Michigan Continued Unemployment Insurance Claims
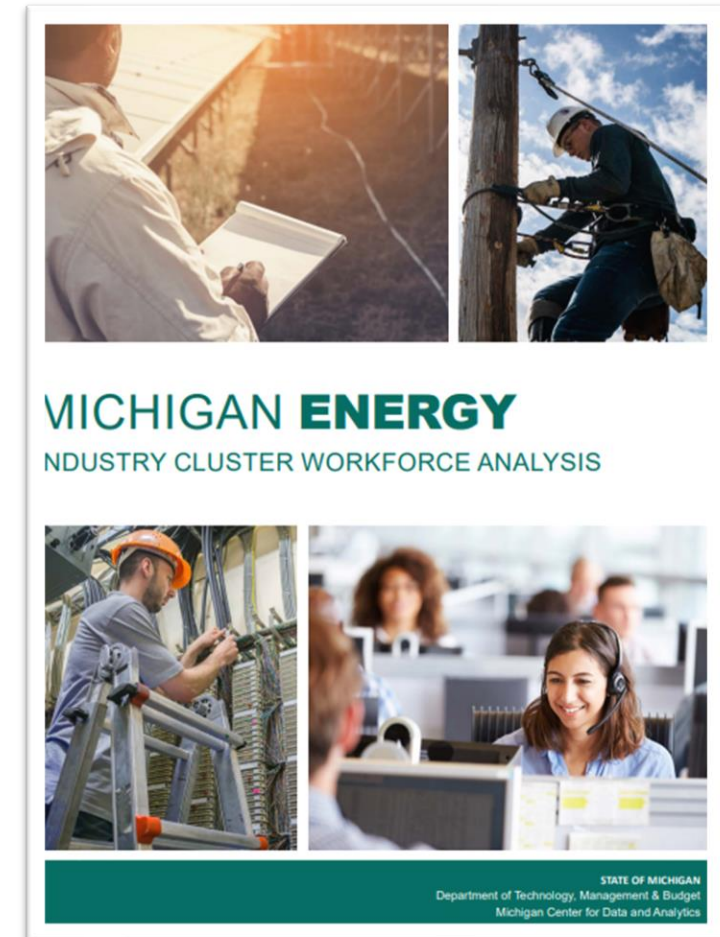
—— Utilities   —— Share of Total

Demographics

- Michigan's liaison to the U.S. Census Bureau for most programs, including population estimates and projections
  - Submits data inputs to improve the accuracy of Census Bureau population estimates for Michigan counties, cities, villages, and townships
  - Produces population projections for the state, counties, and by sex and five-year age cohorts

- Analysis of Michigan's population size and demographic composition
  - https://michigan.gov/lmisubscribe

- Advisors to state and local leaders, businesses, nonprofits, the media, and the public on key population trends and Census data

Michigan Statewide Population Projections through 2050

April 2024

MICHIGAN Center for Data and Analytics

Energy/Utilities Data

Energy Sector Analysis Report

- Our [latest energy sector report](#)was published June 2023.

- Prior to that we most recently published December 2019. Data trends mostly move slowly.

- Currently the center publishes 8 sector reports along with other occupational grouping reports.

MICHIGAN **ENERGY**
NDUSTRY CLUSTER WORKFORCE ANALYSIS

STATE OF MICHIGAN
Department of Technology, Management & Budget
Michigan Center for Data and Analytics

Current Energy Sector Industry Definition

- Energy Efficiency (48.1 percent)
- Utilities (27.9 percent)
- Wholesale (9.6 percent)
- Oil and Gas (7.6 percent)
- Electric Manufacturing (6.8 percent)

- Where does clean energy fall?

Energy Occupations

- In 2021, total sector employment was roughly 119,300 and has climbed to 121,780 in 2023. Michigan had roughly 3.8 million jobs in 2023.

- The largest occupations continue to be construction related: Electricians, Plumbers, HVAC Mechanics and Installers.

- The sector includes a total of 160 occupations (out of roughly 800 defined by the Feds).

Registered Apprenticeship Michigan Dashboard

- Michigan.gov/Apprenticeship

- Statewide and regional apprenticeship information by industry and occupation

- Real employment outcomes of apprenticeship completers

- Updated with data from RAPIDS and UI wage records

- Refreshed yearly, most recently with 2024 data in February 2025
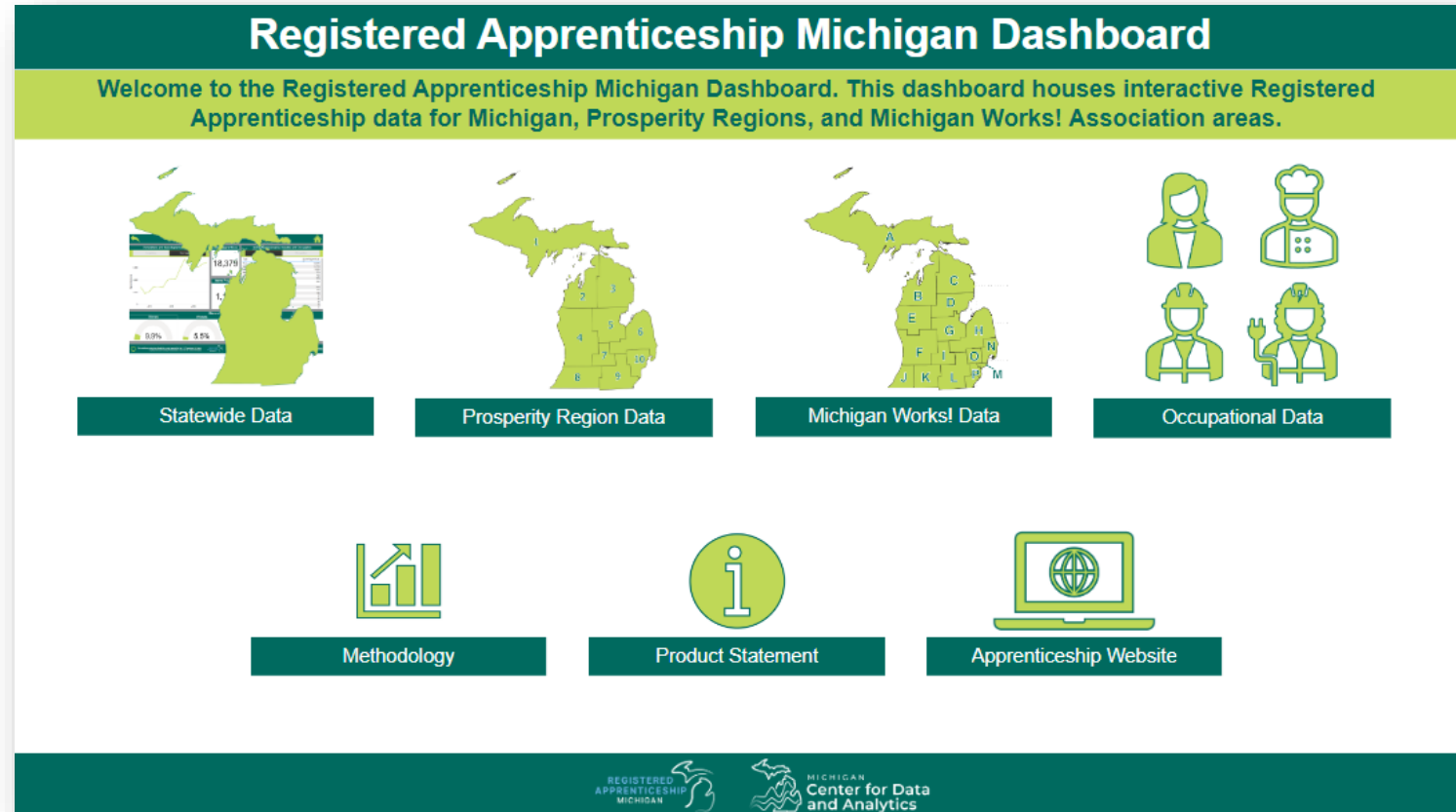
Registered Apprenticeship Michigan Occupational Data

Occupation

🔍 Search

- ○ Administrative Services Managers
- ○ Aircraft Mechanics and Service Technicians
- ○ Automotive Glass Installers and Repairers
- ○ Automotive Service Technicians and Mecha.
- ○ Bakers
- ○ Bookkeeping, Accounting, and Auditing Cle...
- ○ Brickmasons and Blockmasons
- ○ Bus and Truck Mechanics and Diesel Engin...
- ○ Camera Operators, Television, Video, and ...
- ○ Carpenters
- ○ Cement Masons and Concrete Finishers
- ○ Childcare Workers
- ○ Community Health Workers
- ○ Computer Numerically Controlled Tool Oper...
- ○ Computer Numerically Controlled Tool Prog...
- ○ Computer Occupations, All Other
- ○ Computer User Support Specialists
- ○ Conservation Scientists
- ○ Construction and Building Inspectors
- ○ Construction and Related Workers, All Other
- ○ Construction Laborers
- ○ Control and Valve Installers and Repairers, ...
- ○ Cooks, Restaurant
- ○ Correctional Officers and Jailers
- ○ Customer Service Representatives
- ○ Dental Assistants
- ○ Electric Motor, Power Tool, and Related Re...
- ○ Electrical and Electronic Engineering Techn...

Selected Occupation

Electrical Power-Line Installers and Repairers

Active Apprentices

509

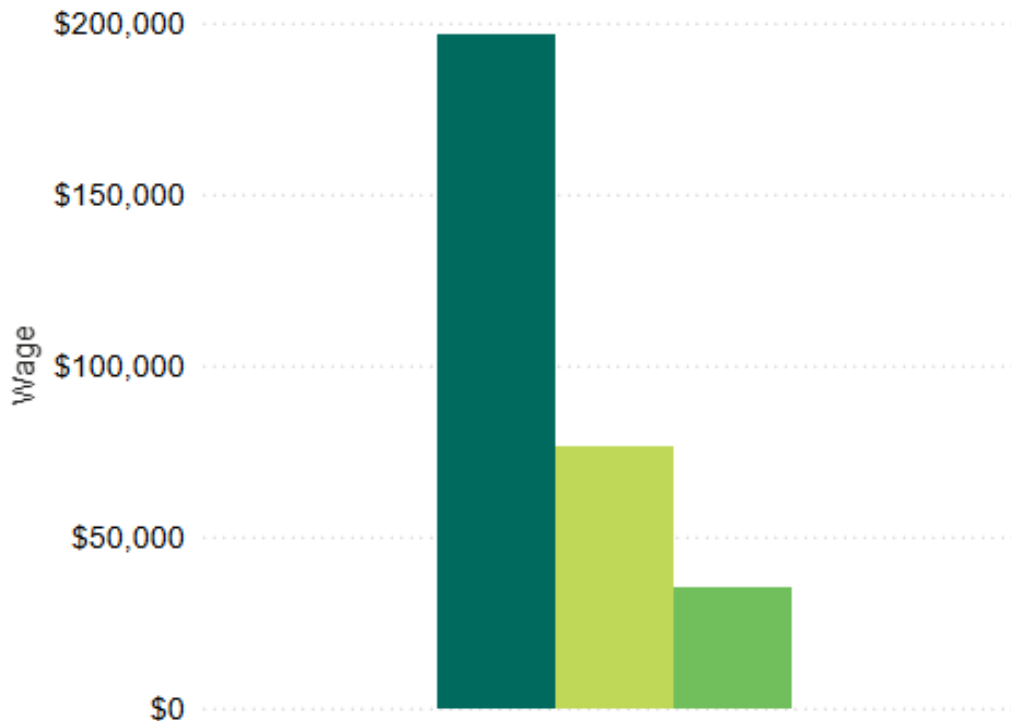## Completers and New Apprentices by Year

Completers | New Apprentices

Annual Occupational Wage Data

● One-Year-After Wage ● Occupation Starting Wage ● All Occupation Starting Wage

Completion Rate

43.9%

78.0%

REGISTERED APPRENTICESHIP MICHIGAN

MICHIGAN Center for Data and Analytics

Note: Data updated through 2024 in February 2025

Construction saw a record number of new registered apprentices in 2024 while growth among nontraditional industries has outpaced that of Manufacturing over the year.

New Registered Apprentices by Industry, 2008–2024

Construction

Nontraditional

Manufacturing
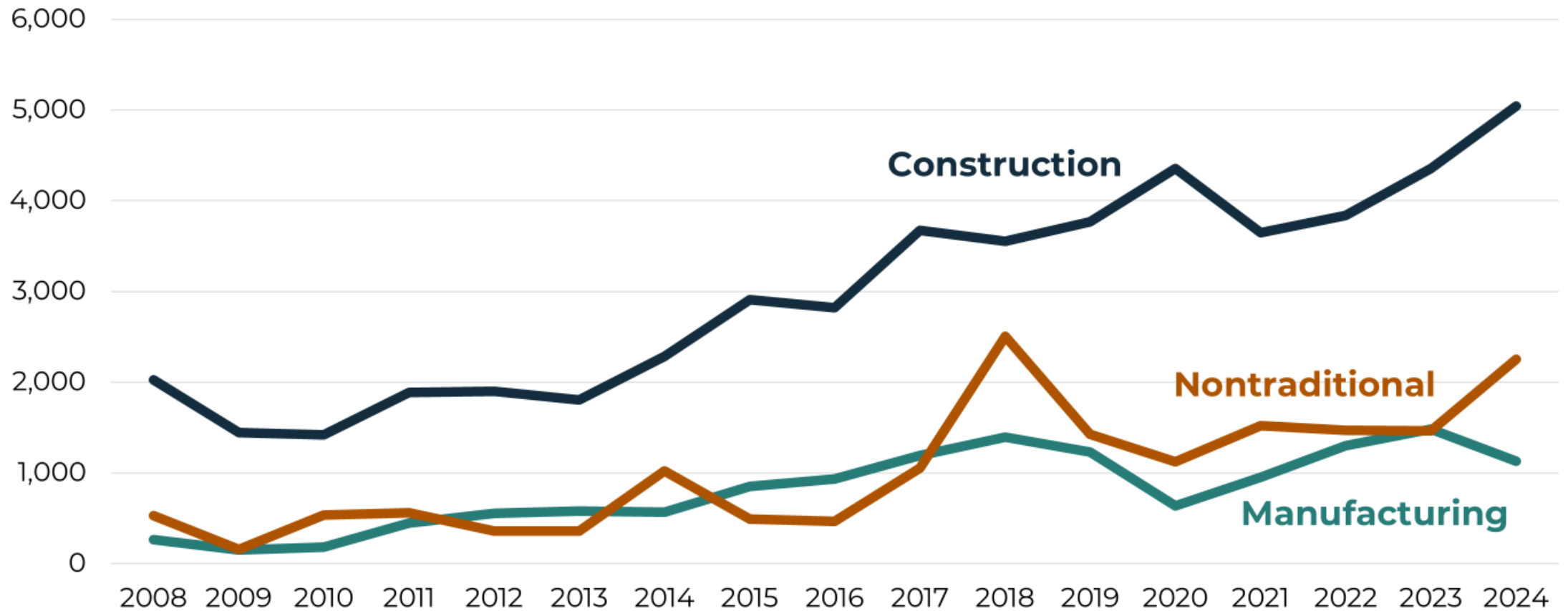
Source: Registered Apprenticeship Partners Information Data System (RAPIDS), Office of Apprenticeship, U.S. Department of Labor

Utilities had the greatest median annual one-year-after wage among 2022 Registered Apprenticeship completers.

Industry	Median One-Year-After Wage	Employed	Total Completers	Employment Rate
Administrative and Support and Waste Management and Remediation Services	$48,840	27	30	90.0%
Construction	$82,110	923	992	93.0%
Educational Services	$76,670	26	28	92.9%
Health Care and Social Assistance	$39,950	26	26	100.0%
Manufacturing	$78,190	326	342	95.3%
Professional, Scientific, and Technical Services	$53,460	17	17	100.0%
Transportation and Warehousing	$58,720	27	30	90.0%
Utilities	$193,860	65	66	98.5%
Wholesale Trade	$76,730	13	14	92.9%

Millwrights had the highest completion rate among larger occupations. *Construction laborers* often feed into other occupations resulting in a much lower completion rate.

Completion Rates by Occupation, 2024

Overall Completion Rate for All Completers (43.9%)

Occupation	Rate
Millwrights	69.8%
Plumbers, Pipefitters, and Steamfitters	55.1%
Tool and Die Makers	52.7%
All Other Occupations	47.7%
Electricians	46.2%
Carpenters	28.3%
Construction Laborers	6.3%
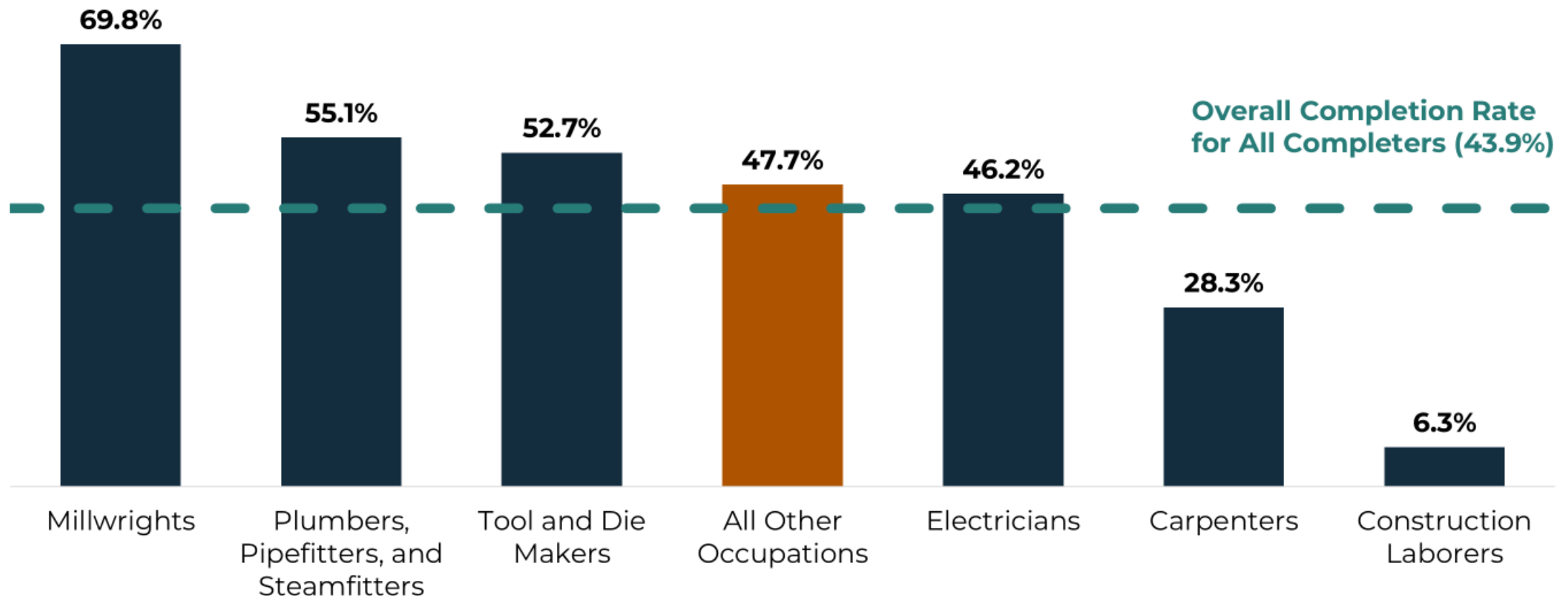
Staffing Patterns and Allied Sectors

Just over 60 percent of *Utilities* employment is concentrated in four occupation groups.
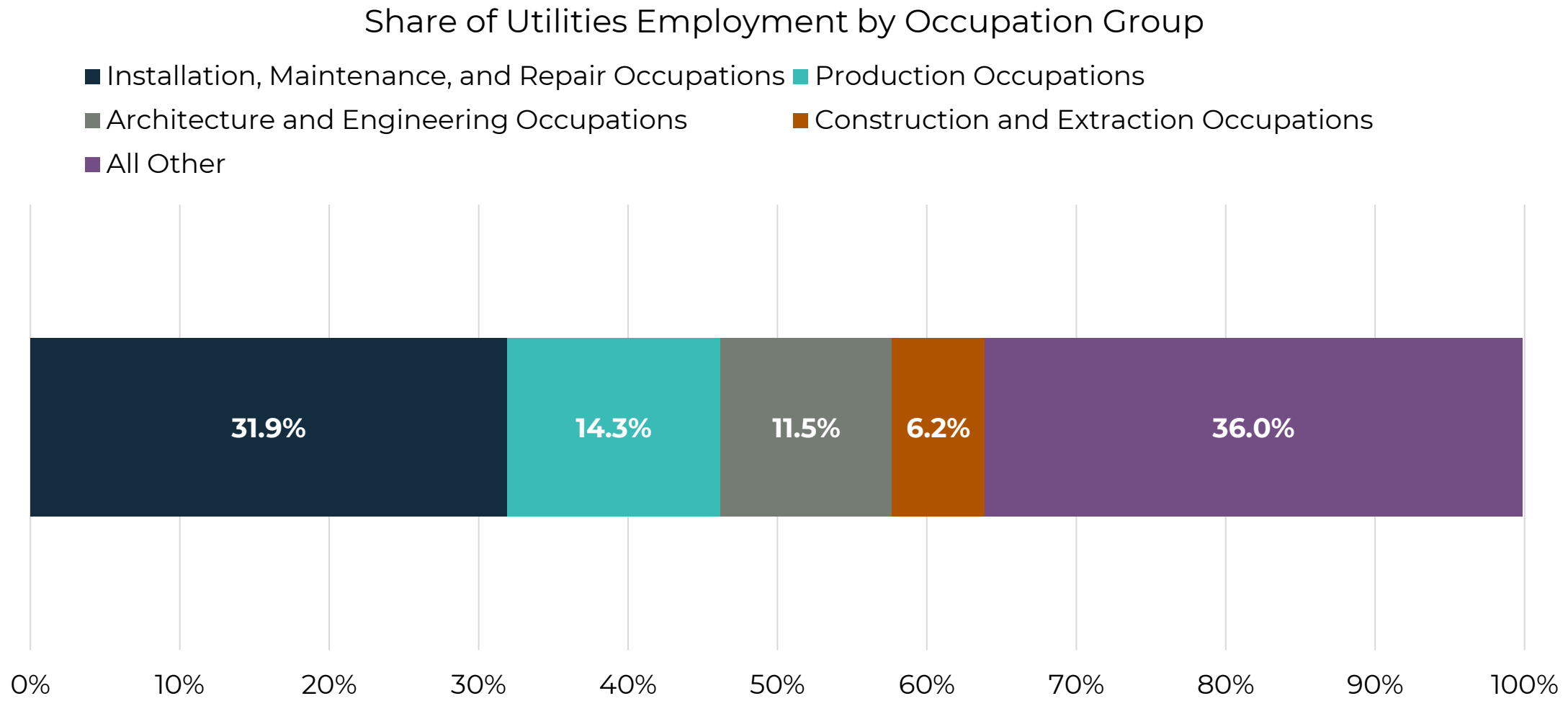
Share of Utilities Employment by Occupation Group

- ■ Installation, Maintenance, and Repair Occupations
- ■ Production Occupations
- ■ Architecture and Engineering Occupations
- ■ Construction and Extraction Occupations
- ■ All Other

| 31.9% | 14.3% | 11.5% | 6.2% | 36.0% |

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Top 15 Occupations in Selected Occupation Groups

- Top 15 occupations by employment in the four selected occupation groups

- Account for over 50 percent of industry employment

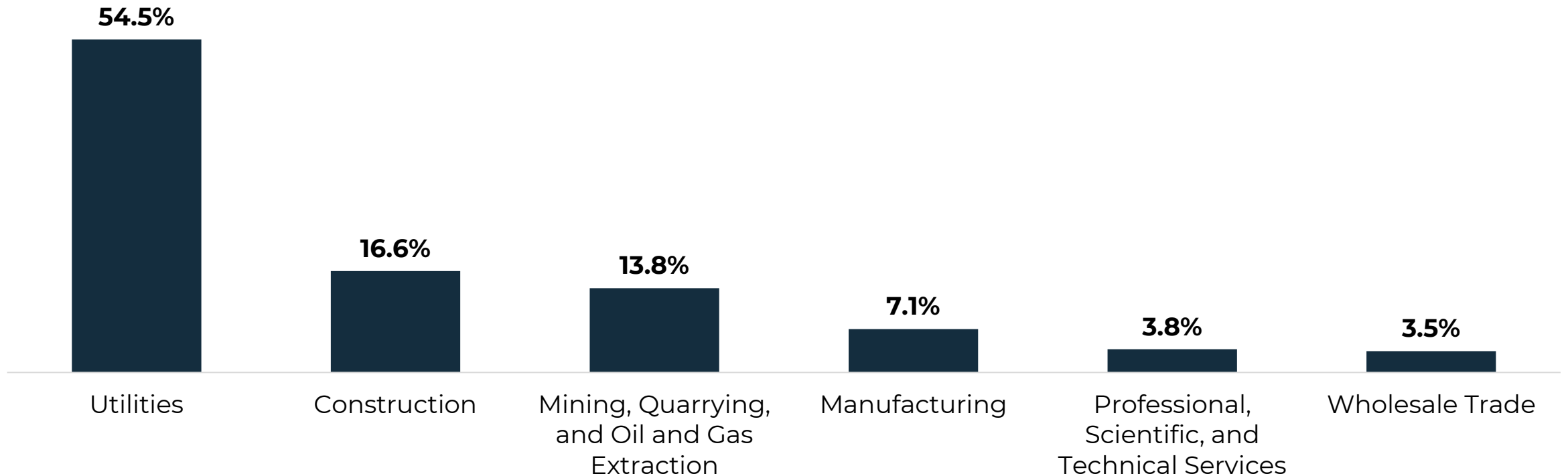| Occupation	Total Employment	Percent of Utilities Employment
Electrical Power-Line Installers and Repairers	2,200	11%
Control and Valve Installers and Repairers, Except Mechanical Door	2,120	11%
Electrical Engineers	1,290	6%
Power Plant Operators	1,020	5%
Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	760	4%
First-Line Supervisors of Mechanics, Installers, and Repairers	560	3%
Plumbers, Pipefitters, and Steamfitters	520	3%
First-Line Supervisors of Production and Operating Workers	490	2%
Power Distributors and Dispatchers	410	2%
Industrial Machinery Mechanics	370	2%
Gas Plant Operators	290	1%
Operating Engineers and Other Construction Equipment Operators	260	1%
Civil Engineers	210	1%
Electrical and Electronic Engineering Technologists and Technicians	200	1%
First-Line Supervisors of Construction Trades and Extraction Workers	180	1%
Total	**10,880**	**54%**

15 Selected *Utilities*-related occupations account for a substantial share of employment in several industries.

Share of Industry Employment in Selected *Utilities*-related Occupations

Industry	Share
Utilities	54.5%
Construction	16.6%
Mining, Quarrying, and Oil and Gas Extraction	13.8%
Manufacturing	7.1%
Professional, Scientific, and Technical Services	3.8%
Wholesale Trade	3.5%

Common occupations shared with *Utilities* varies by industry.

- *Construction*
  - *First-Line Supervisors of Construction Trades and Extraction Workers*
  - *Plumbers, Pipefitters, and Steamfitters*
  - *Operating Engineers and Other Construction Equipment Operators*

- *Manufacturing*
  - *First-Line Supervisors of Production and Operating Workers*
  - *Industrial Machinery Mechanics*

- *Professional, Scientific, and Technical Services*
  - *Civil Engineers*
  - *Electric Engineers*

Common occupations shared with *Utilities* varies by industry.

Employment by Comparison Industry for Selected Utilities-related Occupations

- Construction
- Manufacturing
- Mining, Quarrying, and Oil and Gas Extraction
- Professional, Scientific, and Technical Services
- Utilities
- Wholesale Trade

Gas Plant Operators
Power Distributors and Dispatchers
Electrical Repairers, Power, Substation, & Relay
Power Plant Operators
Electrical Engineering Technologists & Techs
Ctrl. & Valve Install. & Repairers, Ex. Mech. Door
Electrical Power-Line Installers and Repairers
Civil Engineers
Supervisors of Mechanics, Installers, & Repairers
Operating Engineers
Electrical Engineers
Plumbers, Pipefitters, and Steamfitters
Supervisors of Construction Workers
Industrial Machinery Mechanics
Supervisors of Production & Operating Workers

0   5,000   10,000   15,000   20,000   25,000

Employment by Comparison Industry for Selected Utilities-related Occupations

Legend:
- Construction
- Manufacturing
- Mining, Quarrying, and Oil and Gas Extraction
- Professional, Scientific, and Technical Services
- Utilities
- Wholesale Trade

Occupations (top to bottom):
- Gas Plant Operators
- Power Distributors and Dispatchers
- Electrical Repairers, Power, Substation, & Relay
- Power Plant Operators
- Electrical Engineering Technologists & Techs
- Ctrl. & Valve Install. & Repairers, Ex. Mech. Door
- Electrical Power-Line Installers and Repairers
- Civil Engineers
- Supervisors of Mechanics, Installers, & Repairers
- Operating Engineers
- Electrical Engineers
- Plumbers, Pipefitters, and Steamfitters
- Supervisors of Construction Workers
- Industrial Machinery Mechanics
- Supervisors of Production & Operating Workers

X-axis: 0, 5,000, 10,000, 15,000, 20,000, 25,000

Staffing Pattern Key Takeaways

- *Utilities* is a relatively distinct sector.

- *Construction*, *Mining*, and *Manufacturing* have the most overlap in related occupations.

- These occupations include potentially entry level as well as supervisor positions which typically require experience.

- Energy/Utilities is a sector filled with a wide variance in education and trading making potential workforce partners vary widely.

Projections and Education

Total Michigan Employment

- Michigan is expected to gain **25,010 total jobs** over the 2022–2032 period, about **0.6 percent**.

  - After historic job losses in 2020, 2022 saw two years of job gains and a full employment economy with an unemployment rate of 4.1 percent.

- Nearly **494,000 job openings** are expected each year through 2032.

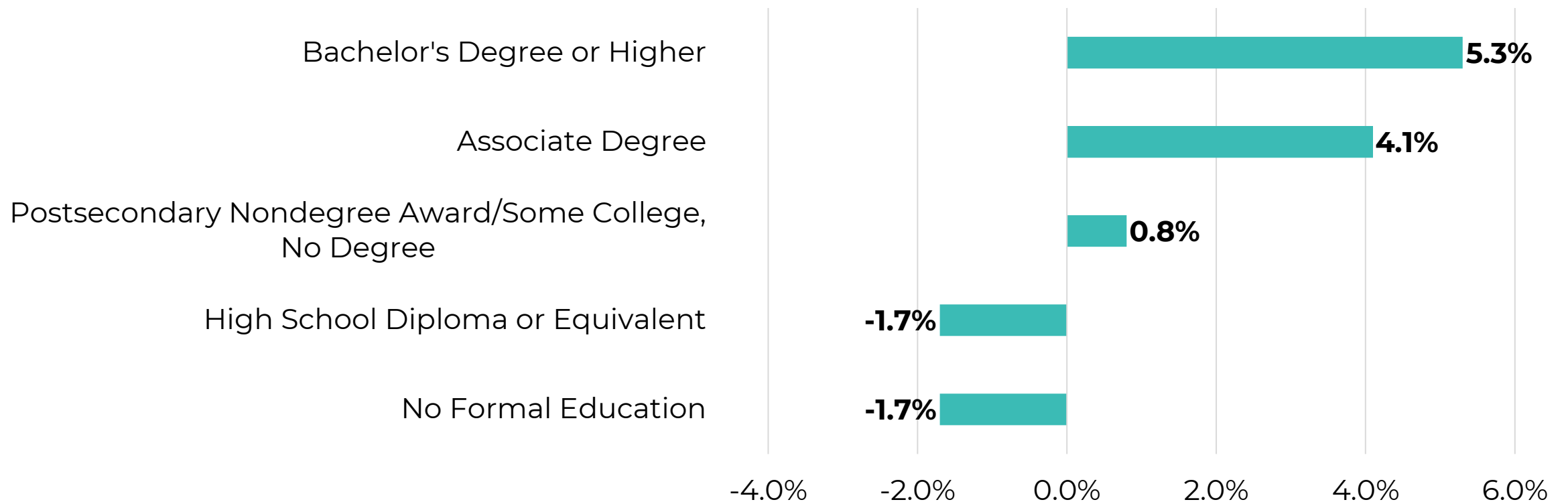| 2022	2032	Change	
4,524,550	4,549,560	+25,010	+0.6%

Energy Projections

- There are no total sector projections (limitations in Federal methods).

- The sector is made up of many high-growth occupations including those related to information technology, manufacturing, and business.

- Nearly half of all occupations require some amount of post-secondary education and almost all other occupations require some level of on-the-job training.

Top Occupational Groups for Job Growth

Title	2022	2032	10-Year Numeric Change	10-Year Percent Change
Healthcare Support	190,280	203,840	13,560	7.1%
Computer and Mathematical	122,140	128,460	6,320	5.2%
Healthcare Practitioner and Technical	294,870	307,890	13,020	4.4%
Community and Social Assistance	68,150	71,120	2,970	4.4%
Life, Physical, and Social Science	31,700	32,550	850	2.7%

Projected Job Growth by Education Group

Projected Growth by Education and Training Group

Education Group	Projected Growth
Bachelor's Degree or Higher	5.3%
Associate Degree	4.1%
Postsecondary Nondegree Award/Some College, No Degree	0.8%
High School Diploma or Equivalent	-1.7%
No Formal Education	-1.7%

Sources of Job Openings

Top Occupational Groups by Annual Job Openings

Occupational Group	Annual Job Openings
Food Preparation and Serving Related	68k
Office and Administrative Support	54k
Transportation and Material Moving	52k
Sales and Related	47k
Production	43k
Healthcare Support	31k
Management Occupations	25k
Business and Financial Operations	22k
Educational Instruction and Library	20k
Healthcare Practitioners and Technical	18k

Apprenticeship Takeaways

- Registered Apprenticeship programs in *Utilities* had an average length of about three years.
  - In total, there were 17 active *Utilities* Registered Apprenticeship programs training over 800 active registered apprentices.
  - A majority of these programs train registered apprentices as *Electrical power-line installers and repairers* and *Construction laborers*.
  - Utility related apprenticeship continue to have some of the highest wages of any field with new completers often having the ability to sign up for hours and jobs to earn extra wages.
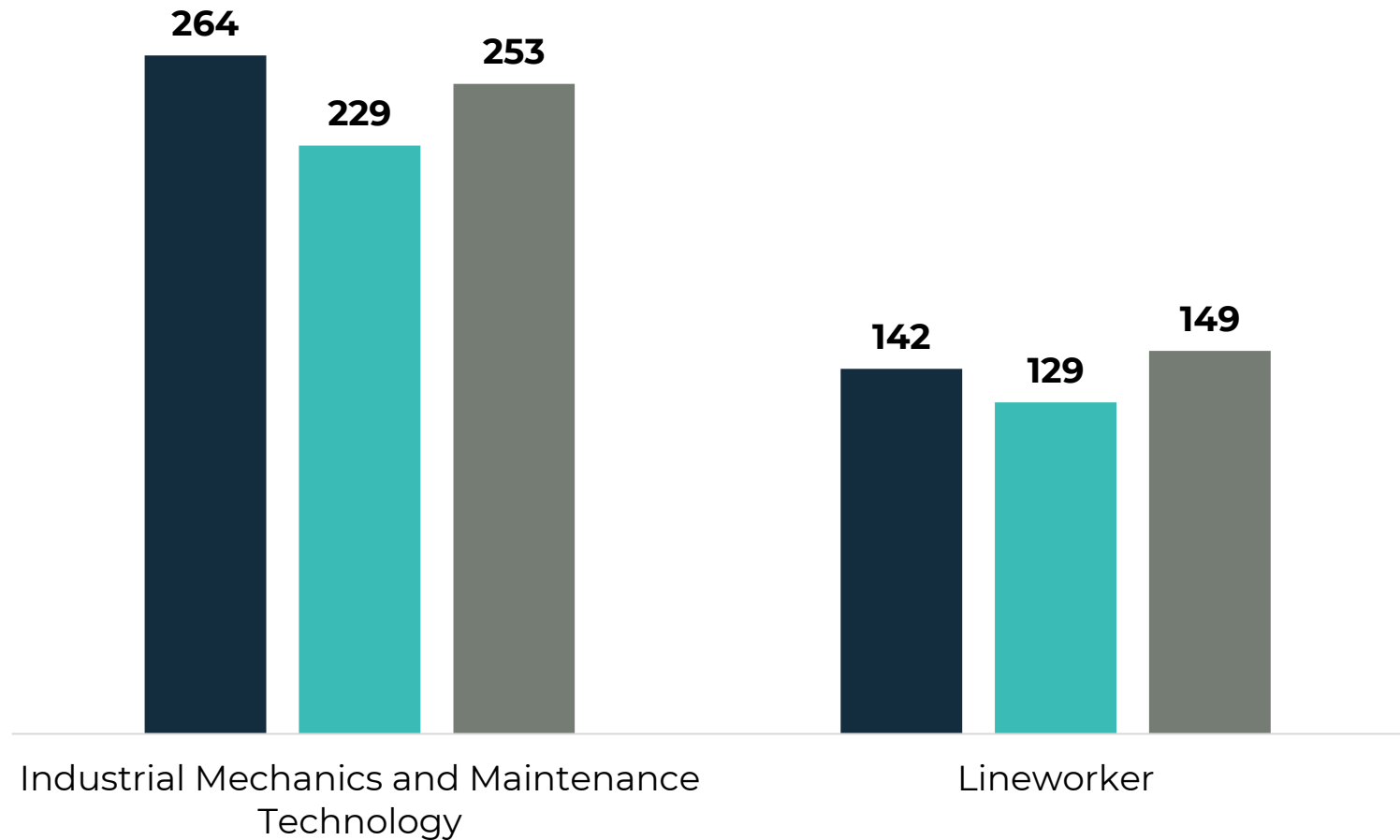
Education Takeaways

- On-the-job training is critical for many *Utilities* jobs.
- The majority of jobs in *Utilities* are in occupations that (typically) require a high school diploma or equivalent
  - 42 percent of all *Utilities* jobs require medium/long-term training or an apprenticeship in addition to a high school diploma or equivalent.
- Just 26 percent of *Utilities* occupations require a bachelor's degree.

Postsecondary Completions

- Main programs providing preparation for *Crtl. & Valve Install. & Repairers* and *Electric Power-Line Installers & Repairers* at Michigan postsecondary institutions.

- Completions in 2023 were similar to 2019, though there has been some volatility in recent years.

Total Degree/Certificate Completions by Program

■ 2019 ■ 2021 ■ 2023

Industrial Mechanics and Maintenance Technology
- 2019: 264
- 2021: 229
- 2023: 253

Lineworker
- 2019: 142
- 2021: 129
- 2023: 149

Source: Integrated Postsecondary Education Data System, National Center for Education Statistics
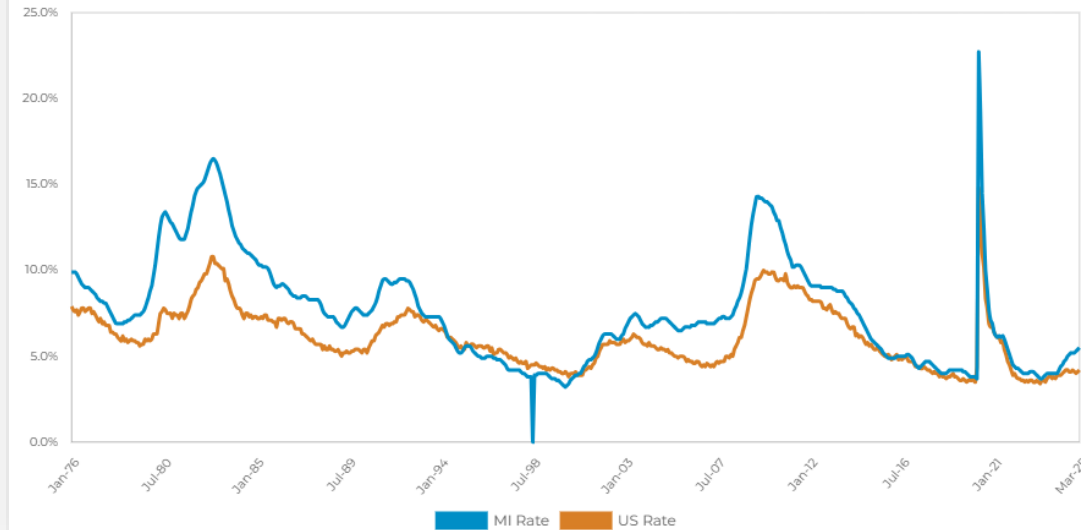
Other Products From the State

MiEconomy Mobile and Web App

- MiEconomy is an app created by MCDA that's available for iOS, Android, and web.

- Provides instant access to the latest information on a variety of statewide metrics such as:
  - Labor force
  - Unemployment
  - Industry jobs
  - Economy
  - Population

Support for Pathfinder

- Real wage outcomes, employment, and ROI data review

- Handling data feedback and questions from institutions of higher education

- Data governance

pathfinder

Occupation Details

Pharmacists

|	
Ranks	**Occupation Description**
About	Dispense drugs prescribed by physicians and other health practitioners and provide information to patients about medications and their use. May advise physicians and other health practitioners on the selection, dosage, interactions, and side effects of medications.

Wage Range

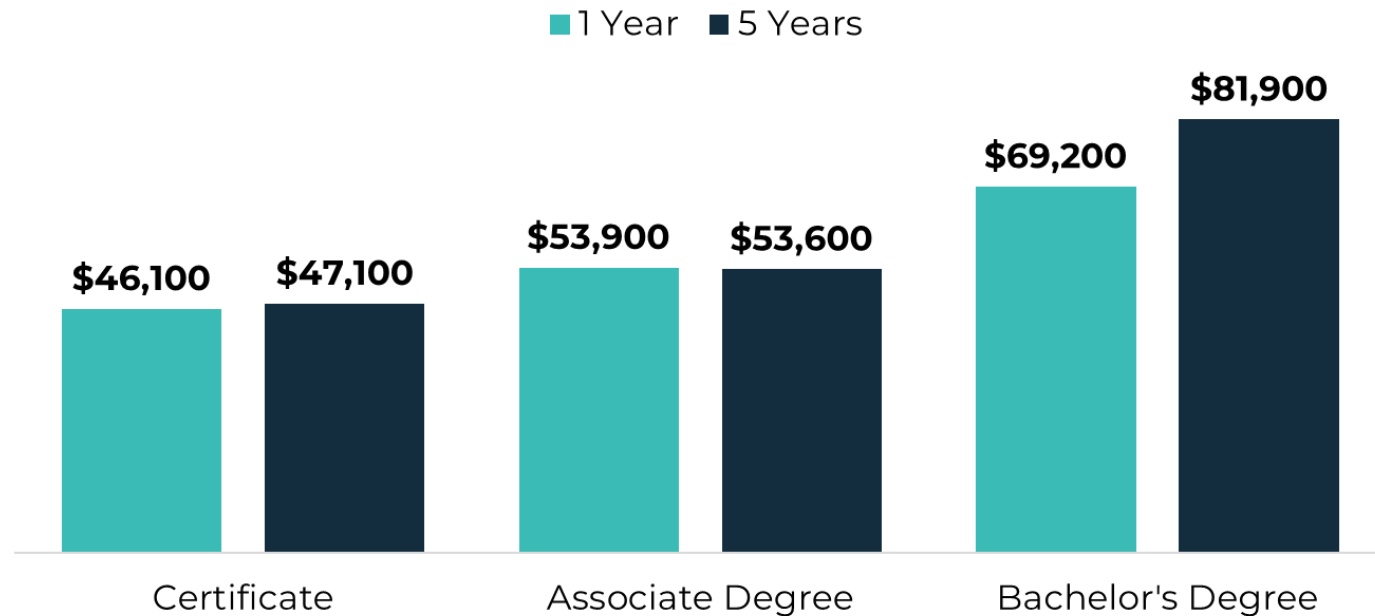Ten percent of Pharmacists earn less than $49,000, and ten percent earn more than $159,820.

The median wage of Pharmacists is $127,770.

$127,770

$49,000

$159,820
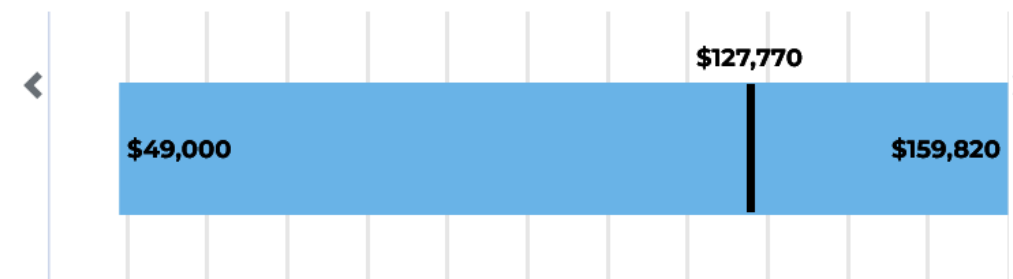
MiSchooldata.org

- Michigan's Official Education Data Source
- Data on education ranging from pre-k to postsecondary and workforce
- Median wages by field of study

Median Annual Wages for Electrical/Electronic Engineering Technologists/Technicians Completers, 2021

■ 1 Year ■ 5 Years

	Certificate	Associate Degree	Bachelor's Degree
1 Year	$46,100	$53,900	$69,200
5 Years	$47,100	$53,600	$81,900

Source: MiSchoolData

Program Evaluation and Analysis Research Lab (PEARL)

- Environment to allow SOM to safely lend access to State data from across state government for research purposes and keep it within state systems

- Researchers create agreements with individual departments, who still own their data

- Will be used to join data sources for more context around customers' situations and needs.

- One example: Connecting data across systems to evaluate Michigan Reconnect
  - When someone gains a degree through Reconnect, are they also participating in other assistance programs?
  - Does Reconnect reduce the State's expenses on other programs?

Almost Lunch!

For Further Information

Women in the Michigan Workforce

March 2024

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Michigan.gov/MCDA/Reports

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Thank you! Questions?

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