



WAYMAKER
GROUP

Material Advancement and Research Solutions (MARS) Tech Hub

ECONOMIC DEVELOPMENT ASSESSMENT & STRATEGY

July 2024

Submitted by: Waymaker Group

Revitalization Through Innovation

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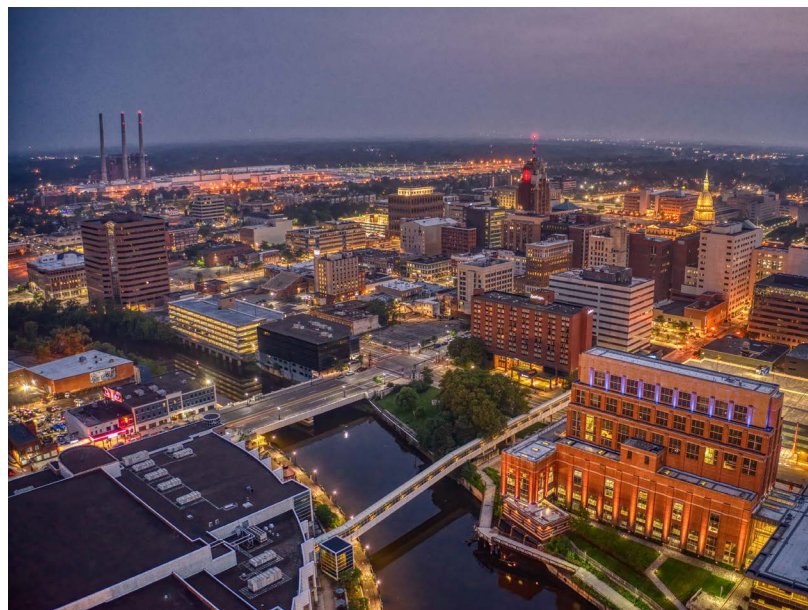
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EXECUTIVE SUMMARY

The objective of this report is to establish a comprehensive tech-based economic development (TBED) strategy aimed at fostering a new, more prosperous economy in the Greater Lansing region. Likewise, we sought to align this TBED strategy with timely industry opportunities that could promote regional competitiveness and leverage the foundational efforts of the Material Advancement and Research Solutions (MARS) Tech Hub to drive economic growth and innovation.

PRIMARY FINDINGS

- 1. Economic Profile:** The Greater Lansing MSA exhibits a significant specialization in manufacturing industries, with particular strength in motor vehicle manufacturing and related sub-components that feed that industry (metals manufacturing, plastics manufacturing, etc.). Conversely, computer and electronic product manufacturing—which would include the rapidly expanding and broadly MARS-applicable semiconductor industry—is almost nonexistent in the region.
- 2. Commercialization Efforts:** Initial efforts to improve regional commercialization activity show promising potential. However, performance at Michigan State University continues to lag behind peers and the nation, especially when adjusted for the size of their R&D budget. MSU is currently punching below its weight, representing a largely untapped opportunity for regional TBED.
- 3. Startup Pipeline:** Although currently modest, the startup pipeline may present high potential for regional growth due to inherent competitive advantages. Materials startups have high barriers to entry, naturally suppressing pipeline volume. However, this also insulates regional companies from national competition to a degree.
- 4. Key Regional Differentiators:** The region's strengths in nuclear capabilities and talent are a prominent differentiator compared to the nation. There is no other region in the U.S. with as large a supply of talent ranging from mid-skill technician roles to nuclear engineers and theoretical scientists. Moreover, the Facility for Rare Isotope Beams (FRIB) is a truly unique asset without analog anywhere else in the country.
- 5. Regional TBED Value Proposition:** Integrating regional testing capabilities with industry-aligned collaborative R&D presents a compelling TBED strategy, akin to how several successful international cities have grown. Ultimately, companies may choose to locate satellite operations to be nearer to testing capabilities at Fraunhofer or the FRIB due to logistical advantages, but owning the expertise and production of knowledge is a more durable source of value for regional TBED.
- 6. Integrating Regional Capabilities:** Radiation effects testing presents the clearest intersection between both core capabilities of the MARS initiative: synthetic diamonds and the particle accelerator. In the initial EDA Tech Hubs proposal, these two capabilities were largely presented as adjacent, but equally important, assets for regional TBED. Integrating them into one shared value proposition for a targeted set of industry users will be a necessary next step.
- 7. Promotion and Awareness:** TBED initiatives necessitate substantial investment, proactive branding, and outreach efforts. There is not presently an entity playing this role in a dedicated way.



INDUSTRY PRIORITIZATION

Both qualitative data, via stakeholder interviews, and quantitative research and analysis were utilized to assess the Greater Lansing region's potential for regional technology-based economic growth.

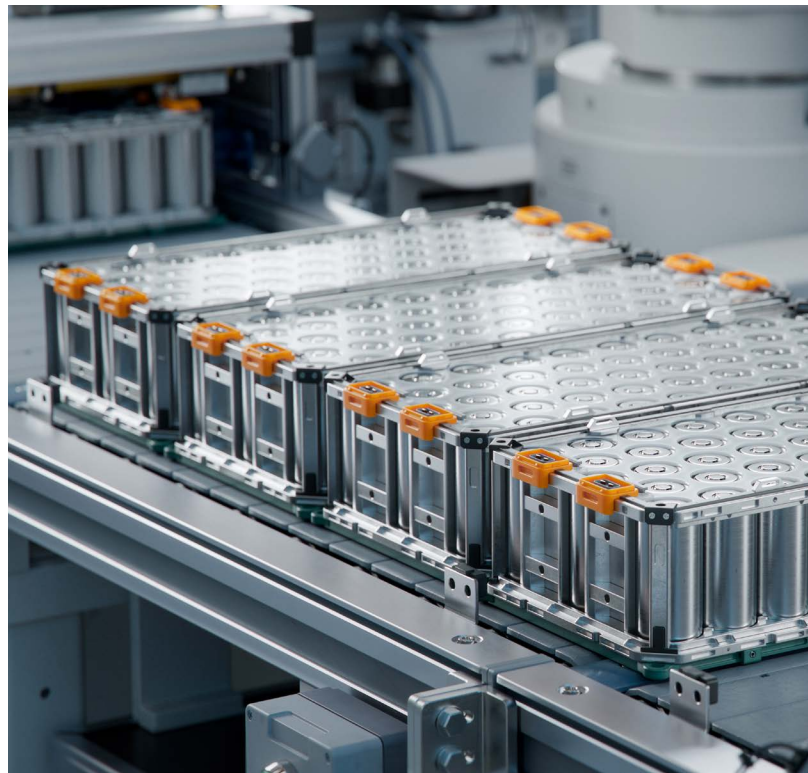
1. Battery manufacturing represents the lowest hanging fruit for MARS' near-term industry focus.

- » It is a large market with strong forecast growth, expected to reach half a trillion dollars in global market cap over the next decade. There is also clear regional momentum with the announcement of the Ultium plant and its 1,700 projected employees.
- » There is strong proximity to large industry end-users, through the massive automotive industry presence in Michigan, accounting for over 1/5th of total domestic auto production.
- » The industry is open for competition, with only 7.7% of total industry employment being concentrated in the top five MSAs. No single MSA has clearly pulled ahead, and the Ultium plant's employment alone would elevate Lansing into the top five.
- » There are clear applications to both advanced materials capabilities, with the particle accelerator and synthetic diamond helping solve needs around battery life span, testing charging frequencies, cooling electronics, and reducing heat loads.

2. Outside of battery manufacturing, several other industry opportunities are available for regional pursuit. However, none presents as seamless a fit for near-term impact under the MARS initiative.

- » The region is approaching a specialization in the aerospace and defense parts manufacturing industry, but electronic components are currently underrepresented in the region. With the high degree of similarity between the aerospace and automotive industries' supply chains, this could be a seamless transition for the region. However, there aren't as many available regional anchors, and the industry lacks the clear momentum of the battery manufacturing industry.

- » The outsourced assembly and testing (OSAT) industry represents the least concentrated node of the semiconductor value chain and, due to national needs around supply chain shortening and resiliency, could be a strong fit for the region. However, it would require the attraction of a larger firm, most likely one that lacks a presence in the U.S. currently. This does not maximize the work of the MARS consortium, which is more focused on promoting TBED than on facilitating large industry attraction projects.
- » The radiopharmaceuticals market, especially the use of radioisotopes for therapeutic purposes, is a clear fit for the region. There is unmatched availability of talent and infrastructure in nuclear capabilities and the logistical advantages around packaging and shipping are strong. However, the industry is smaller than other compelling opportunities facing Greater Lansing, and it doesn't harness both of the major MARS capabilities, with synthetic diamond being irrelevant to the industry's needs.



EDA GRANT RECOMMENDATIONS

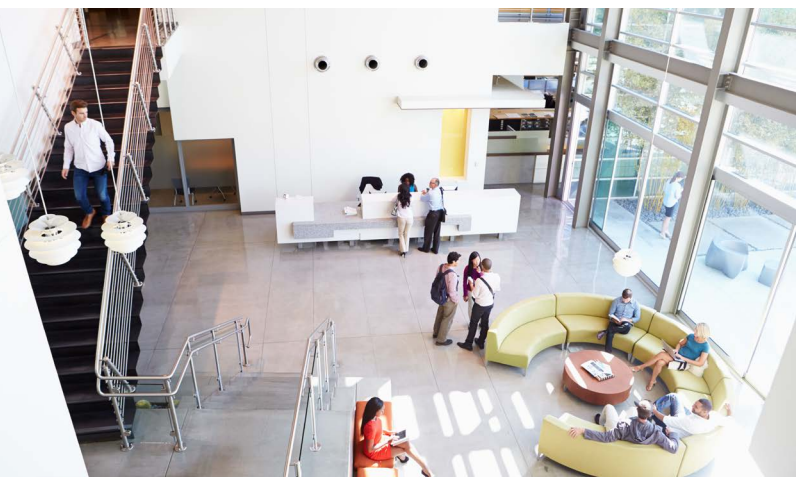
In order to better position the MARS consortium to compete under the EDA Tech Hubs program, the following principles are recommended.

1. **Narrow the Industry Focus:** The region should de-emphasize the medical isotope and semiconductor industries in favor of industries that maximize potential upside, can produce narrative simplicity for the EDA grant, and that have complementarity or shared needs. We recommend battery manufacturing be used as an early adopter that draws upon both synthetic diamond AND particle accelerator capabilities in the region.
2. **Increase Startup Support:** The region should strengthen support mechanisms for high-growth startups to enhance job creation objectives aligned with EDA goals. Owing to high capital constraints facing materials companies and the lack of corporate involvement in the Greater Lansing ecosystem, we recommend pursuing a corporate venture studio model and/or a capital connector program to in-source more investor involvement in the Tech Hub.
3. **Promote Infrastructure Development:** The region should establish a shared facility to house both tenants and programs, fostering collaboration and innovation among regional stakeholders.
4. **Curate Purposeful Workforce Development Programming:** The region should develop specialized workforce programs tailored to meet the needs of anchor companies within the MARS consortium, ensuring a skilled labor pool to drive economic growth.

ECOSYSTEM RECOMMENDATIONS

Outside of the potential EDA Tech Hubs funding, there are several other ecosystem investments that would position Greater Lansing well for future success.

1. **Restructuring the MARS Governance Structure:** The region should establish a new governance structure capable of building and maintaining regional alignment, playing crucial roles in attraction and outreach, and generating sustainable revenue streams. We recommend pursuing a three-legged revenue model that includes testing and services agreements with anchor industry partners (fee-for-service), public sector investment, and an IP management plan that would allow MARS to share in the long-run economics of new spinoffs formed from their efforts.
2. **Diversifying Public Funding Sources:** The MARS consortium should seek alternative public funding sources beyond the Tech Hubs program. While this funding could come from government, family offices, or even impact investors, we recommend prioritizing the pursuit of funding from the State of Michigan in parallel with the EDA grant. Broadening the region of service to include other nearby battery hubs in Michigan could incentivize the state to take a more active support role.
3. **Promoting Cultural Change at MSU to Enhance Commercialization Output:** We recommend hiring a consultant to conduct a more thorough review of commercialization policies, procedures, and culture at Michigan State University. Among other things, we believe this analysis should target the present construction of MSU's research pipeline, the alignment of faculty incentives with commercialization outcomes, and how hiring and faculty funding/support decisions are made.
4. **Scaling the Radiation Effects R&D Group and Attracting Top Talent:** A key determinant of regional TBED is the strength of regional R&D. MSU and the Greater Lansing region have a clear emerging strength in radiation effects testing, but more steps should be taken to attract and retain top scientific talent.



MARS TECH HUB ECONOMIC DEVELOPMENT ASSESSMENT & STRATEGY

Presentation

MARS Tech Hub Economic Development Assessment & Strategy

Findings and Recommendations to Drive Tech-Based
Economic Development (TBED) in Greater Lansing

July 2024

MARS is a unique initiative.

Waymaker Group approached this project keeping this distinctiveness in mind.

MARS is built around set of differentiated capabilities, not a single industry or cluster.



Synthetic Diamond



Rare Isotope

The Greater Lansing Region's Unique Challenge:

Identifying near-term, momentum building applications and users of the region's core capabilities

- Finding overlap and intersection between the two main capabilities
- Exploring local, regional, and national demand for the capabilities
- Crafting a unique and differentiated value proposition for the region

Waymaker Group's Approach:

Identify feasible economic opportunities, based around the region's core capabilities, with the highest likelihood of generating near-term impact

- Determine regional "fit"
- Measure market upside and economic impact potential
- Assess differences in timeline to implementation

| We analyzed 3 ways in which these capabilities could impact regional development.

1

Creation and scale of new advanced materials startups

2

Attraction of new investment from out-of-region

3

Promoting organic growth from the existing regional industry base

Our analysis focused on 3 core questions:

1. What defines the Greater Lansing regional economy currently (*what does the region do well*)?
2. What do incumbent stakeholders in the region desire most from TBED initiatives?
3. What economic opportunities maximize the factors of contestability, long-term upside, and near-term feasibility for the region?



Contestability



Upside



Feasibility

Stakeholder Interview Directory

Qualitative data, via stakeholder interviews, was utilized to assess the Greater Lansing region's potential for regional technology-based economic growth.

1. **Britany Affolter-Caine, Ph.D**, *Executive Director, Michigan's University Research Corridor*
2. **Charles Hasemann, Ph.D**, *Associate VP for Innovation and Economic Development, Michigan State University*
3. **Cindy Kangas**, *Executive Director, Capital Area Manufacturing Council*
4. **Dave Washburn**, *Executive Director, Michigan State University Research Foundation*
5. **Emma Bostwick**, *Director of Business Attraction, Lansing Economic Area Partnership*
6. **Harrison Leffel-Jones**, *COO, VP of Small Business and Innovation, Lansing Economic Area Partnership*
7. **Jerry Hollister**, *Director of Government Contracts/COO, Niowave Inc*
8. **Joe Steele**, *Vice President of Communication and Legislative Affairs, Leading Innovations For Tomorrow*
9. **John Albrecht, Ph.D**, *Professor, Michigan State University Electrical & Computer Engineering Faculty*
10. **Johnathan Smith, J.D.**, *Senior Chief Deputy Director, Michigan Department of Labor Economic Opportunities*
11. **Keith Evans, Ph.D**, *Co-Founder, Great Lakes Crystal Technologies*
12. **Nadia Abunasser, Ph.D**, *Federal Opportunities Director, Michigan Economic Development Corporation*
13. **Nigel Francis**, *CEO and Executive Director, Leading Innovations For Tomorrow*
14. **Russell Zarras**, *Lead Business Developer, Fraunhofer USA Inc*

Regional Context

The Greater Lansing MSA is an average small metropolitan area. The populace is highly educated and capable of fueling tech-based growth, but population growth and wage gains have been stagnant.

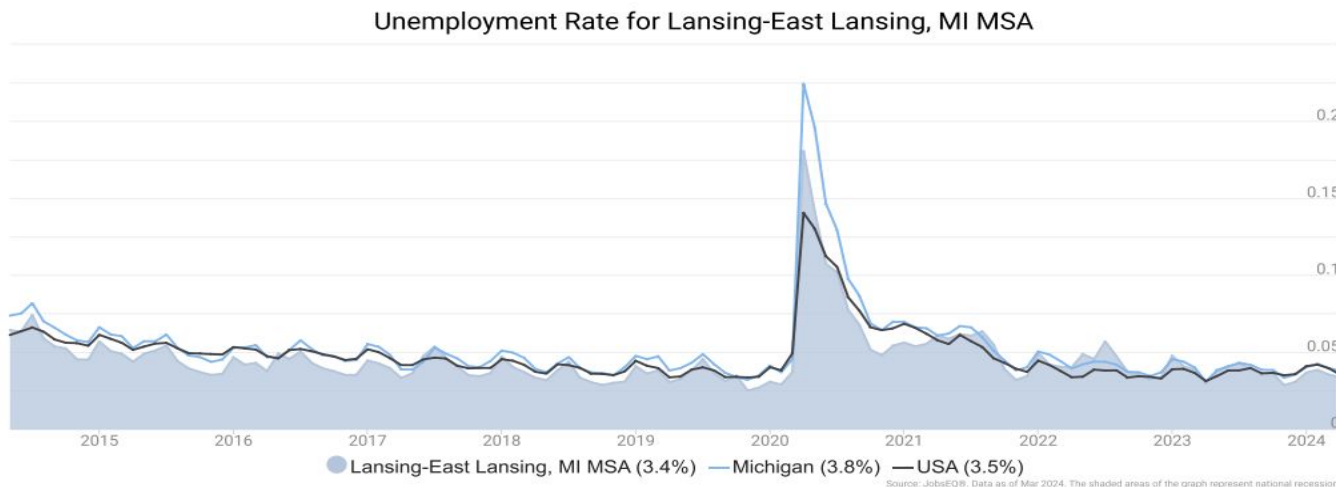
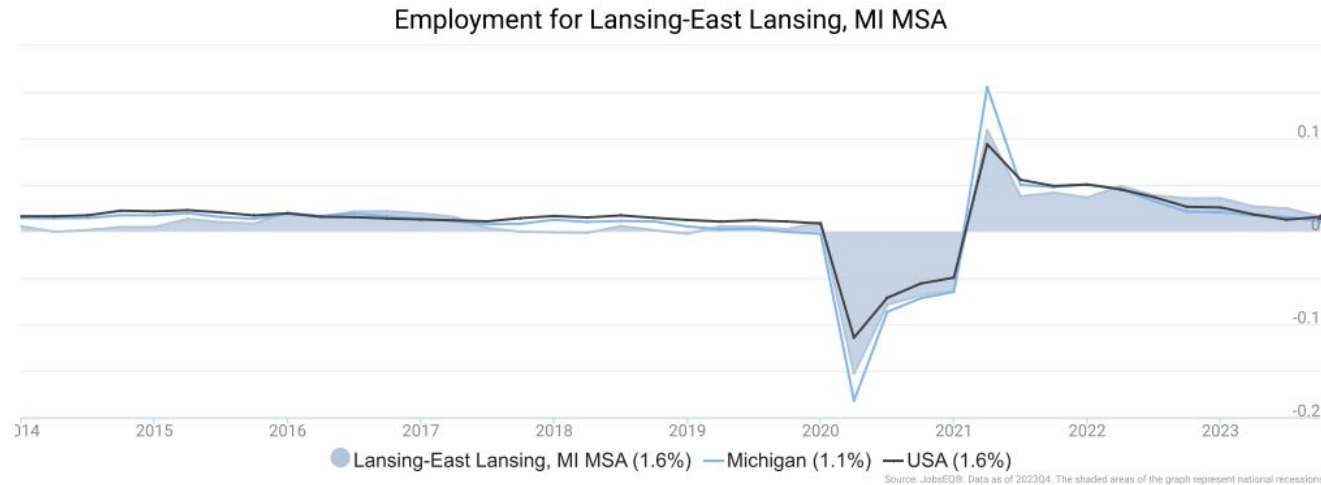
Greater Lansing MSA Demographic Profile

- The Greater Lansing MSA is younger and more highly educated than national average.
- However, the population is growing much slower than the nation, and poverty rates come in slightly above state and national averages.

Variable	Lansing MSA	Michigan	USA
Median Age	36.3	39.9	38.5
Associate's Degree	10.9%	10.3%	9.2%
Bachelor's Degree	23.6%	20.6%	22.4%
Postgraduate Degree	14.7%	12.3%	13.4%
Annual Avg. Population Growth	0.1%	0.1%	0.6%
People Per Sq Mile	278.7	177.3	94.8
Poverty Level	13.2%	13.1%	12.5%

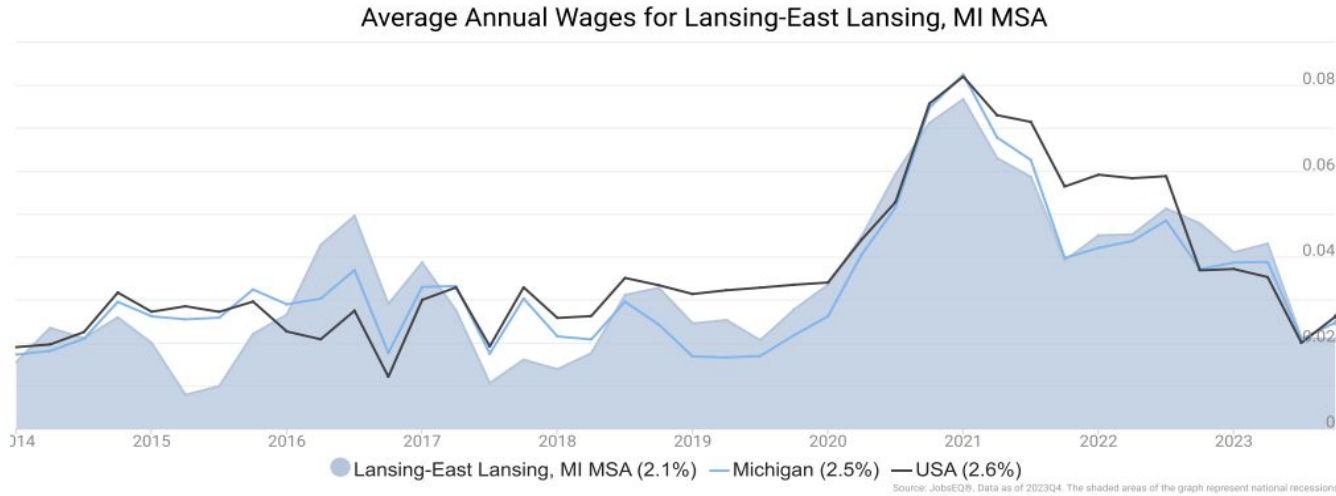
Source: See Appendix I: Greater Lansing Economic Overview for full descriptive statistics.

Greater Lansing MSA Employment Trends



- The Greater Lansing MSA has a strong record recently at adding jobs and keeping the region engaged in the workforce.
- YoY employment growth is higher than national average.
- Unemployment rate in the region trends below state and national average.
- The labor force participation rate (64.2%) and prime-aged labor force participation rate (85.6%) both trend above state and national averages.

Greater Lansing MSA Wage and Earnings Profile



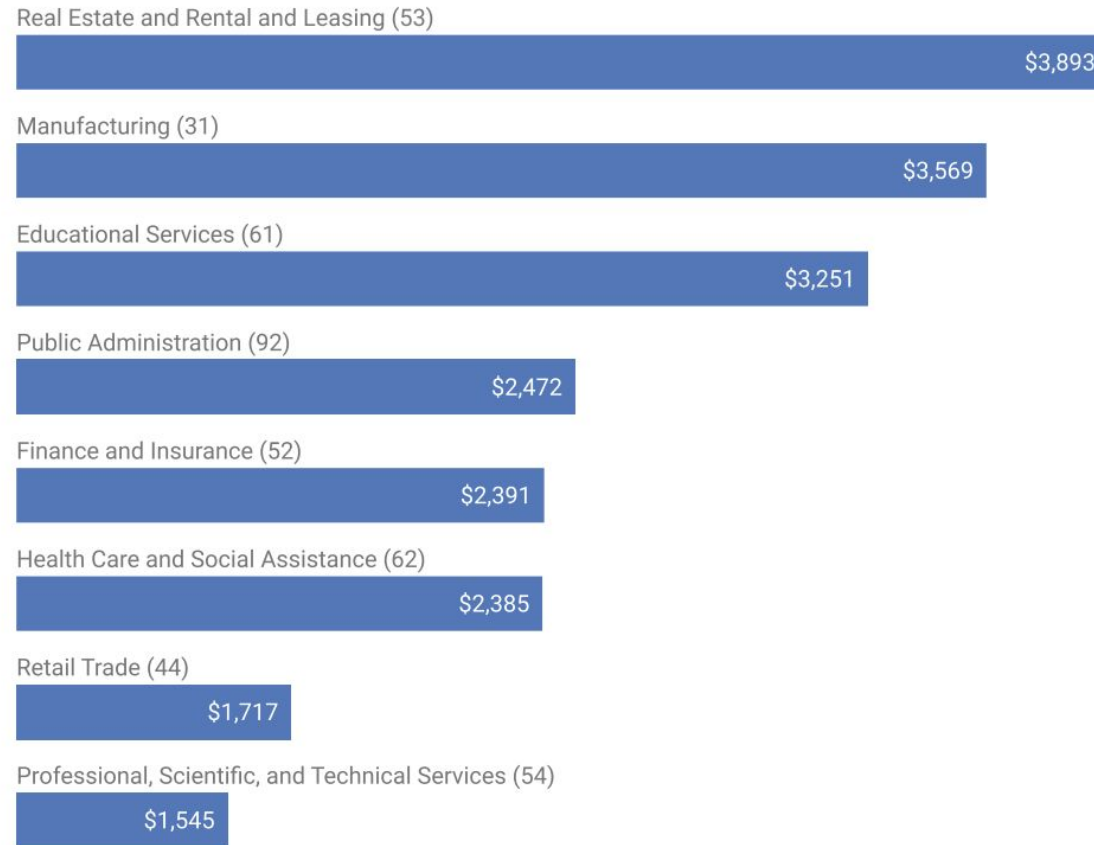
- The Greater Lansing MSA has, unfortunately, not seen wage growth keep pace with the state or national average.
- Per capita income, median household income, and annual average salaries for full time workers are all lower than state and national averages.
- However, when adjusted for cost of living, the Greater Lansing MSA hovers around average.

Region	Annual Avg Salary	Cost of Living Index	Purchasing Power
Lansing MSA	\$61,314	90.3	\$67,911
Michigan	\$63,707	101.3	\$62,882
USA	\$69,861	100	\$69,861

Source: Appendix I: Greater Lansing Economic Overview.

Greater Lansing MSA Economic Outlook

GDP (in \$ millions)



Source: Appendix I: Greater Lansing Economic Overview

- In 2022, nominal GDP in the Lansing MSA expanded 8.7%, above national average.
- However, over the next 5 years, employment is projected to contract by 2,671 jobs.
- A large driver of this economic precarity is that the regional economy is overly weighted in sectors with poor growth trajectories.
 - State government, hospitals, and university employment, all “local” sectors, dominate the regional landscape.
 - Only the automotive demonstrates robustness among “traded” sectors.

Major Observations

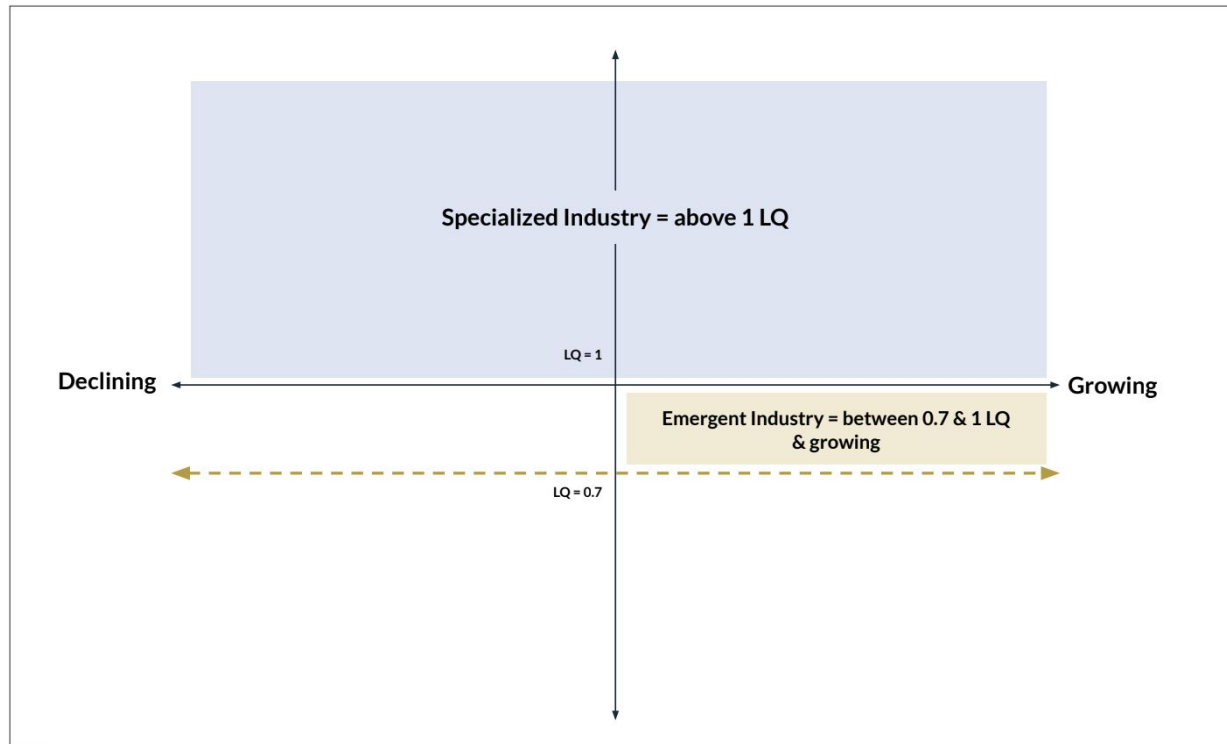
Through Waymaker's interview process and quantitative analysis, we discovered seven major observations that informed our understanding of the regional economy's strengths and weaknesses.

Key Takeaway Summary

1. The Greater Lansing MSA has a considerably manufacturing intensive economy.
2. Regional commercialization efforts are nascent but have the ingredients for success.
3. The startup pipeline, while low in volume, presents high upside due to natural competitive insulation that could increase the rate of success of regional firms.
4. The region has the strongest differentiation around nuclear capabilities and talent.
5. Marrying regional testing with R&D presents a viable economic attraction opportunity akin to how international cities like Shenzhen or Dresden have grown.
6. Radiation effects testing offers a significant intersection between the MARS initiatives' two core capabilities, which hasn't presently been articulated by the consortium.
7. Due to regional economic developers' historic lack of emphasis on TBED, this initiative will require deep, sustained investment, and an active branding and outreach effort.

Defining Greater Lansing's Economic Opportunity Areas

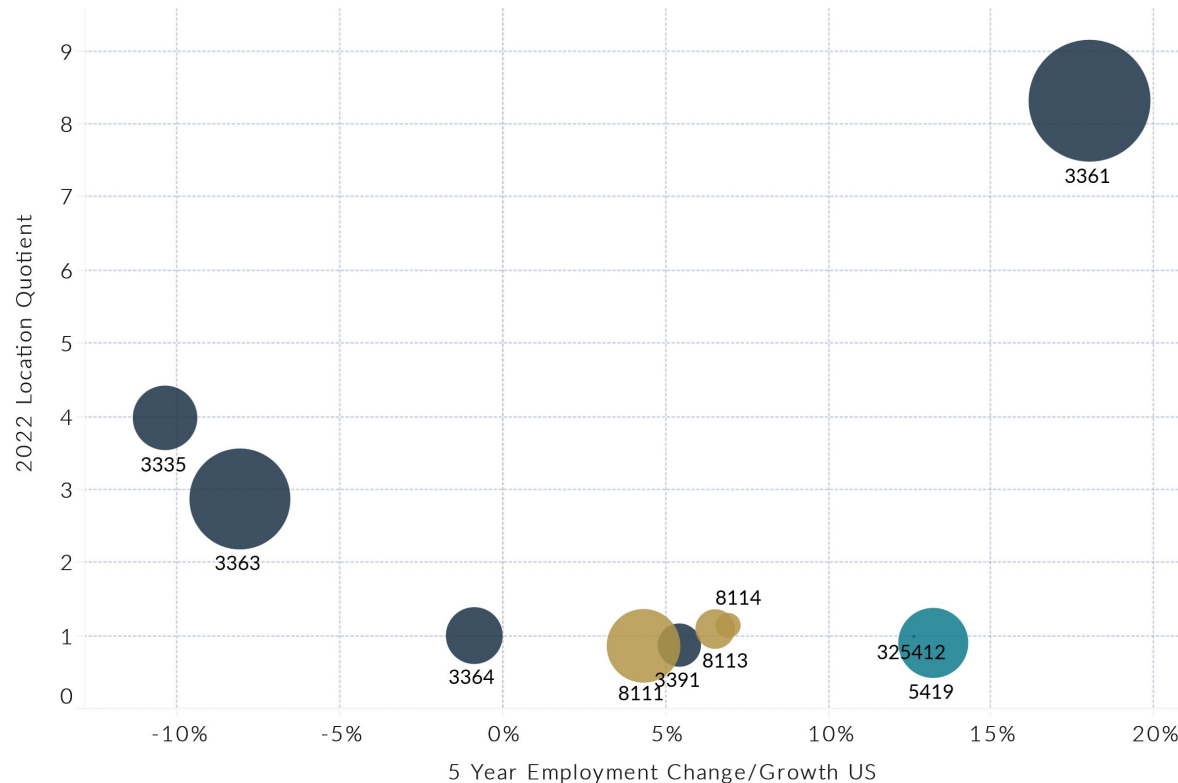
- 1 In understanding the region's relative industry strengths, we first defined all specialized and emergent industries, by LQ and 5-year growth rate.



- 2 From there, we excluded all non-traded industries or those with low establishment counts.
- 3 We focused in on industries with the greatest potential for promoting regional TBED, most of them in manufacturing components.
- 4 Finally, we made cuts to the industry priority list to emphasize those areas with specific resonance to the MARS initiative.

The Greater Lansing economy is, unsurprisingly, manufacturing intensive.

5 Year Employment Growth by 2022 Location Quotient



Source: Based on Appendix II: BLS Industry Analysis

Note: Circle Area = Size of Total Regional Employment; LQ Data in the BLS analysis will differ from the cluster analysis because BLS suppresses data when establishment counts are low.

Manufacturing: NAICS 33	Other Services (Except Public Administration): NAICS 81
3364 - Product and Parts Manufacturing 335910A - Battery Manufacturing (Adjusted) 335910 - Battery Manufacturing* 3335 - Metalworking Machinery Manufacturing 3361 - Motor Vehicle Manufacturing 3363 - Motor Vehicle Parts Manufacturing	8111 - Automotive Repair and Maintenance 8113 - Commercial and Industrial Machinery and Equipment 8114 - Personal and Household Goods Repair and Maintenance
Material Manufacturing: NAICS 32	Professional, Scientific, and Technical Services: NAICS 54
325412 - Pharmaceutical Preparation Manufacturing*	5419 - Other Professional, Scientific, and Technical Services

* denotes that 2022 LQ could not be calculated so a value of 1.0 was applied.

The Greater Lansing economy is, unsurprisingly, manufacturing intensive.

- When looking more broadly at “clusters” of industries, instead of specific industries, the same reality becomes apparent.
 - Automotive and, even more broadly, Advanced Manufacturing are the large employers in the region.
 - Activities that support these clusters (metals, plastics, etc.) are also strongly represented.
- *Note: We excluded the biopharmaceutical cluster due to low establishment count, despite a strong LQ and 5-year growth rate.*
- *Note: We included the Computer and Electronic Product Manufacturing sector in this table because it has high overlap with regional economic development goals (semiconductor, etc.).*

Selected Industry Clusters for the Greater Lansing Region

NAICS	Industry	Current			5-Year History	
		Empl	Avg Ann Wages	LQ	Empl Change	Ann %
10191	Advanced Manufacturing (Brookings)	12,519	\$77,952	1.49	1,382	2.40%
10101	Aerospace Vehicles and Defense (US Cluster Mapping)	868	\$104,221	0.93	-209	-4.20%
10104	Automotive (US Cluster Mapping)	8,276	\$74,508	5.59	1,236	3.30%
10105	Biopharmaceuticals (US Cluster Mapping)	1,040	\$108,275	2.15	131	2.70%
10146	Medical Devices (US Cluster Mapping)	335	\$97,334	0.83	-51	-2.80%
10148	Metalworking Technology (US Cluster Mapping)	1,421	\$71,921	2.21	-511	-6.00%
10163	Upstream Metal Manufacturing (US Cluster Mapping)	1,051	\$76,362	1.92	12	0.20%
10154	Plastics (US Cluster Mapping)	1,916	\$60,442	2.05	-389	-3.60%
334	Computer and Electronic Product Manufacturing	113	\$88,195	0.07	4	0.80%

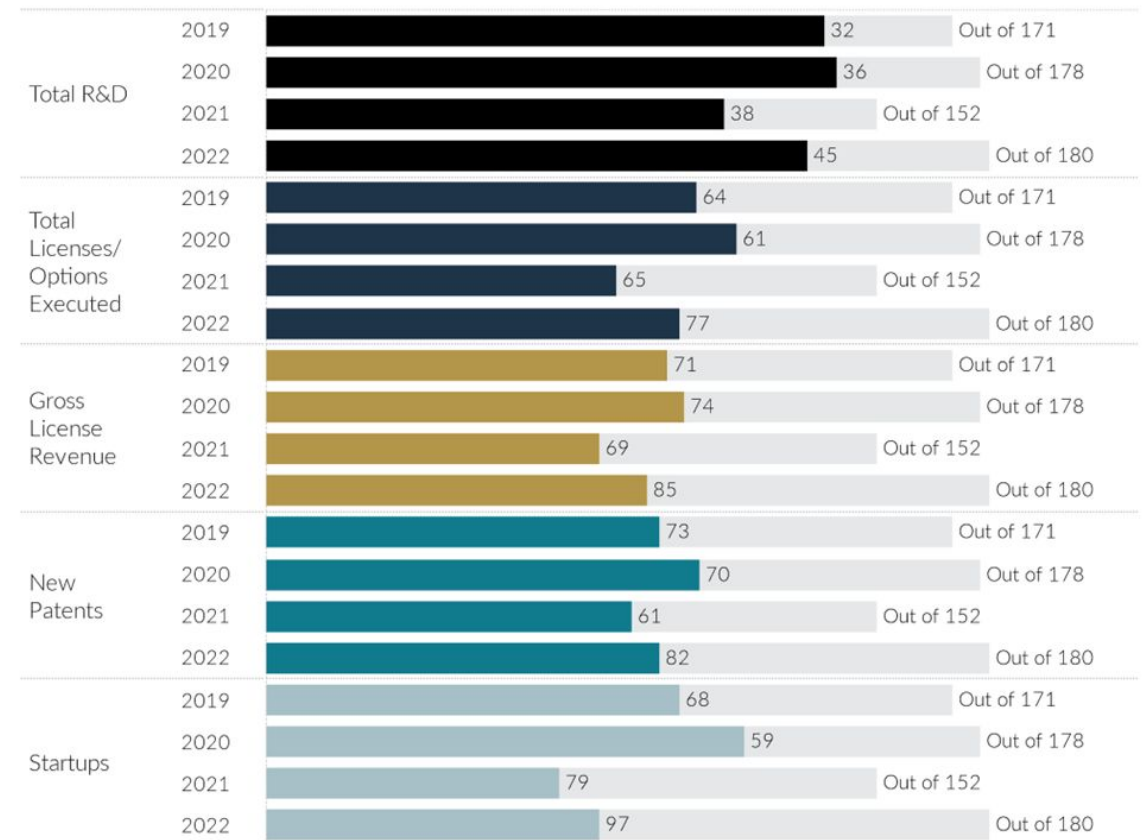
Source: See Appendix III: Greater Lansing Cluster Data for more detailed industry-by-industry data and future forecasts.

Note: LQ data will differ from Appendix II because data for low establishment count industries have not been suppressed.

Commercialization outcomes at MSU are off track from expected values.

- Compared to all institutions reporting in AUTM (2019-2022), MSU ranks in the bottom half to bottom quartile across every dimension:
 - Patents, licensing revenue, startups, etc.
- Compared to a smaller subset of benchmark peers, MSU annually generates around 20-80% of those universities' average across every AUTM dimension.
- MSU's rate of startup formation is limited.
 - 14th among peer group
 - 147/180 nationally when adjusted for size of R&D budget

MSU Ranks in AUTM: 2019-2022 (Unadjusted Numbers)

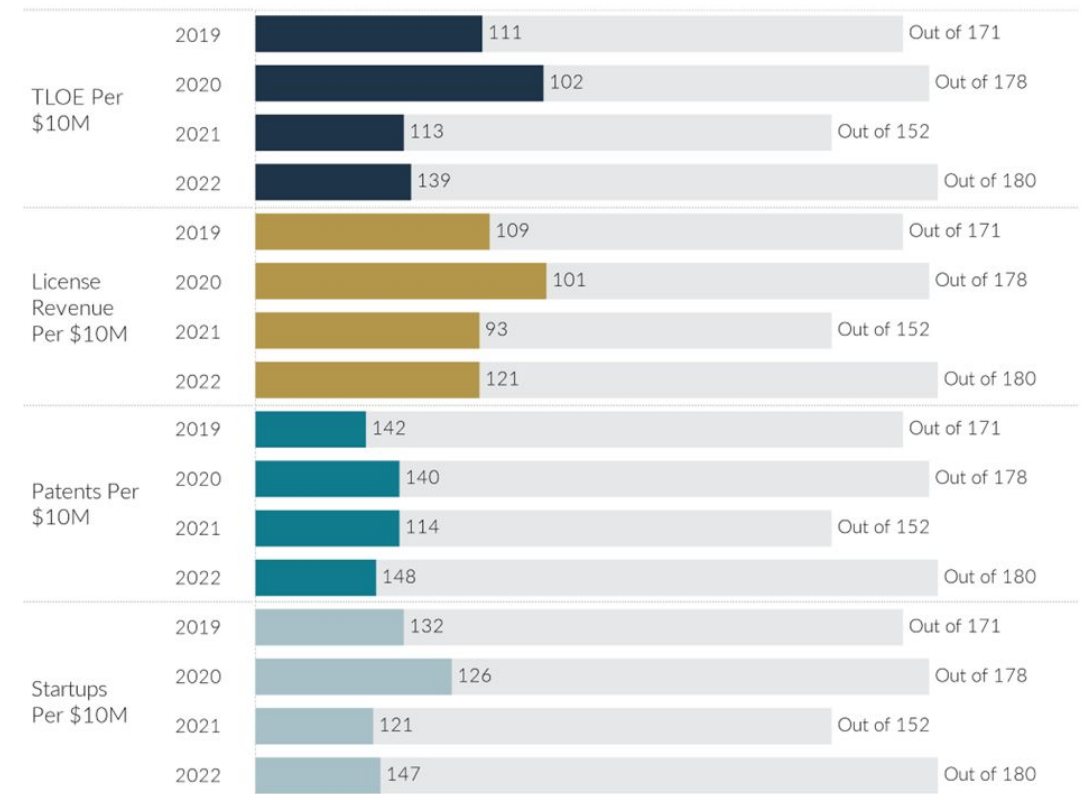


Source: See Appendix IV: MSU AUTM Analysis for more detail.

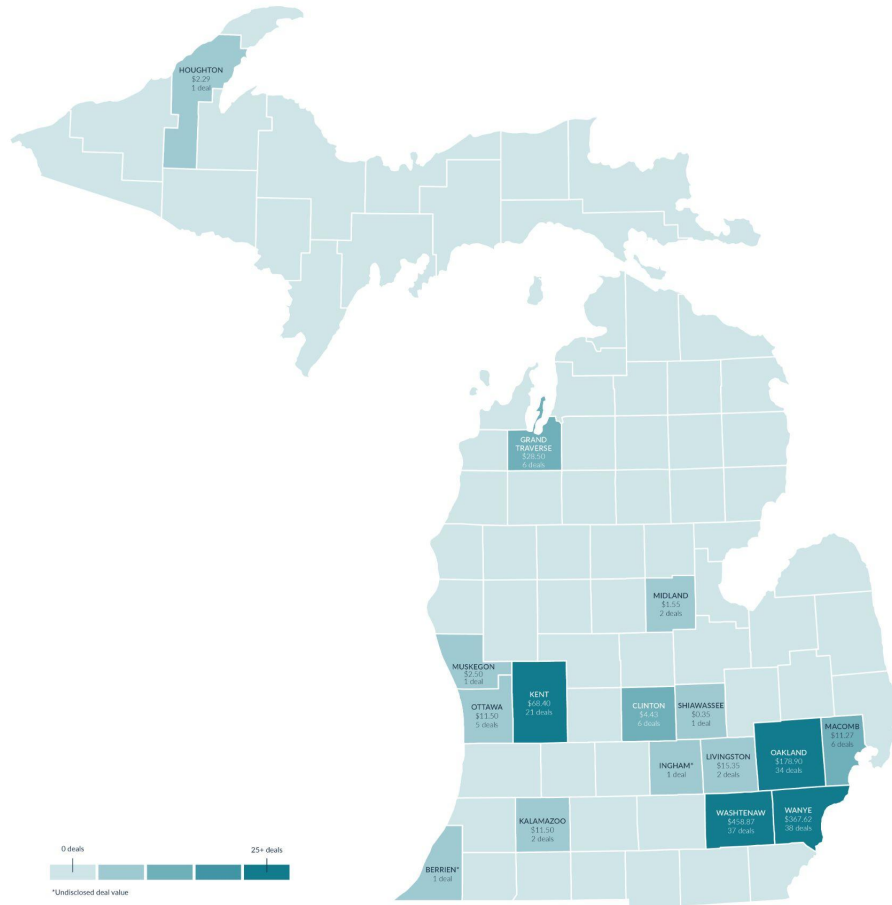
Commercialization outcomes at MSU are off track from expected values.

- When adjusted for the size of their R&D budget, MSU's commercialization performance is worse. This suggests that MSU is punching below what it is capable of.
- However, several initiatives created in the last decade to address these challenges are best practice in nature and have shown early promise (Spartan Innovations, MSU Business Connect, and MSU Technologies).
- Moving forward, *focus* and *scale* can improve these outcomes:
 - R&D diversity can sometimes be an impediment to commercialization output by spreading resources too thin across less commercially valuable research fields.
 - Likewise, many commercially valuable fields require considerable capital investment to generate output.

MSU Ranks in AUTM: 2019-2022 (Adjusted by Size of R&D Spending)



The startup pipeline is underdeveloped, but success rates *could be* higher than average.



Source: Michigan Venture Capital Association 2023 Impact Report.

- Over 80% of deal count and 90% of deal value in Michigan in 2022 were concentrated in the top 5 counties¹.
 - None of the Greater Lansing region's four counties were included in this top 5.
 - Clinton county was 6th in deal count and 8th in value.
 - There were only 8 financed deals in the Lansing MSA in 2022.
- Michigan, as a state, only accounts for around 0.5% of all deal value in the country².
- Lansing ranked 37th out of 64 small MSAs in the Midwest Startups 2023 Ecosystem Report for number of startups relative to population (startup density)³.
- Finally, we observed low stakeholder enthusiasm for near-term spinouts throughout our interview process.

The startup pipeline is underdeveloped, but success rates *could be* higher than average.

- However, advanced materials companies, specifically, have a high barrier to entry.
 - Economics problems frustrate these companies:
 - High volume businesses
 - Very CapEx intensive
 - Lengthy timeline for market discovery
- While this presents challenges for a regional strategy focused around promoting job creation through startups, it could also create a protective “moat” for regional startups, insulating them from competition to some degree.
- There is already a higher-than-average share of such firms in the region relative to national average.
- These kinds of companies will require strong access to capital to grow, but an intentional strategy could generate massive value inflection despite a narrower total deal pipeline.

Mid-Michigan is highly differentiated in its nuclear capabilities and talent.

- The Facility for Rare Isotope Beams is an “n of 1”.
 - It would require massive public sector investment and time to replicate.
- Only in select places in Germany could you find so much talent from technicians to scientists to engineers to operators within a 100 square mile radius.
 - 10% of all nuclear physics PhDs produced at MSU (top Nuclear Physics program in America).
 - UM nuclear engineering school is #1 in the country.
 - Ann Arbor and Detroit are 9th and 14th respectively in availability of nuclear technicians.
 - Advanced manufacturing DNA in the region bodes well for preparation of technician talent.
- Joint access to testing equipment, talent, and logistics capabilities is a compelling economic development value proposition.



Testing capabilities can be a useful attraction strategy, but requires more than testing alone.

- We explored the core reasons why a private company might choose to locate company operations or satellite facilities near to testing capabilities at FRIB/Fraunhofer. Here is what we found:
 - High volume of testing needs makes co-location beneficial from a logistics and cost angle; **OR**
 - Collaborative R&D is useful in solving the problems of industry.
- MSU's new radiation effects testing group could be a game changer for the region, due to the latter factor.
- Cities like Shenzhen, China and Dresden, Germany have grown their economies in this way.

The global radiation-hardening electronics market size is currently valued at

\$1.74

and is anticipated to reach

\$2.61

B by 2032.⁴

Radiation effects testing alone could be a

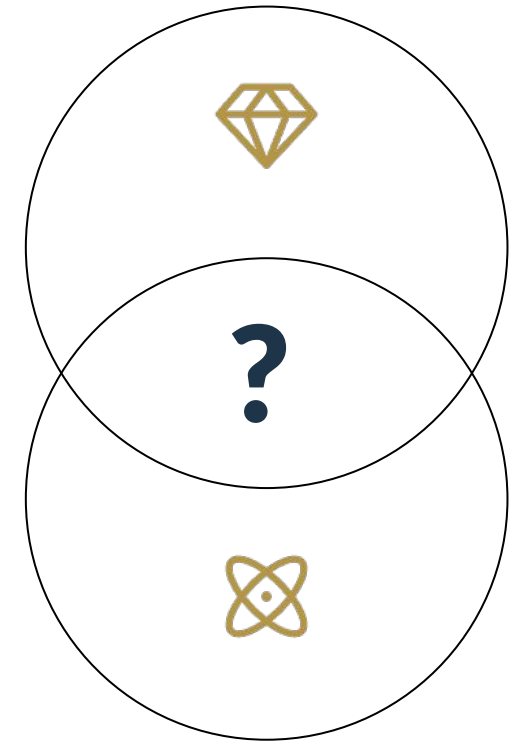
\$1B

market by 2030.

There is an intersection between diamond and accelerator capabilities.

- The region has not articulated the overlap between these two capabilities...yet.
- Economic developers see immediate wins in medical isotope production, packaging, and shipping, but this is a smaller and more niche industry, and makes diamond capabilities irrelevant.
- Likewise, a pure focus on the automotive industry has ample application to diamond and other materials capabilities, but less for isotopes.
- Deep research interests at the FRIB have few economic impacts beyond government grants.

Radiation effects testing combines the two assets in ways that could serve the same set of core industry customers.



The MARS initiative would benefit by focusing intentionally on outreach and marketing.

- There is not presently an entity playing a dedicated role in TBED in the region.
- MEDC has reportedly been challenged when it comes to closing tech deals.
- Fraunhofer's economic development programs are lacking traction/take up from the state.
- Awareness of the MARS Tech Hub's value proposition is presently low, though companies from out of region jump to take advantage of the capabilities.
- Packaging the region's resources together into a unified offering for companies could help all stakeholders involved in the consortium.



Package regional resources



Collaborate with industry



**Aggressively promote
your value proposition**

Industry Recommendations

Our analysis has identified the highest opportunity for regional TBED in the following areas.

In recommending economic opportunities, we prioritized four factors.

1 Fit

- Are there existing employment specializations in the region?
- Existing companies?
- Any unique resonance or ability to connect it to other industries with high concentration in the region?

3 Upside

- What is the total addressable market?
- What are the growth trends facing this market?
- If this “hits,” what is the potential economic impact for the region?

2 Competition

- What regions do this well already?
- How mature is the industry?
- Does the industry tend to cluster or concentrate in a small handful of places?
- Or is it open for many regions to compete?

4 Advantages

- Does this play into specialized assets or capabilities of the MARS consortium, specifically?
- Is there unique opportunity for this set of stakeholders to positively influence the industry’s growth?

Summarizing our Industry Recommendations

1 Battery manufacturing = Lowest hanging fruit

- Large market with strong forecast growth.
- Clear regional momentum (Ultium plant).
- Strong proximity to large industry end-users (automotive industry) in Michigan.
- Open for competition due to low national concentration (no MSA has pulled ahead).
- Application to both core materials capabilities under MARS.

2 Aerospace/defense and space = Likely a longer term target

- The automotive and aerospace/defense supply chains are highly similar, but A&D is higher wage.
- Even just increasing the region's share of parts manufacturing employment would have a large economic impact on the region.
- But the region's ambitions around rad-hard testing and R&D likely won't be met by existing regional firms.
- The region should start with materials work for parts manufacturers, and recruit electronics components methodically as company relationships develop.

Summarizing our Industry Recommendations

3 OSATs = Aspirational, but potential regional skeleton key

- There is no current LQ specialization in the region, but that could change with one large attraction project.
- This is the least concentrated node in the semiconductor value chain.
- Its activities depend on proximity to end-users, which Lansing can provide.
- Preparing workforce would be a major hurdle, and may rely on a super-regional approach.
- But there is clear plug-in with other industry recommendations (batteries, automotive) through supply chain shortening.

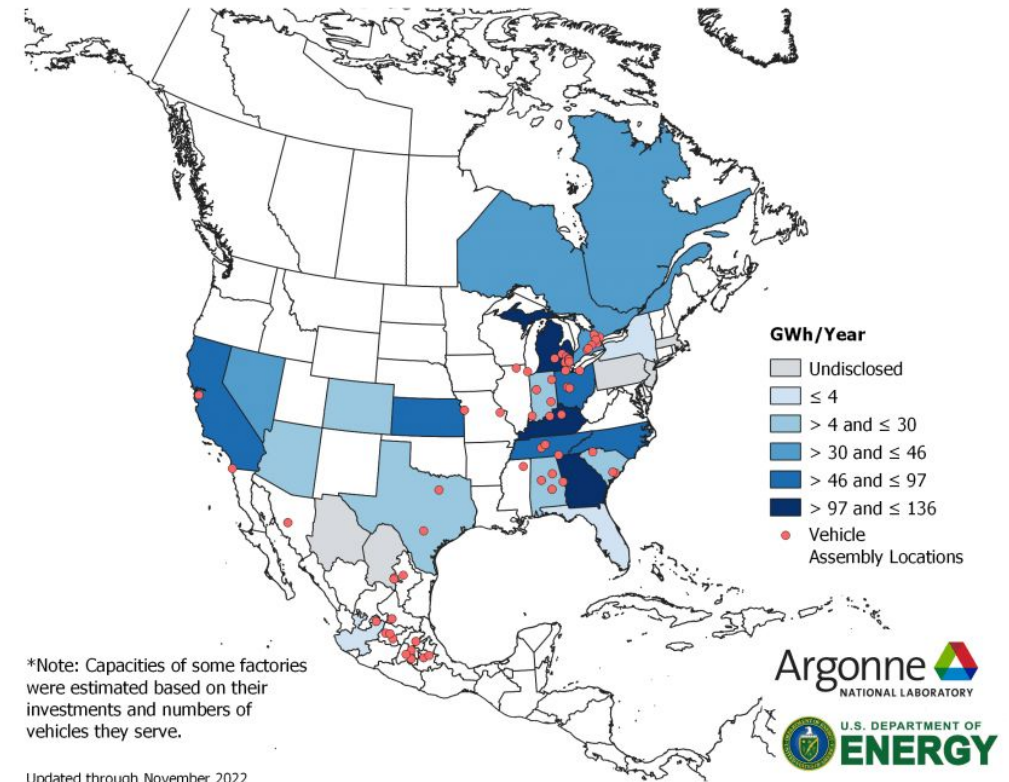
4 Medical isotopes = Clear regional differentiation and job creator

- This is a smaller industry.
- High barriers to entry mean less competition, but there are also longer timelines and more capital required to realize value creation.
- There is a large opportunity for traditional economic development and mid-wage job creation.
- Unfortunately, it doesn't fit the diamond components of MARS.

The battery manufacturing industry is low hanging fruit for the Greater Lansing region.

1. The Global EV battery market is booming at 14.4% CAGR through 2033 and will reach around a \$508B market size⁵.
2. Michigan is anticipated to be a top 3 state in new battery plant capacity by 2030 (alongside Georgia and Kentucky)⁶.
 - Surrounding states are also expected to be top-10 players, putting Lansing in the middle of this growth.
 - The top LQ in the country for battery manufacturing is in nearby Midland, MI.
3. Hyper similar activities to the assembly of cars creates a regional strength around Lansing's skilled workforce.
 - The top three occupations that account for 32% of projected total employment growth in battery manufacturing are assemblers and fabricators, other production occupations, and metal/plastics workers⁷.
 - Lansing has a high LQ in each of these (see Appendix V: Lansing Occupation Distribution by Cluster).

Planned Battery Plant Capacity in North America by 2030



Source:
<https://www.energy.gov/eere/vehicles/articles/fotw-1271-january-2-2023-electric-vehicle-battery-manufacturing-capacity>

The battery manufacturing industry is low hanging fruit for the Greater Lansing region.

4. There is a very low degree of national concentration in this industry, creating an opportunity to compete.
 - Only 7.7% of employment is concentrated in the top 5 MSAs.
 - The Ultium plant's targeted employment would make Lansing's employment greater than Atlanta and LA, the top 2 MSAs, combined.
 - Today, one-third of U.S. battery production and development occurs in Michigan⁸.
5. There are clear applications to both main advanced materials capabilities under the MARS consortium.
 - Accelerator: Doubling lifespan of batteries by testing charging frequencies, etc.
 - Diamond: Cooling electronics/reducing heat loads, etc.
 - Mission critical batteries could benefit from rad-hard testing and R&D

Concentration by Top-5 MSAs

Lower  Higher

Concentration by 2022 Total Employment

NAICS 3364 Aerospace product and parts manufacturing	39%
NAICS 325412 Pharmaceutical preparation manufacturing	35%
NAICS 3361 Motor vehicle manufacturing	24%
NAICS 3391 Medical equipment and supplies manufacturing	22%
NAICS 3363 Motor vehicle parts manufacturing	22%
NAICS 3335 Metalworking machinery manufacturing	21%
NAICS 8114 Personal and household goods repair and maintenance	17%
NAICS 8111 Automotive repair and maintenance	15%
NAICS 5419 Other professional, scientific, and technical services	15%
NAICS 8113 Commercial and industrial machinery and equipment (except automotive and electronic) repair and ..	14%
NAICS 335910 Battery manufacturing (Adjusted)	10%
NAICS 335910 Battery manufacturing	8%

Source: Appendix II: Greater Lansing Cluster Data

Aerospace/defense and space electronics could see a modest presence in this region.

1. There is a high degree of national concentration in the aerospace/defense manufacturing industry.
 - In fact, this is among the most concentrated industries in the nation, with the top 2 MSAs commanding almost a quarter of total industry employment.
 - Lansing is a top decile MSA in this industry, ranking 41st for total employment and 30th for LQ. Despite this hyper concentration, Lansing is competitively positioned to add jobs in this space due to existing activities in the region.
2. Moreover, the automotive and aerospace supply chains are highly similar, affording ample opportunity for regional economic growth.
 - Because aerospace manufacturing is higher wage, even a marginal increase in the region's employment share represents a strong opportunity.
3. Broadly, "space electronics" is harder to gauge because there is no clear NAICS code that overlaps cleanly with that set of activities.

Concentration by Top-5 MSAs

Lower  Higher

Concentration by 2022 Total Employment

NAICS 3364 Aerospace product and parts manufacturing	39%
NAICS 325412 Pharmaceutical preparation manufacturing	35%
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NAICS 335910 Battery manufacturing	8%

Source: Appendix II: Greater Lansing Cluster Data

Aerospace/defense and space electronics could see a modest presence in this region.

4. Lansing is **almost** specialized in the aerospace/defense cluster (LQ of 0.93).
 - Entirely around parts manufacturing though
5. Computer & Electronic Product manufacturing is almost nonexistent (LQ of 0.07).
 - Includes many of the components (wireless Comms, etc.) that will go into orbit.
 - While Radiation Hard electronics could be a major target for the region, this is likely a longer term play.
6. Building in-roads with parts manufacturers around materials testing is the near term opportunity.
 - Further growth could happen once relationships are established.

Aerospace Vehicles and Defense (US Cluster Mapping) in Lansing-East Lansing, MI MSA, 2023Q41						
NAICS	Industry	Current			5-Year Forecast	
		Empl	Avg Ann Wages	LQ	Total Demand	Ann % Growth
336412	Aircraft Engine and Engine Parts Manufacturing	858	\$104,382	7.16	342	-0.30%
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	7	\$74,037	0.05	3	-0.40%
336414	Guided Missile and Space Vehicle Manufacturing	3	\$133,288	0.03	1	-0.30%
336411	Aircraft Manufacturing	1	\$55,136	0	0	-0.70%
10101	Aerospace Vehicles and Defense (US Cluster Mapping)	868	\$104,221	0.93	346	-0.30%
Total - All Industries		229,139	\$61,314	1	121,430	-0.20%

Computer and Electronic Product Manufacturing in Lansing-East Lansing, MI MSA, 2023Q41						
NAICS	Industry	Current			5-Year Forecast	
		Empl	Avg Ann Wages	LQ	Total Demand	Ann % Growth
33441	Semiconductor and Other Electronic Component Manufacturing	39	\$43,553	0.07	17	0.10%
33411	Computer and Peripheral Equipment Manufacturing	32	\$186,693	0.14	12	-0.50%
33451	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	31	\$65,483	0.05	12	-0.50%
33429	Other Communications Equipment Manufacturing	10	\$59,272	0.37	3	-1.00%
33422	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing	1	\$80,346	0.01	0	-0.60%
334	Computer and Electronic Product Manufacturing	113	\$88,195	0.07	45	-0.40%
Total - All Industries		229,139	\$61,314	1	121,430	-0.20%

Source: Appendix III: Greater Lansing Cluster Data

The region could carve out a niche in the OSAT market, but it's an aspirational target.

1. The region is encouragingly reserved in its strategy around the semiconductor industry.
 - Fabrication plants are a low impact economic attraction strategy, due to low human capital/labor needs (high degree of automation).
 - Additionally, they are hyper competitive and thus, expensive from an incentives standpoint.
 - Several interviewed stakeholders echoed the sentiment on being too late to compete in recruitment of fabs.
2. A potential fit could be in the Outsourced Semiconductor Assembly and Test (OSAT) node of the value chain.
 - It makes sense to locate these operations as close to the end users of the chips as possible.
 - Michigan's manufacturing strength creates an obvious market opportunity for OSATs looking to expand US operations.
 - Either through consumer electronics or, more likely, automotive, there is a large body of potential end users in the broader region.

Michigan is home to nearly

1/5th

of US Automotive production, has the greatest concentration of OEMs in America⁹, and is highly specialized:

5.59 LQ

Lansing's Advanced Manufacturing Cluster, more broadly, is also specialized:

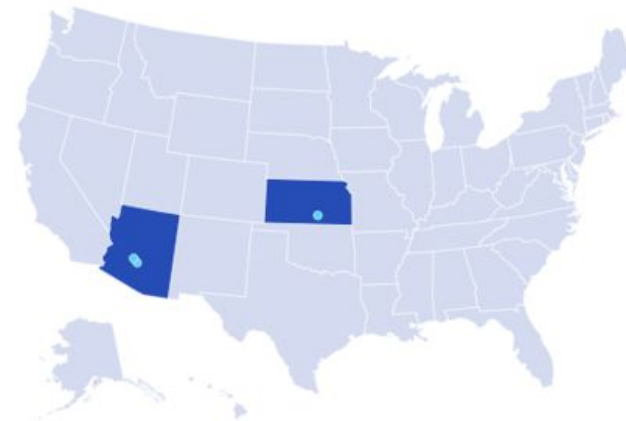
1.49 LQ

The region could carve out a niche in the OSAT market, but it's an aspirational target.

3. The global OSAT market is currently valued around \$43B, and is projected to grow at 8.6% CAGR to reach \$71B by 2029¹⁰.
4. It is also one of the least concentrated markets in the semiconductor value chain.
 - There are only ~25 total OSATs in the US and only one of the top 20 global firms by market cap is HQed here¹¹.
 - U.S. facilities typically offer small to medium volume production, often for specific markets like the defense sector.
 - Larger scale operations are needed to meet increased demand for high performance computing.
5. China and Taiwan have greatly increased their market share.
 - Federal programs to incentivize reshoring are expected.
6. Preparing the workforce will be a major challenge.
 - But the University of Michigan has among the top ranked semiconductor training institutes in the country.
 - Thus, there is room for super-region collab with UM and Ann-Arbor.
7. There is potential for the OSATs industry to be a “skeleton key” for other industries’ growth in Lansing.
 - Tighter supply chain could spur co-location of other firms.

Semiconductor Industry Association, “U.S. Semiconductor Ecosystem Map”

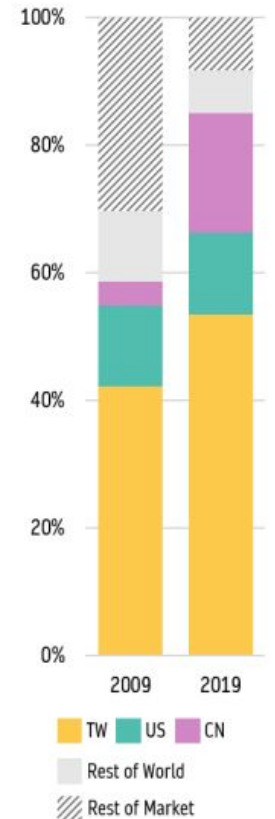
Only 3 New OSATs Projects in America



Map Source: <https://www.semiconductors.org/ecosystem/>

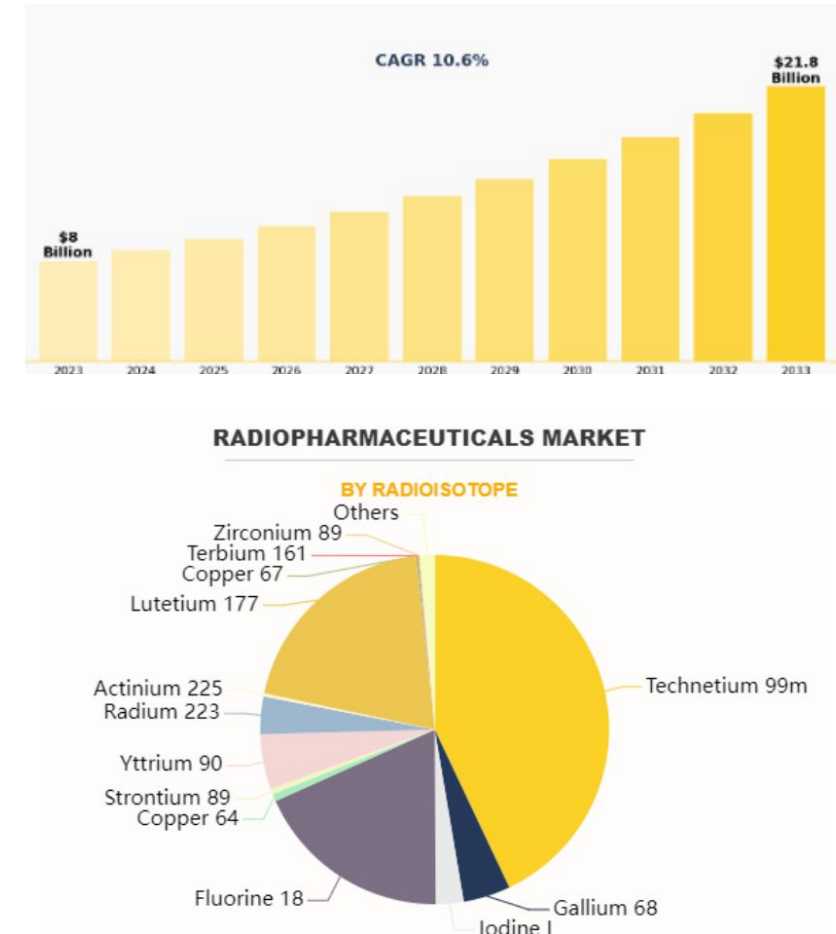
Chart Source:
https://www.interface-eu.org/storage/archive/files/the_global_semiconductor_value_chain.pdf

Top20 OSAT Companies
[market share by HQ location]



The medical isotope industry is a highly compelling near-term opportunity.

1. There is a regional specialization in the NAICS code related to this industry, but it's complicated.
 - LQ of 1.85 in “Pharmaceutical Preparation Manufacturing,” which covers radioisotopes for therapeutic use.
 - But there is a low establishment count (2) that makes this number unreliable.
 - When only 1-2 large firms dominant employment, regional specialization is less clear.
2. This industry is smaller than other opportunities facing the region.
 - The global radiopharmaceutical market¹² was valued at \$7.9B in 2023 and is projected to grow at 10.6% CAGR to \$21.8B by 2033.
 - Historically more than 90% of the market is for diagnostic, rather than therapeutic, applications, but this is beginning to shift.
 - The current regional industry presence (Niowave) is focused largely on the therapeutic side.
 - 3 major isotopes are their focus, all of which are in the major isotopes chart to the right (including the parent of Tech-99).
3. There has been a more than 550% increase in VC funding in the space over the last 5 years¹³.



Source: <https://www.alliedmarketresearch.com/radiopharmaceuticals-market-A14458>

The medical isotope industry is a highly compelling near-term opportunity.

4. There are high barriers to entry in this industry.
 - Extracting and processing isotopes is capital intensive.
 - Regulatory requirements are stringent.
 - Handling and shipping radioactive materials is a complex process with significant risk.
5. These barriers can be both a pro and a con for Lansing.
6. This industry is a great fit for the local ecosystem, with strong near-term job creation potential.
 - Outsized presence of nuclear talent in the Lansing and broader Mid-Michigan region.
 - There is proximity to potential end users.
 - MI ranks top 10 for university-led bioscience R&D¹⁴.
 - Largest end user is hospitals and clinics, which Lansing's location provides strong access to.
 - Jobs pay 64% above area median wages.
 - Spinoff economic development opportunities are available in packaging and shipping of nuclear materials.

There are some concerns with building around this industry



Smaller Market: Smaller total addressable market + only one significant local company (Niowave) to anchor MARS' efforts.



Long Process: There is a lengthier timeline to realize value inflection, due to the upfront R&D needed to spinout new companies.



Less Overlap: The synthetic diamond components of the MARS value proposition aren't necessary to this industry.

These industries would have varying spillovers for the regional economy.

- For employment, motor vehicle manufacturing is the strongest industry for the regional economy, with each new job created helping to create an additional 1.86 jobs through indirect and induced spillovers.
- By contrast, total regional sales is maximized on a per-unit basis by aerospace manufacturing.
- However, each of these industries also varies in how large their growth in-region could be.
 - While motor vehicle manufacturing may have a larger jobs multiplier, if only 100 new direct jobs are created this will still be a smaller effect size than 500 new battery manufacturing jobs.
 - The table on the bottom shows the projected impact of 1,700 new battery manufacturing jobs (the size of the Ultium project) compared against a doubling of a company like Niowave (150 jobs).

Industry	Employment Multiplier	Sales/Output Multiplier	Compensation Multiplier
Aerospace Products and Parts Mfg	1.97	1.71	1.65
Motor Vehicle Mfg	2.86	1.35	2.37
Battery Mfg	1.53	1.42	1.45
Pharmaceutical Preparation Mfg	1.85	1.41	1.45

Annual Impact of Battery Manufacturing (Event Size = 1700)				
	Direct	Indirect	Induced	Total
Employment	1,700	270	630	2,600
Sales/Output	\$586,107,342	\$98,857,098	\$146,617,898	\$831,582,338
Compensation	\$152,241,973	\$24,448,170	\$43,529,147	\$220,219,289
Annual Impact of Pharmaceutical Preparation Manufacturing (Event Size = 150)				
	Direct	Indirect	Induced	Total
Employment	150	41	87	278
Sales/Output	\$89,649,950	\$16,745,150	\$20,272,068	\$126,667,167
Compensation	\$24,228,963	\$4,825,310	\$6,018,541	\$35,072,814

Source: See Appendix VI: Greater Lansing Economic Impact for more detail.

EDA Tech Hub Recommendations

The region will increase its competitiveness for large public funding programs if a few conditions are met.

A summary of our recommendations to strengthen the MARS proposal.

1. Narrow your focus and secure early adopters.
2. Increase focus on supporting high-growth startups.
3. Develop a physical landing spot to co-house companies and programs.
4. Explore the development of a targeted workforce development subcommittee.

Narrow your industry focus and secure early adopters.

1. Narrow your industry focus for near-term narrative development and momentum building.
2. De-emphasize medical isotopes.
 - Prioritize narrative simplicity first and foremost.
 - Pursue industry opportunities with higher impact potential and wider potential applications and users.
3. Build your consortium around electronics and electronic product manufacturing.
 - Utilize automotive/battery manufacturing as an early adopter.
 - Track aerospace, defense, and space tech as longer-term aspirations.
4. Offer a combined package of space, testing service, collaborative R&D, and capital to attract satellite operations of companies to locate in Lansing.

Early Adopters



Growth Targets



Increase focus on supporting high-growth startups.



Increase Corporate Innovation Engagement

- **Challenge:** Low volume of regional startup activity, lack of industry participation
- **Proposal:** Create a topically focused venture studio or open innovation program, sponsored by corporate anchors.
- **Resources:** Existing infrastructure through Spartan Innovations, Fraunhofer's Tech Bridge program, etc.



Strengthen Regional Access to Capital

- **Challenge:** Capital intensity of startups in the advanced materials space, shortage of risk capital in-region
- **Proposal:** Launch a “capital connector” program to in-source sophisticated VC/PE from out of region.
- **Resources:** Co-invest through Rise/Red Cedar, MEDC network, SSBCI as potential match.

Develop a physical landing spot to co-house companies and programs.

1. An intentional focus on real estate development could have numerous economic and community development impacts:
 - Landing spot for new companies (smaller satellites)
 - Further links university with community
 - Generates positive externalities in transitional area
2. Ownership and operatorship of the building will matter, but a new MARS entity should, at minimum, operate it.
3. To make the building viable, revenue generating opportunities must be identified early.
4. A combination of tenant lease agreements and fee-based services could be a workable model.
5. Employ variable rates depending on company size/maturity.
6. Consider making the building the single, permanent home of a shared infrastructure/equipment library that could drive fees-paying customers to engage in the space.
 - We recommend conducting a thorough core facilities review before doing this to better understand existing options and which resources are most in-demand for target companies.



Explore the development of a targeted workforce development subcommittee.

1. With narrowed focus, targeted workforce recommendations are possible.
 - The initial MARS focus on “advanced materials” broadly was too large to develop curated workforce programs around.
2. Conduct an occupational crosswalk analysis to determine shared skills needs and any overlap in training options that could benefit multiple certifications/credentials.
 - Use a “what if” scenario to strategize around new unplanned demand, not forecast demand.
3. Explore how developed curriculum could be licensed to other ecosystems in the long-run, as a revenue generation strategy.
4. Develop a process to offer customized workforce solutions for paying industry partners (micro-credentials, etc.).

Lansing-East Lansing, MI MSA, NAICS 33591 - Battery Manufacturing (1700 Workers)			
SOC	Title	New Employer Demand	Potential Candidates per Opening
51-2028	Electrical, Electronic, and Electromechanical Equipment Assemblers, Except Coil Winders, Tapers, and Finishers	335	1
51-2092	Team Assemblers	166	24
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	67	15
17-2112	Industrial Engineers	44	23
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	41	5
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	38	88
51-4041	Machinists	37	17
11-1021	General and Operations Managers	36	133
17-2071	Electrical Engineers	31	12
17-2141	Mechanical Engineers	23	48

Lansing-East Lansing, MI MSA, NAICS 3361 - Motor Vehicle Manufacturing (200 Workers)			
SOC	Title	New Employer Demand	Potential Candidates per Opening
51-2092	Team Assemblers	106	38
51-2099	Assemblers and Fabricators, All Other	13	45
51-1011	First-Line Supervisors of Production and Operating Workers	5	202
17-2112	Industrial Engineers	5	205
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	4	56
47-2111	Electricians	4	284
49-9041	Industrial Machinery Mechanics	4	170
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	4	249
11-3051	Industrial Production Managers	3	186
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	3	1,110

Source: JobsEQ®

Ecosystem Recommendations

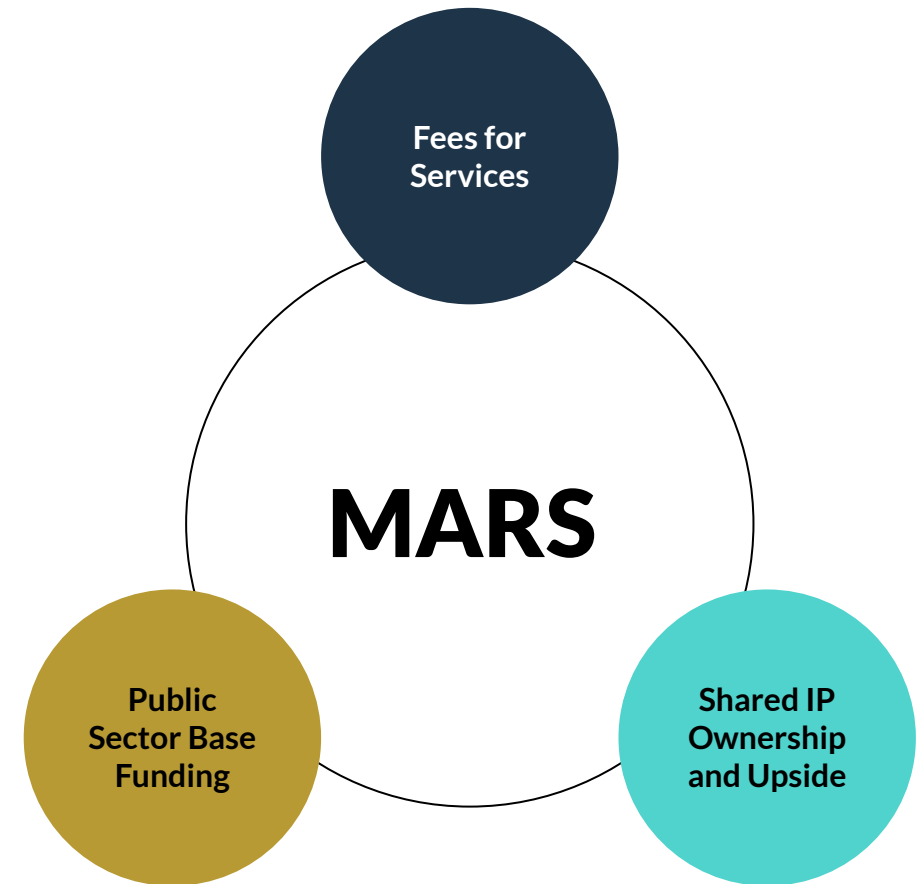
Irrespective of grant funding, Greater Lansing's ability to implement an effective TBED strategy around advanced materials will be bolstered if community stakeholders can address several preconditions.

A summary of our recommendations to strengthen Lansing's Innovation Ecosystem.

1. Adopt a new governance structure to lead MARS.
2. Identify public funding options besides the Tech Hub programs.
3. Promote culture change within MSU to aid improvement in commercialization output.
4. Scale the radiation effects R&D group and attract more top scientific talent in this area.
5. Don't forget about traditional economic development along the way!

Adopt a new governance structure to lead MARS.

1. Regional Needs:
 - An entity with the ability to build and maintain regional alignment;
 - Represent multiple (oftentimes disparate) stakeholder interests;
 - Play vital attraction and outreach roles; and
 - Generate a diversified revenue stream that could promote sustainability.
2. Fidelity to core mission and incentive structures is important.
3. We do not recommend membership models.
4. A three-legged revenue model is both more durable and more adaptive:
 - Testing and services agreements
 - Public sector investment
 - Shared IP management/ownership



Identify public funding options besides Tech Hubs.

1. Public funding is imperative in the early days of TBED initiatives.
2. Federal programs are highly competitive, with only the top 5-10% applications seeing awards.
3. Diversifying sources of public/civic sector funding is wise.
 - Family offices
 - Impact investors
 - State
4. We recommend parallel fundraising efforts with the State of Michigan.
 - They could play a lead role OR simply serve as a **dedicated** source of matching funds.
5. Gaining state buy-in will, however, benefit by MARS broadening the constituency outside of Lansing.
 - Exploring the replication of models like Ohio's Innovation Districts program or Indiana's READI could provide state resources to support MARS (and others).
 - A super-regional approach could also work. A Flint/Midland triangle or Detroit/Ann Arbor corridor would widen the base of stakeholders benefiting from state action, incentivizing the state to finally put tangible support behind one tech hub, rather than passively supporting all of them.
6. Adding dedicated capacity to lead fundraising strategy and pursuit is a good first application of the new governance entity. The MARS consortium should seek out expertise to lead fundraising efforts.

Promote culture change within MSU to aid improvement in commercialization output.

1. MSU Innovation Center is already following best practices when it comes to commercialization support programming.
 - MSU Business Connect (corporate engagement)
 - MSU Technologies (traditional tech transfer)
 - Spartan Innovations (startups and entrepreneurship)
2. However, performance continues to lag.
 - As aforementioned, this could indicate issues in the academic culture at MSU.
 - It could also indicate a research pipeline that, while vast, is not as conducive to promoting commercialization.
3. We recommend hiring a consultant to conduct a thorough and formal review of tech transfer and commercialization policies, procedures, and systems within the university.
 - This would, at a minimum, focus on faculty rewards and incentives, the construction of the institution's research pipeline, and widening the funnel of commercializable research through changes in faculty hiring practices.

AUTM Metric	MSU Rank among Peers
Research Expenditures	8/14
Licenses	12/14
License Revenue	13/14
Patent Applications	12/14
Startups Formed	14/14
Startups per \$100M	13/14

Source: MSU Peer Benchmark Set, AUTM 2021; provided by Charles Hasemann.

Promote culture change within MSU to aid improvement in commercialization output.

4. As an overview of best practices:

- **Construct a R&D pipeline that is conducive to commercialization.**
 - Some research fields tend to produce more commercially viable discoveries. Focusing resources into high-value areas can improve downstream output.
 - Among these, biotech/biopharma, computer science, and advanced materials track near the top.
 - By contrast, social sciences, geology and earth sciences, and theoretical physics trend towards the bottom.
- **Align faculty rewards with commercialization outcomes.**
 - Promotion and tenure metrics should reward patent generation, startups and other commercialization activities.
 - Senior faculty mentoring should encourage junior faculty to engage in commercialization.
- **Develop programs to widen the funnel .**
 - Pull more faculty and grad students toward commercialization.
 - Add non-tenured faculty positions focused on translational research and commercialization.
- **Benchmark successful universities (see sample to the right).**



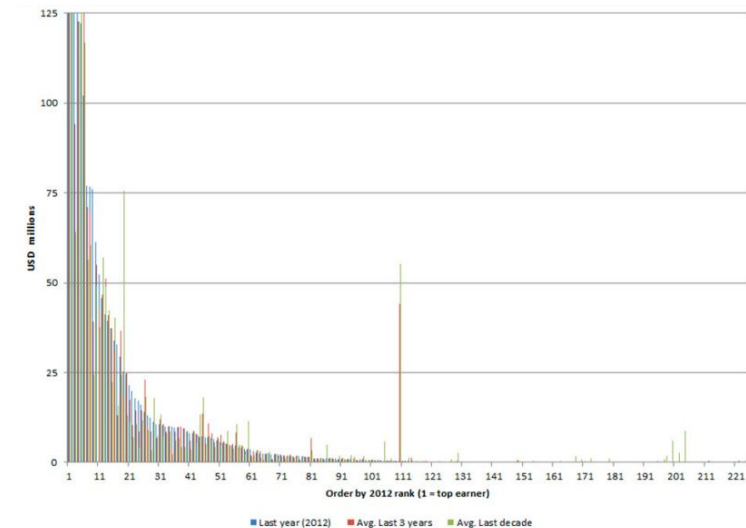
UNIVERSITY OF MINNESOTA



Scale the radiation effects R&D group and attract more top scientific talent in this area.

1. The greatest contributor to commercialization is R&D input.
 - There is a power law distribution at play in most AUTM dimensions (license revenue, startups, etc.)¹⁵.
 - Focusing in a core area can enable differential competition, relative to spreading R&D budgets thin.
2. A significant area of research focus is emerging at MSU in radiation effects.
 - Developing a program like the Georgia Research Alliance did to attract and retain the top scientific talent in this field will only build upon this emerging regional strength.
3. These top scientists are also disproportionate drivers of securing large federal contracts from agencies like DoD.
 - Despite only being 5% of Georgia's research workforce they drive 25% of the public and private R&D funding¹⁶.
 - Ensuring that these "rockstar scientists" have the appropriate resources needed to secure large contracts, and aligning these projects to industry needs, can be a vital strategy for economic growth.

DISTRIBUTION OF LICENSING GROSS INCOME BY UNIVERSITY



GEORGIA RESEARCH ALLIANCE: The Payoff



3,600 professionals
working in research laboratories and startup
companies that received GRA investment
(Year: 2019)

Source: <https://gra.org/stories/1046/>

Don't forget about traditional economic development opportunities along the way!

1. MARS can drive a compelling regional value proposition by copying the Shenzhen/Dresden blueprint.
 - Ease of testing, manufacturing, and shipping eventually results in relocation of operations.
2. However, the execution of this value proposition requires that MARS and regional economic developers be on the same page.
3. Hyper focusing attraction efforts on niche needs that emerge within clients' value chains can help ensure that regional companies are supported to scale in place.
 - Example: Formalizing a partnership with economic development agencies around advanced packaging/shipping to support end-to-end solutions for these companies.

Sources

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WAYMAKER
GROUP

Thank you.

APPENDIX I

Greater Lansing Economic Overview



Economic Overview

Lansing-East Lansing, MI MSA



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Demographic Profile

The population in the Lansing-East Lansing, MI MSA was 470,861 per American Community Survey data for 2018-2022.

The region has a civilian labor force of 248,249 with a participation rate of 64.2%. Of individuals 25 to 64 in the Lansing-East Lansing, MI MSA, 38.4% have a bachelor's degree or higher which compares with 35.8% in the nation.

The median household income in the Lansing-East Lansing, MI MSA is \$69,225 and the median house value is \$189,619.

Summary¹

	Percent			Value		
	Lansing-East Lansing, MI MSA	Michigan	USA	Lansing-East Lansing, MI MSA	Michigan	USA
Demographics						
Population (ACS)	—	—	—	470,861	10,057,921	331,097,593
Male	49.3%	49.6%	49.6%	232,015	4,993,696	164,200,298
Female	50.7%	50.4%	50.4%	238,846	5,064,225	166,897,295
Median Age ²	—	—	—	36.3	39.9	38.5
Under 18 Years	20.2%	21.4%	22.1%	95,076	2,149,464	73,213,705
18 to 24 Years	14.7%	9.6%	9.4%	69,025	970,018	31,282,896
25 to 34 Years	13.5%	13.0%	13.7%	63,460	1,307,008	45,388,153
35 to 44 Years	11.9%	11.9%	12.9%	56,076	1,196,758	42,810,359
45 to 54 Years	11.4%	12.4%	12.4%	53,507	1,250,963	41,087,357
55 to 64 Years	12.4%	13.9%	12.9%	58,394	1,396,885	42,577,475
65 to 74 Years	9.8%	10.6%	9.7%	46,020	1,069,878	32,260,679
75 Years and Over	6.2%	7.1%	6.8%	29,303	716,947	22,476,969
Race: White	77.7%	75.7%	65.9%	365,742	7,617,085	218,123,424
Race: Black or African American	9.0%	13.6%	12.5%	42,588	1,363,539	41,288,572
Race: American Indian and Alaska Native	0.4%	0.5%	0.8%	1,764	45,662	2,786,431
Race: Asian	4.6%	3.3%	5.8%	21,450	327,551	19,112,979
Race: Native Hawaiian and Other Pacific Islander	0.0%	0.0%	0.2%	43	2,780	624,863
Race: Some Other Race	1.6%	1.6%	6.0%	7,637	157,999	20,018,544
Race: Two or More Races	6.7%	5.4%	8.8%	31,637	543,305	29,142,780
Hispanic or Latino (of any race)	7.1%	5.5%	18.7%	33,401	550,427	61,755,866
Population Growth						
Population (Pop Estimates) ⁴	—	—	—	473,177	10,037,261	334,914,895
Population Annual Average Growth ⁴	0.1%	0.1%	0.6%	384	12,246	1,885,495
People per Square Mile ⁴	—	—	—	278.7	177.3	94.8
Economic						
Labor Force Participation Rate and Size (civilian population 16 years and over)	64.2%	61.4%	63.3%	248,249	5,013,611	167,857,207
Prime-Age Labor Force Participation Rate and Size (civilian population 25-54)	85.6%	82.0%	82.8%	147,914	3,077,483	106,380,520
Armed Forces Labor Force	0.1%	0.1%	0.5%	275	4,979	1,236,378
Veterans, Age 18-64	3.6%	3.7%	4.3%	10,713	226,546	8,636,019
Veterans Labor Force Participation Rate and Size, Age 18-64	74.3%	73.8%	77.1%	7,964	167,218	6,656,238
Median Household Income ²	—	—	—	\$69,225	\$68,505	\$75,149
Per Capita Income	—	—	—	\$37,764	\$37,929	\$41,261
Mean Commute Time (minutes)	—	—	—	21.7	24.5	26.7
Commute via Public Transportation	1.8%	1.1%	3.8%	4,210	50,639	5,945,723
Educational Attainment, Age 25-64						
No High School Diploma	5.2%	7.7%	10.1%	12,114	395,084	17,373,867

Summary¹

	Percent			Value		
	Lansing-East Lansing, MI MSA	Michigan	USA	Lansing-East Lansing, MI MSA	Michigan	USA
High School Graduate	21.7%	26.6%	25.1%	50,327	1,368,295	43,176,248
Some College, No Degree	23.8%	22.7%	19.7%	55,074	1,168,053	33,916,989
Associate's Degree	10.9%	10.3%	9.2%	25,129	529,192	15,886,884
Bachelor's Degree	23.6%	20.6%	22.4%	54,695	1,059,370	38,451,123
Postgraduate Degree	14.7%	12.3%	13.4%	34,098	631,620	23,058,233
Housing						
Total Housing Units	—	—	—	205,850	4,580,447	140,943,613
Median House Value (of owner-occupied units) ^{2,5}	—	—	—	\$189,619	\$201,100	\$281,900
Homeowner Vacancy	1.0%	1.0%	1.1%	1,233	29,370	931,393
Rental Vacancy	5.6%	4.8%	5.5%	3,944	56,206	2,623,236
Renter-Occupied Housing Units (% of Occupied Units)	33.9%	27.5%	35.2%	64,988	1,102,783	44,238,593
Occupied Housing Units with No Vehicle Available (% of Occupied Units)	6.9%	7.2%	8.3%	13,264	287,851	10,474,870
Social						
Poverty Level (of all people)	13.2%	13.1%	12.5%	59,469	1,293,164	40,521,584
Households Receiving Food Stamps/SNAP	10.1%	12.7%	11.5%	19,445	508,976	14,486,880
Enrolled in Grade 12 (% of total population)	1.1%	1.3%	1.4%	5,385	134,254	4,476,703
Disconnected Youth ³	2.1%	2.7%	2.5%	635	14,264	430,795
Children in Single Parent Families (% of all children)	32.8%	34.3%	34.0%	29,517	704,235	23,568,955
Uninsured	4.7%	5.2%	8.7%	21,861	515,011	28,315,092
With a Disability, Age 18-64	12.1%	12.0%	10.5%	36,225	728,961	20,879,820
With a Disability, Age 18-64, Labor Force Participation Rate and Size	50.3%	42.7%	45.5%	18,208	311,103	9,492,098
Foreign Born	7.2%	6.9%	13.7%	33,778	694,860	45,281,071
Speak English Less Than Very Well (population 5 yrs and over)	3.0%	3.4%	8.2%	13,462	323,255	25,704,846

Source: [JobsEQ®](#)

1. American Community Survey 2018-2022, unless noted otherwise

2. Median values for certain aggregate regions (such as MSAs) may be estimated as the weighted averages of the median values from the composing counties.

3. Disconnected Youth are 16-19 year olds who are (1) not in school, (2) not high school graduates, and (3) either unemployed or not in the labor force.

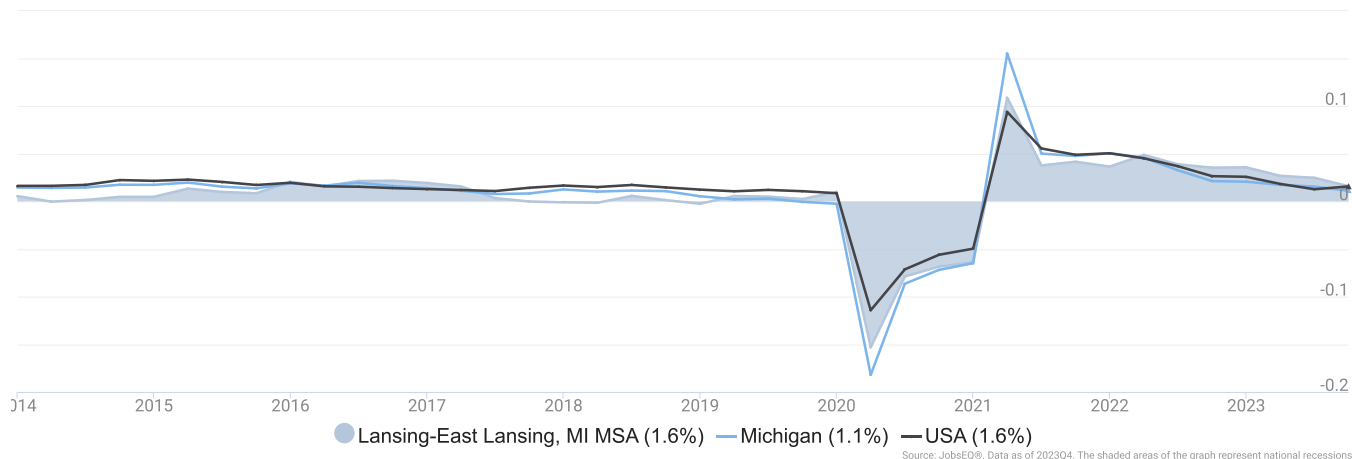
4. Census Population Estimate for 2023, annual average growth rate since 2013. Post-2019 data for Connecticut counties are imputed by Chmura.

5. The Census's method for calculating median house values changed with the 2022 data set, so pre-2022 values are not directly comparable with later data.

Employment Trends

As of 2023Q4, total employment for the Lansing-East Lansing, MI MSA was 229,139 (based on a four-quarter moving average). Over the year ending 2023Q4, employment increased 1.6% in the region.

Employment for Lansing-East Lansing, MI MSA

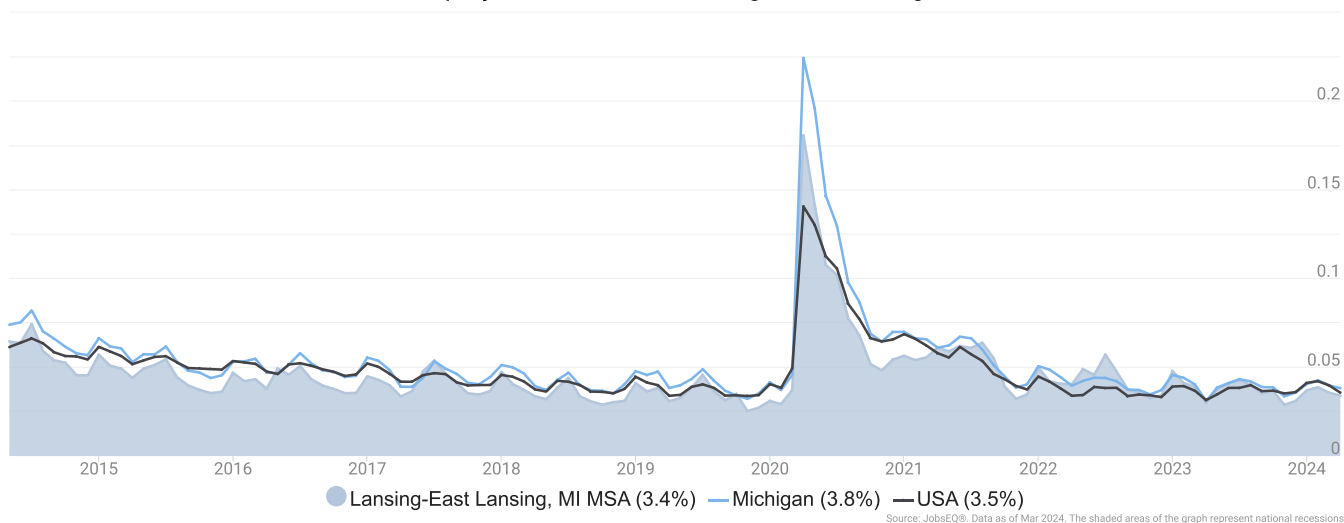


Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2023Q3 with preliminary estimates updated to 2023Q4.

Unemployment Rate

The unemployment rate for the Lansing-East Lansing, MI MSA was 3.4% as of April 2024. The regional unemployment rate was lower than the national rate of 3.5%. One year earlier, in April 2023, the unemployment rate in the Lansing-East Lansing, MI MSA was 2.9%.

Unemployment Rate for Lansing-East Lansing, MI MSA

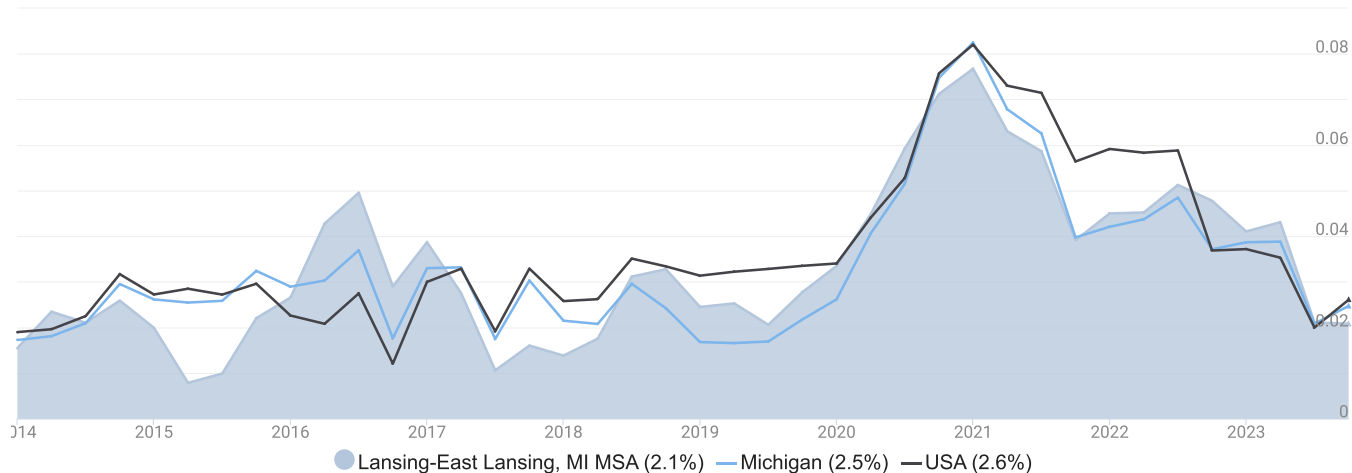


Unemployment rate data are from the Local Area Unemployment Statistics, provided by the Bureau of Labor Statistics and updated through April 2024.

Wage Trends

The average worker in the Lansing-East Lansing, MI MSA earned annual wages of \$61,314 as of 2023Q4. Average annual wages per worker increased 2.1% in the region over the preceding four quarters. For comparison purposes, annual average wages were \$69,861 in the nation as of 2023Q4.

Average Annual Wages for Lansing-East Lansing, MI MSA



Annual average wages per worker data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2023Q3 with preliminary estimates updated to 2023Q4.

Cost of Living Index

The Cost of Living Index estimates the relative price levels for consumer goods and services. When applied to wages and salaries, the result is a measure of relative purchasing power. The cost of living is 9.7% lower in Lansing-East Lansing, MI MSA than the U.S. average.

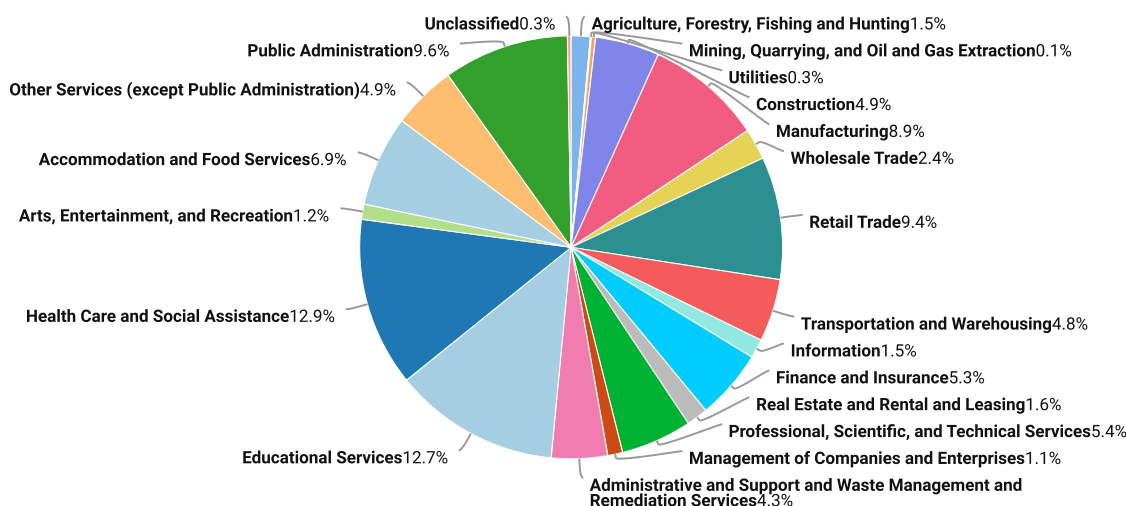
Cost of Living Information			
	Annual Average Salary	Cost of Living Index (Base US)	US Purchasing Power
Lansing-East Lansing, MI MSA	\$61,314	90.3	\$67,911
Michigan	\$63,707	101.3	\$62,882
USA	\$69,861	100.0	\$69,861

Source: [JobsEQ®](#)
Data as of 2023Q4
Cost of Living per [COLI](#), data as of 2023Q4, imputed by Chmura where necessary.

Industry Snapshot

The largest sector in the Lansing-East Lansing, MI MSA is Health Care and Social Assistance, employing 29,598 workers. The next-largest sectors in the region are Educational Services (29,073 workers) and Public Administration (21,969). High location quotients (LQs) indicate sectors in which a region has high concentrations of employment compared to the national average. The sectors with the largest LQs in the region are Public Administration (LQ = 2.08), Educational Services (1.59), and Finance and Insurance (1.34).

Total Workers for Lansing-East Lansing, MI MSA by Industry



Source: JobsEQ® Data as of 2023Q4

Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2023Q3 with preliminary estimates updated to 2023Q4.

Sectors in the Lansing-East Lansing, MI MSA with the highest average wages per worker are Management of Companies and Enterprises (\$137,778), Utilities (\$107,473), and Mining, Quarrying, and Oil and Gas Extraction (\$89,822). Regional sectors with the best job growth (or most moderate job losses) over the last 5 years are Public Administration (+1,470 jobs), Construction (+1,430), and Professional, Scientific, and Technical Services (+1,091).

Over the next 5 years, employment in the Lansing-East Lansing, MI MSA is projected to contract by 2,671 jobs. The fastest growing sector in the region is expected to be Professional, Scientific, and Technical Services with a +0.4% year-over-year rate of growth. The strongest forecast by number of jobs over this period is expected for Health Care and Social Assistance (+386 jobs), Professional, Scientific, and Technical Services (+236), and Transportation and Warehousing (+157).

Lansing-East Lansing, MI MSA, 2023Q4¹

NAICS	Industry	Current			5-Year History		5-Year Forecast				
		Empl	Avg Ann Wages	LQ	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
62	Health Care and Social Assistance	29,598	\$59,803	0.88	502	0.3%	14,916	6,997	7,533	386	0.3%
61	Educational Services	29,073	\$69,460	1.59	-819	-0.6%	13,215	6,666	6,912	-364	-0.3%
92	Public Administration	21,969	\$75,406	2.08	1,470	1.4%	9,266	4,388	5,557	-679	-0.6%
44	Retail Trade	21,501	\$36,977	0.95	-664	-0.6%	13,642	6,422	8,056	-836	-0.8%
31	Manufacturing	20,491	\$73,090	1.11	582	0.6%	9,610	4,073	6,103	-566	-0.6%
72	Accommodation and Food Services	15,886	\$22,292	0.80	-1,172	-1.4%	13,667	6,265	7,641	-239	-0.3%
54	Professional, Scientific, and Technical Services	12,449	\$86,283	0.74	1,091	1.9%	5,336	2,065	3,035	236	0.4%
52	Finance and Insurance	12,213	\$82,497	1.34	892	1.5%	5,055	2,138	2,953	-37	-0.1%
81	Other Services (except Public Administration)	11,261	\$43,921	1.16	-196	-0.3%	6,220	2,784	3,595	-159	-0.3%
23	Construction	11,227	\$68,520	0.82	1,430	2.8%	4,642	1,950	2,860	-168	-0.3%
48	Transportation and Warehousing	10,967	\$50,412	0.97	885	1.7%	6,184	2,630	3,397	157	0.3%
56	Administrative and Support and Waste Management and Remediation Services	9,807	\$46,395	0.68	-556	-1.1%	5,421	2,398	3,176	-153	-0.3%
42	Wholesale Trade	5,432	\$78,953	0.63	-555	-1.9%	2,569	1,088	1,622	-141	-0.5%
53	Real Estate and Rental and Leasing	3,738	\$60,311	0.91	-5	0.0%	1,773	859	936	-22	-0.1%
11	Agriculture, Forestry, Fishing and Hunting	3,346	\$41,648	1.18	685	4.7%	1,915	964	1,014	-64	-0.4%
51	Information	3,330	\$74,883	0.74	442	2.9%	1,521	587	904	30	0.2%
71	Arts, Entertainment, and Recreation	2,663	\$26,728	0.58	-32	-0.2%	2,003	841	1,144	18	0.1%
55	Management of Companies and Enterprises	2,634	\$137,778	0.74	-27	-0.2%	1,178	461	670	46	0.3%
22	Utilities	736	\$107,473	0.63	-87	-2.2%	125	117	169	-161	-4.8%
99	Unclassified	639	\$40,825	1.47	400	21.7%	350	155	201	-6	-0.2%
21	Mining, Quarrying, and Oil and Gas Extraction	177	\$89,822	0.21	8	0.9%	80	31	51	-2	-0.2%
Total - All Industries		229,139	\$61,314	1.00	4,274	0.4%	121,430	54,711	69,391	-2,671	-0.2%

Source: [JobsEQ®](#)

Data as of 2023Q4

Note: Figures may not sum due to rounding.

1. All data based upon a four-quarter moving average

Exits and transfers are approximate estimates based upon occupation separation rates.

Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2023Q3 with preliminary estimates updated to 2023Q4. Forecast employment growth uses national projections adapted for regional growth patterns.

Occupation Snapshot

The largest major occupation group in the Lansing-East Lansing, MI MSA is Office and Administrative Support Occupations, employing 29,043 workers. The next-largest occupation groups in the region are Transportation and Material Moving Occupations (18,852 workers) and Sales and Related Occupations (17,956). High location quotients (LQs) indicate occupation groups in which a region has high concentrations of employment compared to the national average. The major groups with the largest LQs in the region are Community and Social Service Occupations (LQ = 1.65), Educational Instruction and Library Occupations (1.29), and Legal Occupations (1.25).

Occupation groups in the Lansing-East Lansing, MI MSA with the highest average wages per worker are Management Occupations (\$118,600), Legal Occupations (\$105,100), and Healthcare Practitioners and Technical Occupations (\$95,400). The unemployment rate in the region varied among the major groups from 1.2% among Legal Occupations to 6.6% among Farming, Fishing, and Forestry Occupations.

Over the next 5 years, the fastest growing occupation group in the Lansing-East Lansing, MI MSA is expected to be Computer and Mathematical Occupations with a +0.9% year-over-year rate of growth. The strongest forecast by number of jobs over this period is expected for Computer and Mathematical Occupations (+317 jobs) and Healthcare Support Occupations (+243). Over the same period, the highest separation demand (occupation demand due to retirements and workers moving from one occupation to another) is expected in Office and Administrative Support Occupations (15,494 jobs) and Food Preparation and Serving Related Occupations (15,278).

Lansing-East Lansing, MI MSA, 2023Q4¹

SOC	Occupation	Current						5-Year History		5-Year Forecast				
		Empl	Mean Ann Wages ²	LQ	Unempl	Unempl Rate	Online Job Ads ³	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
43-0000	Office and Administrative Support	29,043	\$48,600	1.05	1,046	3.5%	1,649	-800	-0.5%	13,893	7,336	8,158	-1,601	-1.1%
53-0000	Transportation and Material Moving	18,852	\$44,800	0.94	1,220	6.5%	1,077	1,100	1.2%	12,299	5,335	6,844	120	0.1%
41-0000	Sales and Related	17,956	\$50,200	0.89	955	4.9%	2,491	-708	-0.8%	10,752	5,145	6,238	-630	-0.7%
11-0000	Management	17,010	\$118,600	0.99	349	1.9%	3,263	1,857	2.3%	6,507	2,572	3,883	52	0.1%
13-0000	Business and Financial Operations	16,209	\$78,900	1.11	496	2.8%	2,475	1,772	2.3%	6,274	2,446	3,878	-50	-0.1%
35-0000	Food Preparation and Serving Related	16,148	\$34,000	0.87	1,058	6.5%	1,261	-1,307	-1.5%	15,054	6,912	8,366	-224	-0.3%
25-0000	Educational Instruction and Library	15,848	\$70,500	1.29	440	2.7%	883	-239	-0.3%	7,179	3,756	3,509	-86	-0.1%
51-0000	Production	15,488	\$51,600	1.21	664	4.4%	458	-200	-0.3%	7,454	3,159	4,953	-658	-0.9%
29-0000	Healthcare Practitioners and Technical	11,976	\$95,400	0.89	212	1.6%	2,268	269	0.5%	3,412	1,874	1,447	91	0.2%
47-0000	Construction and Extraction	9,155	\$61,400	0.88	518	6.0%	282	685	1.6%	3,740	1,567	2,255	-82	-0.2%
31-0000	Healthcare Support	7,986	\$36,400	0.77	322	3.9%	687	132	0.3%	5,785	2,556	2,986	243	0.6%
49-0000	Installation, Maintenance, and Repair	7,902	\$56,500	0.88	215	2.8%	725	387	1.0%	3,337	1,515	1,881	-59	-0.1%
15-0000	Computer and Mathematical	7,299	\$89,800	0.99	207	2.5%	2,622	559	1.6%	2,518	819	1,383	317	0.9%
21-0000	Community and Social Service	6,836	\$56,700	1.65	246	3.5%	902	509	1.6%	2,979	1,265	1,617	96	0.3%
37-0000	Building and Grounds Cleaning and Maintenance	6,726	\$37,800	0.90	401	6.2%	507	44	0.1%	4,340	2,056	2,381	-98	-0.3%
39-0000	Personal Care and Service	5,087	\$37,900	0.90	268	5.0%	195	-160	-0.6%	4,466	1,757	2,676	34	0.1%
33-0000	Protective Service	5,006	\$55,800	1.02	159	3.3%	206	60	0.2%	2,458	1,274	1,330	-146	-0.6%

Lansing-East Lansing, MI MSA, 2023Q4¹

SOC	Occupation	Current						5-Year History		5-Year Forecast				
		Empl	Mean Ann Wages ²	LQ	Unempl	Unempl Rate	Online Job Ads ³	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
17-0000	Architecture and Engineering	4,415	\$90,600	1.19	123	2.3%	574	298	1.4%	1,378	584	792	3	0.0%
27-0000	Arts, Design, Entertainment, Sports, and Media	4,006	\$66,000	0.95	182	3.9%	375	-154	-0.8%	1,950	841	1,134	-24	-0.1%
23-0000	Legal	2,335	\$105,100	1.25	27	1.2%	173	8	0.1%	674	334	349	-9	-0.1%
19-0000	Life, Physical, and Social Science	2,334	\$76,100	1.16	66	2.5%	531	159	1.4%	968	241	725	1	0.0%
45-0000	Farming, Fishing, and Forestry	1,525	\$43,200	1.13	96	6.6%	14	492	8.1%	1,061	419	676	-34	-0.4%
Total - All Occupations		229,139	\$62,300	1.00	9,272	3.9%	23,619	4,763	0.4%	118,549	53,761	67,459	-2,671	-0.2%

Source: [JobsEQ®](#)

Data as of 2023Q4 unless noted otherwise

Note: Figures may not sum due to rounding.

1. Data based on a four-quarter moving average unless noted otherwise.

2. Wage data represent the average for all Covered Employment

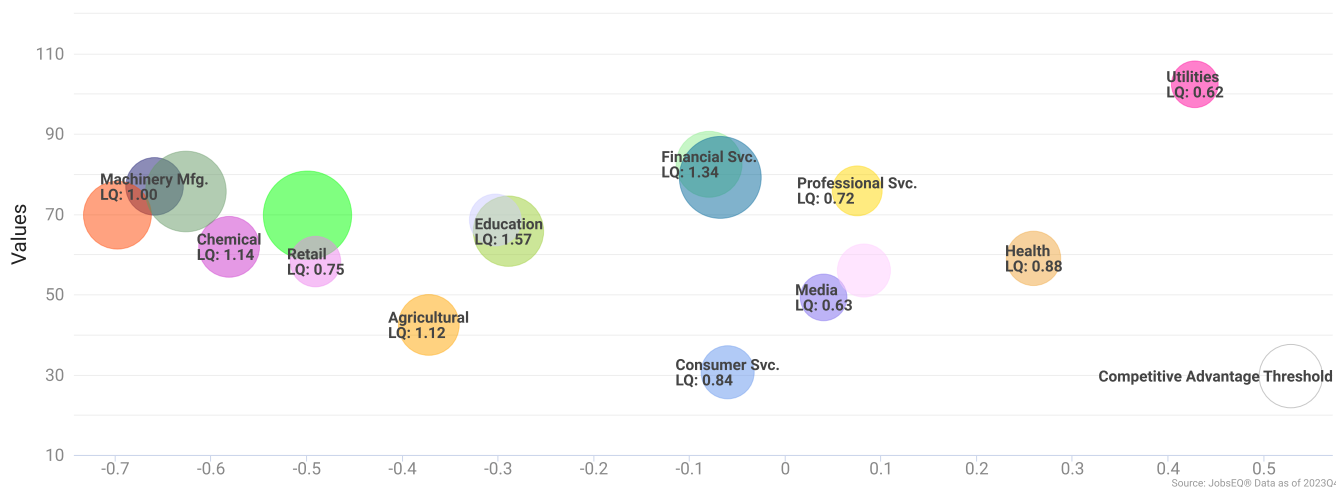
3. Data represent found online ads active within the last thirty days in the selected region. Due to alternative county-assignment algorithms, ad counts in this analytic may not match that shown in RTI (nor in the popup window ad list). Ad counts for ZCTA-based regions are estimates.

Occupation employment data are estimated via industry employment data and the estimated industry/occupation mix. Industry employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and currently updated through 2023Q3, imputed where necessary with preliminary estimates updated to 2023Q4. Wages by occupation are as of 2023 provided by the BLS and imputed where necessary. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.

Industry Clusters

A cluster is a geographic concentration of interrelated industries or occupations. The industry cluster in the Lansing-East Lansing, MI MSA with the highest relative concentration is Auto/Auto-related with a location quotient of 2.56. This cluster employs 9,810 workers in the region with an average wage of \$69,771. Employment in the Auto/Auto-related cluster is projected to contract in the region about 0.5% per year over the next ten years.

Industry Clusters for Lansing-East Lansing, MI MSA as of 2023Q4

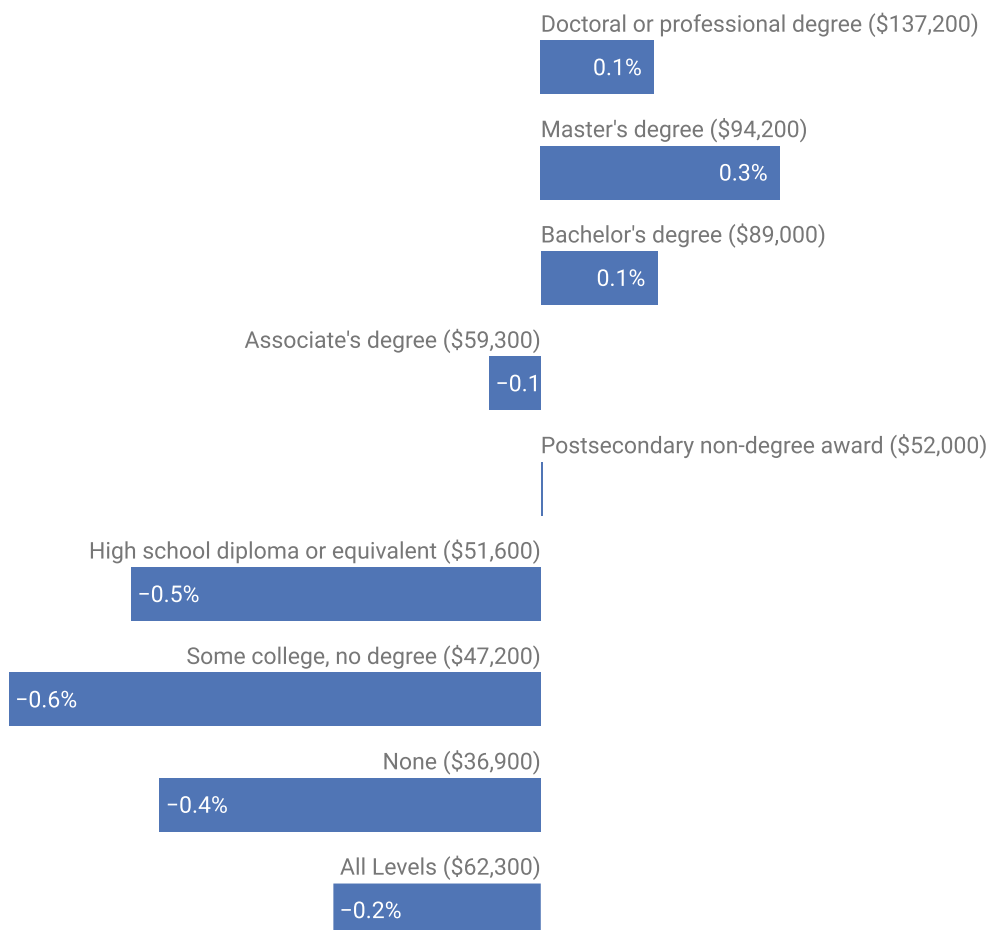


Location quotient and average wage data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics, imputed where necessary, and updated through 2023Q3 with preliminary estimates updated to 2023Q4. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.

Education Levels

Expected growth rates for occupations vary by the education and training required. While all employment in the Lansing-East Lansing, MI MSA is projected to contract 0.2% over the next ten years, occupations typically requiring a postgraduate degree are expected to grow 0.1% per year, those requiring a bachelor's degree are forecast to grow 0.1% per year, and occupations typically needing a 2-year degree or certificate are expected to contract 0.1% per year.

Annual Average Projected Job Growth by Education Levels

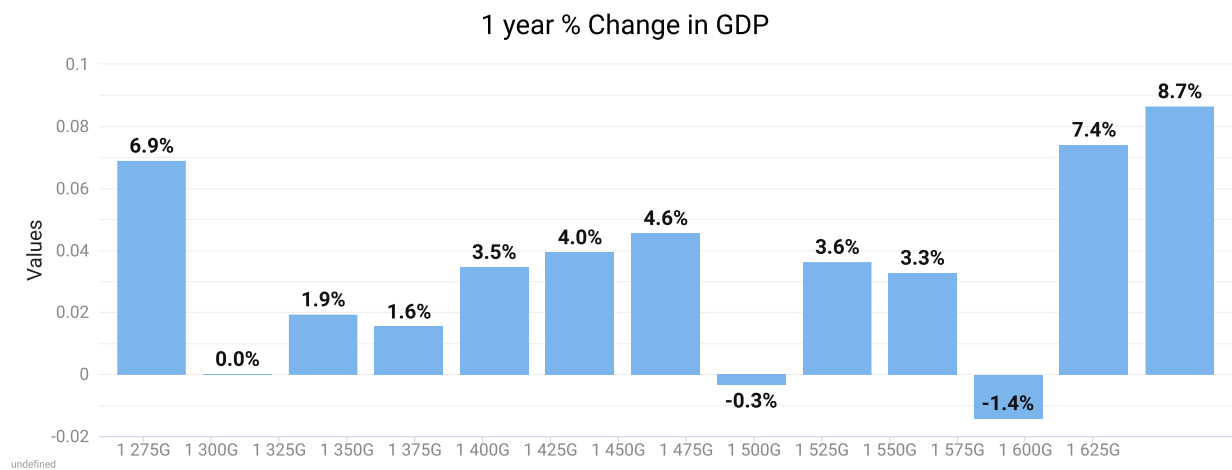


Source: JobsEQ®
Data as of 2023Q4

Employment by occupation data are estimates as of 2023Q4. Education levels of occupations are based on BLS assignments. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.

Gross Domestic Product

Gross Domestic Product (GDP) is the total value of goods and services produced by a region. In 2022, nominal GDP in the Lansing-East Lansing, MI MSA expanded 8.7%. This follows growth of 7.4% in 2021. As of 2022, total GDP in the Lansing-East Lansing, MI MSA was \$28,375,646,000.



Gross Domestic Product data are provided by the Bureau of Economic Analysis, imputed by Chmura where necessary, updated through 2022.

Of the sectors in the Lansing-East Lansing, MI MSA, Real Estate and Rental and Leasing contributed the largest portion of GDP in 2022, \$3,892,548,000 The next-largest contributions came from Manufacturing (\$3,569,151,000); Educational Services (\$3,251,196,000); and Public Administration (\$2,472,487,000).

GDP (in \$ millions)

Real Estate and Rental and Leasing (53)

\$3,893

Manufacturing (31)

\$3,569

Educational Services (61)

\$3,251

Public Administration (92)

\$2,472

Finance and Insurance (52)

\$2,391

Health Care and Social Assistance (62)

\$2,385

Retail Trade (44)

\$1,717

Professional, Scientific, and Technical Services (54)

\$1,545

Wholesale Trade (42)

\$1,162

Construction (23)

\$982

Gross Domestic Product data are provided by the Bureau of Economic Analysis, imputed by Chmura where necessary, updated through 2022.

FAQ

What is a location quotient?

A location quotient (LQ) is a measurement of concentration in comparison to the nation. An LQ of 1.00 indicates a region has the same concentration of an industry (or occupation) as the nation. An LQ of 2.00 would mean the region has twice the expected employment compared to the nation and an LQ of 0.50 would mean the region has half the expected employment in comparison to the nation.

What is separation demand?

Separation demand is the number of jobs required due to separations—labor force exits (including retirements) and turnover resulting from workers moving from one occupation into another. Note that separation demand does not include all turnover—it does not include when workers stay in the same occupation but switch employers. The total projected demand for an occupation is the sum of the separation demand and the growth demand (which is the increase or decrease of jobs in an occupation expected due to expansion or contraction of the overall number of jobs in that occupation).

What is a cluster?

A cluster is a geographic concentration of interrelated industries or occupations. If a regional cluster has a location quotient of 1.25 or greater, the region is considered to possess a competitive advantage in that cluster.

What is the difference between industry wages and occupation wages?

Industry wages and occupation wages are estimated via separate data sets, often the time periods being reported do not align, and wages are defined slightly differently in the two systems (for example, certain bonuses are included in the industry wages but not the occupation wages). It is therefore common that estimates of the average industry wages and average occupation wages in a region do not match exactly.

What is NAICS?

The North American Industry Classification System (NAICS) is used to classify business establishments according to the type of economic activity. The NAICS Code comprises six levels, from the “all industry” level to the 6-digit level. The first two digits define the top level category, known as the “sector,” which is the level examined in this report.

What is SOC?

The Standard Occupational Classification system (SOC) is used to classify workers into occupational categories. All workers are classified into one of over 804 occupations according to their occupational definition. To facilitate classification, occupations are combined to form 22 major groups, 95 minor groups, and 452 occupation groups. Each occupation group includes detailed occupations requiring similar job duties, skills, education, or experience.

About This Report

This report and all data herein were produced by JobsEQ®, a product of Chmura Economics & Analytics. The information contained herein was obtained from sources we believe to be reliable. However, we cannot guarantee its accuracy and completeness.

APPENDIX II

BLS Industry Analysis

		2018	2022	2018
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Lansing-East Lansing, MI MSA	5221	NAICS 5221	Depository credit intermediation	Met	Met	Not Met	Not Met	171	160	106,429	106,713	3,017	226,160	1,713,453	146,131,754	0.01334	0.01173	2,785	224,700	1,764,797	150,025,655	0.01239	0.01176	-7.70%	3.00%	1.14	1.05	4	
Lansing-East Lansing, MI MSA	238991	All other residential trade contractors	Met	Met	Met	Met	Met	54	72	28,900	34,684	144	226,160	155,949	146,131,754	0.00064	0.00010	289	224,700	183,019	150,025,655	0.00119	0.00122	100.70%	17.40%	0.6	1.05	6	
Lansing-East Lansing, MI MSA	411114	Specialized Automotive Repair	Met	Met	Met	Met	Met	18	58	46,514	52,848	222	226,160	45,502	146,131,754	0.00032	0.00031	71	224,700	45,502	150,025,655	0.00032	0.00031	-45.00%	8.80%	0.74	1.02	6	
Lansing-East Lansing, MI MSA	6116	NAICS 6116	Other schools and instruction	Met	Met	Not Met	Not Met	64	69	54,270	62,191	810	226,160	438,776	146,131,754	0.00308	0.003	714	224,700	463,272	150,025,655	0.00318	0.00309	-11.90%	5.10%	1.19	1.03	4	
Lansing-East Lansing, MI MSA	236118	Residential Remodelers	Met	Met	Not Met	Not Met	Not Met	132	173	97,933	119,971	646	226,160	354,692	146,131,754	0.00286	0.00243	660	224,700	430,242	150,025,655	0.00294	0.00287	2.20%	21.30%	1.18	1.02	6	
Lansing-East Lansing, MI MSA	423820	Farm and Garden Machinery and Equipment Merchant Wholesalers	Met	Met	Not Met	Not Met	Not Met	16	17	8,812	9,192	289	226,160	100,933	146,131,754	0.00038	0.00069	174	224,700	113,457	150,025,655	0.00077	0.00076	-39.80%	12.40%	1.85	1.02	6	
Lansing-East Lansing, MI MSA	541690	Other Scientific and Technical Consulting Services	Met	Met	Met	Met	Met	23	29	46,514	52,848	222	226,160	123,977	146,131,754	0.00098	0.00133	32	224,700	211,074	150,025,655	0.00143	0.00141	-45.00%	8.80%	0.74	1.02	6	
Lansing-East Lansing, MI MSA	561710	Exterminating and Pest Control Services	Met	Met	Met	Met	Met	10	17	14,976	16,973	113	226,160	124,421	146,131,754	0.0005	0.00085	221	224,700	144,190	150,025,655	0.00098	0.00096	95.60%	15.00%	0.59	1.02	6	
Lansing-East Lansing, MI MSA	3364	NAICS 3364	Aerospace product and parts manufacturing	Met	Met	Not Met	Not Met	5	5	3,274	3,965	1,075	226,160	503,765	146,131,754	0.00475	0.00345	754	224,700	499,320	150,025,655	0.00336	0.00333	-49.90%	-0.90%	1.38	1.01	4	
Lansing-East Lansing, MI MSA	6219	NAICS 6219	Other ambulatory health care services	Met	Met	Met	Met	20	25	13,665	18,392	57	226,160	309,745	146,131,754	0.00025	0.00212	495	224,700	326,935	150,025,655	0.00022	0.00218	768.40%	5.30%	0.12	1.01	4	
Lansing-East Lansing, MI MSA	4441	NAICS 4441	Building material and supplies dealers	Met	Met	Met	Met	75	75	52,853	54,519	1,689	226,160	1,150,181	146,131,754	0.00717	0.00787	1,869	224,700	1,541,149	150,025,655	0.00832	0.00828	-14.70%	8.10%	0.95	1	6	
Lansing-East Lansing, MI MSA	238332	Nonresidential flooring contractors	Met	Met	Manually Ve	Manually Ve	4	8	3,183	3,345	226,160		27,305	146,131,754	0	0.00019	41	224,700	27,294	150,025,655	0.00018	0.00018	2022.00%	0.00%			1	6	
Lansing-East Lansing, MI MSA	45020	Hobby, Toy, and Game Retailers	Not Met	Not Met	Not Met	Not Met	Not Met	17		11,831								192	224,700	128,196	150,025,655	0.00085	0.00085					1	6
Lansing-East Lansing, MI MSA	722320	Caterers	Met	Met	Met	Met	Met	24	23	12,407	13,156	252	226,160	177,762	146,131,754	0.00111	0.00122	232	224,700	154,796	150,025,655	0.00103	0.00103	-7.90%	-12.90%	0.92	1	6	
Lansing-East Lansing, MI MSA	722513	Limited-Service Restaurants	Met	Met	Met	Not Met	Not Met	299	357	243,158	257,969	7,530	226,160	4,422,913	146,131,754	0.0333	0.03027	6,702	224,700	4,464,115	150,025,655	0.02983	0.02976	-11.00%	0.90%	1.1	1	6	
Lansing-East Lansing, MI MSA	4862	NAICS 4862	Specialized freight trucking	Met	Met	Met	Met	37	52	49,959	51,195	493	226,160	464,983	146,131,754	0.00218	0.00318	679	224,700	458,321	150,025,655	0.00302	0.00306	-1.40%	0.69	0.99	4	6	
Lansing-East Lansing, MI MSA	6111	NAICS 6111	Elementary and secondary schools	Not Met	Not Met	Not Met	Not Met	19	21	18,378	20,564	1,924	226,160	837,974	146,131,754	0.00851	0.00573	1,316	224,700	896,678	150,025,655	0.00586	0.00598	-3.80%	-0.60%	1.48	0.98	4	
Lansing-East Lansing, MI MSA	459410	Office Supplies and Stationery Retailers	Not Met	Not Met	Not Met	Not Met	Not Met	8		6,796								110	224,700	75,165	150,025,655	0.00049	0.0005					0.98	6
Lansing-East Lansing, MI MSA	561740	Carpet and Upholstery Cleaning Services	Not Met	Not Met	Not Met	Not Met	Not Met	11	15	7,758	7,334	67	226,160	41,382	146,131,754	0.0003	0.00028	56	224,700	38,211	150,025,655	0.00025	0.00025	-16.40%	-7.70%	1.05	0.98	6	
Lansing-East Lansing, MI MSA	4862	NAICS 4862	Specialized freight trucking	Not Met	Not Met	Not Met	Not Met	19	21	18,378	20,564	1,924	226,160	837,974	146,131,754	0.00851	0.00573	1,316	224,700	896,678	150,025,655	0.00586	0.00598	-3.80%	-0.60%	1.48	0.98	6	
Lansing-East Lansing, MI MSA	621320	Offices of Optometrists	Not Met	Not Met	Not Met	Not Met	Not Met	34	35	20,671	21,287	267	226,160	136,510	146,131,754	0.00118	0.00093	218	224,700	149,133	150,025,655	0.00097	0.00099	-18.40%	9.20%	1.28	0.98	6	
Lansing-East Lansing, MI MSA	2389	NAICS 2389	Other specialty trade contractors	Not Met	Met	Met	Met	123	158	80,951	92,103	929	226,160	679,494	146,131,754	0.00411	0.00463	1,068	224,700	746,029	150,025,655	0.00475	0.00497	15.00%	9.80%	0.86	0.96	4	
Lansing-East Lansing, MI MSA	484110	General Freight Trucking, Local	Not Met	Not Met	Not Met	Not Met	Not Met	55	65	35,355	47,340	441	226,160	259,020	146,131,754	0.00283	0.00177	424	224,700	295,584	150,025,655	0.00189	0.00197	-33.90%	14.10%	1.6	0.96	6	
Lansing-East Lansing, MI MSA	238912	Nonresidential site preparation contractors	Not Met	Not Met	Not Met	Not Met	Not Met	42	47	60,219	71,275	807	226,160	453,057	146,131,754	0.00357	0.0031	723	224,700	504,253	150,025,655	0.00322	0.00336	-10.40%	11.10%	1.15	0.96	6	
Lansing-East Lansing, MI MSA	23812	Nonresidential site preparation contractors	Not Met	Met	Met	Met	Met	20	22	16,228	16,927	265	226,160	220,425	146,131,754	0.00117	0.00151	339	224,700	238,533	150,025,655	0.00151	0.00159	27.90%	8.20%	0.78	0.95	6	
Lansing-East Lansing, MI MSA	623110	Offices of Chiropractors	Not Met	Not Met	Not Met	Not Met	Not Met	57	59	38,729	39,358	261	226,160	136,922	146,131,754	0.00124	0.00094	205	224,700	144,687	150,025,655	0.00091	0.00096	-7.20%	5.70%	1.33	0.95	6	
Lansing-East Lansing, MI MSA	423110	Automobile and Other Motor Vehicle Merchant Wholesalers	Not Met	Manually Ver	Manually Ve	Manually Ve	6	8	6,545	7,488	226,160		123,721	146,131,754	0	0.00085	185	224,700	131,677	150,025,655	0.00082	0.00088	-202.00%	6.40%	0.93	0.94	6		
Lansing-East Lansing, MI MSA	541940	Veterinary Services	Not Met	Not Met	Met	Met	Met	43	44	14,007	15,544	554	226,160	389,618	146,131,754	0.00216	0.00261	739	224,700	453,165	150,025,655	0.00234	0.00261	-14.70%	16.40%	1.92	0.95	6	
Lansing-East Lansing, MI MSA	5311	NAICS 5311	Lessors of real estate	Not Met	Not Met	Not Met	Not Met	85	112	111,428	119,580	869	226,160	603,763	146,131,754	0.00384	0.00413	854	224,700	615,067	150,025,655	0.0038	0.0041	-1.70%	1.60%	0.93	0.93	4	
Lansing-East Lansing, MI MSA	441227	Motorcycle, ATV, and All Other Motor Vehicle Dealers	Not Met	Not Met	Not Met	Not Met	Not Met	9		7,606								112	224,700	80,092	150,025,655	0.0005	0.00053					0.93	6
Lansing-East Lansing, MI MSA	811198	All Other Automotive Repair and Maintenance	Not Met	Manually Ver	Manually Ve	Manually Ve	11	14	5,648	6,879	226,160		24,076	146,131,754	0	0.00016	39	224,700	27,764	150,025,655	0.00017	0.00019	-202.00%	16.40%			0.93	6	
Lansing-East Lansing, MI MSA	541929	Computer Infrastructure Providers, Data processing, web hosting, and related services	Not Met	Met	Met	Met	Met	27	38	23,694	46,690	178	226,160	333,499	146,131,754	0.00079	0.00228	432	224,700	442,700	150,025,655	0.00086	0.00091	-24.10%	39.50%	0.34	0.92	6	
Lansing-East Lansing, MI MSA	581210	Computing Infrastructure Providers, Data Processing, Web Hosting, and Related Services	Not Met	Met	Met	Met	Met	27	38	23,694	46,690	178	226,160	333,499	146,131,754	0.00079	0.00228	432	224,700	442,700	150,025,655	0.00086	0.00091	-24.10%	39.50%	0.34	0.92	6	
Lansing-East Lansing, MI MSA	5419	NAICS 5419	Other professional, scientific, and technical services	Not Met	Met	Met	Met	171	238	96,474	123,197	867	226,160	740,054	146,131,754	0.00383	0.00506	1,146	224,700	838,424	150,025,655	0.0051	0.00559	32.20%	13.20%	0.76	0.91	4	
Lansing-East Lansing, MI MSA	561990	All Other Support Services	Not Met	Met	Met	Met	Met	24	34	19,985	21,783	4	226,160	207,132	146,131,754	1.8E-05	0.00142	287	224,700	210,213	150,025,655	0.00128	0.0014	7075.00%	1.80%	0.01	0.91	6	
Lansing-East Lansing, MI MSA	1114	NAICS 1114	Greenhouses, nursery, and floriculture production	Not Met	Met	Met	Met	16	29	8,923	9,990	189	226,160	154,938	146,131,754	0.00084	0.00106	240	224,700	178,839	150,025,655	0.00107	0.00119	27.00%	15.40%	0.79	0.9	4	
Lansing-East Lansing, MI MSA	441212	NAICS 4412	Other motor vehicle dealers	Not Met	Not Met	Not Met	Not Met	17	17	14,127	15,714	263	226,160	159,077	146,131,754	0.00116	0.00119	239	224,700	176,404	150,025,655	0.00106	0.00106	9.10%	11.10%	1.07	0.9	4	
Lansing-East Lansing, MI MSA	423850	Service Establishment Equipment and Supplies Merchant Wholesalers	Not Met	Not Met	Not Met	Not Met	Not Met	7	7	1,001	6,449	83	226,160	56,458	146,131,754	0.00037	0.00039	75	224,700	55,607	150,025,655	0.00033	0.00037	-7.60%	-1.50%	0.95	0.9	6	
Lansing-East Lansing, MI MSA	531320	Offices of Real Estate Appraisers	Not Met	Not Met	Not Met	Not Met	Not Met	23	20	13,263	14,137	47	226,160	34,156	146,131,754	0.00021	0.00023	48	224,700	35,515	150,025,655	0.00021	0.00024	2.10%	3.80%	0.89	0.9	6	
Lansing-East Lansing, MI MSA	561730	Landscape Services	Not Met	Met	Met	Met	Met	125	144	108,351	120,144	1,014	226,160	781,885	146,131,754	0.00448	0.00535	1,165	224,700	860,032	150,025,655	0.00518	0.00573	14.90%	9.90%	0.84	0.9	6	
Lansing-East Lansing, MI MSA	812199	Other Personal Care Services	Not Met	Met	Met	Met	Met	35	86	20,835	24,755	489	226,160	139,345	146,131,754	0.0008	0.00093	430	224,700	319,454	150,025,655	0.00121	0.00123	13.90%	129.30%	0.83	0.9	6	
Lansing-East Lansing, MI MSA	517111	Wired Telecommunications Carriers	Not Met	Not Met	Not Met	Not Met	Not Met	36		20,116								635	224,700	474,921	150,025,655	0.00283	0.00317					0.89	6
Lansing-East Lansing, MI MSA	3391	NAICS 3391	Medical equipment and supplies manufacturing	Not Met	Not Met	Not Met	Not Met	17	18	12,709	13,524	429	226,160	317,107	146,131,754	0.0019	0.00215	438	224,700	334,121	150,025,								

Lansing-East Lansing, MI MSA	624410	Child Care Services	Not Met	Not Met	Met	Not Met	64	87	72,226	76,096	729	226,160	893,805	146,131.754	0.00322	0.00612	904	224,700	890,817	150,025.655	0.00402	0.00594	24.00%	-0.40%	0.53	0.68	6
Lansing-East Lansing, MI MSA	2382	NAICS 2382 Building equipment contractors	Not Met	Not Met	Not Met	Not Met	203	231	203,830	223,948	2,437	226,160	2,168,852	146,131.754	0.01078	0.01484	2,393	224,700	2,373,797	150,025.655	0.01045	0.01582	-1.80%	9.40%	0.73	0.67	4
Lansing-East Lansing, MI MSA	7121	NAICS 7121 Museums, historical sites, and similar institutions	Not Met	Not Met	Not Met	Not Met	14	12	6,659	7,425	149	226,160	167,058	146,131.754	0.00064	0.00154	156	224,700	157,508	150,025.655	0.00049	0.00105	-4.70%	-5.00%	0.58	0.64	4
Lansing-East Lansing, MI MSA	238221	Residential plumbing and HVAC contractors	Not Met	Not Met	Not Met	Not Met	86	97	78,403	88,012	493	226,160	543,916	146,131.754	0.00218	0.00372	632	224,700	640,952	150,025.655	0.00281	0.00427	28.20%	17.00%	0.59	0.66	6
Lansing-East Lansing, MI MSA	457110	Gasoline Stations with Convenience Stores	Not Met	Not Met	Not Met	Not Met	129		99,522								849	224,700	862,925	150,025.655	0.00378	0.00575				0.66	6
Lansing-East Lansing, MI MSA	459911	Tobacco, Electronic Cigarette, and Other Smoking Supplies Retailers	Not Met	Not Met	Not Met	Not Met	36		20,868								110	224,700	110,628	150,025.655	0.00049	0.00074				0.66	6
Lansing-East Lansing, MI MSA	531190	Lessors of Other Real Estate Property	Not Met	Not Met	Not Met	Not Met	12	11	10,075	10,155	41	226,160	42,237	146,131.754	0.00027	0.00029	41	224,700	41,179	150,025.655	0.00018	0.00027	-32.80%	-2.50%	0.93	0.6	4
Lansing-East Lansing, MI MSA	4451	NAICS 4451 Grocery and convenience retailers	Not Met	Not Met	Not Met	Not Met	147	152	87,492	96,363	3,031	226,160	2,685,885	146,131.754	0.0134	0.01838	2,696	224,700	2,765,998	150,025.655	0.012	0.01844	-11.10%	2.90%	0.73	0.65	4
Lansing-East Lansing, MI MSA	459999	All Other Miscellaneous Retailers	Not Met	Not Met	Not Met	Not Met	56		34,106								195	224,700	199,189	150,025.655	0.00087	0.00133				0.65	6
Lansing-East Lansing, MI MSA	524900	Other Commercial and Industrial Machinery and Equipment Rental and Leasing	Not Met	Not Met	Met	Not Met	9	9	7,758	8,818	54	226,160	68,957	146,131.754	0.00024	0.00047	73	224,700	74,742	150,025.655	0.00032	0.0005	35.20%	8.40%	0.51	0.65	6
Lansing-East Lansing, MI MSA	5424	NAICS 5424 Agencies, Brokerages, and Insurance Related Activities	Not Met	Not Met	Not Met	Not Met	245	275	165,498	182,786	1,112	226,160	1,172,494	146,131.754	0.00492	0.00803	1,231	224,700	1,293,809	150,025.655	0.00548	0.00862	-12.70%	10.20%	0.61	0.64	4
Lansing-East Lansing, MI MSA	7112	NAICS 7112 Spectator sports	Not Met	Not Met	Not Met	Not Met	6	7	6,618	7,833	192	226,160	144,273	146,131.754	0.00085	0.00099	142,739	150,025.655	0.00061	0.00095	-28.60%	-1.30%	0.86	0.64	4		
Lansing-East Lansing, MI MSA	561720	Janitorial Services	Not Met	Not Met	Not Met	Not Met	65	74	72,498	80,779	1,069	226,160	1,084,810	146,131.754	0.00473	0.00742	1,012	224,700	1,049,284	150,025.655	0.00445	0.00699	-5.30%	-3.30%	0.64	0.64	6
Lansing-East Lansing, MI MSA	5171	NAICS 5171 Wired and wireless telecommunications (except satellite)	Not Met	Not Met	Not Met	Not Met	54		31,418								577	224,700	609,070	150,025.655	0.00237	0.00406				0.63	4
Lansing-East Lansing, MI MSA	5616	NAICS 5616 Management, scientific, and technical consulting services	Not Met	Not Met	Not Met	Not Met	177	231	266,230	365,553	1,019	226,160	1,481,914	146,131.754	0.00451	0.01014	1,702	224,700	1,804,889	150,025.655	0.0037	0.01203	-67.00%	21.70%	0.64	0.63	4
Lansing-East Lansing, MI MSA	5511	NAICS 5511 Management of companies and enterprises	Not Met	Not Met	Not Met	Not Met	34	46	66,941	74,778	23	226,160	2,347,219	146,131.754	0.0001	0.01106	2,380	224,700	2,503,464	150,025.655	0.01039	0.01169	10247.80%	6.70%	0.01	0.61	4
Lansing-East Lansing, MI MSA	449110	Food Retailers	Not Met	Not Met	Not Met	Not Met	29		23,018								221,259	150,025.655	0.00093	0.00147						0.63	6
Lansing-East Lansing, MI MSA	523999	Miscellaneous Financial Investment Activities	Not Met	Not Met	Manually	Not Met	7	11	3,700	5,811	226,160		28,879	146,131.754	0	0.0002	30	224,700	31,586	150,025.655	0.00013	0.00021	-2022.00%	9.40%		0.63	6
Lansing-East Lansing, MI MSA	5312	NAICS 5312 Offices of real estate agents and brokers	Not Met	Not Met	Not Met	Not Met	83	116	119,830	157,651	324	226,160	326,730	146,131.754	0.00143	0.00224	349	224,700	375,207	150,025.655	0.00155	0.0025	7.70%	14.80%	0.64	0.62	4
Lansing-East Lansing, MI MSA	238212	Nonresidential electrical contractors	Not Met	Not Met	Not Met	Not Met	31	34	36,265	37,724	776	226,160	632,000	146,131.754	0.00043	0.00432	619	224,700	645,442	150,025.655	0.00275	0.00444	-20.20%	5.30%	0.79	0.62	6
Lansing-East Lansing, MI MSA	531210	Offices of Real Estate Agents and Brokers	Not Met	Not Met	Not Met	Not Met	83	116	119,830	157,651	324	226,160	326,730	146,131.754	0.00143	0.00224	349	224,700	375,207	150,025.655	0.00155	0.0025	7.70%	14.80%	0.64	0.62	6
Lansing-East Lansing, MI MSA	2381	NAICS 2381 Building foundation and exterior contractors	Not Met	Not Met	Not Met	Not Met	91	109	100,893	113,153	798	226,160	909,505	146,131.754	0.00353	0.00624	869	224,700	948,925	150,025.655	0.00387	0.00633	8.90%	4.30%	0.57	0.61	4
Lansing-East Lansing, MI MSA	5413	NAICS 5413 Architectural, engineering, and related services	Not Met	Not Met	Not Met	Not Met	116	112	136,112	159,103	1,350	226,160	1,469,304	146,131.754	0.00397	0.01005	1,468	224,700	1,600,788	150,025.655	0.00633	0.01067	8.70%	18.80%	0.59	0.61	4
Lansing-East Lansing, MI MSA	2383	NAICS 2383 Building finishing contractors (except For-Sale Builders)	Not Met	Not Met	Not Met	Not Met	64	64	84,733	91,144	313	226,160	360,334	146,131.754	0.00138	0.00247	356	224,700	386,647	150,025.655	0.00158	0.00259	13.70%	7.90%	0.56	0.61	6
Lansing-East Lansing, MI MSA	2383	NAICS 2383 Building finishing contractors	Not Met	Not Met	Not Met	Not Met	102	111	126,175	136,333	732	226,160	824,009	146,131.754	0.00354	0.00564	745	224,700	833,519	150,025.655	0.00352	0.00556	1.80%	1.20%	0.57	0.6	4
Lansing-East Lansing, MI MSA	8121	NAICS 8121 Personal care services	Not Met	Not Met	Not Met	Not Met	113	122	127,458	145,631	716	226,160	720,123	146,131.754	0.00317	0.00493	624	224,700	716,145	150,025.655	0.00278	0.00474	-12.80%	-1.20%	0.64	0.59	4
Lansing-East Lansing, MI MSA	812112	Beauty Salons	Not Met	Not Met	Not Met	Not Met	66	134	73,750	152,316	357	226,160	732,972	146,131.754	0.00158	0.00229	638	224,700	726,738	150,025.655	0.00284	0.00485	-78.80%	71.50%	0.54	0.59	6
Lansing-East Lansing, MI MSA	4594	NAICS 4594 Office supplies, stationery, and gift retailers	Not Met	Not Met	Not Met	Not Met	28		16,546								211,740	150,025.655	0.00081	0.00141						0.58	6
Lansing-East Lansing, MI MSA	5613	NAICS 5613 Employment services	Not Met	Not Met	Not Met	Not Met	54	81	111,435	149,935	3,861	226,160	3,629,524	146,131.754	0.01707	0.02484	3,341	224,700	3,858,962	150,025.655	0.01487	0.02572	-13.50%	6.30%	0.69	0.58	4
Lansing-East Lansing, MI MSA	524291	Claims Adjusting	Not Met	Not Met	Met	Not Met	5	5	7,054	7,942	51	226,160	60,254	146,131.754	0.00023	0.00041	54	224,700	62,079	150,025.655	0.00024	0.00041	5.90%	2.50%	0.55	0.58	6
Lansing-East Lansing, MI MSA	541211	Offices of Certified Public Accountants	Not Met	Not Met	Not Met	Not Met	53	55	54,498	60,514	446	226,160	477,280	146,131.754	0.00197	0.00327	459	224,700	532,399	150,025.655	0.00204	0.00355	2.90%	11.50%	0.6	0.58	6
Lansing-East Lansing, MI MSA	561380	Testing Laboratories and Services	Not Met	Not Met	Not Met	Not Met	118	112	11,162	11,418	118	226,160	135,052	146,131.754	0.00052	0.00092	98	224,700	173,532	150,025.655	0.00048	0.0008	-29.30%	-4.90%	0.54	0.54	4
Lansing-East Lansing, MI MSA	4237	NAICS 4237 Hardware and plumbing and heating equipment and supplies merchant wholesalers	Not Met	Not Met	Not Met	Not Met	18	22	24,520	27,630	237	226,160	276,400	146,131.754	0.00105	0.00189	259	224,700	332,794	150,025.655	0.00115	0.00202	9.30%	9.60%	0.55	0.57	4
Lansing-East Lansing, MI MSA	4238	NAICS 4238 Machinery, equipment, and supplies merchant wholesalers	Not Met	Not Met	Not Met	Not Met	52	57	69,256	74,627	678	226,160	702,116	146,131.754	0.003	0.0048	606	224,700	726,456	150,025.655	0.0027	0.00484	-10.60%	3.50%	0.62	0.56	4
Lansing-East Lansing, MI MSA	4885	NAICS 4885 Freight transportation arrangement	Not Met	Not Met	Not Met	Not Met	7	7	19,120	22,920	109	226,160	226,640	146,131.754	0.00048	0.00155	227	224,700	270,494	150,025.655	0.00101	0.0018	108.30%	19.40%	0.31	0.56	4
Lansing-East Lansing, MI MSA	238992	All other nonresidential trade contractors	Not Met	Not Met	Not Met	Not Met	15	25	15,088	17,102	106	226,160	182,094	146,131.754	0.00047	0.00125	155	224,700	183,976	150,025.655	0.00069	0.00123	46.20%	1.00%	0.38	0.56	6
Lansing-East Lansing, MI MSA	443310	Automotive Parts and Accessories Retailers	Not Met	Not Met	Not Met	Not Met	10	10	3,337								326	224,700	387,033	150,025.655	0.00145	0.00237				0.56	6
Lansing-East Lansing, MI MSA	488510	Freight Transportation Arrangement	Not Met	Not Met	Met	Not Met	7	7	19,120	22,920	109	226,160	226,640	146,131.754	0.00048	0.00155	227	224,700	270,494	150,025.655	0.00101	0.0018	108.30%	19.40%	0.31	0.56	6
Lansing-East Lansing, MI MSA	524292	Pharmacy Benefit Management and Other Third Party Administration of Insurance and Pension Funds	Not Met	Not Met	Not Met	Not Met	7	8	7,400	8,649	171	226,160	200,468	146,131.754	0.00076	0.00137	175	224,700	209,484	150,025.655	0.00078	0.0014	2.30%	4.30%	0.55	0.56	6
Lansing-East Lansing, MI MSA	5231	NAICS 5231 Printing and related support activities	Not Met	Not Met	Not Met	Not Met	50	48	20,220	20,098	419	226,160	430,094	146,131.754	0.00185	0.00294	310	224,700	377,497	150,025.655	0.00138	0.00252	-26.00%	-12.20%	0.63	0.55	4
Lansing-East Lansing, MI MSA	4239	NAICS 4239 Miscellaneous durable goods merchant wholesalers	Not Met	Not Met	Not Met	Not Met	40	40	37,453	244	226,160		299,213	146,131.754	0.00109	0.00205	259	224,700	330,244	150,025.655	0.00115	0.00209	9.30%	4.60%	0.55	0.54	4
Lansing-East Lansing, MI MSA	5231	NAICS 5231 Securities and commodity contracts intermediation and brokerage	Not Met	Not Met	Not Met	Not Met	30	65	36,281	42,773	10	226,160	455,778	146,131.754	4-E-05	0.0312	383	224,700	461,766	150,025.655	0.0017	0.00308	3730.00%	1.30%	0.01	0.55	4
Lansing-East Lansing, MI MSA	6211	NAICS 6211 Offices of Physicians	Not Met	Not Met	Not Met	Not Met	179	177	215,248	277,883	2,574	226,160	2,618,728	146,131.754	0.01138	0.01912	2,333	224,700	2,807,222	150,025.655	0.01038	0.01871	-9.70%	7.20%	0.64	0.55	4
Lansing-East Lansing, MI MSA	541100	Supermarkets and Other Grocery Retailers (except Convenience Retailers)	Not Met	Not Met	Not Met	Not Met	62	64	58,999	58,138	2,317	226,160	2,528,949	146,131.754	0.01025	0.01731	2,122	224,700	2,560,								

Lansing-East Lansing, MI MSA	611310	Colleges, Universities, and Professional Schools	Not Met	Not Met	Met	Not Met	15	19	9,517	12,597	592	226,160	1,253,844	146,131.754	0.00262	0.00858	710	224,700	1,230,421	150,025.655	0.00316	0.0082	19,900%	-1.10%	0.31	0.39	6
Lansing-East Lansing, MI MSA	621340	Offices of Physical, Occupational and Speech Therapists, and Audiologists	Not Met	Not Met	Not Met	Not Met	31	40	38,073	46,559	238	226,160	403,003	146,131.754	0.00105	0.00265	253	224,700	442,338	150,025.655	0.00113	0.00295	6,300%	9.60%	0.38	0.38	6
Lansing-East Lansing, MI MSA	713940	Fitness and Recreational Sports Centers	Not Met	Not Met	Not Met	Not Met	24	25	37,524	42,887	399	226,160	441,848	146,131.754	0.00116	0.00349	330	224,700	574,241	150,025.655	0.00117	0.00383	17,300%	-10.50%	0.4	0.38	6
Lansing-East Lansing, MI MSA	541519	Other Computer Related Services	Not Met	Not Met	Not Met	Not Met	12	26	17,535	27,862	19	226,160	114,557	146,131.754	8.4E-05	0.00078	77	224,700	140,333	150,025.655	0.00034	0.00094	305.30%	22.40%	0.11	0.37	6
Lansing-East Lansing, MI MSA	812190	Pet Care (except Veterinary) Services	Not Met	Not Met	Not Met	Not Met	20	54	18,900	48,048	69	226,160	125,519	146,131.754	0.00031	0.00066	188	224,700	336,578	150,025.655	0.00084	0.00224	172.50%	168.20%	0.36	0.37	6
Lansing-East Lansing, MI MSA	2123	NAICS 2123 Nonmetallic mineral mining and quarrying	Not Met	Not Met	Met	Not Met	12	12	5,750	5,910	36	226,160	97,477	146,131.754	0.00016	0.00067	53	224,700	98,201	150,025.655	0.00024	0.00065	47.20%	0.50%	0.24	0.36	4
Lansing-East Lansing, MI MSA	4242	NAICS 4242 Drugs and druggists' sundries merchant wholesalers	Not Met	Not Met	Manually	Not Met	5	13	18,661	22,295	226,160		235,459	146,131.754	0.00161	0.00161	139	224,700	254,654	150,025.655	0.00062	0.0017	202.20%	8.20%	0.36	0.36	4
Lansing-East Lansing, MI MSA	4246	NAICS 4246 Chemical and allied products merchant wholesalers	Not Met	Not Met	Not Met	Not Met	13	15	18,034	18,480	89	226,160	147,129	146,131.754	0.00039	0.00101	80	224,700	147,190	150,025.655	0.00036	0.00098	10.10%	0.00%	0.39	0.36	4
Lansing-East Lansing, MI MSA	321	NAICS 321 Nursing care facilities (skilled nursing facilities)	Not Met	Not Met	Not Met	Not Met	19	15	17,931	19,343	885	226,160	1,600,597	146,131.754	0.00391	0.01095	730	224,700	1,344,230	150,025.655	0.00025	0.00896	-17.50%	-16.20%	0.36	0.36	4
Lansing-East Lansing, MI MSA	424210	Drugs and Druggists' Sundries Merchant Wholesalers	Not Met	Not Met	Manually	Not Met	5	13	18,661	22,295	226,160		235,459	146,131.754	0.00161	0.00161	139	224,700	254,654	150,025.655	0.00062	0.0017	-202.20%	8.20%	0.36	0.36	4
Lansing-East Lansing, MI MSA	459202	Gift, Novelty, and Souvenir Retailers	Not Met	Not Met	Not Met	Not Met	17	17	9,772	9,772	226,160			146,131.754	0.00000	0.00000	73	224,700	224,700	150,025.655	0.00032	0.00091			0.36	0.36	4
Lansing-East Lansing, MI MSA	532289	All Other Consumer Goods Rental	Not Met	Not Met	Manually	Not Met	6	15	11,814	9,102	226,160		59,921	146,131.754	0.0	0.0004	32	224,700	39,990	150,025.655	0.00014	0.0004	-202.20%	1.70%	0.36	0.36	4
Lansing-East Lansing, MI MSA	541430	Graphic Design Services	Not Met	Not Met	Manually	Not Met	15	13	17,086	19,465	226,160		62,200	146,131.754	0.0	0.00043	32	224,700	58,994	150,025.655	0.00014	0.00039	-202.20%	-5.10%	0.36	0.36	4
Lansing-East Lansing, MI MSA	623110	Nursing Care Facilities (Skilled Nursing Facilities)	Not Met	Not Met	Not Met	Not Met	19	15	17,931	19,343	885	226,160	1,600,597	146,131.754	0.00391	0.01095	730	224,700	1,344,230	150,025.655	0.00025	0.00896	-17.50%	-16.20%	0.36	0.36	4
Lansing-East Lansing, MI MSA	4236	NAICS 4236 Household appliances and electrical and electronic goods merchant wholesalers	Not Met	Not Met	Not Met	Not Met	18	18	34,568	37,823	147	226,160	335,444	146,131.754	0.00065	0.00042	189	224,700	361,326	150,025.655	0.00084	0.00241	28.60%	2.20%	0.27	0.35	4
Lansing-East Lansing, MI MSA	488190	Other Support Activities for Air Transportation	Not Met	Not Met	Not Met	Not Met	31	30	19,320	18,742	281	226,160	313,132	146,131.754	0.00034	0.00214	140	224,700	264,731	150,025.655	0.00062	0.00178	-14.80%	-14.80%	0.58	0.35	6
Lansing-East Lansing, MI MSA	325211	Plastics Material and Resin Manufacturing	Not Met	Not Met	Manually	Not Met	3	3	1,207	1,412	226,160		58,914	146,131.754	0.0	0.0004	32	224,700	60,842	150,025.655	0.00014	0.00041	-202.20%	3.30%	0.35	0.35	6
Lansing-East Lansing, MI MSA	42320	Motor Vehicle Supplies and New Parts Merchant Wholesalers	Not Met	Not Met	Not Met	Not Met	13	19	14,074	14,620	157	226,160	174,324	146,131.754	0.00069	0.00119	92	224,700	177,922	150,025.655	0.00041	0.00119	-41.40%	2.10%	0.58	0.35	6
Lansing-East Lansing, MI MSA	484230	Specialized Freight (except Used Goods) Trucking, Long-Distance	Not Met	Not Met	Met	Not Met	13	15	11,254	12,798	41	226,160	137,429	146,131.754	0.00018	0.00094	70	224,700	132,660	150,025.655	0.00031	0.00088	70.70%	-3.50%	0.19	0.35	6
Lansing-East Lansing, MI MSA	488190	Other Support Activities for Air Transportation	Not Met	Not Met	Manually	Not Met	7	7	5,526	5,441	226,160		116,410	146,131.754	0.0	0.0008	67	224,700	126,215	150,025.655	0.0003	0.00084	-202.20%	8.40%	0.35	0.35	6
Lansing-East Lansing, MI MSA	523940	Portfolio Management and Investment Advice	Not Met	Not Met	Not Met	Not Met	61			80,029	226,160			146,131.754	0.00000	0.00000	250	224,700	471,704	150,025.655	0.00111	0.00314			0.35	0.6	4
Lansing-East Lansing, MI MSA	811211	Automotive Body, Paint, and Interior Repair and Maintenance	Not Met	Not Met	Met	Not Met	42	45	34,883	35,266	105	226,160	244,808	146,131.754	0.00046	0.00168	129	224,700	245,706	150,025.655	0.00057	0.00168	22.90%	0.40%	0.28	0.35	6
Lansing-East Lansing, MI MSA	4233	NAICS 4233 Lumber and other construction materials merchant wholesalers	Not Met	Not Met	Not Met	Not Met	14	15	21,860	24,374	360	226,160	243,398	146,131.754	0.00019	0.00167	129	224,700	255,839	150,025.655	0.00057	0.00171	-64.20%	5.10%	0.96	0.34	4
Lansing-East Lansing, MI MSA	5323	NAICS 5323 General rental centers	Not Met	Not Met	Not Met	Not Met	9	9	3,614	3,754	226,160		35,472	146,131.754	0.0	0.00024	16	224,700	31,776	150,025.655	7.1E-05	0.00021	202.20%	-10.40%	0.34	0.34	4
Lansing-East Lansing, MI MSA	238312	Nonresidential drywall contractors	Not Met	Not Met	Not Met	Not Met	5	5	6,335	6,165	44	226,160	140,824	146,131.754	0.00019	0.00096	64	224,700	127,371	150,025.655	0.00028	0.00085	45.50%	-9.60%	0.2	0.34	6
Lansing-East Lansing, MI MSA	532310	General Rental Centers	Not Met	Not Met	Manually	Not Met	9	9	3,614	3,754	226,160		35,472	146,131.754	0.0	0.00024	16	224,700	31,776	150,025.655	7.1E-05	0.00021	202.20%	-10.40%	0.34	0.34	6
Lansing-East Lansing, MI MSA	238222	Nonresidential plumbing and HVAC contractors	Not Met	Not Met	Not Met	Not Met	22	26	28,683	29,113	354	226,160	555,194	146,131.754	0.00157	0.0038	282	224,700	570,349	150,025.655	0.00126	0.0038	-20.30%	2.70%	0.41	0.33	6
Lansing-East Lansing, MI MSA	454540	Mail Retailers	Not Met	Not Met	Not Met	Not Met	11			6,633	226,160			146,131.754	0.00000	0.00000	30	224,700	61,077	150,025.655	0.00013	0.00041			0.33	0.33	6
Lansing-East Lansing, MI MSA	459920	Art Dealers	Not Met	Not Met	Not Met	Not Met	8			5,297	226,160			146,131.754	0.00000	0.00000	9	224,700	18,448	150,025.655	4E-05	0.00012			0.33	0.33	6
Lansing-East Lansing, MI MSA	4234	NAICS 4234 Professional and commercial equipment and supplies merchant wholesalers	Not Met	Not Met	Not Met	Not Met	37	40	59,344	71,438	629	226,160	676,607	146,131.754	0.00278	0.00463	347	224,700	729,909	150,025.655	0.00154	0.00487	-44.80%	7.90%	0.6	0.32	4
Lansing-East Lansing, MI MSA	4251	NAICS 4251 Wholesale trade agents and brokers	Not Met	Not Met	Not Met	Not Met	48	58	154,533	129,505	373	226,160	345,313	146,131.754	0.00166	0.00373	244	224,700	516,794	150,025.655	0.00109	0.00344	-34.90%	-5.20%	0.44	0.32	4
Lansing-East Lansing, MI MSA	4222	NAICS 4222 Nonfood stores and nonfood product merchant wholesalers	Not Met	Not Met	Not Met	Not Met	25	58	17,877	55,534	207	226,160	418,244	146,131.754	0.00092	0.00418	279	224,700	560,079	150,025.655	0.00126	0.00418	-20.30%	1.50%	0.22	0.32	4
Lansing-East Lansing, MI MSA	334519	Other Measuring and Controlling Device Manufacturing	Not Met	Not Met	Manually	Not Met	2	3	1,171	1,357	226,160		36,320	146,131.754	0.0	0.00025	19	224,700	39,487	150,025.655	8.5E-05	0.00026	-202.20%	8.70%	0.32	0.32	6
Lansing-East Lansing, MI MSA	425120	Wholesale Trade Agents and Brokers	Not Met	Not Met	Not Met	Not Met	62	58	150,811	129,505	116	226,160	513,764	146,131.754	0.00051	0.00352	244	224,700	516,794	150,025.655	0.00109	0.00344	110.30%	0.60%	0.15	0.32	6
Lansing-East Lansing, MI MSA	444240	Nursery, Garden Center, and Farm Supply Retailers	Not Met	Not Met	Not Met	Not Met	26			13,685	226,160			146,131.754	0.00000	0.00000	73	224,700	153,881	150,025.655	0.00032	0.00103			0.32	0.6	4
Lansing-East Lansing, MI MSA	621112	Offices of Physicians, Mental Health Specialists	Not Met	Not Met	Not Met	Not Met	10	13	10,750	13,358	34	226,160	56,751	146,131.754	0.00015	0.00039	34	224,700	71,478	150,025.655	0.00015	0.00048	0.00%	25.50%	0.32	0.32	6
Lansing-East Lansing, MI MSA	712110	Museum	Not Met	Not Met	Not Met	Not Met	7			4,481	226,160			146,131.754	0.0	0.00067	49	224,700	88,804	150,025.655	0.00019	0.00067	-202.20%	-9.40%	0.24	0.32	6
Lansing-East Lansing, MI MSA	238321	Residential painting contractors	Not Met	Not Met	Not Met	Not Met	26	24	31,722	35,052	55	226,160	123,163	146,131.754	0.00024	0.00084	60	224,700	129,335	150,025.655	0.00027	0.00086	9.10%	5.00%	0.29	0.31	6
Lansing-East Lansing, MI MSA	441120	Used Car Dealers	Not Met	Not Met	Met	Not Met	21	29	25,999	26,943	63	226,160	164,942	146,131.754	0.00028	0.00113	85	224,700	182,580	150,025.655	0.00038	0.00122	34.90%	10.70%	0.25	0.31	6
Lansing-East Lansing, MI MSA	541810	Advertising Agencies	Not Met	Not Met	Not Met	Not Met	13	13	20,960	33,735	72	226,160	203,342	146,131.754	0.00032	0.00139	104	224,700	222,735	150,025.655	0.00046	0.00148	44.40%	9.50%	0.23	0.31	6
Lansing-East Lansing, MI MSA	454911	Food (Health) Supplement Retailers	Not Met	Not Met	Not Met	Not Met	11			7,711	226,160			146,131.754	0.00000	0.00000	22	224,700	49,733	150,025.655	9.0E-05	0.00033			0.3	0.3	6
Lansing-East Lansing, MI MSA	4812	NAICS 4812 Nonscheduled air transportation	Not Met	Not Met	Manually	Not Met	2	4	3,421	4,196	226,160		45,945	146,131.754	0.0	0.00031	24	224,700	54,689	150,025.655	0.00011	0.00036	-202.20%	19.00%	0.29	0.4	6
Lansing-East Lansing, MI MSA	311811	Retail Bakeries	Not Met	Not Met	Manually	Not Met	8	13	7,787	8,754	226,160		86,819	146,131.754	0.0	0.00059	42	224,700	95,989	150,025.655	0.00019	0.00064	-202.20%	10.60%	0.29	0.6	4
Lansing-East Lansing, MI MSA	531320	Periodical Publishers	Not Met	Not Met	Not Met	Not Met				7,896	226,160			146,131.754	0.00000	0.0											

Lansing-East Lansing, MI MSA	62390	NAICS 3239 Other residential care facilities	Not Met	Not Met	Manually	Not Met	13	14	6,565	7,092	17	226,160	165,613	146,131,754	7.5E-05	0.00113	23	224,700	152,757	150,025,655	0.00012	-33.30%	-8.50%	0.07	0.1	6	
Lansing-East Lansing, MI MSA	62391	NAICS 3239 Other residential care facilities	Not Met	Not Met	Manually	Not Met	6	5	6,720	8,417	17	226,160	155,231	146,131,754	0	0.00038	10	224,700	68,814	150,025,655	4.5E-05	0.00044	-32.00%	19.20%	0.1	6	
Lansing-East Lansing, MI MSA	62120	Motion Picture and Video Production	Not Met	Not Met	Not Met	Not Met	17	17	19,471	24,234	45	226,160	128,814	146,131,754	0.0002	0.00156	24	224,700	271,321	150,025,655	0.00019	0.00181	-56.70%	18.90%	0.13	0.1	6
Lansing-East Lansing, MI MSA	61410	Interior Design Services	Not Met	Not Met	Manually	Not Met	6	5	14,048	17,300	17	226,160	65,700	146,131,754	0	0.00000	24	224,700	54,027	150,025,655	3.4E-05	0.00000	-54.00%	13.00%	0.13	0.1	6
Lansing-East Lansing, MI MSA	61120	Sports and Recreation Instruction	Not Met	Not Met	Not Met	Not Met	13	14	16,967	19,499	58	226,160	126,514	146,131,754	0.0002	0.00094	24	224,700	175,848	150,025,655	0.00011	0.00104	-54.00%	13.00%	0.27	0.1	6
Lansing-East Lansing, MI MSA	62390	Other Residential Care Facilities	Not Met	Not Met	Manually	Not Met	13	14	6,565	7,092	17	226,160	165,613	146,131,754	7.5E-05	0.00113	23	224,700	152,757	150,025,655	0.00012	-33.30%	-8.50%	0.07	0.1	6	
Lansing-East Lansing, MI MSA	7212	NAICS 7212 Rv (recreational vehicle) parks and recreational camps	Not Met	Not Met	Manually	Not Met	4	6	7,508	8,492	17	226,160	68,336	146,131,754	0	0.00047	10	224,700	72,011	150,025,655	4.5E-05	0.00048	-32.00%	5.20%	0.09	0.4	6
Lansing-East Lansing, MI MSA	62310	Investment Banking and Securities Intermediation	Not Met	Not Met	Not Met	Not Met	11	10	24,170	27,742	35	226,160	191,214	146,131,754	0.00015	0.00131	24	224,700	208,125	150,025,655	0.00022	0.00072	-33.00%	1.00%	0.09	0.4	6
Lansing-East Lansing, MI MSA	64310	Architectural Services	Not Met	Not Met	Not Met	Not Met	35	26	21,668	23,241	77	226,160	46,472	146,131,754	0.00034	0.00278	50	224,700	366,337	150,025,655	0.00022	0.00244	-35.10%	-11.00%	0.12	0.09	6
Lansing-East Lansing, MI MSA	81213	Nail Salons	Not Met	Not Met	Manually	Not Met	3	16	24,413	64,122	17	226,160	105,245	146,131,754	0	0.00072	38	224,700	287,618	150,025,655	0.00017	0.00192	-202.00%	173.30%	0.09	0.6	6
Lansing-East Lansing, MI MSA	5121	NAICS 5121 Motion picture and video industries	Not Met	Not Met	Manually	Not Met	25	25	27,729	33,725	226,160	104,212	146,131,754	0	0.00277	47	224,700	418,504	150,025,655	0.00021	0.00279	-202.00%	3.50%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	52292	Real Estate Credit	Not Met	Not Met	Manually	Not Met	181	21	11,374	13,946	226,160	235,948	146,131,754	0.0001	0.00000	26	224,700	119,770	150,025,655	0.00015	0.00016	-202.00%	0.00%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	56130	Professional Employer Organizations	Not Met	Not Met	Manually	Not Met	3	13	13,332	20,132	226,160	377,749	146,131,754	0	0.00259	46	224,700	443,489	150,025,655	0.0002	0.00296	-202.00%	17.40%	0.07	0.6	6	
Lansing-East Lansing, MI MSA	56161	Investigation and Personal Background Check Services	Not Met	Not Met	Manually	Not Met	6	6	5,128	5,654	226,160	37,911	146,131,754	0	0.00026	4	224,700	40,289	150,025,655	1.8E-05	0.00027	-202.00%	6.30%	0.07	0.6	6	
Lansing-East Lansing, MI MSA	3751	NAICS 3751 Household and institutional furniture and kitchen cabinet manufacturing	Not Met	Not Met	Manually	Not Met	13	12	12,901	12,842	226,160	247,676	146,131,754	0	0.00169	23	224,700	241,792	150,025,655	0.00011	0.00161	-202.00%	-2.30%	0.06	0.4	6	
Lansing-East Lansing, MI MSA	23816	Residential roofing contractors	Not Met	Not Met	Manually	Not Met	7	20	17,501	22,501	226,160	175,501	146,131,754	3.1E-05	0.00000	10	224,700	119,770	150,025,655	4.5E-05	0.00049	-202.00%	0.00%	0.05	0.6	6	
Lansing-East Lansing, MI MSA	36370	Motor Vehicle Metal Stamping	Not Met	Not Met	Manually	Not Met	5	6	560	582	226,160	90,540	146,131,754	0	0.00062	7	224,700	80,685	150,025,655	3.1E-05	0.00054	-202.00%	-10.80%	0.06	0.6	6	
Lansing-East Lansing, MI MSA	3219	NAICS 3219 Other wood product manufacturing	Not Met	Not Met	Manually	Not Met	8	9	9,552	10,404	226,160	231,826	146,131,754	0	0.00159	19	224,700	249,346	150,025,655	8.0E-05	0.00166	-202.00%	7.60%	0.05	0.4	6	
Lansing-East Lansing, MI MSA	39930	Sign manufacturing	Not Met	Not Met	Manually	Not Met	8	7	7,131	7,461	226,160	78,448	146,131,754	0	0.00054	6	224,700	74,236	150,025,655	2.7E-05	0.0005	-202.00%	-5.30%	0.05	0.6	6	
Lansing-East Lansing, MI MSA	3345	NAICS 3345 National, measuring, electrochemical, and control instruments manufacturing	Not Met	Not Met	Manually	Not Met	12	12	6,645	11,777	226,160	409,861	146,131,754	5.3E-05	0.00000	10	224,700	222,843	150,025,655	0.00012	0.00012	-202.00%	0.00%	0.02	0.1	6	
Lansing-East Lansing, MI MSA	6215	NAICS 6215 Medical and diagnostic laboratories	Not Met	Not Met	Manually	Not Met	3	5	21,326	26,487	226,160	127,417	146,131,754	0	0.00188	18	224,700	319,635	150,025,655	8.0E-05	0.00213	-202.00%	15.60%	0.04	0.4	6	
Lansing-East Lansing, MI MSA	54164	Process, Physical Distribution, and Logistics Consulting Services	Not Met	Not Met	Not Met	Not Met	13	12	14,870	18,501	36	226,160	29,710	146,131,754	0.00016	0.00088	6	224,700	158,825	150,025,655	2.7E-05	0.00106	-83.30%	22.50%	0.18	0.03	6
Lansing-East Lansing, MI MSA	42340	Computer and Computer Peripheral Equipment and Software Merchant Wholesalers	Not Met	Not Met	Manually	Not Met	6	6	5	13,548	17,747	226,160	208,664	146,131,754	0	0.00151	7	224,700	232,632	150,025,655	6.1E-05	0.00155	-202.00%	5.70%	0.02	0.6	6
Lansing-East Lansing, MI MSA	62310	Investment Banking and Securities Intermediation	Not Met	Not Met	Manually	Not Met	13	13	20,671	25,746	209	226,160	1,200,671	146,131,754	0.00001	0.00000	10	224,700	1,271,339	150,025,655	0.00001	0.00001	-202.00%	0.00%	0.1	0.1	6
Lansing-East Lansing, MI MSA	72330	Food Service Contractors	Not Met	Not Met	Not Met	Not Met	25	28	23,219	23,996	146	226,160	52,682	146,131,754	0.00009	0.00043	15	224,700	467,409	150,025,655	3.7E-05	0.00112	-89.70%	-8.80%	0.19	0.02	6
Lansing-East Lansing, MI MSA	32373	NAICS 3237 Concrete and concrete product manufacturing	Not Met	Not Met	Manually	Not Met	7	17	9,007	9,175	226,160	194,859	146,131,754	0	0.00133	4	224,700	200,385	150,025,655	1.8E-05	0.00134	-202.00%	2.80%	0.01	0.4	6	
Lansing-East Lansing, MI MSA	1112	NAICS 1112 Vegetable and melon farming	Not Met	Not Met	Not Met	Not Met	4	6	4,892	5,277	226,160	142,576	146,131,754	0	0.00063	24	224,700	82,690	150,025,655	0	0.00055	0.00%	-10.70%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	1113	NAICS 1113 Fruit and tree nut farming	Not Met	Not Met	Not Met	Not Met	4	6	11,117	12,478	226,160	183,635	146,131,754	0	0.00014	24	224,700	162,975	150,025,655	0.00016	0.00016	-202.00%	0.00%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	1129	NAICS 1129 Other animal production	Not Met	Not Met	Not Met	Not Met	4	3	3,987	4,027	226,160	19,975	146,131,754	0	0.00014	24	224,700	21,662	150,025,655	0	0.00014	0.00%	8.50%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	1132	NAICS 1132 Forest nurseries and gathering of forest products	Not Met	Not Met	Not Met	Not Met	1	1	259	343	226,160	19,964	146,131,754	0	1.3E-05	24	224,700	20,050	150,025,655	0	1.4E-05	0.00%	-1.70%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	1133	NAICS 1133 Logging	Not Met	Not Met	Not Met	Not Met	8	8	8,272	8,015	226,160	48,903	146,131,754	0	0.00034	24	224,700	45,345	150,025,655	0	0.0003	0.00%	-7.00%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	1142	NAICS 1142 Hunting and trapping	Not Met	Not Met	Not Met	Not Met	4	4	479	555	226,160	479	146,131,754	0	0.00000	24	224,700	2,084	150,025,655	0	0.00000	0.00%	0.00%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	1153	NAICS 1153 Support activities for forestry	Not Met	Not Met	Not Met	Not Met	4	4	2,471	2,874	226,160	18,010	146,131,754	0	0.00012	24	224,700	20,372	150,025,655	0.00014	0.00014	0.00%	20.60%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	2111	NAICS 2111 Oil and gas extraction	Not Met	Not Met	Not Met	Not Met	2	3	7,206	6,427	226,160	142,363	146,131,754	0	0.00097	24	224,700	112,716	150,025,655	0.00075	0.00075	0.00%	-20.80%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	2131	NAICS 2131 Support activities for mining	Not Met	Not Met	Not Met	Not Met	5	8	18,242	17,185	226,160	340,737	146,131,754	0	0.00233	24	224,700	261,944	150,025,655	0.00175	0.00175	0.00%	-23.10%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	2211	NAICS 2211 Electric power generation, transmission and distribution	Not Met	Not Met	Not Met	Not Met	6	6	9,615	12,452	226,160	194,679	146,131,754	0	0.00267	24	224,700	385,183	150,025,655	0.00257	0.00257	0.00%	-1.00%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	2212	NAICS 2212 Natural gas distribution	Not Met	Not Met	Not Met	Not Met	6	6	2,126	2,126	226,160	109,607	146,131,754	0	0.00035	24	224,700	112,324	150,025,655	0.00035	0.00035	0.00%	0.00%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	2213	NAICS 2213 Water, sewage and other systems	Not Met	Not Met	Manually	Not Met	3	6	5,906	6,423	226,160	51,564	146,131,754	0	0.00035	24	224,700	56,333	150,025,655	0.00038	0.00038	0.00%	2.00%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	2372	NAICS 2372 Land subdivision	Not Met	Not Met	Manually	Not Met	3	2	5,992	5,999	13	226,160	95,906	146,131,754	5.8E-05	0.00027	24	224,700	37,002	150,025,655	0.00025	-201.00%	-6.40%	0.21	0.4	6	
Lansing-East Lansing, MI MSA	2379	NAICS 2379 Other heavy and civil engineering construction	Not Met	Not Met	Manually	Not Met	6	6	8,056	9,185	17	226,160	31,535	146,131,754	7.5E-05	0.00079	24	224,700	122,148	150,025,655	0.00081	-201.00%	5.40%	0.09	0.4	6	
Lansing-East Lansing, MI MSA	3113	NAICS 3113 Super and nonferrous product manufacturing	Not Met	Not Met	Manually	Not Met	6	6	1,244	2,244	226,160	76,246	146,131,754	0	0.00024	24	224,700	79,145	150,025,655	0.00024	0.00024	0.00%	0.00%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	3114	NAICS 3114 Fruit and vegetable preserving and specialty food manufacturing	Not Met	Not Met	Not Met	Not Met	1	1	2,304	2,652	226,160	171,594	146,131,754	0	0.00117	24	224,700	177,394	150,025,655	0.00118	0.00118	0.00%	3.40%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	3116	NAICS 3116 Animal slaughtering and processing	Not Met	Not Met	Not Met	Not Met	1	2	4,072	4,396	226,160	519,779	146,131,754	0	0.00356	24	224,700	530,470	150,025,655	0.00354	0.00354	0.00%	2.10%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	3117	NAICS 3117 Textile product manufacturing and packaging	Not Met	Not Met	Not Met	Not Met	1	1	871	849	226,160	51,577	146,131,754	0	0.00024	24	224,700	42,423	150,025,655	0.00022	0.00022	0.00%	-6.20%	0.07	0.4	6	
Lansing-East Lansing, MI MSA	3119	NAICS 3119 Other textile manufacturing	Not Met	Not Met	Manually	Not Met	1	1	5,599	7,261	226,160	234,485	146,131,754	0	0.00154	24	224,700	250,066	150,025,655	0.00154	0.00154	0.00%	0.00%	0.07	0.4	6	
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Lansing-East Lansing, MI MSA	5612	NAICS 5612 Facilities support services	Not Met	Not Met	Not Met	Not Met	2	3	5,915	7,277	226,160	152,803	146,131.754	0	0.00105	224,700	156,177	150,025.655	0	0.00104	0.00%	2.60%	4		
Lansing-East Lansing, MI MSA	5615	NAICS 5615 Travel arrangement and reservation services	Not Met	Not Met	Met	Not Met	14	15	22,157	21,100	226,160	219,374	146,131.754	0	0.0015	224,700	173,638	150,025.655	0	0.00116	0.00%	-20.90%	4		
Lansing-East Lansing, MI MSA	5622	NAICS 5622 Waste treatment and disposal	Not Met	Not Met	Met	Not Met	1	9	3,937	4,292	226,160	90,174	146,131.754	0	0.00067	224,700	100,191	150,025.655	0	0.00067	0.00%	1.80%	4		
Lansing-East Lansing, MI MSA	5629	NAICS 5629 Remediation and other waste management services	Not Met	Not Met	Manually	Not Met	15	14	13,575	16,279	132	153,131	146,131.754	0.00058	0.00105	224,700	151,538	150,025.655	0	0.00114	-2018.00%	11.90%	0.56	4	
Lansing-East Lansing, MI MSA	6112	NAICS 6112 Junior colleges	Not Met	Not Met	Met	Not Met	1	1	870	982	226,160	26,100	146,131.754	0	0.00018	224,700	20,680	150,025.655	0	0.00014	0.00%	-12.40%	4		
Lansing-East Lansing, MI MSA	6221	NAICS 6221 General medical and surgical hospitals	Not Met	Not Met	Met	Not Met	9	12	7,358	9,780	226,160	4,705,779	146,131.754	0	0.00322	224,700	4,716,736	150,025.655	0	0.00314	0.00%	0.90%	4		
Lansing-East Lansing, MI MSA	6222	NAICS 6222 Psychiatric and substance abuse hospitals	Not Met	Not Met	Met	Not Met	1	2	1,231	1,415	226,160	122,693	146,131.754	0	0.00085	224,700	122,516	150,025.655	0	0.00082	0.00%	-5.00%	4		
Lansing-East Lansing, MI MSA	6223	NAICS 6223 Specialty (except psychiatric and substance abuse) hospitals	Not Met	Not Met	Met	Not Met	6	6	1,778	2,183	226,160	232,145	146,131.754	0	0.00159	224,700	241,364	150,025.655	0	0.00161	0.00%	4.60%	4		
Lansing-East Lansing, MI MSA	6243	NAICS 6243 Vocational rehabilitation services	Not Met	Not Met	Met	Not Met	7	10	9,452	9,502	226,160	327,166	146,131.754	0	0.00224	224,700	274,648	150,025.655	0	0.00183	0.00%	-15.80%	4		
Lansing-East Lansing, MI MSA	7114	NAICS 7114 Agents and managers for artists, actors, entertainers, and other public figures	Not Met	Not Met	Met	Not Met	1	2	4,746	6,148	226,160	28,400	146,131.754	0	0.00019	224,700	29,112	150,025.655	0	0.00019	0.00%	2.50%	4		
Lansing-East Lansing, MI MSA	7115	NAICS 7115 Independent artists, writers, and performers	Not Met	Not Met	Manually	Not Met	18	19	27,778	34,188	42	51,432	146,131.754	0.00019	0.00019	224,700	58,372	150,025.655	2018.00%	0.0039	0.00%	1.80%	0.53	4	
Lansing-East Lansing, MI MSA	7131	NAICS 7131 Amusement parks and arcades	Not Met	Not Met	Met	Not Met	1	2	3,448	3,885	226,160	219,982	146,131.754	0	0.00151	224,700	217,758	150,025.655	0	0.00145	0.00%	-1.00%	4		
Lansing-East Lansing, MI MSA	7132	NAICS 7132 Gambling industries	Not Met	Not Met	Met	Not Met	2	2	3,351	3,941	226,160	119,040	146,131.754	0	0.00081	224,700	107,355	150,025.655	0	0.00072	0.00%	-11.30%	4		
Lansing-East Lansing, MI MSA	111110	Soybean Farming	Not Met	Not Met	Met	Not Met	4	5	1,071	1,315	226,160	4,861	146,131.754	0	3.3E-05	224,700	5,180	150,025.655	0	3.3E-05	0.00%	6.70%	4		
Lansing-East Lansing, MI MSA	111150	Corn Farming	Not Met	Not Met	Met	Not Met	4	7	3,369	3,787	226,160	18,176	146,131.754	0	0.00012	224,700	18,346	150,025.655	0	0.00012	0.00%	0.90%	4		
Lansing-East Lansing, MI MSA	111191	Obseed and Grain Combination Farming	Not Met	Not Met	Met	Not Met	4	5	4,118	4,300	226,160	17,194	146,131.754	0	0.00012	224,700	17,054	150,025.655	0	0.00011	0.00%	-0.80%	4		
Lansing-East Lansing, MI MSA	111199	All Other Grain Farming	Not Met	Not Met	Met	Not Met	2	2	1,119	1,363	226,160	4,445	146,131.754	0	3E-05	224,700	4,922	150,025.655	0	3.3E-05	0.00%	10.70%	4		
Lansing-East Lansing, MI MSA	112121	Potato Farming	Not Met	Not Met	Met	Not Met	2	2	1,056	1,040	226,160	17,127	146,131.754	0	0.00012	224,700	15,990	150,025.655	0	0.00011	0.00%	-6.60%	4		
Lansing-East Lansing, MI MSA	112129	Other Vegetable (except Potato) and Melon Farming	Not Met	Not Met	Met	Not Met	2	4	3,836	4,236	226,160	75,450	146,131.754	0	0.00052	224,700	66,700	150,025.655	0	0.00044	0.00%	-11.60%	4		
Lansing-East Lansing, MI MSA	112131	Apple Orchards	Not Met	Not Met	Met	Not Met	2	2	1,705	1,565	226,160	37,594	146,131.754	0	0.00026	224,700	30,050	150,025.655	0	0.00022	0.00%	-20.10%	4		
Lansing-East Lansing, MI MSA	114221	Nursery and Tree Production	Not Met	Not Met	Manually	Not Met	10	13	5,019	5,103	14	226,160	79,811	146,131.754	6.2E-05	0.00055	224,700	86,515	150,025.655	0	0.00058	-2018.00%	8.40%	0.11	4
Lansing-East Lansing, MI MSA	114222	Floriculture Production	Not Met	Manually	Met	Manually	Ve	4	2,179	2,191	64	226,160	45,431	146,131.754	0.00028	0.00031	224,700	44,578	150,025.655	0	0.00023	-2018.00%	-1.90%	0.91	4
Lansing-East Lansing, MI MSA	111191	Sugar Beet Farming	Not Met	Not Met	Met	Not Met	1	2	349	360	226,160	1,786	146,131.754	0	1.2E-05	224,700	1,589	150,025.655	0	1.1E-05	0.00%	-11.00%	4		
Lansing-East Lansing, MI MSA	112111	Beef Cattle Ranching and Farming	Not Met	Not Met	Met	Not Met	4	7	8,878	9,787	226,160	38,309	146,131.754	0	0.00026	224,700	40,597	150,025.655	0	0.00027	0.00%	6.00%	4		
Lansing-East Lansing, MI MSA	112920	Horses and Other Equine Production	Not Met	Not Met	Met	Not Met	1	2	1,351	1,494	226,160	5,877	146,131.754	0	4E-05	224,700	5,972	150,025.655	0	4E-05	0.00%	1.60%	4		
Lansing-East Lansing, MI MSA	112990	All Other Animal Production	Not Met	Not Met	Met	Not Met	3	3	3,307	1,655	226,160	9,541	146,131.754	0	6.5E-05	224,700	11,340	150,025.655	0	7.6E-05	0.00%	18.90%	4		
Lansing-East Lansing, MI MSA	113210	Forest Nurseries and Gathering of Forest Products	Not Met	Not Met	Met	Not Met	1	1	295	343	226,160	1,964	146,131.754	0	1.3E-05	224,700	2,050	150,025.655	0	1.4E-05	0.00%	-1.70%	4		
Lansing-East Lansing, MI MSA	113210	Logging	Not Met	Not Met	Met	Not Met	1	1	872	801	226,160	48,951	146,131.754	0	0.00011	224,700	45,541	150,025.655	0	0.00011	0.00%	0.00%	4		
Lansing-East Lansing, MI MSA	114210	Hunting and Trapping	Not Met	Not Met	Met	Not Met	1	3	479	555	226,160	1,878	146,131.754	0	1.3E-05	224,700	2,084	150,025.655	0	1.4E-05	0.00%	10.80%	4		
Lansing-East Lansing, MI MSA	115114	Postharvest Crop Activities (except Cotton Ginning)	Not Met	Not Met	Met	Not Met	3	3	2,129	2,244	226,160	91,916	146,131.754	0	0.00063	224,700	85,906	150,025.655	0	0.00057	0.00%	-6.50%	4		
Lansing-East Lansing, MI MSA	115115	Farm Labor Contractors and Crew Leaders	Not Met	Not Met	Met	Not Met	1	3	2,710	2,936	226,160	177,370	146,131.754	0	0.00121	224,700	185,013	150,025.655	0	0.00123	0.00%	4.30%	4		
Lansing-East Lansing, MI MSA	115116	Tree Management Services	Not Met	Not Met	Met	Not Met	2	2	1,501	1,750	226,160	19,740	146,131.754	0	0.00011	224,700	19,935	150,025.655	0	0.00012	0.00%	5.40%	4		
Lansing-East Lansing, MI MSA	115310	Support Activities for Forestry	Not Met	Not Met	Met	Not Met	4	6	2,471	2,874	226,160	18,030	146,131.754	0	0.00012	224,700	20,372	150,025.655	0	0.00014	0.00%	20.60%	4		
Lansing-East Lansing, MI MSA	211120	Crude Petroleum Extraction	Not Met	Not Met	Met	Not Met	1	2	4,839	4,445	226,160	104,458	146,131.754	0	0.00071	224,700	82,668	150,025.655	0	0.00055	0.00%	-21.40%	4		
Lansing-East Lansing, MI MSA	211130	Natural Gas Extraction	Not Met	Not Met	Met	Not Met	1	1	2,367	1,982	226,160	37,906	146,131.754	0	0.00026	224,700	30,648	150,025.655	0	0.00022	0.00%	-19.10%	4		
Lansing-East Lansing, MI MSA	212132	Crushed and Broken Limestone Mining and Quarrying	Not Met	Not Met	Met	Not Met	1	1	1,130	1,146	226,160	21,507	146,131.754	0	0.00015	224,700	22,444	150,025.655	0	0.00015	0.00%	4.40%	4		
Lansing-East Lansing, MI MSA	213111	Drilling Oil and Gas Wells	Not Met	Not Met	Met	Not Met	1	1	1,089	1,100	226,160	19,320	146,131.754	0	0.00011	224,700	17,391	150,025.655	0	0.00012	0.00%	-26.50%	4		
Lansing-East Lansing, MI MSA	213112	Support Activities for Oil and Gas Operations	Not Met	Not Met	Met	Not Met	3	4	14,893	14,023	226,160	264,786	146,131.754	0	0.00181	224,700	201,850	150,025.655	0	0.00135	0.00%	-23.80%	4		
Lansing-East Lansing, MI MSA	213114	Support Activities for Metal Mining	Not Met	Not Met	Met	Not Met	1	1	318	401	226,160	3,327	146,131.754	0	2.6E-05	224,700	4,948	150,025.655	0	3.3E-05	0.00%	32.80%	4		
Lansing-East Lansing, MI MSA	221111	Hydroelectric Power Generation	Not Met	Not Met	Met	Not Met	1	1	627	670	226,160	6,578	146,131.754	0	4E-05	224,700	7,523	150,025.655	0	5E-05	0.00%	6.50%	4		
Lansing-East Lansing, MI MSA	221112	Fossil Fuel Electric Power Generation	Not Met	Not Met	Met	Not Met	3	3	1,763	1,812	226,160	87,714	146,131.754	0	0.00019	224,700	74,337	150,025.655	0	0.00019	0.00%	27.40%	4		
Lansing-East Lansing, MI MSA	221122	Electric Power Distribution	Not Met	Not Met	Met	Not Met	2	1	5,308	6,233	226,160	211,661	146,131.754	0	0.00145	224,700	216,114	150,025.655	0	0.00144	0.00%	2.00%	4		
Lansing-East Lansing, MI MSA	221210	Natural Gas Distribution	Not Met	Not Met	Met	Not Met	1	2	2,952	3,218	226,160	109,607	146,131.754	0	0.00075	224,700	112,324	150,025.655	0	0.00075	0.00%	2.30%	4		
Lansing-East Lansing, MI MSA	223120	Water Supply and Irrigation Systems	Not Met	Not Met	Met	Not Met	3	3	1,106	5,563	226,160	43,716	146,131.754	0	0.00003	224,700	48,377	150,025.655	0	0.00032	0.00%	3.30%	4		
Lansing-East Lansing, MI MSA	237120	Oil and Gas Pipeline and Related Structures Construction	Not Met	Not Met	Met	Not Met	3	3	3,964	4,297	226,160	164,452	146,131.754	0	0.00011	224,700	131,997	150,025.655	0	0.00018	0.00%	16.50%	4		
Lansing-East Lansing, MI MSA	237210	Land Subdivision	Not Met	Not Met	Manually	Not Met	3	2	5,992	5,999	13	226,160	39,506	146,131.754	5.8E-05	0.00027	224,700	37,002	150,025.655	0	0.00025	-2018.00%	-6.40%	0.21	4
Lansing-East Lansing, MI MSA	237990	Other Heavy and Civil Engineering Construction	Not Met	Not Met	Manually	Not Met	6	10	8,056	9,185	17	226,160	115,935	146,131.754	7.5E-05	0.00079	224,700	122,148	150,025.655	0	0.00081	-2018.00%	5.40%	0.09	4
Lansing-East Lansing, MI MSA	238111	Residential poured foundation contractors	Not Met	Not Met	Manually	Not Met	18	25	14,335	17,096	74	226,160	106,545	146,131.754	0.00033	0.00073	224,700	120,338	150,025.655	0	0.0008	-2018.00%	12.90%	0.45	4
Lansing-East Lansing, MI MSA	238112	Nonresidential poured foundation contractors	Not Met	Not Met	Met	Not Met	1	1	612	612	226,160	11,046	146,131.754	0	0.00079	224,700	125,549	150,025.655	0	0.00084	0.00%	8.20%	4		
Lansing-East Lansing, MI MSA	238121	Residential structural steel contractors	Not Met	Not Met	Met	Not Met	2	2	1,310	1,478	226,160	13,762	146,131.754	0	9.4E-05	224,700	13,737	150,025.655	0	9.2E-05	0.00%	-0.20%	4		
Lansing-East Lansing, MI MSA	238122	Nonresidential structural steel contractors	Not Met	Not Met	Met	Not Met	2	4	3,921	4,011	226,160	73,973	146,131.754	0	0.00051	224,700	73,206	150,025.655	0	0.00049	0.00%	-1.00%	4		
Lansing-East Lansing, MI MSA	238132	Nonresidential framing contractors	Not Met	Not Met	Met</																				

Lansing-East Lansing, MI MSA	325412	Pharmaceutical Preparation Manufacturing	Not Met	Not Met	Not Met	Not Met	4	2	2,794	4,322	226,160	201,668	146,131,754	0	0.00138	224,700	227,139	150,025,655	0	0.00151	0.00%	12.60%	6	
Lansing-East Lansing, MI MSA	325414	Biological Product (except Diagnostic) Manufacturing	Not Met	Not Met	Not Met	Not Met	2	2	487	661	226,160	35,551	146,131,754	0	0.00024	224,700	43,818	150,025,655	0	0.00029	0.00%	23.30%	6	
Lansing-East Lansing, MI MSA	325510	Paint and Coating Manufacturing	Not Met	Not Met	Not Met	Not Met	1	3	1,502	2,712	226,160	40,436	146,131,754	0	0.00028	224,700	42,638	150,025,655	0	0.00028	0.00%	5.40%	6	
Lansing-East Lansing, MI MSA	325611	Soap and Other Detergent Manufacturing	Not Met	Not Met	Not Met	Not Met	1	2	807	1,087	226,160	26,267	146,131,754	0	0.00018	224,700	28,011	150,025,655	0	0.00019	0.00%	6.60%	6	
Lansing-East Lansing, MI MSA	325991	Custom Compounding of Purchased Resins	Not Met	Not Met	Not Met	Not Met	2	2	428	456	226,160	18,335	146,131,754	0	0.00013	224,700	17,462	150,025,655	0	0.00012	0.00%	-4.80%	6	
Lansing-East Lansing, MI MSA	325998	All Other Miscellaneous Chemical Product and Preparation Manufacturing	Not Met	Not Met	Not Met	Not Met	2	5	1,708	2,045	226,160	39,975	146,131,754	0	0.00027	224,700	43,101	150,025,655	0	0.00029	0.00%	7.80%	6	
Lansing-East Lansing, MI MSA	326112	Plastics Packaging Film and Sheet (Including Laminated) Manufacturing	Not Met	Not Met	Not Met	Not Met	1	1	414	536	226,160	21,493	146,131,754	0	0.00015	224,700	24,681	150,025,655	0	0.00016	0.00%	14.90%	6	
Lansing-East Lansing, MI MSA	326122	Plastics Pipe and Pipe Fitting Manufacturing	Not Met	Not Met	Not Met	Not Met	1	1	568	614	226,160	28,471	146,131,754	0	0.00019	224,700	31,521	150,025,655	0	0.00021	0.00%	10.70%	6	
Lansing-East Lansing, MI MSA	326140	Polystyrene Foam Product Manufacturing	Not Met	Not Met	Not Met	Not Met	1	2	585	584	226,160	32,831	146,131,754	0	0.00022	224,700	33,030	150,025,655	0	0.00021	0.00%	-5.50%	6	
Lansing-East Lansing, MI MSA	326150	Urethane and Other Foam Product (except Polystyrene) Manufacturing	Not Met	Not Met	Not Met	Not Met	3	3	901	909	226,160	37,307	146,131,754	0	0.00026	224,700	37,617	150,025,655	0	0.00025	0.00%	0.80%	6	
Lansing-East Lansing, MI MSA	326160	Plastics Bottle Manufacturing	Not Met	Not Met	Not Met	Not Met	2	2	559	627	226,160	497	146,131,754	0	0.00024	224,700	53,614	150,025,655	0	0.00024	0.00%	7.40%	6	
Lansing-East Lansing, MI MSA	326199	All Other Plastics Product Manufacturing	Not Met	Not Met	Not Met	Not Met	5	5	5,899	6,267	226,160	35,681	146,131,754	0	0.00029	224,700	39,048	150,025,655	0	0.00021	0.00%	3.40%	6	
Lansing-East Lansing, MI MSA	326220	Rubber and Plastics Hoses and Belting Manufacturing	Not Met	Not Met	Not Met	Not Met	1	1	428	471	226,160	24,331	146,131,754	0	0.00017	224,700	23,401	150,025,655	0	0.00016	0.00%	-3.80%	6	
Lansing-East Lansing, MI MSA	326291	Rubber Product Manufacturing for Mechanical Use	Not Met	Not Met	Not Met	Not Met	1	1	475	468	226,160	31,007	146,131,754	0	0.00021	224,700	28,146	150,025,655	0	0.00019	0.00%	-9.20%	6	
Lansing-East Lansing, MI MSA	327120	Clay Building Material and Refractories Manufacturing	Not Met	Not Met	Not Met	Not Met	1	1	652	689	226,160	23,267	146,131,754	0	0.00016	224,700	21,652	150,025,655	0	0.00014	0.00%	-6.90%	6	
Lansing-East Lansing, MI MSA	327211	Other Pressed and Blown Glass and Glassware Manufacturing	Not Met	Not Met	Not Met	Not Met	1	1	417	444	226,160	14,249	146,131,754	0	9.8E-05	224,700	12,834	150,025,655	0	0.00005	0.00%	-9.90%	6	
Lansing-East Lansing, MI MSA	327310	Cement Manufacturing	Not Met	Not Met	Not Met	Not Met	2	2	374	407	226,160	13,909	146,131,754	0	9.5E-05	224,700	14,165	150,025,655	0	9.4E-05	0.00%	1.80%	6	
Lansing-East Lansing, MI MSA	327320	Ready-Mix Concrete Manufacturing	Not Met	Not Met	Not Met	Not Met	3	4	5,368	5,586	226,160	97,475	146,131,754	0	0.00067	224,700	101,053	150,025,655	0	0.00067	0.00%	3.70%	6	
Lansing-East Lansing, MI MSA	327332	Concrete Pipe Manufacturing	Not Met	Not Met	Not Met	Not Met	1	1	270	248	226,160	7,722	146,131,754	0	5.3E-05	224,700	8,091	150,025,655	0	6E-05	0.00%	16.40%	6	
Lansing-East Lansing, MI MSA	327392	Other Concrete Product Manufacturing	Not Met	Not Met	Not Met	Not Met	3	4	2,127	2,096	226,160	56,522	146,131,754	0	0.00039	224,700	57,007	150,025,655	0	0.00038	0.00%	0.90%	6	
Lansing-East Lansing, MI MSA	327991	Cut Stone and Stone Product Manufacturing	Not Met	Not Met	Not Met	Not Met	1	1	2,539	2,902	226,160	33,412	146,131,754	0	0.00023	224,700	36,067	150,025,655	0	0.00024	0.00%	7.90%	6	
Lansing-East Lansing, MI MSA	331110	Iron and Steel Mills and Ferroalloy Manufacturing	Not Met	Not Met	Not Met	Not Met	2	2	918	957	226,160	83,343	146,131,754	0	0.00057	224,700	83,151	150,025,655	0	0.00055	0.00%	-0.20%	6	
Lansing-East Lansing, MI MSA	331210	Iron and Steel Pipe and Tube Manufacturing from Purchased Steel	Not Met	Not Met	Not Met	Not Met	1	1	486	550	226,160	27,105	146,131,754	0	0.00019	224,700	24,827	150,025,655	0	0.00017	0.00%	-8.40%	6	
Lansing-East Lansing, MI MSA	331221	Roll-Formed Steel Shape Manufacturing	Not Met	Not Met	Not Met	Not Met	1	1	416	466	226,160	19,924	146,131,754	0	0.00014	224,700	20,730	150,025,655	0	0.00014	0.00%	4.00%	6	
Lansing-East Lansing, MI MSA	331222	Steel Wire Drawing	Not Met	Not Met	Not Met	Not Met	2	1	249	253	226,160	10,420	146,131,754	0	7.1E-05	224,700	10,566	150,025,655	0	7E-05	0.00%	1.40%	6	
Lansing-East Lansing, MI MSA	331313	Alumina Refining and Primary Aluminum Production	Not Met	Not Met	Not Met	Not Met	2	2	105	126	226,160	8,220	146,131,754	0	5.6E-05	224,700	8,488	150,025,655	0	5.7E-05	0.00%	3.30%	6	
Lansing-East Lansing, MI MSA	331492	Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum)	Not Met	Not Met	Not Met	Not Met	1	1	257	264	226,160	10,167	146,131,754	0	7E-05	224,700	10,021	150,025,655	0	6.7E-05	0.00%	-1.40%	6	
Lansing-East Lansing, MI MSA	331512	Nonferrous Metal Die-Casting Foundries	Not Met	Not Met	Not Met	Not Met	3	3	303	303	226,160	21,817	146,131,754	0	0.00017	224,700	21,828	150,025,655	0	0.00017	0.00%	0.05%	6	
Lansing-East Lansing, MI MSA	331529	Other Nonferrous Metal Foundries (except Die-Casting)	Not Met	Not Met	Not Met	Not Met	1	2	303	300	226,160	13,134	146,131,754	0	9E-05	224,700	12,359	150,025,655	0	8.2E-05	0.00%	-5.90%	6	
Lansing-East Lansing, MI MSA	332111	Iron and Steel Forging	Not Met	Not Met	Not Met	Not Met	2	3	485	505	226,160	22,843	146,131,754	0	0.00016	224,700	19,570	150,025,655	0	0.00013	0.00%	-14.30%	6	
Lansing-East Lansing, MI MSA	332112	Nonferrous Forging	Not Met	Not Met	Not Met	Not Met	1	1	93	92	226,160	7,814	146,131,754	0	5.4E-05	224,700	6,651	150,025,655	0	4.4E-05	0.00%	-14.90%	6	
Lansing-East Lansing, MI MSA	332119	Metal Crown, Closure, and Other Metal Stamping (except Automotive)	Not Met	Not Met	Not Met	Not Met	2	2	1,384	1,270	226,160	50,611	146,131,754	0	0.00024	224,700	50,423	150,025,655	0	0.00024	0.00%	-0.20%	6	
Lansing-East Lansing, MI MSA	332216	Saw Blade and Handtool Manufacturing	Not Met	Not Met	Not Met	Not Met	2	2	1,057	1,052	226,160	27,719	146,131,754	0	0.00019	224,700	27,719	150,025,655	0	0.00018	0.00%	-0.50%	6	
Lansing-East Lansing, MI MSA	332311	Prefabricated Metal Building and Component Manufacturing	Not Met	Not Met	Not Met	Not Met	1	1	1,039	1,307	226,160	31,670	146,131,754	0	0.00022	224,700	35,474	150,025,655	0	0.00024	0.00%	12.00%	6	
Lansing-East Lansing, MI MSA	332312	Fabricated Structural Metal Manufacturing	Not Met	Not Met	Not Met	Not Met	5	5	3,417	3,726	226,160	90,853	146,131,754	0	0.00062	224,700	92,066	150,025,655	0	0.00061	0.00%	1.30%	6	
Lansing-East Lansing, MI MSA	332313	Plate Work Manufacturing	Not Met	Not Met	Not Met	Not Met	4	2	1,822	1,938	226,160	47,480	146,131,754	0	0.00032	224,700	45,342	150,025,655	0	0.00033	0.00%	-4.50%	6	
Lansing-East Lansing, MI MSA	332321	Metal Window and Door Manufacturing	Not Met	Not Met	Not Met	Not Met	1	1	1,353	1,465	226,160	20,929	146,131,754	0	0.00023	224,700	20,567	150,025,655	0	0.00023	0.00%	12.30%	6	
Lansing-East Lansing, MI MSA	332322	Sheet Metal Work Manufacturing	Not Met	Not Met	Manually	Not Met	5	5	4,377	4,479	226,160	112,448	146,131,754	6.6E-05	0.00077	224,700	113,958	150,025,655	0	0.00076	-2018.00%	1.30%	0.09	6
Lansing-East Lansing, MI MSA	332323	Ornamental and Architectural Metal Work Manufacturing	Not Met	Not Met	Not Met	Not Met	2	2	3,953	3,161	226,160	42,106	146,131,754	0	0.00029	224,700	42,924	150,025,655	0	0.00029	0.00%	1.90%	6	
Lansing-East Lansing, MI MSA	332410	Power Boiler and Heat Exchanger Manufacturing	Not Met	Not Met	Not Met	Not Met	1	1	387	415	226,160	20,656	146,131,754	0	0.00014	224,700	18,972	150,025,655	0	0.00013	0.00%	-8.20%	6	
Lansing-East Lansing, MI MSA	332439	Other Metal Container Manufacturing	Not Met	Not Met	Not Met	Not Met	1	1	452	453	226,160	15,055	146,131,754	0	0.00011	224,700	14,504	150,025,655	0	0.00011	0.00%	-3.70%	6	
Lansing-East Lansing, MI MSA	332613	Spring Manufacturing	Not Met	Not Met	Not Met	Not Met	1	1	445	408	226,160	17,681	146,131,754	0	0.00012	224,700	15,919	150,025,655	0	0.00011	0.00%	-10.00%	6	
Lansing-East Lansing, MI MSA	332618	Other Fabricated Wire Product Manufacturing	Not Met	Not Met	Not Met	Not Met	1	1	890	870	226,160	25,712	146,131,754	0	0.00018	224,700	24,403	150,025,655	0	0.00016	0.00%	-5.10%	6	
Lansing-East Lansing, MI MSA	332811	Metal Heat Treating	Not Met	Not Met	Not Met	Not Met	4	5	694	694	226,160	19,841	146,131,754	0	0.00014	224,700	17,655	150,025,655	0	0.00012	0.00%	-11.00%	6	
Lansing-East Lansing, MI MSA	332812	Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	Not Met	Not Met	Not Met	Not Met	2	2	985	1,088	226,160	59,455	146,131,754	0	0.00028	224,700	57,147	150,025,655	0	0.00028	0.00%	10.40%	6	
Lansing-East Lansing, MI MSA	332813	Electroplating, Plating, Polishing, Anodizing, and Coloring	Not Met	Not Met	Not Met	Not Met	6	6	2,657	2,478	226,160	60,656	146,131,754	0	0.00042	224,700	53,275	150,025,655	0	0.00036	0.00%	-12.20%	6	
Lansing-East Lansing, MI MSA	332911	Industrial Valve Manufacturing	Not Met	Not Met	Not Met	Not Met	1	1	609	695	226,160	26,029	146,131,754	0	0.00018	224,700	25,903	150,025,655	0	0.00017	0.00%	-0.50%	6	
Lansing-East Lansing, MI MSA	332912	Fluid Power Valve and Hose Fitting Manufacturing	Not Met	Not Met	Not Met	Not Met	2	2	564	584	226,160	36,500	146,131,754	0	0.00025	224,700	35,136	150,025,655	0	0.00023	0.00%	-3.70%	6	
Lansing-East Lansing, MI MSA	332916	Fabricated Pipe and Pipe Fitting Manufacturing	Not Met	Not Met	Not Met	Not Met	2	2	934	978	226,160	32,371	146,131,754	0	0.00022	224,700	30,276	150,025,655	0	0.00021	0.00%	-5.50%	6	
Lansing-East Lansing, MI MSA	332999	All Other Miscellaneous Fabricated Metal Product Manufacturing	Not Met	Not Met	Not Met	Not Met	3	3	3,702	4,194	226,160	81,263	146,131,754	0	0.00056	224,700	83,008	150,025,655	0	0.00055	0.00%	2.10%	6	
Lansing-East Lansing, MI MSA	333111	Farm Machinery and Equipment Manufacturing	Not Met	Not Met	Not Met	Not Met	2	1	1,417	1,563	226,160	60,754	146,131,754	0	0.00042	224,700	66,643	150,025,655	0	0.00044	0.00%	9.70%	6	
Lansing-East Lansing, MI MSA	333120	Construction Machinery Manufacturing	Not Met	Not Met	Not Met	Not Met	3	3	942	1,072	226,160	70,112	146,131,754	0	0.00048	224,700	71,556	150,025,655	0	0.00048	0.00%	2.10%	6	
Lansing-East Lansing, MI MSA	333																							

Lansing-East Lansing, MI MSA	423220	Home Furnishing Merchant Wholesalers	Not Met	Not Met	Met	Not Met	2	3	6,415	7,057	226,160	65,746	146,131.754	0	0.00045	224,700	64,635	150,025.655	0	0.00043	0.00%	-1.70%	6		
Lansing-East Lansing, MI MSA	423310	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers	Not Met	Not Met	Not Met	Not Met	4	4	8,631	9,384	226,160	111,343	146,131.754	0	0.00076	224,700	113,881	150,025.655	0	0.00076	0.00%	2.30%	6		
Lansing-East Lansing, MI MSA	423320	Brick, Stone, and Related Construction Material Merchant Wholesalers	Not Met	Not Met	Not Met	Not Met	5	4	6,159	6,412	226,160	62,379	146,131.754	0	0.00039	224,700	61,804	150,025.655	0	0.00044	0.00%	-4.50%	6		
Lansing-East Lansing, MI MSA	423330	Roofing, Siding, and Insulation Material Merchant Wholesalers	Not Met	Not Met	Not Met	Not Met	2	3	3,118	3,865	226,160	38,395	146,131.754	0	0.00026	224,700	42,900	150,025.655	0	0.00028	0.00%	10.70%	6		
Lansing-East Lansing, MI MSA	423390	Other Construction Material Merchant Wholesalers	Not Met	Not Met	Not Met	Not Met	3	4	3,953	4,713	226,160	30,669	146,131.754	0	0.00021	224,700	33,654	150,025.655	0	0.00022	0.00%	9.70%	6		
Lansing-East Lansing, MI MSA	423410	Photographic Equipment and Supplies Merchant Wholesalers	Not Met	Not Met	Met	Not Met	2	2	1,277	1,279	226,160	14,527	146,131.754	0	9.9E-05	224,700	12,714	150,025.655	0	8.9E-05	0.00%	-12.50%	6		
Lansing-East Lansing, MI MSA	423440	Other Commercial Equipment Merchant Wholesalers	Not Met	Not Met	Met	Not Met	4	5	4,320	6,637	226,160	57,125	146,131.754	0	0.00039	224,700	56,442	150,025.655	0	0.00038	0.00%	-0.80%	6		
Lansing-East Lansing, MI MSA	423460	Ophthalmic Goods Merchant Wholesalers	Not Met	Not Met	Met	Not Met	1	1	2,234	2,403	226,160	22,709	146,131.754	0	0.00016	224,700	22,557	150,025.655	0	0.00015	0.00%	-0.70%	6		
Lansing-East Lansing, MI MSA	423490	Other Professional Equipment and Supplies Merchant Wholesalers	Not Met	Not Met	Manually	Not Met	3	3	3,952	4,527	14	226,160	32,829	146,131.754	6.2E-05	0.00022	224,700	36,926	150,025.655	0	0.00025	-2018.00%	12.50%	0.28	6
Lansing-East Lansing, MI MSA	423610	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	Not Met	Not Met	Manually	Not Met	9	12	16,535	18,190	90	226,160	176,635	146,131.754	0.0004	0.00121	224,700	185,302	150,025.655	0	0.00124	-2018.00%	4.90%	0.33	6
Lansing-East Lansing, MI MSA	423620	Other Electrical and Electronic Equipment Merchant Wholesalers	Not Met	Not Met	Manually	Not Met	8	6	6,159	6,412	226,160	62,379	146,131.754	0	0.00039	224,700	61,804	150,025.655	0	0.00044	-2018.00%	-4.60%	0.25	6	
Lansing-East Lansing, MI MSA	423710	Hardware Merchant Wholesalers	Not Met	Not Met	Not Met	Not Met	3	3	7,725	8,092	226,160	87,885	146,131.754	0	0.0006	224,700	91,173	150,025.655	0	0.00061	0.00%	4.00%	6.00	6	
Lansing-East Lansing, MI MSA	423740	Refrigeration Equipment and Supplies Merchant Wholesalers	Not Met	Not Met	Not Met	Not Met	2	2	1,642	1,770	226,160	14,492	146,131.754	0	9.9E-05	224,700	15,463	150,025.655	0	0.0001	0.00%	6.70%	6		
Lansing-East Lansing, MI MSA	423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	Not Met	Not Met	Not Met	Not Met	4	4	5,352	5,723	226,160	90,591	146,131.754	0	0.00062	224,700	96,242	150,025.655	0	0.00064	0.00%	6.20%	6		
Lansing-East Lansing, MI MSA	423840	Industrial Supplies Merchant Wholesalers	Not Met	Not Met	Not Met	Not Met	2	5	11,218	12,949	226,160	93,515	146,131.754	0	0.00064	224,700	102,978	150,025.655	0	0.00069	0.00%	10.10%	6		
Lansing-East Lansing, MI MSA	423900	Transportation Equipment and Supplies (except Motor Vehicle) Merchant Wholesalers	Not Met	Not Met	Not Met	Not Met	1	2	3,823	4,435	226,160	34,186	146,131.754	0	0.00023	224,700	33,924	150,025.655	0	0.00023	0.00%	-0.80%	6		
Lansing-East Lansing, MI MSA	423920	Toy and Hobby Goods and Supplies Merchant Wholesalers	Not Met	Not Met	Not Met	Not Met	1	2	2,286	2,920	226,160	20,591	146,131.754	0	0.00014	224,700	23,479	150,025.655	0	0.00016	0.00%	12.10%	6		
Lansing-East Lansing, MI MSA	423930	Recyclable Material Merchant Wholesalers	Not Met	Not Met	Met	Not Met	6	7	8,080	7,946	226,160	104,266	146,131.754	0	0.00071	224,700	100,712	150,025.655	0	0.00067	0.00%	-3.40%	6		
Lansing-East Lansing, MI MSA	424120	Stationery and Office Supplies Merchant Wholesalers	Not Met	Not Met	Manually	Not Met	5	5	3,863	3,536	22	226,160	50,554	146,131.754	9.7E-05	0.00035	224,700	41,363	150,025.655	0	0.00028	-2018.00%	-18.20%	0.28	6
Lansing-East Lansing, MI MSA	424130	Industrial and Personal Service Paper Merchant Wholesalers	Not Met	Not Met	Manually	Not Met	5	5	5,195	5,062	65	226,160	65,245	146,131.754	0.00029	0.00045	224,700	65,110	150,025.655	0	0.00043	-2018.00%	-0.20%	0.64	6
Lansing-East Lansing, MI MSA	424310	Piece Goods, Notions, and Other Dry Goods Merchant Wholesalers	Not Met	Not Met	Met	Not Met	2	1	3,677	3,800	226,160	25,976	146,131.754	0	0.00018	224,700	22,932	150,025.655	0	0.00015	0.00%	-11.70%	6		
Lansing-East Lansing, MI MSA	424410	General Line Grocery Merchant Wholesalers	Not Met	Not Met	Met	Not Met	3	1	6,455	7,808	226,160	242,302	146,131.754	0	0.00166	224,700	254,573	150,025.655	0	0.0017	0.00%	5.10%	6		
Lansing-East Lansing, MI MSA	424430	Dairy Product (except Dried or Canned) Merchant Wholesalers	Not Met	Not Met	Met	Not Met	2	2	2,696	2,717	226,160	41,260	146,131.754	0	0.00028	224,700	32,581	150,025.655	0	0.00022	0.00%	-21.00%	6		
Lansing-East Lansing, MI MSA	424480	Fresh Fruit and Vegetable Merchant Wholesalers	Not Met	Not Met	Met	Not Met	3	2	4,790	5,063	226,160	101,042	146,131.754	0	0.00069	224,700	92,827	150,025.655	0	0.00062	0.00%	-8.10%	6		
Lansing-East Lansing, MI MSA	424510	Grain and Field Bean Merchant Wholesalers	Not Met	Not Met	Met	Not Met	7	5	4,038	3,964	226,160	45,018	146,131.754	0	0.00031	224,700	39,003	150,025.655	0	0.00026	0.00%	-13.40%	6		
Lansing-East Lansing, MI MSA	424590	Other Farm Product Raw Material Merchant Wholesalers	Not Met	Not Met	Met	Not Met	4	4	1,116	1,735	226,160	8,591	146,131.754	0	9.9E-05	224,700	14,795	150,025.655	0	9.8E-05	0.00%	7.70%	6		
Lansing-East Lansing, MI MSA	424610	Plastics Materials and Basic Forms and Shapes Merchant Wholesalers	Not Met	Not Met	Met	Not Met	3	3	4,855	4,502	226,160	29,254	146,131.754	0	0.0002	224,700	29,254	150,025.655	0	0.0002	0.00%	-4.20%	6		
Lansing-East Lansing, MI MSA	424710	Petroleum Bulk Stations and Terminals	Not Met	Not Met	Met	Not Met	2	2	2,741	2,742	226,160	33,507	146,131.754	0	0.00023	224,700	33,995	150,025.655	0	0.00023	0.00%	1.50%	6		
Lansing-East Lansing, MI MSA	424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	Not Met	Not Met	Met	Not Met	6	8	5,585	5,658	226,160	69,329	146,131.754	0	0.00047	224,700	65,485	150,025.655	0	0.00044	0.00%	-5.50%	6		
Lansing-East Lansing, MI MSA	424810	Beer and Ale Merchant Wholesalers	Not Met	Not Met	Not Met	Not Met	4	5	2,918	3,027	226,160	112,584	146,131.754	0	0.00077	224,700	114,028	150,025.655	0	0.00076	0.00%	1.30%	6		
Lansing-East Lansing, MI MSA	424820	Wine and Distilled Alcoholic Beverage Merchant Wholesalers	Not Met	Not Met	Not Met	Not Met	1	1	4,867	4,076	226,160	37,617	146,131.754	0	0.0006	224,700	34,278	150,025.655	0	0.00058	0.00%	8.20%	6		
Lansing-East Lansing, MI MSA	424930	Flower, Nursery Stock, and Florists' Supplies Merchant Wholesalers	Not Met	Not Met	Not Met	Not Met	1	1	3,406	3,720	226,160	45,067	146,131.754	0	0.00031	224,700	48,223	150,025.655	0	0.00032	0.00%	7.00%	6		
Lansing-East Lansing, MI MSA	424940	Tobacco Product and Electronic Cigarette Merchant Wholesalers	Not Met	Not Met	Not Met	Not Met	3	4	1,818	2,140	226,160	23,714	146,131.754	0	0.00016	224,700	25,838	150,025.655	0	0.00017	0.00%	9.00%	6		
Lansing-East Lansing, MI MSA	424950	Paint, Varnish, and Supplies Merchant Wholesalers	Not Met	Not Met	Met	Not Met	2	3	2,978	2,880	226,160	22,773	146,131.754	0	0.00016	224,700	22,734	150,025.655	0	0.00015	0.00%	-0.20%	6		
Lansing-East Lansing, MI MSA	441210	Recreational Vehicle Dealers	Not Met	Not Met	Not Met	Not Met	4	5	2,650	2,990	226,160	49,678	146,131.754	0	0.00034	224,700	57,101	150,025.655	0	0.00038	0.00%	14.90%	6		
Lansing-East Lansing, MI MSA	441222	Boat Dealers	Not Met	Not Met	Not Met	Not Met	3	3	4,408	4,398	226,160	36,166	146,131.754	0	0.00025	224,700	39,501	150,025.655	0	0.00024	0.00%	9.20%	6		
Lansing-East Lansing, MI MSA	441340	Tire Dealers	Not Met	Not Met	Met	Not Met	21			20,612							185,196	150,025.655	0	0.00123			6		
Lansing-East Lansing, MI MSA	444120	Paint and Wallpaper Retailers	Not Met	Not Met	Not Met	Not Met	4	4	6,513	6,832	226,160	40,014	146,131.754	0	0.00027	224,700	41,487	150,025.655	0	0.00028	0.00%	3.70%	6		
Lansing-East Lansing, MI MSA	445220	Fruit and Vegetable Retailers	Not Met	Not Met	Met	Not Met	1	1	3,388	3,426	226,160	37,115	146,131.754	0	0.00025	224,700	35,773	150,025.655	0	0.00024	0.00%	-3.70%	6		
Lansing-East Lansing, MI MSA	445250	Fish and Seafood Retailers	Not Met	Not Met	Met	Not Met	2			965							15,287	150,025.655	0	0.0001			6		
Lansing-East Lansing, MI MSA	445292	Confectionery and Nut Retailers	Not Met	Not Met	Met	Not Met	1	1	3,167	3,037	226,160	22,645	146,131.754	0	0.00016	224,700	20,395	150,025.655	0	0.00014	0.00%	-9.90%	6		
Lansing-East Lansing, MI MSA	481112	Scheduled Freight Air Transportation	Not Met	Not Met	Met	Not Met	1	1	625	683	226,160	11,053	146,131.754	0	7.6E-05	224,700	14,232	150,025.655	0	9.5E-05	0.00%	28.80%	6		
Lansing-East Lansing, MI MSA	481211	Nonscheduled Chartered Passenger Air Transportation	Not Met	Not Met	Met	Not Met	1	2	225	2,761	226,160	30,710	146,131.754	0	0.00021	224,700	37,322	150,025.655	0	0.00025	0.00%	21.50%	6		
Lansing-East Lansing, MI MSA	481212	Nonscheduled Chartered Freight Air Transportation	Not Met	Not Met	Met	Not Met	1	1	571	573	226,160	14,442	146,131.754	0	0.0001	224,700	10,781	150,025.655	0	7.2E-05	0.00%	44.60%	6		
Lansing-East Lansing, MI MSA	481219	Other Nonscheduled Air Transportation	Not Met	Not Met	Met	Not Met	1	1	625	863	226,160	5,502	146,131.754	0	3.8E-05	224,700	6,585	150,025.655	0	4.4E-05	0.00%	19.40%	6		
Lansing-East Lansing, MI MSA	485210	Interurban and Rural Bus Transportation	Not Met	Not Met	Met	Not Met	2	2	518	508	226,160	18,687	146,131.754	0	0.00013	224,700	14,142	150,025.655	0	9.4E-05	0.00%	-15.00%	-15.00%	6	
Lansing-East Lansing, MI MSA	485310	Taxi and Ridesharing Services	Not Met	Not Met	Met	Not Met	2	2	3,091	2,819	226,160	36,084	146,131.754	0	0.00025	224,700	28,328	150,025.655	0	0.00019	0.00%	-21.50%	6		
Lansing-East Lansing, MI MSA	485320	Limousine Service	Not Met	Not Met	Met	Not Met	1	1	4,785	4,127	226,160	39,277	146,131.754	0	0.00027	224,700	27,637	150,025.655	0	0.00027	0.00%	-29.60%	6		
Lansing-East Lansing, MI MSA	485410	School and Employee Bus Transportation	Not Met	Not Met	Met	Not Met	2	2	4,411	4,213	226,160	200,407	146,131.754	0	0.00137	224,700	177,094	150,025.655	0	0.00118	0.00%	-9.60%	6		
Lansing-East Lansing, MI MSA	485510	Charter Bus Industry	Not Met	Not Met	Met	Not Met	1	1	1,389	1,338	226,160	28,851	146,131.754	0	0.0002	224,700	20,523	150,025.655	0	0.00014	0.00%	-29.20%	6		
Lansing-East Lansing, MI MSA	485991	Special Needs Transportation	Not Met	Not Met	Met	Not Met	1	1	3,363	3,872	226,160	73,470	146,131.754	0	0.0005	224,700	63,323	150,025.655	0	0.00042	0.00%	-13.70%	6		
Lansing-East Lansing, MI MSA	485999	All Other Transit and Ground Passenger Transportation	Not Met	Not Met	Met	Not Met	1	1	2,556	2,988															

Lansing-East Lansing, MI MSA	541910	Marketing Research and Public Opinion Polling	Not Met	Not Met	Met	Not Met	4	5	8,308	9,932	226,160	91,987	146,131.754	0	0.00063	224,700	78,002	150,025.655	0	0.00052	0.00%	-15.20%		6	
Lansing-East Lansing, MI MSA	541921	Photography Studios, Portrait	Not Met	Not Met	Manually	Not Met	9	9	9,971	11,110	3	226,160	40,833	146,131.754	1.3E-05	0.00028	224,700	35,352	150,025.655	0	0.00024	-2018.00%	-13.40%	0.05	6
Lansing-East Lansing, MI MSA	541922	Commercial Photography	Not Met	Not Met	Not Met	Not Met	1	5	3,727	4,278	226,160	10,221	146,131.754	0	7E-05	224,700	11,252	150,025.655	0	7.5E-05	0.00%	10.10%		6	
Lansing-East Lansing, MI MSA	541930	Translation and Interpretation Services	Not Met	Not Met	Met	Not Met	1	1	3,876	4,821	226,160	40,368	146,131.754	0	0.00028	224,700	39,003	150,025.655	0	0.00026	0.00%	-3.40%		6	
Lansing-East Lansing, MI MSA	551112	Offices of Other Holding Companies	Not Met	Not Met	Manually	Not Met	8	12	9,523	12,698	27	226,160	73,992	146,131.754	0.00012	0.00051	224,700	83,354	150,025.655	0	0.00056	-2018.00%	12.70%	0.24	6
Lansing-East Lansing, MI MSA	551114	Corporate, Subsidiary, and Regional Managing Offices	Not Met	Not Met	Not Met	Not Met	26	34	56,452	73,784	226,160	2,260,274	146,131.754	0	0.01547	224,700	2,411,281	150,025.655	0	0.01607	0.00%	6.70%		6	
Lansing-East Lansing, MI MSA	561210	Facilities Support Services	Not Met	Not Met	Not Met	Not Met	2	10	5,915	7,277	226,160	152,003	146,131.754	0	0.00035	224,700	156,177	150,025.655	0	0.00034	0.00%	2.60%		6	
Lansing-East Lansing, MI MSA	561311	Employment Placement Agencies	Not Met	Not Met	Manually	Not Met	8	9	15,890	23,581	89	226,160	248,760	146,131.754	0.00039	0.00017	224,700	281,955	150,025.655	0	0.00188	-2018.00%	13.10%	0.23	6
Lansing-East Lansing, MI MSA	561312	Executive Search Services	Not Met	Not Met	Not Met	Not Met	4	4	7,020	9,148	226,160	41,910	146,131.754	0	0.00029	224,700	48,316	150,025.655	0	0.00032	0.00%	15.30%		6	
Lansing-East Lansing, MI MSA	561410	Document Preparation Services	Not Met	Not Met	Met	Not Met	6	6	6,883	7,842	226,160	47,956	146,131.754	0	0.00033	224,700	39,486	150,025.655	0	0.00026	0.00%	-17.60%		6	
Lansing-East Lansing, MI MSA	561421	Telephone Answering Services	Not Met	Not Met	Not Met	Not Met	2	2	3,094	3,714	226,160	35,884	146,131.754	0	0.00032	224,700	38,382	150,025.655	0	0.00026	0.00%	4.00%		6	
Lansing-East Lansing, MI MSA	561422	Telemarketing Bureaus and Other Contact Centers	Not Met	Not Met	Not Met	Not Met	5	5	7,964	11,251	226,160	47,660	146,131.754	0	0.00027	224,700	49,034	150,025.655	0	0.00027	0.00%	-15.20%		6	
Lansing-East Lansing, MI MSA	561431	Private Mail Centers	Not Met	Not Met	Not Met	Not Met	2	2	5,257	5,600	226,160	27,521	146,131.754	0	0.00019	224,700	35,349	150,025.655	0	0.00024	0.00%	28.40%		6	
Lansing-East Lansing, MI MSA	561439	Other Business Service Centers (including Copy Shops)	Not Met	Not Met	Met	Not Met	9	9	5,642	5,920	226,160	51,775	146,131.754	0	0.00035	224,700	43,377	150,025.655	0	0.00029	0.00%	-16.30%		6	
Lansing-East Lansing, MI MSA	561440	Collection Agencies	Not Met	Not Met	Manually	Not Met	7	6	5,293	5,998	62	226,160	127,976	146,131.754	0.00027	0.00088	224,700	99,609	150,025.655	0	0.00066	-2018.00%	-22.20%	0.31	6
Lansing-East Lansing, MI MSA	561450	Credit Bureaus	Not Met	Not Met	Not Met	Not Met	1	1	1,133	1,278	226,160	22,053	146,131.754	0	0.00015	224,700	23,581	150,025.655	0	0.00016	0.00%	7.00%		6	
Lansing-East Lansing, MI MSA	561491	Repossession Services	Not Met	Not Met	Met	Not Met	2	2	893	798	226,160	7,868	146,131.754	0	5.4E-05	224,700	5,824	150,025.655	0	3.9E-05	0.00%	-26.00%		6	
Lansing-East Lansing, MI MSA	561492	Court Reporting and Stenotype Services	Not Met	Not Met	Met	Not Met	5	2	2,999	3,207	226,160	11,933	146,131.754	0	8.2E-05	224,700	11,451	150,025.655	0	7.6E-05	0.00%	-4.00%		6	
Lansing-East Lansing, MI MSA	561520	Tour Operators	Not Met	Not Met	Met	Not Met	2	2	3,165	3,151	226,160	28,866	146,131.754	0	0.0002	224,700	20,565	150,025.655	0	0.00014	0.00%	-28.50%		6	
Lansing-East Lansing, MI MSA	561591	Convention and Visitors Bureaus	Not Met	Not Met	Met	Not Met	3	1	980	999	226,160	9,268	146,131.754	0	6.4E-05	224,700	7,922	150,025.655	0	5.3E-05	0.00%	-14.30%		6	
Lansing-East Lansing, MI MSA	561599	All Other Travel Arrangement and Reservation Services	Not Met	Not Met	Met	Not Met	1	2	4,242	4,438	226,160	89,721	146,131.754	0	0.00061	224,700	75,246	150,025.655	0	0.0005	0.00%	-16.20%		6	
Lansing-East Lansing, MI MSA	561612	Security Guards and Patrol Services	Not Met	Not Met	Not Met	Not Met	6	10	14,622	16,320	226,160	731,731	146,131.754	0	0.00501	224,700	742,536	150,025.655	0	0.00495	0.00%	1.40%		6	
Lansing-East Lansing, MI MSA	561613	Armored Car Services	Not Met	Not Met	Not Met	Not Met	1	1	769	894	226,160	30,469	146,131.754	0	0.00021	224,700	27,974	150,025.655	0	0.00019	0.00%	-8.20%		6	
Lansing-East Lansing, MI MSA	561910	Packaging and Labeling Services	Not Met	Not Met	Not Met	Not Met	2	1	2,520	2,950	226,160	59,487	146,131.754	0	0.00041	224,700	66,147	150,025.655	0	0.00044	0.00%	11.20%		6	
Lansing-East Lansing, MI MSA	562000	Convention and Trade Show Organizers	Not Met	Manually Vet	Manually	Manually Ve	6	8	5,266	7,244	347	226,160	55,269	146,131.754	0.00153	0.00038	224,700	50,381	150,025.655	0	0.00034	-2018.00%	-8.80%	4.06	6
Lansing-East Lansing, MI MSA	562111	Solid Waste Collection	Not Met	Not Met	Not Met	Not Met	9	9	9,177	10,078	226,160	157,909	146,131.754	0	0.00108	224,700	175,473	150,025.655	0	0.00117	0.00%	10.70%		6	
Lansing-East Lansing, MI MSA	562112	Hazardous Waste Collection	Not Met	Not Met	Not Met	Not Met	1	1	694	735	226,160	11,523	146,131.754	0	7.9E-05	224,700	12,223	150,025.655	0	8.2E-05	0.00%	6.00%		6	
Lansing-East Lansing, MI MSA	562119	Other Waste Collection	Not Met	Not Met	Not Met	Not Met	7	1	1,022	2,148	226,160	12,402	146,131.754	0	0.0001	224,700	15,947	150,025.655	0	0.00011	0.00%	19.40%		6	
Lansing-East Lansing, MI MSA	562211	Hazardous Waste Treatment and Disposal	Not Met	Not Met	Not Met	Not Met	3	2	1,063	1,251	226,160	35,948	146,131.754	0	0.00025	224,700	37,680	150,025.655	0	0.00025	0.00%	4.70%		6	
Lansing-East Lansing, MI MSA	562212	Solid Waste Landfill	Not Met	Not Met	Met	Not Met	2	2	1,603	1,609	226,160	39,292	146,131.754	0	0.00027	224,700	37,867	150,025.655	0	0.00025	0.00%	-2.20%		6	
Lansing-East Lansing, MI MSA	562219	Other Nonhazardous Waste Treatment and Disposal	Not Met	Not Met	Not Met	Not Met	6	6	1,099	1,237	226,160	17,651	146,131.754	0	0.00012	224,700	19,779	150,025.655	0	0.00013	0.00%	9.30%		6	
Lansing-East Lansing, MI MSA	562920	Materials Recovery Facilities	Not Met	Not Met	Not Met	Not Met	2	2	1,281	1,552	226,160	12,881	146,131.754	0	0.0001	224,700	23,703	150,025.655	0	0.00013	0.00%	24.60%		6	
Lansing-East Lansing, MI MSA	562991	Septic Tank and Related Services	Not Met	Not Met	Manually	Not Met	6	6	3,739	4,287	7	226,160	27,515	146,131.754	3.1E-05	0.00019	224,700	32,620	150,025.655	0	0.00022	-2018.00%	18.60%	0.16	6
Lansing-East Lansing, MI MSA	562998	All Other Miscellaneous Waste Management Services	Not Met	Not Met	Not Met	Not Met	2	2	1,935	2,321	226,160	19,146	146,131.754	0	0.00013	224,700	22,287	150,025.655	0	0.00015	0.00%	18.60%		6	
Lansing-East Lansing, MI MSA	611210	Junior Colleges	Not Met	Not Met	Met	Not Met	1	1	870	982	226,160	26,100	146,131.754	0	0.00018	224,700	20,680	150,025.655	0	0.00014	0.00%	-12.40%		6	
Lansing-East Lansing, MI MSA	611420	Computer Training	Not Met	Not Met	Not Met	Not Met	3	3	2,734	3,926	226,160	16,698	146,131.754	0	0.00011	224,700	22,107	150,025.655	0	0.00015	0.00%	31.60%		6	
Lansing-East Lansing, MI MSA	611511	Cosmetology and Barber Schools	Not Met	Not Met	Not Met	Not Met	1	1	749	1,893	226,160	17,552	146,131.754	0	0.00012	224,700	17,982	150,025.655	0	0.00014	0.00%	14.60%		6	
Lansing-East Lansing, MI MSA	611512	Flight Training	Not Met	Not Met	Not Met	Not Met	2	2	1,287	1,638	226,160	18,992	146,131.754	0	0.00013	224,700	22,410	150,025.655	0	0.00015	0.00%	18.40%		6	
Lansing-East Lansing, MI MSA	611513	Apprenticeship Training	Not Met	Not Met	Not Met	Not Met	1	1	1,402	1,588	226,160	14,941	146,131.754	0	0.0001	224,700	15,260	150,025.655	0	0.0001	0.00%	2.40%		6	
Lansing-East Lansing, MI MSA	611691	Exam Preparation and Tutoring	Not Met	Not Met	Not Met	Not Met	9	5	9,377	11,071	226,160	93,743	146,131.754	0	0.00044	224,700	93,366	150,025.655	0	0.00062	0.00%	1.70%		6	
Lansing-East Lansing, MI MSA	611692	Automobile Driving Schools	Not Met	Not Met	Not Met	Not Met	6	7	2,508	2,646	5	226,160	25,495	146,131.754	2.2E-05	0.0001	224,700	15,810	150,025.655	0	0.0001	-2018.00%	14.60%	0.21	6
Lansing-East Lansing, MI MSA	621410	Family Planning Centers	Not Met	Not Met	Not Met	Not Met	1	2	1,946	2,640	226,160	22,238	146,131.754	0	0.00015	224,700	26,920	150,025.655	0	0.00018	0.00%	19.00%		6	
Lansing-East Lansing, MI MSA	621420	Outpatient Mental Health and Substance Abuse Centers	Not Met	Not Met	Not Met	Not Met	6	11	10,657	14,496	226,160	242,586	146,131.754	0	0.00166	224,700	276,507	150,025.655	0	0.00184	0.00%	12.30%		6	
Lansing-East Lansing, MI MSA	621492	Kidney Dialysis Centers	Not Met	Not Met	Manually	Not Met	7	7	7,278	8,086	112	226,160	131,062	146,131.754	0.0005	0.0009	224,700	130,612	150,025.655	0	0.00087	-2018.00%	-0.40%	0.55	6
Lansing-East Lansing, MI MSA	621498	All Other Outpatient Care Centers	Not Met	Not Met	Not Met	Not Met	6	6	1,183	1,263	226,160	17,884	146,131.754	0.00039	0.00017	224,700	216,985	150,025.655	0	0.00047	-2018.00%	19.80%	0.25	6	
Lansing-East Lansing, MI MSA	621511	Medical Laboratories	Not Met	Not Met	Not Met	Not Met	2	4	15,214	21,331	226,160	200,090	146,131.754	0	0.00137	224,700	237,129	150,025.655	0	0.00158	0.00%	18.50%		6	
Lansing-East Lansing, MI MSA	621512	Diagnostic Imaging Centers	Not Met	Not Met	Not Met	Not Met	1	1	6,113	7,156	226,160	75,327	146,131.754	0	0.00052	224,700	82,505	150,025.655	0	0.00055	0.00%	9.90%		6	
Lansing-East Lansing, MI MSA	621991	Blood and Organ Banks	Not Met	Not Met	Not Met	Not Met	4	3	1,905	2,276	226,160	75,628	146,131.754	0	0.00052	224,700	84,239	150,025.655	0	0.00056	0.00%	11.50%		6	
Lansing-East Lansing, MI MSA	621999	All Other Miscellaneous Ambulatory Health Care Services	Not Met	Not Met	Not Met	Not Met	8	13	6,331	10,400	226,160	60,796	146,131.754	0	0.00042	224,700	79,976	150,025.655	0	0.00053	0.00%	34.70%		6	
Lansing-East Lansing, MI MSA	622110	General Medical and Surgical Hospitals	Not Met	Not Met	Not Met	Not Met	9	12	7,358	9,780	226,160	4,705,779	146,131.754	0	0.0032	224,700	4,716,736	150,025.655	0	0.00314	0.00%	0.90%		6	
Lansing-East Lansing, MI MSA	622210	Psychiatric and Substance Abuse Hospitals	Not Met	Not																					

Top 5 MSAs by Total Employment, Selected High Priority NAICS Codes

Industry	MSA	Avg Annual Employment 2022	Total US Employment in this NAICS in 2022	LQ 2022	Rank by Total Emp
NAICS 325412 Pharmaceutical preparation manufacturing	New York-Newark-Jersey City, NY-NJ-PA MSA	26,582	227,139	1.89	1
NAICS 325412 Pharmaceutical preparation manufacturing	Chicago-Naperville-Elgin, IL-IN-WI MSA	17,398	227,139	2.59	2
NAICS 325412 Pharmaceutical preparation manufacturing	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	13,980	227,139	3.31	3
NAICS 325412 Pharmaceutical preparation manufacturing	San Juan-Carolina-Caguas, PR MSA	11,799	227,139	11.79	4
NAICS 325412 Pharmaceutical preparation manufacturing	Los Angeles-Long Beach-Anaheim, CA MSA	9,411	227,139	1.02	5
NAICS 3335 Metalworking machinery manufacturing	Detroit-Warren-Dearborn, MI MSA	14,494	162,475	7.08	1
NAICS 3335 Metalworking machinery manufacturing	Grand Rapids-Wyoming, MI MSA	6,220	162,475	10.22	2
NAICS 3335 Metalworking machinery manufacturing	Los Angeles-Long Beach-Anaheim, CA MSA	4,583	162,475	0.69	3
NAICS 3335 Metalworking machinery manufacturing	Cleveland-Elyria, OH MSA	4,390	162,475	4.1	4
NAICS 3335 Metalworking machinery manufacturing	Milwaukee-Waukesha-West Allis, WI MSA	4,334	162,475	4.98	5
NAICS 335910 Battery manufacturing	Los Angeles-Long Beach-Anaheim, CA MSA	1,072	45,618	0.58	1
NAICS 335910 Battery manufacturing	Atlanta-Sandy Springs-Roswell, GA MSA	732	45,618	0.87	2
NAICS 335910 Battery manufacturing	San Francisco-Oakland-Hayward, CA MSA	672	45,618	0.91	3
NAICS 335910 Battery manufacturing	Chicago-Naperville-Elgin, IL-IN-WI MSA	552	45,618	0.41	4
NAICS 335910 Battery manufacturing	Tampa-St. Petersburg-Clearwater, FL MSA	504	45,618	1.2	5
NAICS 3361 Motor vehicle manufacturing	Detroit-Warren-Dearborn, MI MSA	33,933	278,103	9.69	1
NAICS 3361 Motor vehicle manufacturing	Nashville-Davidson--Murfreesboro--Franklin, TN MSA	14,633	278,103	7.52	2
NAICS 3361 Motor vehicle manufacturing	Kansas City, MO-KS MSA	9,969	278,103	5.11	3
NAICS 3361 Motor vehicle manufacturing	Chicago-Naperville-Elgin, IL-IN-WI MSA	6,308	278,103	0.77	4
NAICS 3361 Motor vehicle manufacturing	Roanoke, VA MSA	653	278,103	2.38	5
NAICS 3363 Motor vehicle parts manufacturing	Detroit-Warren-Dearborn, MI MSA	74,606	551,067	10.75	1
NAICS 3363 Motor vehicle parts manufacturing	Grand Rapids-Wyoming, MI MSA	13,639	551,067	6.61	2
NAICS 3363 Motor vehicle parts manufacturing	Chicago-Naperville-Elgin, IL-IN-WI MSA	10,640	551,067	0.65	3
NAICS 3363 Motor vehicle parts manufacturing	Dallas-Fort Worth-Arlington, TX MSA	10,501	551,067	0.74	4
NAICS 3363 Motor vehicle parts manufacturing	Indianapolis-Carmel-Anderson, IN MSA	9,487	551,067	2.43	5
NAICS 3364 Aerospace product and parts manufacturing	Seattle-Tacoma-Bellevue, WA MSA	69,056	502,085	10.06	1
NAICS 3364 Aerospace product and parts manufacturing	Los Angeles-Long Beach-Anaheim, CA MSA	52,272	502,085	2.57	2
NAICS 3364 Aerospace product and parts manufacturing	Dallas-Fort Worth-Arlington, TX MSA	32,339	502,085	2.51	3
NAICS 3364 Aerospace product and parts manufacturing	Wichita, KS MSA	25,577	502,085	25.95	4
NAICS 3364 Aerospace product and parts manufacturing	St. Louis, MO-IL MSA	16,591	502,085	3.82	5
NAICS 3391 Medical equipment and supplies manufacturing	Los Angeles-Long Beach-Anaheim, CA MSA	29,749	334,121	2.18	1
NAICS 3391 Medical equipment and supplies manufacturing	Minneapolis-St. Paul-Bloomington, MN-WI MSA	18,034	334,121	4.27	2
NAICS 3391 Medical equipment and supplies manufacturing	Salt Lake City, UT MSA	9,979	334,121	5.67	3
NAICS 3391 Medical equipment and supplies manufacturing	San Francisco-Oakland-Hayward, CA MSA	8,305	334,121	1.54	4
NAICS 3391 Medical equipment and supplies manufacturing	Memphis, TN-MS-AR MSA	6,636	334,121	4.78	5
NAICS 5419 Other professional, scientific, and technical services	New York-Newark-Jersey City, NY-NJ-PA MSA	44,301	843,368	0.85	1
NAICS 5419 Other professional, scientific, and technical services	Los Angeles-Long Beach-Anaheim, CA MSA	28,193	843,368	0.83	2
NAICS 5419 Other professional, scientific, and technical services	Houston-The Woodlands-Sugar Land, TX MSA	18,457	843,368	1.06	3
NAICS 5419 Other professional, scientific, and technical services	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	17,592	843,368	1.13	4
NAICS 5419 Other professional, scientific, and technical services	Dallas-Fort Worth-Arlington, TX MSA	17,469	843,368	0.81	5
NAICS 8111 Automotive repair and maintenance	New York-Newark-Jersey City, NY-NJ-PA MSA	45,855	985,649	0.76	1
NAICS 8111 Automotive repair and maintenance	Los Angeles-Long Beach-Anaheim, CA MSA	39,317	985,649	0.99	2
NAICS 8111 Automotive repair and maintenance	Chicago-Naperville-Elgin, IL-IN-WI MSA	30,183	985,649	1.05	3

NAICS 8111 Automotive repair and maintenance	Atlanta-Sandy Springs-Roswell, GA MSA	17,483	985,649	0.97	4
NAICS 8111 Automotive repair and maintenance	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	17,302	985,649	0.95	5
electronic) repair and maintenance	Houston-The Woodlands-Sugar Land, TX MSA	14,720	225,198	3.2	1
electronic) repair and maintenance	Chicago-Naperville-Elgin, IL-IN-WI MSA	6,394	225,198	0.97	2
electronic) repair and maintenance	Los Angeles-Long Beach-Anaheim, CA MSA	5,341	225,198	0.59	3
electronic) repair and maintenance	Phoenix-Mesa-Scottsdale, AZ MSA	3,083	225,198	0.93	4
electronic) repair and maintenance	Miami-Fort Lauderdale-West Palm Beach, FL MSA	2,647	225,198	0.67	5
NAICS 8114 Personal and household goods repair and maintenance	Miami-Fort Lauderdale-West Palm Beach, FL MSA	4,313	84,109	2.89	1
NAICS 8114 Personal and household goods repair and maintenance	Los Angeles-Long Beach-Anaheim, CA MSA	3,593	84,109	1.05	2
NAICS 8114 Personal and household goods repair and maintenance	Detroit-Warren-Dearborn, MI MSA	2,624	84,109	2.48	3
NAICS 8114 Personal and household goods repair and maintenance	Chicago-Naperville-Elgin, IL-IN-WI MSA	2,059	84,109	0.83	4
NAICS 8114 Personal and household goods repair and maintenance	Houston-The Woodlands-Sugar Land, TX MSA	1,554	84,109	0.89	5

Top 5 MSAs by LQ, Selected High Priority NAICS Codes

Industry	MSA	Avg Annual Employment 2022	Total US Employment in this NAICS in 2022	LQ 2022	Rank by LQ
NAICS 325412 Pharmaceutical preparation manufacturing	Greenville, NC MSA	2,401	227,139	20.18	1
NAICS 325412 Pharmaceutical preparation manufacturing	San Juan-Carolina-Caguas, PR MSA	11,799	227,139	11.79	2
NAICS 325412 Pharmaceutical preparation manufacturing	Vallejo-Fairfield, CA MSA	1,314	227,139	6.26	3
NAICS 325412 Pharmaceutical preparation manufacturing	Waco, TX MSA	1,126	227,139	6.02	4
NAICS 325412 Pharmaceutical preparation manufacturing	Columbia, SC MSA	2,355	227,139	4.07	5
NAICS 3335 Metalworking machinery manufacturing	Niles-Benton Harbor, MI MSA	831	162,475	12.92	1
NAICS 3335 Metalworking machinery manufacturing	Jackson, MI MSA	782	162,475	12.74	2
NAICS 3335 Metalworking machinery manufacturing	Elmira, NY MSA	451	162,475	12.55	3
NAICS 3335 Metalworking machinery manufacturing	Saginaw, MI MSA	1,017	162,475	11.83	4
NAICS 3335 Metalworking machinery manufacturing	Grand Rapids-Wyoming, MI MSA	6,220	162,475	10.22	5
NAICS 335910 Battery manufacturing	Midland, MI MSA	496	45,618	45.31	1
NAICS 335910 Battery manufacturing	Las Vegas-Henderson-Paradise, NV MSA	392	45,618	1.22	2
NAICS 335910 Battery manufacturing	Tampa-St. Petersburg-Clearwater, FL MSA	504	45,618	1.2	3
NAICS 335910 Battery manufacturing	Kansas City, MO-KS MSA	349	45,618	1.09	4
NAICS 335910 Battery manufacturing	San Francisco-Oakland-Hayward, CA MSA	672	45,618	0.91	5
NAICS 3361 Motor vehicle manufacturing	Detroit-Warren-Dearborn, MI MSA	33,933	278,103	9.69	1
NAICS 3361 Motor vehicle manufacturing	Nashville-Davidson--Murfreesboro--Franklin, TN MSA	14,633	278,103	7.52	2
NAICS 3361 Motor vehicle manufacturing	Kansas City, MO-KS MSA	9,969	278,103	5.11	3
NAICS 3361 Motor vehicle manufacturing	Roanoke, VA MSA	653	278,103	2.38	4
NAICS 3361 Motor vehicle manufacturing	Chicago-Naperville-Elgin, IL-IN-WI MSA	6,308	278,103	0.77	5
NAICS 3363 Motor vehicle parts manufacturing	Battle Creek, MI MSA	5,016	551,067	25.9	1
NAICS 3363 Motor vehicle parts manufacturing	Bowling Green, KY MSA	4,264	551,067	15.3	2
NAICS 3363 Motor vehicle parts manufacturing	Morristown, TN MSA	2,314	551,067	13.5	3
NAICS 3363 Motor vehicle parts manufacturing	Jackson, MI MSA	2,254	551,067	10.83	4
NAICS 3363 Motor vehicle parts manufacturing	Detroit-Warren-Dearborn, MI MSA	74,606	551,067	10.75	5
NAICS 3364 Aerospace product and parts manufacturing	Wichita, KS MSA	25,577	502,085	25.95	1
NAICS 3364 Aerospace product and parts manufacturing	Seattle-Tacoma-Bellevue, WA MSA	69,056	502,085	10.06	2
NAICS 3364 Aerospace product and parts manufacturing	Palm Bay-Melbourne-Titusville, FL MSA	6,108	502,085	7.93	3
NAICS 3364 Aerospace product and parts manufacturing	Ogden-Clearfield, UT MSA	6,741	502,085	7.2	4
NAICS 3364 Aerospace product and parts manufacturing	Waco, TX MSA	2,360	502,085	5.74	5
NAICS 3391 Medical equipment and supplies manufacturing	Aguadilla-Isabela, PR MSA	3,092	334,121	24	1
NAICS 3391 Medical equipment and supplies manufacturing	Glens Falls, NY MSA	1,473	334,121	13.11	2
NAICS 3391 Medical equipment and supplies manufacturing	Naples-Immokalee-Marco Island, FL MSA	2,061	334,121	5.79	3
NAICS 3391 Medical equipment and supplies manufacturing	Salt Lake City, UT MSA	9,979	334,121	5.67	4
NAICS 3391 Medical equipment and supplies manufacturing	Memphis, TN-MS-AR MSA	6,636	334,121	4.78	5
NAICS 5419 Other professional, scientific, and technical services	Corvallis, OR MSA	651	843,368	3.09	1
NAICS 5419 Other professional, scientific, and technical services	Crestview-Fort Walton Beach-Destin, FL MSA	1,866	843,368	2.76	2
NAICS 5419 Other professional, scientific, and technical services	Monroe, MI MSA	557	843,368	2.57	3
NAICS 5419 Other professional, scientific, and technical services	Fort Collins, CO MSA	1,946	843,368	2.03	4
NAICS 5419 Other professional, scientific, and technical services	State College, PA MSA	704	843,368	1.91	5
NAICS 8111 Automotive repair and maintenance	Lake Havasu City-Kingman, AZ MSA	770	985,649	2.17	1
NAICS 8111 Automotive repair and maintenance	Amarillo, TX MSA	1,451	985,649	1.87	2
NAICS 8111 Automotive repair and maintenance	Carson City, NV MSA	354	985,649	1.8	3
NAICS 8111 Automotive repair and maintenance	St. George, UT MSA	916	985,649	1.77	4
NAICS 8111 Automotive repair and maintenance	Decatur, IL MSA	519	985,649	1.74	5

repair and maintenance	San Angelo, TX MSA	558	225,198	7.6	1
repair and maintenance	Houma-Thibodaux, LA MSA	885	225,198	7.53	2
repair and maintenance	Odessa, TX MSA	691	225,198	6.23	3
repair and maintenance	Beckley, WV MSA	351	225,198	5.87	4
repair and maintenance	Springfield, OH MSA	401	225,198	5.82	5
NAICS 8114 Personal and household goods repair and maintenance	Mount Vernon-Anacortes, WA MSA	241	84,109	8.34	1
NAICS 8114 Personal and household goods repair and maintenance	Hilton Head Island-Bluffton-Beaufort, SC MSA	244	84,109	5.49	2
NAICS 8114 Personal and household goods repair and maintenance	Midland, MI MSA	94	84,109	4.66	3
NAICS 8114 Personal and household goods repair and maintenance	Daphne-Fairhope-Foley, AL MSA	195	84,109	4.35	4
NAICS 8114 Personal and household goods repair and maintenance	Naples-Immokalee-Marco Island, FL MSA	385	84,109	4.3	5

Greater Lansing Rank Among MSAs, Selected High Priority NAICS Codes

By Total Employment				
Industry	Top 5 Emp Agged	US Employment in that Industry	(Rank by Top 5	Lansing MSA Rank
NAICS 325412 Pharmaceutical preparation manufacturing	79,170	227,139	34.9%	NA
NAICS 3335 Metalworking machinery manufacturing	34,021	162,475	20.9%	27
NAICS 335910 Battery manufacturing	3532	45,618	7.7%	NA
NAICS 3361 Motor vehicle manufacturing	65,496	278,103	23.6%	5
NAICS 3363 Motor vehicle parts manufacturing	118,873	551,067	21.6%	29
NAICS 3364 Aerospace product and parts manufacturing	195,835	502,085	39.0%	41
NAICS 3391 Medical equipment and supplies manufacturing	72,703	334,121	21.8%	71
NAICS 5419 Other professional, scientific, and technical services	126,012	843,368	14.9%	95
NAICS 8111 Automotive repair and maintenance	150,140	985,649	15.2%	116
NAICS 8113 Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	32,185	225,198	14.3%	84
NAICS 8114 Personal and household goods repair and maintenance	14143	84,109	16.8%	71

By Location Quotient				
Industry	Top 5 Emp Agged	US Employment in that Industry	(Ranked by Top 5 in	Lansing MSA Rank
NAICS 325412 Pharmaceutical preparation manufacturing	18,995	227,139	8.4%	NA
NAICS 3335 Metalworking machinery manufacturing	9,301	162,475	5.7%	6
NAICS 335910 Battery manufacturing	2413	45,618	5.3%	NA
NAICS 3361 Motor vehicle manufacturing	65,496	278,103	23.6%	2
NAICS 3363 Motor vehicle parts manufacturing	88,454	551,067	16.1%	33
NAICS 3364 Aerospace product and parts manufacturing	109,842	502,085	21.9%	30
NAICS 3391 Medical equipment and supplies manufacturing	23,241	334,121	7.0%	t-67
NAICS 5419 Other professional, scientific, and technical services	5724	843,368	0.7%	t-129
NAICS 8111 Automotive repair and maintenance	4,010	985,649	0.4%	t-272
NAICS 8113 Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	2,886	225,198	1.3%	103
NAICS 8114 Personal and household goods repair and maintenance	1159	84,109	1.4%	t-69

APPENDIX III

Greater Lansing Cluster Data

Advanced Manufacturing (Brookings) in Lansing-East Lansing, MI MSA, 2023Q4¹

NAICS	Industry	5-Year History					5-Year Forecast				
		Empl	Current Avg Ann Wages	LQ	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
336110	Automobile and Light Duty Motor Vehicle Manufacturing	4,669	\$81,221	13.34	-351	-1.4%	2,524	898	1,562	64	0.3%
336412	Aircraft Engine and Engine Parts Manufacturing	858	\$104,382	7.16	-192	-4.0%	342	141	215	-13	-0.3%
336360	Motor Vehicle Seating and Interior Trim Manufacturing	696	\$52,761	6.64	325	13.4%	259	131	204	-76	-2.3%
325412	Pharmaceutical Preparation Manufacturing	587	\$110,366	1.85	-14	-0.5%	267	101	168	-1	0.0%
336330	Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing	417	\$55,391	8.86	258	21.3%	144	77	121	-54	-2.7%
336370	Motor Vehicle Metal Stamping	364	\$56,533	3.10	-75	-3.7%	127	68	106	-46	-2.7%
339113	Surgical Appliance and Supplies Manufacturing	319	\$98,110	2.16	-65	-3.7%	149	61	94	-7	-0.4%
336390	Other Motor Vehicle Parts Manufacturing	318	\$55,195	1.48	-85	-4.6%	113	59	93	-39	-2.6%
336120	Heavy Duty Truck Manufacturing	317	\$70,839	6.02	317	n/a	176	61	107	8	0.5%
325414	Biological Product (except Diagnostic) Manufacturing	316	\$103,772	5.05	9	0.6%	142	54	90	-2	-0.1%
331313	Alumina Refining and Primary Aluminum Production	299	\$79,375	26.28	-9	-0.6%	139	57	88	-6	-0.4%
331523	Nonferrous Metal Die-Casting Foundries	295	\$58,799	9.48	2	0.2%	120	53	84	-17	-1.2%
336340	Motor Vehicle Brake System Manufacturing	290	\$64,078	9.77	289	n/a	100	54	84	-38	-2.7%
	Motor Vehicle Transmission and Power Train Parts Manufacturing										
336350	Manufacturing	282	\$65,154	2.53	113	10.8%	98	52	82	-37	-2.7%
333248	All Other Industrial Machinery Manufacturing	256	\$63,144	2.60	10	0.8%	115	46	74	-6	-0.4%
336310	Motor Vehicle Gasoline Engine and Engine Parts Manufacturing	255	\$143,965	3.12	168	24.0%	98	48	75	-26	-2.1%
	Military Armored Vehicle, Tank, and Tank Component Manufacturing										
336992	Boat Building	221	\$77,074	18.06	221	n/a	70	39	63	-32	-3.1%
336612	Travel Trailer and Camper Manufacturing	209	\$37,499	2.96	157	31.9%	88	38	59	-10	-0.9%
336214	All Other Miscellaneous Manufacturing	175	\$39,137	2.75	4	0.4%	88	33	57	-2	-0.2%
339999	Medicinal and Botanical Manufacturing	170	\$66,459	1.53	107	22.0%	79	33	51	-4	-0.5%
325411	Conveyor and Conveying Equipment Manufacturing	137	\$109,728	2.31	136	204.2%	62	23	39	0	0.0%
333922	Dental Laboratories	104	\$70,788	2.02	43	11.1%	51	19	31	2	0.3%
339116	Other Nonferrous Metal Foundries (except Die-Casting)	92	\$49,674	1.40	36	10.5%	43	18	27	-2	-0.4%
331529	Truck Trailer Manufacturing	82	\$58,038	4.51	10	2.7%	29	14	23	-8	-2.1%
336212	All Other Transportation Equipment Manufacturing	78	\$56,312	1.25	17	4.9%	41	15	26	1	0.1%
336999	Sign Manufacturing	51	\$59,607	1.65	37	30.7%	19	9	15	-5	-2.1%
339950	All Other Basic Organic Chemical Manufacturing	48	\$42,252	0.37	9	4.4%	23	9	14	-1	-0.4%
325199	Printed Circuit Assembly (Electronic Assembly) Manufacturing	38	\$83,757	0.65	38	n/a	17	7	11	0	-0.2%
334418	Motorcycle, Bicycle, and Parts Manufacturing	38	\$45,355	2.45	-21	-8.6%	14	7	11	-4	-2.4%
336991	All Other Miscellaneous Chemical Product and Preparation Manufacturing	35	\$80,752	0.57	14	11.4%	14	6	10	-1	-0.7%
333995	Fluid Power Cylinder and Actuator Manufacturing	34	\$68,894	1.51	34	n/a	15	6	10	-1	-0.5%
325211	Plastics Material and Resin Manufacturing	30	\$99,352	0.36	-40	-15.4%	13	5	9	-1	-0.7%
333111	Farm Machinery and Equipment Manufacturing	28	\$65,391	0.29	19	26.3%	14	5	8	0	0.3%
325314	Fertilizer (Mixing Only) Manufacturing	25	\$56,145	2.30	24	117.1%	11	4	7	0	-0.3%
334519	Other Measuring and Controlling Device Manufacturing	22	\$58,295	0.38	11	15.4%	8	4	5	-1	-0.6%
333912	Air and Gas Compressor Manufacturing	20	\$84,199	0.73	-20	-12.8%	10	4	6	0	0.1%
333992	Welding and Soldering Equipment Manufacturing	19	\$75,411	0.89	-14	-10.4%	9	4	6	0	-0.2%
	All Other Miscellaneous General Purpose Machinery Manufacturing										
333998	Motor Vehicle Electrical and Electronic Equipment Manufacturing	18	\$69,427	0.27	7	11.5%	9	3	5	0	0.3%
336320	Construction Machinery Manufacturing	18	\$59,965	0.21	4	5.8%	6	3	5	-2	-2.7%
333120	Computer Terminal and Other Computer Peripheral Equipment Manufacturing	17	\$79,306	0.16	5	6.8%	8	3	5	0	-0.5%
334118	Battery Manufacturing	17	\$86,944	0.37	-20	-14.5%	6	3	4	0	-0.5%
335910	Overhead Traveling Crane, Hoist, and Monorail System Manufacturing	17	\$75,062	0.24	17	n/a	12	4	5	3	3.1%
333923	Custom Compounding of Purchased Resins	14	\$68,134	0.69	-15	-13.5%	7	3	4	0	0.3%
325991	Sporting and Athletic Goods Manufacturing	13	\$53,062	0.54	-44	-25.6%	6	2	4	0	-0.2%
339920	Iron and Steel Mills and Ferroalloy Manufacturing	13	\$47,294	0.19	-2	-3.4%	6	2	4	0	-0.7%
331110	Asphalt Paving Mixture and Block Manufacturing	12	\$90,843	0.10	5	12.3%	5	2	3	-1	-1.4%
324121	Electronic Computer Manufacturing	10	\$80,590	0.42	-22	-20.2%	4	2	3	0	-0.9%
334111	Other Communications Equipment Manufacturing	10	\$190,602	0.06	10	n/a	4	2	2	0	-0.5%
334290	Surgical and Medical Instrument Manufacturing	10	\$59,272	0.37	6	23.2%	3	2	2	0	-1.0%
339112	Cut Stone and Stone Product Manufacturing	10	\$89,442	0.05	9	80.8%	5	2	3	0	-0.4%
327991	Commercial and Service Industry Machinery Manufacturing	9	\$51,247	0.18	7	40.1%	4	2	3	0	-0.8%
333310	Jewelry and Silverware Manufacturing	9	\$72,420	0.07	8	38.6%	4	2	3	0	-0.2%
339910	Musical Instrument Manufacturing	9	\$29,589	0.22	0	-0.5%	5	3	3	0	-0.1%
339992	All Other Miscellaneous Electrical Equipment and Component Manufacturing	9	\$40,857	0.49	7	34.7%	4	2	3	0	-0.4%
335999	Other Aircraft Parts and Auxiliary Equipment Manufacturing	8	\$58,100	0.16	-3	-6.7%	5	2	3	1	2.4%
336413	Dental Equipment and Supplies Manufacturing	7	\$74,037	0.05	-20	-24.6%	3	1	2	0	-0.4%
339114	Pottery, Ceramics, and Plumbing Fixture Manufacturing	6	\$72,251	0.27	5	39.1%	3	1	2	0	-0.4%
327110	Computer Storage Device Manufacturing	5	\$15,307	0.24	-1	-4.4%	2	1	1	-1	-3.4%
334112	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use	5	\$103,028	0.24	5	n/a	2	1	1	0	-0.5%
334512	Doll, Toy, and Game Manufacturing	5	\$53,584	0.28	5	n/a	2	1	1	0	-0.6%
339930	Industrial Gas Manufacturing	5	\$65,150	0.31	1	4.8%	2	1	2	0	-0.8%
325120	Guided Missile and Space Vehicle Manufacturing	4	\$118,752	0.12	3	n/a	2	1	1	0	-0.7%
336414	Clay Building Material and Refractories Manufacturing	3	\$133,288	0.03	3	n/a	1	1	1	0	-0.3%
327120	Electromedical and Electrotherapeutic Apparatus Manufacturing	2	\$15,307	0.05	-1	-5.5%	0	0	0	0	-3.4%
334510	Office Supplies (except Paper) Manufacturing	2	\$96,300	0.02	-1	-9.6%	1	0	0	0	0.1%
339940	Gasket, Packing, and Sealing Device Manufacturing	2	\$31,444	0.10	-12	-35.8%	1	0	0	0	-0.3%
339991	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing	2	\$29,589	0.04	-1	-10.7%	1	0	0	0	-0.2%
334220	Other Electronic Component Manufacturing	1	\$80,346	0.01	0	n/a	0	0	0	0	-0.6%
334419	Irradiation Apparatus Manufacturing	1	\$50,894	0.01	1	n/a	0	0	0	0	-0.4%
334517	Motor Vehicle Body Manufacturing	1	\$79,135	0.04	1	n/a	0	0	0	0	-0.6%
336211	Aircraft Manufacturing	1	\$55,136	0.01	0	1.0%	0	0	0	0	-1.1%
336411	Phosphatic Fertilizer Manufacturing	1	\$55,136	0.00	0	-2.2%	0	0	0	0	-0.7%
325312	Food Product Machinery Manufacturing	0	n/a	0.00	-87	n/a	0	0	0	0	1.1%
333241	Measuring, Dispensing, and Other Pumping Equipment Manufacturing	0	n/a	0.00	-6	n/a	0	0	0	0	-1.1%
333914	Analytical Laboratory Instrument Manufacturing	0	n/a	0.00	0	n/a	0	0	0	0	-1.1%
334516		0	n/a	0.00	-1	n/a	0	0	0	0	-0.8%

335314	Relay and Industrial Control Manufacturing	0 n/a	0.00	0 n/a	0	0	0	0	-2.9%		
336611	Ship Building and Repairing	0 n/a	0.00	0 n/a	0	0	0	0	-2.0%		
10191	Advanced Manufacturing (Brookings)	12,519	\$77,952	1.49	1,382	2.4%	5,437	2,259	3,528	-350	-0.6%
	Total - All Industries	229,139	\$61,314	1.00	4,274	0.4%	121,430	54,711	69,391	-2,671	-0.2%

Source: JobsEQ®

Data as of 2023Q4

Note: Figures may not sum due to rounding.

1. All data based upon a four-quarter moving average

Exits and transfers are approximate estimates based upon occupation separation rates.

Exported on: Friday, June 7, 2024 5:30 PM

Aerospace Vehicles and Defense (US Cluster Mapping) in Lansing-East Lansing, MI MSA, 2023Q4¹

NAICS	Industry	Current			5-Year History		5-Year Forecast				
		Empl	Avg Ann Wages	LQ	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
336412	Aircraft Engine and Engine Parts Manufacturing	858	\$104,382	7.16	-192	-4.0%	342	141	215	-13	-0.3%
	Other Aircraft Parts and Auxiliary Equipment										
336413	Manufacturing	7	\$74,037	0.05	-20	-24.6%	3	1	2	0	-0.4%
336414	Manufacturing	3	\$133,288	0.03	3 n/a		1	1	1	0	-0.3%
336411	Aircraft Manufacturing	1	\$55,136	0.00	0	-2.2%	0	0	0	0	-0.7%
10101	Aerospace Vehicles and Defense (US Cluster Mapping)	868	\$104,221	0.93	-209	-4.2%	346	142	217	-14	-0.3%
	Total - All Industries	229,139	\$61,314	1.00	4,274	0.4%	121,430	54,711	69,391	-2,671	-0.2%

Source: JobsEQ®

Data as of 2023Q4

Note: Figures may not sum due to rounding.

1. All data based upon a four-quarter moving average

Exits and transfers are approximate estimates based upon occupation separation rates.

Exported on: Friday, June 7, 2024 4:41 PM

Automotive (US Cluster Mapping) in Lansing-East Lansing, MI MSA, 2023Q4¹

NAICS	Industry	Current			5-Year History		5-Year Forecast				
		Empl	Avg Ann Wages	LQ	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
336110	Automobile and Light Duty Motor Vehicle Manufacturing	4,669	\$81,221	13.34	-351	-1.4%	2,524	898	1,562	64	0.3%
336360	Motor Vehicle Seating and Interior Trim Manufacturing	696	\$52,761	6.64	325	13.4%	259	131	204	-76	-2.3%
336330	Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing	417	\$55,391	8.86	258	21.3%	144	77	121	-54	-2.7%
336370	Motor Vehicle Metal Stamping	364	\$56,533	3.10	-75	-3.7%	127	68	106	-46	-2.7%
336390	Other Motor Vehicle Parts Manufacturing	318	\$55,195	1.48	-85	-4.6%	113	59	93	-39	-2.6%
336120	Heavy Duty Truck Manufacturing	317	\$70,839	6.02	317	n/a	176	61	107	8	0.5%
331523	Nonferrous Metal Die-Casting Foundries	295	\$58,799	9.48	2	0.2%	120	53	84	-17	-1.2%
336340	Motor Vehicle Brake System Manufacturing	290	\$64,078	9.77	289	n/a	100	54	84	-38	-2.7%
336350	Motor Vehicle Transmission and Power Train Parts Manufacturing	282	\$65,154	2.53	113	10.8%	98	52	82	-37	-2.7%
336310	Motor Vehicle Gasoline Engine and Engine Parts Manufacturing	255	\$143,965	3.12	168	24.0%	98	48	75	-26	-2.1%
336992	Military Armored Vehicle, Tank, and Tank Component Manufacturing	221	\$77,074	18.06	221	n/a	70	39	63	-32	-3.1%
331529	Other Nonferrous Metal Foundries (except Die-Casting)	82	\$58,038	4.51	10	2.7%	29	14	23	-8	-2.1%
336999	All Other Transportation Equipment Manufacturing	51	\$59,607	1.65	37	30.7%	19	9	15	-5	-2.1%
336320	Motor Vehicle Electrical and Electronic Equipment Manufacturing	18	\$59,965	0.21	4	5.8%	6	3	5	-2	-2.7%
336211	Motor Vehicle Body Manufacturing	1	\$55,136	0.01	0	1.0%	0	0	0	0	-1.1%
10104	Automotive (US Cluster Mapping)	8,276	\$74,508	5.59	1,236	3.3%	3,852	1,579	2,563	-289	-0.7%
	Total - All Industries	229,139	\$61,314	1.00	4,274	0.4%	121,430	54,711	69,391	-2,671	-0.2%

Source: JobsEQ®

Data as of 2023Q4

Note: Figures may not sum due to rounding.

1. All data based upon a four-quarter moving average

Exits and transfers are approximate estimates based upon occupation separation rates.

Exported on: Friday, June 7, 2024 4:47 PM

Biopharmaceuticals (US Cluster Mapping) in Lansing-East Lansing, MI MSA, 2023Q4¹

NAICS	Industry	Current			5-Year History		5-Year Forecast				
		Empl	Avg Ann Wages	LQ	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
325412	Pharmaceutical Preparation Manufacturing	587	\$110,366	1.85	-14	-0.5%	267	101	168	-1	0.0%
	Biological Product (except Diagnostic)										
325414	Manufacturing	316	\$103,772	5.05	9	0.6%	142	54	90	-2	-0.1%
325411	Medicinal and Botanical Manufacturing	137	\$109,728	2.31	136	204.2%	62	23	39	0	0.0%
10105	Biopharmaceuticals (US Cluster Mapping)	1,040	\$108,275	2.15	131	2.7%	471	178	296	-4	-0.1%
	Total - All Industries	229,139	\$61,314	1.00	4,274	0.4%	121,430	54,711	69,391	-2,671	-0.2%

Source: JobsEQ®

Data as of 2023Q4

Note: Figures may not sum due to rounding.

1. All data based upon a four-quarter moving average

Exits and transfers are approximate estimates based upon occupation separation rates.

Exported on: Friday, June 7, 2024 4:55 PM

Battery Manufacturing in Lansing-East Lansing, MI MSA, 2023Q4¹

NAICS	Industry	Current			5-Year History		5-Year Forecast				
		Empl	Avg Ann Wages	LQ	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
335910	Battery Manufacturing	17	\$75,062	0.24	17	n/a	12	4	5	3	3.1%
	Total - All Industries	229,139	\$61,314	1.00	4,274	0.4%	121,430	54,711	69,391	-2,671	-0.2%

Source: [JobsEQ®](#)

Data as of 2023Q4

Note: Figures may not sum due to rounding.

1. All data based upon a four-quarter moving average

Exits and transfers are approximate estimates based upon occupation separation rates.

Exported on: Friday, June 7, 2024 5:02 PM

Medical Devices (US Cluster Mapping) in Lansing-East Lansing, MI MSA, 2023Q4¹

NAICS	Industry	Current			5-Year History		5-Year Forecast				
		Empl	Avg Ann Wages	LQ	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
339113	Surgical Appliance and Supplies	319	\$98,110	2.16	-65	-3.7%	149	61	94	-7	-0.4%
339112	Manufacturing Surgical and Medical Instrument	10	\$89,442	0.05	9	80.8%	5	2	3	0	-0.4%
339114	Manufacturing Dental Equipment and Supplies	6	\$72,251	0.27	5	39.1%	3	1	2	0	-0.4%
10146	Medical Devices (US Cluster Mapping)	335	\$97,334	0.83	-51	-2.8%	156	65	99	-7	-0.4%
	Total - All Industries	229,139	\$61,314	1.00	4,274	0.4%	121,430	54,711	69,391	-2,671	-0.2%

Source: JobsEQ®

Data as of 2023Q4

Note: Figures may not sum due to rounding.

1. All data based upon a four-quarter moving average

Exits and transfers are approximate estimates based upon occupation separation rates.

Exported on: Friday, June 7, 2024 5:08 PM

Metalworking Technology (US Cluster Mapping) in Lansing-East Lansing, MI MSA, 2023Q4¹

NAICS	Industry	Current			5-Year History		5-Year Forecast				
		Empl	Avg Ann Wages	LQ	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
333517	Machine Tool Manufacturing	654	\$77,563	10.82	216	8.4%	280	122	182	-24	-0.7%
333514	Special Die and Tool, Die Set, Jig, and Fixture Manufacturing	250	\$64,381	3.31	-255	-13.1%	102	46	69	-13	-1.1%
332811	Metal Heat Treating	110	\$80,385	4.31	-26	-4.1%	48	21	33	-6	-1.2%
332813	Electroplating, Plating, Polishing, Anodizing, and Coloring	97	\$51,994	1.27	7	1.5%	46	19	29	-2	-0.5%
333511	Industrial Mold Manufacturing	97	\$67,112	2.05	-173	-18.5%	41	18	27	-4	-0.8%
332313	Plate Work Manufacturing	76	\$66,846	1.13	-107	-16.1%	38	14	23	0	0.0%
333519	Rolling Mill and Other Metalworking Machinery Manufacturing	70	\$82,599	4.26	-44	-9.2%	30	13	20	-2	-0.7%
332721	Precision Turned Product Manufacturing	40	\$55,333	0.70	-97	-21.9%	15	8	11	-4	-2.1%
333992	Welding and Soldering Equipment Manufacturing	19	\$75,411	0.89	-14	-10.4%	9	4	6	0	-0.2%
332812	Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	6	\$57,496	0.07	4	21.7%	3	1	2	0	-0.9%
333515	Cutting Tool and Machine Tool Accessory Manufacturing	2	\$57,170	0.07	-22	-38.1%	1	0	1	0	-1.2%
10148	Metalworking Technology (US Cluster Mapping)	1,421	\$71,921	2.21	-511	-6.0%	626	271	411	-56	-0.8%
	Total - All Industries	229,139	\$61,314	1.00	4,274	0.4%	121,430	54,711	69,391	-2,671	-0.2%

Source: JobsEQ®

Data as of 2023Q4

Note: Figures may not sum due to rounding.

1. All data based upon a four-quarter moving average

Exits and transfers are approximate estimates based upon occupation separation rates.

Exported on: Friday, June 7, 2024 5:10 PM

Plastics (US Cluster Mapping) in Lansing-East Lansing, MI MSA, 2023Q4¹

NAICS	Industry	Current			5-Year History		5-Year Forecast				
		Empl	Avg Ann Wages	LQ	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
326140	Polystyrene Foam Product Manufacturing	1,579	\$59,777	38.68	-272	-3.1%	746	307	478	-40	-0.5%
326199	All Other Plastics Product Manufacturing	120	\$57,633	0.28	-43	-6.0%	60	24	37	-1	-0.1%
326112	Plastics Packaging Film and Sheet (including Laminated) Manufacturing	76	\$66,736	2.30	68	55.4%	35	15	23	-2	-0.6%
326160	Plastics Bottle Manufacturing	63	\$62,033	1.30	-72	-14.1%	29	12	19	-2	-0.6%
326150	Urethane and Other Foam Product (except Polystyrene) Manufacturing	46	\$52,755	0.88	-18	-6.4%	22	9	14	-1	-0.4%
325211	Plastics Material and Resin Manufacturing	30	\$99,352	0.36	-40	-15.4%	13	5	9	-1	-0.7%
326130	Laminated Plastics Plate, Sheet (except Packaging), and Shape Manufacturing	0	n/a	0.00	-13	n/a	0	0	0	0	-1.7%
10154	Plastics (US Cluster Mapping)	1,916	\$60,442	2.05	-389	-3.6%	899	369	577	-47	-0.5%
	Total - All Industries	229,139	\$61,314	1.00	4,274	0.4%	121,430	54,711	69,391	-2,671	-0.2%

Source: JobsEQ®

Data as of 2023Q4

Note: Figures may not sum due to rounding.

1. All data based upon a four-quarter moving average

Exits and transfers are approximate estimates based upon occupation separation rates.

Exported on: Friday, June 7, 2024 5:11 PM

Upstream Metal Manufacturing (US Cluster Mapping) in Lansing-East Lansing, MI MSA, 2023Q4¹

NAICS	Industry	Current			5-Year History		5-Year Forecast				
		Empl	Avg Ann Wages	LQ	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
332112	Nonferrous Forging	362	\$82,700	38.10	0	0.0%	157	67	107	-17	-1.0%
331313	Alumina Refining and Primary Aluminum Production	299	\$79,375	26.28	-9	-0.6%	139	57	88	-6	-0.4%
	Metal Crown, Closure, and Other Metal Stamping										
332119	(except Automotive)	150	\$59,280	2.16	57	10.0%	72	28	45	-1	-0.2%
332111	Iron and Steel Forging	116	\$83,393	4.03	6	1.1%	51	22	34	-5	-1.0%
332613	Spring Manufacturing	74	\$60,399	3.36	-5	-1.4%	36	14	22	0	-0.1%
331222	Steel Wire Drawing	14	\$50,163	0.95	-7	-7.3%	6	3	4	-1	-0.9%
331110	Iron and Steel Mills and Ferroalloy Manufacturing	12	\$90,843	0.10	5	12.3%	5	2	3	-1	-1.4%
	Secondary Smelting, Refining, and Alloying of										
331492	Nonferrous Metal (except Copper and Aluminum)	12	\$75,305	0.84	-24	-19.5%	5	2	4	-1	-1.3%
	Iron and Steel Pipe and Tube Manufacturing from										
331210	Purchased Steel	6	\$76,631	0.17	-6	-12.6%	2	1	2	0	-1.5%
331221	Rolled Steel Shape Manufacturing	4	\$76,729	0.14	-5	-14.9%	2	1	1	0	-1.5%
10163	Upstream Metal Manufacturing (US Cluster Mapping)	1,051	\$76,362	1.92	12	0.2%	472	198	308	-33	-0.6%
	Total - All Industries	229,139	\$61,314	1.00	4,274	0.4%	121,430	54,711	69,391	-2,671	-0.2%

Source: [JobsEQ®](#)

Data as of 2023Q4

Note: Figures may not sum due to rounding.

1. All data based upon a four-quarter moving average

Exits and transfers are approximate estimates based upon occupation separation rates.

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Computer and Electronic Product Manufacturing in Lansing-East Lansing, MI MSA, 2023Q4¹

NAICS	Industry	Current			5-Year History		5-Year Forecast				
		Empl	Avg Ann Wages	LQ	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing	38	\$44,151	0.45	-14	-6.0%	17	7	10	0	0.1%
334519	Other Measuring and Controlling Device Manufacturing	22	\$58,295	0.38	11	15.4%	8	4	5	-1	-0.6%
334118	Computer Terminal and Other Computer Peripheral Equipment Manufacturing	17	\$86,944	0.37	-20	-14.5%	6	3	4	0	-0.5%
334111	Electronic Computer Manufacturing	10	\$190,602	0.06	10	n/a	4	2	2	0	-0.5%
334290	Other Communications Equipment Manufacturing	10	\$59,272	0.37	6	23.2%	3	2	2	0	-1.0%
334112	Computer Storage Device Manufacturing	5	\$103,028	0.24	5	n/a	2	1	1	0	-0.5%
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use	5	\$53,584	0.28	5	n/a	2	1	1	0	-0.6%
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing	2	\$96,300	0.02	-1	-9.6%	1	0	0	0	0.1%
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing	1	\$80,346	0.01	0	n/a	0	0	0	0	-0.6%
334419	Other Electronic Component Manufacturing	1	\$50,894	0.01	1	n/a	0	0	0	0	-0.4%
334517	Irradiation Apparatus Manufacturing	1	\$79,135	0.04	1	n/a	0	0	0	0	-0.6%
334516	Analytical Laboratory Instrument Manufacturing	0	n/a	0.00	-1	n/a	0	0	0	0	-0.8%
334	Computer and Electronic Product Manufacturing	113	\$88,195	0.07	4	0.8%	45	19	28	-2	-0.4%
Total - All Industries		229,139	\$61,314	1.00	4,274	0.4%	121,430	54,711	69,391	-2,671	-0.2%

Source: JobsEQ®

Data as of 2023Q4

Note: Figures may not sum due to rounding.

1. All data based upon a four-quarter moving average

Exits and transfers are approximate estimates based upon occupation separation rates.

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Computer and Electronic Product Manufacturing in Lansing-East Lansing, MI MSA, 2023Q4¹

NAICS	Industry	Current			5-Year History			5-Year Forecast			Ann % Growth
		Empl	Avg Ann Wages	LQ	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	
33441	Semiconductor and Other Electronic Component Manufacturing	39	\$43,553	0.07	-13	-5.5%	17	7	10	0	0.1%
	Computer and Peripheral Equipment										
33411	Manufacturing	32	\$186,693	0.14	-5	-3.0%	12	5	8	-1	-0.5%
33451	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	31	\$65,483	0.05	16	15.1%	12	5	8	-1	-0.5%
33429	Other Communications Equipment Manufacturing	10	\$59,272	0.37	6	23.2%	3	2	2	0	-1.0%
33422	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing	1	\$80,346	0.01	0	n/a	0	0	0	0	-0.6%
334	Computer and Electronic Product Manufacturing	113	\$88,195	0.07	4	0.8%	45	19	28	-2	-0.4%
	Total - All Industries	229,139	\$61,314	1.00	4,274	0.4%	121,430	54,711	69,391	-2,671	-0.2%

Source: JobsEQ®

Data as of 2023Q4

Note: Figures may not sum due to rounding.

1. All data based upon a four-quarter moving average

Exits and transfers are approximate estimates based upon occupation separation rates.

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APPENDIX IV

MSU AUTM Analysis

Year	ID	Institution	Medschool ? (Y/N)	Institution State	Type	Total Research Expenditures	Total Licenses/Optio ns Executed	Gross License Income	Disclosure s Received	Newly Filed Patents	New Startups Initiated	Startups per \$10M	License Income Per \$10M	Patents Per \$10M	TLOE Per \$10M
2019	71137	Albert Einstein College of Medicine	Yes	NY	5U	\$182,208,486	17	\$2,201,452	41	20	1	0.05488	120820.498	1.09764	0.93300
2020	71137	Albert Einstein College of Medicine	Yes	NY	5U	\$200,763,240	31	\$9,518,848	52	20	4	0.19924	474133.014	0.99620	1.54411
2022	71137	Albert Einstein College of Medicine	YES	NY	5U	\$224,134,903	28	\$3,721,158	28	18	0	0.00000	166023.138	0.80309	1.24925
2021	95002	Albert Einstein College of Medicine Inc.	Yes	NY	5U	\$201,856,459	29	\$2,965,240	39	35	1	0.04954	146898.445	1.73391	1.43666
2019	80821	Arizona State University	No	AZ	5U	\$639,637,000	81	\$673,945	301	228	18	0.28141	10536.3667	3.56452	1.26634
2020	80821	Arizona State University	No	AZ	5U	\$673,357,244	78	\$801,741	306	232	19	0.28217	11906.6217	3.44542	1.15837
2021	80821	Arizona State University	No	AZ	5U	\$677,303,000	79	\$903,221	301	214	21	0.31005	13335.5529	3.15959	1.16639
2022	80821	Arizona State University	NO	AZ	5U	\$797,224,000	75	\$1,989,382	305	246	21	0.26341	24953.8649	3.08571	0.94076
2019	71194	Auburn University	No	AL	5U	\$231,619,000	11	\$1,340,677	75	58	2	0.08635	57882.8594	2.50411	0.47492
2020	71194	Auburn University	No	AL	5U	\$255,281,000	22	\$4,609,824	60	48	1	0.03917	180578.421	1.88028	0.86180
2021	71194	Auburn University	No	AL	5U	\$266,374,000	19	\$2,033,840	73	51	2	0.07508	76352.7972	1.91460	0.71328
2022	71194	Auburn University	NO	AL	5U	\$304,439,000	26	\$2,189,203	48	67	3	0.09854	71909.4137	2.20077	0.85403
2019	92729	Augusta University	Yes	GA	5U	\$96,502,000	7	\$785,628	40	42	1	0.10362	81410.5407	4.35224	0.72537
2020	92729	Augusta University	Yes	GA	5U	\$103,961,000	6	\$562,239	51	72	1	0.09619	54081.723	6.92567	0.57714
2021	92729	Augusta University	Yes	GA	5U	\$116,480,000	8	\$1,035,257	20	39	0	0.00000	88878.5199	3.34821	0.68681
2022	92729	Augusta University	YES	GA	5U	\$127,313,000	5	\$507,383	12	26	0	0.00000	39853.1965	2.04221	0.39273
2019	81039	Baylor College of Medicine	Yes	TX	5U	\$470,849,584	64	\$2,162,537	101	66	3	0.06371	45928.4042	1.40172	1.35925
2020	81039	Baylor College of Medicine	Yes	TX	4HRI	\$497,471,562	52	\$53,123,532	95	67	2	0.04020	1067870.73	1.34681	1.04529
2021	81039	Baylor College of Medicine	Yes	TX	5U	\$614,340,396	69	\$12,002,204	92	42	2	0.03256	195367.325	0.68366	1.12316
2022	81039	Baylor College of Medicine	YES	TX	5U	\$651,587,448	44	\$3,268,821	84	44	5	0.07674	50167.0345	0.67527	0.67527
2020	71212	Baylor University		TX	5U		5		9	64	1	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2020	71228	Beth Israel Deaconess Medical Center	No	MA	4HRI	\$250,000,000	29	\$3,427,901	57	146	12	0.48000	171116.04	5.84000	1.16000
2021	71228	Beth Israel Deaconess Medical Center	No	MA	4HRI	\$233,984,950	29	\$4,708,679	73	169	5	0.21369	201238.541	7.22269	1.23940
2022	71228	Beth Israel Deaconess Medical Center	NO	MA	4HRI	\$269,000,000	32	\$5,987,923	64	174	5	0.18587	222599.368	6.46840	1.18959
2020	89406	Boise State University	No	ID	5U	\$29,828,258	19	\$15,996	22	13	0	0.00000	5362.70003	4.35828	6.36980
2019	71348	Boston Children's Hospital	Yes	MA	5U	\$409,538,000	58	\$43,044,493	152			0.00000	1051050.04	0.00000	1.41623
2020	71348	Boston Children's Hospital	Yes	MA	4HRI	\$423,217,000	46	\$21,075,499	149	76	3	0.07089	497983.28	1.79577	1.08691
2021	71348	Boston Children's Hospital	Yes	MA	4HRI	\$426,609,000	52	\$11,796,365	250	54		0.00000	276514.677	1.26580	1.21891
2022	71348	Boston Children's Hospital	YES	MA	4HRI	\$517,600,000	38	\$58,056,201	146	60	2	0.03864	1121642.21	1.15920	0.73416
2019	92628	Boston University	Yes	MA	5U	\$57,724,872	9	\$1,402,437	87	146	3	0.05579	26080.9398	2.71514	0.16737
2020	92628	Boston University	Yes	MA	5U	\$600,502,991	22	\$1,471,923	113	190	3	0.04996	24511.5016	3.16401	0.36636
2021	92628	Boston University	Yes	MA	5U	\$680,888,627	35	\$2,520,826	72	180	3	0.04406	37022.5893	2.64360	0.51403
2022	92628	Boston University	YES	MA	5U	\$757,194,275	28	\$3,271,082	76	168	2	0.02641	43200.0361	2.21872	0.36979
2019	71267	Bowling Green State University	No	OH	5U	\$17,026,000	0	\$1,000	5	5	0	0.00000	587.337014	2.93669	0.00000
2020	71267	Bowling Green State University	No	OH	5U	\$18,729,000	2	\$11,000	10	7	0	0.00000	5873.2447	3.73752	1.06786
2021	71267	Bowling Green State University	No	OH	5U	\$18,619,000	2	\$11,000	10	3	0	0.00000	5907.9435	1.61126	1.07417
2022	71267	Bowling Green State University	NO	OH	5U	\$19,342,000	1	\$11,000	12	3	0	0.00000	5687.10578	1.55103	0.51701
2019	80010	Brandeis University	No	MA	5U	\$60,825,000	5	\$4,893,068	55	6	2	0.32881	804450.144	0.98644	0.82203
2020	80010	Brandeis University	No	MA	5U	\$57,029,000	0	\$3,931,331	49	5	1	0.17535	689356.468	0.87675	0.00000
2021	80010	Brandeis University	No	MA	5U	\$66,386,000	8	\$3,968,859	40	9	1	0.15063	597845.781	1.35571	1.20507
2022	80010	Brandeis University	NO	MA	5U	\$69,076,000	3	\$3,931,180	47	8	0	0.00000	569109.387	1.15814	0.43430
2019	71271	Brigham & Women's Hospital Inc.	Yes	MA	4HRI	\$673,856,909	78	\$18,664,571	203	704	2	0.02968	276981.222	10.44732	1.15752
2020	71271	Brigham & Women's Hospital Inc.		MA	4HRI	\$667,428,231	119	\$31,145,259	237	839	2	0.02997	466465.814	12.57064	1.78296
2019	92737	Brigham Young University	No	UT	5U	\$32,177,733	39	\$2,564,750	63	143	15	4.66161	797057.394	44.44067	12.12018
2020	92737	Brigham Young University	No	UT	5U	\$38,569,000	58	\$2,598,857	73		7	1.81493	673820.166	0.00000	15.03798
2021	92737	Brigham Young University	No	UT	5U	\$37,402,000	10	\$1,468,349	70	123	5	1.33683	392585.691	32.88594	2.67365
2022	92737	Brigham Young University	NO	UT	5U	\$45,610,000	18	\$1,340,242	45	86	10	2.19250	293848.279	18.85551	3.94650
2019	92669	Brown University		RI	5U	\$226,000,000	4	\$2,340,000	62	112	1	0.04425	103539.823	4.95575	0.17699
2020	92669	Brown University	Yes	RI	5U	\$204,856,037	6	\$1,880,000	56	111	3	0.14644	91771.7646	5.41844	0.29289
2022	92669	Brown University	YES	RI	5U	\$248,993,395	35	\$3,032,000	87	125	2	0.08032	121770.298	5.02021	1.40566
2019	92614	California Institute of Technology	No	CA	5U	\$378,469,656	62	\$6,194,343	267	281	21	0.55487	163668.154	7.42464	1.63818
2020	92614	California Institute of Technology	No	CA	5U	\$475,000,000	94	\$6,960,388	170	188	12	0.25263	146534.484	3.95789	1.97895
2021	92614	California Institute of Technology	No	CA	5U	\$499,000,000	57	\$6,417,502	188	187	8	0.16032	128607.255	3.74749	1.14228
2022	92614	California Institute of Technology	NO	CA	5U	\$661,000,000	55	\$9,309,696	184	237	14	0.21180	140842.602	3.58548	0.83207
2019	71318	Carnegie Mellon University	No	PA	5U	\$297,988,000	101	\$17,399,295	257	125	13	0.46431	705005.036	4.46448	3.60730
2020	71318	Carnegie Mellon University	No	PA	5U	\$307,728,726	85	\$6,442,048	359	255	6	0.19498	209341.782	8.28652	2.76217
2021	71318	Carnegie Mellon University	No	PA	5U	\$359,693,104	46	\$14,148,513	347	293	4	0.11121	393349.576	8.14583	1.27887
2022	71318	Carnegie Mellon University	NO	PA	5U	\$378,857,830	67	\$30,765,415	233	229	11	0.29035	812056.992	6.04448	1.76847
2019	71321	Case Western Reserve University	Yes	OH	5U	\$334,547,000	66	\$1,505,844	174	90	7	0.20924	45011.4334	2.69020	1.97282
2020	71321	Case Western Reserve University	Yes	OH	5U	\$382,334,005	61	\$2,329,084	163	74	7	0.18309	60917.5216	1.93548	1.59546
2021	71321	Case Western Reserve University	Yes	OH	5U	\$322,918,053	63	\$3,224,976	102	53	5	0.15484	99869.7958	1.64128	1.95096
2022	71321	Case Western Reserve University	YES	OH	5U	\$334,891,987	76	\$2,910,096	149	70	4	0.11944	86896.5551	2.09023	2.26939
2019	71326	Cedars-Sinai Medical Center	Yes	CA	4HRI	\$194,000,000	23	\$37,500,000	66	74	4	0.20619	1932989.69	3.81443	1.18557
2020	71326	Cedars-Sinai Medical Center	Yes	CA	4HRI	\$202,554,163	22	\$30,200,000	79	49	1	0.04937	1490959.24	2.41911	1.08613
2021	71326	Cedars-Sinai Medical Center	Yes	CA	4HRI	\$213,500,000	15	\$17,200,000	65	182	3	0.14052	805620.609	8.52459	0.70258
2022	71326	Cedars-Sinai Medical Center	NO	CA	4HRI	\$232,000,000	20	\$14,400,000	73	184	2	0.08621	620689.655	7.93103	0.86207
2019	80658	Children's Hospital of Philadelphia	No	PA	4HRI	\$472,014,095	26	\$1,501,316	83	162	1	0.02119	31806.5926	3.43210	0.55083
2020	80658	Children's Hospital of Philadelphia	No	pa	4HRI	\$506,591,271	29	\$6,242,624	103	43	2	0.03948	123228.021	0.84881	0.57245
2021	80658	Children's Hospital of Philadelphia	No	CA	4HRI	\$521,595,273	28	\$2,114,343	81	27	5	0.09586	40536.0844	0.51764	0.53681
2022	80658	Children's Hospital of Philadelphia	NO	PA	4HRI	\$554,568,746	40	\$21,997,559	108	39	6	0.10819	396660.633	0.70325	0.72128
2020	96008	Children's Hospital Cincinnati	No	OH	4HRI	\$400,000,000	19	\$779,767	142	60	1	0.02500	19494.175	1.50000	0.47500
2021	96008	Children's Hospital Cincinnati	No	OH	4HRI	\$405,446,000	32	\$1,900,000	132	46	1	0.02466	46861.9742	1.13455	0.78925
2019	71361	Cincinnati Children's Hospital Medical Center	No	OH	4HRI	\$450,000,000	12	\$689,641	155	61	2	0.04444	15325.3556	1.35556	0.26667
2022	71361	Cincinnati Children's Hospital Medical Center	NO	OH	4HRI	\$400,000,000	20	\$2,353,303	161	47	2	0.05000	58832.575	1.17500	0.50000
2020	95038	City of Hope National Medical Center & Beckman Research Institute	No	CA	4HRI							0.05564	3069891.06	1.31681	0.20401
2020	95077	City University of New York	Yes	NY	5U	\$539,182,000	11	\$165,523,000	80	71	3	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2019	92629	Clemson University	No	SC	5U	\$218,760,000	17	\$398,136	6						

2019	92633	Columbia University	Yes	NY	5U	\$882,057,235					423			0.00000	0	0.00000	0.00000
2020	92633	Columbia University	Yes	NY	5U	\$904,515,259		123	\$43,517,319	408	265	19	0.21006	481112.049	2.92975	1.35984	
2021	92633	Columbia University	Yes	NY	5U	\$972,900,132		120	\$79,097,662	375	274	27	0.27752	813009.058	2.81632	1.23343	
2022	92633	Columbia University	YES	NY	5U	\$1,065,717,152		82	\$44,975,537	400	267	19	0.17828	422021.33	2.50536	0.76943	
2022	119415	Cooper University Health Care	YES	NJ	4HRI	\$3,630,887				19	3	1	2.75415	0	8.26244	0.00000	
2019	71385	Cornell University	Yes	NY	5U	\$1,144,600,000		94	\$12,118,698	513	179	19	0.16600	105877.145	1.56387	0.82125	
2020	71385	Cornell University	Yes	NY	5U	\$1,190,000,000		69	\$15,364,797	521	188	14	0.11765	129115.941	1.57983	0.57983	
2021	71385	Cornell University	Yes	NY	5U	\$1,220,000,000		94	\$16,070,680	436	184	18	0.14754	131726.885	1.50820	0.77049	
2022	71385	Cornell University	YES	NY	5U	\$1,180,000,000		92	\$31,715,155	419	177	12	0.10169	268772.5	1.50000	0.77966	
2019	71402	Dana-Farber Cancer Institute	No	MA	4HRI	\$336,571,536		49	\$48,608,994	166	109	7	0.20798	144429.36	3.23854	1.45586	
2020	71402	Dana-Farber Cancer Institute	No	MA	4HRI	\$361,529,872		47	\$12,871,647	155	112	5	0.13830	356032.737	3.09795	1.30003	
2021	71402	Dana-Farber Cancer Institute	No	MA	4HRI	\$391,553,882		54	\$46,077,174	148	85	7	0.17877	1176777.35	2.17084	1.37912	
2022	71402	Dana-Farber Cancer Institute	NO	MA	4HRI	\$410,183,299		50	\$16,962,906	109	96	7	0.17066	413544.531	2.34042	1.21897	
2019	71405	Dartmouth College	Yes	NH	5U	\$195,262,325		11	\$33,111,854	49	36	1	0.05121	184974.444	1.84367	0.56334	
2019	92804	Drexel University	Yes	PA	5U	\$122,544,838		18	\$358,766	110	40	7	0.57122	29276.3046	3.26411	1.46480	
2020	92804	Drexel University	Yes	PA	5U	\$135,490,082		17	\$401,689	84	41	4	0.29522	29647.1147	3.02605	1.25470	
2021	92804	Drexel University	Yes	PA	5U	\$179,937,401		14	\$918,497	43	29	3	0.16672	51045.3633	1.61167	0.77805	
2022	92804	Drexel University	YES	PA	5U	\$165,953,344		8	\$2,076,453	56	40	2	0.12052	125122.697	2.41032	0.48204	
2019	71435	Duke University	Yes	NC	5U	\$1,072,436,000		120	\$57,795,470	354	139	16	0.14919	538917.66	1.29611	1.11891	
2020	71435	Duke University	Yes	NC	5U	\$1,044,762,000		105	\$65,267,643	405	178	17	0.16127	624713.026	1.70374	1.00501	
2021	71435	Duke University	Yes	NC	5U	\$1,083,994,000		117	\$91,310,987	374	179	13	0.11993	842356.941	1.65130	1.07934	
2022	71435	Duke University	YES	NC	5U	\$1,223,338,000		125	\$95,697,540	316	153	14	0.11444	782265.735	1.25068	1.02179	
2022	105354	Duke-NUS Medical School	YES	Not A	4HRI	\$55,000,000		11	\$1,500,000		10	25	0.45455	272727.273	1.81818	2.00000	
2019	71441	East Carolina University	Yes	NC	5U	\$52,697,637		7	\$30,490	30	3	1	0.18976	5785.8388	0.56929	1.32833	
2020	71441	East Carolina University	Yes	NC	5U	\$57,903,000		12	\$170,177	39	6	2	0.34541	29390.0143	1.03622	0.27243	
2021	71441	East Carolina University	Yes	NC	5U	\$51,662,000		8	\$74,024	53	2	2	0.38713	14328.52	0.38713	1.54853	
2022	71441	East Carolina University	YES	NC	5U	\$53,126,000		8	\$310,631	53	2	2	0.37646	58470.617	0.37646	1.50585	
2019	71465	Emory University	Yes	GA	5U	\$640,069,809		60	\$11,224,122	263	109	7	0.10936	175357.779	1.70294	0.93740	
2020	71465	Emory University	Yes	GA	5U	\$660,682,468		48	\$13,919,427	263	106	7	0.10595	210682.554	1.60440	0.72652	
2021	71465	Emory University	Yes	GA	5U	\$724,508,234		33	\$18,132,394	213	96	9	0.12422	250271.745	1.32504	0.45548	
2022	71465	Emory University	YES	GA	5U	\$791,631,531		29	\$279,210,490	212	92	5	0.06316	3527025.88	1.16216	0.36633	
2020	97003	Florida Agricultural and Mechanical University	No	FL	5U	\$49,895,216		2	\$10,300	6	3	0	0.00000	2064.32617	0.60126	0.40084	
2020	71496	Florida Atlantic University	Yes	FL	5U	\$50,167,699		3	\$151,337	24	4	1	0.19933	30166.2231	0.79733	0.59799	
2021	71496	Florida Atlantic University	Yes	FL	5U	\$55,922,262		2	\$108,747	40	9	0	0.00000	19446.1018	1.60938	0.35764	
2022	71496	Florida Atlantic University	YES	FL	5U	\$56,102,545		5	\$1,161,857	60	12	0	0.00000	28850.2063	2.13894	0.89123	
2019	71501	Florida State University	Yes	FL	5U	\$188,883,960		18	\$968,537	51	32	2	0.10589	51276.8263	1.69416	0.95297	
2021	71501	Florida State University	Yes	FL	5U	\$328,604,765		23	\$396,606	58	20	2	0.06086	12069.3928	0.60863	0.69993	
2019	95063	Fox Chase Cancer Center	No	PA	4HRI	\$45,064,397		17	\$648,585	27	14	0	0.00000	143924.038	3.10667	0.77238	
2021	95063	Fox Chase Cancer Center	No	PA	4HRI	\$46,438,644		10	\$797,445	14	9	0	0.00000	171720.796	1.93805	2.15339	
2022	71510	Fred Hutchinson Cancer Center	NO	WA	4HRI	\$713,162,036		51	\$12,534,371	218	40	4	0.05609	175757.687	0.56088	0.71512	
2019	95064	Fred Hutchinson Cancer Research Center	No	WA	4HRI	\$542,760,114		57	\$8,124,031	162	39	4	0.07370	149679.956	0.71855	1.05019	
2020	95064	Fred Hutchinson Cancer Research Center	No	WA	4HRI	\$556,557,487		62	\$4,256,709	182	39	5	0.08984	76482.827	0.70074	1.11399	
2021	95064	Fred Hutchinson Cancer Research Center	No	WA	4HRI	\$754,542,657		30	\$23,623.573	210	36	1	0.01325	525133.637	0.47711	0.39759	
2020	71543	George Mason University		VA	5U	\$200,000,000		6	\$172,000	40	44	4	0.20000	8600	2.20000	0.30000	
2019	92728	George Washington University	Yes	DC	5U	\$269,762,828		4	\$1,114,713	68	32	2	0.07414	41321.9645	1.18623	0.14828	
2020	92728	George Washington University	Yes	DC	5U	\$270,368,356		9	\$21,205,525	79	48	3	0.11096	784319.782	1.77536	0.33288	
2021	92728	George Washington University	Yes	DC	5U	\$266,107,453		9	\$2,788,848	52	30	3	0.11274	104801.574	1.12736	0.33821	
2022	92728	George Washington University	YES	DC	5U	\$267,482,022		14	\$7740,019	52	26	4	0.14954	28937.215	0.97203	0.52340	
2019	92620	Georgetown University	Yes	DC	5U	\$148,291,726		7	\$434,517	60	69	0	0.00000	29301.4999	4.65299	0.47204	
2020	92620	Georgetown University	Yes	DC	5U	\$258,662,009		11	\$521,861	47	69	4	0.15464	20175.4019	2.66757	0.42527	
2021	92620	Georgetown University	Yes	DC	5U	\$279,590,691		8	\$354,224	39	50	0	0.00000	12669.3775	1.78833	0.28613	
2022	92620	Georgetown University	YES	DC	5U	\$313,219,990		16	\$992,673	37	35	0	0.00000	31692.5175	1.11743	0.51082	
2021	92621	Georgia Institute of Technology	No	GA	5U	\$1,200,000,000		25	\$2,678,048	244	8	0.06667	22317.0667	0.00000	0.20833		
2022	92621	Georgia Institute of Technology	NO	GA	5U	\$1,229,000,000		43	\$2,828,149	239	23	1	0.13832	23031.7901	0.00000	0.34988	
2020	95067	Georgia Institution of Technology	no	GA	5U	\$1,048,987,838		3	\$2,225,639	273	460	8	0.07626	21217.0143	4.38518	0.00000	
2019	71550	Georgia State University	No	GA	5U	\$195,572,000		2	\$73,498	26	18	2	0.10226	3578.10443	0.92038	0.10226	
2020	71550	Georgia State University	No	GA	5U	\$202,451,000		6	\$18,610	22	7	3	0.14818	919.234778	0.34576	0.29637	
2022	71550	Georgia State University	NO	GA	5U	\$164,229,014		2	\$101,932	32	23	0	0.00000	6206.69865	1.40048	0.12178	
2019	99008	H. Lee Moffitt Cancer Center & Research Institute	No	FL	4HRI	\$202,608,422		17	\$2,997,894	59	56	2	0.09871	147964.925	2.76395	0.83906	
2020	99008	H. Lee Moffitt Cancer Center & Research Institute	No	FL	4HRI	\$226,682,077		17	\$374,131	46	39	1	0.04411	16804.6573	1.72047	0.74995	
2021	99008	H. Lee Moffitt Cancer Center & Research Institute	No	FL	4HRI	\$240,276,176		10	\$1,653,749	54	61	1	0.04162	68682.0068	2.53875	0.41619	
2019	71588	Harvard University	Yes	MA	5U	\$915,000,000		109	\$97,891,618	450	224	15	0.16393	1069853.75	2.44809	1.19126	
2020	71588	Harvard University	Yes	MA	5U	\$898,000,000		90	\$58,687,376	443	208	14	0.15590	653534.254	2.31626	1.00223	
2021	71588	Harvard University	Yes	MA	5U	\$913,000,000		152	\$106,047,639	383	180	27	0.29573	1161529.45	1.97152	1.66484	
2022	71588	Harvard University	YES	MA	5U	\$940,000,000		105	\$152,110,587	376	185	23	0.24468	1618197.73	1.96809	1.11702	
2022	94788	Icahn School of Medicine at Mount Sinai	YES	NY	4HRI	\$756,818,818		51	\$57,767,121	142	54	5	0.06607	763288.645	0.71351	0.67387	
2022	80648	Idaho State University	NO	ID	5U	\$27,527,384		0		5	5	0	0.00000	0	0.18167	0.00000	
2019	95082	Indiana University	Yes	IN	5U	\$522,154,225		21	\$2,297,038	176	81	2	0.03830	43991.5621	1.55127	0.40218	
2020	95082	Indiana University	Yes	IN	5U	\$576,582,396		20	\$5,593,332	149	126	3	0.05203	97008.3728	2.18529	0.34687	
2021	95082	Indiana University	Yes	IN	5U	\$428,364,941		27	\$9,308,000	139	165	7	0.16341	217291.359	3.85186	0.63030	
2019	71681	Iowa State University	No	IA	5U	\$391,881,578		46	\$2,902,185	165	46	4	0.10207	74057.7042	1.17382	1.17382	
2020	71681	Iowa State University	No	IA	5U	\$395,950,748		46	\$3,073,864	176	50	4	0.10102	77632.4837	1.26278	1.16176	
2021	71681	Iowa State University	No	IA	5U	\$394,487,595		47	\$2,906,665	179	51	8	0.20279	73682.0381	1.29282	1.19142	
2022	71681	Iowa State University	NO	IA	5U	\$431,704,321		34	\$3,453,019	125	35	1	0.02316	79985.741	0.81074	0.78758	
2021	84862	Jackson State University	MS	MS	5U	\$63,067,157		3		10	3	2	0.37172	0	0.47568	0.47568	
2022	84862	Jackson State University	NO	MS	5U	\$61,947,029		4	\$0	8	2	0	0.00000	0	0.32286	0.64571	
2019	71711	Johns Hopkins University	Yes	MD	5U	\$1,886,017,767		94	\$73,494,269	443	282	18</					

2020	71789	Massachusetts Institute of Technology	No	MA	5U	\$1,877,773,000	167	\$87,000,000	869	446	32	0.17041	463314.788	2.37515	0.88935
2021	71789	Massachusetts Institute of Technology	No	MA	5U	\$1,877,697,000	139	\$87,400,000	734	388	24	0.12782	465463.81	2.06636	0.74027
2022	71789	Massachusetts Institute of Technology	NO	MA	5U	\$1,940,568,000	160	\$82,770,000	698	345	27	0.13913	426524.605	1.77783	0.82450
2019	83462	Mayo Foundation for Medical Education and Research	Yes	MN	4HRI	\$891,000,000	119	\$77,007,005	631	112	11	0.12346	864276.15	1.25701	1.33558
2020	83462	Mayo Foundation for Medical Education and Research	Yes	MN	4HRI	\$930,000,000	149	\$117,885,888	598	110	14	0.15054	1267590.19	1.18280	1.60215
2021	83462	Mayo Foundation for Medical Education and Research	Yes	MN	4HRI	\$1,013,000,000	168	\$112,999,963	663	132	16	0.15795	1115498.15	1.30306	1.65844
2022	83462	Mayo Foundation for Medical Education and Research	YES	MN	4HRI	\$1,075,360,000	157	\$81,635,464	509	125	12	0.11159	759145.44	1.16240	1.45998
2019	99010	Medical College of Wisconsin	Yes	WI	5U	\$273,404,000	7	\$147,559	71	31	4	0.14630	5397.10465	1.13385	0.25603
2020	71822	Medical College of Wisconsin Research Foundation	Yes	WI	5U	\$307,519,000	14	\$294,000	50	25	3	0.09755	9560.38489	0.81296	0.45526
2021	71822	Medical College of Wisconsin Research Foundation	Yes	WI	5U	\$316,486,000	8	\$958,000	34	29	2	0.06319	30269.9014	0.91631	0.25278
2022	71822	Medical College of Wisconsin Research Foundation	YES	WI	4HRI	\$340,000,000	9	\$181,000	47	23	3	0.08824	5323.52941	0.67647	0.26471
2021	83168	Medical University of South Carolina	Yes	SC	5U	\$523,137,982	23	\$1,093,386	101	34	4	0.07646	20900.5279	0.64992	0.43965
2022	83168	Medical University of South Carolina	YES	SC	4HRI	\$264,699,584	18	\$1,230,966	120	60	0	0.00000	46504.2665	2.26672	0.68002
2019	92617	Memorial Sloan Kettering Cancer Center	No	NY	4HRI	\$741,000,000	109	\$160,801,301	129	80	5	0.06748	2170058.04	1.07962	1.47099
2020	92617	Memorial Sloan Kettering Cancer Center	No	NY	4HRI	\$780,000,000	147	\$208,116,628	122	65	5	0.06410	2668161.9	0.83333	1.88462
2021	92617	Memorial Sloan Kettering Cancer Center	No	NY	4HRI	\$855,000,000	156	\$124,995,114	153	148	2	0.02339	1461931.16	1.73099	1.82456
2022	92617	Memorial Sloan Kettering Cancer Center	NO	NY	4HRI	\$930,000,000	156	\$38,052,773	149	66	0	0.00000	409169.602	0.70968	1.67742
2019	71846	Michigan State University	Yes	MI	5U	\$725,708,000	46	\$3,259,540	181	63	4	0.05512	44915.3103	0.86812	0.63386
2020	71846	Michigan State University	Yes	MI	5U	\$713,197,000	50	\$4,345,836	186	69	5	0.07011	60934.5805	0.96747	0.70107
2021	71846	Michigan State University	Yes	MI	5U	\$710,178,000	40	\$3,995,268	120	71	3	0.04224	56257.2763	0.99975	0.56324
2022	71846	Michigan State University	YES	MI	5U	\$759,200,000	29	\$3,525,653	157	58	2	0.02634	46439.0543	0.76396	0.38198
2019	71847	Michigan Technological University	No	MI	5U	\$80,443,225	8	\$334,790	35	7	1	0.12431	41618.1723	0.87018	0.99449
2020	71847	Michigan Technological University	No	MI	5U	\$77,927,423	17	\$221,391	26	11	1	0.12832	28409.8962	1.41157	2.18152
2021	71847	Michigan Technological University	No	MI	5U	\$81,715,393	14	\$121,965	23	7	1	0.12238	14925.5845	0.85663	1.71326
2022	71847	Michigan Technological University	NO	MI	5U	\$91,083,548	9	\$76,548	31	10	1	0.10979	8404.1522	1.09789	0.98810
2019	71869	Mississippi State University	No	MS	5U	\$264,526,000	10	\$164,000	23	11	3	0.11341	6199.76864	0.41584	0.37803
2020	71869	Mississippi State University	No	MS	5U	\$264,526,000	10	\$164,000	23	11	3	0.11341	6199.76864	0.41584	0.37803
2021	71869	Mississippi State University	No	MS	5U	\$275,143,000	20	\$183,000	23	28	1	0.03634	6651.08689	1.01765	0.72689
2022	71869	Mississippi State University	NO	MS	5U	\$303,418,000	16	\$199,985	38	25	1	0.03296	6591.07238	0.82395	0.52733
2019	71881	Montana State University	No	MT	5U	\$138,819,511	45	\$429,991	25	23	1	0.07204	30974.8246	1.65683	3.24162
2020	71881	Montana State University	No	MT	5U	\$148,296,069	36	\$711,187	23	22	3	0.20230	47957.2388	1.48352	2.42758
2021	71881	Montana State University	No	MT	5U	\$193,000,000	13	\$535,435	14	13	3	0.15544	27742.7461	0.67358	0.67358
2022	71881	Montana State University	NO	MT	5U	\$201,000,000	12	\$532,956	21	13	1	0.04975	26515.2239	0.64677	0.59701
2019	80657	Morgan State University	No	MD	5U	\$13,523,000	2	\$10,000	25	15	2	1.47896	7394.80884	11.09221	1.47896
2020	80657	Morgan State University	No	MD	5U	\$17,193,000	3	\$15,000	27	20	2	1.16326	8724.48089	11.63264	1.74490
2021	80657	Morgan State University	No	MD	5U	\$20,627,968	7	\$500	30	28	2	0.96956	242.389362	13.57380	3.39345
2022	80657	Morgan State University	NO	MD	5U	\$29,482,000	8		30	29	2	0.67838	0	9.83651	2.71352
2019	95050	Mount Sinai School of Medicine	Yes	NY	5U	\$585,824,262	59	\$18,072,000	154	61	5	0.08535	308488.418	1.04127	1.00713
2020	95050	Mount Sinai School of Medicine	Yes	NY	5U	\$677,120,430	93	\$77,120,430	152	88	5	0.08194	1263854.84	1.44215	1.52409
2021	95050	Mount Sinai School of Medicine	Yes	NY	5U	\$679,200,010	60	\$15,987,404	160	67	7	0.10306	235385.803	0.98645	0.88339
2019	2E+07	Nationwide Children's Hospital	Yes	OH	5U	\$195,767,348	29	\$37,418,978	88	53	1	0.05108	1911400.36	2.70730	1.48135
2020	2E+07	Nationwide Children's Hospital	No	OH	4HRI	\$195,264,406	32	\$18,986,052	102	30	3	0.15364	972325.289	1.53638	1.63880
2021	85917	Nationwide Children's Hospital	No	OH	4HRI	\$177,841,737	18	\$69,850,747	72	37	2	0.11246	392769.145	2.08050	1.01214
2022	85917	Nationwide Children's Hospital	NO	OH	4HRI	\$225,063,000	13	\$28,424,659	73	26	3	0.13330	1262964.55	1.15523	0.57762
2019	71940	New York University	Yes	NY	5U	\$705,548,000	74	\$71,630,327	174	82	18	0.25512	1015243.85	1.16222	1.04883
2020	71940	New York University	Yes	NY	5U	\$724,643,000	79	\$15,274,685	221	62	17	0.23460	210789.106	0.85559	1.09019
2021	71940	New York University	Yes	NY	5U	\$189,889,000	72	\$19,204,798	194	103	17	0.20735	234236.561	1.25627	0.87817
2022	71940	New York University	YES	NY	5U	\$779,907,000	79	\$100,436,749	257	87	12	0.12246	1024962.05	0.88784	0.80620
2020	101556	Nicholls State University	No	LA	5U	\$12,000,000	0	\$0	0	0	0	0.00000	0	0.00000	0.00000
2019	82569	North Carolina A&T State University	No	NC	5U	\$38,140,000	0	\$39,827	8	2	0	0.00000	10442.3178	0.52438	0.00000
2020	82569	North Carolina A&T State University	No	NC	5U	\$36,151,000	1	\$15,000	11	7	0	0.00000	4149.26281	1.93632	0.27662
2022	82569	North Carolina A&T State University	NO	NC	5U	\$47,900,000	0	\$5,000	10	3	0	0.00000	1043.84134	0.62630	0.00000
2019	71954	North Carolina State University	No	NC	5U	\$541,100,000	175	\$5,402,735	295	114	21	0.38810	99847.2556	2.10682	3.23415
2020	71954	North Carolina State University	No	NC	5U	\$546,000,000	145	\$4,428,267	276	112	17	0.31136	81103.7912	2.05128	2.65568
2021	71954	North Carolina State University	No	NC	5U	\$547,118,000	203	\$5,892,445	270	88	20	0.36555	107699.71	1.60843	3.71035
2022	71954	North Carolina State University	NO	NC	5U	\$583,203,000	194	\$6,728,573	205	89	18	0.30864	115372.743	1.52606	3.32646
2019	95124	North Dakota State University	No	ND	5U	\$152,381,000	51	\$1,155,639	29	4	0	0.00000	75838.7857	0.26250	3.34687
2020	95124	North Dakota State University	No	ND	5U	\$155,644,000	56	\$2,272,966	31	6	0	0.00000	146036.211	0.38550	3.59795
2019	93046	Northeastern University	No	MA	5U	\$178,800,000	19	\$652,631	87	194	7	0.39150	36500.6152	10.85011	1.06264
2020	93046	Northeastern University	No	MA	5U	\$180,000,000	8	\$615,094	119	218	14	0.77778	34171.8889	12.11111	0.44444
2021	93046	Northeastern University	No	MA	5U	\$166,376,400	14	\$807,833	129	243	14	0.84147	48554.5426	14.60544	0.84147
2022	93046	Northeastern University	NO	MA	5U	\$167,541,670	7	\$689,561	111	89	10	0.95687	41157.5819	5.31211	0.41781
2019	71959	Northern Arizona University	No	AZ	5U	\$58,914,000	4	\$10,500	50	17	0	0.00000	1782.25889	2.88556	0.67896
2020	71959	Northern Arizona University	No	AZ	5U	\$64,456,000	3	\$25,562	43	17	1	0.15514	3965.80613	2.63746	0.46543
2022	71959	Northern Arizona University	NO	AZ	5U	\$66,729,000	7	\$56,830	48	23	2	0.29972	8516.53704	3.44678	1.04902
2019	80498	Northern Illinois University	No	IL	5U	\$26,900,000	1	\$13,000	5	4	1	0.37175	4832.71375	1.48699	0.37175
2020	80498	Northern Illinois University	No	IL	5U	\$25,420,000	2	\$10,000	7	4	1	0.39339	3933.91031	1.57356	0.78678
2022	80498	Northern Illinois University	NO	IL	5U	\$13,000,000	0	\$5,000	8	7	0	0.00000	3846.15385	5.38462	0.00000
2019	71963	Northwestern University	Yes	IL	5U	\$634,802,892	60	\$261,129,388	230	203	12	0.18904	4113550.7	3.19784	0.94518
2020	71963	Northwestern University	Yes	IL	5U	\$667,855,333	98	\$105,321,475	240	202	11	0.16471	1577010.32	3.02461	1.67338
2021	71963	Northwestern University	Yes	IL	5U	\$707,657,523	111	\$16,814,768	235	165	16	0.22610	237611.662	2.33164	1.56856
2022	71963	Northwestern University	YES	IL	5U	\$766,473,665	125	\$14,148,511	220	172	12	0.15656	184592.265	2.24404	1.63085
2019	71985	Ohio State University	Yes	OH	5U	\$931,116,266	75	\$8,862,893	418	230	14	0.15036	95185.6747	2.47015	0.80548
2020	71985	Ohio State University	Yes	OH	5U	\$968,259,897	71	\$5,666,824	367	398	12	0.12393	58525.8567	4.11047	0.73327
2021	71985	Ohio State University	Yes	OH	5U	\$1,236,110,895	64	\$3,234,878	306	137	14	0.11326	26169.8041	1.10831	0.51775
2022	71985	Ohio State University	YES	OH	5U	\$1,380,392,245	70	\$18,822,210	363	190	10	0.07244	136354.069	1.37642	0.50710
2019	71986	Ohio State University	Yes	OH	5U	\$53,735,000	2	\$5,224,005	32	41	1	0.18610	972179.213	7.63004	0.37220
2020	71986	Ohio State University	Yes	OH											

2022	86721	Puerto Rico Science Technology and Research Trust	YES	PR	5U	\$123,707,000	4	\$23,804	25	22	1	0.08084	1924.22417	1.77840	0.32334
2020	86721	Puerto Rico Science Technology and Research Trust	Yes	PR	5U	\$121,074,000	4	\$80,164	26	9	0	0.00000	6621.07471	0.74335	0.33038
2021	86721	Puerto Rico ScienceTechnology and Research Trust	Yes	PR	5U	\$112,943,000	4	\$80,164	26	9	0	0.00000	7097.73957	0.79686	0.35416
2019	72075	Purdue Research Foundation	No	IN	5U	\$671,615,000	136	\$6,556,513	380	203	17	0.25312	97623.0876	3.02257	2.02497
2020	72075	Purdue Research Foundation	No	IN	5U	\$695,247,000	148	\$12,179,190	408	229	22	0.31643	175177.886	3.29379	2.12874
2021	72075	Purdue Research Foundation	No	IN	5U	\$667,624,000	210	\$5,712,376	394	234	13	0.18906	83074.1219	3.40302	3.05399
2022	72075	Purdue Research Foundation	NO	IN	5U	\$763,663,000	158	\$5,340,281	379	215	9	0.11785	69929.812	2.81538	2.06898
2019	72104	Rice University	No	TX	5U	\$141,851,585	13	\$506,358	81	28	8	0.56397	35696.323	1.97389	0.91645
2020	72104	Rice University	No	TX	5U	\$149,070,271	17	\$2,207,945	78	40	5	0.33541	148114.375	2.68330	1.14040
2021	72104	Rice University	No	TX	5U	\$158,902,825	11	\$1,330,323	73	40	5	0.31466	83719.2794	2.51726	0.69225
2022	72104	Rice University	NO	TX	5U	\$170,469,240	6	\$1,480,109	77	51	3	0.17598	86825.5763	2.99174	0.35197
2019	95148	Rochester Institute of Technology	No	NY	5U	\$60,000,000	5	\$200,000	20	18	8	1.33333	33333.3333	3.00000	0.83333
2020	95148	Rochester Institute of Technology	No	NY	5U	\$42,180,000	2	\$348,000	16	15	1	0.23708	82503.5562	3.55619	0.47416
2020	95149	Rockefeller University	No	NY	5U	\$318,405,999	67	\$57,512,998	60	7	0	0.00000	1806278.72	0.21985	2.10423
2019	103199	Rosalind Franklin University of Medicine and Science	Yes	IL	5U	\$16,126,000	0	\$0	3	2	0	0.00000	0	1.24023	0.00000
2020	103199	Rosalind Franklin University of Medicine and Science	Yes	IL	5U	\$14,601,000	1	\$50,000	5	4	0	0.00000	34244.2298	2.73954	0.68488
2022	103199	Rosalind Franklin University of Medicine and Science	YES	IL	4HRI	\$12,988,000	2	\$0	2	2	0	0.00000	0	1.53988	1.53988
2019	99185	Rowan University	Yes	NJ	5U	\$34,690,834	3	\$113,573	24	24	1	0.28826	32738.6191	6.91825	0.86478
2020	99185	Rowan University	Yes	NJ	5U	\$36,400,000	3	\$197,475	23	43	2	0.54945	54251.3736	11.81319	0.82418
2021	99185	Rowan University	Yes	NJ	5U	\$46,053,017	1	\$180,847	23	16	1	0.21714	39269.3056	3.47426	0.21714
2022	99185	Rowan University	YES	NJ	5U	\$49,127,744	2	\$241,650	22	15	0	0.00000	49188.0922	3.05326	0.40710
2019	72127	Rutgers The State University of New Jersey	Yes	NJ	5U	\$687,121,000	68	\$15,504,155	195	97	8	0.11643	225639.371	1.41169	0.98964
2020	72127	Rutgers The State University of New Jersey	Yes	NJ	5U	\$720,030,000	66	\$16,174,744	179	108	7	0.09722	224639.862	1.49994	0.91663
2021	72127	Rutgers The State University of New Jersey	Yes	NJ	5U	\$672,951,000	47	\$47,426,780	166	65	5	0.07430	704758.296	0.96589	0.69842
2022	72127	Rutgers The State University of New Jersey	YES	NJ	5U	\$747,058,000	98	\$18,976,020	188	69	8	0.10709	254009.997	0.92362	1.31181
2019	95152	Salk Institution for Biological Studies	No	CA	5U	\$115,659,000	14	\$1,311,567	39	10	0	0.00000	113399.476	0.86461	1.21045
2020	95152	Salk Institution for Biological Studies	No	CA	4HRI	\$122,009,000	12	\$5,177,397	41	27	0	0.00000	424345.499	2.21295	0.98353
2019	72140	San Diego State University	No	CA	5U	\$50,372,264	260	\$1,218,975	20	10	0	0.00000	241993.292	1.98522	51.61571
2020	72140	San Diego State University	No	CA	5U	\$53,629,408	7	\$491,383	40	22	1	0.18646	91625.6618	4.10223	1.30525
2021	72140	San Diego State University	No	CA	5U	\$56,566,281	8	\$521,456	45	13	0	0.00000	92184.9538	2.29819	1.41427
2022	72140	San Diego State University	NO	CA	5U	\$123,856,000	5	\$647,964	25	10	3	0.24222	52315.9153	0.80739	0.40369
2019	2E+07	Seattle Children's Research Institute	No	WA	4HRI	\$156,000,000	2	\$3,067,030	39	46	0	0.00000	196604.487	2.94872	0.12821
2020	2E+07	Seattle Children's Research Institute	NO	WA	5U	\$167,000,000	11	\$1,814,923	57	148	3	0.17964	108678.024	8.86228	0.65868
2022	97541	Seattle Children's Research Institute	NO	WA	4HRI	\$222,000,000	9	\$4,707,713	54	136	1	0.04505	212059.144	6.12613	0.40541
2019	95161	Southern Illinois University	Yes	IL	5U	\$46,873,624	3	\$1,141,434	10	10	0	0.00000	243513.068	2.13340	0.64002
2020	95161	Southern Illinois University	Yes	IL	5U	\$59,854,000	1	\$1,297,657	15	7	0	0.00000	216803.722	1.16951	0.16707
2019	100083	St. Jude Children's Research Hospital	No	TN	5U	\$436,900,000	16	\$20,904,362	58	16	3	0.06867	478470.176	0.36622	0.36622
2020	100083	St. Jude Children's Research Hospital	No	TN	4HRI	\$478,000,000	10	\$8,182,408	43	21	0	0.00000	171180.084	0.43933	0.20921
2021	100083	St. Jude Children's Research Hospital	No	TN	4HRI	\$520,687,000	8	\$13,035,670	48	19	0	0.00000	250355.204	0.36490	0.15364
2022	100083	St. Jude Children's Research Hospital	NO	TN	4HRI	\$585,500,000	19	\$30,770,686	37	23	0	0.00000	525545.448	0.39283	0.32451
2019	72222	Stanford University	Yes	CA	5U	\$1,630,000,000	115	\$49,300,000	564	327	24	0.14724	302453.988	2.00613	0.70552
2020	72222	Stanford University	Yes	CA	5U	\$1,900,000,000	121	\$114,022,678	582	419	22	0.11579	600119.358	2.20526	0.63684
2021	72222	Stanford University	Yes	CA	5U	\$1,662,160,828	164	\$117,910,895	475	391	23	0.13837	709383.19	2.35236	0.98667
2022	72222	Stanford University	YES	CA	5U	\$1,788,981,211	147	\$89,574,070	510	350	38	0.21241	500698.775	1.95642	0.82170
2019	95166	Stevens Institute of Technology	No	NJ	5U	\$54,474,314	4	\$127,000	38	22	4	0.73429	23313.7401	0.40360	0.73429
2020	95166	Stevens Institute of Technology	No	NJ	5U	\$38,253,465	6	\$130,000	29	26	3	0.78424	33983.8496	6.79677	1.56849
2019	2E+07	Temple University	Yes	PA	5U	\$284,301,000	12	\$388,355	71	19	4	0.14070	13659.9942	0.66831	0.42209
2020	2E+07	Temple University System	Yes	PA	5U	\$299,707,000	20	\$1,191,573	92	31	3	0.10010	39757.9302	1.03434	0.66732
2019	95171	Texas A&M	Yes	TX	5U	\$952,156,000	75	\$7,337,407	268	81	11	0.11553	77060.9753	0.85070	0.78769
2020	72280	Texas A&M University System	Yes	TX	5U	\$1,130,803,000	67	\$6,990,277	357	148	6	0.05306	61816.9301	1.30880	0.59250
2021	72280	Texas A&M University System	Yes	TX	5U	\$1,147,719,561	74	\$5,922,652	231	132	5	0.04356	51603.6513	1.15011	0.64476
2022	72280	Texas A&M University System	YES	TX	5U	\$1,152,666,915	63	\$15,774,619	266	196	4	0.03470	136853.23	1.70040	0.54656
2019	72284	Texas Tech University System	Yes	TX	5U	\$239,194,000	25	\$1,173,017	118	41	6	0.25084	49040.4024	1.71409	1.04518
2020	72284	Texas Tech University System	Yes	TX	5U	\$238,018,000	20	\$910,985	112	39	4	0.16805	38273.786	1.63853	0.84027
2021	72284	Texas Tech University System	Yes	TX	5U	\$264,816,300	20	\$564,450	103	34	4	0.16206	22869.2351	1.37754	0.81032
2022	72284	Texas Tech University System	YES	TX	5U	\$278,988,000	60	\$1,191,000	110	40	8	0.28675	42690.0082	1.43375	2.15063
2020	96045	The Catholic University of America	No	DC	5U	\$23,741,615	2	\$0	5	2	1	0.42120	0	0.84240	0.84240
2022	71367	The Cleveland Clinic	YES	OH	5U	\$394,000,000	46	\$9,497,203	218	63	2	0.05076	241045.761	1.59898	1.16751
2019	71788	The General Hospital dba Massachusetts General Hospital	Yes	MA	5U	\$1,004,410,981	188	\$298,897,875	355	1603	3	0.02987	2975852.32	15.95960	1.87174
2020	71788	The General Hospital dba Massachusetts General Hospital	MA	4HRI	\$1,012,905,768	211	\$142,906,417	384	1482	3	0.02962	1410855.99	14.63117	0.08312	
2019	81632	The Research Foundation for The State University of New York	Yes	NY	5U	\$1,057,174,337	58	\$7,564,679	270	164	5	0.04730	71555.6435	1.55131	0.54863
2020	81632	The Research Foundation for The State University of New York	Yes	NY	5U	\$1,053,711,982	64	\$6,721,085	244	144	17	0.16133	63784.8398	1.36660	0.60738
2021	81632	The Research Foundation for The State University of New York	Yes	NY	5U	\$1,095,378,492	66	\$6,444,336	236	185	13	0.11868	58832.048	1.68891	0.60253
2022	81632	The Research Foundation for The State University of New York	YES	NY	5U	\$1,095,254,677	63	\$16,324,744	227	120	11	0.10043	149049.754	1.09564	0.57521
2022	80952	The Research Foundation of The City University of New York	YES	NY	5U		4		37		4	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2021	72134	The Salk Institute for Biological Studies	No	CA	4HRI	\$124,553,000	15	\$7,635,519	29	12	2	0.16057	613033.729	0.96345	1.20431
2022	72134	The Salk Institute for Biological Studies	NO	CA	4HRI	\$135,054,000	10	\$9,384,419	29	13	5	0.37022	694864.202	0.96258	0.74044
2020	72341	The UAB Research Foundation	Yes	AL	5U	\$4,519,458	44	\$4,519,458	85	32	5	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2022	72340	The University of Akron	NO	OH	5U	\$19,943,000	1	\$60,060	35	42	2	1.00286	30115.8301	21.06002	0.50143
2019	95115	Tufts Medical Center	No	MA	4HRI	\$27,003,000	2	\$202,586	11	8	0	0.00000	28135.7721	1.11106	0.27777
2020	95115	Tufts Medical Center	No	MA	4HRI	\$72,498,000	2	\$119,863	9	6	1	0.13793	16533.2837	0.82761	0.27587
2019	92615	Tufts University		MA	5U	\$190,735,919	15	\$4,629,421	65	31	10	0.52429	242713.644	1.62528	0.78643
2020	92615	Tufts University	Yes	MA	5U	\$193,009,959	12	\$2,118,948	68	33	3	0.15543	109784.387	1.70976	0.62173
2021	92615	Tufts University		MA	5U	\$209,514,413	13	\$8,777,946	80	54	4	0.19092	418966.212	2.57739	0.62048
2022	92615	Tufts University	YES	MA	5U	\$223,474,000	16	\$4,062,390	85	56	7	0.31324	181783.563	2.50588	0.71597
2019	72320	Tulane University	Yes	LA	5U	\$156,471,388	4	\$1,688,783	31		3	0.19173	107929.189	0.00000	0.25564
2022	72320	Tulane University	YES	LA	5U	\$222,605,000	4	\$416,112	32	30	1	0.04492	18692.8416	1.34768	0.17969
2019	95182	UAB Research Foundation	Yes	AL	5U	\$607,863,000	30	\$6,426,238	90						

2022	72585	University of California Los Angeles	YES	CA	SU	\$1,454,880,000	58	\$7,466,513	292	194	14	0.09623	51320.4732	1.33344	0.39866
2022	88629	University of California Merced	NO	CA	SU	\$45,964,000	0	\$0	13	5	0	0.00000	0	0.08781	0.00000
2022	72586	University of California Riverside	YES	CA	SU	\$189,600,000	8	\$9,179,921	51	32	1	0.05274	484173.049	1.68776	0.42194
2022	72587	University of California San Diego	YES	CA	SU	\$1,425,499,000	106	\$26,862,572	395	172	11	0.07717	188443.289	1.20660	0.74360
2022	93281	University of California San Francisco	YES	CA	4HRI	\$1,710,036,000	22	\$27,030,602	247	96	5	0.02924	158070.368	0.56139	0.12865
2022	80291	University of California Santa Barbara	NO	CA	SU	\$248,961,000	12	\$5,800,387	54	42	1	0.04017	232983.761	1.68701	0.48200
2022	72589	University of California Santa Cruz	NO	CA	SU	\$160,615,000	2	\$4,731,397	39	29	1	0.06226	294580.021	1.80556	0.12452
2019	95188	University of California System	Yes	CA	SU	\$6,988,400,000	325	\$103,761,000	1726	1463	102	0.12596	148476.046	2.09347	0.46506
2020	95188	University of California System	Yes	CA	SU	\$7,291,419,000	323	\$107,945,000	1624	1532	98	0.13440	148043.886	2.10110	0.44299
2021	95188	University of California System	Yes	CA	SU	\$7,500,000,000	353	\$135,170,000	1628	905	80	0.10667	180226.667	1.20667	0.47067
2022	72583	University of California Davis	YES	CA	SU	\$883,807,000	46	\$13,886,000	131	109	10	0.11315	157115.75	1.23330	0.52048
2019	72354	University of Central Florida	Yes	FL	SU	\$225,085,000	28	\$1,272,771	126	75	5	0.22214	56546.2381	3.33207	1.24397
2020	72354	University of Central Florida	Yes	FL	SU	\$239,343,000	28	\$1,769,577	117	70	2	0.08356	73934.7714	2.92467	1.16987
2021	72354	University of Central Florida	Yes	FL	SU	\$218,596,000	27	\$2,716,130	111	57	0	0.00000	124253.417	2.60755	1.23516
2022	72354	University of Central Florida	YES	FL	SU	\$221,488,000	32	\$1,438,977	98	70	2	0.09030	64968.6213	3.16044	1.44477
2019	72355	University of Chicago	Yes	IL	SU		29		160	79		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2020	72355	University of Chicago	Yes	IL	SU	\$400,951,085	28		140	83		0.00000	0	2.07008	0.69834
2021	72355	University of Chicago	YES	IL	SU	\$436,115,586	34	\$22,020,000	146	136	5	0.11465	504912.017	3.11844	0.77961
2022	72355	University of Chicago	YES	IL	SU	\$514,318,731	22	\$23,046,172	197	121	9	0.17499	448091.244	2.35263	0.42775
2019	72356	University of Cincinnati	Yes	OH	SU	\$254,379,918	18	\$612,982	136	59	5	0.19656	24097.1066	2.31937	0.70760
2020	72356	University of Cincinnati	Yes	OH	SU	\$262,444,482	23	\$791,235	148		4	0.15241	30148.6621	0.00000	0.87638
2021	72356	University of Cincinnati	Yes	OH	SU	\$272,560,631	21	\$520,557	165	72	4	0.14676	19098.7597	2.64161	0.77047
2022	72356	University of Cincinnati	YES	OH	SU	\$308,203,859	26	\$528,909	142	68	6	0.19468	17161.0116	2.20633	0.84360
2021	72357	University of Colorado	Yes	CO	SU	\$1,214,789,782	109	\$22,689,452	267	443	25	0.20580	186776.777	3.64672	0.89727
2022	72357	University of Colorado	YES	CO	SU	\$1,274,884,316	141	\$24,058,275	293	520	28	0.21963	188709.475	4.07880	1.10598
2019	95192	University of Colorado System	No	CO	SU	\$984,067,213	79	\$25,105,003	309	535	13	0.13210	255114.718	5.43662	0.80279
2020	95192	University of Colorado System	Yes	CO	SU	\$996,614,816	93	\$24,310,790	330	559	22	0.22075	243933.66	5.60899	0.93316
2019	72358	University of Connecticut	Yes	CT	SU	\$286,764,000	22	\$580,257	90	57	2	0.06974	20234.6529	1.98770	0.76718
2020	72358	University of Connecticut	Yes	CT	SU	\$280,131,000	14	\$838,713	102	55	3	0.10709	29940.0281	1.96337	0.49977
2021	72358	University of Connecticut	Yes	CT	SU	\$302,329,000	11	\$1,121,166	91	52	5	0.16538	37084.3022	1.71998	0.36384
2022	72358	University of Connecticut	YES	CT	SU	\$367,557,000	12	\$627,112	90	67	7	0.19045	17061.6258	1.82285	0.32648
2019	72361	University of Delaware	No	DE	SU	\$160,779,912	6	\$392,522	45	68	2	0.12439	24413.622	4.22938	0.37318
2020	72361	University of Delaware	No	DE	SU	\$171,533,306	5	\$606,539	47	66	2	0.11660	35359.8385	3.84765	0.29149
2022	72361	University of Delaware	NO	DE	SU	\$221,720,615	7	\$3,444,098	38	51	2	0.09020	155335.037	2.30019	0.31571
2019	95196	University of Denver	No	CO	SU	\$41,400,000	2	\$160,000	4	2	0	0.00000	38647.343	0.48309	0.48309
2020	95196	University of Denver	No	CO	SU	\$37,300,000	0	\$1,000	2	4	0	0.00000	268.096515	1.07239	0.00000
2019	85863	University of Florida	Yes	FL	SU	\$719,462,566	261	\$94,715,889	355	188	14	0.19459	313681.13	2.61306	3.62771
2020	85863	University of Florida	Yes	FL	SU	\$755,113,407	272	\$58,695,546	413	266	16	0.21189	777307.693	3.52265	3.60211
2021	85863	University of Florida	Yes	FL	SU	\$959,966,823	275	\$41,002,021	315	439	7	0.07292	427119.146	4.57307	2.86468
2022	85863	University of Florida	YES	FL	SU	\$1,085,000,000	330	\$58,140,098	320	187	10	0.09217	353853.438	1.72350	3.04147
2019	84319	University of Georgia	No	GA	SU	\$477,536,000	182	\$11,044,558	202	45	6	0.12564	231281.16	0.94234	3.81123
2020	84319	University of Georgia	No	GA	SU	\$495,136,000	192	\$10,263,648	195	54	6	0.12118	207289.472	1.09061	3.87772
2021	84319	University of Georgia	No	GA	SU	\$493,944,000	151	\$10,865,604	152	44	7	0.14172	219976.435	0.89079	3.05703
2022	84319	University of Georgia	NO	GA	SU	\$545,631,000	146	\$11,258,343	147	56	5	0.09164	206336.205	1.02633	2.67580
2019	72371	University of Hawaii	Yes	HI	SU	\$299,439,000	7	\$206,687	41	25	2	0.06679	6902.47429	0.83489	0.23377
2020	72371	University of Hawaii	Yes	HA	SU	\$296,887,000	13	\$220,647	65	23	1	0.03368	7432.01959	0.77471	0.43788
2021	72371	University of Hawaii	Yes	HI	SU	\$292,097,000	12	\$267,524	72	18	2	0.06847	9158.73836	0.61623	0.41082
2022	72371	University of Hawaii	YES	HI	SU	\$297,970,000	8	\$301,658	53	14	2	0.06712	10123.7708	0.46985	0.26848
2019	72372	University of Houston	No	TX	SU	\$195,397,591	9	\$65,686,595	61	60	4	0.20471	3361689.09	3.07066	0.46060
2020	72372	University of Houston	Yes	TX	SU	\$200,000,000	12	\$59,116,380	78	94	3	0.15000	2955819	4.70000	0.60000
2021	72372	University of Houston	Yes	TX	SU	\$203,100,000	24	\$66,006,876	77	69	4	0.19695	3249969.28	3.39734	1.18168
2022	72372	University of Houston	TX	TX	SU	\$170,616,138	15	\$70,629,132	62	144	7	0.65350	6593696.65	13.44335	1.40035
2019	72373	University of Idaho		ID	SU	\$113,107,178	3	\$2,594,965	26	4	0	0.00000	229425.316	0.35365	0.26524
2020	72373	University of Idaho	No	ID	SU	\$112,810,458	4	\$3,355,358	34	11	6	0.53187	297433.24	0.97509	0.35458
2022	72373	University of Idaho	NO	ID	SU	\$115,603,021	7	\$2,517,651	20	10	6	0.51902	217784.187	0.86503	0.60552
2022	82839	University of Illinois	YES	IL	SU	\$1,206,482,000	83	\$36,662,303	334	160	9	0.07460	303877.745	1.32617	0.68795
2021	95202	University of Illinois at Urbana-Champaign	Yes	IL	SU	\$1,161,126,000	107	\$45,649,170	355	150	8	0.06890	393145.705	1.29185	0.92152
2019	95202	University of Illinois Chicago Urbana	Yes	IL	SU	\$1,060,472,000	86	\$47,166,693	421	150	6	0.05658	44470.753	1.41446	0.81096
2020	95202	University of Illinois Chicago Urbana-Champaign	Yes	IL	SU	\$1,101,323,000	116	\$54,232,350	401	111	14	0.12712	492429.106	1.00788	0.10528
2019	92675	University of Iowa Research Foundation	Yes	IA	SU	\$467,877,095	48	\$1,772,332	83	37	5	0.10687	37880.2899	0.79081	1.02591
2020	92675	University of Iowa Research Foundation	Yes	IA	SU	\$490,133,594	37	\$1,568,369	95	41	3	0.06121	31998.8064	0.83651	0.75490
2021	92675	University of Iowa Research Foundation	Yes	IA	SU	\$532,015,218	47	\$1,812,303	101	33	5	0.09398	34064.8714	0.62028	0.88343
2022	92675	University of Iowa Research Foundation	YES	IA	SU	\$576,754,396	48	\$3,647,357	103	36	3	0.05202	63239.3446	0.62418	0.83224
2019	92679	University of Kansas	Yes	KS	SU	\$263,871,170	61	\$10,952,457	64	45	7	0.26528	415068.346	1.70538	2.31173
2020	92679	University of Kansas	Yes	KS	SU	\$275,401,741	35	\$8,087,081	62	38	4	0.14524	293646.691	1.37980	1.27087
2021	92679	University of Kansas	Yes	KS	SU	\$292,575,520	36	\$6,743,677	61	43	5	0.17090	230493.549	1.46971	1.23045
2022	92679	University of Kansas	YES	KS	SU	\$303,584,216	16	\$6,898,326	55	41	1	0.03294	227229.402	1.35053	0.69174
2019	72379	University of Kentucky Research Foundation	Yes	KY	SU	\$336,737,640	18	\$2,271,460	104	67	4	0.11879	67454.8886	1.98968	0.53454
2020	72379	University of Kentucky Research Foundation	Yes	KY	SU	\$350,012,433	17	\$2,943,622	117	71	5	0.12485	84100.4982	2.02850	0.48570
2021	72379	University of Kentucky Research Foundation	Yes	KY	SU	\$466,458,444	40	\$2,652,832	99	67	6	0.12863	56871.7757	1.43636	0.85753
2022	72379	University of Kentucky Research Foundation	YES	KY	SU	\$441,559,539	22	\$1,625,917	91	41	3	0.06974	36822.1464	0.92853	0.49823
2019	2E+07	University of Louisiana at Lafayette	No	LA	SU	\$144,187,000	2	\$29,707	17	22	1	0.06935	2060.31057	0.15280	0.13871
2019	71648	University of Louisville	Yes	KY	SU	\$173,462,000	20	\$762,593	98	54	5	0.28825	43963.1158	3.11307	1.15299
2020	71648	University of Louisville	Yes	KY	SU	\$198,818,000	18	\$455,280	80	40	7	0.35208	22899.3351	2.01189	0.90535
2021	71648	University of Louisville	Yes	KY	SU	\$200,362,000	17	\$833,311	77	44	2	0.09982	41590.2716	2.19603	0.84846
2022	71648	University of Louisville	YES	KY	SU	\$229,582,000	7	\$778,325	46	17	1	0.04356	33901.8303	0.74048	0.30490
2020	95208	University of Maine	No	ME	SU	\$138,194,536	8	\$519,019	24	16	4	0.28945	37557.1289	1.15779	0.57889
2019	113214	University of Massachusetts System	Yes		SU	\$683,650,000	27	\$49,108,251	204	114	10	0.14627	718324.45	1.66752	0.39494

2020	96042	University of Nebraska Medical Center	Yes	NE	5U	\$435,889,516	55	\$6,977,503	212	128	6	0.13765	160075.036	2.93652	1.26179
2019	95226	University of Nevada at Las Vegas	Yes	NV	5U	\$99,445,000	9	\$405,122	39	8	1	0.10056	40738.2976	0.80446	0.90502
2019	72596	University of Nevada at Reno	Yes	NV	5U	\$152,128,000	5	\$333,556	23	36	1	0.06573	21926.0097	2.36643	0.32867
2020	72596	University of Nevada at Reno	Yes	NV	5U	\$159,790,000	8	\$384,732	35	13	5	0.31291	24077.3515	0.81357	0.50066
2021	72596	University of Nevada at Reno	Yes	NV	5U	\$175,386,000	7	\$472,299	34	25	2	0.11403	26929.1163	1.42543	0.39912
2022	72596	University of Nevada at Reno	YES	NV	5U	\$181,782,000	4	\$495,755	34	10	1	0.05501	27271.9521	0.55011	0.22004
2019	72399	University of New Hampshire	No		5U	\$148,980,000	80	\$1,050,000	47	8	1	0.06712	70479.259	0.53698	5.36985
2020	72399	University of New Hampshire	No	NH	5U	\$156,901,000	149	\$1,321,512	58	3	0	0.00000	84225.8494	0.19120	9.49643
2021	72399	University of New Hampshire	No	NH	5U	\$138,000,000	138	\$1,385,366	106	1	1	0.07246	100388.841	0.07246	10.00000
2022	72399	University of New Hampshire	NO	NH	5U	\$175,000,000	138	\$1,893,260	83	1	0	0.00000	108186.286	0.05714	7.88571
2019	95228	University of New Mexico/Sci. & Tech. Corp.	Yes	NM	5U	\$239,695,611	53	\$1,330,634	124	102	11	0.45892	55513.4904	4.25540	2.21114
2020	95228	University of New Mexico/Sci. & Tech. Corp.	Yes	NM	5U	\$243,375,266	47	\$52,341,706	127	77	4	0.16436	2150658.4	3.16384	1.93117
2021	95228	University of New Mexico/Sci. & Tech. Corp.	Yes	NM	5U	\$332,565,903	43	\$54,521,482	81	64	6	0.18042	1639418.88	1.92443	1.29298
2019	95230	University of North Carolina at Chapel Hill	Yes	NC	5U	\$867,016,132	80	\$7,537,033	178	79	11	0.12687	86930.7124	0.91117	0.92270
2019	2E+07	University of North Carolina Wilmington	No	NC	5U	\$17,515,000	8	\$45,000	7	0	1	0.57094	25692.2638	0.00000	4.56751
2020	72401	University of North Carolina Chapel Hill	Yes	NC	5U	\$865,394,712	58	\$5,518,421	170	95	4	0.04622	63767.6765	1.09776	0.67021
2021	72401	University of North Carolina Chapel Hill	Yes	NC	5U	\$908,207,588	86	\$31,518,615	149	81	12	0.13213	347041.969	0.89187	0.94692
2022	72401	University of North Carolina Chapel Hill	YES	NC	5U	\$1,203,086,662	79	\$11,798,363	140	98	6	0.04987	98067.4408	0.81457	0.65664
2019	72597	University of North Carolina Charlotte	No	NC	5U	\$45,045,180	5	\$124,691	23	45	4	0.88800	27681.3191	9.98997	1.11000
2020	72597	University of North Carolina Charlotte	No	NC	5U	\$46,739,879	5	\$101,110	34	58	4	0.85580	21632.4907	12.40910	1.06975
2021	72597	University of North Carolina Charlotte	No	NC	5U	\$45,689,727	9	\$100,044	16	46	3	0.65660	21896.3882	10.06791	1.96981
2022	72597	University of North Carolina Charlotte	NO	NC	5U	\$46,500,175	8	\$340,892	27	35	4	0.86021	73309.8316	7.52685	1.72042
2020	82857	University of North Florida	No	FL	5U	\$12,595,994	1	\$70	1	5	0	0.00000	55.5732243	3.96952	0.79390
2021	82857	University of North Florida	No	FL	5U	\$15,782,000	0	\$357	0	7	0	0.00000	226.207071	4.43543	0.00000
2022	82857	University of North Florida	NO	FL	5U	\$18,394,000	0	\$1,059	0	4	0	0.00000	575.731217	2.17462	0.00000
2019	92673	University of North Texas Denton	No	TX	5U	\$23,896,158	10	\$333,100	44	10	6	2.51086	139394.793	4.18477	4.18477
2020	92673	University of North Texas Denton	No	TX	5U	\$28,210,405	13	\$225,557	42	12	2	0.70896	79955.2506	4.25375	4.60823
2021	92673	University of North Texas Denton	No	TX	5U	\$81,100,000	35	\$155,023	45	25	0	0.00000	19115.0432	3.08261	4.31566
2022	92673	University of North Texas Denton	NO	TX	5U	\$91,315,937	12	\$135,577	41	16	1	0.10951	14847.025	1.75216	1.31412
2019	72404	University of North Texas Health Science Center	Yes	TX	5U	\$46,782,830	1	\$28,550	24	6	1	0.21375	6102.6663	1.28252	0.21375
2020	72404	University of North Texas Health Science Center	Yes	TX	5U	\$45,170,309	1	\$25,844	8	0	0	0.00000	5721.45743	0.00000	0.22138
2021	72404	University of North Texas Health Science Center	Yes	TX	5U	\$53,338,710	3	\$105,718	17	6		0.00000	19820.1269	1.12489	0.56244
2022	72404	University of North Texas Health Science Center	YES	TX	4HRI	\$59,223,276	3	\$310,187	6	5	0	0.00000	52375.8598	0.84426	0.50656
2019	72406	University of Northern Iowa	No	IA	5U	\$40,865,000	3	\$45,000	10	2	1	0.24471	11011.8683	0.48942	0.73412
2020	72406	University of Northern Iowa	No	IA	5U	\$46,865,000	4	\$68,000	10	2	1	0.21338	14509.7621	0.42676	0.85352
2021	72406	University of Northern Iowa	No	IA	5U	\$46,500,000	4	\$38,000	12	2	1	0.21505	8172.04301	0.43011	0.86022
2022	72406	University of Northern Iowa	NO	IA	5U	\$36,500,000	3	\$46,500	12	2	1	0.27397	12739.726	0.54795	0.82192
2019	72407	University of Notre Dame	No	IN	5U	\$240,077,996	6	\$970,533	51	31	4	0.16661	40425.7373	1.29125	0.24992
2020	72407	University of Notre Dame	No	IN	5U	\$227,077,367	5	\$995,734	56	29	4	0.17615	43849.9888	1.27710	0.22019
2021	72407	University of Notre Dame	No	IN	5U	\$222,708,801	15	\$863,007	67	69	6	0.26941	38750.4668	3.09822	0.67353
2022	72407	University of Notre Dame	NO	IN	5U	\$278,000,000	16	\$730,411	67	99	7	0.25180	26273.777	3.56115	0.57554
2019	92722	University of Oklahoma all campuses	Yes	OK	5U	\$299,661,667	4	\$1,520,596	65	49	2	0.06674	50743.761	1.63518	0.13348
2020	92722	University of Oklahoma all campuses	Yes	OK	5U	\$287,151,848	5	\$3,832,716	51	10	2	0.06965	133473.492	0.34825	0.17412
2021	92722	University of Oklahoma all campuses	Yes	OK	5U	\$288,382,012	7	\$490,607	56	32	2	0.06935	17012.3995	1.10964	0.24273
2022	92722	University of Oklahoma all campuses	YES	OK	5U	\$308,428,747	6	\$1,719,514	65	33	1	0.03242	55750.7696	1.06994	0.19453
2019	72411	University of Oregon	No	OR	5U	\$382,882,901	1387	\$9,988,827	49	10	1	0.11314	113017.641	1.13144	#####
2020	72411	University of Oregon	No	OR	5U	\$86,220,000	1110	\$10,358,204	41	8	2	0.23196	1201369.06	0.92786	#####
2021	72411	University of Oregon	No	OR	5U	\$90,700,000	1351	\$9,183,710	41	7	1	0.11025	1012536.93	0.77178	#####
2022	72411	University of Oregon	NO	OR	5U	\$152,973,682	1095	\$10,581,033	45	12	1	0.06537	691689.764	0.78445	71.58094
2019	72416	University of Pennsylvania	Yes	PA	5U	\$1,031,159,764	197	\$113,674,052	364	121	13	0.12607	1102390.3	1.17344	1.73591
2020	72416	University of Pennsylvania	Yes	PA	5U	\$1,046,659,899	175	\$30,617,752	360	116	21	0.20064	292528.184	1.10829	1.67199
2021	72416	University of Pennsylvania	Yes	PA	5U	\$1,121,058,790	289	\$310,163,188	328	141	24	0.21408	2766698.68	2.57774	2.57792
2022	72416	University of Pennsylvania	YES	PA	5U	\$1,252,048,359	259	\$1,258,637,000	363	173	24	0.19169	10052622.9	1.38174	2.06861
2019	100267	University of Pittsburgh	Yes	PA	5U	\$859,690,000	162	\$5,204,369	367	78	17	0.19775	60537.7403	0.90730	1.88440
2020	100267	University of Pittsburgh	Yes	PA	5U	\$94,888,000	132	\$8,594,719	394	122	15	0.16762	96042.3986	1.36330	1.47504
2021	100267	University of Pittsburgh	Yes	PA	5U	\$953,965,000	109	\$9,068,196	315	117	17	0.17820	95057.9529	1.22646	1.14260
2022	100267	University of Pittsburgh	YES	PA	5U	\$1,065,233,000	92	\$8,756,074	334	141	11	0.10326	82198.6739	1.32365	0.86366
2019	72424	University of Rhode Island	No	RI	5U	4	\$49,073	42	20	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
2020	72424	University of Rhode Island	No	RI	5U	3	\$324,563	17	11	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
2022	72424	University of Rhode Island	NO	RI	5U	0	\$62,936	14	6	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
2019	72425	University of Rochester	Yes	NY	5U	\$407,392,000	26	\$1,529,394	122	61	3	0.07364	37541.0906	1.49733	0.63821
2020	72425	University of Rochester	Yes	NY	5U	\$400,596,000	37	\$1,791,704	117	41	2	0.04993	44725.9583	1.02348	0.92362
2021	72425	University of Rochester	Yes	NY	5U	\$417,976,000	49	\$2,257,111	101	49	3	0.07177	54000.9713	1.17232	1.17232
2022	72425	University of Rochester	YES	NY	5U	\$459,920,000	26	\$6,092,038	116	63	3	0.06523	132458.645	1.36980	0.56532
2019	72428	University of South Alabama	Yes	AL	5U	\$87,096,011	3	\$100,883	24	15	0	0.00000	11582.9645	1.72224	0.34445
2020	72429	University of South Carolina	Yes	SC	5U	\$212,009,000	8	\$68,225	79	75	2	0.09434	3218.02376	3.53759	0.37734
2020	72429	University of South Carolina	Yes	SC	5U	\$219,464,000	9	\$47,827	60	61	2	0.09113	2179.26403	2.77950	0.41009
2021	72429	University of South Carolina	Yes	SC	5U	\$215,374,000	6	\$102,828	63	58	5	0.23215	4774.39245	2.69299	0.27859
2022	72429	University of South Carolina	YES	SC	5U	\$229,162,000	8	\$119,660	63	65	5	0.21819	5221.6336	2.83642	0.34910
2019	72431	University of South Florida		FL	5U	\$405,000,000	98	\$3,690,000	173	104	6	0.14815	91111.1111	2.56790	2.41975
2020	72431	University of South Florida	No	FL	5U	\$353,737,000	102	\$1,776,745	189		11	0.31097	50227.8529	0.00000	2.88350
2021	72431	University of South Florida	Yes	FL	5U	\$405,000,000	98	\$2,256,524	192	119	11	0.27160	55716.642	2.93827	2.41975
2022	72431	University of South Florida	YES	FL	5U	\$405,166,000	99	\$4,821,088	185	138	11	0.27149	118990.438	3.40601	2.44344
2019	72432	University of Southern California	Yes	CA	5U	\$909,683,000	50	\$4,266,562	211	93	7	0.07695	46901.635	1.02233	0.54964
2020	72432	University of Southern California	Yes	CA	5U	\$941,198,000	35	\$5,582,320	250	103	7	0.07437	59310.7933	1.09435	0.37187
2021	72432	University of Southern California	Yes	CA	5U	\$955,565,000	59	\$5,910,688	249	97	11	0.11512	61855.4258	1.01511	0.61744
2022	72432	University of Southern California	YES	CA	5U	\$1,039,905,000	29	\$2,412,306	193	113	4	0.03847	23197.369	1.08664	0.27887
2019	72438	University of Tennessee	Yes	TN	5U	\$425,711,731	30	\$776,966	168	64	1	0.02349	18250.9887	1.50336	0.70470
2020	72438	University of Tennessee	Yes	TN	5U	\$341,263,29									

2022	86076	University of Virginia Patent Foundation	YES	VA	5U	\$670,849,057	85	\$3,349,643	226	79	5	0.07453	49931.3961	1.17761	1.26705
2019	72455	University of Washington	Yes	WA	5U	\$1,320,000,000	411	\$19,110,830	287	160	14	0.10606	144779.015	1.21212	3.11364
2020	72455	University of Washington	Yes	WA	5U		457	\$27,364,553	300	165	13	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2021	72455	University of Washington	Yes	WA	5U	\$1,890,000,000	413	\$23,683,812	277	163	9	0.04762	125311.175	0.86243	2.18519
2022	72455	University of Washington	YES	WA	5U	\$1,610,000,000	470	\$26,682,584	274	147	12	0.07453	165730.335	0.91304	2.91925
2019	72539	University of Wisconsin-Madison/Wisconsin Alumni Research Foundation	Yes	WI	5U	\$1,297,331,000	68	\$17,190,000	342	130	10	0.07708	132502.808	1.00206	0.52415
2020	72539	University of Wisconsin-Madison/Wisconsin Alumni Research Foundation	Yes	WI	5U	\$1,365,553,000	69	\$15,991,000	380	115	7	0.05126	117102.742	0.84215	0.50529
2021	72539	University of Wisconsin-Madison/Wisconsin Alumni Research Foundation	Yes	WI	5U	\$1,380,075,000	68	\$17,820,000	359	114	3	0.02174	129123.417	0.82604	0.49273
2022	72539	University of Wisconsin-Madison/Wisconsin Alumni Research Foundation	YES	WI	5U	\$1,523,513,000	79	\$15,600,000	359	156	5	0.03282	102394.925	1.02395	0.51854
2019	92705	University System of Maryland	Yes	MD	5U	\$1,216,024,294	68	\$3,717,530	331	198	19	0.15625	30571.182	1.62826	0.55920
2020	92705	University System of Maryland	Yes	MD	5U	\$1,081,772,349	61	\$4,566,623	352	202	17	0.15715	42214.27	1.86731	0.56389
2021	92705	University System of Maryland	Yes	MD	5U	\$1,143,455,058	81	\$2,922,208	313	200	22	0.19240	25555.9497	1.74908	0.70838
2022	92705	University System of Maryland	YES	MD	5U	\$1,178,636,835	53	\$3,398,167	324	187	14	0.11878	28831.3321	1.58658	0.44967
2019	72092	University Wisconsin-Milwaukee Research Foundation	No	WI	5U	\$53,114,540	5	\$26,954	47	14	1	0.18827	5074.69329	2.63581	0.94136
2020	72092	University Wisconsin-Milwaukee Research Foundation	No	WI	5U	\$60,320,869	8	\$32,269	58	8	2	0.33156	5349.55821	1.32624	1.32624
2021	72092	University Wisconsin-Milwaukee Research Foundation	No	WI	5U	\$54,949,031	8	\$22,591	30	9	2	0.36397	4111.26449	1.63788	1.45589
2022	72092	University Wisconsin-Milwaukee Research Foundation	NO	WI	5U	\$56,584,065	4	\$20,505	40	14	2	0.35346	3623.81176	2.47419	0.70691
2022	72155	UNM Rainforest Innovations	YES	NM	5U	\$331,163,952	41	\$5,436,153	94	57	8	0.24157	164152.921	1.72120	1.23806
2019	72010	Utah State University	No	UT	5U	\$283,916,774	29	\$1,968,230	33	11	0	0.00000	69324.1886	0.38744	1.02143
2020	72010	Utah State University	No	UT	5U	\$304,255,724	22	\$1,698,829	51	18	2	0.06573	55835.5642	0.59161	0.72308
2022	72010	Utah State University	NO	UT	5U	\$344,852,385	21	\$2,880,526	29	15	0	0.00000	83529.2469	0.43497	0.60896
2019	92609	Vanderbilt University	Yes	TN	5U	\$776,937,267	90	\$11,734,219	197	122	4	0.05148	151031.743	1.57027	1.15839
2020	92609	Vanderbilt University	Yes	TN	5U	\$242,803,765	94	\$20,242,075	168	121	5	0.06062	245416.86	1.46702	1.13967
2021	92609	Vanderbilt University	Yes	TN	5U	\$1,019,273,243	99	\$11,415,330	173	124	8	0.07849	111994.797	1.21655	0.97128
2022	92609	Vanderbilt University	YES	TN	5U	\$1,086,223,000	99	\$88,365,676	165	128	2	0.01841	813513.21	1.17840	0.91142
2020	96044	Versiti Blood Research Institute		WI	4HRI	\$11,575,574	3	\$958,226	6	4	0	0.00000	827799.986	3.45555	2.59166
2019	72501	Virginia Commonwealth University	Yes	VA	5U	\$259,457,359	23	\$2,598,518	114	187	6	0.23125	100152.025	7.20735	0.88647
2020	72501	Virginia Commonwealth University	Yes	VA	5U	\$291,902,698	22	\$2,480,057	133	170	7	0.23981	84961.7704	5.82386	0.75368
2021	72501	Virginia Commonwealth University	Yes	VA	5U	\$364,096,198	24	\$3,755,301	160	170	7	0.19226	103140.352	4.66910	0.65917
2022	72501	Virginia Commonwealth University	YES	VA	5U	\$405,737,016	28	\$3,124,408	122	143	10	0.24647	77005.7421	3.52445	0.69010
2020	72502	Virginia Tech Intellectual Properties Inc.	Yes	VA	5U	\$556,341,000	27	\$1,432,014	127	123	6	0.10785	25739.861	2.21087	0.48531
2021	72502	Virginia Tech Intellectual Properties Inc.	Yes	VA	5U	\$542,045,000	27	\$1,448,966	142	145	7	0.12914	26731.4706	2.67505	0.49811
2022	72502	Virginia Tech Intellectual Properties Inc.	YES	VA	5U	\$591,900,000	43	\$1,520,982	169	180	10	0.16895	25696.6042	3.04105	0.72647
2020	72506	Wake Forest University		NC	5U	\$265,000,000	11	\$403,000	56	12	4	0.15094	15207.5472	0.45283	0.41509
2021	72506	Wake Forest University	Yes	NC	5U	\$225,992,619	8	\$926,853	38	35	1	0.04425	41012.5341	1.54872	0.35399
2022	72506	Wake Forest University	YES	NC	5U	\$258,102,485	6	\$1,266,751	31	22	1	0.03874	49079.3802	0.85237	0.23247
2019	92741	Washington State University	Yes	WA	5U	\$211,913,753	63	\$6,774,241	99	69	5	0.23595	319669.72	3.25604	2.97291
2020	92741	Washington State University	Yes	WA	5U	\$209,324,265	78	\$6,488,304	75	56	8	0.38218	309964.256	2.67528	3.72628
2021	92741	Washington State University	Yes	WA	5U	\$227,717,556	67	\$9,492,215	61	48	3	0.13174	416841.598	2.10787	2.94224
2022	92741	Washington State University	YES	WA	5U	\$320,056,365	47	\$15,162,236	54	46	2	0.06249	473736.431	1.43725	1.46849
2019	72513	Washington University in St. Louis	Yes	MO	5U	\$865,000,000	116	\$10,760,618	221	129	7	0.08092	124400.208	1.49133	1.34104
2020	72513	Washington University in St. Louis	Yes	MO	5U	\$946,000,000	142	\$8,286,243	241	156	7	0.07400	87592.4207	1.64905	1.50106
2021	72513	Washington University in St. Louis	Yes	MO	5U	\$953,000,000	163	\$58,227,731	241	187	6	0.06296	610994.029	1.96222	1.71039
2022	72513	Washington University in St. Louis	YES	MO	5U	\$1,104,000,000	232	\$14,651,967	251	179	6	0.05435	132717.092	1.62138	2.01045
2019	72514	Wayne State University	Yes	MI	5U	\$244,217,000	5	\$715,247	59	14	1	0.04095	29287.3551	0.57326	0.20474
2020	72514	Wayne State University	Yes	MI	5U	\$243,259,000	7	\$817,203	47	29	0	0.00000	33593.9472	1.19214	0.28776
2021	72514	Wayne State University	Yes	MI	5U	\$235,519,000	13	\$355,058	33	16	2	0.08492	15075.5565	0.67935	0.55197
2022	72514	Wayne State University	YES	MI	5U	\$242,247,000	6	\$428,585	47	25	2	0.08256	17692.0664	1.03200	0.24768
2020	72518	West Virginia University	Yes	WV	5U	\$99,851,921	4	\$184,736	76	43	1	0.10015	18500.9961	4.30638	0.40059
2021	72518	West Virginia University	Yes	WV	5U	\$105,732,972	8	\$163,301	49	20	2	0.18916	15444.6619	1.89156	0.75662
2022	72518	West Virginia University	YES	WV	5U	\$127,845,646	1	\$276,201	64	34	1	0.07822	21604.2555	2.65946	0.07822
2020	72526	Whitehead Institute for Biomedical Research	No	MA	4HRI	\$39,259,000	21	\$11,115,542	12	6	4	1.01887	2831336	1.52831	5.34909
2021	72526	Whitehead Institute for Biomedical Research	No	MA	4HRI	\$48,766,000	8	\$33,390,550	14	7	0	0.00000	6847096.34	1.43543	1.64049
2022	72526	Whitehead Institute for Biomedical Research	NO	MA	4HRI	\$50,846,000	16	\$42,854,346	14	11	1	0.19667	8428262.99	2.16340	3.14676
2019	95279	Wistar Institute	No	PA	5U	\$68,301,000	53	\$6,620,000	45	37	2	0.29282	969239.103	5.41720	7.75977
2020	95279	Wistar Institute		PA	4HRI	\$68,063,000	51	\$4,728,000	54	42	0	0.00000	694650.544	6.17075	7.49306
2021	95279	Wistar Institute	No	PA	4HRI	\$68,226,000	60	\$5,044,000	61	28	0	0.00000	739307.595	4.10401	8.79430
2019	98001	WiSys Technology Foundation	No	WI	5U	\$20,180,264	8	\$178,000	61	12	2	0.99107	88204.9908	5.94640	3.96427
2020	98001	WiSys Technology Foundation	No	WI	5U	\$12,718,156	4	\$113,629	63	14	2	1.57256	89343.9269	11.00789	3.14511
2021	98001	WiSys Technology Foundation	No	WI	5U	\$20,267,457	6	\$119,392	65	8	3	1.48021	58908.2291	3.94721	2.96041
2022	98001	WiSys Technology Foundation	NO	WI	4HRI	\$24,764,623	6	\$128,749	32	6	1	0.40380	51989.0814	2.42281	2.42281
2020	95280	Woods Hole Oceanographic Institute	No	MA	5U		1	\$451,548	31		1	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2022	72548	Woods Hole Oceanographic Institution	NO	MA	4HRI	\$258,948,987	5	\$501,370	45	13	1	0.03862	19361.7286	0.50203	0.19309
2019	93455	Worcester Polytechnic Institute	No	MA	5U	\$32,000,000	14	\$38,000	60	31	4	1.25000	11875	9.68750	4.37500
2020	93455	Worcester Polytechnic Institute	No	MA	5U	\$31,800,000	15	\$38,373	60	24	4	1.25786	12066.9811	7.54717	4.71698
2021	93455	Worcester Polytechnic Institute	No	MA	5U	\$38,425,000	14	\$217,500	42	33	5	1.30124	56603.7736	8.58816	3.64346
2022	93455	Worcester Polytechnic Institute	NO	MA	5U	\$40,800,000	7	\$119,155	48	44	4	0.98039	29204.6569	10.78431	1.71569
2019	72554	Wright State University	Yes	OH	5U	\$64,208,000	0	\$43,382	15	7	0	0.00000	6756.47894	1.09021	0.00000
2020	72554	Wright State University	Yes	OH	5U	\$49,825,000	1	\$207,127	7	2	1	0.20070	41570.8981	0.40140	0.20070
2021	72554	Wright State University	Yes	OH	5U	\$26,259,000	0	\$2,324	3	0	0	0.00000	885.02895	0.00000	0.00000
2022	72554	Wright State University		OH	5U	\$27,440,000	0	\$899	2	1	0	0.00000	327.623907	0.36443	0.00000
2021	72559	Yale University	Yes	CT	5U	\$876,937,000	181	\$10,303,436	221	592	14	0.15965	117493.457	6.75077	2.06400
2022	72559	Yale University	YES	CT	5U	\$962,000,000	70	\$11,474,261	259	1079	13	0.13514	119275.062	11.21622	0.72765
2020	95103	Zucker Institute for Innovation Commercialization	Yes	SC	5U	\$271,300,000	19	\$1,010,541	156	38	3	0.11058	37248.1017	1.40066	0.70033
2019	Confidentials					\$1,232,280,179	93	\$11,647,218	432	80	14	0.11361	94517.6121	0.64920	0.75470
2020	Confidentials					\$1,568,306,572	151	\$13,314,169	440	126	27	0.17216	84895.1936	0.80341	0.96282
2021	Confidentials					\$2,096,813,259	390	\$105,389,918	583	1988	6	0.02861	502619.475	9.48105	1.85997
2022	Confidentials					\$4,744,836,728	482	\$148,279,085	1121	2272					

APPENDIX V

Lansing Occupation Distribution by Cluster

Manufacturing (CTE Cluster) in Lansing-East Lansing, MI MSA, 2023Q4¹

SOC	Occupation	Current			Online Job		5-Year History		5-Year Forecast					
		Empl	Median Ann Wages ²	LQ	Unempl	Unempl Rate	Ads ³	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
51-2092	Team Assemblers	4,297	\$52,700	2.49	192	4.8%	n/a	242	1.2%	2,301	857	1,588	-143	-0.7%
49-9071	Maintenance and Repair Workers, General First-Line Supervisors of Production and Operating Workers	2,274	\$37,100	1.01	88	4.1%	329	11	0.1%	989	495	517	-23	-0.2%
51-1011	Inspectors, Testers, Sorters, Samplers, and Weighers	984	\$68,200	1.03	24	2.4%	64	20	0.4%	414	172	268	-27	-0.6%
51-9061	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	889	\$42,200	1.07	38	3.8%	39	81	1.9%	454	180	309	-35	-0.8%
51-4031	Industrial Machinery Mechanics	778	\$43,100	2.98	25	3.3%	4	12	0.3%	280	126	222	-68	-1.8%
49-9041	Assemblers and Fabricators, All Other	690	\$64,000	1.21	10	1.5%	8	128	4.2%	313	130	148	36	1.0%
51-2099	First-Line Supervisors of Mechanics, Installers, and Repairers	653	\$52,700	1.86	28	4.8%	3	-131	-3.6%	344	129	240	-25	-0.8%
49-1011	Machinists	651	\$78,600	0.80	8	1.2%	74	58	1.9%	252	125	138	-10	-0.3%
51-4041	Welders, Cutters, Solderers, and Brazers	595	\$51,200	1.29	11	1.8%	25	-64	-2.0%	265	116	165	-16	-0.5%
51-4121	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	513	\$37,400	2.23	28	5.3%	20	-17	-0.7%	195	79	140	-24	-0.9%
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	478	\$62,400	0.99	8	1.5%	45	27	1.2%	205	72	164	-31	-1.3%
51-9111	Packaging and Filling Machine Operators and Tenders	401	\$40,800	0.76	29	7.3%	1	4	0.2%	214	96	118	0	0.0%
43-5061	Production, Planning, and Expediting Clerks	390	\$51,400	0.70	10	2.1%	25	45	2.5%	191	75	119	-4	-0.2%
51-9199	Production Workers, All Other	347	\$35,900	0.94	23	6.5%	102	-9	-0.5%	173	71	111	-9	-0.5%
51-9161	Computer Numerically Controlled Tool Operators	315	\$50,400	1.23	13	3.8%	9	16	1.0%	109	46	87	-23	-1.5%
51-4111	Tool and Die Makers	297	\$66,200	3.51	6	2.0%	7	-33	-2.1%	119	69	72	-22	-1.6%
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	259	\$45,800	1.06	13	5.7%	8	14	1.1%	111	38	76	-3	-0.2%
51-2031	Engine and Other Machine Assemblers	256	\$61,200	3.35	11	3.7%	n/a	88	8.8%	103	66	72	-35	-2.9%
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	251	\$62,500	1.28	1	0.5%	n/a	41	3.6%	110	48	70	-7	-0.6%
49-9099	Installation, Maintenance, and Repair Workers, All Other	210	\$49,800	0.77	8	3.8%	1	19	1.9%	94	39	57	-3	-0.3%
17-3027	Mechanical Engineering Technologists and Technicians	202	\$57,200	3.35	9	3.3%	3	6	0.6%	82	37	51	-6	-0.7%
51-9198	Helpers--Production Workers	183	\$36,900	0.68	10	6.1%	n/a	-127	-10.0%	121	58	76	-12	-1.4%
51-3021	Butchers and Meat Cutters	165	\$39,500	0.90	8	6.0%	4	-17	-1.9%	88	39	54	-5	-0.7%
51-2028	Electrical, Electronic, and Electromechanical Equipment Assemblers, Except Coil Winders, Tapers, and Finishers	162	\$42,700	0.40	12	5.8%	4	21	2.8%	76	39	44	-6	-0.8%
51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	153	\$47,900	1.45	6	4.5%	5	-8	-1.0%	63	28	46	-12	-1.6%
51-3092	Food Batchmakers	145	\$42,000	0.60	4	2.8%	0	45	7.6%	110	47	62	2	0.3%
51-8013	Power Plant Operators	142	\$98,600	3.03	0	n/a	6	-8	-1.1%	21	17	31	-27	-4.1%
51-9011	Chemical Equipment Operators and Tenders	136	\$54,000	0.82	5	3.4%	n/a	17	2.8%	54	21	40	-6	-0.9%
51-6031	Sewing Machine Operators	132	\$36,700	0.68	8	6.0%	n/a	-23	-3.2%	55	39	28	-13	-2.0%
17-3026	Industrial Engineering Technologists and Technicians	130	\$54,600	1.36	6	3.4%	10	6	1.0%	54	24	33	-3	-0.5%
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	95	\$45,100	2.01	3	4.5%	n/a	-12	-2.3%	37	13	30	-6	-1.2%
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	93	\$42,500	0.59	2	1.7%	n/a	-11	-2.2%	44	16	30	-2	-0.4%
51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	92	\$40,700	1.13	4	5.4%	n/a	18	4.3%	41	19	26	-3	-0.6%
17-3023	Electrical and Electronic Engineering Technologists and Technicians	91	\$66,100	0.64	0	n/a	15	-12	-2.5%	39	23	20	-3	-0.7%
51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	89	\$46,800	0.99	3	3.4%	n/a	-27	-5.2%	41	17	27	-3	-0.7%
49-2011	Computer, Automated Teller, and Office Machine Repairers	80	\$39,500	0.61	4	3.6%	2	-21	-4.6%	29	13	23	-6	-1.6%
17-3013	Mechanical Drafters	70	\$54,300	0.98	5	5.3%	17	-11	-2.8%	23	12	15	-4	-1.2%
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	69	\$41,700	1.18	1	1.0%	1	3	1.0%	33	17	16	-1	-0.2%
17-3029	Engineering Technologists and Technicians, Except Drafters, All Other	61	\$51,000	0.62	3	3.3%	3	5	1.6%	26	11	16	-1	-0.4%
51-2051	Fiberglass Laminators and Fabricators	61	\$41,800	1.83	3	4.7%	n/a	29	14.0%	29	12	19	-2	-0.6%
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	59	\$102,100	1.56	5	7.6%	n/a	-4	-1.3%	10	8	12	-10	-3.8%
51-9162	Computer Numerically Controlled Tool Programmers	59	\$65,400	1.47	2	3.7%	7	6	2.0%	30	9	18	2	0.8%
49-9062	Medical Equipment Repairers	56	\$67,700	0.61	4	5.3%	10	-2	-0.6%	27	11	15	1	0.4%
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	54	\$76,900	0.73	4	7.5%	6	-5	-1.7%	20	9	13	-2	-0.6%
51-7041	Sawing Machine Setters, Operators, and Tenders, Wood	54	\$40,900	0.82	4	7.7%	1	-12	-4.1%	29	12	18	-1	-0.3%
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	53	\$43,000	0.67	2	3.1%	n/a	10	4.5%	24	8	16	0	-0.1%
51-4193	Plating Machine Setters, Operators, and Tenders, Metal and Plastic	51	\$41,300	1.10	2	3.0%	n/a	-4	-1.6%	19	9	14	-4	-1.5%
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	49	\$41,300	0.65	1	1.2%	2	-7	-2.6%	28	13	16	-1	-0.6%
51-9081	Dental Laboratory Technicians	47	\$50,700	0.98	2	3.9%	8	-10	-3.9%	23	10	16	-3	-1.1%
19-4031	Chemical Technicians	45	\$45,800	0.56	1	1.7%	21	-3	-1.2%	25	5	21	-1	-0.4%
51-4022	Forging Machine Setters, Operators, and Tenders, Metal and Plastic	44	\$53,400	2.75	1	3.3%	2	-26	-8.9%	17	8	13	-3	-1.6%
51-9032	Cutting and Slicing Machine Setters, Operators, and Tenders	44	\$39,600	0.56	3	8.1%	7	-1	-0.6%	22	10	13	-1	-0.5%
49-2098	Security and Fire Alarm Systems Installers	43	\$51,700	0.36	3	6.8%	9	13	7.7%	22	8	14	0	-0.1%
51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	43	\$37,500	0.49	3	6.9%	n/a	-21	-7.8%	19	7	13	-1	-0.4%
51-9071	Jewelers and Precious Stone and Metal Workers	41	\$49,300	0.63	1	1.1%	n/a	3	1.4%	26	15	12	-1	-0.4%
51-4071	Foundry Mold and Coremakers	36	\$49,400	2.33	2	4.9%	n/a	1	0.5%	9	5	9	-5	-2.8%
51-9195	Molders, Shapers, and Casters, Except Metal and Plastic	36	\$42,700	0.59	3	5.9%	1	4	2.1%	20	9	12	-2	-1.2%
49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	35	\$49,300	0.63	1	4.1%	n/a	1	0.5%	17	9	10	-1	-0.8%
51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	35	\$51,100	0.87	1	3.2%	n/a	-3	-1.7%	14	6	10	-2	-1.4%
49-9031	Home Appliance Repairers	33	\$48,700	0.67	1	1.7%	1	-5	-2.5%	13	6	7	-1	-0.7%
51-4035	Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	33	\$44,000	1.48	0	n/a	n/a	-11	-5.6%	16	10	9	-3	-2.0%
51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	32	\$50,900	1.17	0	n/a	1	-27	-11.7%	16	10	9	-3	-1.7%

51-6093	Upholsterers	32	\$44,500	0.72	3	8.0%	n/a		-4	-2.4%	13	7	7	-1	-0.7%
51-4051	Metal-Refining Furnace Operators and Tenders	30	\$46,900	1.07	2	5.6%		0	1	1.0%	13	4	10	-1	-1.0%
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	27	\$63,500	0.58	2	8.0%	n/a		-9	-5.8%	10	5	8	-3	-2.3%
51-3099	Food Processing Workers, All Other	27	\$35,600	0.39	2	7.7%	n/a		2	1.5%	13	6	8	0	-0.2%
51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	27	\$41,500	1.22	1	3.0%		1	-4	-2.7%	10	5	7	-2	-1.6%
51-4199	Metal Workers and Plastic Workers, All Other	27	\$46,300	0.93	1	3.1%	n/a		-14	-8.3%	10	5	7	-2	-1.3%
51-7011	Cabinetmakers and Bench Carpenters	27	\$51,700	0.19	3	7.9%	n/a		-4	-2.8%	12	5	7	0	-0.4%
51-9082	Medical Appliance Technicians	27	\$51,700	1.15	1	3.7%	n/a		-2	-1.4%	15	6	9	-1	-0.5%
49-2092	Electric Motor, Power Tool, and Related Repairers	26	\$49,200	1.11	1	2.0%	n/a		-1	-0.4%	10	4	6	0	-0.1%
49-9043	Maintenance Workers, Machinery	25	\$57,500	0.27	1	3.2%	n/a		2	1.5%	11	6	5	0	-0.1%
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	23	\$41,600	0.12	2	6.6%	n/a		-5	-3.7%	13	6	8	-1	-0.5%
51-9196	Paper Goods Machine Setters, Operators, and Tenders	22	\$28,300	0.17	7	16.7%	n/a		5	4.8%	11	4	7	-1	-1.1%
51-4061	Model Makers, Metal and Plastic	21	\$69,600	4.15	4	16.7%	n/a		-14	-10.0%	6	3	5	-2	-2.3%
51-9021	Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	21	\$50,700	0.52	0	n/a		2	-2	-1.6%	9	4	6	-1	-0.9%
49-9094	Locksmiths and Safe Repairers	19	\$51,200	0.75	1	7.2%	n/a		3	4.1%	8	5	4	-2	-1.9%
51-4052	Pourers and Casters, Metal	19	\$49,000	2.08	1	5.5%	n/a		-5	-4.7%	8	3	6	-1	-1.1%
49-2021	Radio, Cellular, and Tower Equipment Installers and Repairers	18	\$64,500	1.00	0	n/a		6	5	6.2%	9	3	6	0	-0.3%
51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	18	\$55,400	0.80	1	4.1%	n/a		-2	-1.9%	9	4	6	-1	-0.6%
17-3024	Electro-Mechanical and Mechatronics Technologists and Technicians	17	\$58,200	0.79	1	3.3%		10	0	-0.1%	7	3	4	-1	-0.8%
51-4062	Patternmakers, Metal and Plastic	17	\$72,400	4.79	3	16.0%		1	-9	-8.6%	4	2	4	-2	-2.7%
53-7063	Machine Feeders and Offbearers	17	\$41,400	0.23	0	n/a		1	-14	-11.7%	13	7	6	0	0.4%
51-7099	Woodworkers, All Other	16	\$34,200	0.85	0	n/a	n/a		-5	-5.6%	8	4	4	-1	-1.1%
51-9192	Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	16	\$43,000	0.79	1	7.0%	n/a		0	-0.5%	8	3	5	0	-0.1%
51-9022	Grinding and Polishing Workers, Hand	15	\$38,400	0.71	0	n/a		2	-8	-8.0%	5	2	4	-2	-2.3%
17-3012	Electrical and Electronics Drafters	14	\$69,700	0.44	1	5.3%		4	-2	-2.2%	5	2	3	-1	-1.1%
49-2097	Audiovisual Equipment Installers and Repairers	14	\$46,600	0.38	0	n/a		3	-6	-6.8%	5	2	5	-1	-1.4%
51-8012	Power Distributors and Dispatchers	14	\$107,800	0.99	0	n/a	n/a		-1	-1.7%	2	2	3	-2	-3.7%
17-3019	Drafters, All Other	13	\$50,800	0.49	1	5.1%	n/a		0	0.6%	4	2	3	-1	-1.2%
51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	13	\$37,400	0.44	1	5.2%	n/a		1	1.5%	9	3	5	0	-0.1%
51-9083	Ophthalmic Laboratory Technicians	13	\$40,300	0.44	1	3.6%	n/a		-7	-7.7%	7	3	5	0	-0.5%
49-9063	Musical Instrument Repairers and Tuners	12	\$40,200	1.17	1	5.6%	n/a		-2	-3.3%	5	2	3	0	-0.8%
51-4194	Tool Grinders, Filers, and Sharpeners	12	\$50,500	1.61	0	n/a		2	-10	-11.1%	5	2	3	-1	-1.6%
51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	11	\$53,500	1.14	0	n/a		3	-17	-17.0%	5	3	3	-1	-2.7%
51-9191	Adhesive Bonding Machine Operators and Tenders	11	\$49,500	0.73	2	16.0%		6	-3	-4.8%	5	2	3	0	-0.5%
49-9081	Wind Turbine Service Technicians	10	\$58,600	0.52	1	6.5%		2	4	11.0%	6	2	3	1	2.8%
51-6099	Textile, Apparel, and Furnishings Workers, All Other	10	\$28,700	0.50	1	12.5%	n/a		-5	-7.5%	5	3	3	0	-0.9%
51-7021	Furniture Finishers	10	\$43,600	0.41	0	n/a			-2	-3.6%	6	3	3	0	-0.2%
51-9123	Painting, Coating, and Decorating Workers	10	\$39,400	0.52	1	5.6%		1	-5	-7.8%	4	1	3	0	-0.5%
17-3028	Calibration Technologists and Technicians	9	\$59,900	0.55	1	3.3%		2	2	4.9%	4	2	2	0	-0.2%
51-8099	Plant and System Operators, All Other	9	\$117,700	0.42	1	7.0%	n/a		0	-0.2%	4	1	3	0	-0.9%
49-9069	Precision Instrument and Equipment Repairers, All Other	8	\$72,700	0.51	1	5.3%	n/a		-1	-2.0%	3	2	2	0	-0.5%
51-3023	Slaughtering and Meat Packers	8	\$42,900	0.07	1	6.6%	n/a		0	0.6%	4	2	3	0	-0.5%
51-3093	Food Cooking Machine Operators and Tenders	8	\$45,900	0.21	0	n/a	n/a		-3	-6.6%	6	2	4	0	-0.1%
51-4192	Layout Workers, Metal and Plastic	8	\$63,200	0.81	0	n/a	n/a		2	4.2%	3	2	2	-1	-1.5%
51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers	8	\$44,100	0.38	1	12.9%	n/a		-1	-1.7%	4	2	2	0	-0.4%
51-9197	Tire Builders	8	\$43,800	0.29	2	19.6%	n/a		6	27.5%	3	1	2	0	-1.0%
51-6051	Sewers, Hand	7	\$32,100	0.75	1	10.8%	n/a		-1	-2.1%	4	3	2	-1	-2.0%
51-8092	Gas Plant Operators	7	\$100,800	0.32	0	n/a	n/a		-1	-2.9%	2	1	2	-1	-3.3%
51-9031	Cutters and Trimmers, Hand	7	\$40,300	0.61	1	8.2%		3	-3	-6.3%	2	2	2	-1	-2.9%
51-9151	Photographic Process Workers and Processing Machine Operators	7	\$34,100	0.79	1	7.8%	n/a		-20	-23.8%	3	1	3	-1	-1.9%
51-9193	Cooling and Freezing Equipment Operators and Tenders	7	\$54,500	0.67	0	n/a	n/a		1	4.4%	4	1	2	0	0.3%
51-9194	Etchers and Engravers	6	\$41,200	0.48	2	17.6%	n/a		0	-1.3%	4	3	1	0	-0.5%
51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders	5	\$40,000	0.20	0	n/a	n/a		-2	-6.5%	2	1	1	0	-1.1%
17-3021	Aerospace Engineering and Operations Technologists and Technicians	4	\$65,700	0.28	0	n/a	n/a		0	-1.1%	2	1	1	0	0.1%
49-9061	Camera and Photographic Equipment Repairers	4	\$40,200	1.07	0	n/a	n/a		-1	-6.0%	2	1	1	0	-0.1%
51-8091	Chemical Plant and System Operators	4	\$78,100	0.14	0	n/a	n/a		-4	-12.3%	2	0	1	0	-0.7%
19-4051	Nuclear Technicians	3	\$109,500	0.30	1	19.7%		6	0	-1.7%	1	0	1	0	-1.6%
49-9064	Watch and Clock Repairers	3	\$64,300	0.96	0	n/a	n/a		0	-1.9%	1	0	1	-1	-3.8%
51-2021	Coil Winders, Tapers, and Finishers	3	\$57,800	0.19	0	n/a	n/a		0	-2.8%	1	1	1	0	-2.5%
51-2061	Timing Device Assemblers and Adjusters	3	\$41,800	5.24	0	n/a	n/a		-6	-18.4%	2	1	1	0	-0.6%
51-6041	Shoe and Leather Workers and Repairers	3	\$39,300	0.22	0	n/a	n/a		-1	-4.0%	1	1	1	-1	-3.7%
51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	3	\$87,700	0.06	0	n/a	n/a		-1	-5.1%	1	0	1	0	-0.7%
51-6062	Textile Cutting Machine Setters, Operators, and Tenders	2	\$39,500	0.15	0	n/a	n/a		-1	-7.4%	1	1	1	0	-1.4%
51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders	2	\$36,700	0.08	0	n/a	n/a		-2	-13.0%	1	1	1	0	-1.2%
51-6092	Fabric and Apparel Patternmakers	2	\$49,700	1.44	0	n/a	n/a		0	-1.5%	1	1	1	0	-1.0%
51-9141	Semiconductor Processing Technicians	2	\$39,700	0.05	0	n/a	n/a		-1	-4.8%	1	0	1	0	-0.1%
51-7031	Model Makers, Wood	1	\$79,600	0.81	0	n/a	n/a		0	-6.6%	1	0	0	0	-0.6%
51-7032	Patternmakers, Wood	1	\$48,000	1.22	0	n/a	n/a		-1	-14.3%	0	0	0	0	-0.8%
51-8011	Nuclear Power Reactor Operators	1	\$125,800	0.17	0	n/a	n/a		0	-0.4%	0	0	0	0	-2.4%
51-6061	Textile Bleaching and Dyeing Machine Operators and Tenders	0	n/a	0.00	0	n/a	n/a		-3	n/a	0	0	0	0	0.0%
95-0140	Manufacturing (CTE Cluster)	20,276	\$49,400	1.12	800	3.9%		996	232	0.2%	9,393	3,986	6,082	-675	-0.7%
00-0000	Total - All Occupations	229,139	\$50,900	1.00	9,272	3.9%		23,619	4,763	0.4%	118,549	53,761	67,459	-2,671	-0.2%

Source: JobsEQ®

Data as of 2023Q4 unless noted otherwise

Note: Figures may not sum due to rounding.

1. Data based on a four-quarter moving average unless noted otherwise.

2. Wage data represent the average for all Covered Employment

3. Data represent found online ads active within the last thirty days in the selected region. Due to alternative county-assignment algorithms, ad counts in this analytic may not match that shown in RTI (nor in the popup window ad list). Ad counts for ZCTA-based regions are estimates.

Exported on: Monday, June 10, 2024 10:16 AM

Science, Technology, Engineering & Mathematics (CTE Cluster) in Lansing-East Lansing, MI MSA, 2023Q4¹

SOC	Occupation	Current						5-Year History		5-Year Forecast				
		Median Ann Wages ²		LQ	Unempl	Unempl Rate	Online Job Ads ³	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
		Empl												
17-2141	Mechanical Engineers	930	\$89,300	2.26	24	2.2%	49	79	1.8%	276	104	151	21	0.4%
17-2112	Industrial Engineers	878	\$103,300	1.87	29	2.8%	160	140	3.5%	269	108	135	26	0.6%
	Architectural and Engineering													
11-9041	Managers	396	\$129,000	1.37	1	0.2%	205	28	1.5%	118	39	84	-5	-0.3%
17-2199	Engineers, All Other	349	\$93,000	1.49	9	2.0%	24	-8	-0.5%	96	42	57	-3	-0.2%
17-2071	Electrical Engineers	292	\$100,300	1.06	6	1.5%	72	15	1.1%	63	32	42	-11	-0.8%
	Environmental Scientists and													
19-2041	Specialists, Including Health	250	\$84,500	2.31	3	1.1%	21	23	1.9%	93	20	76	-3	-0.3%
15-2051	Data Scientists	232	\$91,000	0.98	9	3.0%	41	77	8.4%	107	30	47	31	2.5%
	Life, Physical, and Social Science													
19-4099	Technicians, All Other	160	\$42,500	1.52	3	1.9%	22	5	0.6%	95	22	74	-1	-0.1%
	Electronics Engineers, Except													
17-2072	Computer	142	\$96,600	0.92	3	1.4%	7	4	0.5%	40	17	22	2	0.3%
19-2031	Chemists	112	\$54,500	0.94	6	4.1%	6	2	0.4%	39	8	29	1	0.2%
19-1031	Conservation Scientists	79	\$68,600	2.40	4	4.7%	18	8	2.3%	30	7	24	-1	-0.2%
15-2041	Statisticians	54	\$81,500	1.23	0	n/a	17	3	1.2%	24	7	11	6	2.2%
	Social Scientists and Related													
19-3099	Workers, All Other	52	\$70,500	1.10	3	5.8%	8	1	0.4%	20	5	16	-1	-0.2%
19-2099	Physical Scientists, All Other	46	\$124,800	1.41	1	1.2%	2	-3	-1.4%	14	3	12	-1	-0.3%
19-4061	Social Science Research Assistants	46	\$40,400	1.02	8	13.7%	1	1	0.3%	27	6	21	0	-0.1%
17-2061	Computer Hardware Engineers	43	\$121,000	0.38	1	1.5%	6	2	0.8%	11	4	7	0	-0.1%
19-1029	Biological Scientists, All Other	39	\$67,700	0.48	2	3.6%	2	3	1.9%	13	3	11	0	-0.2%
	Geoscientists, Except Hydrologists													
19-2042	and Geographers	35	\$77,500	0.95	0	n/a	9	3	1.5%	13	2	11	0	-0.2%
19-3011	Economists	35	\$107,300	1.50	0	n/a	7	5	2.9%	10	3	8	0	-0.1%
	Health and Safety Engineers, Except													
	Mining Safety Engineers and													
17-2111	Inspectors	33	\$91,900	1.09	1	2.8%	9	1	0.7%	8	4	5	0	-0.2%
17-2131	Materials Engineers	25	\$84,800	0.80	0	n/a	3	0	-0.1%	7	3	4	0	-0.1%
19-2012	Physicists	24	\$89,400	0.82	0	n/a	14	2	1.5%	7	3	4	0	-0.1%
17-2041	Chemical Engineers	21	\$109,900	0.72	0	n/a	1	-4	-3.6%	5	2	3	0	-0.1%
19-1099	Life Scientists, All Other	21	\$80,200	1.67	5	22.3%	n/a	-2	-1.5%	5	1	4	0	-0.2%
19-1021	Biochemists and Biophysicists	20	\$95,600	0.42	1	3.6%	1	0	-0.1%	7	2	6	0	0.1%
19-1022	Microbiologists	19	\$84,700	0.68	1	3.6%	5	1	0.6%	7	2	5	0	-0.1%
	Computer and Information Research													
15-1221	Scientists	17	\$122,500	0.38	1	2.4%	52	0	0.5%	7	2	4	2	1.7%
	Cartographers and													
17-1021	Photogrammetrists	17	\$66,200	0.93	0	n/a	3	1	1.1%	5	3	3	0	-0.1%
19-2043	Hydrologists	15	\$80,900	1.69	0	n/a	1	1	1.4%	5	1	5	0	-0.5%
17-2011	Aerospace Engineers	14	\$85,300	0.15	0	n/a	2	-2	-3.2%	4	2	2	0	-0.1%
19-3041	Sociologists	13	\$66,800	2.57	0	n/a	n/a	0	0.7%	5	1	4	0	-0.3%
17-2171	Petroleum Engineers	12	\$129,800	0.37	1	5.7%	n/a	1	1.7%	3	1	2	0	0.0%
19-3022	Survey Researchers	10	\$63,500	0.84	2	9.7%	n/a	-3	-5.4%	3	1	3	0	-0.9%
	Marine Engineers and Naval													
17-2121	Architects	9	\$97,900	0.73	0	n/a	n/a	3	9.3%	2	1	1	0	-0.4%
19-2021	Atmospheric and Space Scientists	9	\$88,200	0.66	0	n/a	6	1	1.6%	4	1	3	0	0.0%
	Mining and Geological Engineers,													
17-2151	Including Mining Safety Engineers	8	\$85,500	0.67	1	6.5%	3	1	3.5%	2	1	1	0	-0.2%
17-2161	Nuclear Engineers	8	\$123,100	0.40	0	n/a	3	1	2.4%	2	1	1	0	-0.5%
19-2032	Materials Scientists	8	\$86,100	0.69	0	n/a	n/a	-1	-2.2%	2	1	2	0	-0.1%
19-3093	Historians	7	\$60,500	1.48	0	n/a	6	0	1.5%	3	1	2	0	-0.3%
	Mathematical Science Occupations,													
15-2099	All Other	6	\$63,300	0.88	0	n/a	n/a	1	4.4%	2	1	1	0	0.4%
19-3094	Political Scientists	6	\$65,000	0.59	0	n/a	2	1	2.9%	2	1	2	0	0.2%
19-2011	Astronomers	5	\$117,300	1.24	0	n/a	n/a	0	1.0%	1	1	1	0	-0.1%
19-3091	Anthropologists and Archeologists	4	\$75,300	0.38	0	n/a	6	1	3.8%	2	0	1	0	-0.2%
15-2021	Mathematicians	3	\$88,100	1.00	0	n/a	n/a	0	-0.4%	1	0	1	0	0.1%
19-3092	Geographers	3	\$81,400	1.34	0	n/a	1	0	0.4%	1	0	1	0	-0.3%
	Science, Technology, Engineering &													
95-0090	Mathematics (CTE Cluster)	4,507	\$93,800	1.33	128	2.4%	794	390	1.8%	1,465	496	908	61	0.3%
00-0000	Total - All Occupations	229,139	\$50,900	1.00	9,272	3.9%	23,619	4,763	0.4%	118,549	53,761	67,459	-2,671	-0.2%

Source: [JobsEQ®](#)

Data as of 2023Q4 unless noted otherwise

Note: Figures may not sum due to rounding.

1. Data based on a four-quarter moving average unless noted otherwise.
2. Wage data represent the average for all Covered Employment

3. Data represent found online ads active within the last thirty days in the selected region. Due to alternative county-assignment algorithms, ad counts in this analytic may not match that shown in RTI (nor in the popup window ad list). Ad counts for ZCTA-based regions are estimates.

Exported on: Monday, June 10, 2024 10:18 AM

Transportation, Distribution & Logistics (CTE Cluster) in Lansing-East Lansing, MI MSA, 2023Q4¹

SOC	Occupation			Current		Rate	Job Ads ²	5-Year History		Demand	5-Year Forecast			
		Empl	Ann	LQ	Unempl			Change	Ann %		Exits	Transfers	Growth	Growth
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	3,032	\$38,100	0.74	287	8.6%	154	67	0.4%	1,984	731	1,233	20	0.1%
53-3032	Heavy and Tractor-Trailer Truck Drivers	2,710	\$56,400	0.88	126	4.7%	273	128	1.0%	1,428	612	802	14	0.1%
53-3051	Bus Drivers, School	1,711	\$42,000	3.31	47	3.3%	20	-65	-0.7%	1,266	896	389	-19	-0.2%
53-3033	Light Truck Drivers	1,529	\$44,000	0.96	69	4.6%	115	323	4.9%	871	354	464	53	0.7%
49-3023	Automotive Service Technicians and Mechanics	998	\$52,600	0.90	20	2.1%	66	-22	-0.4%	401	172	241	-13	-0.3%
53-7051	Industrial Truck and Tractor Operators	978	\$44,100	0.89	58	6.3%	26	1	0.0%	477	157	314	6	0.1%
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	740	\$59,400	0.87	16	2.2%	2	84	2.4%	369	126	241	2	0.1%
53-7064	Packers and Packagers, Hand	675	\$32,800	0.73	81	11.3%	7	-143	-3.8%	455	198	274	-16	-0.5%
53-7061	Cleaners of Vehicles and Equipment	529	\$31,200	0.92	34	7.2%	19	69	2.8%	343	142	203	-2	-0.1%
53-3053	Shuttle Drivers and Chauffeurs	491	\$49,700	1.55	24	5.7%	30	127	6.2%	337	212	123	3	0.1%
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	449	\$56,200	1.09	2	0.4%	62	50	2.4%	177	80	104	-6	-0.3%
53-3052	Bus Drivers, Transit and Intercity	312	\$43,300	1.31	15	5.8%	5	12	0.8%	195	124	73	-2	-0.1%
43-5021	Couriers and Messengers	304	\$36,900	0.99	25	8.0%	1	145	13.9%	154	72	87	-4	-0.3%
13-1081	Logisticians	303	\$76,800	1.05	7	1.7%	48	59	4.4%	145	43	83	19	1.2%
43-5032	Dispatchers, Except Police, Fire, and Ambulance	299	\$41,900	0.98	9	3.0%	15	15	1.0%	130	58	79	-8	-0.5%
11-3071	Transportation, Storage, and Distribution Managers	279	\$87,900	1.13	9	3.0%	36	39	3.1%	116	40	71	5	0.4%
49-3021	Automotive Body and Related Repairers	197	\$50,500	0.89	1	0.8%	21	-6	-0.6%	81	42	42	-3	-0.3%
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	186	\$73,100	0.76	2	1.2%	n/a	47	6.0%	74	29	46	-2	-0.2%
53-6031	Automotive and Watercraft Service Attendants	151	\$31,600	1.03	6	5.3%	n/a	15	2.2%	104	38	69	-3	-0.4%
53-3054	Taxi Drivers	135	\$33,100	0.51	5	3.9%	1	60	12.4%	81	37	34	10	1.5%
49-3093	Tire Repairers and Changers	128	\$33,400	0.87	3	2.8%	20	19	3.3%	66	24	44	-3	-0.4%
53-3099	Motor Vehicle Operators, All Other	121	\$30,000	1.24	4	4.1%	1	0	0.0%	90	52	36	1	0.2%
49-3011	Aircraft Mechanics and Service Technicians	114	\$71,400	0.54	1	0.8%	5	4	0.8%	40	16	24	0	-0.1%
53-6021	Parking Attendants	92	\$30,700	0.59	5	6.5%	7	10	2.4%	63	25	40	-1	-0.3%
43-5011	Cargo and Freight Agents	85	\$48,200	0.62	3	3.4%	2	18	5.0%	45	17	26	2	0.4%
49-3051	Motorboat Mechanics and Service Technicians	43	\$47,800	1.03	0	n/a	n/a	4	1.8%	22	11	10	1	0.4%
53-2012	Commercial Pilots	39	\$114,800	0.51	0	n/a	5	6	3.5%	21	7	15	0	-0.2%
49-3022	Automotive Glass Installers and Repairers	24	\$46,300	0.77	1	2.8%	n/a	1	0.8%	9	3	6	0	-0.2%
53-4011	Locomotive Engineers	24	\$61,100	0.49	0	n/a	n/a	-8	-5.5%	9	3	6	0	-0.2%
49-3052	Motorcycle Mechanics	22	\$46,700	0.92	0	n/a	n/a	-1	-0.8%	11	6	5	0	0.0%
49-3092	Recreational Vehicle Service Technicians	22	\$41,800	0.89	1	2.8%	1	2	1.5%	14	5	8	1	0.8%
53-4041	Subway and Streetcar Operators	22	\$87,200	1.68	0	n/a	n/a	-1	-0.5%	10	3	7	0	-0.3%
53-5011	Sailors and Marine Oilers	18	\$49,100	0.41	0	n/a	n/a	2	2.4%	9	3	6	0	-0.4%
53-6041	Traffic Technicians	17	\$41,100	1.71	0	n/a	n/a	2	2.4%	8	3	5	0	-0.4%
53-4031	Railroad Conductors and Yardmasters	16	\$56,700	0.28	0	n/a	n/a	-3	-3.6%	6	2	4	0	-0.2%
53-5021	Captains, Mates, and Pilots of Water Vessels	16	\$82,700	0.27	1	6.1%	2	3	4.2%	7	3	5	0	-0.4%
53-6099	Transportation Workers, All Other	16	\$42,300	0.86	0	n/a	n/a	-2	-1.9%	8	3	5	0	-0.2%
47-4061	Rail-Track Laying and Maintenance Equipment Operators	15	\$66,900	0.61	0	n/a	1	-1	-1.2%	5	2	3	0	-0.3%
53-6032	Aircraft Service Attendants	15	\$32,100	0.46	1	5.3%	1	1	1.5%	11	4	7	0	0.0%
49-2091	Avionics Technicians	14	\$65,000	0.46	2	10.6%	1	-1	-0.8%	6	3	3	0	-0.2%
49-3091	Bicycle Repairers	14	\$33,400	0.70	0	n/a	1	4	6.4%	8	3	5	0	-0.1%
53-2011	Airline Pilots, Copilots, and Flight Engineers	13	\$246,900	0.10	0	n/a	n/a	4	7.2%	8	2	5	0	0.3%
53-2021	Air Traffic Controllers	12	\$112,500	0.41	0	n/a	2	0	-0.6%	5	1	4	0	-0.3%
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	11	\$45,000	0.85	0	n/a	n/a	-3	-4.3%	3	2	3	-1	-2.0%
53-2022	Airfield Operations Specialists	10	\$58,600	0.45	0	n/a	1	1	2.9%	4	1	3	0	0.0%
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	8	\$74,900	0.64	0	n/a	3	-2	-4.4%	3	1	2	0	-0.1%
49-3043	Rail Car Repairers	7	\$43,700	0.23	0	n/a	n/a	-2	-5.1%	3	1	2	0	0.0%
53-6011	Bridge and Lock Tenders	7	\$64,100	1.23	0	n/a	n/a	1	4.5%	3	1	2	0	-0.6%
53-2031	Flight Attendants	6	\$72,000	0.04	1	1.9%	n/a	3	13.8%	4	2	2	0	0.5%
53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians	6	\$29,900	0.40	0	n/a	2	0	-0.9%	4	1	3	0	-0.4%
53-7199	Material Moving Workers, All Other	6	\$36,800	0.17	0	n/a	n/a	0	-1.4%	4	2	2	0	-0.1%
53-4022	Railroad Brake, Signal, and Switch Operators and Locomotive Firers	5	\$70,200	0.29	0	n/a	n/a	-3	-9.5%	2	1	2	0	-0.3%
53-6061	Passenger Attendants	5	\$31,900	0.22	0	n/a	2	0	0.0%	4	3	1	0	-0.2%
49-9097	Signal and Track Switch Repairers	4	\$65,300	0.33	0	n/a	n/a	0	-1.9%	2	1	1	0	-0.3%
53-5031	Ship Engineers	4	\$82,300	0.31	0	n/a	n/a	0	2.4%	2	1	1	0	-0.5%
53-1041	Aircraft Cargo Handling Supervisors	3	\$55,200	0.31	0	n/a	n/a	1	6.4%	2	1	1	0	0.6%
53-7071	Gas Compressor and Gas Pumping Station Operators	3	\$104,500	0.51	0	n/a	n/a	0	0.3%	1	0	1	0	-2.2%
53-7073	Wellhead Pumps	3	\$53,700	0.13	0	n/a	n/a	0	1.6%	1	1	1	0	-0.5%
53-7121	Tank Car, Truck, and Ship Loaders	3	\$55,500	0.15	0	n/a	3	0	2.2%	1	1	1	0	-0.9%
53-5022	Motorboat Operators	2	\$51,900	0.47	0	n/a	n/a	0	-1.1%	1	0	1	0	0.0%
53-7072	Pump Operators, Except Wellhead Pumps	2	\$73,400	0.11	0	n/a	1	0	3.4%	1	0	1	0	0.0%
53-4013	Rail Yard Engineers, Dinkey Operators, and Hostlers	1	\$60,600	0.22	0	n/a	n/a	-1	-13.1%	0	0	0	0	-0.1%
53-4099	Rail Transportation Workers, All Other	1	\$46,300	0.33	0	n/a	1	-1	-9.4%	1	0	0	0	-0.4%

Transportation, Distribution & Logistics														
95-0050	(CTE Cluster)	17,006	\$45,000	0.91	871	5.2%	962	1,064	1.3%	9,719	4,386	5,281	53	0.1%
00-0000	Total - All Occupations	229,139	\$50,900	1.00	9,272	3.9%	23,619	4,763	0.4%	118,549	53,761	67,459	-2,671	-0.2%

Source: [JobsEQ®](#)

Data as of 2023Q4 unless noted otherwise

Note: Figures may not sum due to rounding.

1. Data based on a four-quarter moving average unless noted otherwise.
2. Wage data represent the average for all Covered Employment

3. Data represent found online ads active within the last thirty days in the selected region. Due to alternative county-assignment algorithms, ad counts in this analytic may not match that shown in RTI (nor in the popup window ad list). Ad counts for ZCTA-based regions are estimates.

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APPENDIX VI

Greater Lansing Economic Impact

Lansing-East Lansing, MI MSA Annual Impact of Aerospace Product and Parts Manufacturing (Event Size = 200)

	Direct	Indirect	Induced	Total
Employment	200	77	116	393
Sales/Output	\$80,202,115	\$29,593,642	\$27,041,847	\$136,837,604
Compensation	\$28,506,492	\$10,400,132	\$8,028,453	\$46,935,078
Source: JobsEQ®				
Data as of 2023Q4				
Note: Figures may not sum due to rounding.				
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Lansing-East Lansing, MI MSA Annual Impact of Motor Vehicle Manufacturing (Event Size = 200)

	Direct	Indirect	Induced	Total
Employment	200	170	201	572
Sales/Output	\$393,505,051	\$92,553,880	\$46,858,896	\$532,917,827
Compensation	\$20,925,787	\$14,701,010	\$13,911,861	\$49,538,658
Source: JobsEQ®				
Data as of 2023Q4				
Note: Figures may not sum due to rounding.				
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Lansing-East Lansing, MI MSA Annual Impact of Battery Manufacturing (Event Size = 1700)

	Direct	Indirect	Induced	Total
Employment	1,700	270	630	2,600
Sales/Output	\$586,107,342	\$98,857,098	\$146,617,898	\$831,582,338
Compensation	\$152,241,973	\$24,448,170	\$43,529,147	\$220,219,289
Source: JobsEQ®				
Data as of 2023Q4				
Note: Figures may not sum due to rounding.				
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Lansing-East Lansing, MI MSA Annual Impact of Pharmaceutical Preparation Manufacturing (Event Size = 150)

	Direct	Indirect	Induced	Total
Employment	150	41	87	278
Sales/Output	\$89,649,950	\$16,745,150	\$20,272,068	\$126,667,167
Compensation	\$24,228,963	\$4,825,310	\$6,018,541	\$35,072,814
Source: JobsEQ®				
Data as of 2023Q4				
Note: Figures may not sum due to rounding.				
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Multipliers for Aerospace Product and Parts Manufacturing				
	Direct	Indirect	Induced	Total
Employment	1	0.38	0.58	1.97
Sales/Output	1	0.37	0.34	1.71
Compensation	1	0.36	0.28	1.65

Multipliers for Motor Vehicle Manufacturing				
	Direct	Indirect	Induced	Total
Employment	1	0.85	1.01	2.86
Sales/Output	1	0.24	0.12	1.35
Compensation	1	0.7	0.66	2.37

Multipliers for Battery Manufacturing				
	Direct	Indirect	Induced	Total
Employment	1	0.16	0.37	1.53
Sales/Output	1	0.17	0.25	1.42
Compensation	1	0.16	0.29	1.45

Multipliers for Pharmaceutical Preparation Manufacturing				
	Direct	Indirect	Induced	Total
Employment	1	0.27	0.58	1.85
Sales/Output	1	0.19	0.23	1.41
Compensation	1	0.2	0.25	1.45



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