

NEBRASKA ECONOMIC Competitiveness Assessment 2024



*Prepared for the Nebraska Chamber Foundation by Economic Leadership
January 2024*





Fellow Nebraskans,

As we prepare for the next decade, strengthening and advancing Nebraska's economy starts with identifying the new challenges and opportunities facing our state, with the ultimate goal of ensuring Nebraska's competitiveness and success. This effort must be driven by facts and informed by data.

The Nebraska Chamber Foundation is committed to non-partisan research advancing economic growth in Nebraska. We have created an on-going steering committee of 40+ business leaders from across the state. These forward-looking individuals will help identify the issues Nebraska's economy and communities face and anticipate. From there, the Foundation will work to make sure there is more meaningful data in order to define the issues and identify solutions that will move the needle.

Our inaugural studies set the stage for where Nebraska's economy stands and they provide data and analysis that will help Nebraska lead the effort to strengthen our economy in their own communities and regions.

These 2024 studies can be found at www.nechamber.com/foundation and include:

- **Nebraska Economic Competitiveness Assessment** - which measures Nebraska's economic standing with peer states
- **Nebraska Manufacturing Competitiveness** - which provides an industry breakdown of one of Nebraska's top performing industries
- **Immigration and America's Workforce Shortage: A Nebraska Challenge in Need of a National Solution** - which defines Nebraska's workforce shortage and outlines the opportunities posed by legal immigration reform

It is our hope that Nebraska leaders will collaboratively leverage the data found in these studies to find regional and statewide solutions to ensure that we strengthen and grow our economy for years to come.

Sincerely,



Tera Norris
President
NE Chamber Foundation

Thank you to our NE Chamber Foundation INVESTORS



Nebraska Economic Competitiveness Assessment

Executive Summary

With the jarring COVID-era shutdowns and economic shocks potentially behind us, the U.S. economy may be moving into a period of relative calm, as inflation recedes and business prospects are more favorable than not. While several short-term trends have abated, critical long-range challenges remain. One way to summarize the challenges facing Nebraska is in terms of competitiveness – the investments and initiatives that every other state, and most nations around the globe, have made and are making to improve the ability of their business community and their residents to succeed.



The NE Chamber Foundation partnered with consulting firm Economic Leadership LLC to produce three reports that evaluate Nebraska’s economy and key issues affecting it. The centerpiece of these is this report to analyze the state’s economic competitiveness and recommend strategies for taking Nebraska’s performance to the next level.

The critical factors that most affect competitiveness include workforce, infrastructure, business climate, and level of innovation. Preparing a strategy to impact competitiveness involves a three-step process to 1) describe an agreed-upon current economic reality; 2) reach consensus on a desired future; and 3) determine the set of realistic actions needed to get from the current reality to a better economic future.

The current reality for Nebraska is that it has a strong and resilient economy. It hosts one of the nation’s largest agriculture and food processing sectors, boasts robust manufacturing activity, and is diversifying in growing sectors such as technology and business services. Positives for the state economy include relative affordability in cost of living and cost of doing business, a strong education system, and reasonably good infrastructure in areas such as roads, energy, and broadband.

However, Nebraska also is hampered by challenges that, if not addressed properly, will significantly hinder the state’s ability to reach its economic potential. The greatest challenges are a very tight labor market, population growth that is insufficient to meet future workforce needs, technical and technology-related workplace skill shortages, and low marks for the innovation environment.

This study builds upon prior plans that have often revolved around the same themes:

- Growing the population
- Retaining and attracting young adults
- Easing workforce shortages
- Improving worker skills
- Promoting business and economic innovation
- Addressing related issues, especially the availability and affordability of housing and childcare.

Recent successes that arose from these prior plans include state tax reforms, renewal of research and development tax credits, and greater school Career and Technical Education (CTE) funding. However, many stakeholders think that although the issues are well-known, not enough progress has been made. They want to see a relatively small set of focused recommendations and the resources to implement them in order to move the needle and move all regions of Nebraska forward.

Following extensive data analysis and substantial stakeholder input, the Nebraska Competitiveness Assessment 2024 recommends action in the following strategic areas:

Career Awareness and Work Experience for Young People

★ Use existing resources such as the national Creators Wanted initiative and the Coolest Thing Made in Nebraska events to increase manufacturing career awareness among students and parents. Increase partnerships between state and regional chambers, the Nebraska Manufacturing Alliance, and the Nebraska Manufacturing Advisory Council to increase awareness campaigns and events across the state.

★ Bring the Be Pro Be Proud career awareness program to Nebraska or adopt a similar model for increasing student and parent awareness of the opportunities in skilled professions.

★ Develop a work experience coordinator position at the state level and in each region of Nebraska to work with Nebraska businesses to forge the school connections needed to offer career awareness and work experience opportunities to every young person in the state. Career awareness opportunities include business speakers in the schools, site visits to company facilities, and student mentoring by company employees. Work experience includes job shadowing, internships, summer jobs, and youth apprenticeships. Work experience coordinators could be housed with chambers of commerce or community colleges.



- ★ Double public school CTE funding, with a goal of significantly increasing the percentage of students who access CTE curricula.
- ★ Increase college and university enrollment by ten percent in five years, through scholarships and international student recruitment.

Talent Attraction and Retention

- ★ Increase funding for The Good Life is Calling initiative, fine-tuning the content, use of social media, website, and other avenues to target people in their late 20s to early 30s and living in nearby U.S. metro areas. Focus on former state residents and graduates of Nebraska colleges and universities.
- ★ Consider a home purchase incentive initiative for recent college graduates, such as Ohio's long running Grants for Grads program.

Workforce Growth

- ★ Make it a top priority of the Nebraska congressional delegation to partner with like-minded states to push for a legislative solution that promotes legal immigration into the United States. Increase coordination between chambers and relevant non-profit organizations across the state to prepare regional plans to welcome and support new immigrants in Nebraska, with a goal of making Nebraska the most welcoming and ready state for immigrants.

Housing

- ★ Increase funding for the state's workforce housing programs and leverage available federal funds to the maximum extent. For rural areas, Florida's Rural Infrastructure Fund is often used to match USDA or U.S. Economic Development Administration project dollars. This type of fund could include housing among eligible uses for which infrastructure development is needed.



- ★ Consider state incentive programs for private sector development of new housing, such as reimbursement for infrastructure investments. Legislatures in South Dakota and West Virginia have recently made funds available for this purpose.
- ★ Develop regional coalitions of Nebraska-based builders to work with area chambers and local governments on housing development initiatives.
- ★ Consider statewide zoning regulation reforms to allow more by-right development of housing, including different housing types such as townhomes, duplexes, and accessory dwelling units (ADUs).

Childcare

- ★ Review state childcare incentives and consider additional incentives for the development of new childcare facilities and childcare capacity across the state, including incentives for employers that provide daycare on-site, provide land or building space to host daycare facilities on-site, or subsidize daycare for their employees. Recent examples of state incentive programs are available from Iowa, Georgia, and West Virginia.

Business Incentives for Innovation

- ★ Review and streamline existing state incentive offerings while increasing the focus on business capital investment, growing gross domestic product (GDP), and business innovation and automation.
- ★ Provide new modernization and technology adoption tax credits for manufacturing.
- ★ Close the gap on megasite investment compared to other states.



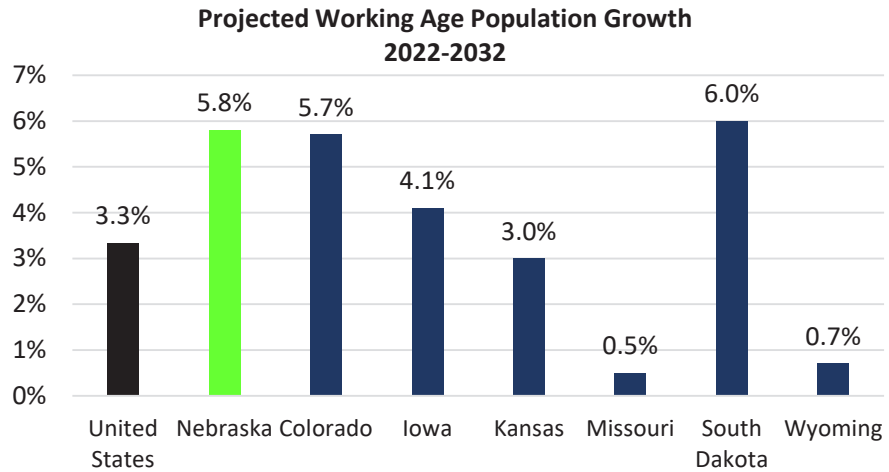
Taxation

- ★ Closely monitor the impact of recent tax changes on Nebraska's competitiveness ratings related to its overall tax burden and propose additional tax reform as needed.

I. Nebraska's Current Competitive Position

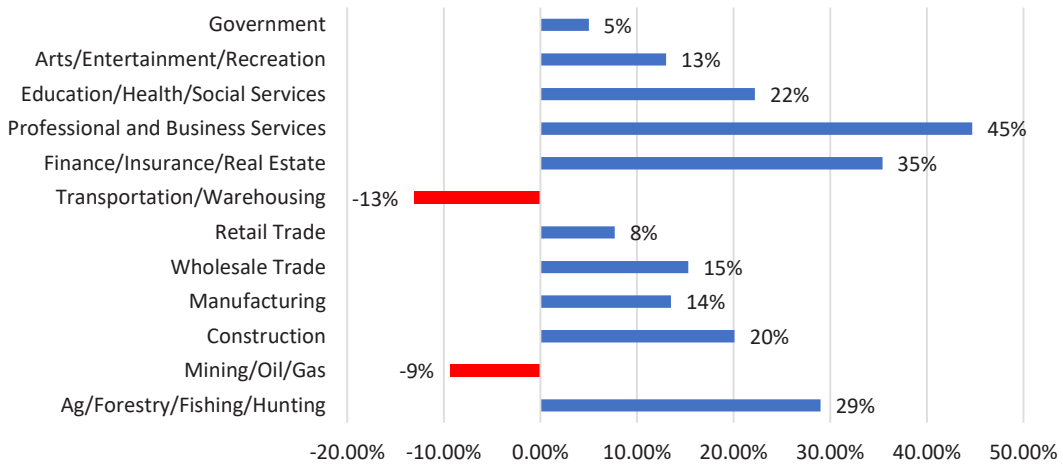
For a state with fewer than two million residents, Nebraska enjoys a robust economy. It boasts the nation's fourth largest agriculture and livestock sector. Nebraska's manufacturing industries account for 12 percent of the state's total GDP and ten percent of its non-farm employment. Its growing technology and business services sectors have been adding workers at a rapid pace and are expected to continue doing so. The state's relatively young population is an economic asset.

Over the last ten years, Nebraska has experienced impressive growth in GDP, a growth which is balanced across a wide range of sectors. Rapid GDP gains came in service industries like business services; finance, insurance, and real estate; and education and health. The state also saw robust growth in agriculture and construction.



Source: Lightcast 2023.3

Percent Change in Sector GDP 2012-2022



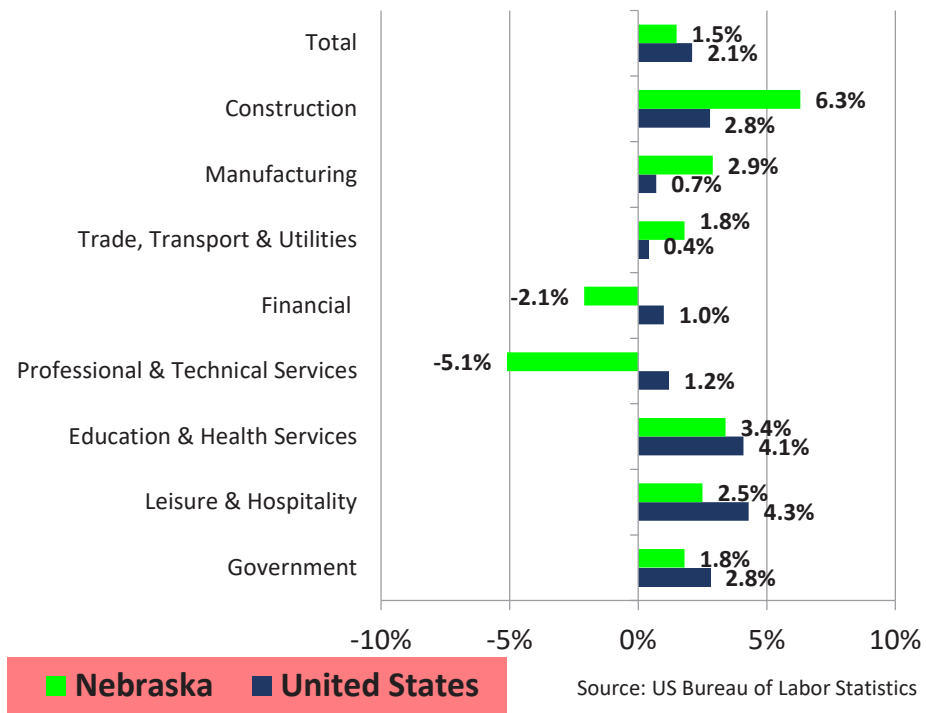
Certain parts of the state have extremely strong recent performance. The Omaha-Council Bluffs metro area was listed by the U.S. Bureau of Economic Analysis as having the nation’s second-highest GDP growth from 2021 to 2022, growing by 6.3 percent. Only Austin, Texas ranked higher with Omaha tying Nashville, Tennessee for second. Over that same one-year period, Omaha’s Douglas County ranked number one in the nation among GDP growth for large counties, with a 9.2 percent gain.

The most recent one-year employment data for Nebraska shows an economy still in transition after the COVID-era shutdowns. After a rapid rise in 2020 and 2021, segments like financial and professional and technical services

are in a hiring lull. Meanwhile, construction and manufacturing job growth in the state is outpacing national levels.

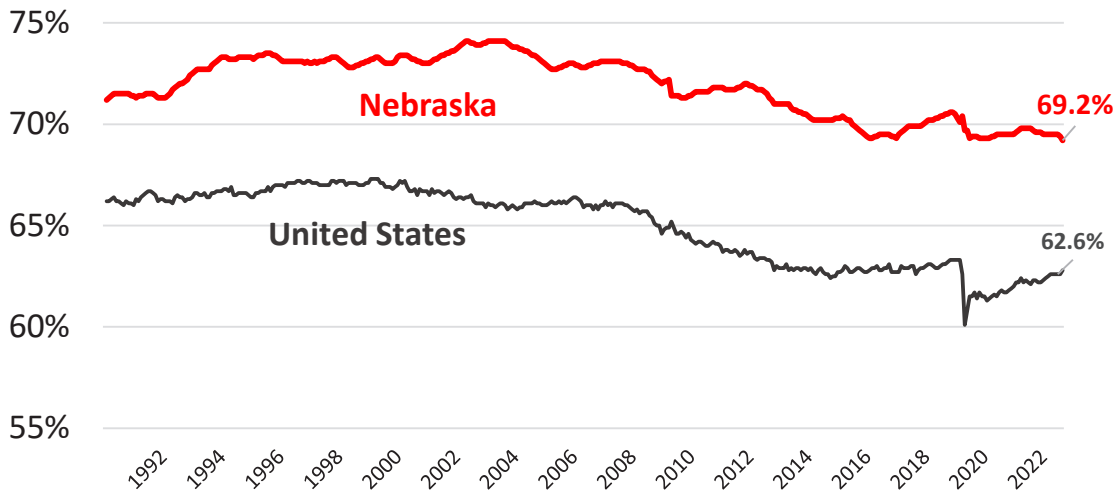
As is the case in many states around the country, Nebraska’s economic and business growth is significantly constrained by workforce challenges.

**Nonfarm Employment Change by Sector
Sept. 2022 - Sept. 2023**



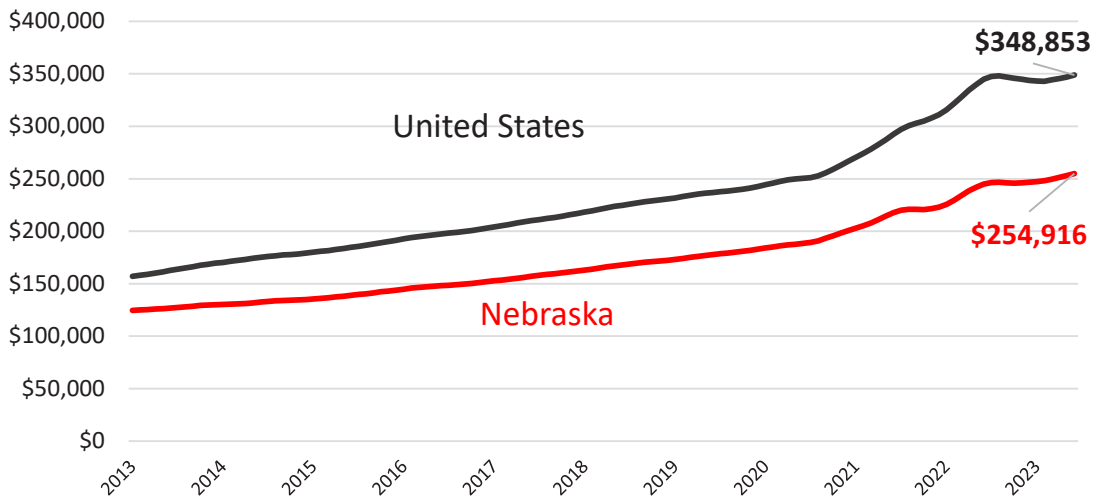
The state did grow population by 7.4 percent between 2010 and 2020, but during this time only 24 counties grew while 69 lost population. Meanwhile, major economic competitors such as Utah, Idaho, and Texas all grew by more than 15 percent. Nebraska’s labor market is one of the nation’s tightest, with a recent unemployment rate of just 2.1 percent. The state’s high labor force participation rate – which at over 69 percent is one of America’s three highest – means there is a smaller pool of currently disengaged workers to tap into.

Nebraska & U.S. Labor Force Participation Rate 1991 -2023



Source: US Bureau of Labor Statistics

Typical Home Value 2013-2023



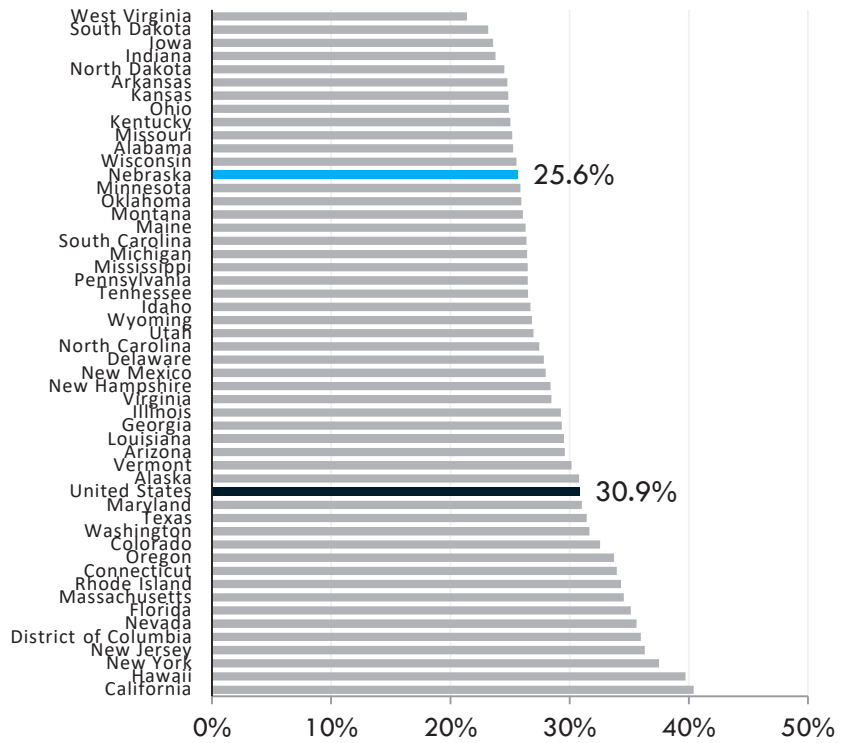
Source: Zillow 2023

In order to attract and retain talent, quality of life factors are increasingly important for communities and states. Key quality of life factors include housing, childcare, and schools (and for the latter, Nebraska enjoys a strong reputation).

The housing situation in Nebraska is more mixed. On one hand, despite rising prices it is still a relatively affordable state, with fewer adults burdened by the cost of a mortgage or rent. On the other hand, there is not enough new housing construction – especially in small cities and rural areas – making it harder to attract young workers and families.

Compared with highly competitive states nearby, Nebraska not only has far fewer new housing starts, but the fewest per existing population.

Percent of Households that are Cost-Burdened by Rent or Mortgage, 2021



Source: EL calculations based on US Census Bureau (2022)

State	2022 New Housing Starts	Starts per 1,000 Residents
Nebraska	11,360	5.8
Idaho	19,060	10.0
Utah	31,500	9.6
Colorado	49,000	8.5
Texas	263,530	9.0

Source: EL calculations based on Statista.com 2022 residential building permits, 2020 Census population

Recent state rankings that take multiple factors into account vary widely in where they rate Nebraska’s economic competitiveness. This can be expected in the volatile COVID and post-pandemic eras. One well-known multifactor analysis is CNBC’s 2023 Best States for Business, which placed Nebraska 28th nationally overall. Within this rating, the state fared best for business friendliness (8th), cost of living (12th), and cost of doing business (19th). It ranked poorly for tech and innovation (33rd), overall economy (34th), infrastructure (35th), workforce (36th), and access to capital (40th). Nebraska’s ranking among the Best States for Business has varied greatly since 2019, placing as high as 7th in 2022. Among neighboring states, Colorado ranked the highest at 11th for 2023, while Wyoming placed lowest at 37th. North Carolina was number one overall.

CNBC Best States for Business Rankings 2023	
Workforce	36 th
Infrastructure	35 th
Cost of Doing Business	19 th
Economy	34 th
Life-Health-Inclusion	22 nd
Tech-Innovation	33 rd
Business Friendly	8 th
Education	20 th
Access to Capital	40 th
Cost of Living	12 th

U.S. News’ Best States Rankings slotted Nebraska in 4th place nationally for 2023, trailing only Utah, Washington, and Idaho. This broader ranking is less business-focused, and it gave the state top ten ratings in infrastructure, education, and the economy. Within the economy category, Nebraska ranked 39th for its business environment, scoring high for company headquarters but poorly in tax burden, patent creation, and business creation.

Other sources that put Nebraska in the middle of the pack for 2023 include Chief Executive, which placed it as the 24th Best State for Business in an annual CEO survey. Also, WalletHub ranked Nebraska 25th among Best States to Start a Business in a 2023 report. The WalletHub study gave the state a strong rating for its business costs, and lower ratings for access to resources and the business environment. Utah was again ranked number one as the best state to start a business.

State Multifactor Overall Rankings	
•	CNBC (2023) – 28 th
•	Chief Executive (2023) – 24 th
•	US News (2023) – 4 th
•	WalletHub (2023) – 25 th

The Nebraska economy can be described currently as strong and resilient – an opinion shared by the large majority of business stakeholders we spoke with across the state. However, its current and future competitiveness is hindered by issues of a very tight labor market, a shortage of technical work skills, relatively low indicators of innovation, and population growth that is far behind competitor states. Positive competitive factors include the cost of doing business and cost of living, good schools, reasonably robust infrastructure, and available land. Major concerns related to the workforce – especially for attracting and keeping young talent – center around the availability and cost of housing and the availability and cost of childcare. Business leaders are still wary of the overall state tax burden, though they are somewhat optimistic that recent changes will reduce that as a competitive impediment.

This competitiveness analysis looks at the Nebraska economy in a number of ways. First, it reviews industry clusters in the state to identify those that are strong, growing, and adding jobs. It then summarizes national trends in four of Nebraska’s leading sectors and points to opportunities for growing those key sectors in the state. The report also looks at employment by occupational category, and it reviews recent economic development plans and data for the state. Finally, it includes critical input gathered from business leaders across Nebraska. Many of these stakeholders believe that the key issues for Nebraska – such as workforce and population growth – have long been identified and discussed, but efforts so far have failed to move the needle significantly.

A goal of this analysis is to recommend a small number of bold strategies that can make a real impact on Nebraska’s future economic competitiveness.

II. A Review of Plans, Reports, and Data

This section briefly summarizes some of the key recent plans, reports, and data in Nebraska pertaining to economic and community development, and the state’s competitive position in relation to other states. One of the themes common throughout many of these plans and reports is **population growth**, or the lack thereof. Closely related to that are **workforce** numbers – and **shortages** – with significant emphasis on the need to **attract and retain younger adults**. **Worker skills**, education and training needs also figure prominently. Another strong theme is the need to support and spur **innovation** among Nebraska businesses and entrepreneurs. Among the relative success stories for economic competitiveness is the recent progress made to reduce overall tax burdens at the state level.



On the quality-of-life side, the need to address availability and affordability in both **housing** and **childcare** are the top issues.

Nebraska Chamber 2023 Survey

A business survey by the Nebraska Chamber Foundation in summer 2023 gathered input from 213 respondents. The four competitiveness factors deemed to be a “**major strength**” or a “**strength**” for Nebraska by respondents were 1) quality of life; 2) healthcare facilities; 3) crime rates and safety; and 4) ratings of public schools.

These state-level competitiveness factors were considered to be a “**major weakness**” by the greatest number of respondents:

Housing availability	38 percent
Housing costs	32 percent
Childcare for working families	29 percent
Availability of skilled labor	27 percent
Attractiveness to young professionals	25 percent

The largest number of stakeholders rated these as a “**weakness**”:

Availability of skilled labor	50 percent
Housing availability	43 percent
Childcare for working families	43 percent
Attractiveness to young professionals	41 percent
Air service	41 percent

In addition, respondents said that these were the biggest workforce issues faced by their businesses:

Pool of potential employees is too small	67 percent
Availability of affordable childcare	58 percent
Can’t find employees with specific technical skills	47 percent
Potential employees lack soft skills	42 percent

Nebraska Chamber 2023 Priorities

The Nebraska Chamber’s 2023 priority statement was titled “Accelerate Our State.” This statement focused on three priority areas for action:

A. **Modernize Taxes**

Aim to maintain the momentum from 2022 and strive for further competitiveness versus other states. Address income, property, and sales taxes. Modernize the state tax code to accomplish the Blueprint Nebraska goals of retaining 18- to 34-year-olds and supporting innovation, R&D, and entrepreneurs.

B. **Address Workforce**

Data shows that jobs in Nebraska have grown substantially since 2010, while the birthrate has declined significantly, leading to an all-time low unemployment rate. Strategies for addressing this critical issue include:

1. Expand workforce development grants.
2. Double CTE funding.
3. Increase college and university enrollment by ten percent in five years, through scholarships and international student recruitment.

4. Reduce the threat of double income taxation for remote workers.
5. Promote federal immigration reform.

C. Drive Innovation

This can be accomplished through these measures:

1. Simplify and renew the state R&D tax credit for another ten years.
2. Provide new modernization and technology tax credits for manufacturing.
3. Keep pro-innovation provisions of the federal tax code (decouple from the federal code as business investment provisions expire).
4. Close the gap on megasite investment versus other states.

The NE Chamber's Accelerate Our State campaign also listed highlights from the 2022 member survey. The issues cited in 2022 as the top barriers to business growth were talent (80%), government and taxes (44%), and supply chain issues (43%). For community development, addressing these needs represents the best way to promote community growth: housing (67%), education and childcare (47%), recreation and events (41%).

Blueprint Nebraska

Blueprint Nebraska is an ambitious plan guided by a team of 320 advisors and adopted in July 2019. The statewide effort included 2,000 people participating in events across Nebraska and another 5,000 providing their input via a survey. This economic development plan focused particularly on the potential of advanced manufacturing to drive the state's future economy. It laid out the following goals for the year 2030:

- Make Nebraska a top three state to live in according to national rankings.
- Create 25,000 additional jobs.
- Grow median annual income by \$15,000.
- Add 43,000 Nebraska residents in the 18-to-34 age group.
- Boost R&D investment by \$200 million annually.

Blueprint Nebraska proposed to achieve these goals by partnering on the following advanced manufacturing strategies:

- A. Investing in automation;
- B. Building broadband connectivity;
- C. Focusing on venture capital and productivity incentives for next generation manufacturing;
- D. Improving the workforce by scaling apprenticeships and internships, boosting STEM skills, and enhancing customized workforce and other training programs;
- E. Creating a manufacturing Center of Excellence; and
- F. Developing an inland port.

Other economic development initiatives promoted in Blueprint Nebraska included a “Choose Nebraska” campaign to attract more 18-to-34-year-olds. To address housing shortages, it called for building 30,000 to 50,000 attainable housing units. It also endorsed supporting other growing sectors in the state, such as the financial technology (fintech), banking, and insurance technology (Insurtech) industries.

Nebraska Department of Economic Development

The Nebraska Department of Economic Development (DED) listed its 2023 priorities as 1) greater efficiency and effectiveness, 2) customer service, 3) growth, 4) public safety, and 5) reduced regulatory burden.

It also noted the Governor’s strategic pillars of a) developing our people, b) cutting red tape, c) managing the budget/tax relief, and d) promoting Nebraska domestically and internationally.



Nebraska DED’s five primary goals for 2023 were:

1. **Economic Growth & Expansion**
Recruitment of high-tech jobs and investments • Existing industry expansion • Entrepreneurship • Site/megasite development • Workforce housing • Community quality of life • Exports and international investment
2. **Talent Retention & Recruitment**
Internships, apprenticeships, and career pathways • Out-of-state talent recruitment • Upskilling and other training • The pipeline of separating military
3. **Brand Recognition**
The Good Life is Calling campaign • Target “opportunity seekers” and “roots returners”
4. **ARPA Execution**
Aim for transformative community investments • Deliver great customer service to grant recipients
5. **Airtight, Scalable Infrastructure**
Scale up Nebraska DED from a \$100 million to a \$1 billion agency • Become more agile as an agency

Nebraska DED also manages the state’s housing and community development efforts. These were some key goals from the department’s 2023 Annual Action Plan for Housing & Community Development:

- Provide decent housing by addressing the needs of the homeless and those at risk of homelessness; preserve affordable housing stock; increase the supply of housing attainable by low- and moderate-income people.

- Provide a good living environment through safe and livable neighborhoods; access to amenities, facilities, and services; avoid isolation of low-income groups.
- Expand economic opportunities by creating jobs accessible to low- and moderate-income people; offering down payment and closing cost assistance; and helping low-income people to achieve self-sufficiency.

Nebraska DED’s 2022 Annual Report was released in July 2023. It noted economic development highlights for Nebraska in five areas of activity:

- **Workforce:** Nebraska had the nation’s highest percentage of adults engaged in the workforce in 2022. At the end of the year, Nebraska had the highest manufacturing employment in over 20 years and hit an all-time high in construction employment.
- **Promoting Nebraska:** “The Good Life” campaign reached 106 million video views between October 2021 and May 2022.
- **Economic recovery:** The National Bureau of Economic Research gave the state an A+ for the state’s response to the COVID pandemic.
- **International trade:** Nebraska set an all-time export record in 2021.
- **Business recruitment**

Below are nine major initiatives of the Nebraska DED from the 2022 report:

- | | |
|--------------------------------------------|-----------------------------------------|
| 1. Business Innovation Act | 6. Middle Income Workforce Housing Fund |
| 2. Operational Assistance Program | 7. Customized Job Training Fund |
| 3. Civic & Community Center Financing Fund | 8. Intern Nebraska |
| 4. Affordable Housing Trust Fund | 9. Site & Building Development Fund |
| 5. Rural Workforce Housing Fund | |

Invest Nebraska

Invest Nebraska was created by the state legislature in 2001 to promote venture capital investments in Nebraska companies. The organization’s 2022 venture capital report notes that 40 VC deals were executed in 2021, totaling \$318 million. Looking at venture capital activity across the state from 2012 to 2021, the leading industry segments for attracting VC dollars were as follows:

- | | |
|------------------------------------------------|------------------------------------------------|
| 1. Hardware, Robotics & Advanced Manufacturing | 3. Healthcare, Life Sciences & Medical Devices |
| 2. B2B Software | 4. Fintech & Insurtech |

By the number of deals completed rather than dollar value, B2B software was number one over the same period.

Impacts from the Business Investment Act

A report for Nebraska DED prepared by UNL details impacts from the state Business Investment Act from 2012 to 2022. The Business Investment Act (BIA) provides early-stage capital to entrepreneurial firms. Highlights of the report include the following:

- Firms received \$39.4 million in BIA funding from 2012 to 2022, and leveraged this into \$420.6 million in additional capital. This is a ratio of \$10.68 for every \$1 in state funding.
- Some businesses have advanced to the revenue-earning stage, earning \$482 million.
- Participant firms have added 1,603 jobs since involvement with BIA, with annual wages of \$104.7 million.
- A total economic impact of \$752 million

Brookings Geography of AI Report, September 2021

A report by the Brookings Institution on the geography of artificial intelligence (AI) innovation in the United States examined activity in metropolitan areas around the nation, including Nebraska's. A cluster analysis for the AI industry subsector revealed that, not surprisingly, the Bay Area of California is America's "superstar region." This report also listed 13 "early adopter" metro areas for AI innovation, 21 research and contracting metro centers, and 87 potential AI adoption centers. Lincoln was included among the 13 early adopter metros, with its leading AI employers being American Express and the University of Nebraska-Lincoln (UNL).

The 2022 Nebraska Thriving Index from UNL Bureau of Business Research

UNL's 2022 "Nebraska Thriving" report divides the state into eight mostly rural regions, excluding the Omaha and Lincoln metro areas. The Nebraska Thriving Index creates an annual prosperity index measuring economic health and quality of life in the rural portions of the state, benchmarking the eight regions against 85 similar regions in states across the Midwest and Mountain West.

Overall, the North 81 region in the northeast and Tri-Cities region in the south-central part of the state ranked highest among their peers. The Siouland (extreme northeast corner), Panhandle (northwest), and Southwest regions ranked lowest. The Panhandle had the worst growth index. The Sandhills, North 81, and Northeast regions ranked best in education and skill. The Siouland, Southeast, and Southwest regions ranked lowest.

Nebraska Department of Education

Data as of the 2021-2022 school year produced by the Nebraska Department of Education summarizes conditions for the public schools that educate 327,000 students in the state. Some highlights:

- 87 percent graduation rate statewide;
- 41 percent of students are in the free and reduced-price meals program;
- 8 percent of students are English language learners;
- \$14,123 per student expenditures;
- 43 percent of districts have internet access provided outside of school;
- 31 percent of schools have maker spaces or tinker spaces;
- 12 percent of schools have robotics courses or clubs for students grades 6-12.

Data from the University of Nebraska-Omaha (UNO) Center for Public Affairs Research

This demographic and economic presentation from the UNO Center for Public Affairs Research was provided by the NE Chamber. It showed that while Nebraska increased its total population by 7.4 percent from 2010 to 2020, 69 of the 93 counties lost population during that time. Net migration in and out of the state among those with a bachelor's degree or higher was negative every year from 2010 to 2021, with a loss of over 4,000 people annually in 2020 and 2021. The number one reason for outmigration from Nebraska was for a new job or job transfer.

The state did enjoy strong percentage growth in high wage jobs between 2018 and 2021. This high wage job growth came in the life, physical, and social sciences; computer and math; architecture and engineering; and the business and financial sectors.



2023 Data for Nebraska from Esri

Global data provider Esri provides the following demographic and economic data and projections for Nebraska, as of 2023:



- The projected five-year annual population growth rate (2023-2028) for Nebraska is essentially the same as for the United States overall, at about 0.30 percent per year. The projected annual household growth rate is below the U.S. average, 0.39 percent compared with 0.49 percent nationally.
- The average household size in Nebraska (2.46) is a little less than the national average (2.53).
- Esri shows the state's median age to be younger than the U.S. median, at 38.0 versus 39.1. Other data sources show Nebraska's median age to be younger than that, and among the ten youngest population states in the country.
- The state's median household income for 2023 is estimated to be 3.8 percent below the national median, while per capita income is 7.1 percent lower. The projected five-year growth rate is slightly lower than nationwide projections.
- Despite rising home prices, Nebraska is still relatively affordable. The housing affordability index for Nebraska is 117 (with higher numbers indicating greater affordability), greater than the U.S. average index of 94. Esri estimates that Nebraskans spend 19.1 percent of their income on mortgages, while the national average is 25.6 percent.
- Other statewide index figures for Nebraska:
 - The state's diversity index is 52.4 versus 72.1 for the U.S. (higher number = greater diversity)
 - The Gini index of income inequality is 40.5 versus 41.9 for the U.S. (higher number = greater inequality)
 - The wealth index is 88 versus 100 for the U.S. (higher number = greater wealth)

III. Nebraska Industry Cluster Analysis

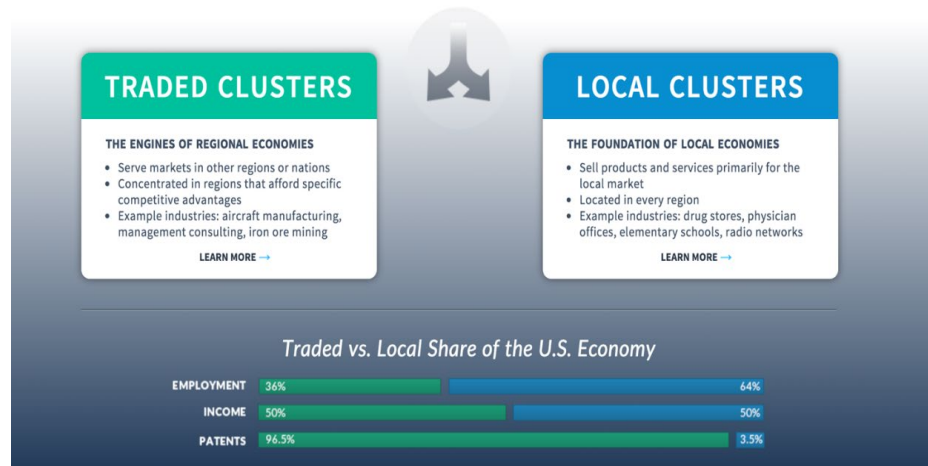
This analysis looks at business activity in Nebraska by clusters, or groups of industries that export goods or services outside of the state. It identifies the leading clusters in the state – those that are major employers and are growing – as well as several emerging clusters that have less concentrated employment levels but have added jobs and are projected to continue doing so.

Traded clusters are groupings of industries that serve markets outside of a specific geography, in this case the state of Nebraska. Traded (or exporting) clusters typically generate the funds that support local clusters such as retail, entertainment, and personal services. Traded clusters usually contain a supply chain that supports an industry via suppliers, infrastructure, specialized training, and machinery. Studies have shown that assets supporting clusters are more efficient and cost effective than those that support individual companies.

As the chart from U.S. Cluster Mapping shows, traded clusters often account for less than 40 percent of a state’s employment; however, they are usually responsible for 50 percent or more of a state’s income and innovation.

To determine the current state of traded clusters in Nebraska, we collected employment and wage data for over 680 six-digit NAICS code industries within the state. These industries were then grouped into 53 traded clusters.

Cluster: a regional concentration of related industries [↗](#)



“What makes clusters unique is not just that companies with similar or complementary interests, competencies, and needs congregate around each other. It’s that an entire value chain exists within a cluster: suppliers, manufacturers, distributors, academic institutions, researchers, and workforce training, as well as those who provide relevant support services.”

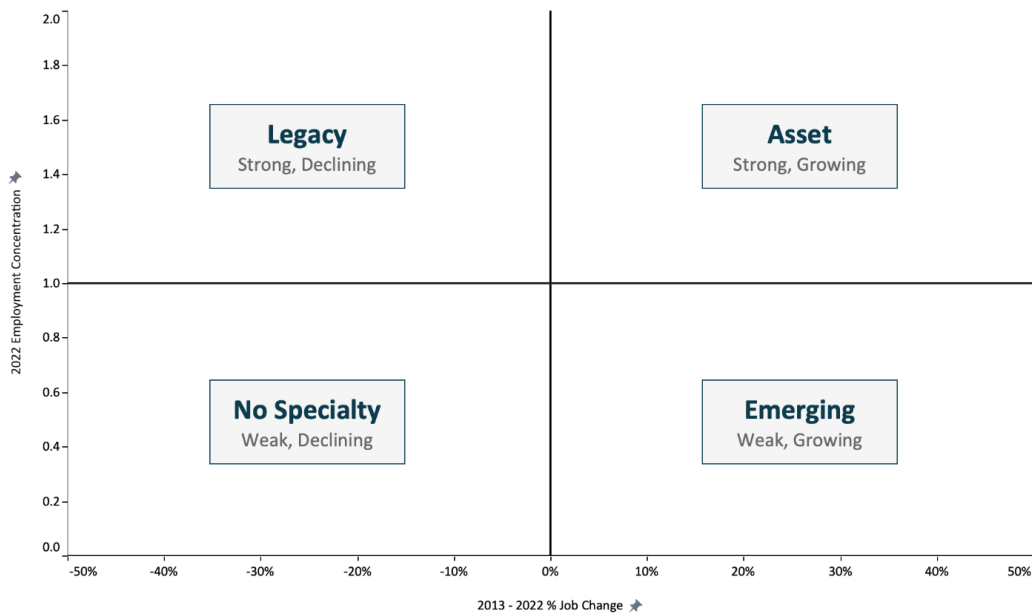
-Bloomberg

The cluster groupings are very closely related to those provided by U.S. Cluster Mapping, a project of the Harvard Business School. Those cluster groupings have not been updated to reflect the most recent iteration of NAICS codes. Therefore, data from Lightcast and their conversion of the U.S. Cluster Mapping using 2019 NAICS codes was used to create cluster groupings. A few technology-related sectors were moved from the business services cluster to the technology cluster. These clusters were then evaluated on recent growth, location quotients, wages, and total employment.

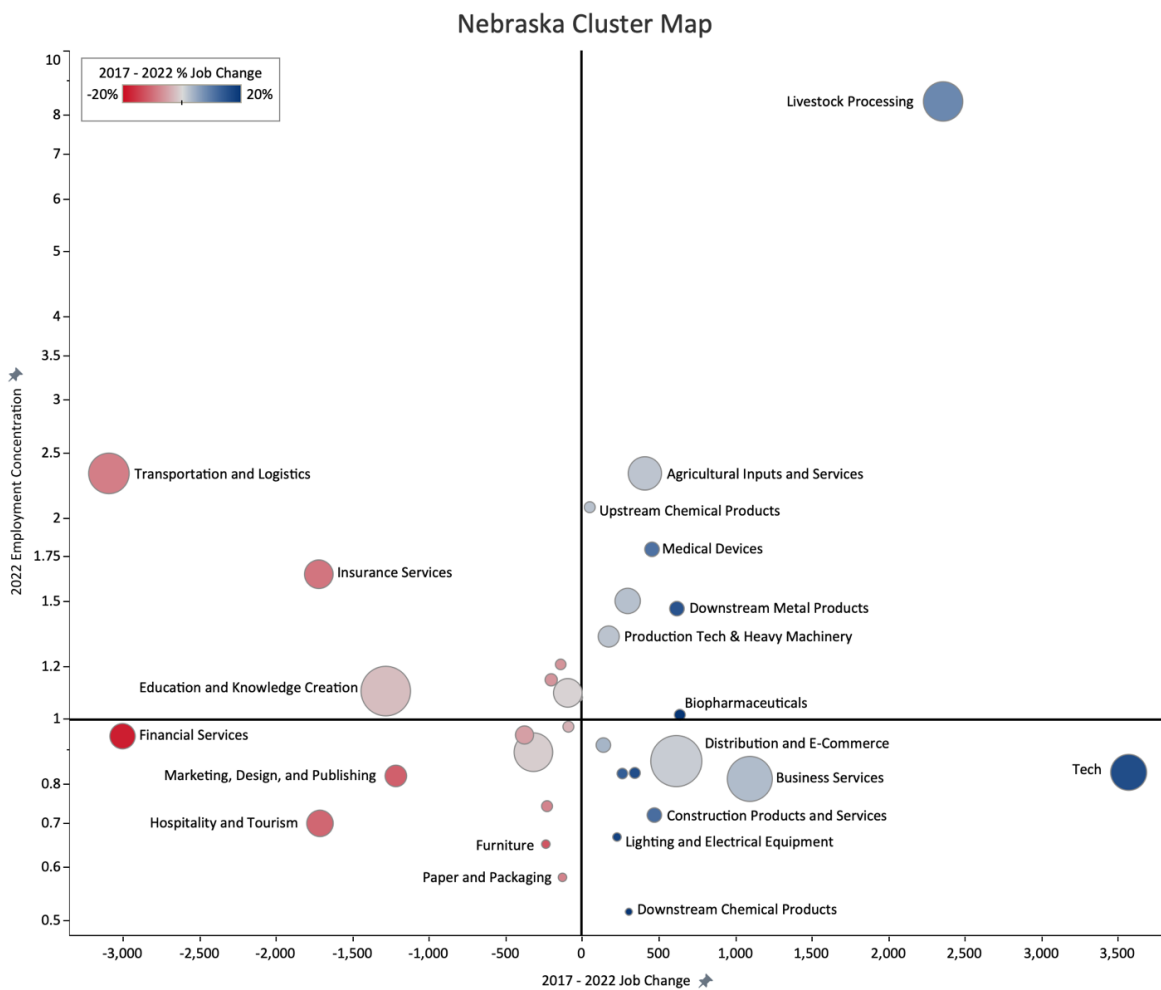
Employment concentration ratios help demonstrate the clusters that have high concentrations in a state. They measure the concentration of a cluster's employment in Nebraska compared to national employment levels. A ratio of greater than 1.00 demonstrates a higher concentration than what would be expected based on national levels. This can reveal what clusters are uniquely strong in Nebraska and which industries attract significant money from outside the state by exporting goods or services.

When mapped alongside employment growth, concentration ratios can show which clusters are thriving or declining. The chart below demonstrates where a cluster may fall on the map and how it corresponds to its strength and growth. Positioning on the map provides one piece of intelligence to support the choices that organizations make to determine how to use marketing and personnel resources.

Example Chart for Cluster Mapping



Nebraska has seven clusters that measure as assets, meaning they experienced strong employment growth in the last five years and are heavily concentrated in the state. Three of these asset clusters are related to agri-business – including livestock processing, agricultural products, and food processing. The other asset clusters are manufacturing-based clusters, including the production of chemical and metal products. Seven clusters register as “legacy” clusters and two of those are small employment clusters. Transportation and logistics is one of the most concentrated clusters in the state, but it saw the most job losses in the last five years. The largest losses in this cluster were in the rail and long-distance trucking industries. Another ten clusters in the state classify as emerging (low concentration but high growth). These include a variety of sectors including plastics, business services, construction, metalworking, and tech.

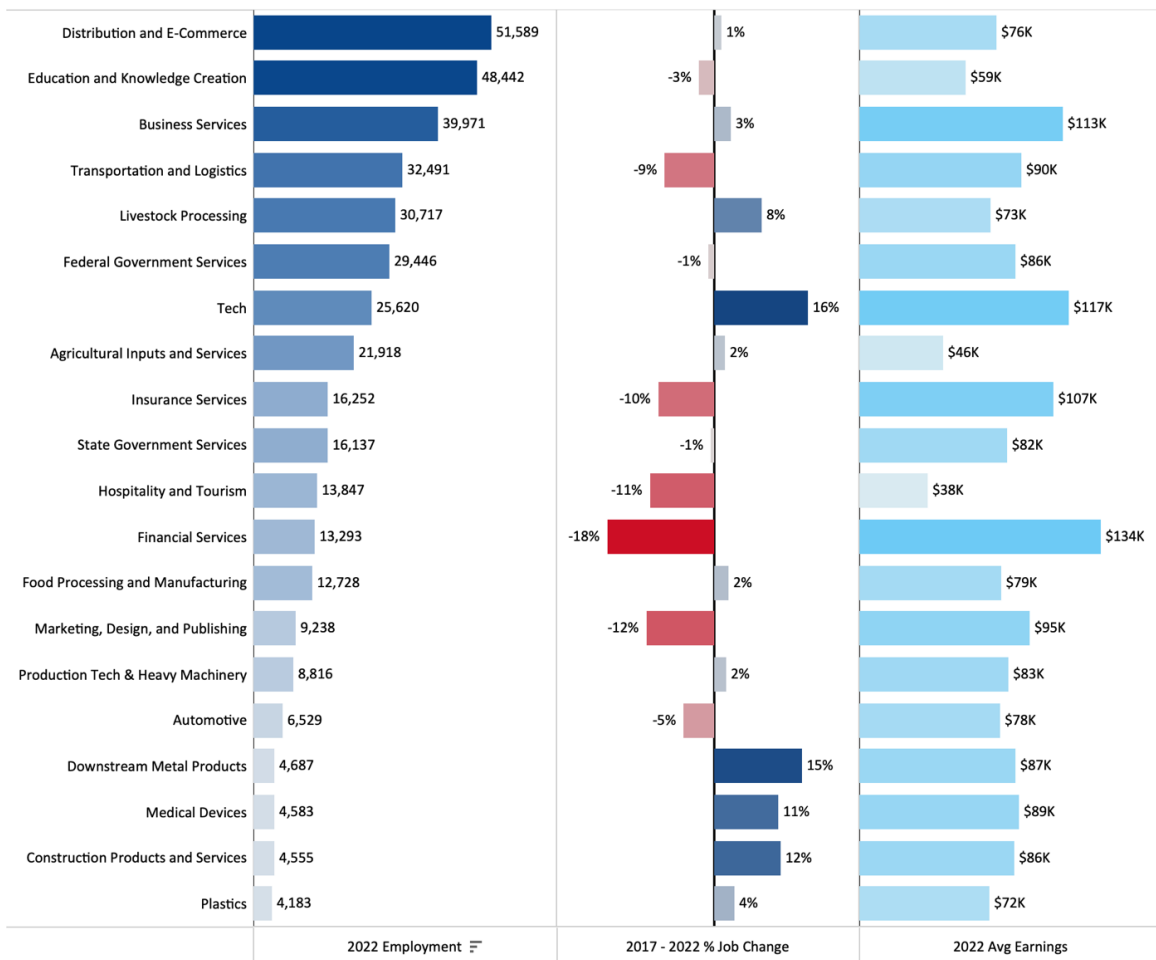


Source: Lightcast 2023.3
 Note: The size of each cluster bubble is determined by the size of 2022 employment levels. Clusters with fewer than 900 employees were left off the chart.

The largest cluster in terms of employment is distribution and e-commerce. This employment is largely driven by the state’s farm supplies wholesalers and general warehousing and storage industries. Overall, jobs in this cluster have experienced a small net increase in the last five years. The education and knowledge creation cluster is the next top employing cluster. This is led by the state’s universities, and many of those institutions have trimmed jobs in the last five years. Research and development is also a small part of the cluster. R&D in biotechnology, in particular, has added 290 jobs in Nebraska in the last five years.

Five of the top ten employing clusters experienced job gains from 2017 to 2022. The Nebraska economy tends to be more dominant in manufacturing-based clusters than knowledge-based sectors. The top manufacturing-based clusters in the state are food processing, machinery production, automotive, and plastics. Some knowledge-based sectors, however, have seen strong growth in recent years, like tech and business services. A benefit of these knowledge-based clusters is that they offer workers high average earnings.

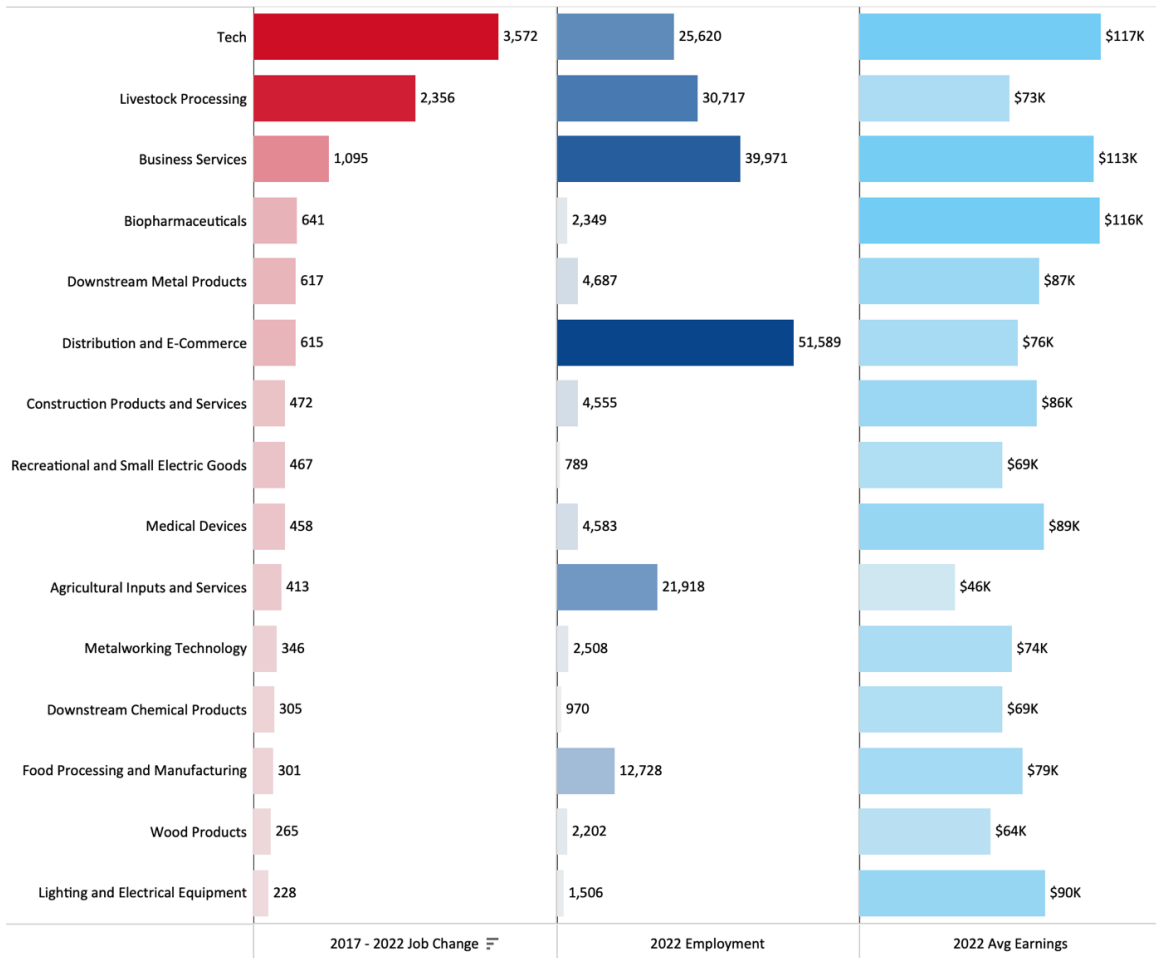
Top Traded Clusters by Employment in Nebraska



Source: Lightcast 2023.3

The fastest growing clusters in the state over the last five years have been tech, livestock, biopharmaceuticals, and business services. Within tech, software publishing is the largest growing segment. From 2017 to 2022, this industry added over 4,690 jobs to the cluster. Jobs have also grown in some of the manufacturing portions of this cluster, including semiconductors and computer equipment. Livestock processing is one of the strongest clusters in the state and has added jobs in recent years, as well. Jobs in this sector pay higher than the state average for all industries but lower than many other clusters. Biopharmaceuticals and medical devices are two clusters that are growing consistently in many parts of the nation, including Nebraska. The biggest growth in business services has been in engineering firms and management consulting. Manufacturing growth has been strong in several clusters, including construction products, recreational goods, metal products, and wood products. The recreational and small electric goods cluster added over 450 jobs just in the motorcycle and bicycle manufacturing segment in the last five years.

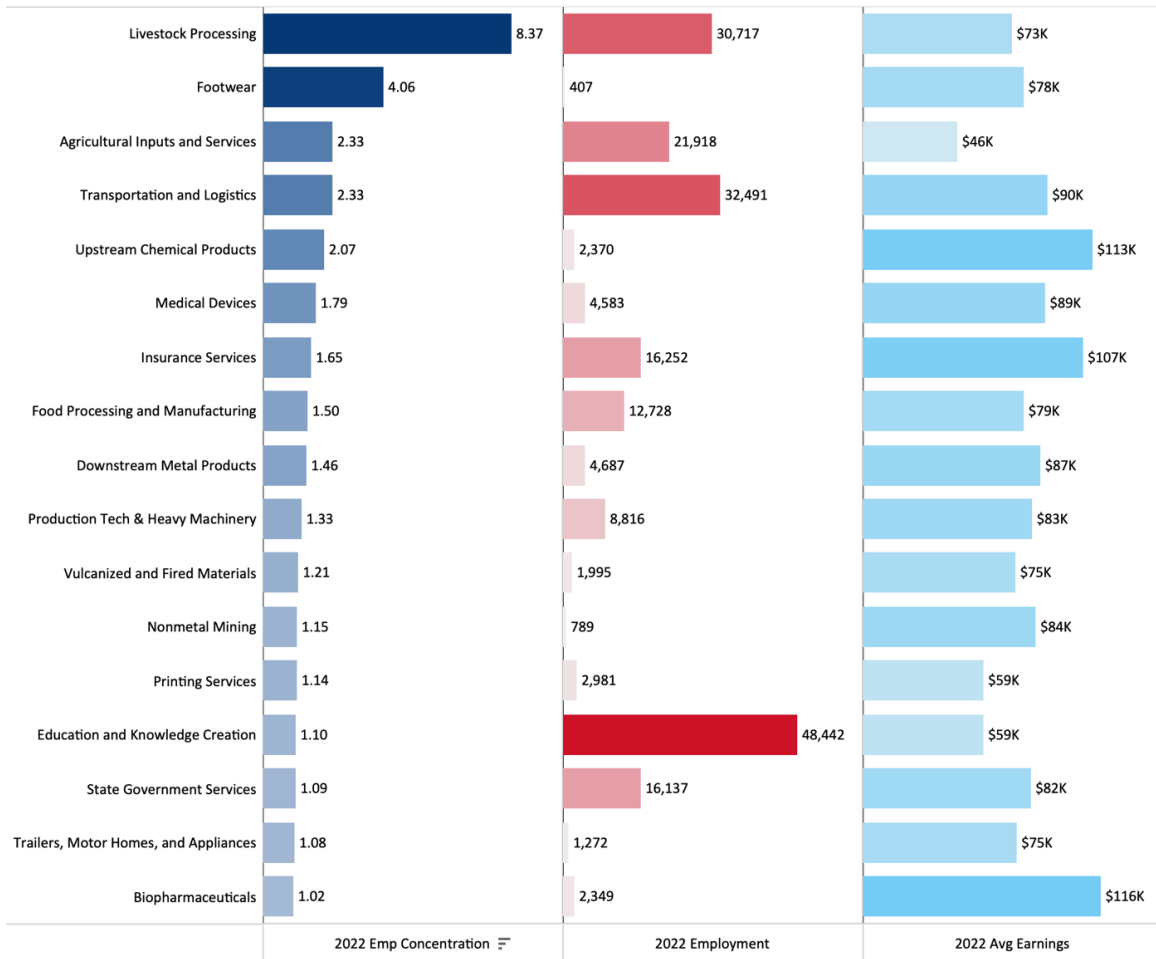
Fastest Growing Clusters in Nebraska



Source: Lightcast 2023.3

Employment concentration ratios help reveal clusters that are important to Nebraska. The state has 17 clusters with concentrations higher than the national average. As a breadbasket and livestock producing state, agribusiness related clusters are strongly concentrated. Positioned in the middle of the country, the state also has a critical role in transportation and logistics. Upstream chemical products is twice as concentrated in Nebraska as the national average. Driven by ethyl alcohol and pesticide manufacturing, this cluster continues to be highly concentrated in the state, adding jobs and offering high wages to workers. Five of the top concentrated clusters offer average earnings per worker of over \$85,000 annually.

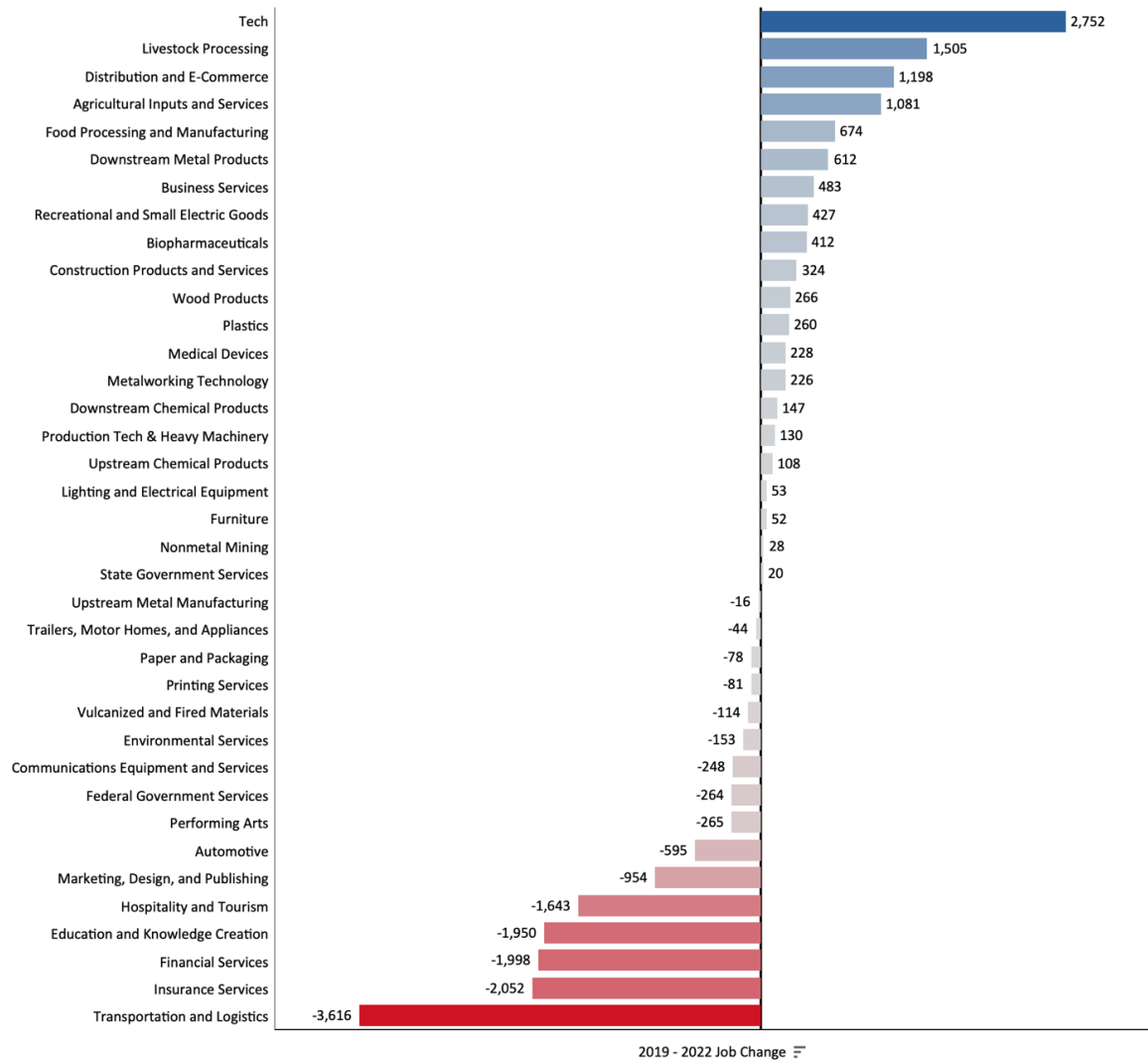
Clusters with the Highest Concentration in Nebraska



Source: Lightcast 2023.3

Given the unique disruption of COVID on the economy, it was important to determine if some of the job changes were related to the pandemic. When comparing the past three years (2019 to 2022 job levels), some clusters that saw job declines are likely to be pandemic related. For example, the hospitality and tourism cluster suffered from the lockdown phase and has not returned to its previous employment levels. Nebraska – like most areas of the country – saw increases during COVID in the distribution and e-commerce cluster from spikes in online shopping and purchases of durable goods. Conversely, several knowledge-based clusters declined in Nebraska against national trends. Knowledge-based clusters such as finance, insurance, and marketing were able to weather the pandemic storm nationally (in part due to remote work), but suffered job cutbacks in the state.

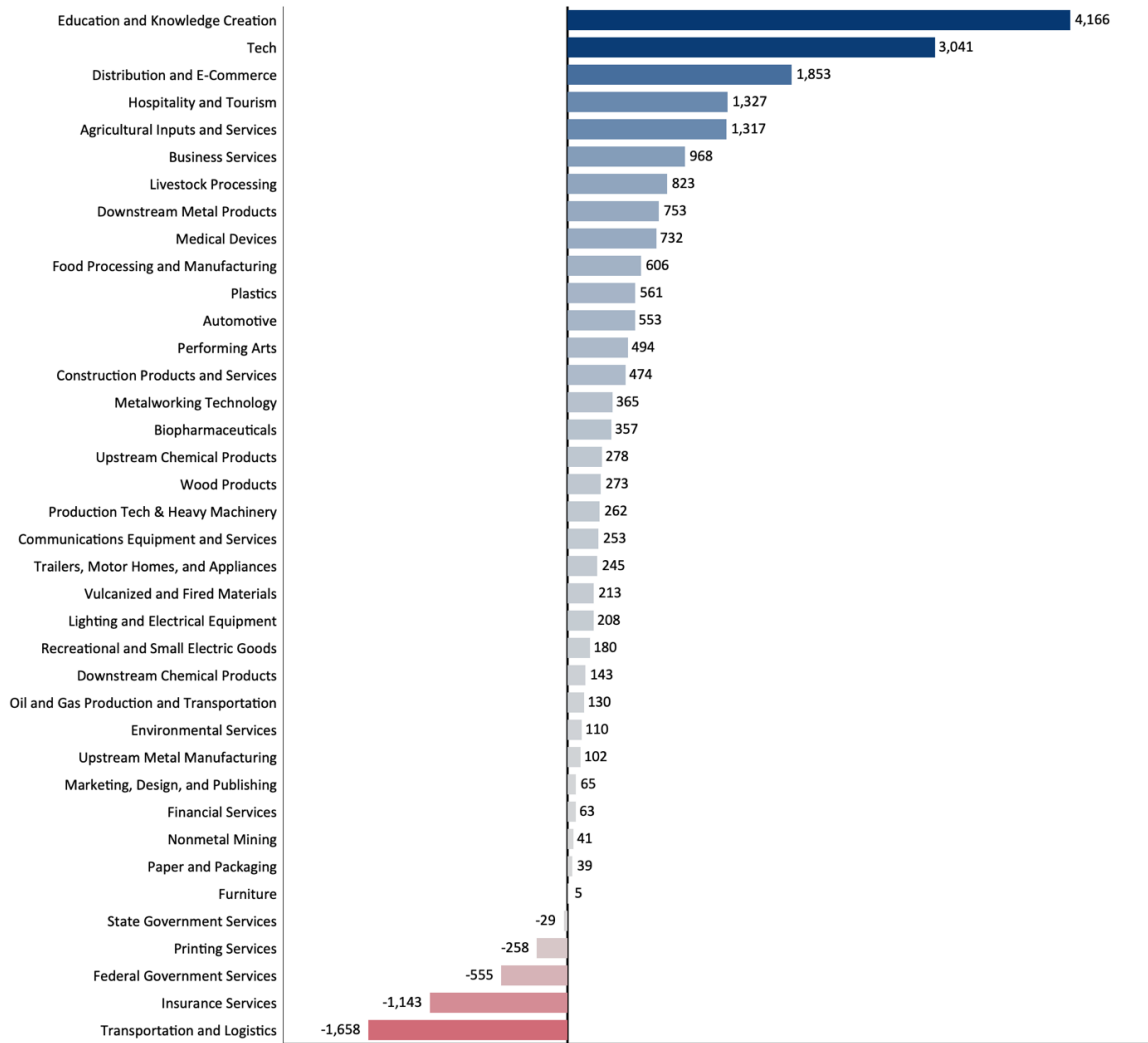
Pandemic Employment Impacts in Nebraska



Source: Lightcast 2023.3

Predictive models generated by Lightcast review the 5-, 10-, and 15-year historical job trends to make estimations on future growth. Based on these models, the next five years should be a time of continued expansion for most of Nebraska’s clusters. Education and tourism are expected to regain jobs from the pandemic—and more. The most promising manufacturing-based clusters for the near future are predicted to be metal products, medical devices, food processing, plastics, and automotive. Downstream metal products includes growth in prefabricated metal building materials and small arms ammunition. Tech is projected to continue its strong growth and add over 3,000 jobs in the next five years.

Predicted Employment Change in Nebraska



2022 - 2027 Job Change

Source: Lightcast 2023.3

Cluster Analysis Summary

For traded clusters, some of the economic development opportunities are grounded in industries with long histories in the state. With continued support, these clusters will continue to generate jobs and contribute significantly to the state's economy:

- Livestock Processing
- Agricultural Inputs and Services
- Food Processing
- Upstream Chemical Products
- Medical Devices
- Downstream Metal Products
- Production Technology & Heavy Machinery
- Transportation and Logistics
- Insurance Services

In addition, the state's future can be enhanced by focusing on and devoting resources to the following less concentrated but emerging industries:

- Tech
- Business Services
- Biopharmaceuticals
- Downstream Chemical Products
- Plastics
- Metalworking Technology
- Automotive

IV. Industry Sector Trends and Best Practices

This segment of the competitiveness report takes a deeper look at industry trends in four sectors of great importance to Nebraska’s economic future: technology, agriculture, manufacturing, and business services. It details national trends and areas of innovation, hubs of industry activity across the United States, and offers best practices for how states and regions have helped grow these key industry sectors.

Technology

The technology sector is nearly a \$2 trillion industry in America, employing 9.4 million people.ⁱ Similar to the U.S. economy overall, 2023 outlooks for the tech sector were relatively cautious, with analysts expecting a more “sober” year for the industry. This appears to have been the case, at least in terms of employment, with 248,700 tech company layoffs in the U.S. tallied as of early November 2023.ⁱⁱ Many of these have come from the biggest names in the sector.



Still, few think the high-flying sector will experience more than a brief pause. One analyst projected a 2.4 percent increase in global spending on enterprise technology in 2023 as firms continue to invest in digital transformation.ⁱⁱⁱ Others note that the national and global economies are at a tipping point for broad adoption of technologies like AI, cloud and edge computing, 5G and 6G cellular, and low Earth orbit satellites. AI applications are rapidly being deployed in an incredibly broad range of uses, from healthcare to education and finance.

Deloitte suggested that tech firms will weather a slowdown by trimming costs and boosting efficiency. They also must grapple with supply chain issues and talent shortages. A key question for tech companies is which ones will continue to innovate and improve their competitive position in an uncertain economy. The innovation mandate might propel more merger and acquisition activity. Tech will also build a greater presence in other industries, from real estate and manufacturing to retail and healthcare.^{iv}

Other tech trends likely to continue in 2024 and beyond:

- **The “Datafication” of Everything** - modifying human chores and tasks with software or devices powered by data-driven technology.^v
- **Quantum Computing** – to help solve complex problems, quantum computing is expected to become “more accessible and powerful.” It offers applications in areas such as drug discovery and optimizing logistics.^{vi}
- **Robotics and Automation** – with a greater presence in healthcare and many other sectors. This includes Robotic Process Automation (RPA), using software to automate virtually any business office function.
- **Natural Language Processing** – a segment of AI used to understand human language, with applications in education, customer service, and healthcare among others.
- **Green Technology** – advancements in carbon capture, energy storage, and renewables.
- **Cybersecurity** – the increased use of AI, machine learning, and the Internet of Things (IoT) means even greater importance for cybersecurity. This will likely lead to cybersecurity itself turning to new technologies like blockchain and AI.
- **Digital Twinning** – to help companies make their design process and operations more efficient by going digital.
- **Genomics** – for disease identification and treatment.

Despite the large number of announced layoffs through the first ten months of 2023, CompTIA still projected 3.0 percent net job growth in the industry for the year. CompTIA’s report lists these as the fastest-growing occupations within tech:

- Data Scientists and Data Analysts
- Cybersecurity Analysts and Engineers
- Web Designers
- Software Developers and Engineers

In addition, CompTIA notes that the tech workforce is projected to grow at twice the pace of the overall U.S. workforce over the next ten years.^{vii}

This projection is reinforced in a recent survey by J.P. Morgan, where 84 percent of tech executives shared plans to add to workforce levels or maintain current levels this year.^{viii} Several large, publicly traded firms have made significant cuts, but this should make more talent available for mid-size and smaller firms. Companies say that they are striving to retain tech talent by offering more flexibility on where and when employees work.

According to CompTIA’s State of the Tech Workforce for 2023, Nebraska has about 52,500 tech employees in the state, ranking 34th highest in the nation. This equals about five percent of the state’s total employment, placing Nebraska 24th in the percentage of all workers employed in tech. CompTIA estimates the industry’s economic impact in Nebraska to be approximately seven billion dollars. The Omaha metro area has about 30,600 of those tech workers, ranking 40th highest among U.S. metros.^{ix}

States with the Highest Concentration for Tech Industry Employment

According to CompTIA, these states and Washington DC had the highest share of tech industry jobs as a percentage of total jobs in the state in 2022:^x

1. Washington	9.4%	6. New Hampshire	7.9%
2. Washington, DC	9.3%	7. Maryland	7.9%
3. Virginia	8.7%	8. California	7.7%
4. Massachusetts	8.4%	9. Utah	7.2%
5. Colorado	8.3%	10. Oregon	6.7%

Tech Sector Metro Employment Hubs

According to a 2022 article, these were the top ten tech hubs in the United States in terms of total tech employment:

1. San Francisco Bay Area	6. Dallas/Ft. Worth
2. New York City Metro Area	7. Chicago
3. Washington, DC	8. Boston
4. Los Angeles	9. Atlanta
5. Seattle	10. Denver

Of those, the metros with the greatest tech talent percentage growth from 2016-2021 were Seattle, Denver, and Dallas/Ft. Worth.^{xi} An April 2023 report listed the ten fastest-growing tech hubs in terms of salary growth. These were 1) Phoenix, AZ; 2) Tampa, FL; 3) Columbus, OH; 4) Portland, OR; 5) Charlotte, NC; 6) Miami, FL; 7) Sacramento, CA; 8) Raleigh, NC; 9) Boston, MA; and 10) Seattle, WA.^{xii}

The movement from more costly states and metros to those that are more affordable increases opportunity for Nebraska. Much of that opportunity will lie in specific, emerging subsectors of tech.

The U.S. Fintech Subsector

Consultants from JLL discussed existing and emerging financial technology (fintech) hubs in a 2023 report. They wrote that the U.S. dominates fintech investment funding, landing 40 percent of all deals globally. With 78 percent of U.S. consumers preferring to manage their finances online, fintech growth is expected to continue. JLL divided leading fintech hubs into three categories, and noted that the sector is decentralizing. Of course, talent recruiting opportunities are among the key location considerations.

Below are the leading fintech hubs as defined by JLL:

- **Core Hubs** - New York City and the San Francisco Bay Area
These two metros contain about 45 percent of the U.S. fintech headquarters of firms with 100 or more employees.
- **Established Second Tiers** - Los Angeles, Chicago, Boston, Philadelphia
- **Emerging Growth Markets** - Atlanta, Charlotte, Denver, Dallas, Salt Lake City^{xiii}

For fintech, Startup Genome ranked these U.S. metros among the top 25 startup ecosystems in the world in 2022:

- | | |
|-------------------|-------------|
| 1. Silicon Valley | 14. Chicago |
| 2. New York City | 17. Atlanta |
| 8. Los Angeles | 18. Seattle |
| 9. Boston | |

Others mentioned after the top 25 were Austin, Miami, Washington DC, Dallas, and Salt Lake City. In a separate ranking of smaller metros, Austin and Salt Lake City made the top 20 while Kansas City and St. Louis were in the top 30.^{xiv}

Top Metro Areas for Finance Workers

An analysis updated in late 2022 by LinkedIn and Zillow ranked the best U.S. cities for finance workers. It looked at factors including after-tax financial occupation income, income tax rates, rent and home prices, job openings, and hiring rate. Among 30 large metros, the top ten were as follows:

- | | |
|---------------------|-------------------------|
| 1. Charlotte | 6. New York City |
| 2. Dallas/Ft. Worth | 7. Seattle |
| 3. Phoenix | 8. Austin |
| 4. Boston | 9. Minneapolis/St. Paul |
| 5. Chicago | 10. San Francisco Bay |

The Medical Technology (MedTech) and Medical Devices Subsector

The U.S. medical devices market is the world's largest, making up 40 percent of the global market. American firms also export a large volume of medical devices outside the country, creating a strong trade surplus. Industry revenues in America are estimated to be \$164 billion in 2023, and the market is projected to grow at a rate of five percent annually over the next several years. There are an estimated 6,500 MedTech companies in the United States, employing about 520,000 people.

The MedTech sector includes both devices and services like health data. An analyst with Deloitte expects that the U.S. MedTech sector will continue its post-pandemic rebound through 2023 “and possibly accelerate.”

Some key trends to watch:

- **Increased R&D** – 80 percent of MedTech executives say that developing innovative products is a top priority, and 75 percent plan to focus more on R&D investments.
- **Digital Technology Talent** – medical equipment companies are putting much more emphasis on hiring talent with data science and other digital technology expertise.
- **Emerging Global Markets** – analysts see huge opportunities for U.S.-based firms from the growth in healthcare devices and services in large developing economies like China and India.
- **Cost Concerns** – a real challenge for firms is providing value in an atmosphere where U.S. healthcare costs seem “unsustainable.”
- **Technology Companies in the Medical Equipment Arena** – there will be a continued blurring of the line between (often implanted) medical devices and wearable health devices for consumers, with more traditional tech firms getting into the MedTech arena.^{xv}

Best Practices in Technology

★ Many states have stepped up regulatory reform efforts in recent years. One avenue of regulatory reform is through so-called “sandbox” legislation that promotes innovation – such as the adoption of new technologies – in regulated industry sectors like financial services and transportation. In 2021, Utah became the first state to create a “universal sandbox,” in which innovators from any industry can apply for an exemption from regulations. With the universal sandbox, a new product or service that would not be permitted under existing regulations can be tested for a set period of time, with certain requirements such as reporting. This could, for example, permit new fintech applications in the financial sector. The goal is to promote experimentation among companies with high growth potential. The universal sandbox program is administered by the Utah Office of Regulatory Relief, also created in 2021.

In a September 2023 opinion piece about the next phase of applying AI technologies, Ben Wilterdink from the economic mobility think tank Archbridge Institute writes that Utah’s

sandbox reforms could lead it to the forefront of innovation: “The potential of AI to unlock new opportunities and innovations is vast. From flexible regulatory frameworks to skill development, Utah is leading the way in preparing for a bright and dynamic future of technological change.”^{xvi}

★ Texas created a new tax incentive focused on technology with JETI – the Jobs, Energy, Technology, and Innovation Act – in 2023. The legislation provides a ten-year tax abatement for the construction of a new or expanded facility “engaged in research, development, or manufacture of high-tech equipment or technology.” Companies can qualify for the incentive based on the amount of capital investment and job creation, both on a sliding scale according to the county population where the project is located. In keeping with economic development project trends, the job creation requirements are modest. The required new employment levels vary from ten to 75 full-time jobs, while capital investment minimums range from \$20 million to \$200 million.

★ A leading model for tech transfer from research universities is the University of Utah, recently rated by the Milken Institute as the nation’s best university for tech transfer and commercialization. Utah was also ranked second in the nation for “innovation impact productivity” in a 2020 report by the George W. Bush Institute. The school’s PIVOT Center assists with the commercialization process and evaluates projects to minimize risk. The Commercial Engine Committee – a “unique asset” according to Milken – is a group of outside experts who help make the process more efficient. In 2022, the PIVOT Center reported \$22 million in licensing income, 307 patents filed, and 122 patents issued by University-related initiatives.

★ Nebraska has its own highly rated innovation asset in the Nebraska Innovation Campus (NIC) adjacent to UNL. In 2023, the Innovation Campus was named the “Outstanding Research Park” by the national Association of University Research Parks. The campus is planned to eventually host 2.2 million square feet of building space and 5,000 employees, two-thirds of which NIC hopes will be private sector workers. For the state, an important goal should be to fund NIC sufficiently for it to serve as an innovation strategy hub for existing businesses all across Nebraska, helping them to innovate, automate, and grow.

Agriculture

The U.S. Department of Agriculture (USDA) has forecasted net farm income in America to be \$141.3 billion for the calendar year 2023. This would be a 23 percent drop from the record numbers of 2022, but still more than 20 percent above the long-term average from 2002-2022. Total crop receipts are expected to drop four percent (led by corn and soybean income), and animals and animal products by 4.6 percent.^{xvii}



Based on 2022 data, Nebraska ranks fourth nationally in gross farm receipts (\$31.8 billion) and eighth in net farm income (\$6.59 billion).^{xviii} The state's 44,300 farms occupy 44.8 million acres, the fourth largest total acreage in the United States.^{xix} Nebraska ranks fourth in the value of animals and animal products, with cash receipts from cattle and calves totaling \$13.68 billion in 2022. It ranks fifth in crop production value, led by corn which had 2022 cash receipts of \$10.75 billion.^{xx}

Key Trends for the Second Half of 2023 and Beyond

- **U.S. Farm Regulations** – Late in 2023, the existing U.S. Farm Bill from 2018 was extended through September 30th, 2024. A new farm bill could be considered again later this year. Passage of a new one may be difficult as the farm bill budget could exceed one trillion dollars for the first time. About 80 percent of the budget would be for the Supplemental Nutrition Assistance Program (SNAP), and there may be a push to impose more work requirements for recipients.

Also of note is the Supreme Court's affirmation of California Proposition 12, which bans the sale of pork, veal, and eggs from farms that do not meet animal raising production standards. The ruling could open the door for other state laws that affect interstate commerce.

- **Falling Prices and Higher Production Costs** – Costs such as labor and interest rate expenses are expected to impact profits as commodity prices fall from the high levels of 2022. Early estimates for 2024 are that production input costs will remain elevated in the United States.
- **Diversification and Risk Management** – More farmers are diversifying their crop mix to reduce the risk of over-reliance on one or two crops. Other risk-reduction tactics include a) adding irrigation systems where rain is unreliable; b) using machines and hired labor to

plant and harvest at peak periods; c) purchasing larger storage systems; and d) greater use of futures and options contracts to hedge against price volatility.

- **Climate Change and El Nino** – Climate change is producing more “feast or famine” production cycles. Natural disasters (from drought to hurricanes to wildfires and floods) led to production shortages and high prices in 2022, but ample rainfall in the western U.S. could cause surging supplies and falling prices this year. Global food prices reached a two-year low in May 2023. The return of El Nino in the U.S. could further impact markets for grains and oilseeds.
- **Precision Agriculture** – Despite the costs and training needs, more farmers are adopting a mix of technologies to monitor and adjust tactics for segments of their land in real time. Using precise monitoring allows farmers to reduce usage of inputs and lessen their risks (by, for example, detecting plant diseases earlier).^{xxi}

Longer term, the OECD-FAO Agricultural Outlook for 2023 through 2032 predicts a global annual increase of 1.3 percent in global food consumption in calories. This is a slower pace than the previous decade, due to a projected slowdown in world population and per capita income growth. The OECD report also estimates a 1.3 percent annual gain in livestock and fish production, resulting from increased per animal productivity. It projects a rapid intensification in the production of livestock in low- and middle-income countries.^{xxii}

AgTech Trends:

The U.S. AgTech or “smart agriculture” market was valued at \$18 billion in 2021 and is projected to grow to \$43 billion by 2030. A 2022 report by Startup Genome ranked the top 25 metro ecosystems in the world for AgTech and New Food. Those in the United States (with their global rankings) are listed below:

- | | |
|-------------------|---------------------------|
| 1. Silicon Valley | 10. Research Triangle, NC |
| 2. New York City | 12. Seattle |
| 5. Denver-Boulder | 17. Chicago |
| 6. Los Angeles | 20. San Diego |
| 7. Boston | 22. Washington, DC |

Others U.S. locations receiving mention were Minneapolis, Des Moines, and Santa Barbara. Startup Genome ranks AgTech and New Food as the fastest-growing startup sub-sector, with funding deals increasing by 128 percent over the last five years.^{xxiii}

Among the AgTech trends that are likely to increase in importance during 2024:

- **Data-Driven Decision Making** – Technology can produce useful farm data on everything from soil moisture and temperature to nutrient levels and plant health. Drones, GPS, AI, and infrared photography help farmers to use only as much water, fertilizer, and pest control as needed and where needed. Big Data can help pinpoint new and expanding market opportunities.
- **Indoor Farming** – This is known as controlled environment agriculture (CEA) and often incorporates “vertical farming” in vertically stacked layers. This trend is bringing food production to controlled, indoor environments and promises quicker, fresher food delivery to customers in urban areas.
- **Sustainability in All Things** – “Regenerative agriculture” aims to minimize the use of chemicals and synthetic fertilizers, while restoring farmland to status as carbon sinks rather than greenhouse gas emitters. Sustainable packaging includes the use of less packaging as well as lighter, naturally derived materials which will reduce transportation costs.
- **Biotechnology** – This includes expanding the use of genomic editing to reduce crop disease and product flaws.

Best Practices in Agriculture

★ A number of states have ramped up their support for agricultural research at public universities. This includes the University of California, Davis developing a sustainable agriculture research hub. The Resnick Center for Agricultural Innovation at UC Davis will focus on five themes: 1) identifying innovative solutions for agricultural byproducts; 2) maximizing water and energy efficiencies; 3) developing next-generation technologies; 4) making crops more resilient and sustainable in the face of climate change; and 5) expanding access to nutritious food. Funding to establish the Resnick Center included a \$50 million private donation.

There is also a new AgTech Innovation Hub at the Ohio State University, co-sponsored by Nationwide Mutual Insurance. OSU’s AgTech Innovation Hub is focused on “applied research, technology transfer, the exchange of knowledge and experience, and transdisciplinary innovation in support of agricultural technology.” Mitigating climate risk is another goal. The Hub’s first round of funding for research projects was announced in June 2023.

★ Since 2009, Minnesota has provided significant state funding to promote innovation in agriculture through the Agricultural Growth, Research, and Innovation Program, or AGRI. In 2022, a total of \$15.8 million in grants was awarded via AGRI to agricultural businesses, farmers, and schools in 13 topic areas. AGRI was funded at \$18 million in 2023.

Manufacturing

In January 2020, just before the COVID-related shutdown, the Institute for Supply Management Manufacturing Purchasing Managers Index (ISM Manufacturing PMI) read 50.9 percent. Three months later, the figure indicated contraction at 41.5 percent. But less than one year after that, the index hit a recent high of 64.7 percent, with a Yahoo Finance columnist noting



that “businesses simply cannot keep up with this recovery.” The index indicated manufacturing expansion for 28 consecutive months, then started a downward trend around November 2021. The November 2023 reading was the 13th consecutive month showing manufacturing sector contraction (shown by an index below 50.0 percent).

The National Association of Manufacturers (NAM) Manufacturers’ Outlook Survey for the third quarter of 2023 revealed mixed opinions about current and expected future conditions. A solid majority of manufacturers – 65.1 percent – were somewhat or very positive about their firm’s outlook; however, this represented the fourth consecutive quarter with sentiment below the long-term average of 74.9 percent. Some concerns have eased significantly, including worries about the likelihood of a recession, inflation fears, and supply chain problems.

The biggest concern across America – not surprisingly – was workforce. Seventy-two percent of manufacturers cited this as their top challenge. Workforce was followed by domestic economic conditions, healthcare costs, and an unfavorable business climate as the most daunting business concerns. The percentage indicating worry about an unfavorable business climate hit the highest level in six years.^{xxiv}

Nebraska’s manufacturing sector health can be measured by the state’s real manufacturing GDP provided by the Federal Reserve Bank of St. Louis. Nebraska’s real manufacturing GDP has generally been on an upward trend since 2005, with disruptions during the Great Recession and the COVID pandemic. It hit a pre-COVID high of \$13.4 billion in the fourth quarter of 2019 before falling to \$12.2 billion in the second quarter of 2020. The state’s manufacturing GDP has risen in strong fashion since then, hitting a high of \$15.0 billion in the late 2021 and a most recent reading of \$14.4 billion.^{xxv}

Major Trends Driving Innovation

An industry review by Oracle in July 2023 noted five major trends driving innovation in manufacturing. This drive to modernize – often called Industry 4.0 – is creating a “generational shift” to smart factories that incorporate robotics, the Internet of Things (IoT), data analysis, augmented reality, and other technologies.^{xxvi} This push to innovate is driven by both technological advances and federal government initiatives such as the CHIPS and Science Act and the Infrastructure Investment and Jobs Act.

These are the five key trends underway:

A. Technology Investments

According to a 2023 survey by Deloitte, the three most common investments in manufacturing technology are in 1) robotics and automation; 2) data analytics; and 3) IoT. Robotics and automation are critical for addressing labor shortages, reducing costs, and speeding up production. Data analytics are used in market forecasting and to spot supply shortages sooner. IoT uses sensors throughout the factory and in equipment to improve supply chain tracking, manufacturing efficiency, and product maintenance.

Manufacturers also say they are prioritizing digital transformation to increase competitiveness. They rank the top positive impacts of digital and data-driven processes as described below:

- Increased efficiency
- Better and faster product development
- More responsiveness to the market
- Deepened customer relationships

One example of what digital transformation can bring is the microfactory, a “small, modular, highly automated, and technologically advanced”^{xxvii} structure that can be set up near customer hubs to reduce shipping and storage costs and make it easier to build customized products.

B. Reevaluating Supply Chains

Manufacturers are investing in digital technology for their supply chains as well, to analyze the role each participant plays along the chain. American firms are increasingly reshoring some materials sourcing and diversifying their supplier base across the globe to increase reliability and flexibility. However, companies need good data as they weigh the benefits of supplier diversification against the added time and cost of monitoring more suppliers.

C. The Factory of the Future

To the extent that factories can reduce human error and inaccuracies, they will become more efficient and productive. Factories already incorporate software for supply chain management and enterprise resource planning, but these often operate under disconnected legacy systems. As manufacturers update these systems and incorporate data analytics software, they will be

much more able to use real-time data to improve efficiency. Meanwhile, the adoption of robots, drones, and other automation will increase productivity while reducing labor costs and safety concerns. The global industrial robot market is expected to grow from \$475 million in 2020 to \$8 billion in 2030.

D. Talent Attraction and Retention

According to Oracle, labor shortages for U.S. manufacturers “are only expected to worsen in the coming years.” In addition to experienced workers retiring faster than they can be replaced, there is a particular shortage of individuals with needed skill sets – interacting with robots, sensors, and Industry 4.0 software, as well as the machinists, welders, and maintenance experts that are always needed. McKinsey & Company estimates that employer demand for hands-on, physical labor will decline by 30 percent in the next decade, while demand for technical skills will rise by 50 percent.^{xxviii} Overall, the talent issue has resulted in 45 percent of industry leaders saying they had recently turned down business due to workforce shortages.

Here are some of the tactics that manufacturers are using to improve talent attraction and retention:

1. Diversifying their recruitment efforts by targeting under-represented groups, including women, Black, Asian, and Latinx candidates;
2. Offering wage increases;
3. Implementing comprehensive recognition programs for team members;
4. Reskilling and upskilling of existing workers;
5. Improving the work environment, including using robots and drones to perform more dangerous or repetitive tasks;
6. Promoting a continuous learning environment to attract and keep younger workers.

E. Sustainability Investments

In a recent McKinsey survey, 22 percent of manufacturers said they have generated value (such as cost savings) from sustainability initiatives in the last five years, and 40 percent expect to reap value from initiatives in the next five years. Common measures incorporate “smart building” technologies such as sensor-controlled heating, cooling, and lighting. Other measures include sourcing renewable energy for their facilities and greater use of electric vehicles. More manufacturers are emphasizing corporate social responsibility. This can take the form of a carbon neutral pledge; thorough evaluation of supply chains for the environmental impact; and making social progress through hiring and promotion practices as well as inclusive corporate governance.

Other trends to watch in manufacturing:

- Fast-Growing Subsectors – According to a forecast by IBISWorld, the top-growing U.S. industrial manufacturing subsectors (by revenue) through 2028 will be: Solar Power Equipment; 3D Printers; Drones; and Electric and Hybrid Vehicles.^{xxix}
- Product as a Service – This will create more reliable income streams by not only selling products, but also offering them as a service, often by subscription. Examples include cloud computing and car makers providing vehicles on a service basis. Other potential services are product installation, monitoring, and maintenance.

Best Practices in Manufacturing

★ Creators Wanted is a national campaign to build the manufacturing workforce of tomorrow, led by the National Association of Manufacturers (NAM) and the Manufacturing Institute. Creators Wanted and the many resources on its website aim to address two key industry issues: misperceptions of modern manufacturing and worker skill gaps. Campaign goals for 2025 include attracting 600,000 new workers; increasing parents' positive perception of the industry from 27 percent to 50 percent; and increasing the number of students in CTE and reskilling programs by 25 percent.^{xxx}

★ More colleges are helping students and manufacturing employers by offering Industry 4.0 education and training. Northeast Wisconsin Technical College (NWTC), based in Green Bay, is one example. NWTC's Industry 4.0 curriculum can be used to upskill workers at a manufacturers' site, or to train new workers at one of the college's locations. Topics covered include:

- Introduction to Industry 4.0
- IoT Data Analysis and Visualization
- Virtual Reality and Augmented Reality Training and Remote Troubleshooting
- Supervisory Controls and Data Acquisition

Manufacturing students can obtain a certificate in Additive Manufacturing or an associate degree in one of seven manufacturing subareas. There are also a number of related I.T. and business diploma and degree tracks.

★ The successful Be Pro Be Proud career awareness program began in Arkansas in 2016, a joint initiative of Associated Industries of Arkansas and the Arkansas State Chamber of Commerce. The Be Pro Be Proud model has now been adopted in five additional states. Be Pro Be Proud touts the attractiveness of careers in skilled professions such as automation and robotics, CNC operations, commercial truck driving, medical technicians, and welding. It features mobile workshops that bring hands-on exposure to skilled trade careers to school students across a state. Be Pro Be Proud has exposed over 312,000 young people to skilled professions so far.

Business Services

The professional and business services industry in the U.S. employs about ten million people. The greatest number of these are in the computer systems design subsector. According to the Bureau of Labor Statistics, average earnings for all employees in the business services sector are \$40 per hour. This sector represents a \$64 billion market in America. The U.S. also enjoys a trade surplus of over \$100 billion from exporting these services (including legal, accounting, management consulting, R&D, engineering and architectural services.)



Top Trends in Business Services in the United States

- Even though IDC expects a slowdown in software spending in the U.S., it still projects the size of the U.S. market to grow by more than five percent annually over the next three years.^{xxxi}
- Digitalization of data is creating huge needs for extensive data analysis to better serve clients. As one observer puts it, “Data is the new gold.”
- Increased outsourcing of business management tasks is creating more opportunities for firms in business and financial services.
- There appears to be no easing of the talent wars to obtain and keep productive employees. Business and professional service firms are making work arrangements more flexible (including “gig” contract work and remote work for a portion of the workweek) to be attractive for top talent.
- The impacts of the COVID-19 pandemic increased demand for facilities management services. Facility managers must devise solutions that improve worker health, safety, and wellbeing, also balancing the need to create more flexible spaces that encourage employee interaction and incorporate hybrid work schedules.

- All of the business opportunities above put pressure on labor supply and, with wages rising, on labor costs. Industry observers think that labor costs and worker productivity could be the number one sector issue currently. Companies with a big field service component – like facilities management, commercial cleaning, security, or waste management – will need to embrace technology to keep labor costs down.
- In this labor-intensive field, automation will increasingly be adopted to improve productivity and reduce hiring pressures. AI and machine learning will facilitate data analysis tasks. AI resources like chatbots and natural language processing (NLP) will play growing roles in areas like advertising and customer service.

The top U.S. metro areas with heavy concentrations of consulting firms include New York, San Francisco, Boston, Los Angeles, Chicago, Houston, Denver, Atlanta, and Seattle. Washington, DC ranks high for legal services, while the San Jose area is a leading location for engineering services.

Best Practices in Business Services

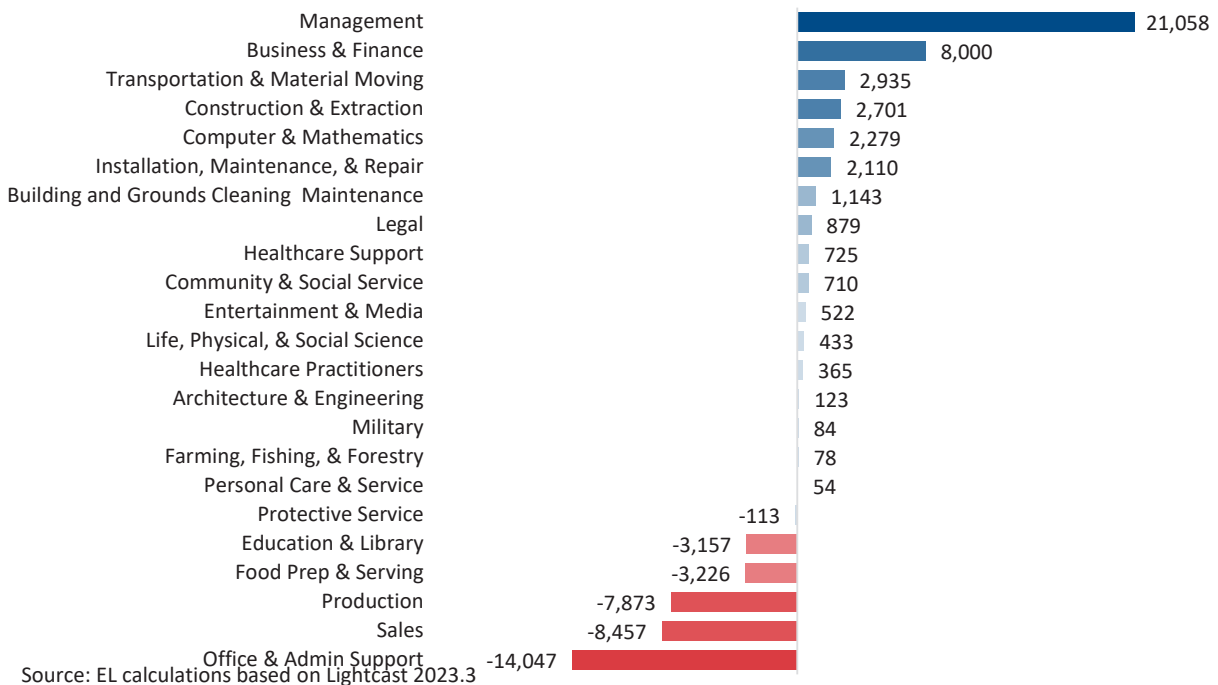
★ Professional and Business Services is one of the State of Michigan’s seven targeted industry sectors. The Michigan Economic Development Corporation website features podcast links with leaders in professional, corporate, and financial services in Michigan from organizations like AECOM, JPMorgan Chase, Goldman Sachs, and the Midwest Regional U.S. Patent & Trademark Office. It also has case studies describing why service firms chose to locate or expand in Michigan.

V. Occupational Analysis

This section looks at employment trends in Nebraska by occupation rather than industry sector, and it suggests some opportunities for in-demand, good-paying jobs that require less than a four-year college degree. The first chart shows a five-year trend in employment changes for major occupations in the state, during a period affected by the pandemic-related economic shutdown and its subsequent recovery.

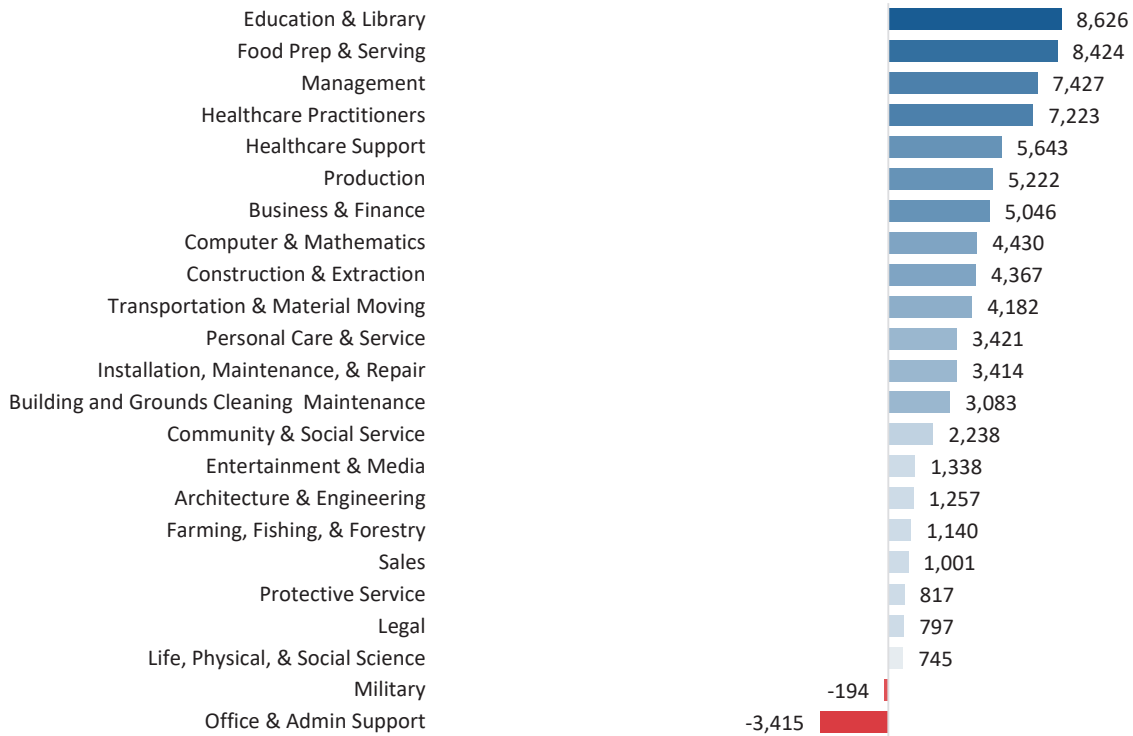


Occupation Job Change, 2017 - 2022



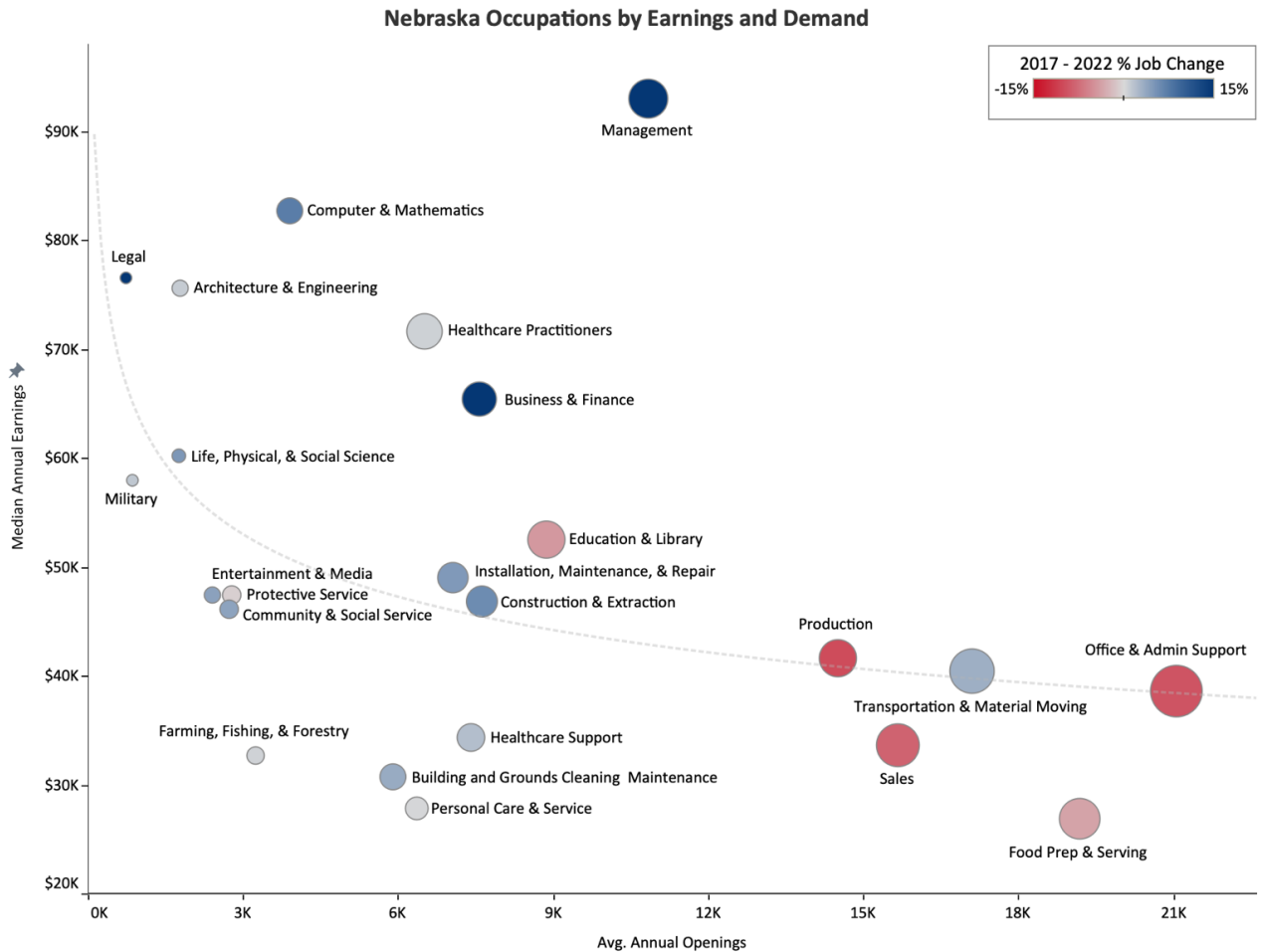
Occupations exhibiting the biggest net increase in employment include traditionally white-collar jobs in management, business, and finance, as well as blue collar positions in logistics and construction. The ten-year employment change chart below shows predicted strong growth in a wide range of occupations, from education and healthcare to manufacturing-related production jobs.

Predicted Occupation Change, 2022 - 2032



Source: EL calculations based on Lightcast 2023.3

The next chart plots prominent occupations in Nebraska by the number of annual openings, as well as median annual earnings. Leading occupations that are high paying and have a significant number of openings include those in management, healthcare professions, computer and math, and business and finance. Positions with mid-level wages and a relatively high level of openings include education; installation, maintenance, and repair; construction; and production jobs. It is worth noting that some occupations (circles shown in shades of red) that lost jobs over the past five years can still have a large volume of openings, due to frequent turnover and increasing retirements. That includes occupations in education, production, sales, and transportation and material moving.



Source: EL calculations based on Lightcast 2023.3

Top Demand for Jobs

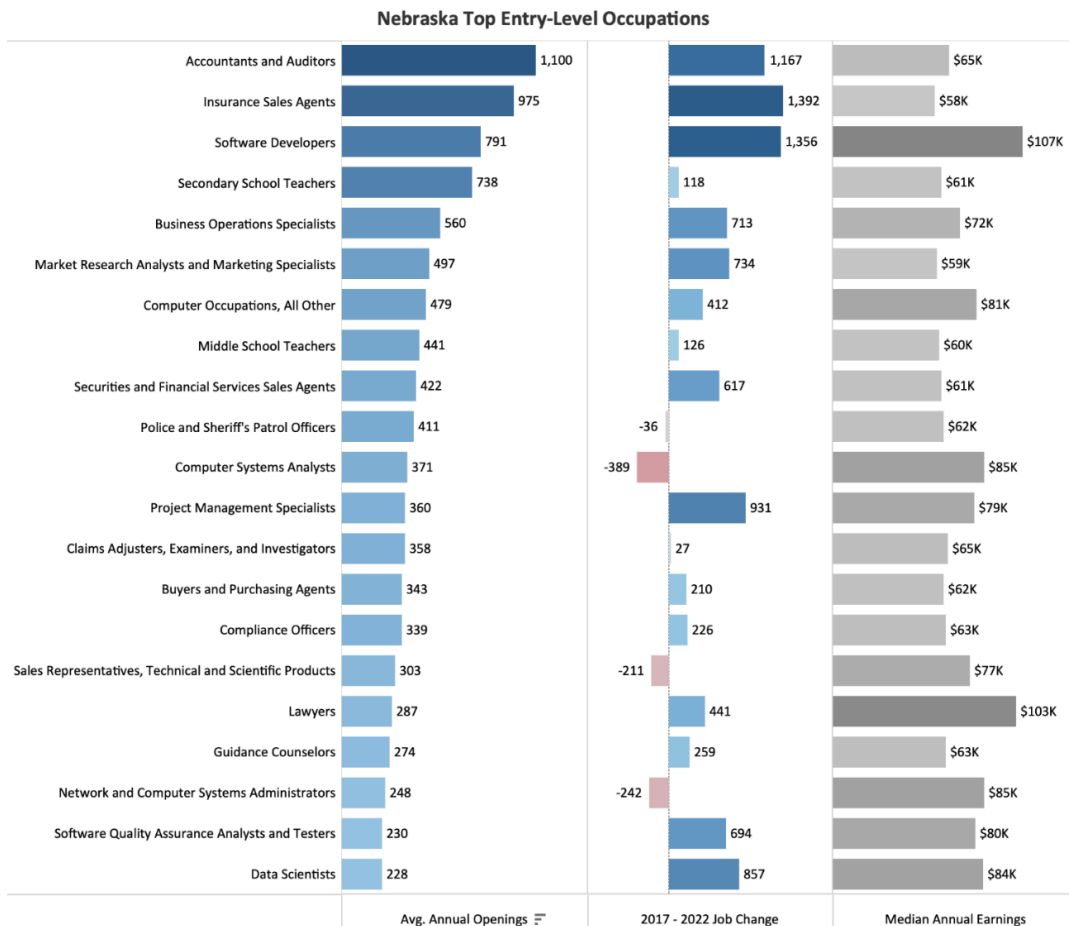
The average number of annual openings can help explain demand better than net job growth because the calculation accounts for the jobs needed to be added each year to replace retiring workers and keep pace with growth. Another part of the top demand jobs analysis includes filtering out jobs that would be at the highest risk for automation. This helps identify the jobs

that offer better longer-term prospects for workers. We use an automation index based on automation research to filter jobs.

The occupations with the greatest number of annual openings are often lower paying. Economic developers also want to create opportunities for area workers to earn higher wages. Accordingly, we also filter the top jobs list by median annual earnings.

Our analysis filtered for entry-level jobs that pay more than \$55k per year, had a net job change of better than -1,000, and have lower predictions for automation. This group offers some of the best options for upskilling and recruiting workers.

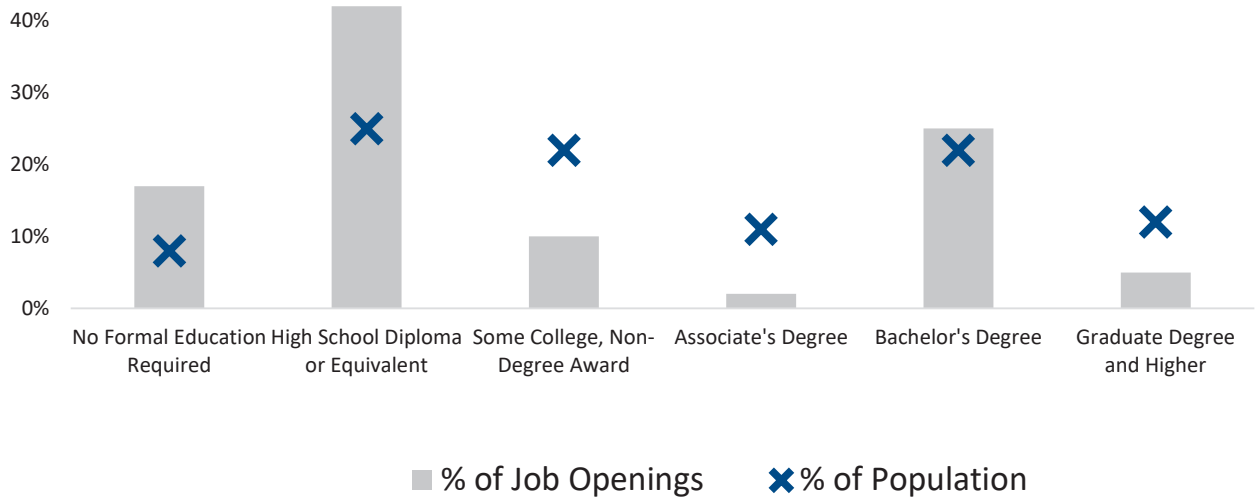
In this group of high demand and high opportunity, we find several business service jobs like accountants, sales, and purchasing agents. Data and tech jobs also rank as some of the best entry-level opportunities in Nebraska. Some of the jobs in Nebraska experienced net employment decline but still rank as top opportunities due to future growth and retirement predictions. This means that, even though overall jobs may be declining, the rate of retirement and turnover still requires many new applicants each year.



Source: EL calculations based on Lightcast 2023.3

Many of the top-demand occupations usually require a bachelor’s degree. This is changing as human resources teams begin to shift away from degree requirements to a focus on skills, but it is happening slowly. Only three of the top 25 top-demand occupations do not usually require a bachelor’s degree for an entry-level position. In Nebraska, a higher percentage of the openings are in jobs that do not have specific education demands. This demonstrates that having all students get at least a bachelor’s degree would create a mismatch with in-state opportunities.

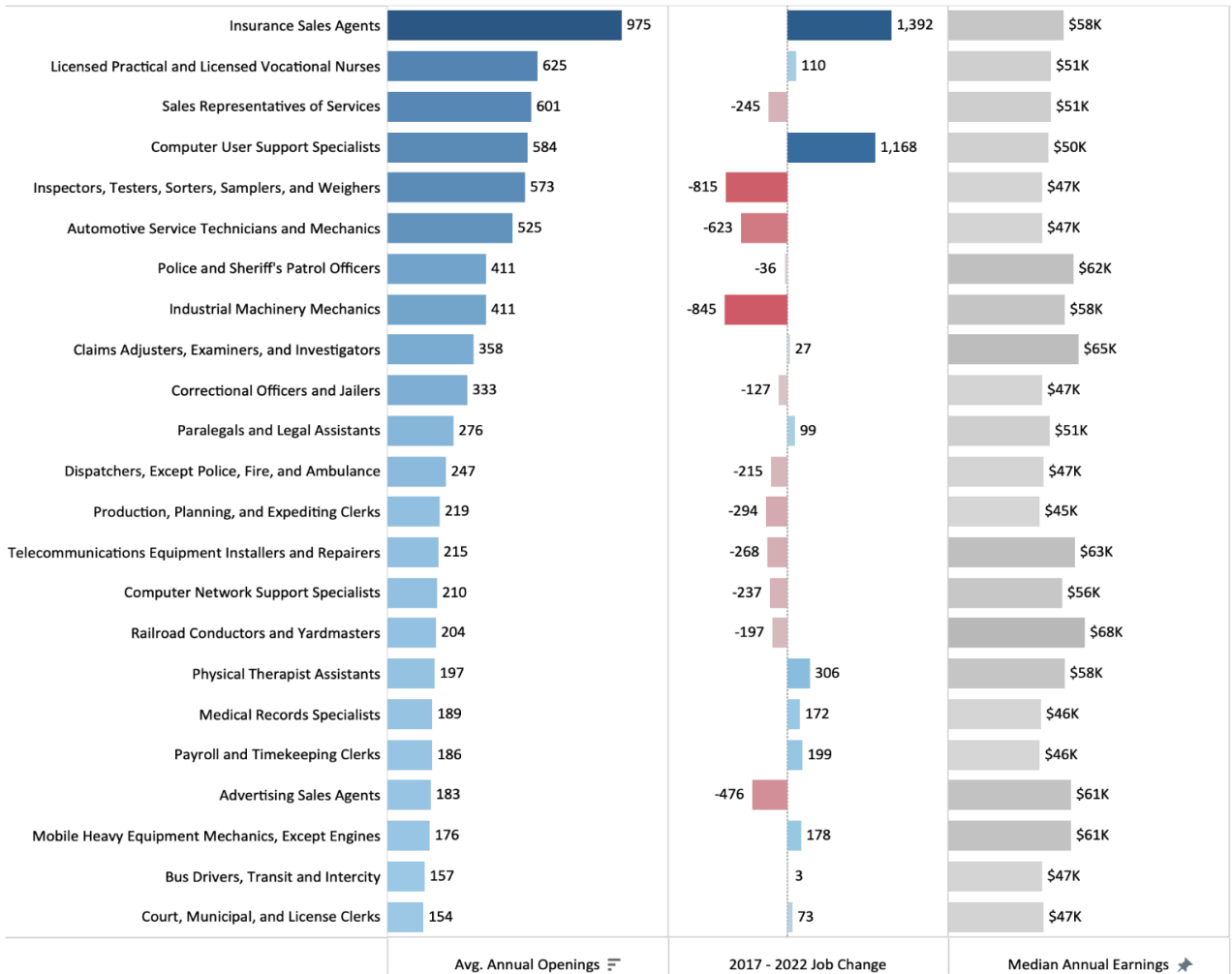
Nebraska Avg Annual Job Openings vs Education Attainment, 2022



Source: Lightcast 2023.3

The chart below shows top-demand jobs that do not require a bachelor’s degree or more education. To keep the list expansive, we adjusted the median wage requirement to \$45,000 and allowed a slightly higher likelihood of automation in the future. The list includes a wide range of occupations – in sales, nursing, computer support, automotive, public safety, and industrial mechanics. However, some of these occupations lost a significant number of jobs over the last five years.

Nebraska Top Entry-Level Occupations Requiring Less than a Bachelor's Degree



Source: EL calculations based on Lightcast 2023.3

The state has several high-demand jobs that do not require a bachelor’s degree or higher. These occupations include jobs in healthcare, computers, and business services such as payroll clerks. This type of data may be helpful in showing students and parents the opportunities in the trades and other occupations that pay good wages without advanced education. If students enter the skilled trades or protective services, they could be earning as much as a marketing analyst with half as much schooling required.

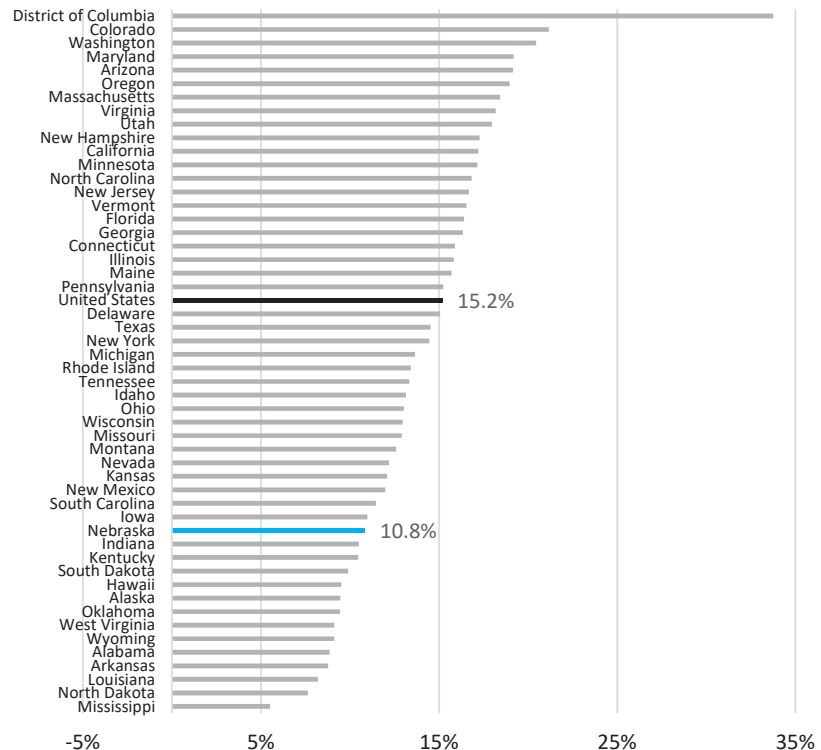
Non-Traditional Workers

A final workforce group to explore are non-traditional workers, which were growing in number before the COVID pandemic and have increased momentum since 2020. These less-traditional categories represent another target for talent recruitment and retention efforts.

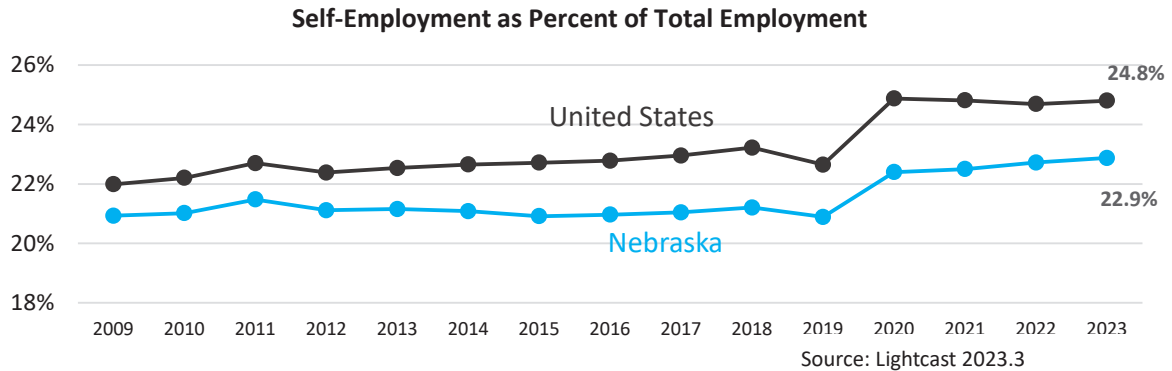
Remote workers still work for a company, but are typically not going into the office. They could even live in a different state than their employer. As of 2022, a relatively low percentage of Nebraska employees – about 11 percent compared with the national average of more than 15 percent – are remote. Given Nebraska’s attractive cost of living, good schools, and growth in services sectors like technology,

finance and insurance, the state could attract remote workers from more expensive locations in Colorado and on the West Coast. Some stakeholders we spoke with note that Omaha and Lincoln face stiff competition from other Midwest metros like Kansas City and Oklahoma City in attempts to lure younger and remote workers.

Remote Workers by State 2022



Another growing component of the U.S. workforce is the **self-employed**. Nebraska’s percentage of self-employed people in the workforce is slightly lower than the national average, though the gap has narrowed in the last two years. Again, Nebraska’s lower cost of doing business and cost of living add appeal for entrepreneurs as a place to start a new enterprise. According to some evaluations, the availability of capital is a concern.



VI. Stakeholder Input from Across Nebraska

For this Nebraska competitiveness study, the consultant team conducted one-on-one interviews with 16 leaders statewide. These stakeholders represent a broad array of industry sectors, from manufacturing and agriculture to finance, telecommunications, and consulting. There are also representatives among state elected officials and a venture capital organization. Geographically, leaders come from a good cross section of Nebraska, including North Platte, Minden, Fairbury, Lincoln, and Omaha. This group provided honest – sometimes blunt – input regarding the current strengths and weaknesses of the state’s economy and how Nebraska can work to enhance its economic competitiveness.

The State Economy

Overall, Nebraska stakeholders give good ratings to the state’s economy, with most considering it “strong,” “very good”, or “excellent”. Many say that Nebraska’s economy appears to be more resilient than others, with steady performance during the pandemic and fewer ups and downs than in coastal states. Nebraska may even be, as one says, “recession-resistant.” Several mention robust hiring rates and low unemployment as indicators of a strong economy.

A few are not as enthusiastic, but even they consider the economy to be “good” or “fair.” Some regional variation is noted, with conditions picking up post-pandemic in central and western portions of the state. At least one respondent feels that urban areas are doing better than “outstate.”

Stakeholders most often point to agriculture and livestock as leading the state's strongest sectors. Manufacturing is mentioned next as a key economic strength. Other sectors highlighted include finance and other white-collar industries such as logistics, medical products, and travel and tourism. Rising GDP is cited as a positive sign. Reasons for economic strength include an environment that is generally business friendly, state tax reforms that are starting to pay off, and a good education system.

Not surprisingly, workforce issues – especially labor shortages – are Nebraska's primary economic weakness. Housing (the supply in particular) is cited next. There is no widespread consensus on other economic weaknesses and challenges, though the status of technology in the state compared to its potential is another concern. Some feel that Nebraska is not leveraging the success it has had in landing leading tech names. Automation and robotics are key to the state's future for manufacturing and other sectors, but adoption is slow. Healthcare and hospitals are also challenged, mostly due to labor costs (contract and travel staffing) and nursing shortages. Childcare is listed as a weakness, as well. Finally, some note that rural parts of the state may struggle more, given their dependence on agricultural prices.

Next, we asked stakeholders how competitive the state is in several categories that are critical to economic performance. Here is what they think:

The Ability to Attract and Retain Talent

Respondents are lukewarm in their estimation of state competitiveness in this key category. Most rate the ability to attract and retain talent as “just OK,” “not a strength,” “average,” or “average at best.” Some feel that it is a perception issue and “Nebraska is not sexy.” Others believe that the metropolitan areas of Omaha and Lincoln have a hard time competing with neighboring Kansas City, Denver, Oklahoma City, and Tulsa.

A few stakeholders rate talent attraction and retention as a concern because they see the state as losing more young residents than Nebraska is able to attract from elsewhere. They perceive a need to engage young people and show them the opportunities available here. One business leader says they have had some success recruiting people in their late 20s and early 30s from out of state.

Other thoughts:

- Wages need to increase to keep and attract talent.
- Broadband internet access is an important factor.
- If the legislature and the state are seen as opposing diversity, it could spell trouble for attracting and keeping young people.

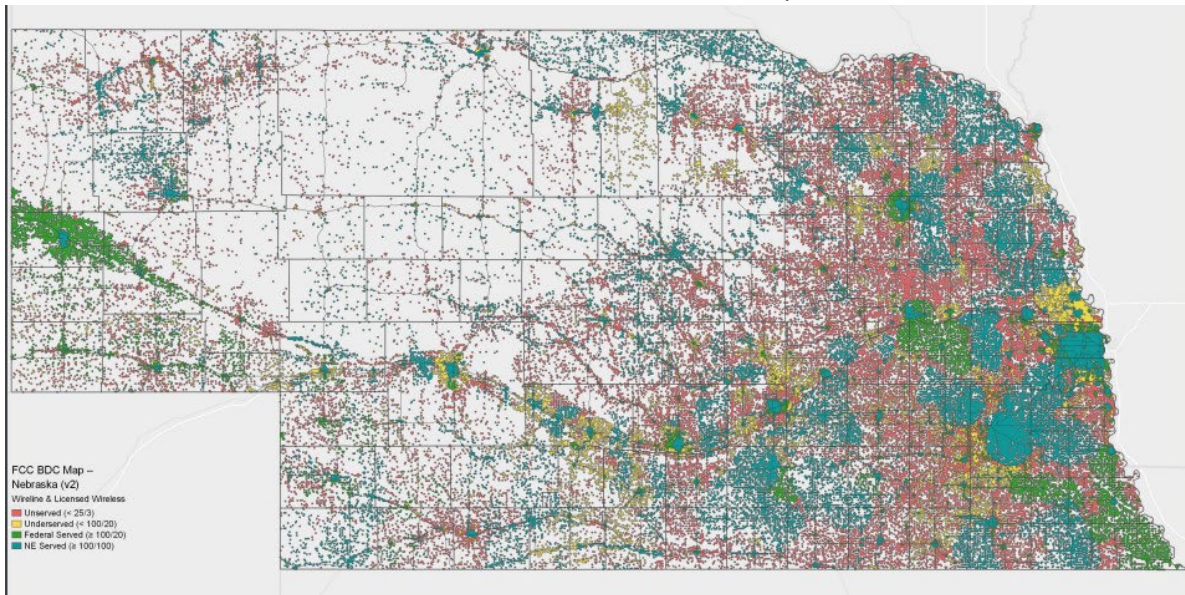
Infrastructure

Opinions on Nebraska’s infrastructure vary by type. The road system is generally considered good but aging and needing attention. Road bond measures should help to address maintenance and some new construction. Several stakeholders say that more four-lane highway development is needed throughout the state.

Public water and sewer service is a strength, with good supply and relatively low rates. Electricity (availability and cost) is another plus, though one manufacturer cites a lack of power redundancy in their small town.

Broadband internet gets mixed reviews – considered good in Omaha, Lincoln, and North Platte, less viable in smaller towns and rural areas. Several believe that federal BEAD (Broadband Equity Access & Deployment) funds and other efforts are improving the network and reaching more of rural Nebraska.

Nebraska Broadband Status Map



Source: Nebraska.gov website, BEAD program page, accessed September 2023

Air service is also noted among infrastructure concerns. Omaha is viewed as having strong connectivity with many destinations, while Lincoln’s is more limited. Smaller markets like North Platte struggle merely to maintain service and flight capacity.

Buildings and Sites

Nebraska leaders see the availability of industrial buildings and sites as a moderate positive. There is a perceived lack of larger, shovel-ready sites— or megasites— though respondents note current efforts to address this. In general, stakeholders see land availability as very good. Building supply is not as robust, with an older inventory, and construction costs making it difficult to add supply at competitive prices. On the local level, some cities could improve the speed of approvals and permitting. As one person notes, however, when it comes to buildings “the biggest problem is housing.”

Cost of Doing Business

Stakeholders view this as a relative advantage for Nebraska, with most ranking the state “favorable” and “competitive.” A few see Nebraska as “very competitive” and perhaps among the top ten or 20 states nationally. Costs here look especially good compared with the West Coast and Colorado’s Front Range. However, expenses are rising, especially the cost of labor and cost of housing. Taxes (property taxes in particular) are the biggest cost negative, though income tax relief is on the way.

Business Incentives

When it comes to state business incentives, Nebraska again gets moderately good reviews, with most rating incentive offerings as “competitive” or “fairly good.” As is common in the U.S., some feel that incentives are designed for larger employers and less useful for smaller companies.

The two main criticisms of state incentives are summarized below:

- They are too conservative and “old school,” needing a “fresh look” and a more aggressive posture – especially to incentivize innovation and investments in automation. There may be too much emphasis on job creation rather than capital investments. Some respondents did praise the ImagiNE Nebraska incentives, the availability of tax increment financing (TIFs), and the R&D tax credit.
- The array of state incentive offerings are “cumbersome” to understand, and need to be streamlined, summarized, and better marketed to the business community.

Two additional sets of comments revolved around a) the need for aggressive incentives to promote workforce training and education; and b) that the reasonably strong Nebraska incentives are offset by an “antiquated, broken” tax structure.

Availability and Affordability of Housing

There is almost total agreement that housing is a “huge issue,” a “big challenge,” and a “major problem” in Nebraska. One stakeholder labels both availability and affordability as “atrocious.” The biggest issue is availability. Business leaders say that there is not enough housing at any level – all types, for ownership or for rent, and in all regions but especially in small cities and rural areas. There is especially a lack of new homes that could be called affordable, starter homes, or workforce housing. Entry-level housing around Nebraska is largely limited to older, existing inventory.

While a couple of respondents think that affordability is OK, more note “surprising” and rising housing costs, expensive particularly compared to average incomes. Even in a city the size of North Platte (population 23,000), mid-level housing is said to cost \$300,000 to \$450,000.

The lack of new construction is particularly acute outstate; several say that builders will not go into smaller cities, and there are virtually no apartments being built. One modular home builder noted that the private sector is trying to address the shortage, and their firm is currently working in eight rural communities.

Regarding state housing programs, stakeholders say that Nebraska’s workforce housing grants are helpful, but they are a “band-aid” approach to the problem. A bigger, more comprehensive program is needed. A final comment on the housing market is that the state’s high property taxes hurt affordability.

Availability and Affordability of Childcare

Childcare is deemed “a struggle” and “challenging,” especially with “low” and “limited” availability, long wait lists, and “massive shortages” in rural areas. Problems are seen as worsening since the pandemic. Several point to labor shortages in the industry and think that wages are too low to attract enough workers. Others believe that public-private solutions will be needed to address childcare challenges, with large companies likely needing to help employees with the cost or actually provide care on-site.

While some say that “tough” state childcare facility regulations make it hard to open more centers, others note that, in 2023, Nebraska passed a childcare tax credit for families and incentives for providers.



Public Transportation

Public transportation does not rank high among stakeholder issues. In small cities, it is often “not on the radar” or “not applicable.” Respondents note that Nebraskans are generally very car oriented. Opinion is mixed in Omaha and Lincoln, where several deem options to be “sufficient” or “decent,” but other say the transit systems are “not strong” and “not robust.”

Public transit can be a talent attraction and retention amenity, and one stakeholder says that “not all understand” that this is an important consideration for young people. Another notes that streetcar service is coming to Omaha, but that this is “more of an economic development issue.”

Air service is also mentioned as a part of public transportation. It is particularly important in small cities like North Platte which are fighting to keep air service and passenger capacity.

The Primary Business Workforce Issues in Nebraska

Not surprisingly, the lack of worker availability – leading to low quantities of applicants and small hiring pools – is most often cited as the “number one” business issue. As one stakeholder notes, it is hard to be selective on quality when applicant quantity is so low. Reasons given for the very tight labor market include poor retention of young people across the state and low birthrates. Business leaders emphasize the need to grow Nebraska’s population, suggesting strategies such as attracting workers from nearby, more expensive metro such as Denver.

After quantity, some employers describe quality as uneven or “spotty.” More leaders say they have had to “build our own training system” to upskill new hires and existing workers.

Stakeholders also mention the following as among the toughest workforce challenges for Nebraska businesses:

- A lack of candidates for good-paying jobs in the skilled trades and maintenance positions, and the need to change the public perception of those jobs;
- Attracting and retaining talent for I.T. and other technology positions;
- Skill gaps in advanced manufacturing – employees need updated skill sets in order for our company to automate;
- The supply of skilled nurses;
- It is “incredibly hard” to fill entry-level jobs in Omaha;
- The lack of CDL truck drivers.

Finally, the limited availability and the cost of childcare is considered an important workforce challenge.

How Important is a Solution That Would Facilitate Legal Immigration?

There is near unanimous consensus that solving the issue of legal immigration is “extremely important,” “critical,” and perhaps even the “most important thing” for Nebraska and the United States. Given demographic trends, business leaders say it is “glaringly apparent” that Nebraska is not and will not be able to meet its workforce needs without immigration. As one put it, there’s “no other subset” of workers available. Another says that without a two-pronged effort accelerating immigration and automation, the state will be unable to grow its economy.

Stakeholders see the current immigration system as “broken.” They feel that America needs to “close the back door” but also “open the front door” for more legal immigration. They see a stigma around illegal immigration, but stress that legal paths must be addressed. Some are concerned that the issue is “toxic” and confusing to explain. However, most want Nebraska to help push reform at the national level, joining with other states facing the same workforce challenges.

If immigration can be increased, respondents believe that immigrants will need a path to full citizenship and a path (with assistance) to homeownership, among other services. Support will be needed from Nebraska’s religious institutions, schools, and other supporting organizations.

Several stakeholders have had positive experiences with refugees and other immigrants working in Nebraska. One currently has 15 or more languages spoken by “great workers” from around the world at their plant.

Spurring New Business Development Around the State

There was no consensus about the best ways to promote new business growth and entrepreneurship across Nebraska, but there were plenty of ideas. Here are those that multiple stakeholders mentioned:

- We need a better startup climate. There are lots of entrepreneur support efforts, but we need a more structured, cohesive approach across the state. Examples: securing capital, assistance with spinning off a new business, or protecting intellectual property.
- It will require private investors willing to take a risk, or state tax incentives, for someone to open a restaurant, Main Street business, or hotel in our smaller cities and towns.



- New business creation will require population growth and workforce growth.
- The state must maintain a good business climate and make it easy to do business here.
- We need to emphasize software development and other tech businesses.
- We should focus on helping our existing large employers grow and add jobs here, rather than in other states.

Additional advice on this topic included the following suggestions:

- Nebraska should emphasize small business growth instead of recruiting a company needing 2,000 workers.
- Ask successful Nebraska startups what would have made things easier, better for them. Example: create case studies of firms like Buildertrend.
- We need better partnerships between business and education for workforce preparation.
- We should commercialize innovation in growing sectors like biotech. Develop the brand of larger cities like Omaha as a place for young people, venture capital, and startups – currently trailing Kansas City in this regard.

The Biggest Barriers to Manufacturing Growth in Nebraska

Workforce again rises to the top in discussions about barriers to growth in Nebraska’s manufacturing sector. Workforce concerns for manufacturers include both quantity and skill levels. As one interviewee says, “We turn away a lot of business” due to a lack of workers. The shortage of workers possessing the skill sets needed to automate is a particular concern.

Related to this is the challenge to increase productivity by adopting automation and other new technologies. Capital needs for automation initiatives can be a barrier. Other concerns mentioned multiple times include the availability and cost of housing, and the state’s business climate – especially the overall tax burden.

When asked what state-level action would best support manufacturing growth, business leaders offered these ideas:

- Reduce the state tax burden.
- Work on two fronts to a) increase workforce quantity and b) support manufacturing innovation and automation.
- Promote careers in manufacturing, through efforts such as the “Coolest Thing Made in Nebraska” events sponsored by the NE Chamber and the Nebraska Manufacturing Alliance.
- Help craft a solution to increase legal immigration.
- Revamp manufacturing incentives – focus on capital investment, automation, and innovation.

Leadership in Economic Development Efforts

Stakeholders feel strongly that the NE Chamber, along with the Omaha and Lincoln chambers, are the state leaders for economic development, and that they communicate and coordinate well. They say that the NE Chamber “helps us speak with one voice.” Other regional chambers receive praise as well.

A few see the state’s Department of Economic Development (DED) as a core leader, but more say that it is not as strong as it could be, due to staff turnover and change in administrations. It does receive credit for managing big projects well. One commented that DED could better serve as a clearinghouse of information on state programs from various agencies, to help businesses understand the opportunities and the processes.

The other groups that interviewees see as state economic development leaders are the Nebraska Manufacturing Advisory Council and the NE Manufacturing Alliance. Other comments on this topic:

- There is a need to bring the Hispanic community into economic development discussions better, and into leadership positions.
- There should be more focus on smaller-scale, grass-roots business development instead of low-percentage “big-game hunting.”

What Will Success Look Like for Nebraska?

We asked stakeholders what success would mean for the state. If Nebraska improves its economic competitiveness over the next ten years, what will be different? What will be better?

The most common answer involves net population growth. A more competitive Nebraska will see population gains above the national average. Not necessarily rapid growth, but sustainable net increases. As a result of this, employers in the state will be less challenged to find skilled labor, with fewer positions going unfilled. Successful immigration reform would provide an additional source of labor.

Another popular vision of a future Nebraska is more widespread prosperity, across more of the state and among various groups. There would be less income disparity, with a “rising tide lifting all boats.” Population, assets, and amenities would be distributed across the state, not all concentrated in Lincoln and Omaha. Perhaps as a result of this, “our communities will be more vibrant.”

Some mention that there would be more and better housing options, greater childcare availability, and other quality of life improvements that impact talent attraction and retention. Others think that success will come from incentive legislation that promotes new business capital investments, especially in automation. A few focus on the potential of technology, saying that success would mean more tech companies operating in Nebraska, along with higher average wages and tax revenue growth from higher-wage tech jobs and investments.

Final Stakeholder Thoughts

We also asked business leaders if they had any additional thoughts on how Nebraska can increase its economic competitiveness. One



common theme that arose is the need to streamline and coordinate economic development-related efforts. Interviewees say that there are too many groups in the state trying to solve the same problems, such as workforce. Consolidating efforts should increase their effectiveness. Others think that there are too many initiatives being carried out by various state agencies, and these are not well-coordinated. State leaders need to identify a few key initiatives, better coordinate actions to address them, and use metrics and dashboards to track and publicize progress. Examples of key issues to address include technology investments in Nebraska and their impact on state GDP; housing development; and childcare.

Additional input:

- Talent is the state's number one issue; technology (and tech talent) is number two.
- There's some tension between urban and rural Nebraska, and this can hold us back.
- We have a great public school system, but passing so many education bonds has a major impact on property taxes.
- Nebraska needs to increase exports of goods and service.
- It is important to keep addressing quality of life issues such as community amenities and recreation opportunities.

VII. Recommendations

It is clear from this assessment that Nebraska's economy is strong and reasonably diversified. The state also offers other attributes that support a successful economy, such as quality public schools, high participation by adults in the workforce, and relatively affordable housing. However, the competition from other states is intense, including several that rate higher for population and workforce growth and for innovation. The recommendations below are aimed at improving the workforce pipeline throughout the state, providing essential quality of life supports that working adults need, and creating a better atmosphere in which innovation can thrive.

Career Awareness and Work Experience for Young People

- ★ Use existing resources such as the national Creators Wanted initiative and the Coolest Thing Made in Nebraska events to increase manufacturing career awareness among students and parents. Increase partnerships between state and regional chambers, the Nebraska Manufacturing Alliance, and the Nebraska Manufacturing Advisory Council to increase awareness campaigns and events across the state.
- ★ Develop a work experience coordinator position at the state level and in each region of Nebraska to work with Nebraska businesses in forging the school connections needed to offer career awareness and work experience opportunities to every young person in the state. Career awareness opportunities include business speakers in the schools, site visits to company facilities, and student mentoring by company employees. Work experience includes job shadowing, internships, summer jobs, and youth apprenticeships. Work experience coordinators could be housed with chambers of commerce or community colleges.
- ★ Bring the Be Pro Be Proud career awareness program to Nebraska, or adopt a similar model for increasing student and parent awareness of the opportunities in skilled professions.
- ★ Double public school CTE funding, with a goal of significantly increasing the percentage of students who access CTE curricula.
- ★ Increase college and university enrollment by ten percent in five years, through scholarships and international student recruitment.

Talent Attraction and Retention

- ★ Increase funding for The Good Life is Calling initiative, fine-tuning the content, use of social media, website, and other avenues to target people in their late 20s to early 30s and living in nearby U.S. metro areas. Focus on former state residents and graduates of Nebraska colleges and universities.

★ Consider a home purchase incentive initiative for recent college graduates, such as Ohio's long running Grants for Grads program.

Workforce Growth

★ Make it a top priority of the Nebraska congressional delegation to partner with like-minded states to push for a legislative solution that promotes legal immigration into the United States. Increase coordination between chambers and relevant non-profit organizations across the state to prepare regional plans to welcome and support new immigrants in Nebraska, with a goal of making Nebraska the most welcoming and ready state for immigrants.



Housing

★ Increase funding for the state's workforce housing programs and leverage available federal funds to the maximum extent. For rural areas, Florida's Rural Infrastructure Fund is often used to match USDA or U.S. Economic Development Administration project dollars. This type of fund could include housing among eligible uses for which infrastructure development is needed.

★ Consider state incentive programs for private sector development of new housing, such as reimbursement for infrastructure investments. Legislatures in South Dakota and West Virginia have recently made funds available for this purpose.



★ Develop regional coalitions of Nebraska-based builders to work with area chambers and local governments on housing development initiatives.

★ Consider statewide zoning regulation reforms to allow more by-right development of housing, including different housing types such as townhomes, duplexes, and accessory dwelling units (ADUs).

Childcare

★ Review state childcare incentives and consider additional incentives for the development of new childcare facilities and childcare capacity across the state, including incentives for employers that provide daycare on-site, provide land or building space to host daycare facilities on-site, or subsidize daycare for their employees. Recent examples of state incentive programs are available from Iowa, Georgia, and West Virginia.

Business Incentives for Innovation

- ★ Review and streamline existing state incentive offerings while increasing the focus on business capital investment, growing GDP, and business innovation and automation.
- ★ Provide new modernization and technology adoption tax credits for manufacturing.
- ★ Close the gap on megasite investment versus other states.

Taxation

★ Closely monitor the impact of recent tax changes on Nebraska's competitiveness ratings related to its overall tax burden, and propose additional tax reform as needed.

Final Thoughts

Nebraska enjoys a robust economy and a great quality of life. Despite the overall success, each region of the state faces challenges, both current and emerging. Most of the challenges are not surprising. More workers are needed to sustain Nebraska's business growth and success. More available and affordable housing and childcare are needed to attract and retain workers. Investments in innovation are needed to aid businesses as they are forced to innovate and automate. Collaboration is needed across the state to stay competitive and implement these recommendations.

This report was researched and written by the Economic Leadership team of Greg Payne, Skylar Casey, and Ted Abernathy.

Footnotes

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