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THE IMPACT OF DATA CENTERS ON THE NEBRASKA ECONOMY

PREPARED BY

MANGUM economics

FOR

NetChoice

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About NetChoice

NetChoice works to make the Internet safe for free enterprise and free expression.
Choice – Consumers know best the products and services they need.
Limited Government – The internet has thrived under light-touch regulation.
Competition – The internet provides consumers with an abundance of services like never before.

Executive Summary

Nebraska has developed a growing data center sector for the last several years, partially driven by the state's data center incentive programs. Nebraska has over a dozen data centers in the state, mostly in the Omaha metropolitan area, with some smaller facilities in the Lincoln metropolitan area. Meta's (formerly dba Facebook) data center campus in Sarpy County is the largest in the state and one of the largest enterprise data center campuses in the country. We estimate that there are 490 people working full-time in data centers, and over 1,500 construction workers building new data centers in the state. Major data center projects under construction in Nebraska include:

- Meta's completion of the six-building data center project that it announced in 2018.
- Meta's addition of 4 buildings to the campus that it announced in 2021.
- Google's completion of the new data center that it announced in 2019.

With the completion of these projects in the next few years, the amount of data center investment in Nebraska will almost double (the equivalent of a 24 percent compound annual growth rate). For comparison, that is roughly the same rate of growth as has occurred in Northern Virginia (between 2014 and 2021).

This report explores the economic impact of the construction and operation of data centers in Nebraska and illustrates the economic impact that a single new hyperscale data center would create.

Taking into account the indirect economic ripple effects that the direct investment generated, we estimate that the total impact on Nebraska from data centers in 2021 was approximately $1.3 billion in economic output and almost 5,300 jobs.

We estimate that in the last year, the indirect economic activity associated with data centers in Nebraska led to $17.8 million in tax revenue collected by the State of Nebraska and $18 million collected by local governments.

Construction and operation of a single new typical hyperscale data center would have a potential total economic impact on Nebraska of almost $270 million in total economic output during the two-year construction period, including 1,200 construction jobs plus 720 non-construction jobs supported in the community during the construction phase. Once the new Nebraska facility is fully operational, it would support $82 million annually in total economic output in Nebraska, including supporting 300 jobs.

The combination of rapidly rising investment and rapidly rising wages make data centers one of Nebraska's most high-performing lines of business and a valuable (and growing) contributor to a strong and robust state economy. The wages for data center jobs are almost twice as high as the average across all industries, and these wages have grown 25 percent faster than the average pay for a private-sector job in Nebraska.

Data center tax incentives are an effective way to encourage data center investment and growth in a state, and they can accomplish that without negatively impacting State revenues. In fact, over half of U.S. states have sales and use tax exemptionsfor data centers. Virginia's Joint Legislative Audit and Review Commission found in a 2019 report that:

- Up to 90 percent of the data center investment in Virginia made by the companies that received the sales and use tax exemption would have occurred in other states except for the exemption.
- In 2017, the most recent year data was available, the data center tax incentive generated $1.09 of Virginia tax revenue for every dollar that it exempted (this does not include local tax revenue or other economic benefits).

Nebraska is one of many states that offer incentives to encourage data centers to locate or expand in their states. A recent report by Cushman and Wakefield states, "A majority of states throughout the U.S. now offer state-level incentives, often sales- or property-tax abatements for long-term investment." The competition among states for data centers is significant, and data centers carefully evaluate the business climate in various states when making location decisions.

If Nebraska continues to be strongly competitive for data center site selection, we can conservatively estimate that the state should see a 10 percent compound annual growth rate of data centers for 2025 through 2035, following the additional growth in data centers already announced through 2024. If that occurs, then in 2035, the data center contribution to the Nebraska economy will have grown to:

- $4.8 billion in economic output activity associated with data center operations, including:
- 2,670 onsite operational data center jobs plus 11,370 additional jobs supported elsewhere in the Nebraska economy, and
- $1.1 billion in pay and benefits for workers throughout the Nebraska economy.

Nebraska Has a Growing Data Center Market

Nebraska has developed a growing data center sector for the last several years, partially driven by the State's data center incentive programs. The State refunds the sales and use taxes paid on qualifying equipment for data centers that have invested at least $200 million and that have created at least 30 new jobs.

Nebraska sits in the center of the area often referred to as the Silicon Prairie. That name is in reference to the large number of data centers and other tech facilities that have located in Nebraska and Iowa, taking advantage of major fiber installations running along the transcontinental railroad lines that connect the East and West Coasts, reliable low-cost power, abundant supply of renewable energy, and a strong workforce.

Nebraska has over a dozen data centers in the state, mostly in the Omaha metropolitan area, with some smaller facilities in the Lincoln metropolitan area. Meta's data center campus in Sarpy County is the largest in the state and one of the largest enterprise data center campuses in the country. We estimate that there are 490 people working full time in data centers, and over 1,500 construction workers building new data centers in the state.

ADDITIONAL NEAR-TERM DATA CENTER DEVELOPMENT

Based on announcements from companies operating data centers in Nebraska, there is at least $1.5 billion of data center construction that will occur over the next 3 years. Major data center projects under construction in Nebraska include:

- Meta's completion of the six-building data center project that it announced in 2018.[1]
- Meta's addition of 4 buildings to the campus that it announced in 2021.[2]
- Google's completion of the new data center that it announced in 2019.[3]

With the completion of these projects in the next few years, the amount of data center investment in Nebraska will almost double (the equivalent of a 24 percent compound annual growth rate). For comparison, that is roughly the same rate of growth that has occurred in Northern Virginia (the largest and fastest-growing major data center market in the world) between 2014 and 2021.[4]

[1] Papillion Data Center Expanding to Six Buildings.
[2] "Facebook Data Center to Expand in Papillion," *Lincoln Journal-Star*, March 24, 2021.
[3] "Google building $600 million data center near Omaha," *Des Moines Register*, October 4, 2019.
[4] Based on data from CBRE and JLL, we estimate that the data center market in Northern Virginia grew at a 25 percent compound annual growth rate between 2014 and 2021.

THE IMPACT OF DATA CENTERS ON THE NEBRASKA ECONOMY

The large pipeline of data center construction projects listed above means that Nebraska construction workers have a long-term pipeline of local projects that allows them to work locally, rather than having to pursue projects in other states. Construction at the Meta location has been going on continually since 2017.

The construction and ongoing operation of data centers in Nebraska have large impacts on the state's economy. These economic impacts are driven by:

Direct Impacts:

- The spending in Nebraska on the construction of data centers
- The spending on goods and services in Nebraska that data centers make during the ongoing operation of data centers

Indirect Impacts:

- The spending on goods and services in Nebraska made by data center vendors

Induced Impacts:

- The spending by Nebraskans employed in building and operating data centers

Direct Economic Impact: We estimate that in 2021 the construction and operation of data centers in Nebraska directly provided approximately:

- **$579 million in economic output from construction and operations combined, including:**
- 1,520 construction jobs,
- $81.9 million in associated construction pay and benefits,
- 490 full-time-equivalent onsite operations jobs inside data centers, and
- $50 million in associated data center operations pay and benefits.

Total Economic Impact: Taking into account the indirect economic ripple effects that the direct investment generated, we estimate that the total impact on Nebraska from data centers in 2021 was approximately:

- **$1.3 billion in economic output, including:**
- 5,290 jobs, and
- $355 million in associated employee pay and benefits.
- During the operation phase, there are 4.3 additional jobs supported by the data center in other businesses for each operational job inside the data center.

State and Local Tax Revenue: We estimate that in the last year, the indirect economic activity associated with data centers in Nebraska led to:

- $17.8 million in tax revenue collected by the State of Nebraska, and
- $18 million collected by local governments.

Table 1 provides a summary of the total construction and operational impact of data centers on the state of Nebraska over the last year.

Table 1. Summary of Annualized Economic Impact of Data Centers in Nebraska

Direct Effects	Jobs	Pay & Benefits	Economic Output
Data Center Construction	1,520	$81,900,000	$230,000,000
Data Center Operation	490	$50,000,000	$349,000,000
Indirect Effects			
Data Center Construction Phase Supported	600	$38,100,000	$117,700,000
Data Center Operation Phase Supported	1,290	$110,900,000	$407,500,000
Induced Effects			
Data Center Construction Phase Supported	590	$31,500,000	$96,400,000
Data Center Operation Phase Supported	800	$42,800,000	$130,800,000
Total Impact			
Construction Phase Subtotal	**2,710**	**$151,500,000**	**$444,100,000**
Operation Phase Subtotal	**2,580**	**$203,700,000**	**$887,300,000**
Total Economic Impact in Nebraska	**5,290**	**$355,200,000**	**$1,331,400,000**

THE IMPACT OF A SINGLE NEW HYPERSCALE DATA CENTER

To help make the overall statewide estimates of the impact of the entire data center sector more concrete, we can illustrate the economic and fiscal impact potential if just one new $750 million hyperscale data center were to locate in Nebraska. It is important to note that there is significant variability among hyperscale data centers in terms of size, design, capacity, and other characteristics. Our assumptions and calculations are based on an aggregation of information associated with several actual hyperscale data center projects across the country and information provided by industry sources.

Assumptions used to estimate the impact of a $750 million hyperscale data center:

- Construction: $240 million would be spent for construction (including the employment of 1,200 construction workers) in total over the 18 to 24 months that a data center of this scale would typically take for construction.
- Construction: $460 million would be spent on computer equipment that is almost always sourced outside of the region of interest and does not contribute to local economic activity.
- Construction: $50 million would be paid for the purchase of cooling and electrical equipment and other fixtures.
- Operation: eventually employ 100 direct, permanent employees and contractors that provide onsite services such as security and maintenance.

Construction

Direct Economic Impact (24-month construction period):

- **$140.2 million in economic output in the Nebraska economy, including:**
- 1,200 total construction jobs, and
- $52.5 million in associated pay and benefits for construction workers.

Total Economic Impact (24-month construction period):

Accounting for all of the additional effects that the project would cause as the new investment ripples through the Nebraska economy, construction of such a new hyperscale data center would have a potential total economic impact over the two-year construction period of approximately:

- **$269.1 million in total economic output, including:**
- 1,920 jobs supported, and
- $94.5 million in total pay and benefits.

Operation

Direct Economic Impact (annually, once fully built out/operational)

- **$34.2 million in economic output in the Nebraska economy once the data center is fully operational, including:**
- 100 new permanent, onsite operational jobs, and
- $10.2 million in associated pay and benefits for operating workers.

Total Economic Impact (annually, once fully built out/operational):

Once such a facility is fully operational and after accounting for all of the direct and indirect effects that the project would cause in the Nebraska economy, the potential total economic impact would be approximately:

- **$82.4 million annually in total economic output, including:**
- 300 jobs supported once data center operations begin, and
- $24.2 million in pay and benefits.

Data Centers Benefit the Broader Economy in Nebraska

Data centers have generated business for Nebraska companies that are critical pieces of the data center supply chain that in turn generate economic activity and growth for other businesses in Nebraska. Table 2 shows a selection of different Nebraska businesses that are part of the second ripple effect of economic activity related to spending by data centers.

Table 2. Select Businesses Serving Nebraska Data Centers[5]

Company	Nebraska Office Location	Line of Business
Baxter-Kenworthy	Omaha	Electrical design and fabrication services
Commonwealth Electric of Greater Nebraska	Columbus, Grand Island, Kearney, Lincoln, Omaha	Engineering and design-build electrical services
Darland Construction Company	Omaha	Planning, management, and design-build construction services
Gregg Electric Company	Lincoln	Electrical contracting services
Hiller Electric	Omaha	Electrical contracting services
Hy-Electric	Lincoln	Electric construction and maintenance services
Kiewit Corporation	Omaha	Construction and engineering services
Miller Electric Company	Omaha	Design, installation, and maintenance of electrical systems
Olsson	Lincoln	Electrical, mechanical, and structural engineering and design services
Power Protection Products	Omaha	Electrical design, construction, management, and consulting services
Sampson Construction	Kearney, Lincoln, Papillion	Construction design-build and management services
Turner Construction	Omaha	Global construction services
United Electric Supply	Omaha	Electrical equipment and fixtures

[5] None of the companies named here were consulted for this report nor did they request to be included. They are included based only on our own independent research. This list is by no means comprehensive. It is for illustration only.

DATA CENTERS PAY RAPIDLY RISING WAGES

The combination of rapidly rising investment and rapidly rising wages make data centers one of Nebraska's most high-performing lines of business and a valuable (and growing) contributor to a robust state economy. Data centers are extremely capital-intensive and require a large amount of expensive equipment to operate.

The wages for data center jobs are almost twice as high as the average across all industries, and these wages have grown significantly over time. Based on Bureau of Labor Statistics data, between 2001 and 2020 the average annual pay in the data center industry in Nebraska increased 25 percent faster than the pay for an average private-sector job in Nebraska.

- **Data center industry wages in Nebraska:** 105 percent increase ($49,600 to $101,800)
- **Average private sector wages in Nebraska across all industries:** 84 percent average increase in private wages across all industries ($28,000 to $51,400).

Nebraska's Incentive is Required to Keep the State Competitive

Nebraska is one of many states that offer incentives to encourage data centers to locate or expand in their states. A recent report by Cushman and Wakefield states, "A majority of states throughout the U.S. now offer state-level incentives, often sales- or property-tax abatements for long-term investment."[6] The competition among states for data centers is significant, and data centers carefully evaluate the business climate in various states when making location decisions. States with existing sales and use tax incentives revise and extend them from time to time to make them more attractive. Several states have recently added, enhanced, or renewed their sales and use tax incentives in 2020 and 2021 to enhance their competitiveness. The following list shows the extensive recent action on data center incentives across the country in the last few years.

Midwest

- Illinois enacted a new incentive in 2019 that offers up to a 20-year exemption of sales and use tax on data center equipment for carbon-neutral data centers with a $250 million investment and the creation of 20 new jobs.
- Indiana enacted a new incentive in 2019 that offers a 50-year sales and use tax exemption on data center equipment.
- Iowa offers a data center incentive program to encourage data center development.
- Minnesota offers a 20-year sales tax exemption on data center equipment and power.
- Missouri offers a 15-year exemption on sales and use taxes and utility taxes.
- North Dakota enacted a data center incentive in 2021 to replace an incentive that expired in 2020. The new incentive has no sunset date or limitation on the benefit period.
- Ohio offers a full or partial exemption on sales and use taxes on data center equipment.

[6] Cushman & Wakefield Data Center Advisory Group, *Data Center Global Market Comparison*, 2021.

Southeast

- Virginia revised its sales and use tax exemption to require fewer new employees and less capital investment for data centers that locate where the unemployment and poverty rates are higher than statewide averages.

East

- Pennsylvania's original incentive was ineffective at attracting data center investment to the state while billions of dollars of investments were being made in nearby states. The legislature enacted a new sales and use tax exemption that is open indefinitely with benefits available for at least 15 years.
- Connecticut became the latest state to add a completely new data center incentive. Depending on the size and location of the facility, data centers could be exempted from the State's sales and use taxes for 20 to 30 years.
- Maryland enacted a new sales and use tax incentive with a benefit period of 10 to 20 years, depending on the level of investment. The incentive has no sunset date. Following the enactment of Maryland's data center incentive, a data center developer announced plans for a new 2,100-acre data center campus in the state.

West

- Arizona revised and extended its data center sales and use tax exemption by 10 years to run through 2033. The benefit period ranges from 10 to 20 years, with the 20-year benefit reserved for data centers that are considered a sustainable redevelopment project.
- Idaho enacted a new sales and use tax exemption for data center equipment used in new data centers. The new incentive has no program sunset or limitation on the benefit period. In February 2022, Meta announced plans for a 960,000 square foot data center in the state.
- Utah expanded its sales and use tax exemption for data centers with no minimum investment or employment criteria and no program sunset.
- Wyoming offers a sales and use tax exemption on data center equipment. In 2021, legislators rejected a bill that would have repealed the incentive.

COMPETITION BETWEEN STATES

Beyond the extensive list of states with data center incentives, a couple of recent events illustrate the competition between states to attract data centers.

New York – New Jersey – Connecticut

New Jersey is debating adding an incentive. There is a growing realization that the New York-New Jersey region lost its lead in the data center market to Northern Virginia, at least in part because New Jersey is not competitive with other markets on taxes.[7]

An even more dramatic illustration of the sensitivity of data centers to tax changes is the way in which data centers showed their mobility in response to a potential increase in taxes in New Jersey. In the summer of 2020, some elected state officials proposed imposing a 25/100th of one percent or a 1/100th of one percent tax on financial transactions processed in data centers located in New Jersey.[8] In the fall of 2020, the New York Stock Exchange ran its financial transactions out of its data center in Chicago for five days to practice for any possible relocation of the market to data centers outside of New Jersey. The Governor of Texas was involved in attempting to attract Nasdaq to migrate its data center operations to Dallas, the second-largest data center market in the United States. In the spring of 2021, the State of Connecticut enacted a data center incentive to make that state a viable alternative, in the event that New Jersey proceeded with the financial transaction tax.[9]

Illinois – Indiana

In June of 2019, Illinois added a new data center incentive.[10] Although the Chicago area is one of the largest data center markets in the United States, it was not keeping pace with the growth of data centers in the markets of Northern Virginia, Dallas, and Phoenix – all located in states that provide sales and use tax exemptions to attract data center investment. Since the enactment of the Illinois incentive, several new large data center projects have been announced in the state, and over $5 billion in additional data center investment has been committed making it one of the fastest-growing states in terms of data center activity.[11] The neighboring state of Indiana also enacted a 50-year sales and use tax exemption for data centers to attract data centers to the Indiana suburbs of Chicago.[12]

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[7] See Rich Miller, "Will Tax Incentives Jump-Start NJ's Data Center Industry?," *Data Center Frontier*, January 28, 2020. "Twenty years ago, New Jersey probably led the country and data center space, but we haven't moved the needle at all in 20 years." – Gil Santaliz, NJFX "New Jersey was once a hotbed of data center activity, with thriving markets for colocation and financial data centers. The state maintains a substantial and strategically important data center community, but the hottest leasing action has shifted elsewhere, primarily to Northern Virginia." "There is a bill being looked at, and it looks very similar to the broad strokes of what you see in Virginia." – Santaliz

[8] Alex Alley, "NYSE and Nasdaq threaten to leave New Jersey if transaction tax goes ahead," *Data Center Dynamics*, October 20, 2020.

[9] Matt Pilon, "In a crowded pond, CT goes fishing for data centers with new incentives," *Hartford Business Journal*, April 19, 2021.

[10] Ally Marotti. "Data center boosters hope new tax incentives 'stop the bleeding,' keep tech sites in Illinois," *Chicago Tribune*, June 2019.

[11] Companies announcing large data center projects in Illinois since the enactment of the incentive include Aligned Energy, Facebook, Prime Data Centers, NTT, and Stream.

[12] Indiana General Assembly 2019, Indiana House Bill 1405.

Data Center Incentives Do Not Diminish State Tax Revenues

With so many states offering data center sales and use tax incentives, state tax incentives intended to attract data centers do not diminish state tax revenues because data centers generally avoid locating and expanding in states without a sales and use tax exemption. States that do not attract new data center investment do not receive the additional tax revenue and economic impact from data centers. Consequently, when data centers locate in states with sales and use tax exemptions, there is no lost state revenue. States with sales and use tax exemptions for data centers are recognizing that forgoing direct sales and use tax revenue is necessary to gain the economic impact that data centers bring, along with the tax revenue associated with that economic impact.

In June of 2019, Virginia's Joint Legislative Audit and Review Commission (JLARC) published an evaluation of the State's data center incentive using confidential tax information that is not publicly available.[13]

JLARC found that up to 90 percent of the data center investment made by the companies that received the sales and use tax exemption would not have occurred in the state of Virginia without the incentive. So, the "cost" of the State data center incentive is only 10 percent of the amount of the State sales tax revenue exempted. Using the confidential tax information, JLARC estimated the economic and government budgetary impact of Virginia's data center sales and use tax exemption.[14]

JLARC determined that in 2017 (the latest year for which data was available for the evaluation) data centers generated $4.7 million more State tax revenue from construction and suppliers than the amount of sales and use tax exempted by Virginia's data center incentive.[15] In 2017, the State took in $1.09 in State tax revenue from data center-related activity for every one dollar of potential State tax revenue that was exempted from qualifying data centers.

[13] Joint Legislative Audit and Review Commission, *Data Center and Manufacturing Incentives, Economic Development Incentives Evaluation Series*. June 17, 2019.
[14] *Appendix N: Results of economic and revenue impact analyses*.
[15] Mangum Economics, *The Impact of Data Centers on the State and Local Economies of Virginia, 2020. Also, see Appendix N: Results of Economic and Revenue Impact Analyses*.

The Potential for Future Jobs and Investment Growth in Nebraska

It is possible to estimate the potential impact on jobs and economic growth in Nebraska if the State's data center incentive program stays competitive with other states that offer an incentive.

Early in this report, we noted that just in terms of announced data center development projects, the volume of data centers in Nebraska is planned to more than double by the end of 2024. That implies a compound annual growth rate of 24 percent. That is almost the same rate of growth as has occurred in Northern Virginia between 2018 and 2021, where the total data center capacity more than doubled during that time. It is arguable as to whether Nebraska can continue to achieve such a high rate of data center growth year after year. However, if Nebraska continues to be strongly competitive for data center site selection, we can conservatively estimate that the state should see a 10 percent compound annual growth rate of data centers for 2025 through 2035, following the additional growth in data centers already announced through 2024.[16]

If data center development in Nebraska grows at a 10 percent compound growth rate from 2025 to 2035[17], then in 2035, we estimate that the data center contribution to the Nebraska economy will have grown to:

- $4.8 billion in economic output activity associated with data center operations, including:
- 2,670 onsite operational data center jobs plus 11,370 additional jobs supported elsewhere in the Nebraska economy, and
- $1.1 billion in pay and benefits for workers throughout the Nebraska economy.

[16] For comparison, Dallas-Fort Worth had a compound annual growth rate of 10 percent from 2014 to 2021.
[17] The estimates here start with the 2021 operations phase estimates in Table 1, then apply a 24 percent compound annual growth rate for 2022-2024, and then apply a 10 percent compound annual growth rate for 2025-2035.

About Mangum Economics, LLC

Mangum Economics, LLC is a Virginia-based firm that specializes in producing objective quantitative and qualitative analysis in support of strategic decision making. Much of our recent work relates to IT & Telecom Infrastructure (data centers, terrestrial and subsea fiber), Renewable Energy, Economic Development, and Tax and Regulatory Policy. Examples of our work include:

- *The Impact of Data Centers on the State and Local Economies of Virginia*, 2016, 2018, 2020, and 2022;
- *The Impact of Data Centers on the Georgia Economy, 2022;*
- *The Impact of Data Centers on the Arizona Economy,* 2021;
- *Potential Impact of the Development of the Offshore Wind Energy Industry on Hampton Roads and Virginia*, 2020;
- *The Potential Impact of a Data Center Incentive in Maryland*, 2020;
- *Opportunities for Southside Virginia to Participate in the Cloud Economy*, 2019;
- *The Economic and Fiscal Contribution that Data Centers Make to Virginia: Spotlight on Prince William County*, 2018; and
- *The Potential Impact of a Data Center Incentive in Illinois*, 2018.

POLICY ANALYSIS

Identify the intended and, more importantly, unintended consequences of proposed legislation and other policy initiatives.

ECONOMIC IMPACT ASSESSMENTS AND RETURN ON INVESTMENT ANALYSES

Measure the economic contribution that business, education, or other enterprises make to their localities.

CLUSTER ANALYSIS

Use occupation and industry clusters to illuminate regional workforce and industry strengths and identify connections between the two.

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