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# Economic Impacts of Commercial Real Estate

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*Produced in conjunction with*





## About NAIOP

NAIOP, the Commercial Real Estate Development Association, is the leading organization for developers, owners and related professionals in office, industrial, retail and mixed-use real estate. NAIOP comprises some 21,000 members in North America. NAIOP advances responsible commercial real estate development and advocates for effective public policy. For more information, visit [naiop.org](http://naiop.org).

The NAIOP Research Foundation was established in 2000 as a 501(c)(3) organization to support the work of individuals and organizations engaged in real estate development, investment and operations. The Foundation's core purpose is to provide information about how real properties, especially office, industrial and mixed-use properties, impact and benefit communities throughout North America. The initial funding for the Research Foundation was underwritten by NAIOP and its Founding Governors with an endowment established to support future research. For more information, visit [naiop.org/researchfoundation](http://naiop.org/researchfoundation).

## About Dodge Construction Network

Dodge Construction Network leverages an unmatched offering of data, analytics and industry-spanning relationships to generate the most powerful source of information, knowledge, insights and connections in the commercial construction industry. The company powers four longstanding and trusted industry solutions—Dodge Data & Analytics, The Blue Book Network, Sweets and IMS—to connect the dots across the entire commercial construction ecosystem. Together, these solutions provide clear and actionable opportunities for both small teams and enterprise firms. Purpose-built to simplify the complex, Dodge Construction Network ensures that construction professionals have the information they need to build successful businesses and thriving communities. With over a century of industry experience, Dodge Construction Network is the catalyst for modern commercial construction. [www.construction.com](http://www.construction.com)

## About NCREIF

NCREIF is a member-driven, not-for-profit association that improves private real estate investment industry knowledge by providing transparent and consistent data, performance measurement, analytics, standards and education.

## About the Leeds School of Business

Formed in 1906, the Leeds School of Business is the eighth-oldest business school in the United States. As part of the University of Colorado, the Leeds School embraces the university's research and teaching mission with prominent faculty teaching 4,600 undergraduate and graduate students in accounting, finance, marketing and management degree programs.

A center within the Leeds School of Business, the Business Research Division (BRD) was formed shortly after the school came into existence. Continuing with the inaugural mission, the BRD conducts applied industry and economic research for multiple constituencies external to the school. Faculty and staff who contributed to this report have extensive experience in conducting real estate and economic research. The project team included Brian Lewandowski, Executive Director of the Business Research Division; Richard Wobbekind, PhD, Faculty Director of the BRD and Associate Dean at the Leeds School of Business; Adam Illig, Data Scientist with the BRD; and Ethan Street, Student Research Assistant with the BRD. For more information about the project team or the BRD, please visit: [www.colorado.edu/business/brd](http://www.colorado.edu/business/brd).

## Disclaimer

The data collection measures included in this report should be regarded as guidelines rather than as absolute standards. The data may differ according to the geographic area in question, and results may vary accordingly. Local and regional economic performance are key factors. Further study and evaluation are recommended before any investment decisions are made.

This report is intended to provide information and insight to industry practitioners and does not constitute advice or recommendations. NAIOP disclaims any liability for action taken as a result of this project and its findings.



# Contents

1	Introduction
4	Economic Contributions
4	Building and Nonbuilding Construction
8	Office, Industrial, Warehouse and Retail Development Expenditures
11	The U.S. Economy and Residential and Nonresidential Construction
15	Office: Looking into the Future
15	Retail: Steady Despite Tight Market
16	Industrial: Reshoring Continues as E-commerce Growth Cools
16	Conclusion
20	Note on Methodology
21	Survey of NAIOP Members
22	Definitions
24	Appendices
24	Appendix A: Soft Cost Impacts by State
29	Appendix B: Site Development Impacts by State
34	Appendix C: Hard Cost Impacts by State
39	Appendix D: Tenant Improvement Impacts by State
44	Appendix E: Total Construction Cost Impacts by State
49	Appendix F: Operating Impacts by State
54	Appendix G: National and State Multipliers

# Introduction

Since 2008, NAIOP has conducted this study to estimate the annual economic contribution of commercial real estate development to the U.S. economy. The study uses key data sets from the U.S. Census Bureau, the U.S. Bureau of Labor Statistics, the Bureau of Economic Analysis, Dodge Construction Network and the National Council of Real Estate Investment Fiduciaries (NCREIF). It applies several estimating and impact-assessment methodologies to take snapshots of the commercial real estate development industry from various perspectives. The study includes an analysis of the economic contributions of new commercial real estate development and existing commercial building operations and compares these contributions to the broader economic contributions of all building and nonbuilding construction, which includes infrastructure, residential and government building construction.

The combined economic contributions of new commercial building development and the operations of existing commercial buildings in 2023 (see Tables 1 and 2 on pages 2 and 3) resulted in direct expenditures of \$913.1 billion and the following impacts on the U.S. economy:

- Contributed \$2.5 trillion to U.S. GDP
- Generated \$881.4 billion in personal earnings
- Supported a total of 15 million jobs

**Development of New Commercial Real Estate Buildings.** The analysis begins with Dodge Construction Network data relating to square footage and construction values for office, industrial, warehouse and retail projects. Dodge Construction Network measures a building's full construction value and square feet when the project breaks ground (starts), not when it is completed. The U.S. Census Bureau also tracks construction spending via its Value of Construction Put in Place Survey. The survey provides monthly estimates of the national total dollar value of construction work in the U.S. It includes data on construction completed on new structures or improvements to existing property across residential and nonresidential property subtypes. These data provide the foundation for estimating expenditures made during four distinct phases of the development process: preconstruction (soft costs), site development,

on-site construction (hard costs) and tenant improvements (financing fees are not included in this analysis within the soft construction costs category because they have little immediate economic impact). This study also examines the contribution of one year of building operations reported as a stand-alone phase following development. Additionally, it shows the impacts for the estimated 904 million square feet of commercial buildings that commenced construction over the past year (according to Dodge Construction Network), which supported an estimated 1.9 million jobs and \$149 billion in earnings.

Multipliers are applied to the direct expenditures to calculate the contribution to U.S. gross domestic product (GDP), personal earnings, and jobs supported during each distinct development phase. Residential and hotel properties and government buildings are not included in these calculations (see Table 1).

The full measure of the economic impact of office, industrial, warehouse and retail development includes all expenditures associated with each phase of the development process. In addition to the wide range of on-site construction services, these expenditures support professional and business services, including:

- Architecture and engineering services;
- Legal services;
- Marketing and management services;
- Grading, paving and landscaping services;
- Site engineering services; and
- Interior design and construction services.

The combined spending for preconstruction, construction and post-construction activities required to deliver buildings ready for occupancy represents the development industry's total direct contribution to national, state and local economies. It provides the appropriate basis for calculating the economic impacts of this spending as represented by its contribution to GDP, personal earnings (wages and salaries), and employment.

**Existing Inventory of Commercial Real Estate Buildings.** This study also includes the economic contributions of existing buildings. Based on the existing stock of commercial buildings—totaling 56.2 billion square feet at the end of the third quarter of 2023—direct expenditures for building operations totaled an estimated \$503.6 billion and contributed \$1.4 trillion to GDP. These direct expenditures also generated \$464.9 billion in personal earnings (wages and salaries) and supported 8.8 million jobs (Table 2).



TABLE 1

**Economic Contributions to the U.S. Economy from Development of Commercial Real Estate Buildings, 2018–2023**

Development Phases				Totals	Operations Phase
Pre-Construction	Construction				Post-Construction
Soft Construction (Soft Costs)	Site Development	Hard Construction (Hard Costs)	Tenant Improvements		Building Operations <sup>4</sup>
architecture, engineering, legal, marketing, management, administration	grading, paving, landscaping, roadway, parking, off-site improvements	labor, materials, construction management	interior design and construction (excludes furniture and equipment)		maintenance, repairs, custodial, utilities, property management

**Direct Expenditures (In Billions of Dollars)**

2023	\$61.57	\$65.81	\$206.86	\$75.27	\$409.52	\$4.03
2022	65.83	69.84	235.18	87.82	458.67	3.78
2021	37.26	38.25	137.69	49.73	262.94	3.42
2020	31.20	29.03	108.27	37.01	205.52	3.82
2019	38.33	35.46	135.06	48.29	257.14	4.41
2018	35.64	31.80	121.84	40.53	229.81	3.97

**Total Economic Contribution to GDP (In Billions of Dollars, Includes Multiplier Effect)<sup>1</sup>**

2023	\$169.17	\$187.01	\$587.82	\$213.89	\$1,157.89	\$11.01
2022	180.87	198.46	668.28	249.54	1,297.14	10.19
2021	102.38	108.70	391.26	141.32	743.65	9.23
2020	86.61	84.02	313.32	107.11	591.07	10.29
2019	107.29	96.14	366.13	130.92	700.47	12.04
2018	99.76	86.22	330.30	109.86	626.14	10.85

**Personal Earnings (In Billions of Dollars, Includes Multiplier Effect)<sup>2</sup>**

2023	\$72.79	\$65.02	\$204.36	\$74.36	\$416.53	\$3.72
2022	77.83	69.00	232.33	86.75	465.91	3.62
2021	44.05	37.79	136.03	49.13	267.00	3.28
2020	38.66	30.17	112.50	38.46	219.80	3.66
2019	43.78	33.19	126.41	45.20	248.58	4.24
2018	40.71	29.77	114.04	37.93	222.45	3.82

**Jobs Supported (Includes Multiplier Effect)<sup>3</sup>**

2023	894,669	1,005,182	3,153,415	1,147,765	6,201,031	147,888
2022	956,524	1,070,517	3,597,113	1,345,551	6,969,706	153,300
2021	541,441	562,317	2,014,173	727,972	3,845,903	136,865
2020	511,099	457,108	1,704,543	582,702	3,255,453	207,586
2019	608,157	640,690	2,440,035	872,503	4,561,385	260,155
2018	565,500	574,575	2,201,271	732,173	4,073,519	234,372

Sources: NAIOP; Dodge Construction Network, Bureau of Economic Analysis RIMSII, NCREIF, and IMPLAN.

<sup>1</sup> The total value of goods and services generated directly and indirectly as a result of construction and related expenditures within the U.S.

<sup>2</sup> The additional earnings (wages and salaries) generated from construction and related expenditures.

<sup>3</sup> The jobs supported by the spending and re-spending of direct expenditures for all phases of development and operations.

<sup>4</sup> NCREIF state-level data was used in 2021, 2022 and 2023, and a national weighted average was used for 2018–2020.

Note: Data include office, industrial, warehouse/flex and retail buildings under construction in the year indicated and exclude existing inventory. Operations figures are based on buildings delivered in the year indicated. Column totals may not add up due to rounding.



**TABLE 2**

**Economic Contribution to the U.S. Economy from Operations of Existing Buildings, 2019–2023**

Year	Total Square Feet (In Billions)	Direct Expenditures for Building Operations <sup>1</sup> (In Billions of Dollars)	Total Economic Contribution to GDP <sup>2</sup> (In Billions of Dollars)	Personal Earnings <sup>3</sup> (In Billions of Dollars)	Jobs Supported (In Millions) <sup>4</sup>
2023	56.24	\$503.6	\$1,377.4	\$464.9	8.802
2022	55.36	476.1	1,302.2	439.5	8.322
2021	54.61	447.2	1,223.3	412.9	7.817
2020	53.37	505.3	1,362.6	484.2	10.195
2019	52.72	472.1	1,273.0	452.4	9.525

Sources: NCREIF; Newmark Group Inc.

<sup>1</sup> The total value of goods and services generated directly and indirectly as a result of construction and related expenditures within the U.S.

<sup>2</sup> The additional earnings (wages and salaries) generated from construction and related expenditures.

<sup>3</sup> The jobs supported by the spending and re-spending of direct expenditures for all phases of development and operations.

Note: Building operations include maintenance repair, cleaning, utilities, security, building management, and administrative expense; see Appendices for state and building type data.

The remaining sections of this report discuss the broader economic impacts of building and nonbuilding construction; analyze trends in the construction and performance of office, warehouse, industrial and retail real estate; and discuss the outlook for individual commercial property types. Table 8 on page 17 details the economic contributions of the first year of operating expenditures from newly developed buildings to the economies of each state and the District of Columbia. Table 9 on page 18 details the total economic contribution of construction across commercial property types to individual state economies. The study’s methodology is described at the end of the report, and the appendices provide a detailed breakdown of the economic contributions of expenditures on soft costs, site development, hard costs, tenant improvements and operations for new office, manufacturing, warehouse and retail construction in each state.



# Economic Contributions

## Building and Nonbuilding Construction

U.S. Census data on the value of construction put in place allow for a calculation of the contribution of building and nonbuilding construction to the U.S. economy for the year in review. The product types include residential, nonresidential and infrastructure projects in the construction pipeline. The most recent multipliers from the U.S. Department of Commerce’s Bureau of Economic Analysis (BEA) and IMPLAN are applied to reflect the effects of construction expenditures on U.S. GDP and the jobs supported by these direct expenditures (Table 3).

**TABLE 3**

**Economic Contributions from Building and Nonbuilding Construction**

Year	Direct Expenditures (In Billions of Dollars)	Total Economic Contribution to GDP (In Trillions of Dollars, Includes Multiplier Effect) <sup>1</sup>	Percent Contribution to GDP	Jobs Supported (In Millions, Includes Multiplier Effect) <sup>2</sup>
2023	\$1,952	\$5.5	20.6%	27.1
2022	1,849	5.3	20.4	25.6
2021	1,653	4.7	19.9	22.9
2020	1,500	4.3	20.4	23.6
2019	1,391	3.8	17.5	25.3
2018	1,333	3.7	18.1	27.1
2017	1,280	3.5	17.7	24.6
2016	1,213	3.4	17.9	24.9
2015	1,132	3.0	16.2	23.3
2014	1,015	2.9	16.3	20.8
2013	915	2.7	15.8	21.4

Sources: U.S. Census, Annual Value of Construction Put in Place; Bureau of Economic Analysis, Gross Domestic Product; author’s calculations.

<sup>1</sup> The total value of goods and services generated directly and indirectly as a result of construction and related expenditures within the U.S.; revised based on current multipliers from the BEA.

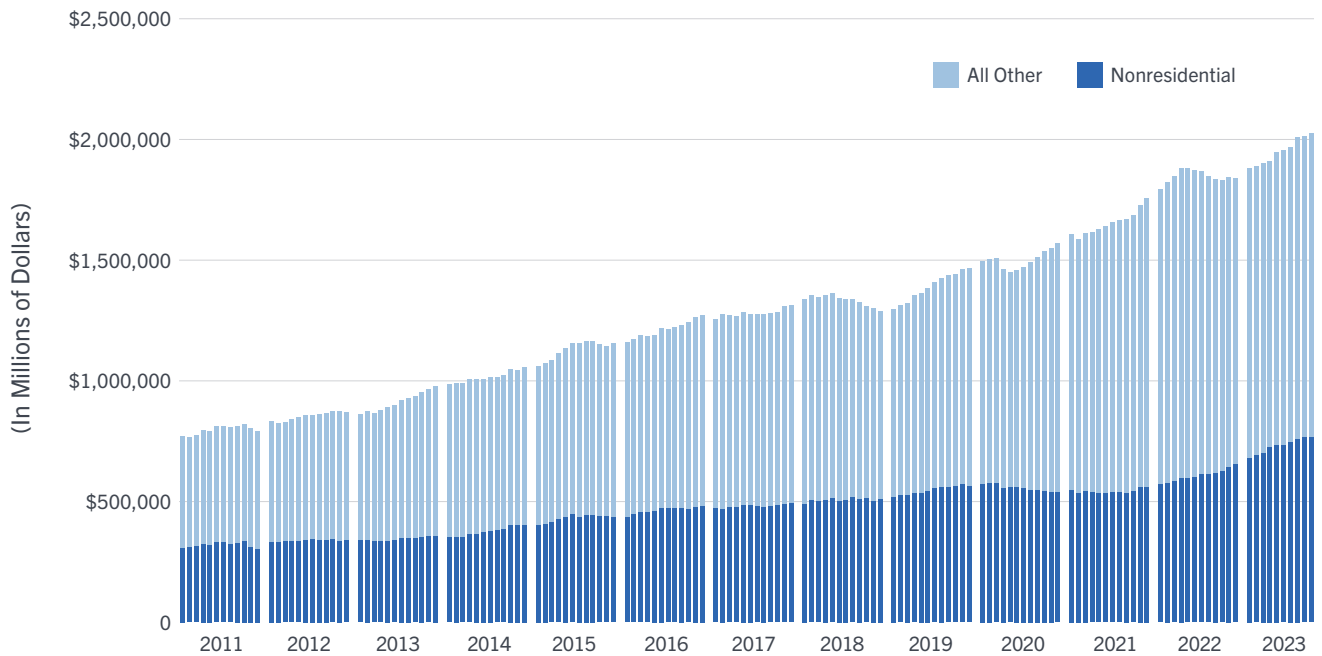
<sup>2</sup> The jobs supported by the spending and re-spending of direct expenditures for all phases of development and operations.

<sup>3</sup> In September 2023, the BEA completed a comprehensive revision of GDP statistics, revising the values used to calculate this table. This resulted in a change in the historical values seen in the 2023 report.

Note: Historic values are revised, 2023 is estimated.

**Construction Trends.** The construction industry has been in a generally strong growth cycle since the end of 2020. Construction employment averaged 7.96 million jobs in 2023. The industry added more than 709,000 jobs over three years (2021-2023) and added an estimated 218,000 jobs (2.8% growth) in 2023—a faster pace of growth than the overall job market. Despite the growth in jobs, there were indications of a construction slowdown in 2023. Residential building permits decreased 13.5% year-to-date in November 2023, with significant declines in both single-family (-9.3%) and multifamily (-19.5%).

**FIGURE 1: Value of Construction, 2011–2023**



Source: U.S. Census Bureau, Value of Construction Put in Place (Seasonally Adjusted).

Note: Nonresidential excludes communication, power, highway and street, sewage and waste disposal, water supply, and conservation and development.

**The Value of Construction.** The overall value of building and nonbuilding construction put in place increased 11.8% in 2022, posting the largest growth since 2005. Tracking with the record overall growth rate, most construction subcomponents performed positively in 2022. The value of nonresidential construction put in place increased 12.1% and residential values increased 14.6%. Just three nonresidential subsectors experienced an annual decline.<sup>1</sup> The subsectors of manufacturing and retail construction increased 39.8% and 24.6%, respectively, while public safety and religious construction decreased 9.8% and 4.8%, respectively (see Table 4).



<sup>1</sup> Excluding communication, power, highway and street, sewage and waste disposal, water supply, and conservation and development.



TABLE 4

Nonresidential Construction Spending, 2021–2023 (In Billions of Current Year Dollars)

Type of Structure	2021	2022	Percent Change 2021–2022	October YTD 2022	October YTD 2023	Percent Change 2022–2023
Transportation	\$59.1	\$58.7	-0.6	\$48.8	\$53.2	8.9
Health Care	50.3	54.8	8.8	45.2	51.7	14.2
Retail	97.4	121.3	24.6	100.2	109.4	9.1
Manufacturing	82.0	114.7	39.8	92.4	159.0	72.0
Amusement and Recreation	27.1	30.0	10.7	24.9	26.8	7.5
Educational	101.0	102.1	1.1	86.3	96.8	12.2
Public Safety	12.8	11.6	-9.8	9.7	10.7	10.5
Office	89.9	91.6	1.9	76.0	82.2	8.2
Religious	3.1	2.9	-4.8	2.5	2.8	10.8
Lodging	19.1	19.7	3.5	16.1	19.7	22.4
<b>Total</b>	<b>\$541.8</b>	<b>\$607.5</b>	<b>12.1</b>	<b>\$502.2</b>	<b>\$612.2</b>	<b>21.9</b>

Sources: U.S. Census, *Annual Value of Construction Put in Place 2009–2022*, [https://www.census.gov/construction/c30/historical\\_data.html](https://www.census.gov/construction/c30/historical_data.html), retrieved December 18, 2023.

Note: Totals include some miscellaneous state and local government buildings but exclude spending for nonbuilding construction on items relating to communication, power, highway and street, sewage and waste disposal, water supply, and conservation and development.

As of October 2023, the total value of construction was up 10.7% year-over-year, while nominal GDP grew 6.2% year-over-year in the third quarter of 2023, and real GDP grew 2.9%.<sup>2</sup> The value of nonresidential building construction increased 21.9% year-to-date through October 2023 when compared with the same period in 2022.<sup>3</sup> This increase in nonresidential construction value reflected a strong performance among all the building categories, as shown in Table 4. Manufacturing construction increased 72%, lodging increased 22.4%, and health care increased 14.2%. Residential value of construction put in place decreased 7.4% year-over-year.

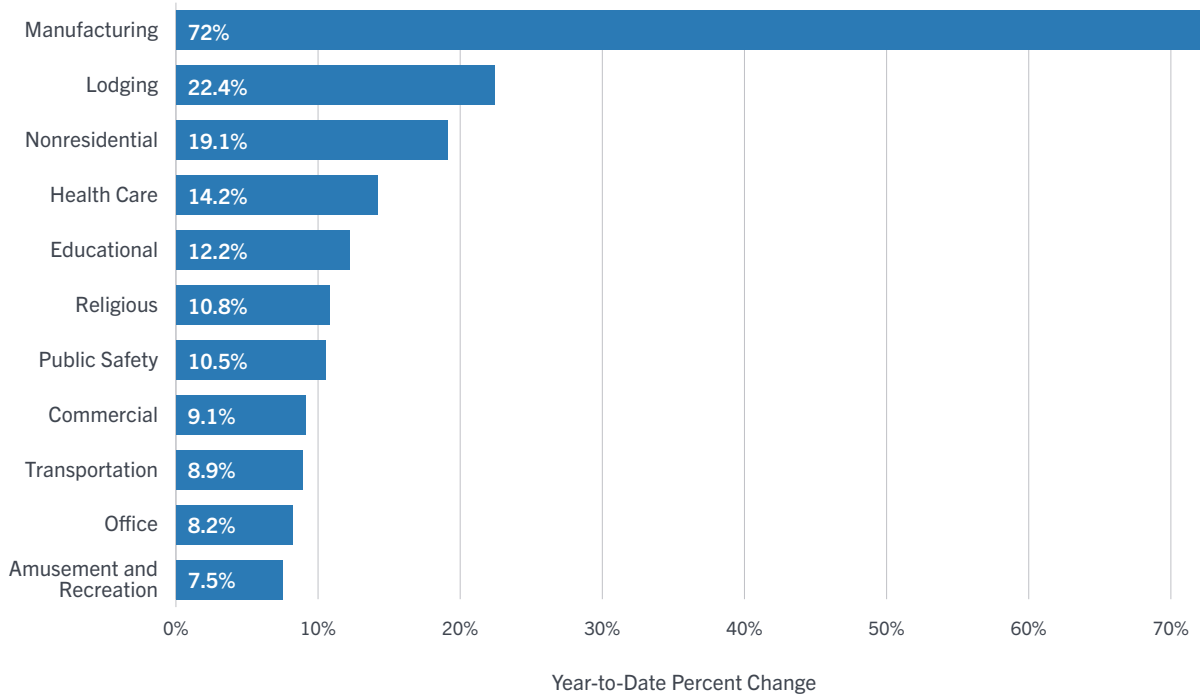
For 2023, projections show that residential permits will total 1.4 million units, a slight decrease from 2022 (Figure 3).<sup>4</sup> In 2022, persistently high inflation led the Federal Reserve to raise the Federal Funds interest rate at a historic pace. This continued at a slower pace through 2023. In October 2023, mortgage rates reached their highest level since 2000. Since then, rates have come down slightly as the Federal Reserve Board of Governors began to signal that the Federal Funds rate has peaked, and that most Governors expect a handful of rate cuts in 2024. If interest rates fall in the coming years, mortgage payments should become more affordable, and many potential homebuyers are expected to reenter the market. While the housing market has slowed in the short term, demographics are favorable for residential demand as millennials continue to transition to homeownership.

<sup>2</sup> Value of construction excluding communication, power, highway and street, sewage and waste disposal, water supply, and conservation and development.

<sup>3</sup> Excluding communication, power, highway and street, sewage and waste disposal, water supply, and conservation and development.

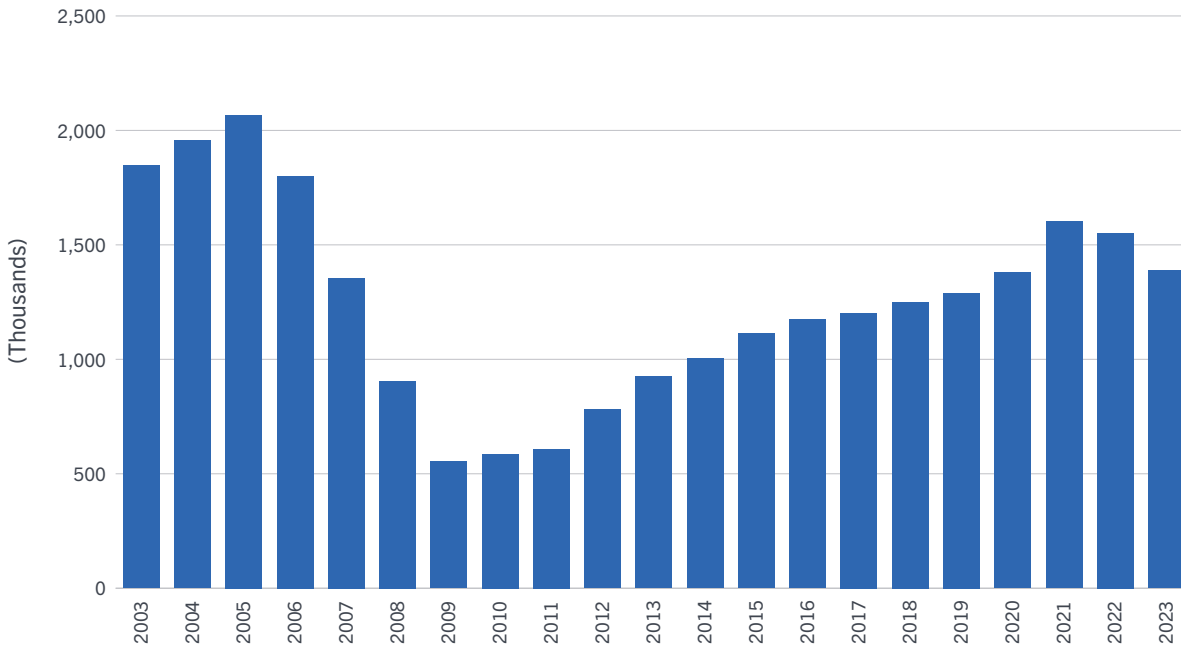
<sup>4</sup> October 2023 year-to-date change from October 2022 year-to-date applied to 2022.

**FIGURE 2: Value of Construction Put in Place, October 2022 to October 2023**



Source: U.S. Census Bureau, Annual Value of Construction Put in Place.

**FIGURE 3: New Privately Owned Housing Units Started, 2003–2023**



Source: U.S. Census Bureau, New Privately Owned Housing Units Started. 2023 based on year-to-date growth rate as of October 2023.



**Building and Nonbuilding Construction, Output Multipliers, GDP and Employment.** Based on U.S. Census data, the estimated total value of building and nonbuilding construction spending put in place in the U.S. in 2023 was \$2 trillion. This construction spending directly accounted for 7.2% of the nation’s third-quarter GDP in 2023. With an output multiplier of 2.84, each \$1 of construction spending generated a total value of \$2.84 to the economy, reflecting the cumulative effects of the initial construction expenditures as they cycle throughout the economy.<sup>5</sup> Applying this multiplier to the total value of direct construction spending in 2023 brings the value of its overall contribution to GDP—direct, indirect and induced—to \$5.5 trillion, which supported 20.6% of all U.S. economic activity in 2023. Industry spending also directly and indirectly supported 27.1 million jobs in the economy.

**The Bottom Line:** In 2023 the \$2 trillion in building and nonbuilding construction spending contributed \$5.5 trillion to U.S. GDP and supported 27.1 million jobs.

## Office, Industrial, Warehouse and Retail Development Expenditures

**Construction data** provided by Dodge Construction Network for office, industrial (manufacturing), warehouse and retail buildings provide a more refined definition of construction expenditures (hard costs) over time. As presented in Table 5, total construction expenditures (hard costs) for these four building types in 2023 totaled \$206.9 billion, down \$28.3 billion, or 12%, from the revised annual total for 2022.

**Office construction** expenditures averaged \$49.8 billion over the past five years (2019-2023). Office activity totaled \$56.3 billion in 2023, up 5.4% from 2022. It is important to note that Dodge Construction Network includes data centers in its office construction data.

**Industrial (manufacturing) construction** expenditures averaged \$52.8 billion over the past five years (2019–2023). Industrial activity totaled \$79.5 billion in 2023, representing a 22.1% decrease from 2022. However, construction activity previously surged 217.2% from 2021 to 2022 (\$32.2 to \$102.1 billion).

**Warehouse construction** outlays averaged \$45.4 billion over the past five years (2019-2023). Warehouse activity totaled \$51.8 billion in 2023, down 14% from 2022.

**Retail construction** expenditures averaged \$16.6 billion over the past five years (2019-2023). Retail activity totaled \$19.3 billion in 2023, down 0.7% from 2022.

**TABLE 5**

**Comparing Construction Expenditures (Hard Costs), 2022 and 2023**  
(In Billions of Current Year Dollars)

Building Type	2022 <sup>1</sup>	2023 <sup>2</sup>	Change (2022–2023)
Office	\$53.4	\$56.3	5.4%
Industrial	102.1	79.5	–22.1%
Warehouse	60.2	51.8	–14.0%
Retail/Entertainment	19.4	19.3	–0.7%
<b>Total</b>	<b>\$235.2</b>	<b>\$206.9</b>	<b>–12.0%</b>

Source: Dodge Construction Network.

<sup>1</sup> Revised. <sup>2</sup> Trailing 12 months ending September 2023.

Column totals may not add up due to rounding.

<sup>5</sup> The nonresidential structures multiplier was sourced from IMPLAN. The state-level multipliers were sourced from the Bureau of Economic Analysis.

**Expenditures and Square Footage (All Structures Combined).** The total amount of new construction in 2023, as measured in square feet for these four building types, decreased by 147.3 million square feet (14%) from revised year-end construction data for 2022. A continuing change in the mix of building types affected the square footage of new construction in 2023. Industrial accounted for 16.2% of all new space built in 2023 (measured in square feet), up from 13.7% in 2022 and 10.6% in 2021. Warehouses accounted for 63.2% of all new space built in 2023, down from 67.8% in 2022 and 69.8% in 2021. The share of retail space has varied in recent years—at 8.1% in 2023, 6.7% in 2022 and 7.5% in 2021—but

is down from 16.2% in 2017. Office rose to 12.6% of space built in 2023 from 11.7% in 2022 but has fallen from 23.2% of space built in 2019.

The patterns of construction value by building type present a slightly different distribution, as shown in Table 6. Industrial construction value decreased its share (43.4% to 38.5%) from 2022 to 2023. In comparison, office construction value increased as a percentage of the total from 22.7% to 27.2% in the same period. Additionally, retail construction value increased to 9.3% in 2023 from 8.3% in 2022. Warehouse slightly decreased its share (25.6% to 25%) from 2022 to 2023.

**TABLE 6**

**Office, Industrial, Warehouse and Retail Construction, 2022 and 2023**

Building Type	Square Feet (In Millions)		Construction Value <sup>3</sup> (In Billions of Dollars)	
	2022 <sup>1</sup>	2023 <sup>2</sup>	2022 <sup>1</sup>	2023 <sup>2</sup>
Office	123	113	\$53.4	\$56.3
Industrial	144	146	102.1	79.5
Warehouse	713	571	60.2	51.8
Retail/Entertainment	70	73	19.4	19.3
<b>Total</b>	<b>1,051</b>	<b>904</b>	<b>\$235.2</b>	<b>\$206.9</b>

Source: Dodge Construction Network.

<sup>1</sup> Revised. <sup>2</sup> Trailing 12 months ending September 2023. <sup>3</sup> Hard costs only.

Column totals may not add up due to rounding.

**Hard Construction Expenditures (All Structures Combined), Multipliers and GDP.** Applying national construction multipliers from IMPLAN yields the economic impact of this construction activity. The multipliers measure contribution to GDP (\$2.84 of output per dollar spent), personal earnings final demand (\$0.99 per dollar spent), and employment final demand (13.87 jobs supported per \$1 million in output).<sup>6</sup>

State-level direct spending and associated economic impacts for spending on preconstruction (soft costs), construction (site development and hard costs) and post-construction (operations) are included in the appendices. Note that individual state construction

multipliers are generally smaller than the U.S. multipliers. The state-level multipliers measure only the share of construction-related expenditures retained within the respective state economies. Construction-related spending flows that leak out of one state economy to other states (spillover effects) are excluded. States with smaller economies tend to retain smaller portions of construction-related spending benefits than larger states due to the local supply chain—fewer goods and services are available to be sourced. Thus, goods and services tend to be sourced from outside the states or regions (i.e., leakage).

<sup>6</sup> The nonresidential structures multiplier was sourced from IMPLAN. The state-level multipliers were sourced from the Bureau of Economic Analysis.



**The Bottom Line.** The four phases of development tracked in this study make substantial contributions to U.S. GDP. Applying the latest IMPLAN and BEA multipliers shows that direct construction expenditures—soft costs, site development costs, hard costs, tenant improvements—of \$409.5 billion in 2023 resulted in a contribution of \$1,157.9 billion to U.S. GDP, generated \$416.5 billion in personal earnings, and supported 6.2 million jobs, as presented in Table 7.



**TABLE 7**

**Office, Industrial, Warehouse and Retail Construction and Operations Contribution to the Economy, 2023**

Development Phase	Direct Expenditures (In Billions of Dollars)	Total Economic Contribution to GDP <sup>1</sup> (In Billions of Dollars)	Personal Earnings <sup>2</sup> (In Billions of Dollars)	Jobs Supported <sup>3</sup>
<b>Development Phase</b>	<b>\$409.5</b>	<b>\$1,157.9</b>	<b>\$416.5</b>	<b>6,201,031</b>
Soft Construction (Soft Costs)	61.6	169.2	72.8	894,669
Site Development <sup>4</sup>	65.8	187.0	65.0	1,005,182
Hard Construction (Hard Costs)	206.9	587.8	204.4	3,153,415
Tenant Improvements <sup>5</sup>	75.3	213.9	74.4	1,147,765
<b>Annual Operations</b>	<b>\$4.0</b>	<b>\$11.0</b>	<b>\$3.7</b>	<b>147,888</b>

Source: Dodge Construction Network.

<sup>1</sup> The total value of goods and services generated directly and indirectly as a result of construction and related expenditures within the U.S.

<sup>2</sup> The additional earnings (wages and salaries) generated from construction and related expenditures.

<sup>3</sup> The jobs supported by the spending and re-spending of direct expenditures for all phases of development and operations.

<sup>4</sup> Site development includes grading, infrastructure, parking and landscaping.

<sup>5</sup> Tenant improvements exclude furniture and equipment.

Note: See Appendices for state-level data. Column totals may not add up due to rounding.

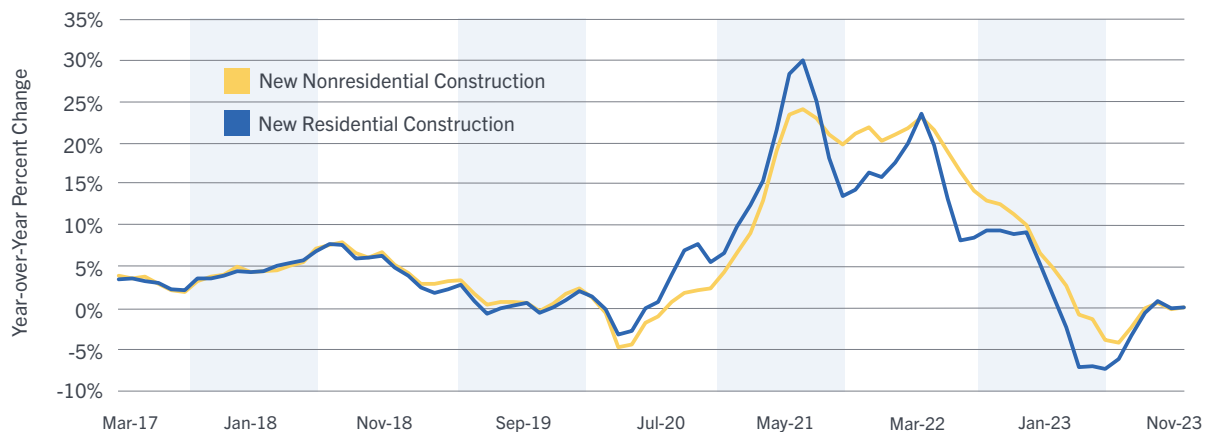
# The U.S. Economy and Residential and Nonresidential Construction

Following the pandemic recession, demand for residential and nonresidential construction surged, while worker shortages, supply chain disruptions and inflation created headwinds for industry operations. In 2023, the industry faced lower residential demand and continued growth in nonresidential and infrastructure demand. Supply chain disruptions diminished and price growth stabilized, but workforce challenges remained.

Leading up to 2023, the consensus was for the U.S. economy to experience a severe slowdown in economic growth, with many economists projecting a recession. The U.S. economy outperformed expectations, with real (inflation-adjusted) GDP growing an estimated 2.4%, according to Consensus Forecasts, which is an acceleration from the 1.9% growth recorded in 2022. Topline inflation as measured by the Bureau of Labor Statistics (BLS) Consumer Price Index dropped to 3.1% in November 2023. The Federal Reserve has signaled potential interest rate decreases in 2024.

According to BLS Producer Price Index data, inputs for new nonresidential construction (excluding capital investment, labor and imports) were up 18.5% in 2021 and 15.7% in 2022, but prices slowed and even decreased for several months in 2023 (Figure 4). New industrial building construction costs rose 5.2% in 2021 and 22.3% in 2022, but year-over-year growth slowed to just 0.3% in November 2023. Similarly, costs for new office building construction rose 6.1% in 2021 and 20.7% in 2022 but increased just 1.8% year-over-year in November 2023.

**FIGURE 4: Construction Producer Price Index Inputs**

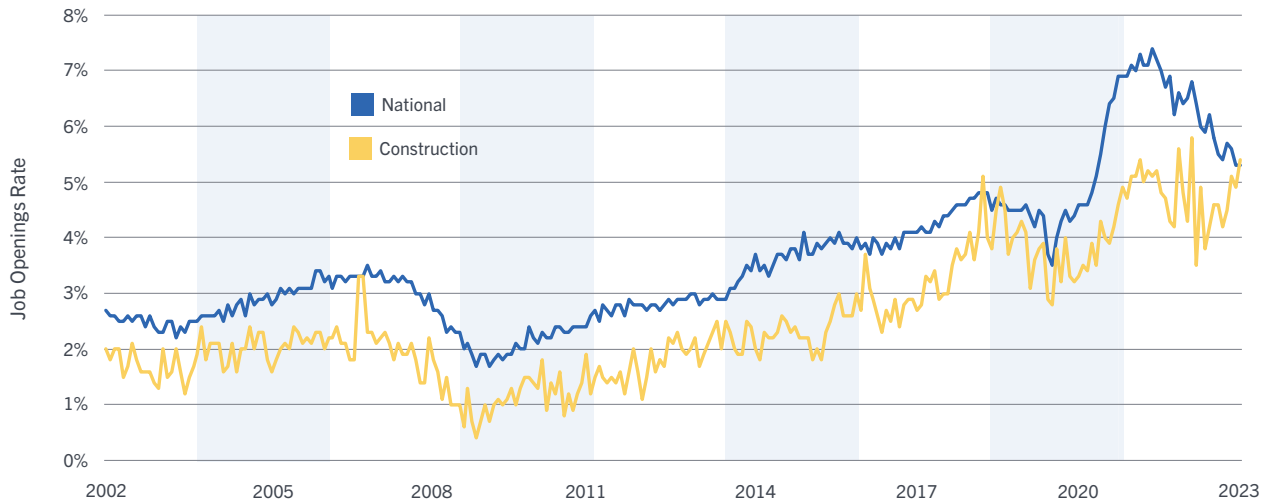


Source: Bureau of Labor Statistics.

While total job openings are elevated, recent data suggest the job market is cooling. Total job openings in November 2023 stood at 8.8 million, compared with 10.7 million in November 2022. The rate of job openings (openings as a percentage of total nonfarm employment) decreased from 6.5% to 5.3% from November 2022 to November 2023. The pattern is reversed for the construction industry—job openings increased from 348,000 in November 2022 to 459,000 in November 2023, and the rate of openings increased from 4.3% to 5.4%, indicating continued strong demand for workers (Figure 5).



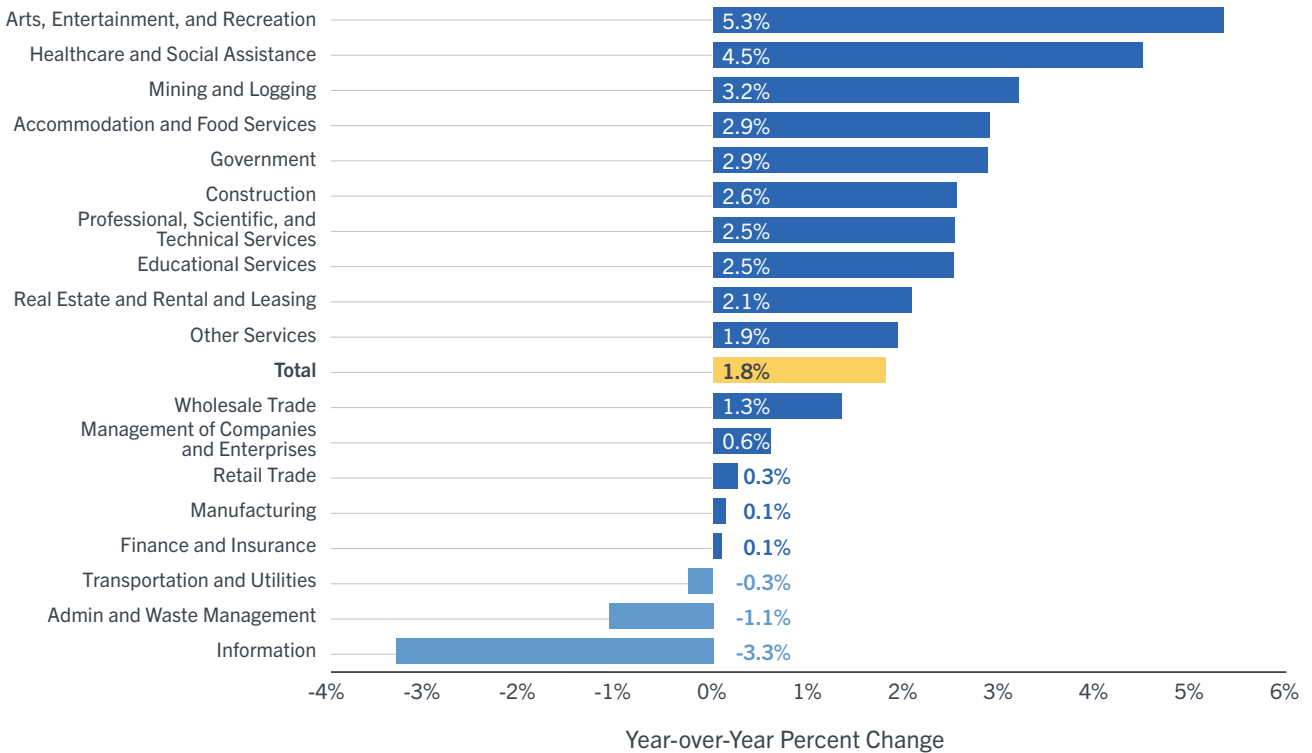
**FIGURE 5: Job Openings Rate**



Source: Bureau of Labor Statistics, JOLTS.

Between November 2022 and November 2023, most industries posted job gains, with a few recording job losses. Arts, entertainment and recreation grew 5.3%, the largest growth among job sectors, followed by healthcare (4.5%), and mining and logging (3.2%). Information had a job decrease of 3.3%, the largest among all industries (Figure 6).

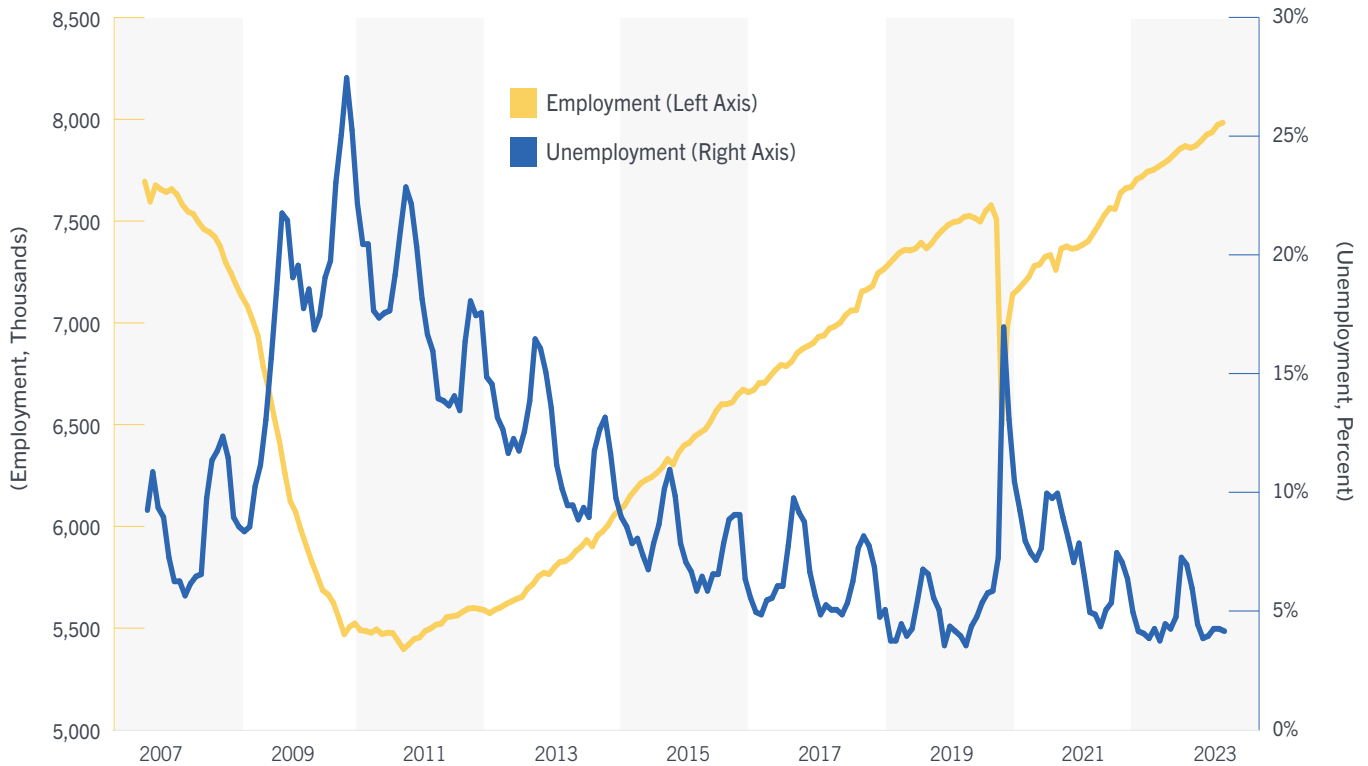
**FIGURE 6: U.S. Employment by Industry, Change from November 2022 to November 2023**



Source: Bureau of Labor Statistics, CES (seasonally adjusted).

**Construction employment** surpassed 8 million jobs (seasonally adjusted) in November 2023 (Figure 7). Despite slowing job growth and comparatively high unemployment, construction industry demand for workers remains strong. Construction unemployment stood at 4.8% (unadjusted) in November 2023 compared to the unadjusted U.S. unemployment rate of 3.5% for the same month. The job opening rate increased to 5.4% in November 2023 (compared to 4.3% in November 2022), with 459,000 openings.

**FIGURE 7: U.S. Construction Employment and Unemployment, 2007–2023**



Source: Employment from the Bureau of Labor Statistics, CES (seasonally adjusted); unemployment from the BLS, CPS (not seasonally adjusted).

**Residential building construction** maintained a high level of growth in the last decade but has recently slowed down as mortgage rates climb. Spending increased 25.6% in 2021 and 14.6% in 2022. In 2023, however, activity decreased by 7.4% year-to-date through October.

**Commercial building construction** expenditures fell 12% in 2023 after surging 70.8% higher in 2022 (see Figure 8 on page 14). Technology, demographics and financing availability are having profound cyclical and secular impacts on commercial real estate

property types that will impact future demand, use and design of commercial space. Even as some employers are trying to bring workers back to the office, remote work behaviors are showing a level of permanence that is leading to high vacancies and low utilization of office space in many markets. Given high vacancy rates and high interest rates, the capital funding environment has become more difficult for new projects in the near term. Over the long term, the industry may be impacted by demographic changes caused by slowing fertility rates and migration, leading some cities' populations to stagnate while others continue to grow.

**FIGURE 8: Total Value of Construction By Type, 2013–2023 (In Billions of Dollars)**



Sources: Dodge Construction Network. Note: 2023 reflects the trailing 12 months through September 2023.



## Office: Looking into the Future

Hybrid and remote work continue to shape the demand for office real estate. The implications of post-COVID work habits also extend to ancillary property types. With fewer people coming into the office five days a week, downtown retail and hospitality buildings experience lower foot traffic.

Although many businesses have attempted to bring their employees back into the office, occupancy remains well below pre-COVID levels. Kastle Systems, a security firm, reports office occupancy at around 51% of pre-COVID levels in the properties it monitors as of mid-December 2023.<sup>7</sup> While some companies remained with a hybrid model in 2023, others required their employees to come back to the office, under threat of termination. Many of the large Wall Street banks mandated five-day in-office requirements in 2023.

Office vacancy remains high, a trend exacerbated by downsizing and layoffs among some firms, which has been especially concentrated in the tech and financial sectors. Recent CBRE reports indicate that vacancy reached 15.9% in the Manhattan office submarket in the fourth quarter of 2023,<sup>8</sup> while tech-heavy San Francisco recorded a vacancy rate of 35.6%.<sup>9</sup> However, it appears that the elevated vacancy is not reflective of all office buildings in the nation, with approximately 66% of U.S. office buildings more than 90% leased in the second quarter of 2023, compared to 71% being more than 90% leased in Q1 2020.<sup>10</sup>

Office building owners face rising vacancy rates and continued downward pressure on office lease rates. User-demand uncertainty and higher financing costs have tempered new office development and sales transaction volumes. Newer, high-quality buildings have outperformed the rest of the market as occupiers trade space in older commodity buildings for smaller but well-amenitized spaces to attract workers to the office.

With many properties experiencing a decline in operating income, low-performing, highly leveraged properties face increasing default risks. After the regional banking crisis in March 2023, concerns were raised about the commercial real estate loan portfolios of many U.S. regional banks, as many had increased the size of their CRE loan portfolios in the last decade. However, most defaults to date have been among large office properties financed by commercial mortgage-backed securities (CMBS). Office CMBS default rates grew rapidly in 2023, according to Moody's Analytics.<sup>11</sup>

## Retail: Steady Despite Tight Market

Office-adjacent retail in urban markets continued to struggle in 2023, but overall demand for traditional retail space remained durable. On the supply side, new retail construction activity slowed slightly. The recent decline can be attributed to higher construction and financing costs, but retail completions remain below 2016 levels (see Figure 8).<sup>12</sup>

While it was a tougher year on the supply side, demand for retail space increased in 2023. As reported by ICSC, the rise in total shopping center occupancy from the third quarter of 2022 to the third quarter of 2023 was about 0.4%, driven by an increase of 2.5% in mall occupancy.<sup>13</sup> In the post-COVID years, indoor mall spaces struggled in comparison to open-air shopping centers, but 2023 saw an outsized growth in mall occupancy. Retail availability fell to 4.8% in the third quarter of 2023, the lowest level since CBRE began tracking the market in 2005. Several years of reduced retail construction have constrained supply and supported a declining vacancy rate.

There were some bankruptcy filings among high-profile retailers in 2023 (e.g., Bed Bath & Beyond, Rite Aid). While most of the Chapter 11 filings will result in restructuring scenarios where only some retail locations are affected, these bankruptcies are indicative of the razor-thin margins that retail companies must maintain in today's economic environment.

<sup>7</sup> Kastle Systems, "Kastle Back to Work Barometer," December 13, 2023, <https://www.kastle.com/safety-wellness/getting-america-back-to-work/>.

<sup>8</sup> CBRE, "Manhattan Office Figures," January 9, 2024, <https://www.cbre.com/insights/figures/manhattan-office-figures-q4-2023>.

<sup>9</sup> CBRE, "San Francisco Office Snapshot," January 8, 2024, <https://www.cbre.com/insights/figures/san-francisco-office-snapshot-q4-2023>.

<sup>10</sup> CBRE, "Most US Office Buildings More than 90 Percent Leased," August 1, 2023, <https://www.cbre.com/insights/briefs/most-us-office-buildings-more-than-90-percent-leased>.

<sup>11</sup> Matt Reidy, Kevin Fagan and Twinkle Roy, "MA CRE Office Loan Maturity Monitor," Moody's Analytics, November 29, 2023, <https://cre.moodyanalytics.com/insights/cre-news/ma-cre-office-loan-maturity-monitor-october-surprise-office-improves-while-multifamily-weakens/>.

<sup>12</sup> CBRE, "Retail Availability Rate Hits Record Low," January 19, 2024, <https://www.cbre.com/insights/figures/q4-2023-us-retail-figures>.

<sup>13</sup> ICSC, "Industry Benchmark Report," <https://www.icsc.com/news-and-views/industry-insights/marketplace-perspectives/performance-series/industry-benchmark-report>.

With the continued rise of e-commerce, many brick-and-mortar retailers have gotten more creative with how to attract people into physical locations. For example, furniture retailer RH's (colloquially Restoration Hardware) retail locations offer dining experiences.<sup>14</sup> Other stores have shifted to an omnichannel model, integrating their brick-and-mortar locations with their online businesses by offering online purchase/delivery options and "buy online, pick up in store" (BOPIS) conveniences.<sup>15</sup>

### **Industrial: Reshoring Continues as E-commerce Growth Cools**

Industrial real estate has outperformed other sectors of commercial real estate in recent years, supported by growth in e-commerce and more recently by reshoring of manufacturing in several industries. In 2023, the growth in demand for warehouses and distribution centers slowed as consumer spending shifted from goods to services, consumers frequented in-person retail at higher rates, and retailers trimmed inventories and expansion plans. New construction has also slowed in response to higher interest rates and construction costs. However, vacancy rates for warehouses and distribution centers remain low, particularly in supply-constrained port markets and near major population centers. If the Federal Reserve can successfully orchestrate a soft landing in 2024, consumer and manufacturing demand should continue to support growth in demand for logistics space, albeit at a slower pace than in recent years.

Manufacturing construction experienced another strong year, driven by reshoring in industries that stand to benefit from recent federal subsidies for electrification, green energy generation and critical industries like semiconductors.<sup>16</sup>

These industries face a narrow window to complete construction and receive the full benefit of provisions in the Infrastructure Investment and Jobs Act, the Inflation Reduction Act, and the CHIPS and Science Act, prompting a flurry of new plant announcements and construction starts over the last two years. New manufacturing starts in 2023 declined from 2022's record levels but remained markedly higher than the range for the preceding decade (see Figure 8). As the window for claiming federal subsidies closes over the coming years, new manufacturing starts appear likely to slow, but the completion of projects now entering the pipeline should also create future demand for associated logistics space.

### **Conclusion**

Total construction spending was up an estimated 5.6% in 2023 and accounted for approximately 20.6% of total GDP (inclusive of the multiplier effect). The subsector of nonresidential construction was a strong performer for the industry at large in 2023, with the value of completions increasing 21.9% year-to-date in October 2023. This was driven by manufacturing, which saw a 72% growth year-to-date in October 2023. Higher interest rates, workforce constraints and inflation continued to raise challenges for the commercial real estate industry in 2023.

Slow growth in real (inflation-adjusted) GDP (1.2%) and real business investment (0.7%) is expected in 2024—both evidence of cooling demand for construction and real estate.<sup>17</sup> While expected slowdowns in economic growth in 2024 could dampen demand, the total value of construction is anticipated to increase modestly, with growth in nonresidential construction, particularly infrastructure, expected to outweigh declines in residential construction.

<sup>14</sup> Amanda Lauren, "Is Restoration Hardware the Retail Experience That Will Change the Way Millennials Buy Furniture?," Forbes, January 2019, <https://www.forbes.com/sites/amandal Lauren/2019/01/25/is-restoration-hardware-the-retail-experience-that-will-change-the-way-millennials-buy-furniture/?sh=582dcf603ba9>.

<sup>15</sup> National Retail Federation, "State of Retail," 2023, <https://nrf.com/research-insights/state-retail>.

<sup>16</sup> Lisa DeNight and Elizabeth Berthelette, "Forging the Future: Manufacturing Growth and Its Effects on North American Industrial Markets," NAIOP Research Foundation, February 1, 2024, <https://www.naiop.org/forging-the-future>.

<sup>17</sup> GDP and fixed business investment projections from December 2023 issue of Consensus Forecasts.

TABLE 8

## Impacts of Operations on State Economies (In Four Categories), 2023

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	\$49,626	\$93,952	\$31,602	1,851
Alaska	2,378	3,765	1,325	66
Arizona	149,905	291,251	101,006	5,202
Arkansas	12,984	23,464	7,901	442
California	343,912	677,301	232,691	11,035
Colorado	108,227	220,480	75,954	3,840
Connecticut	18,473	33,634	10,879	493
Delaware	10,496	17,332	4,885	227
District of Columbia	3,564	4,410	454	17
Florida	466,156	915,484	318,338	18,951
Georgia	200,398	424,885	141,561	8,353
Hawaii	4,789	8,422	2,923	140
Idaho	46,526	83,612	28,902	1,629
Illinois	122,805	268,906	87,032	4,521
Indiana	47,907	95,679	31,139	1,637
Iowa	47,651	82,135	27,166	1,429
Kansas	48,601	90,364	27,197	1,380
Kentucky	31,882	60,784	18,862	1,017
Louisiana	31,101	57,356	19,485	1,108
Maine	7,067	12,459	4,309	217
Maryland	50,976	92,521	29,505	1,410
Massachusetts	72,240	133,073	43,517	1,951
Michigan	36,980	74,632	25,350	1,336
Minnesota	65,097	126,997	42,729	2,104
Mississippi	14,332	25,266	8,336	464
Missouri	29,607	58,989	18,276	1,040
Montana	13,460	22,813	8,030	432
Nebraska	55,668	96,656	32,421	1,610
Nevada	41,740	72,322	24,660	1,249
New Hampshire	14,876	26,000	8,121	350
New Jersey	106,648	214,555	66,879	3,264
New Mexico	16,617	27,442	9,532	503
New York	152,116	263,997	82,675	3,651
North Carolina	122,998	254,211	84,450	5,123
North Dakota	9,075	14,684	4,694	239
Ohio	82,309	172,544	56,201	3,126
Oklahoma	53,481	100,597	34,516	1,992
Oregon	38,988	72,826	24,165	1,147
Pennsylvania	61,417	123,909	40,056	1,997
Rhode Island	10,975	19,028	5,715	257
South Carolina	58,632	118,548	38,562	2,402
South Dakota	21,211	34,695	11,596	598
Tennessee	49,807	107,080	34,676	1,932
Texas	783,737	1,751,809	585,451	36,788
Utah	38,181	77,434	26,253	1,478
Vermont	1,181	1,967	655	34
Virginia	120,892	226,382	71,640	3,529
Washington	95,237	173,684	58,771	2,681
West Virginia	10,286	16,805	5,278	262
Wisconsin	39,435	75,041	25,167	1,308
Wyoming	2,855	4,490	1,505	75
<b>Total</b>	<b>\$4,025,498</b>	<b>\$11,010,872</b>	<b>\$3,716,402</b>	<b>147,888</b>

Sources: Dodge Construction Network, NCREIF, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.



TABLE 9

**Total Impacts of Soft Costs, Site Development, Hard Costs and Tenant Improvements on State Economies (in Four Categories), 2023**

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	\$7.47	\$16.44	\$6.31	118,504
Alaska	0.32	0.56	0.24	3,668
Arizona	17.34	37.49	15.03	261,963
Arkansas	2.22	4.58	1.77	32,917
California	22.59	48.25	19.35	289,930
Colorado	6.55	14.81	5.88	93,097
Connecticut	1.32	2.61	1.02	15,458
Delaware	0.57	0.99	0.34	5,422
District of Columbia	2.35	2.80	0.27	3,843
Florida	20.84	45.37	18.28	345,831
Georgia	36.95	87.07	33.37	617,230
Hawaii	0.48	0.91	0.38	5,959
Idaho	1.79	3.60	1.45	27,473
Illinois	12.93	31.52	11.60	181,891
Indiana	12.83	29.19	10.82	187,095
Iowa	5.03	9.88	3.81	68,455
Kansas	10.12	21.29	7.53	133,717
Kentucky	6.11	13.11	4.76	88,320
Louisiana	5.13	10.58	4.17	77,529
Maine	0.32	0.62	0.26	4,735
Maryland	4.65	9.07	3.38	55,017
Massachusetts	6.39	12.64	4.84	71,940
Michigan	8.45	19.05	7.48	131,968
Minnesota	3.62	7.98	3.06	48,289
Mississippi	4.80	9.69	3.73	70,668
Missouri	4.76	10.54	3.74	66,431
Montana	0.41	0.79	0.33	6,131
Nebraska	6.96	13.53	5.33	97,931
Nevada	4.41	8.44	3.40	56,233
New Hampshire	0.62	1.23	0.46	6,948
New Jersey	6.49	14.27	5.22	79,614
New Mexico	1.30	2.36	0.97	18,134
New York	14.96	27.47	10.36	158,492
North Carolina	19.14	44.06	16.88	312,059
North Dakota	0.57	1.03	0.38	6,372
Ohio	19.92	47.04	17.44	299,128
Oklahoma	2.15	4.57	1.81	34,086
Oregon	3.19	6.61	2.49	39,554
Pennsylvania	6.28	14.54	5.36	86,141
Rhode Island	0.48	0.89	0.32	5,242
South Carolina	7.01	15.92	5.93	114,397
South Dakota	3.16	5.97	2.42	43,409
Tennessee	6.70	16.17	5.88	95,620
Texas	71.67	185.00	69.74	1,220,051
Utah	3.70	8.51	3.30	58,619
Vermont	0.07	0.12	0.05	916
Virginia	9.73	19.93	7.42	132,230
Washington	6.72	13.72	5.44	82,403
West Virginia	1.44	2.60	0.96	17,762
Wisconsin	6.36	13.65	5.34	88,912
Wyoming	0.14	0.25	0.10	1,841
<b>Total</b>	<b>\$409.52</b>	<b>\$1,157.89</b>	<b>\$416.53</b>	<b>6,201,031</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

# Jobs Housed and Payroll Value

In addition to the annual operating expenditures associated with new buildings, these structures represent new productive capacity within the national economy. While the value of this added capacity depends on how each building is used, two common measures are the number of jobs this new capacity can accommodate and the amount of payroll these new jobs can potentially generate. Using an average-jobs-per-square-foot estimate for each category of building, it is possible to estimate the total number of employees that could be housed within the buildings built in 2023. The total payroll value of these new workers can also be calculated by multiplying this employment estimate by the 2023 U.S. average wage earnings per worker for the mix of jobs associated with each building category.

These calculations are presented in Table 10. They show that the 904 million square feet of new office, industrial, warehouse and retail space constructed in 2023 has the capacity to house 1.9 million new workers with a total estimated annual payroll of \$149 billion.



**TABLE 10**

**Jobs Accommodated and Payroll Generated in Office, Industrial, Warehouse and Retail Space Construction in 2023**

Building Type	Square Feet (In Millions)	Square Feet per Job	Jobs Accommodated (In Thousands)	Average Earnings per Job	Total Payroll (In Billions of Dollars)
Office	113	190	597	\$130,747	\$78
Industrial	146	750	195	81,509	16
Warehouse	571	600	952	50,942	48
Retail/Entertainment	73	475	154	41,213	6
<b>Total/Average</b>	<b>904</b>	<b>476</b>	<b>1,897</b>	<b>\$78,416</b>	<b>\$149</b>

Sources: Dodge Construction Network; U.S. Bureau of Labor Statistics (QCEW); Newmark Knight Frank; author's calculations.

Note: For this study, office jobs were tabulated for Information; Finance and Insurance; and Professional, Scientific and Technical Services industries. Industrial jobs included the Manufacturing industry; Warehouse jobs included the Warehouse industry; and Retail/Entertainment jobs included the Retail industry.

# Note on Methodology

## Construction Value and Area

To publish the economic results in this report in February 2024, full-year 2023 data were estimated. The construction estimates (value and area) for 2023 were provided by Dodge Construction Network and based on activity for the 12 months ending in September 2023 and revised annual construction totals for 2022 and 2021. Values before 2020 were kept the same as in the previous report, released in January 2023. It is important to note that Dodge Construction Network categorizes data centers as office properties in its data.

## Economic Multipliers

The output (GDP), personal earnings (wages and salaries) and jobs-supported multipliers used in the 2024 report reflect the most recent revisions by the U.S. Department of Commerce's Bureau of Economic Analysis (BEA) and IMPLAN, as of November 2023. These multipliers are based on the 2012 Benchmark Input-Output Table for the nation and 2021 regional data.

Multipliers by state were sourced from the BEA (RIMS II) for three industries: construction (nonresidential structures), soft costs (architectural, engineering and related services) and operations (services to buildings and dwellings). The aggregated national multipliers were sourced from IMPLAN.

- **Construction** multipliers are utilized for hard costs, site improvements and tenant improvements.
- **Architectural and engineering services** multipliers are utilized to represent the bundle of construction-related professional services considered in this report and identified as soft costs (preconstruction).
- **Services to buildings** multipliers are utilized to represent the bundle of building operations services (including building management, repair and maintenance, custodial, security, and sales and marketing, but excluding financing costs).



## Operations Costs

Building maintenance costs were generated using the per square foot costs from the National Council of Real Estate Investment Fiduciaries' NCREIF Property Index (NPI). National aggregated operation costs by property type were utilized, as were state-level data. A regional average was used when states were not represented in the NPI, with regional areas mapped from the BEA. Historic data sets from reports published before 2023 are expected to differ from data included in this report, as cost estimates in those reports utilized Building Owners and Managers Association International survey data.

# Survey of NAIOP Members

Since 2006, NAIOP has conducted member surveys to determine the distribution of construction costs across the four major categories of building development—soft costs, site development, hard costs and tenant improvements—by type of building. The results of these surveys are shown in Table 11.

**TABLE 11**

**Survey of NAIOP Members' Building Cost Allocation Percentages (%), by Building Type, 2006, 2008, 2013, 2016, 2018, 2021, 2023**

Building Type	Soft Construction Costs <sup>1</sup>	Site Development Costs	Building Construction Costs	Tenant Improvement Costs
<b>Office</b>				
2023	15.9%	13.8%	48.9%	21.4%
2021	15.1	10.2	53.0	21.8
2018	18.1	11.6	52.4	17.9
2016	16.4	13.7	49.2	20.6
2013	14.4	14.5	49.5	21.6
2008	17.4	14.2	49.7	18.6
2006	17.1	15.8	49.5	17.6
<b>Manufacturing</b>				
2023	14.2	16.2	49.2	20.5
2021	12.6	13.8	51.0	22.7
2018	10.0	14.9	56.2	18.9
2016	12.3	9.4	57.1	21.3
2013	16.9	13.8	54.0	15.3
2008	14.3	19.3	52.6	13.8
2006	12.1	18.6	55.7	13.7
<b>Warehouse/Flex</b>				
2023	16.9	18.4	52.5	12.2
2021	14.2	18.3	54.5	13.0
2018	14.7	17.5	54.9	12.9
2016	14.1	15.5	57.9	12.6
2013	14.6	19.0	53.3	13.1
2008	17.1	18.5	53.6	13.7
2006	14.2	16.8	55.0	14.1
<b>Retail</b>				
2023	10.8	16.6	56.6	16.0
2021	15.3	15.9	47.6	21.3
2018	19.1	13.7	46.0	21.3
2016	17.7	14.4	49.3	18.6
2013	17.0	21.8	44.3	16.9
2008	15.8	20.8	47.0	16.4
2006	17.7	16.1	52.4	13.8
<b>Combined<sup>2</sup></b>				
2023	15.8	17.2	52.1	15.0
2021	14.3	15.6	53.1	17.1
2018	15.5	14.4	52.4	17.7
2016	15.4	14.2	53.2	17.2
2013	15.2	17.3	49.1	17.3
2008	15.6	17.2	51.2	15.9
2006	16.3	16.4	52.5	14.9

Source: NAIOP survey.

<sup>1</sup> Professional services and administrative and management processes required to support the construction project.

<sup>2</sup> Weighted average reflecting the number of responses by type.



# Definitions

**Area of Analysis** – the geographic unit of analysis, normally a political unit, for which economic, demographic and fiscal information is reported.

**Building Value** – construction value would include hard costs (costs of the structure) and soft costs (management, architecture and engineering, legal fees, communications); the finished commercial value would reflect cash flow potential or current performance. Assessed valuation for tax purposes may be accepted as an appropriate substitute for actual market value.

**Development Costs** – includes all of the construction-related expenditures associated with developing a building, which include soft construction costs, site development costs, hard construction costs and tenant improvement expenditures.

**Direct Expenditures** – all spending in support of all phases of new construction required to deliver the final product as well as the operation phase (after the building delivers), including payroll of the workers directly involved and all nonpayroll spending for materials, management, overhead, utilities, equipment leasing or purchases for or by subcontractors, suppliers and vendors.

**Economic Impact** – the generation of new spending within a jurisdiction as a result of investing in and operating new economic activity; in this case, office, industrial, warehouse and retail buildings.

**Fiscal Impact** – the effect of real estate development on the revenues and expenditures of the jurisdiction where the building is located.

**Gross Domestic Product (GDP), Gross State Product (GSP)** – the value of goods and services produced within the economy of the respective geographic area (nation, state).

**Gross Square Feet** – a measure of an individual building size or aggregate inventory of building space reflecting the total envelope of the structure, which is typically larger than the occupied or usable building area.

**Hard Construction Costs** – a category of construction costs that reflects the expenditures for the building's hard construction phase. Costs for labor, materials and construction management are the three basic types of hard costs. Soft construction costs, site development costs and tenant improvement expenditures are reported independently from hard construction costs.

**Indirect Benefit** – the additional economic benefits (measured in dollars or jobs) resulting from the accumulated additional value generated by direct expenditures, as these dollars are re-spent within the economy. Indirect effects are calculated using **Multipliers** and include sales and purchases by businesses supplying goods and services in support of building construction and operation as well as the re-spending of payroll by workers (**Induced Effects**) associated with the new building.

**Induced Effects** – the contributions of the payroll spending by workers in a specific industry or sector on local businesses providing goods and services to households.

**Infrastructure** – utilities, roads, parking lots, storm drainage structures; other site improvements could be included in estimating these costs if not included elsewhere. If these improvements are financed by the private sector, whether on-site or off-site, their costs should be included in the base values for calculating industry economic contributions.

**Interstate Spillovers** – economic contributions that are generated by direct construction expenditures in a given state that are realized by another state due to workers commuting across state lines (i.e., earning wages in one state and spending these earnings in their home state) and the importation of building materials from another state. These economic impacts are not reflected in the benefiting states' multipliers but are captured in the U.S. multipliers and reported in the U.S. totals.

**Multiplier** – a number used to calculate the final economic impact of one dollar spent. Types of multipliers include:

**output multiplier** measures the contribution of a direct expenditure on the overall economy (gross domestic product or gross state product).

**employment multiplier** measures the total number of jobs that can be supported by a direct expenditure (expressed in jobs supported per \$1 million in direct spending).

**personal earnings multiplier** measures the total personal earnings (wages and salaries) generated within the state or nation as a result of a direct expenditure and the jobs it supports.

**Operating Costs** – costs (expenditures) associated with the day-to-day operation of an office, industrial, warehouse or retail building including building management, utilities, normal maintenance and repair, custodial services and security. These costs do not include the operating costs of building tenants.

**Output** – the goods and services produced for sale to other firms or industries as intermediate goods or services or for sale to consumers as final goods or services.

**Personal Earnings** – wages and salaries (payroll) paid out to all workers related directly or indirectly to the construction activity (pre-construction, construction, post-construction) for which direct expenditures are made. These wages and salaries include payment to the workers directly related to construction work being performed, employees of suppliers and vendors related to that work, and employees of businesses and organizations benefiting from the spending of these new wages and salaries generated as a result of these direct expenditures; that is, employees working in retail and consumer services, health care, education, local government and so on, whose business sales and cash flow have increased because of the new wages and salaries paid to workers in construction-related activities.

**Sector** – industries or firms grouped by similar characteristics of operations (e.g., retail trade sector, manufacturing sector, construction sector, services sector, government sector, etc.).

**Site Development** – a category of construction costs that reflects improvements made to the site before a building can be constructed. These costs include grading, infrastructure, landscaping, surface and structured parking, and other costs to prepare the site to support the functions of the building constructed on the site.

**Soft Construction Costs** – a category of development costs that reflects the professional services and administrative and management processes required to support the construction project. These may precede actual on-site construction by several years and may include legal and other consultant services, architectural and engineering services, management and administration.

**Tenant Improvement Costs** – a category of construction costs that reflects improvements made to the interior of a building to meet the needs of a specific tenant. Costs may include interior walls and partitions, floor coverings and cabinets, but excludes furnishings. The building owner or the tenant may pay for these improvements.

**Total Output** – the sum of the direct and indirect benefits (expenditures) reflecting the combination of the initial expenditures by a firm and its subsequent accumulated value as this spending is recirculated throughout the economy. This includes benefits (induced) generated by the re-spending of personal earnings. This represents the total contribution to gross domestic product or gross state product.

**Value Added** – a measure of the incremental dollar value created by an industry, firm or individual employee as a result of its production process (work performed); the value created beyond the value of the individual inputs.

# Appendix A: Soft Cost Impacts by State

**Appendix A-1: Impacts of Soft Costs on State Economies (Office), 2023**

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.10	\$0.19	\$0.07	1,155
Alaska	0.02	0.04	0.01	196
Arizona	0.97	2.06	0.79	12,731
Arkansas	0.08	0.16	0.06	999
California	1.08	2.31	0.89	12,084
Colorado	0.26	0.58	0.22	3,178
Connecticut	0.03	0.06	0.02	295
Delaware	0.03	0.05	0.02	235
District of Columbia	0.36	0.49	0.07	812
Florida	0.76	1.64	0.63	10,898
Georgia	0.93	2.10	0.79	13,117
Hawaii	0.03	0.06	0.02	363
Idaho	0.07	0.14	0.05	932
Illinois	1.23	2.85	1.03	14,553
Indiana	0.19	0.39	0.14	2,408
Iowa	0.50	0.89	0.34	5,363
Kansas	0.15	0.28	0.10	1,504
Kentucky	0.11	0.21	0.08	1,265
Louisiana	0.11	0.21	0.08	1,364
Maine	0.01	0.01	0.00	61
Maryland	0.30	0.61	0.22	3,073
Massachusetts	0.59	1.20	0.44	5,914
Michigan	0.14	0.30	0.11	1,707
Minnesota	0.11	0.23	0.09	1,287
Mississippi	0.05	0.09	0.03	587
Missouri	0.40	0.82	0.27	4,250
Montana	0.03	0.05	0.02	303
Nebraska	0.57	1.06	0.40	6,336
Nevada	0.19	0.35	0.14	2,165
New Hampshire	0.03	0.05	0.02	252
New Jersey	0.15	0.32	0.11	1,578
New Mexico	0.09	0.16	0.06	1,023
New York	1.39	2.58	0.88	12,098
North Carolina	0.37	0.82	0.31	5,159
North Dakota	0.06	0.10	0.04	588
Ohio	0.61	1.31	0.48	7,803
Oklahoma	0.16	0.30	0.12	2,042
Oregon	0.29	0.57	0.21	3,231
Pennsylvania	0.31	0.65	0.23	3,567
Rhode Island	0.02	0.05	0.02	244
South Carolina	0.11	0.23	0.08	1,448
South Dakota	0.07	0.13	0.05	808
Tennessee	0.26	0.59	0.21	3,248
Texas	2.65	6.48	2.39	37,369
Utah	0.19	0.42	0.16	2,812
Vermont	0.00	0.01	0.00	40
Virginia	1.14	2.32	0.81	12,193
Washington	0.39	0.76	0.29	3,963
West Virginia	0.03	0.05	0.02	327
Wisconsin	0.59	1.15	0.44	6,924
Wyoming	0.00	0.01	0.00	43
<b>Total</b>	<b>\$18.31</b>	<b>\$50.31</b>	<b>\$21.65</b>	<b>266,059</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

## Appendix A-2: Impacts of Soft Costs on State Economies (Industrial), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.82	\$1.61	\$0.62	9,853
Alaska	0.00	0.00	0.00	4
Arizona	0.50	1.05	0.40	6,522
Arkansas	0.14	0.26	0.10	1,659
California	0.70	1.51	0.58	7,890
Colorado	0.38	0.86	0.33	4,694
Connecticut	0.01	0.01	0.01	74
Delaware	0.00	0.00	0.00	1
District of Columbia	0.00	0.00	0.00	1
Florida	0.21	0.46	0.18	3,047
Georgia	3.23	7.28	2.73	45,432
Hawaii	0.00	0.01	0.00	45
Idaho	0.02	0.04	0.02	266
Illinois	0.15	0.35	0.12	1,763
Indiana	1.32	2.70	1.00	16,655
Iowa	0.14	0.24	0.09	1,444
Kansas	1.05	2.06	0.70	10,893
Kentucky	0.58	1.14	0.41	6,820
Louisiana	0.43	0.84	0.33	5,367
Maine	0.01	0.02	0.01	120
Maryland	0.09	0.18	0.06	918
Massachusetts	0.14	0.28	0.10	1,366
Michigan	0.85	1.80	0.69	10,397
Minnesota	0.13	0.27	0.10	1,522
Mississippi	0.57	1.02	0.39	6,617
Missouri	0.08	0.17	0.06	874
Montana	0.00	0.00	0.00	10
Nebraska	0.41	0.76	0.29	4,555
Nevada	0.16	0.29	0.11	1,777
New Hampshire	0.04	0.07	0.03	341
New Jersey	0.05	0.11	0.04	554
New Mexico	0.03	0.05	0.02	353
New York	0.19	0.36	0.12	1,666
North Carolina	1.73	3.80	1.42	23,925
North Dakota	0.00	0.01	0.00	33
Ohio	1.75	3.76	1.38	22,481
Oklahoma	0.05	0.09	0.04	617
Oregon	0.03	0.06	0.02	353
Pennsylvania	0.12	0.26	0.09	1,435
Rhode Island	0.00	0.00	0.00	7
South Carolina	0.39	0.82	0.30	5,236
South Dakota	0.33	0.57	0.22	3,677
Tennessee	0.35	0.79	0.29	4,320
Texas	4.93	12.04	4.44	69,394
Utah	0.20	0.44	0.17	2,913
Vermont	0.00	0.00	0.00	5
Virginia	0.05	0.09	0.03	494
Washington	0.24	0.48	0.18	2,474
West Virginia	0.12	0.21	0.08	1,267
Wisconsin	0.18	0.34	0.13	2,073
Wyoming	0.01	0.01	0.00	73
<b>Total</b>	<b>\$22.92</b>	<b>\$62.97</b>	<b>\$27.09</b>	<b>333,003</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.



### Appendix A-3: Impacts of Soft Costs on State Economies (Warehouse), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.11	\$0.21	\$0.08	1,274
Alaska	0.02	0.04	0.02	217
Arizona	1.15	2.44	0.94	15,078
Arkansas	0.08	0.15	0.06	956
California	1.49	3.18	1.22	16,689
Colorado	0.28	0.62	0.24	3,414
Connecticut	0.15	0.28	0.10	1,430
Delaware	0.06	0.09	0.03	428
District of Columbia	–	–	–	–
Florida	1.73	3.70	1.43	24,665
Georgia	1.09	2.44	0.92	15,259
Hawaii	0.01	0.02	0.01	120
Idaho	0.17	0.32	0.13	2,159
Illinois	0.53	1.24	0.45	6,325
Indiana	0.31	0.65	0.24	3,980
Iowa	0.08	0.15	0.06	879
Kansas	0.26	0.51	0.17	2,680
Kentucky	0.17	0.32	0.12	1,931
Louisiana	0.12	0.23	0.09	1,482
Maine	0.02	0.03	0.01	183
Maryland	0.31	0.61	0.22	3,099
Massachusetts	0.22	0.44	0.16	2,190
Michigan	0.17	0.37	0.14	2,118
Minnesota	0.28	0.58	0.22	3,211
Mississippi	0.05	0.10	0.04	632
Missouri	0.21	0.44	0.15	2,293
Montana	0.01	0.02	0.01	127
Nebraska	0.05	0.09	0.03	546
Nevada	0.31	0.58	0.22	3,577
New Hampshire	0.02	0.03	0.01	157
New Jersey	0.77	1.67	0.58	8,132
New Mexico	0.05	0.08	0.03	527
New York	0.49	0.91	0.31	4,268
North Carolina	0.58	1.29	0.48	8,094
North Dakota	0.01	0.02	0.01	117
Ohio	0.47	1.01	0.37	6,020
Oklahoma	0.06	0.11	0.04	773
Oregon	0.15	0.29	0.11	1,648
Pennsylvania	0.48	1.01	0.37	5,571
Rhode Island	0.03	0.05	0.02	266
South Carolina	0.53	1.12	0.41	7,109
South Dakota	0.03	0.05	0.02	349
Tennessee	0.23	0.51	0.19	2,825
Texas	2.42	5.91	2.18	34,073
Utah	0.11	0.23	0.09	1,527
Vermont	0.00	0.01	0.00	35
Virginia	0.28	0.58	0.20	3,033
Washington	0.34	0.66	0.25	3,451
West Virginia	0.04	0.07	0.03	424
Wisconsin	0.18	0.35	0.13	2,088
Wyoming	0.00	0.01	0.00	42
<b>Total</b>	<b>\$16.68</b>	<b>\$45.84</b>	<b>\$19.72</b>	<b>242,426</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

## Appendix A-4: Impacts of Soft Costs on State Economies (Retail and Entertainment), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.05	\$0.10	\$0.04	618
Alaska	0.00	0.01	0.00	43
Arizona	0.10	0.21	0.08	1,321
Arkansas	0.02	0.04	0.02	284
California	0.22	0.46	0.18	2,436
Colorado	0.06	0.13	0.05	711
Connecticut	0.02	0.04	0.02	221
Delaware	0.01	0.01	0.00	40
District of Columbia	0.01	0.02	0.00	25
Florida	0.46	0.99	0.38	6,588
Georgia	0.20	0.45	0.17	2,788
Hawaii	0.02	0.03	0.01	195
Idaho	0.02	0.04	0.02	267
Illinois	0.11	0.26	0.09	1,310
Indiana	0.05	0.10	0.04	628
Iowa	0.05	0.08	0.03	488
Kansas	0.03	0.05	0.02	266
Kentucky	0.03	0.07	0.02	397
Louisiana	0.07	0.14	0.05	877
Maine	0.01	0.02	0.01	158
Maryland	0.03	0.06	0.02	316
Massachusetts	0.04	0.09	0.03	428
Michigan	0.06	0.12	0.05	697
Minnesota	0.04	0.08	0.03	454
Mississippi	0.02	0.03	0.01	208
Missouri	0.04	0.09	0.03	464
Montana	0.02	0.03	0.01	233
Nebraska	0.02	0.03	0.01	194
Nevada	0.03	0.06	0.02	342
New Hampshire	0.01	0.02	0.01	104
New Jersey	0.07	0.15	0.05	739
New Mexico	0.03	0.05	0.02	308
New York	0.21	0.40	0.14	1,867
North Carolina	0.12	0.27	0.10	1,694
North Dakota	0.01	0.02	0.01	104
Ohio	0.10	0.22	0.08	1,303
Oklahoma	0.05	0.10	0.04	697
Oregon	0.03	0.07	0.02	375
Pennsylvania	0.07	0.15	0.05	838
Rhode Island	0.02	0.03	0.01	171
South Carolina	0.05	0.12	0.04	741
South Dakota	0.02	0.04	0.01	225
Tennessee	0.14	0.31	0.11	1,712
Texas	0.64	1.56	0.58	8,999
Utah	0.05	0.11	0.04	700
Vermont	0.00	0.00	0.00	27
Virginia	0.06	0.13	0.05	692
Washington	0.06	0.12	0.04	605
West Virginia	0.01	0.02	0.01	140
Wisconsin	0.04	0.08	0.03	480
Wyoming	0.00	0.01	0.00	52
<b>Total</b>	<b>\$3.66</b>	<b>\$10.06</b>	<b>\$4.33</b>	<b>53,181</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

## Appendix A-5: Impacts of Soft Costs on State Economies (in Four Categories), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$1.07	\$2.11	\$0.81	12,899
Alaska	0.05	0.08	0.03	459
Arizona	2.72	5.76	2.21	35,652
Arkansas	0.33	0.61	0.23	3,898
California	3.49	7.46	2.86	39,099
Colorado	0.98	2.19	0.84	11,997
Connecticut	0.21	0.40	0.15	2,020
Delaware	0.09	0.16	0.05	704
District of Columbia	0.37	0.51	0.07	838
Florida	3.17	6.78	2.63	45,198
Georgia	5.45	12.27	4.61	76,597
Hawaii	0.07	0.13	0.05	724
Idaho	0.28	0.54	0.21	3,623
Illinois	2.02	4.69	1.70	23,950
Indiana	1.87	3.84	1.42	23,671
Iowa	0.77	1.36	0.52	8,175
Kansas	1.48	2.90	0.98	15,342
Kentucky	0.89	1.74	0.62	10,414
Louisiana	0.74	1.43	0.55	9,090
Maine	0.04	0.08	0.03	522
Maryland	0.73	1.46	0.52	7,406
Massachusetts	0.99	2.01	0.74	9,898
Michigan	1.22	2.58	0.99	14,920
Minnesota	0.56	1.16	0.44	6,473
Mississippi	0.69	1.24	0.47	8,044
Missouri	0.74	1.52	0.50	7,881
Montana	0.06	0.10	0.04	673
Nebraska	1.05	1.94	0.74	11,631
Nevada	0.69	1.28	0.49	7,860
New Hampshire	0.09	0.17	0.06	854
New Jersey	1.04	2.26	0.79	11,002
New Mexico	0.19	0.34	0.13	2,211
New York	2.28	4.24	1.44	19,899
North Carolina	2.81	6.17	2.31	38,872
North Dakota	0.09	0.15	0.05	842
Ohio	2.93	6.29	2.31	37,608
Oklahoma	0.31	0.61	0.24	4,128
Oregon	0.50	0.99	0.37	5,607
Pennsylvania	0.98	2.07	0.75	11,412
Rhode Island	0.07	0.13	0.04	687
South Carolina	1.07	2.29	0.84	14,534
South Dakota	0.45	0.79	0.31	5,058
Tennessee	0.97	2.20	0.80	12,106
Texas	10.63	25.99	9.59	149,835
Utah	0.55	1.19	0.45	7,952
Vermont	0.01	0.02	0.01	107
Virginia	1.53	3.12	1.09	16,412
Washington	1.03	2.02	0.77	10,492
West Virginia	0.21	0.36	0.13	2,157
Wisconsin	0.98	1.92	0.73	11,565
Wyoming	0.02	0.03	0.01	211
<b>Total</b>	<b>\$61.57</b>	<b>\$169.17</b>	<b>\$72.79</b>	<b>894,669</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

## Appendix B: Site Development Impacts by State

**Appendix B-1: Impacts of Site Development on State Economies (Office), 2023**

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.10	\$0.19	\$0.07	1,365
Alaska	0.02	0.03	0.01	219
Arizona	0.97	1.82	0.73	12,976
Arkansas	0.08	0.15	0.06	1,119
California	1.08	1.99	0.80	12,244
Colorado	0.26	0.51	0.20	3,279
Connecticut	0.03	0.05	0.02	315
Delaware	0.03	0.05	0.02	260
District of Columbia	0.36	0.36	0.03	468
Florida	0.76	1.44	0.59	11,236
Georgia	0.93	1.91	0.74	13,839
Hawaii	0.03	0.06	0.02	373
Idaho	0.07	0.13	0.05	992
Illinois	1.23	2.60	0.96	15,332
Indiana	0.19	0.38	0.14	2,457
Iowa	0.50	0.87	0.34	6,144
Kansas	0.15	0.27	0.10	1,722
Kentucky	0.11	0.20	0.07	1,400
Louisiana	0.11	0.20	0.08	1,486
Maine	0.01	0.01	0.00	68
Maryland	0.30	0.51	0.19	3,188
Massachusetts	0.59	1.01	0.39	5,888
Michigan	0.14	0.28	0.11	1,957
Minnesota	0.11	0.21	0.08	1,307
Mississippi	0.05	0.09	0.03	661
Missouri	0.40	0.77	0.28	5,015
Montana	0.03	0.04	0.02	339
Nebraska	0.57	0.97	0.38	7,227
Nevada	0.19	0.31	0.13	2,123
New Hampshire	0.03	0.05	0.02	264
New Jersey	0.15	0.28	0.10	1,619
New Mexico	0.09	0.14	0.06	1,109
New York	1.39	2.20	0.84	13,111
North Carolina	0.37	0.75	0.29	5,387
North Dakota	0.06	0.09	0.03	592
Ohio	0.61	1.26	0.47	8,093
Oklahoma	0.16	0.29	0.12	2,192
Oregon	0.29	0.52	0.19	3,115
Pennsylvania	0.31	0.62	0.23	3,722
Rhode Island	0.02	0.04	0.01	237
South Carolina	0.11	0.21	0.08	1,553
South Dakota	0.07	0.12	0.05	888
Tennessee	0.26	0.55	0.20	3,281
Texas	2.65	5.97	2.26	40,175
Utah	0.19	0.39	0.15	2,686
Vermont	0.00	0.01	0.00	43
Virginia	1.14	2.01	0.76	13,855
Washington	0.39	0.69	0.28	4,252
West Virginia	0.03	0.05	0.02	349
Wisconsin	0.59	1.11	0.44	7,299
Wyoming	0.00	0.01	0.00	46
<b>Total</b>	<b>\$18.31</b>	<b>\$44.95</b>	<b>\$15.63</b>	<b>228,866</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.



## Appendix B-2: Impacts of Site Development on State Economies (Industrial), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.82	\$2.09	\$0.80	15,383
Alaska	0.00	0.00	0.00	5
Arizona	0.50	1.23	0.50	8,781
Arkansas	0.14	0.34	0.13	2,455
California	0.70	1.72	0.69	10,561
Colorado	0.38	1.00	0.40	6,398
Connecticut	0.01	0.02	0.01	105
Delaware	0.00	0.00	0.00	1
District of Columbia	0.00	0.00	0.00	0
Florida	0.21	0.53	0.22	4,150
Georgia	3.23	8.76	3.37	63,319
Hawaii	0.00	0.01	0.00	61
Idaho	0.02	0.05	0.02	374
Illinois	0.15	0.42	0.15	2,453
Indiana	1.32	3.48	1.29	22,442
Iowa	0.14	0.31	0.12	2,186
Kansas	1.05	2.56	0.91	16,475
Kentucky	0.58	1.46	0.53	9,974
Louisiana	0.43	1.03	0.41	7,721
Maine	0.01	0.02	0.01	177
Maryland	0.09	0.20	0.08	1,258
Massachusetts	0.14	0.31	0.12	1,797
Michigan	0.85	2.21	0.87	15,744
Minnesota	0.13	0.33	0.13	2,043
Mississippi	0.57	1.33	0.51	9,846
Missouri	0.08	0.21	0.08	1,362
Montana	0.00	0.00	0.00	14
Nebraska	0.41	0.92	0.36	6,863
Nevada	0.16	0.34	0.14	2,301
New Hampshire	0.04	0.08	0.03	471
New Jersey	0.05	0.13	0.05	750
New Mexico	0.03	0.06	0.03	505
New York	0.19	0.40	0.15	2,386
North Carolina	1.73	4.58	1.76	32,997
North Dakota	0.00	0.01	0.00	44
Ohio	1.75	4.80	1.78	30,801
Oklahoma	0.05	0.12	0.05	874
Oregon	0.03	0.07	0.03	449
Pennsylvania	0.12	0.33	0.12	1,979
Rhode Island	0.00	0.00	0.00	9
South Carolina	0.39	1.01	0.38	7,417
South Dakota	0.33	0.72	0.29	5,341
Tennessee	0.35	0.96	0.35	5,764
Texas	4.93	14.64	5.54	98,552
Utah	0.20	0.53	0.21	3,675
Vermont	0.00	0.00	0.00	8
Virginia	0.05	0.11	0.04	742
Washington	0.24	0.57	0.23	3,506
West Virginia	0.12	0.26	0.09	1,784
Wisconsin	0.18	0.44	0.17	2,887
Wyoming	0.01	0.01	0.01	104
<b>Total</b>	<b>\$22.92</b>	<b>\$74.32</b>	<b>\$25.84</b>	<b>415,297</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

### Appendix B-3: Impacts of Site Development on State Economies (Warehouse), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.11	\$0.26	\$0.10	1,899
Alaska	0.02	0.05	0.02	306
Arizona	1.15	2.72	1.10	19,383
Arkansas	0.08	0.18	0.07	1,350
California	1.49	3.47	1.40	21,327
Colorado	0.28	0.69	0.28	4,443
Connecticut	0.15	0.32	0.12	1,927
Delaware	0.06	0.11	0.04	598
District of Columbia	–	–	–	–
Florida	1.73	4.12	1.67	32,072
Georgia	1.09	2.81	1.08	20,305
Hawaii	0.01	0.02	0.01	156
Idaho	0.17	0.37	0.15	2,898
Illinois	0.53	1.43	0.53	8,405
Indiana	0.31	0.79	0.29	5,120
Iowa	0.08	0.18	0.07	1,270
Kansas	0.26	0.60	0.21	3,871
Kentucky	0.17	0.39	0.14	2,697
Louisiana	0.12	0.27	0.11	2,035
Maine	0.02	0.03	0.01	258
Maryland	0.31	0.65	0.24	4,055
Massachusetts	0.22	0.47	0.18	2,751
Michigan	0.17	0.43	0.17	3,062
Minnesota	0.28	0.67	0.26	4,114
Mississippi	0.05	0.12	0.05	898
Missouri	0.21	0.53	0.19	3,412
Montana	0.01	0.02	0.01	179
Nebraska	0.05	0.11	0.04	785
Nevada	0.31	0.65	0.27	4,424
New Hampshire	0.02	0.04	0.01	207
New Jersey	0.77	1.84	0.68	10,522
New Mexico	0.05	0.09	0.04	720
New York	0.49	0.98	0.38	5,834
North Carolina	0.58	1.48	0.57	10,658
North Dakota	0.01	0.02	0.01	149
Ohio	0.47	1.23	0.46	7,875
Oklahoma	0.06	0.14	0.05	1,047
Oregon	0.15	0.33	0.13	2,004
Pennsylvania	0.48	1.22	0.45	7,332
Rhode Island	0.03	0.05	0.02	325
South Carolina	0.53	1.31	0.49	9,615
South Dakota	0.03	0.07	0.03	484
Tennessee	0.23	0.60	0.22	3,600
Texas	2.42	6.86	2.60	46,201
Utah	0.11	0.27	0.10	1,840
Vermont	0.00	0.01	0.00	49
Virginia	0.28	0.63	0.24	4,346
Washington	0.34	0.76	0.30	4,670
West Virginia	0.04	0.08	0.03	570
Wisconsin	0.18	0.42	0.17	2,777
Wyoming	0.00	0.01	0.00	56
<b>Total</b>	<b>\$16.68</b>	<b>\$51.66</b>	<b>\$17.96</b>	<b>274,878</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

## Appendix B-4: Impacts of Site Development on State Economies (Retail and Entertainment), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.05	\$0.18	\$0.07	1,308
Alaska	0.00	0.01	0.01	86
Arizona	0.10	0.34	0.14	2,411
Arkansas	0.02	0.08	0.03	569
California	0.22	0.72	0.29	4,418
Colorado	0.06	0.20	0.08	1,313
Connecticut	0.02	0.07	0.03	423
Delaware	0.01	0.01	0.00	80
District of Columbia	0.01	0.02	0.00	26
Florida	0.46	1.56	0.63	12,159
Georgia	0.20	0.73	0.28	5,266
Hawaii	0.02	0.05	0.02	358
Idaho	0.02	0.07	0.03	508
Illinois	0.11	0.42	0.15	2,470
Indiana	0.05	0.18	0.07	1,148
Iowa	0.05	0.14	0.05	1,002
Kansas	0.03	0.08	0.03	544
Kentucky	0.03	0.11	0.04	787
Louisiana	0.07	0.23	0.09	1,711
Maine	0.01	0.04	0.02	316
Maryland	0.03	0.09	0.04	586
Massachusetts	0.04	0.13	0.05	762
Michigan	0.06	0.20	0.08	1,431
Minnesota	0.04	0.13	0.05	825
Mississippi	0.02	0.06	0.02	420
Missouri	0.04	0.15	0.05	980
Montana	0.02	0.06	0.02	466
Nebraska	0.02	0.05	0.02	397
Nevada	0.03	0.09	0.04	601
New Hampshire	0.01	0.03	0.01	195
New Jersey	0.07	0.24	0.09	1,357
New Mexico	0.03	0.08	0.03	599
New York	0.21	0.61	0.23	3,622
North Carolina	0.12	0.44	0.17	3,166
North Dakota	0.01	0.03	0.01	187
Ohio	0.10	0.38	0.14	2,420
Oklahoma	0.05	0.18	0.07	1,339
Oregon	0.03	0.11	0.04	648
Pennsylvania	0.07	0.26	0.10	1,566
Rhode Island	0.02	0.05	0.02	297
South Carolina	0.05	0.19	0.07	1,422
South Dakota	0.02	0.06	0.02	443
Tennessee	0.14	0.52	0.19	3,096
Texas	0.64	2.57	0.97	17,319
Utah	0.05	0.17	0.07	1,198
Vermont	0.00	0.01	0.00	52
Virginia	0.06	0.20	0.08	1,408
Washington	0.06	0.19	0.08	1,161
West Virginia	0.01	0.04	0.01	266
Wisconsin	0.04	0.14	0.05	906
Wyoming	0.00	0.01	0.01	101
<b>Total</b>	<b>\$3.66</b>	<b>\$16.08</b>	<b>\$5.59</b>	<b>86,141</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

## Appendix B-5: Impacts of Site Development on State Economies (in Four Categories), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$1.07	\$2.71	\$1.04	19,955
Alaska	0.05	0.09	0.04	616
Arizona	2.72	6.11	2.47	43,551
Arkansas	0.33	0.75	0.29	5,493
California	3.49	7.90	3.19	48,551
Colorado	0.98	2.40	0.96	15,432
Connecticut	0.21	0.45	0.18	2,769
Delaware	0.09	0.17	0.06	938
District of Columbia	0.37	0.38	0.03	495
Florida	3.17	7.65	3.10	59,617
Georgia	5.45	14.21	5.47	102,729
Hawaii	0.07	0.14	0.06	949
Idaho	0.28	0.61	0.25	4,773
Illinois	2.02	4.87	1.80	28,660
Indiana	1.87	4.83	1.79	31,167
Iowa	0.77	1.50	0.58	10,601
Kansas	1.48	3.51	1.25	22,612
Kentucky	0.89	2.17	0.79	14,859
Louisiana	0.74	1.73	0.68	12,953
Maine	0.04	0.10	0.04	818
Maryland	0.73	1.45	0.55	9,088
Massachusetts	0.99	1.92	0.74	11,198
Michigan	1.22	3.12	1.23	22,194
Minnesota	0.56	1.35	0.52	8,288
Mississippi	0.69	1.60	0.62	11,826
Missouri	0.74	1.66	0.60	10,770
Montana	0.06	0.13	0.05	998
Nebraska	1.05	2.05	0.81	15,272
Nevada	0.69	1.40	0.57	9,449
New Hampshire	0.09	0.20	0.07	1,137
New Jersey	1.04	2.49	0.92	14,248
New Mexico	0.19	0.37	0.15	2,933
New York	2.28	4.18	1.61	24,953
North Carolina	2.81	7.24	2.78	52,208
North Dakota	0.09	0.16	0.06	972
Ohio	2.93	7.66	2.85	49,189
Oklahoma	0.31	0.72	0.29	5,453
Oregon	0.50	1.03	0.39	6,216
Pennsylvania	0.98	2.44	0.90	14,598
Rhode Island	0.07	0.15	0.05	868
South Carolina	1.07	2.73	1.02	20,007
South Dakota	0.45	0.97	0.39	7,157
Tennessee	0.97	2.63	0.96	15,740
Texas	10.63	30.05	11.37	202,247
Utah	0.55	1.36	0.53	9,399
Vermont	0.01	0.02	0.01	153
Virginia	1.53	2.95	1.11	20,351
Washington	1.03	2.21	0.88	13,590
West Virginia	0.21	0.43	0.16	2,969
Wisconsin	0.98	2.10	0.83	13,869
Wyoming	0.02	0.04	0.02	307
<b>Total</b>	<b>\$61.57</b>	<b>\$187.01</b>	<b>\$65.02</b>	<b>1,005,182</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.



# Appendix C: Hard Cost Impacts by State

**Appendix C-1: Impacts of Construction (Hard Costs) on State Economies (Office), 2023**

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.29	\$0.19	\$0.07	1,155
Alaska	0.07	0.04	0.01	196
Arizona	2.98	2.06	0.79	12,731
Arkansas	0.26	0.16	0.06	999
California	3.32	2.31	0.89	12,084
Colorado	0.80	0.58	0.22	3,178
Connecticut	0.09	0.06	0.02	295
Delaware	0.09	0.05	0.02	235
District of Columbia	1.10	0.49	0.07	812
Florida	2.35	1.64	0.63	10,898
Georgia	2.87	2.10	0.79	13,117
Hawaii	0.10	0.06	0.02	363
Idaho	0.22	0.14	0.05	932
Illinois	3.77	2.85	1.03	14,553
Indiana	0.59	0.39	0.14	2,408
Iowa	1.55	0.89	0.34	5,363
Kansas	0.45	0.28	0.10	1,504
Kentucky	0.33	0.21	0.08	1,265
Louisiana	0.34	0.21	0.08	1,364
Maine	0.02	0.01	0.00	61
Maryland	0.93	0.61	0.22	3,073
Massachusetts	1.82	1.20	0.44	5,914
Michigan	0.43	0.30	0.11	1,707
Minnesota	0.34	0.23	0.09	1,287
Mississippi	0.15	0.09	0.03	587
Missouri	1.22	0.82	0.27	4,250
Montana	0.08	0.05	0.02	303
Nebraska	1.76	1.06	0.40	6,336
Nevada	0.58	0.35	0.14	2,165
New Hampshire	0.08	0.05	0.02	252
New Jersey	0.46	0.32	0.11	1,578
New Mexico	0.27	0.16	0.06	1,023
New York	4.27	2.58	0.88	12,098
North Carolina	1.15	0.82	0.31	5,159
North Dakota	0.18	0.10	0.04	588
Ohio	1.87	1.31	0.48	7,803
Oklahoma	0.48	0.30	0.12	2,042
Oregon	0.88	0.57	0.21	3,231
Pennsylvania	0.94	0.65	0.23	3,567
Rhode Island	0.08	0.05	0.02	244
South Carolina	0.33	0.23	0.08	1,448
South Dakota	0.22	0.13	0.05	808
Tennessee	0.80	0.59	0.21	3,248
Texas	8.15	6.48	2.39	37,369
Utah	0.60	0.42	0.16	2,812
Vermont	0.01	0.01	0.00	40
Virginia	3.49	2.32	0.81	12,193
Washington	1.20	0.76	0.29	3,963
West Virginia	0.10	0.05	0.02	327
Wisconsin	1.81	1.15	0.44	6,924
Wyoming	0.01	0.01	0.00	43
<b>Total</b>	<b>\$56.28</b>	<b>\$50.31</b>	<b>\$21.65</b>	<b>266,059</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

## Appendix C-2: Impacts of Construction (Hard Costs) on State Economies (Industrial), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$2.83	\$1.61	\$0.62	9,853
Alaska	0.00	0.00	0.00	4
Arizona	1.72	1.05	0.40	6,522
Arkansas	0.49	0.26	0.10	1,659
California	2.45	1.51	0.58	7,890
Colorado	1.34	0.86	0.33	4,694
Connecticut	0.03	0.01	0.01	74
Delaware	0.00	0.00	0.00	1
District of Columbia	0.00	0.00	0.00	1
Florida	0.74	0.46	0.18	3,047
Georgia	11.22	7.28	2.73	45,432
Hawaii	0.01	0.01	0.00	45
Idaho	0.07	0.04	0.02	266
Illinois	0.52	0.35	0.12	1,763
Indiana	4.57	2.70	1.00	16,655
Iowa	0.47	0.24	0.09	1,444
Kansas	3.66	2.06	0.70	10,893
Kentucky	2.03	1.14	0.41	6,820
Louisiana	1.51	0.84	0.33	5,367
Maine	0.03	0.02	0.01	120
Maryland	0.32	0.18	0.06	918
Massachusetts	0.48	0.28	0.10	1,366
Michigan	2.96	1.80	0.69	10,397
Minnesota	0.45	0.27	0.10	1,522
Mississippi	1.97	1.02	0.39	6,617
Missouri	0.28	0.17	0.06	874
Montana	0.00	0.00	0.00	10
Nebraska	1.43	0.76	0.29	4,555
Nevada	0.54	0.29	0.11	1,777
New Hampshire	0.12	0.07	0.03	341
New Jersey	0.18	0.11	0.04	554
New Mexico	0.11	0.05	0.02	353
New York	0.66	0.36	0.12	1,666
North Carolina	6.00	3.80	1.42	23,925
North Dakota	0.01	0.01	0.00	33
Ohio	6.08	3.76	1.38	22,481
Oklahoma	0.16	0.09	0.04	617
Oregon	0.11	0.06	0.02	353
Pennsylvania	0.43	0.26	0.09	1,435
Rhode Island	0.00	0.00	0.00	7
South Carolina	1.34	0.82	0.30	5,236
South Dakota	1.15	0.57	0.22	3,677
Tennessee	1.20	0.79	0.29	4,320
Texas	17.09	12.04	4.44	69,394
Utah	0.70	0.44	0.17	2,913
Vermont	0.00	0.00	0.00	5
Virginia	0.16	0.09	0.03	494
Washington	0.84	0.48	0.18	2,474
West Virginia	0.43	0.21	0.08	1,267
Wisconsin	0.61	0.34	0.13	2,073
Wyoming	0.02	0.01	0.00	73
<b>Total</b>	<b>\$79.54</b>	<b>\$62.97</b>	<b>\$27.09</b>	<b>333,003</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

### Appendix C-3: Impacts of Construction (Hard Costs) on State Economies (Warehouse), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.33	\$0.21	\$0.08	1,274
Alaska	0.07	0.04	0.02	217
Arizona	3.57	2.44	0.94	15,078
Arkansas	0.25	0.15	0.06	956
California	4.62	3.18	1.22	16,689
Colorado	0.87	0.62	0.24	3,414
Connecticut	0.46	0.28	0.10	1,430
Delaware	0.17	0.09	0.03	428
District of Columbia	–	–	–	–
Florida	5.37	3.70	1.43	24,665
Georgia	3.37	2.44	0.92	15,259
Hawaii	0.04	0.02	0.01	120
Idaho	0.52	0.32	0.13	2,159
Illinois	1.65	1.24	0.45	6,325
Indiana	0.98	0.65	0.24	3,980
Iowa	0.26	0.15	0.06	879
Kansas	0.80	0.51	0.17	2,680
Kentucky	0.51	0.32	0.12	1,931
Louisiana	0.37	0.23	0.09	1,482
Maine	0.05	0.03	0.01	183
Maryland	0.95	0.61	0.22	3,099
Massachusetts	0.68	0.44	0.16	2,190
Michigan	0.54	0.37	0.14	2,118
Minnesota	0.86	0.58	0.22	3,211
Mississippi	0.17	0.10	0.04	632
Missouri	0.67	0.44	0.15	2,293
Montana	0.03	0.02	0.01	127
Nebraska	0.15	0.09	0.03	546
Nevada	0.97	0.58	0.22	3,577
New Hampshire	0.05	0.03	0.01	157
New Jersey	2.38	1.67	0.58	8,132
New Mexico	0.14	0.08	0.03	527
New York	1.52	0.91	0.31	4,268
North Carolina	1.81	1.29	0.48	8,094
North Dakota	0.04	0.02	0.01	117
Ohio	1.46	1.01	0.37	6,020
Oklahoma	0.18	0.11	0.04	773
Oregon	0.45	0.29	0.11	1,648
Pennsylvania	1.48	1.01	0.37	5,571
Rhode Island	0.08	0.05	0.02	266
South Carolina	1.63	1.12	0.41	7,109
South Dakota	0.10	0.05	0.02	349
Tennessee	0.70	0.51	0.19	2,825
Texas	7.50	5.91	2.18	34,073
Utah	0.33	0.23	0.09	1,527
Vermont	0.01	0.01	0.00	35
Virginia	0.88	0.58	0.20	3,033
Washington	1.05	0.66	0.25	3,451
West Virginia	0.13	0.07	0.03	424
Wisconsin	0.55	0.35	0.13	2,088
Wyoming	0.01	0.01	0.00	42
<b>Total</b>	<b>\$51.77</b>	<b>\$45.84</b>	<b>\$19.72</b>	<b>242,426</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

## Appendix C-4: Impacts of Construction (Hard Costs) on State Economies (Retail and Entertainment), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.27	\$0.10	\$0.04	618
Alaska	0.03	0.01	0.00	43
Arizona	0.53	0.21	0.08	1,321
Arkansas	0.13	0.04	0.02	284
California	1.15	0.46	0.18	2,436
Colorado	0.31	0.13	0.05	711
Connecticut	0.12	0.04	0.02	221
Delaware	0.03	0.01	0.00	40
District of Columbia	0.06	0.02	0.00	25
Florida	2.43	0.99	0.38	6,588
Georgia	1.05	0.45	0.17	2,788
Hawaii	0.10	0.03	0.01	195
Idaho	0.11	0.04	0.02	267
Illinois	0.58	0.26	0.09	1,310
Indiana	0.26	0.10	0.04	628
Iowa	0.24	0.08	0.03	488
Kansas	0.14	0.05	0.02	266
Kentucky	0.18	0.07	0.02	397
Louisiana	0.37	0.14	0.05	877
Maine	0.07	0.02	0.01	158
Maryland	0.16	0.06	0.02	316
Massachusetts	0.23	0.09	0.03	428
Michigan	0.30	0.12	0.05	697
Minnesota	0.21	0.08	0.03	454
Mississippi	0.09	0.03	0.01	208
Missouri	0.23	0.09	0.03	464
Montana	0.10	0.03	0.01	233
Nebraska	0.09	0.03	0.01	194
Nevada	0.16	0.06	0.02	342
New Hampshire	0.06	0.02	0.01	104
New Jersey	0.37	0.15	0.05	739
New Mexico	0.14	0.05	0.02	308
New York	1.13	0.40	0.14	1,867
North Carolina	0.64	0.27	0.10	1,694
North Dakota	0.06	0.02	0.01	104
Ohio	0.54	0.22	0.08	1,303
Oklahoma	0.28	0.10	0.04	697
Oregon	0.18	0.07	0.02	375
Pennsylvania	0.38	0.15	0.05	838
Rhode Island	0.09	0.03	0.01	171
South Carolina	0.29	0.12	0.04	741
South Dakota	0.11	0.04	0.01	225
Tennessee	0.72	0.31	0.11	1,712
Texas	3.36	1.56	0.58	8,999
Utah	0.25	0.11	0.04	700
Vermont	0.01	0.00	0.00	27
Virginia	0.34	0.13	0.05	692
Washington	0.31	0.12	0.04	605
West Virginia	0.07	0.02	0.01	140
Wisconsin	0.21	0.08	0.03	480
Wyoming	0.03	0.01	0.00	52
<b>Total</b>	<b>\$19.28</b>	<b>\$10.06</b>	<b>\$4.33</b>	<b>53,181</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.



## Appendix C-5: Impacts of Construction (Hard Costs) on State Economies (in Four Categories), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$3.73	\$2.11	\$0.81	12,899
Alaska	0.17	0.08	0.03	459
Arizona	8.80	5.76	2.21	35,652
Arkansas	1.12	0.61	0.23	3,898
California	11.53	7.46	2.86	39,099
Colorado	3.31	2.19	0.84	11,997
Connecticut	0.69	0.40	0.15	2,020
Delaware	0.29	0.16	0.05	704
District of Columbia	1.16	0.51	0.07	838
Florida	10.89	6.78	2.63	45,198
Georgia	18.50	12.27	4.61	76,597
Hawaii	0.25	0.13	0.05	724
Idaho	0.93	0.54	0.21	3,623
Illinois	6.52	4.69	1.70	23,950
Indiana	6.40	3.84	1.42	23,671
Iowa	2.51	1.36	0.52	8,175
Kansas	5.04	2.90	0.98	15,342
Kentucky	3.06	1.74	0.62	10,414
Louisiana	2.59	1.43	0.55	9,090
Maine	0.17	0.08	0.03	522
Maryland	2.36	1.46	0.52	7,406
Massachusetts	3.20	2.01	0.74	9,898
Michigan	4.23	2.58	0.99	14,920
Minnesota	1.86	1.16	0.44	6,473
Mississippi	2.38	1.24	0.47	8,044
Missouri	2.40	1.52	0.50	7,881
Montana	0.22	0.10	0.04	673
Nebraska	3.43	1.94	0.74	11,631
Nevada	2.25	1.28	0.49	7,860
New Hampshire	0.31	0.17	0.06	854
New Jersey	3.39	2.26	0.79	11,002
New Mexico	0.66	0.34	0.13	2,211
New York	7.58	4.24	1.44	19,899
North Carolina	9.60	6.17	2.31	38,872
North Dakota	0.29	0.15	0.05	842
Ohio	9.95	6.29	2.31	37,608
Oklahoma	1.10	0.61	0.24	4,128
Oregon	1.62	0.99	0.37	5,607
Pennsylvania	3.23	2.07	0.75	11,412
Rhode Island	0.25	0.13	0.04	687
South Carolina	3.59	2.29	0.84	14,534
South Dakota	1.57	0.79	0.31	5,058
Tennessee	3.43	2.20	0.80	12,106
Texas	36.11	25.99	9.59	149,835
Utah	1.87	1.19	0.45	7,952
Vermont	0.03	0.02	0.01	107
Virginia	4.87	3.12	1.09	16,412
Washington	3.41	2.02	0.77	10,492
West Virginia	0.73	0.36	0.13	2,157
Wisconsin	3.18	1.92	0.73	11,565
Wyoming	0.07	0.03	0.01	211
<b>Total</b>	<b>\$206.86</b>	<b>\$169.17</b>	<b>\$72.79</b>	<b>894,669</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

## Appendix D: Tenant Improvement Impacts by State

**Appendix D-1:** Impacts of Tenant Improvements on State Economies (Office), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.13	\$0.29	\$0.11	2,125
Alaska	0.03	0.05	0.02	341
Arizona	1.31	2.83	1.14	20,211
Arkansas	0.11	0.24	0.09	1,742
California	1.45	3.10	1.25	19,071
Colorado	0.35	0.79	0.32	5,108
Connecticut	0.04	0.08	0.03	490
Delaware	0.04	0.07	0.02	404
District of Columbia	0.48	0.56	0.05	729
Florida	1.03	2.25	0.91	17,501
Georgia	1.26	2.98	1.15	21,556
Hawaii	0.05	0.09	0.04	582
Idaho	0.10	0.20	0.08	1,544
Illinois	1.65	4.06	1.50	23,880
Indiana	0.26	0.59	0.22	3,826
Iowa	0.68	1.35	0.52	9,570
Kansas	0.20	0.42	0.15	2,682
Kentucky	0.15	0.32	0.12	2,181
Louisiana	0.15	0.31	0.12	2,314
Maine	0.01	0.01	0.01	106
Maryland	0.41	0.79	0.30	4,966
Massachusetts	0.80	1.57	0.61	9,171
Michigan	0.19	0.43	0.17	3,048
Minnesota	0.15	0.33	0.13	2,036
Mississippi	0.07	0.14	0.05	1,030
Missouri	0.54	1.20	0.43	7,812
Montana	0.03	0.07	0.03	527
Nebraska	0.77	1.51	0.60	11,256
Nevada	0.25	0.49	0.20	3,307
New Hampshire	0.04	0.07	0.03	411
New Jersey	0.20	0.44	0.16	2,521
New Mexico	0.12	0.22	0.09	1,727
New York	1.87	3.42	1.31	20,421
North Carolina	0.50	1.16	0.45	8,390
North Dakota	0.08	0.15	0.05	923
Ohio	0.82	1.96	0.73	12,606
Oklahoma	0.21	0.45	0.18	3,415
Oregon	0.39	0.80	0.30	4,852
Pennsylvania	0.41	0.97	0.36	5,797
Rhode Island	0.03	0.06	0.02	369
South Carolina	0.14	0.33	0.12	2,418
South Dakota	0.10	0.19	0.08	1,383
Tennessee	0.35	0.85	0.31	5,110
Texas	3.57	9.30	3.52	62,576
Utah	0.26	0.60	0.24	4,184
Vermont	0.00	0.01	0.00	68
Virginia	1.53	3.13	1.18	21,580
Washington	0.52	1.08	0.43	6,623
West Virginia	0.04	0.08	0.03	543
Wisconsin	0.79	1.73	0.68	11,369
Wyoming	0.01	0.01	0.00	72
<b>Total</b>	<b>\$24.64</b>	<b>\$70.01</b>	<b>\$24.34</b>	<b>356,477</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

## Appendix D-2: Impacts of Tenant Improvements on State Economies (Industrial), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$1.18	\$2.65	\$1.02	19,507
Alaska	0.00	0.00	0.00	7
Arizona	0.72	1.56	0.63	11,134
Arkansas	0.20	0.43	0.16	3,113
California	1.02	2.18	0.88	13,392
Colorado	0.56	1.26	0.50	8,113
Connecticut	0.01	0.02	0.01	133
Delaware	0.00	0.00	0.00	2
District of Columbia	0.00	0.00	0.00	1
Florida	0.31	0.68	0.27	5,262
Georgia	4.68	11.11	4.27	80,292
Hawaii	0.01	0.01	0.00	78
Idaho	0.03	0.06	0.02	475
Illinois	0.21	0.53	0.19	3,111
Indiana	1.91	4.41	1.64	28,458
Iowa	0.20	0.39	0.15	2,772
Kansas	1.52	3.24	1.15	20,891
Kentucky	0.85	1.85	0.67	12,648
Louisiana	0.63	1.31	0.52	9,791
Maine	0.01	0.03	0.01	224
Maryland	0.13	0.25	0.10	1,595
Massachusetts	0.20	0.39	0.15	2,278
Michigan	1.23	2.81	1.11	19,965
Minnesota	0.19	0.42	0.16	2,590
Mississippi	0.82	1.69	0.65	12,485
Missouri	0.12	0.27	0.10	1,728
Montana	0.00	0.00	0.00	18
Nebraska	0.60	1.17	0.46	8,703
Nevada	0.22	0.43	0.18	2,918
New Hampshire	0.05	0.10	0.04	597
New Jersey	0.08	0.17	0.06	952
New Mexico	0.04	0.08	0.03	641
New York	0.28	0.51	0.19	3,025
North Carolina	2.50	5.80	2.23	41,842
North Dakota	0.00	0.01	0.00	56
Ohio	2.54	6.09	2.26	39,057
Oklahoma	0.07	0.15	0.06	1,109
Oregon	0.05	0.09	0.04	570
Pennsylvania	0.18	0.42	0.15	2,509
Rhode Island	0.00	0.00	0.00	11
South Carolina	0.56	1.28	0.48	9,405
South Dakota	0.48	0.91	0.37	6,773
Tennessee	0.50	1.22	0.44	7,309
Texas	7.13	18.57	7.02	124,968
Utah	0.29	0.67	0.26	4,661
Vermont	0.00	0.00	0.00	10
Virginia	0.07	0.14	0.05	940
Washington	0.35	0.72	0.29	4,446
West Virginia	0.18	0.33	0.12	2,262
Wisconsin	0.25	0.56	0.22	3,660
Wyoming	0.01	0.02	0.01	132
<b>Total</b>	<b>\$33.16</b>	<b>\$94.24</b>	<b>\$32.76</b>	<b>526,613</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

### Appendix D-3: Impacts of Tenant Improvements on State Economies (Warehouse), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.08	\$0.17	\$0.07	1,256
Alaska	0.02	0.03	0.01	202
Arizona	0.83	1.80	0.73	12,818
Arkansas	0.06	0.12	0.05	893
California	1.07	2.29	0.93	14,103
Colorado	0.20	0.46	0.18	2,938
Connecticut	0.11	0.21	0.08	1,274
Delaware	0.04	0.07	0.02	395
District of Columbia	–	–	–	–
Florida	1.25	2.72	1.10	21,209
Georgia	0.78	1.86	0.71	13,427
Hawaii	0.01	0.02	0.01	103
Idaho	0.12	0.25	0.10	1,916
Illinois	0.38	0.94	0.35	5,558
Indiana	0.23	0.53	0.19	3,386
Iowa	0.06	0.12	0.05	840
Kansas	0.19	0.40	0.14	2,560
Kentucky	0.12	0.26	0.09	1,783
Louisiana	0.09	0.18	0.07	1,346
Maine	0.01	0.02	0.01	170
Maryland	0.22	0.43	0.16	2,682
Massachusetts	0.16	0.31	0.12	1,819
Michigan	0.13	0.28	0.11	2,025
Minnesota	0.20	0.44	0.17	2,720
Mississippi	0.04	0.08	0.03	594
Missouri	0.15	0.35	0.12	2,256
Montana	0.01	0.01	0.01	119
Nebraska	0.04	0.07	0.03	519
Nevada	0.23	0.43	0.18	2,925
New Hampshire	0.01	0.02	0.01	137
New Jersey	0.55	1.22	0.45	6,958
New Mexico	0.03	0.06	0.02	476
New York	0.35	0.65	0.25	3,858
North Carolina	0.42	0.98	0.38	7,048
North Dakota	0.01	0.02	0.01	98
Ohio	0.34	0.81	0.30	5,207
Oklahoma	0.04	0.09	0.04	692
Oregon	0.11	0.22	0.08	1,325
Pennsylvania	0.34	0.81	0.30	4,848
Rhode Island	0.02	0.04	0.01	215
South Carolina	0.38	0.87	0.32	6,359
South Dakota	0.02	0.04	0.02	320
Tennessee	0.16	0.40	0.14	2,380
Texas	1.74	4.54	1.72	30,552
Utah	0.08	0.18	0.07	1,217
Vermont	0.00	0.00	0.00	32
Virginia	0.20	0.42	0.16	2,874
Washington	0.24	0.50	0.20	3,088
West Virginia	0.03	0.05	0.02	377
Wisconsin	0.13	0.28	0.11	1,836
Wyoming	0.00	0.00	0.00	37
<b>Total</b>	<b>\$12.02</b>	<b>\$34.16</b>	<b>\$11.88</b>	<b>181,773</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

## Appendix D-4: Impacts of Tenant Improvements on State Economies (Retail and Entertainment), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.08	\$0.17	\$0.07	1,259
Alaska	0.01	0.01	0.01	83
Arizona	0.15	0.33	0.13	2,320
Arkansas	0.04	0.08	0.03	548
California	0.32	0.69	0.28	4,252
Colorado	0.09	0.20	0.08	1,263
Connecticut	0.03	0.07	0.03	407
Delaware	0.01	0.01	0.00	77
District of Columbia	0.02	0.02	0.00	25
Florida	0.69	1.50	0.61	11,702
Georgia	0.30	0.70	0.27	5,068
Hawaii	0.03	0.05	0.02	345
Idaho	0.03	0.06	0.03	489
Illinois	0.16	0.40	0.15	2,377
Indiana	0.07	0.17	0.06	1,104
Iowa	0.07	0.14	0.05	964
Kansas	0.04	0.08	0.03	524
Kentucky	0.05	0.11	0.04	758
Louisiana	0.11	0.22	0.09	1,646
Maine	0.02	0.04	0.02	304
Maryland	0.05	0.09	0.03	564
Massachusetts	0.06	0.13	0.05	734
Michigan	0.09	0.19	0.08	1,377
Minnesota	0.06	0.13	0.05	794
Mississippi	0.03	0.05	0.02	405
Missouri	0.06	0.15	0.05	944
Montana	0.03	0.06	0.02	449
Nebraska	0.03	0.05	0.02	382
Nevada	0.04	0.09	0.03	578
New Hampshire	0.02	0.03	0.01	188
New Jersey	0.10	0.23	0.08	1,306
New Mexico	0.04	0.07	0.03	576
New York	0.32	0.58	0.22	3,486
North Carolina	0.18	0.42	0.16	3,047
North Dakota	0.02	0.03	0.01	180
Ohio	0.15	0.36	0.13	2,329
Oklahoma	0.08	0.17	0.07	1,289
Oregon	0.05	0.10	0.04	623
Pennsylvania	0.11	0.25	0.09	1,507
Rhode Island	0.03	0.05	0.02	286
South Carolina	0.08	0.19	0.07	1,369
South Dakota	0.03	0.06	0.02	426
Tennessee	0.20	0.50	0.18	2,979
Texas	0.95	2.48	0.94	16,668
Utah	0.07	0.17	0.06	1,153
Vermont	0.00	0.01	0.00	50
Virginia	0.10	0.20	0.07	1,355
Washington	0.09	0.18	0.07	1,118
West Virginia	0.02	0.04	0.01	256
Wisconsin	0.06	0.13	0.05	872
Wyoming	0.01	0.01	0.01	97
<b>Total</b>	<b>\$5.45</b>	<b>\$15.48</b>	<b>\$5.38</b>	<b>82,902</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.



## Appendix D-5: Impacts of Tenant Improvements on State Economies (in Four Categories), 2023

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$1.46	\$3.28	\$1.26	24,147
Alaska	0.05	0.09	0.04	633
Arizona	3.00	6.52	2.63	46,483
Arkansas	0.41	0.86	0.33	6,296
California	3.87	8.26	3.34	50,819
Colorado	1.20	2.71	1.08	17,422
Connecticut	0.19	0.38	0.15	2,304
Delaware	0.09	0.16	0.05	878
District of Columbia	0.50	0.57	0.05	755
Florida	3.27	7.14	2.90	55,674
Georgia	7.01	16.65	6.40	120,342
Hawaii	0.09	0.17	0.07	1,107
Idaho	0.28	0.57	0.23	4,425
Illinois	2.41	5.93	2.19	34,927
Indiana	2.47	5.70	2.11	36,775
Iowa	1.00	2.00	0.77	14,145
Kansas	1.95	4.14	1.47	26,656
Kentucky	1.16	2.54	0.92	17,370
Louisiana	0.97	2.02	0.80	15,097
Maine	0.05	0.10	0.04	805
Maryland	0.81	1.57	0.59	9,808
Massachusetts	1.22	2.40	0.93	14,002
Michigan	1.63	3.72	1.46	26,415
Minnesota	0.60	1.33	0.51	8,140
Mississippi	0.95	1.96	0.76	14,513
Missouri	0.87	1.96	0.71	12,739
Montana	0.07	0.14	0.06	1,113
Nebraska	1.43	2.80	1.11	20,860
Nevada	0.75	1.44	0.59	9,729
New Hampshire	0.12	0.23	0.09	1,332
New Jersey	0.93	2.05	0.76	11,737
New Mexico	0.24	0.43	0.18	3,420
New York	2.82	5.16	1.98	30,790
North Carolina	3.61	8.37	3.22	60,327
North Dakota	0.11	0.20	0.07	1,257
Ohio	3.85	9.22	3.43	59,199
Oklahoma	0.40	0.86	0.34	6,505
Oregon	0.59	1.22	0.46	7,370
Pennsylvania	1.04	2.45	0.91	14,661
Rhode Island	0.08	0.15	0.05	881
South Carolina	1.16	2.67	1.00	19,550
South Dakota	0.63	1.20	0.49	8,903
Tennessee	1.22	2.97	1.08	17,779
Texas	13.39	34.88	13.19	234,764
Utah	0.70	1.62	0.63	11,214
Vermont	0.01	0.02	0.01	160
Virginia	1.89	3.88	1.46	26,749
Washington	1.21	2.49	0.99	15,275
West Virginia	0.27	0.49	0.18	3,439
Wisconsin	1.23	2.69	1.06	17,738
Wyoming	0.03	0.04	0.02	338
<b>Total</b>	<b>\$75.27</b>	<b>\$213.89</b>	<b>\$74.36</b>	<b>1,147,765</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

# Appendix E: Total Construction Cost Impacts by State

**Appendix E-1: Total Impacts of Soft Costs, Site Development, Hard Costs and Tenant Improvements on State Economies (Office), 2023**

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.60	\$1.32	\$0.51	9,499
Alaska	0.14	0.23	0.10	1,533
Arizona	6.10	13.18	5.28	92,082
Arkansas	0.53	1.09	0.42	7,839
California	6.78	14.48	5.81	86,959
Colorado	1.64	3.70	1.47	23,232
Connecticut	0.19	0.37	0.15	2,218
Delaware	0.19	0.33	0.11	1,822
District of Columbia	2.25	2.67	0.26	3,675
Florida	4.80	10.45	4.21	79,609
Georgia	5.86	13.81	5.29	97,747
Hawaii	0.21	0.40	0.17	2,647
Idaho	0.46	0.92	0.37	6,995
Illinois	7.70	18.78	6.91	108,309
Indiana	1.20	2.72	1.01	17,431
Iowa	3.16	6.20	2.39	42,935
Kansas	0.91	1.92	0.68	12,034
Kentucky	0.68	1.46	0.53	9,829
Louisiana	0.69	1.43	0.56	10,450
Maine	0.03	0.06	0.03	476
Maryland	1.91	3.72	1.39	22,570
Massachusetts	3.72	7.37	2.82	41,922
Michigan	0.88	1.98	0.78	13,676
Minnesota	0.70	1.53	0.59	9,278
Mississippi	0.32	0.64	0.24	4,630
Missouri	2.50	5.55	1.97	34,919
Montana	0.16	0.31	0.13	2,374
Nebraska	3.60	6.99	2.75	50,527
Nevada	1.19	2.27	0.92	15,149
New Hampshire	0.17	0.33	0.12	1,864
New Jersey	0.94	2.06	0.75	11,476
New Mexico	0.56	1.02	0.42	7,802
New York	8.72	16.01	6.04	92,274
North Carolina	2.34	5.39	2.06	38,099
North Dakota	0.38	0.68	0.25	4,211
Ohio	3.82	9.02	3.34	57,295
Oklahoma	0.98	2.07	0.82	15,450
Oregon	1.80	3.73	1.40	22,281
Pennsylvania	1.92	4.45	1.64	26,327
Rhode Island	0.16	0.29	0.10	1,690
South Carolina	0.67	1.52	0.57	10,943
South Dakota	0.46	0.86	0.35	6,239
Tennessee	1.64	3.95	1.44	23,310
Texas	16.66	42.98	16.20	283,046
Utah	1.22	2.79	1.08	19,240
Vermont	0.02	0.04	0.02	305
Virginia	7.14	14.61	5.44	96,918
Washington	2.45	4.99	1.98	29,967
West Virginia	0.20	0.36	0.13	2,461
Wisconsin	3.69	7.92	3.10	51,561
Wyoming	0.03	0.04	0.02	327
<b>Total</b>	<b>\$115.04</b>	<b>\$325.18</b>	<b>\$117.21</b>	<b>1,665,611</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

**Appendix E-2: Total Impacts of Soft Costs, Site Development, Hard Costs and Tenant Improvements  
on State Economies (Industrial), 2023**

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$5.76	\$12.69	\$4.88	91,527
Alaska	0.00	0.00	0.00	32
Arizona	3.51	7.59	3.04	53,141
Arkansas	0.99	2.04	0.79	14,694
California	4.97	10.62	4.26	63,962
Colorado	2.72	6.14	2.44	38,662
Connecticut	0.05	0.11	0.04	631
Delaware	0.00	0.00	0.00	8
District of Columbia	0.00	0.00	0.00	3
Florida	1.51	3.28	1.32	25,080
Georgia	22.82	53.79	20.62	381,613
Hawaii	0.03	0.06	0.02	371
Idaho	0.15	0.29	0.12	2,254
Illinois	1.05	2.56	0.94	14,786
Indiana	9.31	21.18	7.85	135,808
Iowa	0.96	1.88	0.73	13,049
Kansas	7.44	15.64	5.53	98,362
Kentucky	4.13	8.87	3.22	59,776
Louisiana	3.07	6.33	2.49	46,360
Maine	0.07	0.14	0.06	1,058
Maryland	0.64	1.25	0.47	7,598
Massachusetts	0.97	1.91	0.73	10,904
Michigan	6.01	13.56	5.32	93,989
Minnesota	0.92	2.04	0.78	12,367
Mississippi	4.00	8.07	3.11	58,889
Missouri	0.58	1.28	0.46	8,107
Montana	0.01	0.01	0.00	84
Nebraska	2.91	5.65	2.23	40,992
Nevada	1.10	2.10	0.85	13,995
New Hampshire	0.25	0.50	0.19	2,841
New Jersey	0.37	0.81	0.30	4,538
New Mexico	0.22	0.39	0.16	3,035
New York	1.35	2.48	0.94	14,333
North Carolina	12.20	28.09	10.77	199,117
North Dakota	0.02	0.04	0.02	266
Ohio	12.38	29.24	10.84	186,011
Oklahoma	0.33	0.70	0.28	5,259
Oregon	0.22	0.46	0.17	2,739
Pennsylvania	0.87	2.01	0.74	11,941
Rhode Island	0.00	0.01	0.00	53
South Carolina	2.73	6.20	2.31	44,613
South Dakota	2.33	4.40	1.78	32,036
Tennessee	2.45	5.91	2.15	34,924
Texas	34.77	89.78	33.85	592,633
Utah	1.42	3.25	1.26	22,426
Vermont	0.00	0.01	0.00	48
Virginia	0.32	0.67	0.25	4,431
Washington	1.72	3.50	1.39	21,088
West Virginia	0.87	1.57	0.58	10,739
Wisconsin	1.24	2.67	1.04	17,399
Wyoming	0.05	0.08	0.03	626
<b>Total</b>	<b>\$161.78</b>	<b>\$457.54</b>	<b>\$164.27</b>	<b>2,537,928</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

**Appendix E-3: Total Impacts of Soft Costs, Site Development, Hard Costs and Tenant Improvements  
on State Economies (Warehouse), 2023**

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.62	\$1.37	\$0.53	9,837
Alaska	0.14	0.24	0.10	1,596
Arizona	6.79	14.69	5.89	102,477
Arkansas	0.48	0.98	0.38	7,044
California	8.81	18.82	7.54	112,855
Colorado	1.65	3.74	1.48	23,445
Connecticut	0.87	1.71	0.67	10,118
Delaware	0.33	0.57	0.19	3,123
District of Columbia	–	–	–	–
Florida	10.23	22.26	8.96	169,278
Georgia	6.42	15.11	5.79	106,815
Hawaii	0.07	0.13	0.05	825
Idaho	0.99	2.00	0.80	15,227
Illinois	3.15	7.68	2.82	44,224
Indiana	1.86	4.23	1.57	27,067
Iowa	0.49	0.96	0.37	6,604
Kansas	1.53	3.22	1.14	20,133
Kentucky	0.98	2.10	0.76	14,091
Louisiana	0.71	1.46	0.57	10,660
Maine	0.09	0.18	0.07	1,344
Maryland	1.81	3.53	1.32	21,385
Massachusetts	1.30	2.57	0.98	14,593
Michigan	1.03	2.31	0.91	15,922
Minnesota	1.63	3.60	1.38	21,760
Mississippi	0.32	0.64	0.25	4,684
Missouri	1.27	2.81	1.00	17,677
Montana	0.06	0.12	0.05	936
Nebraska	0.29	0.57	0.22	4,086
Nevada	1.85	3.53	1.42	23,523
New Hampshire	0.10	0.19	0.07	1,092
New Jersey	4.54	9.97	3.65	55,576
New Mexico	0.27	0.49	0.20	3,775
New York	2.90	5.32	2.00	30,572
North Carolina	3.46	7.95	3.04	56,151
North Dakota	0.07	0.13	0.05	788
Ohio	2.78	6.54	2.42	41,528
Oklahoma	0.35	0.74	0.29	5,493
Oregon	0.86	1.79	0.67	10,683
Pennsylvania	2.82	6.53	2.41	38,630
Rhode Island	0.16	0.29	0.11	1,733
South Carolina	3.10	7.04	2.62	50,466
South Dakota	0.19	0.35	0.14	2,533
Tennessee	1.34	3.23	1.17	19,056
Texas	14.30	36.86	13.89	242,396
Utah	0.62	1.43	0.55	9,823
Vermont	0.02	0.03	0.01	256
Virginia	1.67	3.42	1.27	22,629
Washington	2.00	4.09	1.62	24,509
West Virginia	0.24	0.44	0.16	2,992
Wisconsin	1.05	2.25	0.88	14,609
Wyoming	0.02	0.04	0.02	296
<b>Total</b>	<b>\$98.65</b>	<b>\$278.76</b>	<b>\$100.70</b>	<b>1,481,871</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

**Appendix E-4: Total Impacts of Soft Costs, Site Development, Hard Costs and Tenant Improvements on State Economies (Retail and Entertainment), 2023**

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.48	\$1.05	\$0.40	7,640
Alaska	0.04	0.08	0.03	507
Arizona	0.94	2.03	0.81	14,263
Arkansas	0.22	0.46	0.18	3,340
California	2.02	4.32	1.74	26,154
Colorado	0.54	1.23	0.49	7,758
Connecticut	0.21	0.42	0.16	2,490
Delaware	0.05	0.09	0.03	470
District of Columbia	0.10	0.12	0.01	165
Florida	4.30	9.37	3.78	71,864
Georgia	1.85	4.36	1.67	31,055
Hawaii	0.17	0.32	0.13	2,116
Idaho	0.19	0.39	0.16	2,996
Illinois	1.03	2.51	0.92	14,572
Indiana	0.46	1.06	0.39	6,789
Iowa	0.43	0.84	0.33	5,867
Kansas	0.24	0.50	0.18	3,188
Kentucky	0.32	0.68	0.25	4,624
Louisiana	0.66	1.37	0.54	10,060
Maine	0.12	0.24	0.10	1,856
Maryland	0.29	0.57	0.21	3,464
Massachusetts	0.40	0.79	0.30	4,521
Michigan	0.53	1.20	0.47	8,381
Minnesota	0.36	0.80	0.31	4,884
Mississippi	0.17	0.34	0.13	2,465
Missouri	0.40	0.90	0.32	5,728
Montana	0.18	0.35	0.15	2,736
Nebraska	0.16	0.32	0.13	2,326
Nevada	0.28	0.53	0.22	3,566
New Hampshire	0.10	0.20	0.08	1,151
New Jersey	0.65	1.43	0.52	8,024
New Mexico	0.25	0.46	0.19	3,522
New York	1.99	3.66	1.39	21,313
North Carolina	1.14	2.63	1.01	18,692
North Dakota	0.10	0.18	0.07	1,107
Ohio	0.95	2.24	0.83	14,294
Oklahoma	0.49	1.05	0.42	7,885
Oregon	0.31	0.64	0.24	3,852
Pennsylvania	0.67	1.55	0.57	9,243
Rhode Island	0.16	0.30	0.11	1,766
South Carolina	0.51	1.16	0.43	8,375
South Dakota	0.19	0.36	0.14	2,602
Tennessee	1.28	3.09	1.12	18,331
Texas	5.94	15.38	5.80	101,976
Utah	0.45	1.03	0.40	7,130
Vermont	0.02	0.04	0.02	307
Virginia	0.60	1.23	0.46	8,252
Washington	0.55	1.13	0.45	6,839
West Virginia	0.13	0.23	0.08	1,570
Wisconsin	0.38	0.82	0.32	5,343
Wyoming	0.05	0.08	0.03	592
<b>Total</b>	<b>\$34.05</b>	<b>\$96.40</b>	<b>\$34.35</b>	<b>515,621</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.



**Appendix E-5: Total Impacts of Soft Costs, Site Development, Hard Costs and Tenant Improvements  
on State Economies (in Four Categories), 2023**

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$7.47	\$16.44	\$6.31	118,504
Alaska	0.32	0.56	0.24	3,668
Arizona	17.34	37.49	15.03	261,963
Arkansas	2.22	4.58	1.77	32,917
California	22.59	48.25	19.35	289,930
Colorado	6.55	14.81	5.88	93,097
Connecticut	1.32	2.61	1.02	15,458
Delaware	0.57	0.99	0.34	5,422
District of Columbia	2.35	2.80	0.27	3,843
Florida	20.84	45.37	18.28	345,831
Georgia	36.95	87.07	33.37	617,230
Hawaii	0.48	0.91	0.38	5,959
Idaho	1.79	3.60	1.45	27,473
Illinois	12.93	31.52	11.60	181,891
Indiana	12.83	29.19	10.82	187,095
Iowa	5.03	9.88	3.81	68,455
Kansas	10.12	21.29	7.53	133,717
Kentucky	6.11	13.11	4.76	88,320
Louisiana	5.13	10.58	4.17	77,529
Maine	0.32	0.62	0.26	4,735
Maryland	4.65	9.07	3.38	55,017
Massachusetts	6.39	12.64	4.84	71,940
Michigan	8.45	19.05	7.48	131,968
Minnesota	3.62	7.98	3.06	48,289
Mississippi	4.80	9.69	3.73	70,668
Missouri	4.76	10.54	3.74	66,431
Montana	0.41	0.79	0.33	6,131
Nebraska	6.96	13.53	5.33	97,931
Nevada	4.41	8.44	3.40	56,233
New Hampshire	0.62	1.23	0.46	6,948
New Jersey	6.49	14.27	5.22	79,614
New Mexico	1.30	2.36	0.97	18,134
New York	14.96	27.47	10.36	158,492
North Carolina	19.14	44.06	16.88	312,059
North Dakota	0.57	1.03	0.38	6,372
Ohio	19.92	47.04	17.44	299,128
Oklahoma	2.15	4.57	1.81	34,086
Oregon	3.19	6.61	2.49	39,554
Pennsylvania	6.28	14.54	5.36	86,141
Rhode Island	0.48	0.89	0.32	5,242
South Carolina	7.01	15.92	5.93	114,397
South Dakota	3.16	5.97	2.42	43,409
Tennessee	6.70	16.17	5.88	95,620
Texas	71.67	185.00	69.74	1,220,051
Utah	3.70	8.51	3.30	58,619
Vermont	0.07	0.12	0.05	916
Virginia	9.73	19.93	7.42	132,230
Washington	6.72	13.72	5.44	82,403
West Virginia	1.44	2.60	0.96	17,762
Wisconsin	6.36	13.65	5.34	88,912
Wyoming	0.14	0.25	0.10	1,841
<b>Total</b>	<b>\$409.52</b>	<b>\$1,157.89</b>	<b>\$416.53</b>	<b>6,201,031</b>

Sources: Dodge Construction Network, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

# Appendix F: Operating Impacts by State

**Appendix F-1: Impacts of Operations on State Economies (Office), 2023**

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	\$19,303	\$36,544	\$12,292	720
Alaska	1,046	1,657	583	29
Arizona	55,847	108,505	37,630	1,938
Arkansas	2,283	4,126	1,389	78
California	151,898	299,149	102,775	4,874
Colorado	43,514	88,646	30,538	1,544
Connecticut	1,101	2,004	648	29
Delaware	6,088	10,053	2,833	132
District of Columbia	2,538	3,140	324	12
Florida	123,571	242,682	84,387	5,024
Georgia	64,833	137,459	45,798	2,702
Hawaii	1,097	1,928	669	32
Idaho	19,303	34,689	11,991	676
Illinois	64,476	141,182	45,694	2,374
Indiana	16,132	32,219	10,486	551
Iowa	30,650	52,832	17,474	919
Kansas	17,268	32,107	9,663	490
Kentucky	15,718	29,967	9,299	502
Louisiana	12,261	22,612	7,682	437
Maine	1,115	1,966	680	34
Maryland	27,636	50,160	15,996	764
Massachusetts	44,049	81,143	26,535	1,190
Michigan	5,618	11,338	3,851	203
Minnesota	13,576	26,485	8,911	439
Mississippi	5,822	10,264	3,386	189
Missouri	11,747	23,405	7,252	413
Montana	6,196	10,502	3,697	199
Nebraska	45,986	79,845	26,782	1,330
Nevada	9,046	15,673	5,344	271
New Hampshire	8,775	15,337	4,790	207
New Jersey	19,949	40,133	12,510	611
New Mexico	5,161	8,523	2,960	156
New York	49,516	85,935	26,912	1,189
North Carolina	43,787	90,498	30,064	1,824
North Dakota	5,516	8,926	2,853	145
Ohio	20,000	41,925	13,656	759
Oklahoma	32,839	61,770	21,194	1,223
Oregon	22,072	41,228	13,680	649
Pennsylvania	22,424	45,240	14,625	729
Rhode Island	2,802	4,857	1,459	66
South Carolina	10,860	21,958	7,143	445
South Dakota	12,342	20,187	6,747	348
Tennessee	16,662	35,821	11,600	646
Texas	338,878	757,460	253,142	15,907
Utah	13,479	27,337	9,268	522
Vermont	556	927	308	16
Virginia	82,025	153,601	48,608	2,394
Washington	52,960	96,582	32,681	1,491
West Virginia	2,046	3,343	1,050	52
Wisconsin	20,986	39,934	13,393	696
Wyoming	659	1,036	347	17
<b>Total</b>	<b>\$1,604,013</b>	<b>\$4,387,427</b>	<b>\$1,480,850</b>	<b>58,185</b>

Sources: Dodge Construction Network, NCREIF, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

## Appendix F-2: Impacts of Operations on State Economies (Industrial), 2023

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	\$13,558	\$25,668	\$8,634	506
Alaska	12	18	6	0
Arizona	9,207	17,889	6,204	319
Arkansas	1,572	2,842	957	54
California	5,812	11,447	3,933	186
Colorado	11,600	23,632	8,141	412
Connecticut	233	424	137	6
Delaware	20	33	9	–
District of Columbia	–	–	–	–
Florida	14,833	29,131	10,130	603
Georgia	35,671	75,630	25,198	1,487
Hawaii	204	359	125	6
Idaho	2,261	4,063	1,404	79
Illinois	7,681	16,818	5,443	283
Indiana	9,866	19,704	6,413	337
Iowa	2,991	5,155	1,705	90
Kansas	3,369	6,263	1,885	96
Kentucky	4,569	8,711	2,703	146
Louisiana	1,316	2,427	825	47
Maine	470	828	286	14
Maryland	1,218	2,211	705	34
Massachusetts	2,746	5,059	1,654	74
Michigan	8,825	17,810	6,049	319
Minnesota	8,853	17,272	5,811	286
Mississippi	2,754	4,855	1,602	89
Missouri	2,253	4,489	1,391	79
Montana	108	184	65	3
Nebraska	3,161	5,489	1,841	91
Nevada	4,629	8,020	2,735	139
New Hampshire	749	1,309	409	18
New Jersey	1,889	3,799	1,184	58
New Mexico	162	268	93	5
New York	8,271	14,353	4,495	199
North Carolina	18,933	39,131	12,999	789
North Dakota	129	208	66	3
Ohio	12,536	26,279	8,560	476
Oklahoma	67	126	43	2
Oregon	1,161	2,169	720	34
Pennsylvania	1,962	3,958	1,280	64
Rhode Island	65	113	34	2
South Carolina	6,859	13,869	4,511	281
South Dakota	427	698	233	12
Tennessee	3,170	6,815	2,207	123
Texas	22,862	51,101	17,078	1,073
Utah	1,246	2,526	857	48
Vermont	–	–	–	–
Virginia	3,869	7,246	2,293	113
Washington	5,645	10,295	3,484	159
West Virginia	2,228	3,639	1,143	57
Wisconsin	2,086	3,970	1,332	69
Wyoming	477	750	251	13
<b>Total</b>	<b>\$254,585</b>	<b>\$696,362</b>	<b>\$235,037</b>	<b>9,382</b>

Sources: Dodge Construction Network, NCREIF, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

### Appendix F-3: Impacts of Operations on State Economies (Warehouse), 2023

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	\$6,865	\$12,996	\$4,371	256
Alaska	593	939	330	16
Arizona	65,831	127,903	44,357	2,284
Arkansas	3,907	7,061	2,377	133
California	134,711	265,301	91,146	4,322
Colorado	38,222	77,867	26,824	1,356
Connecticut	11,931	21,722	7,026	318
Delaware	3,338	5,512	1,553	72
District of Columbia	-	-	-	-
Florida	204,074	400,781	139,362	8,296
Georgia	56,232	119,223	39,722	2,344
Hawaii	1,199	2,109	732	35
Idaho	20,453	36,755	12,705	716
Illinois	30,812	67,470	21,837	1,134
Indiana	11,846	23,659	7,700	405
Iowa	5,194	8,953	2,961	156
Kansas	24,460	45,478	13,688	695
Kentucky	6,007	11,453	3,554	192
Louisiana	5,804	10,703	3,636	207
Maine	1,508	2,658	919	46
Maryland	15,592	28,299	9,024	431
Massachusetts	20,750	38,224	12,500	560
Michigan	9,727	19,632	6,668	351
Minnesota	29,649	57,843	19,462	958
Mississippi	795	1,402	462	26
Missouri	7,994	15,927	4,935	281
Montana	957	1,622	571	31
Nebraska	3,544	6,153	2,064	102
Nevada	20,428	35,395	12,069	611
New Hampshire	2,222	3,884	1,213	52
New Jersey	62,485	125,707	39,184	1,913
New Mexico	3,972	6,560	2,279	120
New York	43,007	74,639	23,374	1,032
North Carolina	39,217	81,054	26,927	1,633
North Dakota	526	851	272	14
Ohio	22,506	47,180	15,367	855
Oklahoma	4,339	8,162	2,801	162
Oregon	9,329	17,426	5,782	274
Pennsylvania	24,926	50,289	16,257	811
Rhode Island	2,333	4,044	1,215	55
South Carolina	31,313	63,311	20,594	1,283
South Dakota	2,044	3,343	1,117	58
Tennessee	7,324	15,746	5,099	284
Texas	247,445	553,090	184,842	11,615
Utah	13,820	28,028	9,503	535
Vermont	353	588	196	10
Virginia	25,676	48,082	15,216	750
Washington	29,852	54,441	18,422	840
West Virginia	2,220	3,626	1,139	57
Wisconsin	5,684	10,816	3,628	189
Wyoming	623	980	329	16
<b>Total</b>	<b>\$1,323,640</b>	<b>\$3,620,530</b>	<b>\$1,222,005</b>	<b>48,894</b>

Sources: Dodge Construction Network, NCREIF, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

## Appendix F-4: Impacts of Operations on State Economies (Retail and Entertainment), 2023

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	\$9,900	\$18,744	\$6,305	369
Alaska	727	1,151	405	20
Arizona	19,020	36,955	12,816	660
Arkansas	5,221	9,436	3,177	178
California	51,490	101,404	34,838	1,652
Colorado	14,891	30,335	10,450	528
Connecticut	5,209	9,484	3,068	139
Delaware	1,050	1,734	489	23
District of Columbia	1,026	1,270	131	5
Florida	123,677	242,890	84,459	5,028
Georgia	43,662	92,572	30,843	1,820
Hawaii	2,289	4,025	1,397	67
Idaho	4,510	8,104	2,801	158
Illinois	19,836	43,436	14,058	730
Indiana	10,062	20,097	6,541	344
Iowa	8,816	15,196	5,026	264
Kansas	3,504	6,516	1,961	100
Kentucky	5,588	10,653	3,306	178
Louisiana	11,720	21,614	7,342	418
Maine	3,974	7,006	2,423	122
Maryland	6,529	11,850	3,779	181
Massachusetts	4,694	8,647	2,828	127
Michigan	12,810	25,853	8,781	463
Minnesota	13,018	25,396	8,545	421
Mississippi	4,961	8,747	2,886	161
Missouri	7,613	15,168	4,699	267
Montana	6,198	10,505	3,698	199
Nebraska	2,977	5,168	1,734	86
Nevada	7,638	13,234	4,512	229
New Hampshire	3,130	5,471	1,709	74
New Jersey	22,326	44,916	14,001	683
New Mexico	7,321	12,090	4,200	221
New York	51,322	89,070	27,894	1,232
North Carolina	21,060	43,528	14,460	877
North Dakota	2,904	4,699	1,502	76
Ohio	27,267	57,160	18,618	1,035
Oklahoma	16,235	30,539	10,478	605
Oregon	6,426	12,003	3,983	189
Pennsylvania	12,105	24,421	7,895	394
Rhode Island	5,776	10,014	3,007	135
South Carolina	9,600	19,410	6,314	393
South Dakota	6,399	10,467	3,498	180
Tennessee	22,651	48,698	15,770	879
Texas	174,552	390,158	130,390	8,193
Utah	9,636	19,542	6,626	373
Vermont	272	452	151	8
Virginia	9,321	17,454	5,523	272
Washington	6,780	12,365	4,184	191
West Virginia	3,793	6,196	1,946	97
Wisconsin	10,679	20,320	6,815	354
Wyoming	1,096	1,723	578	29
<b>Total</b>	<b>\$843,260</b>	<b>\$2,306,553</b>	<b>\$778,510</b>	<b>31,427</b>

Sources: Dodge Construction Network, NCREIF, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.



## Appendix F-5: Impacts of Operations on State Economies (in Four Categories), 2023

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	\$49,626	\$93,952	\$31,602	1,851
Alaska	2,378	3,765	1,325	66
Arizona	149,905	291,251	101,006	5,202
Arkansas	12,984	23,464	7,901	442
California	343,912	677,301	232,691	11,035
Colorado	108,227	220,480	75,954	3,840
Connecticut	18,473	33,634	10,879	493
Delaware	10,496	17,332	4,885	227
District of Columbia	3,564	4,410	454	17
Florida	466,156	915,484	318,338	18,951
Georgia	200,398	424,885	141,561	8,353
Hawaii	4,789	8,422	2,923	140
Idaho	46,526	83,612	28,902	1,629
Illinois	122,805	268,906	87,032	4,521
Indiana	47,907	95,679	31,139	1,637
Iowa	47,651	82,135	27,166	1,429
Kansas	48,601	90,364	27,197	1,380
Kentucky	31,882	60,784	18,862	1,017
Louisiana	31,101	57,356	19,485	1,108
Maine	7,067	12,459	4,309	217
Maryland	50,976	92,521	29,505	1,410
Massachusetts	72,240	133,073	43,517	1,951
Michigan	36,980	74,632	25,350	1,336
Minnesota	65,097	126,997	42,729	2,104
Mississippi	14,332	25,266	8,336	464
Missouri	29,607	58,989	18,276	1,040
Montana	13,460	22,813	8,030	432
Nebraska	55,668	96,656	32,421	1,610
Nevada	41,740	72,322	24,660	1,249
New Hampshire	14,876	26,000	8,121	350
New Jersey	106,648	214,555	66,879	3,264
New Mexico	16,617	27,442	9,532	503
New York	152,116	263,997	82,675	3,651
North Carolina	122,998	254,211	84,450	5,123
North Dakota	9,075	14,684	4,694	239
Ohio	82,309	172,544	56,201	3,126
Oklahoma	53,481	100,597	34,516	1,992
Oregon	38,988	72,826	24,165	1,147
Pennsylvania	61,417	123,909	40,056	1,997
Rhode Island	10,975	19,028	5,715	257
South Carolina	58,632	118,548	38,562	2,402
South Dakota	21,211	34,695	11,596	598
Tennessee	49,807	107,080	34,676	1,932
Texas	783,737	1,751,809	585,451	36,788
Utah	38,181	77,434	26,253	1,478
Vermont	1,181	1,967	655	34
Virginia	120,892	226,382	71,640	3,529
Washington	95,237	173,684	58,771	2,681
West Virginia	10,286	16,805	5,278	262
Wisconsin	39,435	75,041	25,167	1,308
Wyoming	2,855	4,490	1,505	75
<b>Total</b>	<b>\$4,025,498</b>	<b>\$11,010,872</b>	<b>\$3,716,402</b>	<b>147,888</b>

Sources: Dodge Construction Network, NCREIF, BEA, NAIOP, author's calculations.

Note: Appendices include data for the District of Columbia, resulting in 51 jurisdictions. State data may not sum to the total due to interstate spillover effects.

## Appendix G: National and State Multipliers

### Appendix G-1: Output, Earnings and Employment Multipliers: Non-Residential Construction

State	MULTIPLIERS		
	Output	Earnings	Jobs
Alabama	2.24	0.86	16.51
Alaska	1.74	0.75	11.76
Arizona	2.17	0.88	15.48
Arkansas	2.10	0.81	15.35
California	2.14	0.86	13.13
Colorado	2.27	0.91	14.57
Connecticut	1.98	0.78	12.04
Delaware	1.75	0.61	9.88
District of Columbia	1.15	0.10	1.52
Florida	2.18	0.89	17.01
Georgia	2.37	0.91	17.16
Hawaii	1.89	0.80	12.70
Idaho	2.03	0.82	15.81
Illinois	2.46	0.91	14.48
Indiana	2.31	0.86	14.92
Iowa	2.00	0.77	14.14
Kansas	2.13	0.76	13.70
Kentucky	2.18	0.79	14.94
Louisiana	2.08	0.82	15.58
Maine	1.98	0.82	15.46
Maryland	1.94	0.73	12.15
Massachusetts	1.97	0.76	11.50
Michigan	2.28	0.90	16.19
Minnesota	2.23	0.86	13.67
Mississippi	2.05	0.79	15.22
Missouri	2.25	0.81	14.58
Montana	1.95	0.81	15.51
Nebraska	1.96	0.78	14.61
Nevada	1.92	0.78	12.99
New Hampshire	1.99	0.75	11.52
New Jersey	2.20	0.81	12.58
New Mexico	1.83	0.76	14.43
New York	1.83	0.70	10.93
North Carolina	2.32	0.89	16.73
North Dakota	1.83	0.67	11.44
Ohio	2.40	0.89	15.39
Oklahoma	2.15	0.86	16.31
Oregon	2.09	0.79	12.59
Pennsylvania	2.35	0.87	14.09
Rhode Island	1.85	0.67	11.07
South Carolina	2.29	0.86	16.81
South Dakota	1.91	0.78	14.17
Tennessee	2.44	0.89	14.57
Texas	2.61	0.99	17.53
Utah	2.32	0.90	16.05
Vermont	1.86	0.75	14.18
Virginia	2.05	0.77	14.12
Washington	2.06	0.82	12.64
West Virginia	1.82	0.67	12.67
Wisconsin	2.18	0.86	14.37
Wyoming	1.75	0.69	13.19
<b>Total</b>	<b>2.84</b>	<b>0.99</b>	<b>13.87</b>

Sources: BEA, and IMPLAN.

Note: Appendices include data for the District of Columbia, resulting in 51 states.

## Appendix G-2: Output, Earnings and Employment Multipliers: Soft Costs

State	MULTIPLIERS		
	Output	Earnings	Jobs
Alabama	1.98	0.75	12.06
Alaska	1.68	0.67	9.09
Arizona	2.12	0.81	13.12
Arkansas	1.85	0.71	11.84
California	2.14	0.82	11.20
Colorado	2.23	0.85	12.20
Connecticut	1.94	0.71	9.74
Delaware	1.70	0.50	7.71
District of Columbia	1.38	0.18	2.27
Florida	2.14	0.83	14.25
Georgia	2.25	0.85	14.05
Hawaii	1.88	0.73	10.67
Idaho	1.91	0.74	12.83
Illinois	2.33	0.84	11.87
Indiana	2.05	0.76	12.63
Iowa	1.78	0.67	10.67
Kansas	1.95	0.66	10.34
Kentucky	1.95	0.69	11.66
Louisiana	1.94	0.75	12.36
Maine	1.85	0.73	11.97
Maryland	2.00	0.71	10.11
Massachusetts	2.02	0.74	9.98
Michigan	2.11	0.81	12.20
Minnesota	2.09	0.78	11.62
Mississippi	1.79	0.68	11.67
Missouri	2.05	0.68	10.67
Montana	1.80	0.71	11.99
Nebraska	1.85	0.70	11.06
Nevada	1.86	0.72	11.45
New Hampshire	1.92	0.70	9.51
New Jersey	2.17	0.76	10.59
New Mexico	1.76	0.70	11.50
New York	1.86	0.63	8.72
North Carolina	2.20	0.82	13.84
North Dakota	1.71	0.62	9.82
Ohio	2.15	0.79	12.82
Oklahoma	1.95	0.76	13.12
Oregon	1.99	0.74	11.28
Pennsylvania	2.12	0.77	11.67
Rhode Island	1.82	0.61	9.84
South Carolina	2.13	0.78	13.54
South Dakota	1.74	0.68	11.13
Tennessee	2.27	0.82	12.46
Texas	2.44	0.90	14.09
Utah	2.18	0.82	14.52
Vermont	1.78	0.69	11.19
Virginia	2.04	0.71	10.74
Washington	1.95	0.75	10.18
West Virginia	1.70	0.62	10.27
Wisconsin	1.95	0.74	11.78
Wyoming	1.66	0.64	10.62
<b>Total</b>	<b>2.75</b>	<b>1.18</b>	<b>14.53</b>

Sources: BEA, and IMPLAN.

Note: Appendices include data for the District of Columbia, resulting in 51 states.

### Appendix G-3: Output, Earnings and Employment Multipliers: Operations

State	MULTIPLIERS		
	Output	Earnings	Jobs
Alabama	1.89	0.64	19.70
Alaska	1.58	0.56	17.53
Arizona	1.94	0.67	17.86
Arkansas	1.81	0.61	18.85
California	1.97	0.68	16.29
Colorado	2.04	0.70	17.42
Connecticut	1.82	0.59	14.65
Delaware	1.65	0.47	13.12
District of Columbia	1.24	0.13	3.84
Florida	1.96	0.68	20.70
Georgia	2.12	0.71	19.66
Hawaii	1.76	0.61	16.66
Idaho	1.80	0.62	19.49
Illinois	2.19	0.71	16.81
Indiana	2.00	0.65	17.11
Iowa	1.72	0.57	17.39
Kansas	1.86	0.56	15.28
Kentucky	1.91	0.59	16.74
Louisiana	1.84	0.63	19.33
Maine	1.76	0.61	17.41
Maryland	1.82	0.58	15.24
Massachusetts	1.84	0.60	14.66
Michigan	2.02	0.69	17.90
Minnesota	1.95	0.66	16.57
Mississippi	1.76	0.58	18.38
Missouri	1.99	0.62	17.63
Montana	1.69	0.60	18.93
Nebraska	1.74	0.58	16.66
Nevada	1.73	0.59	17.27
New Hampshire	1.75	0.55	13.47
New Jersey	2.01	0.63	15.21
New Mexico	1.65	0.57	18.32
New York	1.74	0.54	13.83
North Carolina	2.07	0.69	20.15
North Dakota	1.62	0.52	16.25
Ohio	2.10	0.68	18.11
Oklahoma	1.88	0.65	19.80
Oregon	1.87	0.62	15.75
Pennsylvania	2.02	0.65	16.12
Rhode Island	1.73	0.52	13.51
South Carolina	2.02	0.66	20.26
South Dakota	1.64	0.55	17.24
Tennessee	2.15	0.70	18.04
Texas	2.24	0.75	21.00
Utah	2.03	0.69	19.08
Vermont	1.67	0.55	17.45
Virginia	1.87	0.59	15.59
Washington	1.82	0.62	15.43
West Virginia	1.63	0.51	15.60
Wisconsin	1.90	0.64	17.44
Wyoming	1.57	0.53	16.70
<b>Total</b>	<b>2.74</b>	<b>0.92</b>	<b>17.48</b>

Sources: BEA, and IMPLAN.

Note: Appendices include data for the District of Columbia, resulting in 51 states.

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