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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 20,000 members in North America. NAIOP advances responsible commercial real estate development and advocates for effective public policy. For more information, visit 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.

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

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 4,500 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; Michael P. Kercheval, PhD, Executive Director, CU Real Estate Center; and Adam Illig, Data Scientist with the BRD. For more information about the project team or the Business Research Division, please visit www.colorado.edu/business/brd.

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. For more information, visit www.ncreif.org.

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 is a key factor. 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.

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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, U.S. Bureau of Labor Statistics, the Bureau of Economic Analysis, Dodge Construction Network and the National Council of Real Estate 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 source for operation cost data has changed from the 2022 report, resulting in differences in the estimation of some economic contributions (see Methodology section on page 20).

The combined economic contributions of new commercial building development and the operations of existing commercial buildings in 2022 (see Tables 1 and 2 on pages 2 and 3) resulted in direct expenditures of \$826.9 billion and the following impacts on the U.S. economy:

- Contributed \$2.3 trillion to U.S. gross domestic product (GDP)
- Generated \$831.8 billion in personal earnings
- Supported 15.1 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. In addition, the U.S. Census Bureau also tracks construction spending via its Value of Construction Put in Place Survey. It provides monthly estimates of the national total dollar value of construction work in the U.S. The survey includes data on construction completed on new structures or improvements to existing properties

across residential and nonresidential 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 category of soft construction costs because they have little immediate economic impact). This study also examines the contribution of one year of building operations that are reported as a stand-alone phase that follows development. Additionally, it shows the impacts for the estimated 926 million square feet of commercial buildings that commenced construction over the past year (according to Dodge Construction Network), which will provide space for an estimated 1.9 million jobs that generate \$153 billion in earnings.

Multipliers are applied to the direct expenditures to calculate the contribution to U.S. 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 also 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.

TABLE 1

Economic Contributions to the U.S. Economy from Development of Commercial Real Estate Buildings, 2017-2022

Development Phases				Totals	Operations Phase
Pre-Construction	Construction				Post-Construction
Soft Construction (Soft Costs)	Site Development	Hard Construction (Hard Costs)	Tenant Improvements		Building Operations ⁴
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)

	Soft Construction (Soft Costs)	Site Development	Hard Construction (Hard Costs)	Tenant Improvements	Totals	Building Operations ⁴
2022	\$50.20	\$52.11	\$188.61	\$71.65	\$362.56	\$3.78
2021	36.10	37.02	133.23	48.06	254.42	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
2017	33.15	28.87	111.75	38.90	212.67	3.00

Total Economic Contribution to GDP (In Billions of Dollars, Includes Multiplier Effect)¹

	Soft Construction (Soft Costs)	Site Development	Hard Construction (Hard Costs)	Tenant Improvements	Totals	Building Operations ⁴
2022	\$139.36	\$150.79	\$545.81	\$207.35	\$1,043.30	\$10.19
2021	100.21	107.14	385.56	139.08	731.99	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
2017	92.78	78.27	302.94	105.44	579.44	8.21

Personal Earnings (In Billions of Dollars, Includes Multiplier Effect)²

	Soft Construction (Soft Costs)	Site Development	Hard Construction (Hard Costs)	Tenant Improvements	Totals	Building Operations ⁴
2022	\$62.20	\$54.15	\$195.98	\$74.45	\$386.78	\$3.62
2021	44.73	38.47	138.44	49.94	271.58	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
2017	37.86	27.03	104.59	36.41	205.88	2.89

Jobs Supported (Includes Multiplier Effect)³

	Soft Construction (Soft Costs)	Site Development	Hard Construction (Hard Costs)	Tenant Improvements	Totals	Building Operations ⁴
2022	771,102	825,903	2,989,875	1,137,154	5,724,034	153,300
2021	591,310	582,853	2,097,551	756,638	4,028,352	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
2017	525,950	521,648	2,018,904	702,713	3,769,215	177,319

Sources: NAIOP; Dodge Construction Network; NCREIF.

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

² The additional earnings (wages and salaries) generated from construction and related expenditures.

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

⁴ NCREIF state-level data was used in 2021 and 2022, and a national weighted average was used for 2017-2020.

Note: Data include office, industrial, warehouse/flex and retail buildings under construction in the year indicated and excludes existing inventory.

Operations figures are based on buildings delivered in the year indicated.

Column totals may not add up due to rounding.

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 54.7 billion square feet at the end of the third quarter of 2022 according to Newmark—direct expenditures for building operations totaled an estimated \$464.4 billion and contributed \$1.3 trillion to GDP. These direct expenditures also generated \$445 billion in personal earnings (wages and salaries) and supported 9.4 million jobs (Table 2).

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.

TABLE 2 Economic Contribution to the U.S. Economy from Operations of Existing Buildings, 2018-2022

Year	Total Square Feet (In Billions)	Direct Expenditures for Building Operations ¹ (In Billions of Dollars)	Total Economic Contribution to GDP ² (In Billions of Dollars)	Personal Earnings ³ (In Billions of Dollars)	Jobs Supported (In Millions) ⁴
2022	54.70	\$464.4	\$1,252.1	\$445.0	9.369
2021	54.00	466.8	1,258.8	447.3	9.419
2020	53.37	505.3	1,362.6	484.2	10.195
2019	52.72	472.1	1,273.0	452.4	9.525
2018	52.12	451.7	1,218.0	432.8	9.114

Sources: NCREIF; Newmark Group Inc.

¹ Since 2020, direct expenditures decreased while total square feet increased. This is a result of a larger proportion of industrial properties with lower per-square-foot operational costs and minor changes in building composition within the NCREIF data set used to produce this estimate.

² The total value of goods and services generated directly and indirectly as a result of construction and related expenditures within the U.S.

³ The additional earnings (wages and salaries) generated from construction and related expenditures.

⁴ The jobs supported by the spending and re-spending of direct expenditures for all phases of development and operations.

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

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).

Construction Trends. In 2021, the construction industry gained 156,000 jobs, growing by 2.1% annually. Construction employment averaged 7.7 million jobs through November year-to-date, up 3.5% from the same period in the prior year. As of November 2022, the construction industry recorded 7.8 million jobs, up 3.2% year-over-year, and up 0.9% from the prepandemic peak. In addition, more than 1.7 million residential building permits were issued in 2021—the highest number since 2006 and the 12th consecutive annual increase in permits. The overall value of construction put in place increased 8.5% in 2021, posting the largest growth since 2015.

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) ¹	Percent Contribution to GDP	Jobs Supported (In Millions, Includes Multiplier Effect) ²
2022	\$1,802	\$5.2	20.7%	28.4
2021	1,626	4.7	20.2%	25.6
2020	1,500	4.3	20.6%	23.6
2019	1,391	3.8	17.6%	25.3
2018	1,333	3.7	18.2%	27.1
2017	1,280	3.5	17.8%	24.6
2016	1,224	3.4	18.1%	25.1
2015	1,140	3.0	16.4%	23.4
2014	1,015	2.9	16.3%	20.8
2013	915	2.7	15.8%	21.4
2012	854	2.3	13.9%	20.0
2011	791	2.3	14.9%	17.3

Sources: U.S. Census, Annual Value of Construction Put in Place; Bureau of Economic Analysis; IMPLAN; and author's calculations.

¹ 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.

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

Note: Historic values are revised, 2022 is estimated.

Similar to the broader economy, though, the performance of subsectors in construction varied widely in 2021. The value of residential construction put in place increased 24.6%, but nonresidential values decreased 6.1%, with just two nonresidential subsectors experiencing annual growth.¹ The subsectors of retail and manufacturing increased 5.4% and 4.6%, respectively, while lodging decreased 36% and public safety fell 31.2%. Disparities continued into 2022—data year-to-date through October show residential increased 16.4%, manufacturing increased 30% and retail increased 19.6%; while public safety decreased 11% and lodging decreased 6.6% (See Table 4).

The Value of Construction. As of October 2022, the total value of construction was up 9.2% year-over-year, while nominal GDP grew 9.2% year-over-year in the third quarter of 2022, and real GDP grew 1.9%.²

For 2022, projections show that **residential permits** will total 1.6 million units, relatively unchanged from 2021 (see Figure 2 on page 6).³ In 2021, the residential construction industry surged as mortgage rates remained at historically low levels. Over the course of 2022, persistently high inflation pressured the Federal Reserve to raise the Federal Funds interest rate at a historic pace. Based on the Federal Reserve’s outlined path forward, the economy is expected to slow with policy focused on reducing inflation. Concurrently, the 30-year fixed mortgage rate steadily increased to its highest level since 2002. Consequently, many potential buyers are facing elevated monthly payments and are temporarily leaving the market to wait for affordability to improve. Rising interest rates are expected to temporarily slow the single-family housing market, but in the long term, demographics are favorable for residential demand as millennials continue to transition to homeownership.

TABLE 4 Nonresidential Construction Spending, 2020-2022 (In Billions of Current-Year Dollars)

Type of Structure	2020	2021	Percent Change 2020-2021	October YTD 2021	October YTD 2022	Percent Change 2021-2022
Transportation	\$60.7	\$56.7	-6.7	\$47.6	\$46.5	-2.3
Health Care	48.6	48.5	-0.3	40.1	43.0	7.3
Retail	89.7	94.6	5.4	77.8	93.1	19.6
Manufacturing	75.4	78.9	4.6	64.2	83.5	30.0
Amusement/ Recreation	28.3	25.3	-10.6	21.0	22.3	5.8
Education	110.7	98.4	-11.1	83.9	82.8	-1.3
Public Safety	17.7	12.2	-31.2	10.5	9.3	-11.0
Office	92.8	86.6	-6.7	72.8	71.8	-1.3
Religious	3.5	2.9	-15.7	2.4	2.4	-0.5
Lodgings	28.5	18.2	-36.0	15.6	14.6	-6.6
Total	\$555.9	\$522.2	-6.1	\$436.0	\$469.3	7.6

Sources: U.S. Census, *Annual Value of Construction Put in Place 2009-2021*, https://www.census.gov/construction/c30/historical_data.html, retrieved December 8, 2022.

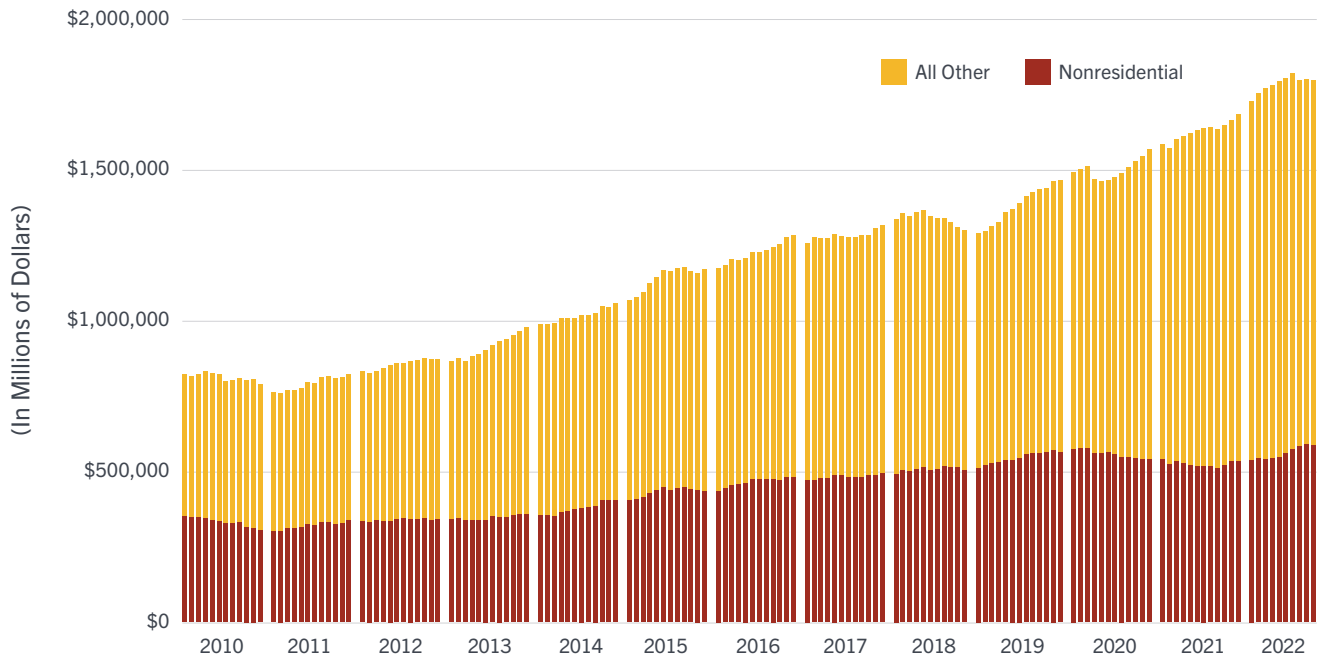
Note: Totals include some miscellaneous state and local government buildings but exclude spending for nonbuilding construction on items relating to communication, power, highway and street, sewage and waste disposal, water supply, and conservation and development.

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

² Excluding communication, power, highway and street, sewage and waste disposal, water supply, and conservation and development.

³ October 2022 year-to-date change from October 2021 year-to-date applied to 2021.

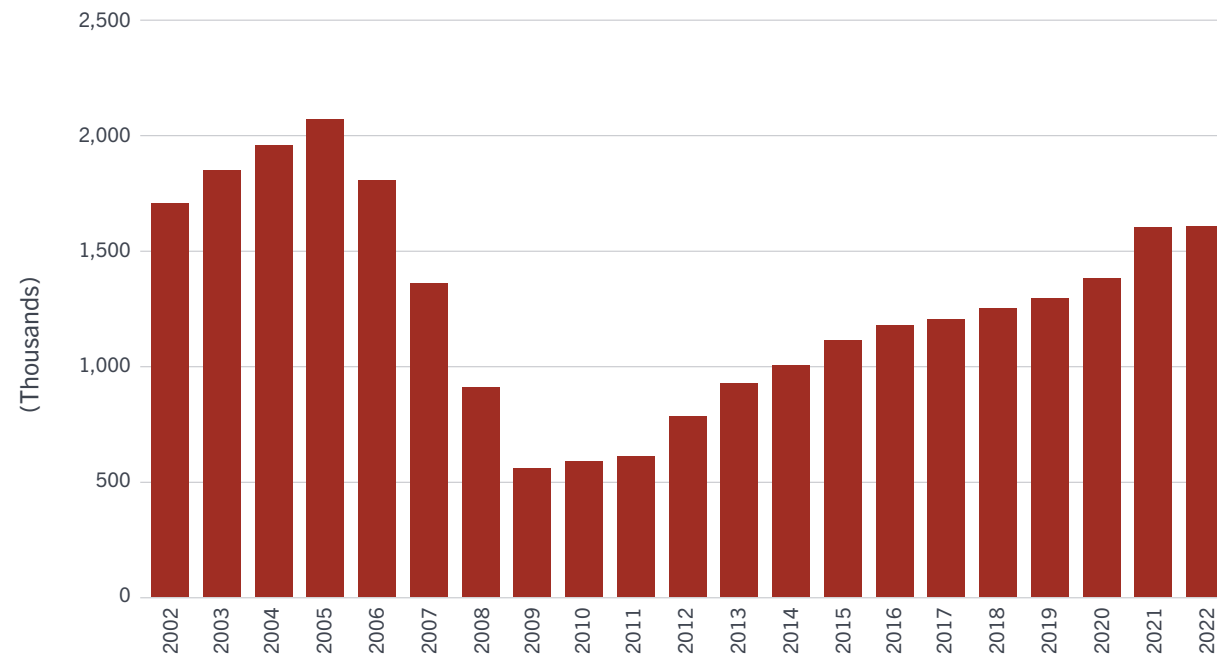
FIGURE 1: VALUE OF CONSTRUCTION, 2010-2022



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

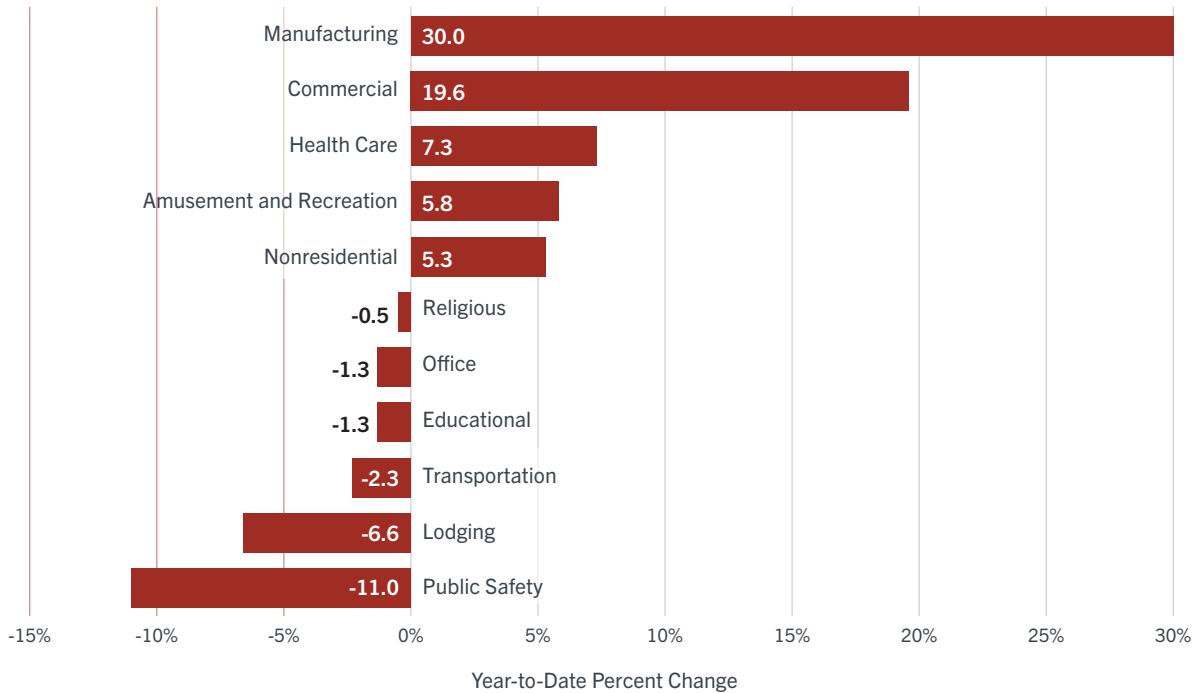
Note: Nonresidential excludes communication, power, highway and street, sewage and waste disposal, water supply, and conservation and development.

FIGURE 2: NEW PRIVATELY OWNED HOUSING UNITS STARTED, 2002-2022



Source: U.S. Census Bureau, New Privately Owned Housing Units Started. 2022 based on year-to-date growth rate as of October 2022. Census housing construction data are only for new, privately owned housing units, and exclude manufactured (mobile) homes.

FIGURE 3: VALUE OF CONSTRUCTION PUT IN PLACE, OCTOBER 2021 TO OCTOBER 2022



Source: U.S. Census Bureau, *New Privately Owned Housing Units Started*.

The value of **nonresidential building construction** declined 6.1% in 2021 but increased 7.6% year-to-date through October 2022 when compared with the same period in 2021.⁴ This increase in nonresidential construction value reflected a mixed performance among the building categories, as shown in Table 4. This is consistent with the differential impacts on those sectors of pandemic-related shutdowns and lost business. Public safety, lodging, transportation and office were among the building types that experienced the greatest declines in year-to-date construction spending in 2022. Manufacturing, commercial and health care posted gains (see Figure 3).

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 2022 was more than \$1.8 trillion. This construction spending directly accounted for 7.1% of the nation’s estimated third-quarter GDP of \$25.2

trillion in 2022. With an output multiplier of 2.89, each \$1 of construction spending generated a total value of \$2.89 to the economy, reflecting the cumulative effects of the initial construction expenditures as they cycle throughout the economy.⁵ Applying this multiplier to the total value of direct construction spending in 2022 brings the value of its overall contribution to GDP—direct, indirect and induced—to \$5.2 trillion, which supported 20.7% of all U.S. economic activity in 2022. Industry spending also directly and indirectly supported 28.4 million jobs in the economy.

The Bottom Line: In 2022, the \$1.8 trillion in building and nonbuilding construction spending contributed \$5.2 trillion to U.S. GDP and supported 28.4 million jobs.

⁴ Excluding communication, power, highway and street, sewage and waste disposal, water supply, and conservation and development.

⁵ The Nonresidential structures multiplier was sourced from IMPLAN. The state-level multipliers were sourced from the Bureau of Economic Analysis.

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 2022 totaled \$188.6 billion, up \$55 billion, or 41.6%, from the revised annual total for 2021.

Office construction expenditures averaged \$46.3 billion over the past five years (2018-2022). Office activity totaled \$44.7 billion in 2022, up 11.5% from 2021 but down 18% from 2019. It is important to note that Dodge Construction Network includes data centers in its office construction data.

Industrial (manufacturing) construction expenditures averaged \$37.2 billion over the past five years (2018-2022). Industrial activity surged to \$73.5 billion in 2022, up 143.4% from 2021 (\$43.3 billion) and 119.2% from 2019.

Warehouse construction outlays averaged \$38.1 billion over the past five years (2018-2022). Warehouse activity totaled \$52.5 billion in 2022, up 8.9% from 2021. Activity was up 72.8% from 2019.

Retail construction expenditures averaged \$15.8 billion over the past five years (2018-2022). Retail activity totaled \$17.9 billion in 2022, up 21.3% from 2021 and up 7.7% from 2019.

Expenditures and Square Footage (All Structures Combined). The total amount of new construction in 2022, as measured in square footage for these four

building types, increased by 107 million square feet (13.1%) from revised year-end construction data for 2021. A continuing change in the mix of building types affected the square footage of new construction in 2022. Industrial accounted for 13.1% of all new space built in 2022, up from 12.0% in 2017 and 10.8% in 2021. As industrial space increased in the share of activity, the three other building types decreased. Warehouses accounted for 68.1% of all new space built in 2022 (measured in square feet), down from 69.5% in 2021. Retail space has seen its share decrease from 16.2% of the total square footage in 2017 to 7.6% in 2021 and 7.0% in 2022, while office declined from 22.0% in 2017 to 12.2% in 2021 and 11.8% in 2022.

The patterns of construction value by building type present a somewhat similar distribution, as shown in Table 6. Industrial construction value increased its share (22.7% to 39.0%) from 2021 to 2022. In comparison, between 2020 and 2021, warehouse construction expenditures decreased as a percentage of the total from 36.2% to 27.8%. In addition, office construction value decreased its share (30.1% to 23.7%) and retail construction value decreased only marginally (11.1% to 9.5%).

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 (2.89), personal earnings final demand (1.04) and employment final demand (15.74 jobs supported per \$1 million in output).⁶

TABLE 5

Comparing Construction Expenditures (Hard Costs), 2021 and 2022

Building Type	Expenditures	Expenditures	Change (2020-2022)
	(In Billions of Dollars) 2021 ¹	(In Billions of Dollars) 2022 ²	
Office	\$40.1	\$44.7	11.5%
Industrial	30.2	73.5	143.4%
Warehouse	48.2	52.5	8.9%
Retail/Entertainment	14.8	17.9	21.3%
Total	\$133.2	\$188.6	41.6%

Source: Dodge Construction Network.

¹ Revised. ² Trailing 12 months ending September 2022.

⁶ The Nonresidential structures multiplier was sourced from IMPLAN. The state-level multipliers were sourced from the Bureau of Economic Analysis.

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 (spill-over 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).

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 \$362.6 billion in 2022 resulted in a contribution of \$1,043.3 billion to U.S. GDP, generated \$386.8 billion in personal earnings and supported 5.7 million jobs, as presented below in Table 7.

TABLE 6 Office, Industrial, Warehouse and Retail Construction, 2021 and 2022

Building Type	Square Feet (In Millions)		Construction Value ³ (In Billions of Dollars)	
	2020 ¹	2022 ²	2020 ¹	2022 ²
Office	100	110	\$40.1	\$44.7
Industrial	88	121	30.2	73.5
Warehouse	569	631	48.2	52.5
Retail/Entertainment	62	64	14.8	17.9
Total	819	926	\$133.2	\$188.6

Source: Dodge Construction Network.

¹ Revised. ² Trailing 12 months ending September 2022. ³ Hard costs only.

TABLE 7 Office, Industrial, Warehouse and Retail Construction and Operations Contribution to the Economy, 2022

Development Phase	Direct Expenditures (In Billions of Dollars)	Total Economic Contribution to GDP ¹ (In Billions of Dollars)	Personal Earnings ² (In Billions of Dollars)	Jobs Supported ³
	\$362.6	\$1,043.3	\$386.8	5,724,034
Soft Construction (Soft Costs)	50.2	139.4	62.2	771,102
Site Development ⁴	52.1	150.8	54.1	825,903
Hard Construction (Hard Costs)	188.6	545.8	196.0	2,989,875
Tenant Improvements ⁵	71.6	207.3	74.5	1,137,154
Annual Operations	\$3.8	\$10.2	\$3.6	153,300

Source: Dodge Construction Network.

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

² The additional earnings (wages and salaries) generated from construction and related expenditures.

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

⁴ Site development includes grading, infrastructure, parking and landscaping.

⁵ Tenant improvements exclude furniture and equipment.

Note: See Appendices for state-level data.



The U.S. Economy and Residential and Nonresidential Construction

Following the pandemic recession, businesses continued to have difficulty adjusting to severely disrupted supply chains and labor shortages. Meanwhile, prices increased, raising concerns about inflation. Recessionary fears grew after two consecutive quarters of negative GDP growth in the first half of 2022, with the U.S. economy entering a tenuous period teetering on stagflation. The Federal Reserve has increased interest rates to tamp down the highest inflation recorded in four decades. However, there is plenty of good economic news—positive GDP growth in the third quarter of 2022, strong job growth, continued consumption, expanding services and manufacturing output, higher income, a decreasing trade balance, and hopes that the Federal Reserve can orchestrate a soft landing in 2023.

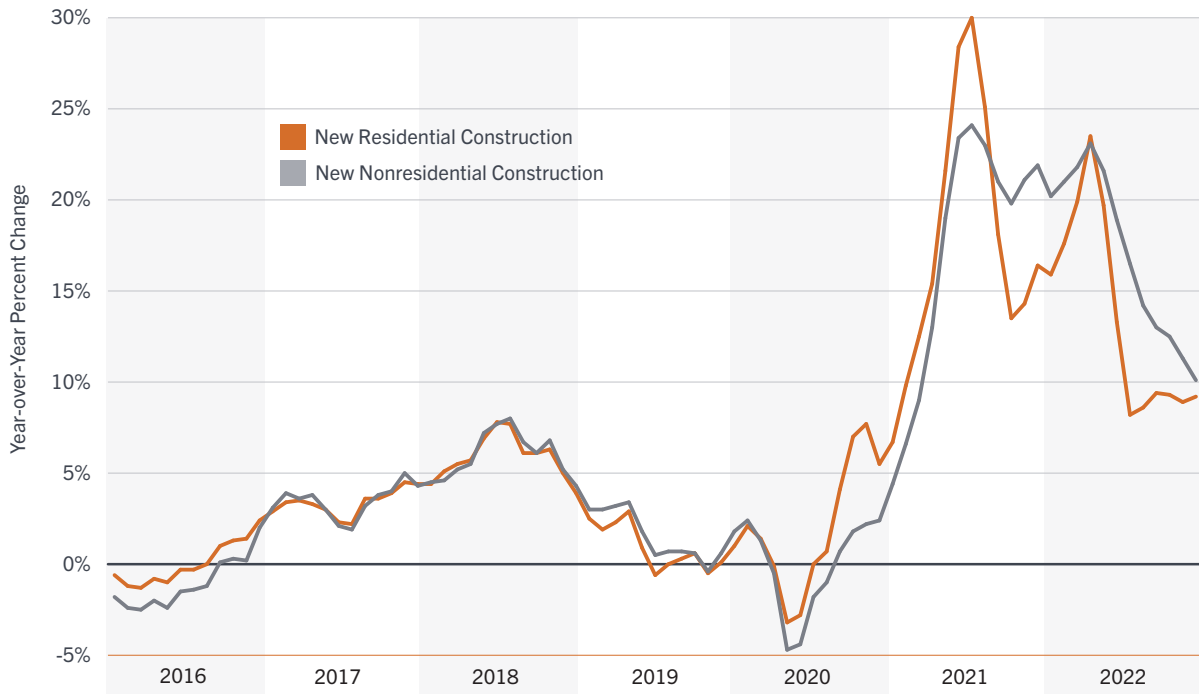
National real GDP increased 5.9% in 2021—the fastest pace of growth in nearly four decades. In 2022, growth slowed to an estimated 1.9% as the economy faced several headwinds, notably high inflation, rising interest rates, a disrupted supply chain and a shortage of workers. Supply chain challenges and disruptions, labor shortages, and difficulty obtaining materials have fueled cost inflation in the construction industry.

According to the Bureau of Labor Statistics' Producer Price Index (PPI) data, costs for new nonresidential building construction were up 5.2% in 2021 and 19.8% in November 2022 year-over-year; new industrial building construction costs rose 5.2% in 2021 and 21.6% year-over-year in November 2022; and costs for new office building construction rose

13% in 2021 and 21% in November 2022. Inputs to construction industries overall were up 18.7% in 2021 and rose 9.8% in November 2022, when year-over-year increases were observed in goods (11.9%), energy (26.1%) and services (6.5%). Inputs to new nonresidential construction increased more (up 10.1%) than new residential construction (9.2%) (see Figure 4 on page 11). While both new nonresidential and new residential construction inputs increased in November 2022, input price inflation slowed in recent months, with year-over-year increases at their lowest levels since the first quarter of 2021. Prices of some specific inputs to construction increased, with cement and construction machinery and equipment up 12.9% and 9.7% year-over-year in November 2022, respectively. Conversely, November 2022 year-over-year decreases were observed in steel mill products (down 26.6%) and lumber and plywood (down 5.8%).

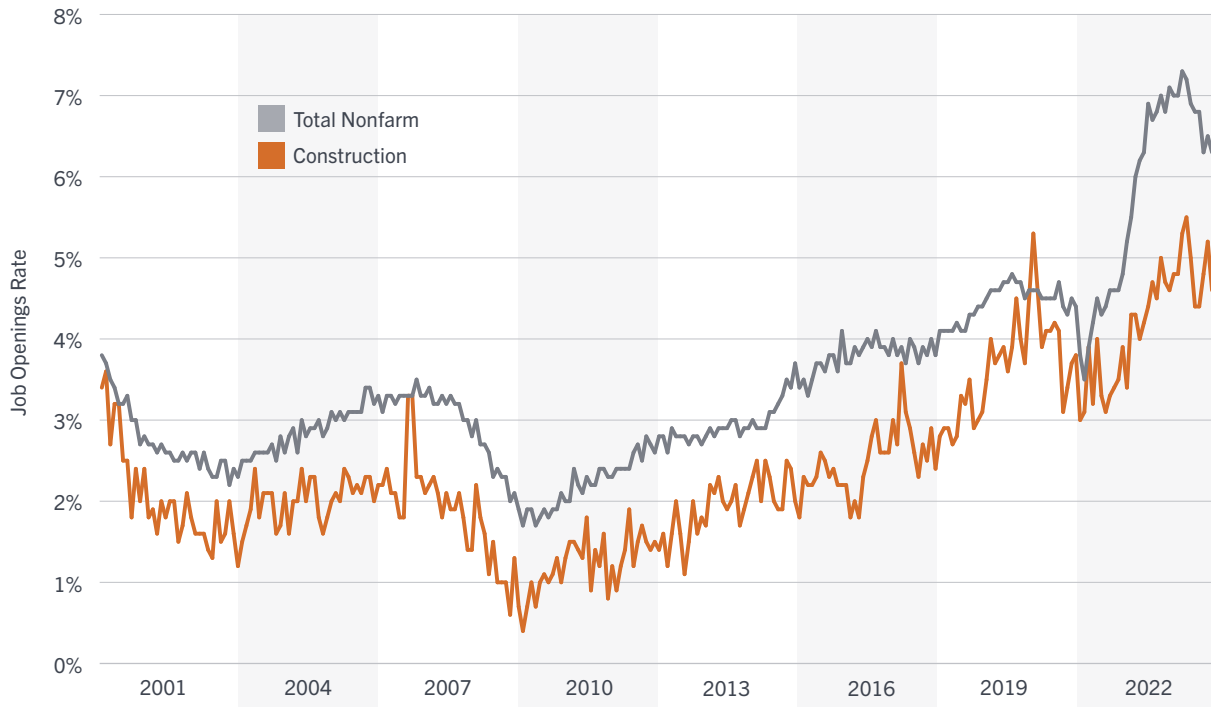
Several workforce issues that were exacerbated during the first year of the COVID-19 pandemic persist. In 2022, businesses across the nation reported staffing issues. As of October 2022, there were approximately 10.3 million job openings (up from 6.8 million in October 2020), indicating elevated labor demand, but there were only 6 million unemployed workers in the country. Concurrently, there were 371,000 job openings in the construction industry, up 50.2% from October 2020. While job openings are elevated, recent data suggest that they are cooling and declining, with total job openings in November 2022 down 3.3% from the prior month and down 12.3% for the construction industry over the same period.

FIGURE 4: CONSTRUCTION PRODUCER PRICE INDEX INPUTS



Source: Bureau of Labor Statistics..

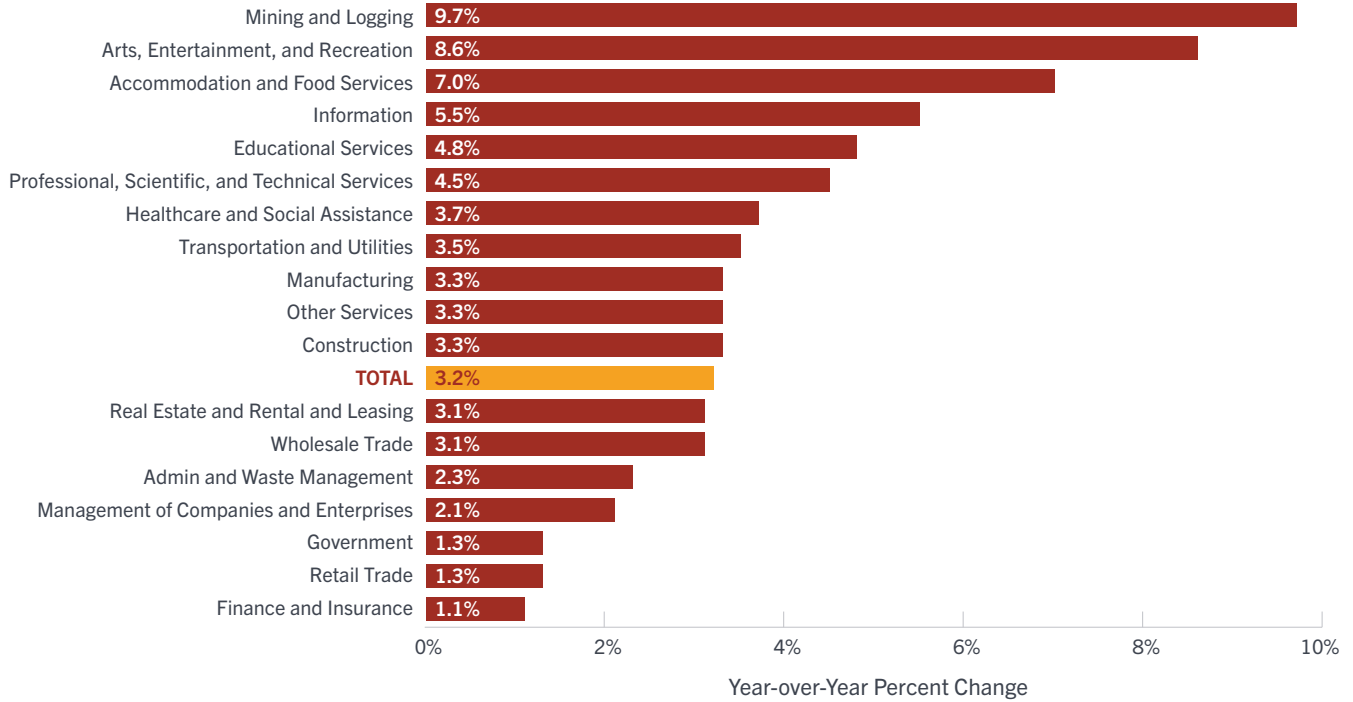
FIGURE 5: JOB OPENINGS RATE



Source: Source: Bureau of Labor Statistics, JOLTS.

Between November 2021 and November 2022, every industry recorded employment gains. Mining and logging employment grew 9.8%, the largest growth among job sectors, followed by arts, entertainment and recreation (8.6%) and accommodation and food services (7%) (Figure 6).

FIGURE 6: U.S. EMPLOYMENT BY INDUSTRY, CHANGE FROM NOVEMBER 2021 TO NOVEMBER 2022



Source: Bureau of Labor Statistics, CES (Seasonally Adjusted).

Residential building construction spending has grown each year from 2012 through 2018. Spending pulled back slightly (1.9%) in 2019, prior to the pandemic, but surged to 16.4% in 2020 and 24.6% in 2021. Activity continued into 2022, albeit at a more moderate pace, growing 16.4% year-to-date through October.

Nonresidential building construction expenditures surged 41.6% in 2022 and are up 74.2% from 2020 levels. Technology, demographics and the lingering effects of the pandemic are having profound cyclical and secular impacts on commercial real estate property types. Cyclical impacts such as shifting

to work-from-home models may be temporary in their current form but very likely will lead to long-term changes in office demand, use and design. Demographic changes include a growing number of Gen-Z and Millennial workers and a future where women will dominate the ranks of college-educated workers. Technologies, ranging from the efficiency of e-commerce to artificial intelligence disrupting traditional service-sector industries, have already transformed the retail, industrial, office and warehouse property cohorts. These are just a few of the many interconnected disruptions and transformations dramatically challenging historical trends in commercial real estate.

FIGURE 7: TOTAL VALUE OF CONSTRUCTION BY TYPE, 2012-2022 (IN BILLIONS OF DOLLARS)



Source: Dodge Construction Network. Note: 2022 reflects the trailing 12 months through September 2022.



Office: Hybrid Work Here to Stay?

Hybrid and remote work has dramatically impacted demand for office space. This not only has primary implications for offices but also has significant secondary effects on ancillary property types. With daytime populations that remain substantially lower than before the pandemic, the vibrancy of many downtown retail and hospitality markets has not fully recovered.

With continued remote work, some firms are defensively putting space onto the sublease market, a trend exacerbated by true downsizing and layoffs, which has been especially concentrated in the tech sector. A recent CoStar Group analysis indicated that New York has the most office sublease space on the market, 29.2 million square feet as of the third quarter of 2022, while tech-heavy San Francisco has the most sublease space as a percentage of total inventory at 5.6%, with more than 10 million square feet of office space available for sublease.⁷

Employers, landlords, and the public sector have teamed up to entice workers back into the office. Cities and states are dusting off relocation incentives, while businesses have attempted to entice workers with workplace amenities and some schedule flexibility, all with limited success. Some employers are now turning to threats of terminations for those who choose not to return to in-person work.

Office building owners face near-term downward pressure on office lease rates and a continued occupier preference for shorter-term leases. User-demand uncertainty, higher financing costs, and continued labor and materials supply shortages will likely temper new office development as well as leasing and sales transaction volumes. Lenders have

also taken note. Existing longer-term leases have largely cushioned the office sector against widespread default, but a growing number of loans are maturing into a higher interest rate environment at the same time that many properties are experiencing declining net operating income (NOI). Low-performing and highly leveraged properties face increasing default risks.

Retail: Resilient Despite Shifts

Notwithstanding the challenges of office-linked retail in urban-core markets, demand for traditional retail space has rebounded, and overall occupancy rates have recovered to pre-pandemic levels. Two factors are at work. First, on the supply side, new construction of retail real estate has ground to a halt. As reported by ICSC (International Council of Shopping Centers), total retail gross leasable area (GLA) in the U.S. has barely budged in the past 12 years and hovers around 7.5 billion square feet.⁸ Retail space per capita (a shorthand gauge of supply relative to potential consumer demand) has remained essentially flat since 2009, at approximately 22 square feet per capita.

While the supply of retail real estate has remained largely unchanged, demand for physical retail space has increased amid shifting consumer buying habits and corresponding retailer adjustments. Most notably, the interplay between retail real estate and e-commerce has turned from competition to collaboration. So-called pure-play e-commerce retailers have become omnichannel retailers, adding physical stores to their distribution channels and thereby enhancing both their market awareness and online sales. Leaders in the trend include formerly online-only retailers Amazon, Warby Parker, Bonobos and UNTUCKit. Meanwhile brick-and-mortar retailers,

⁷ Ashley Fahey, "Ranked: Office Markets With Biggest Gains in Sublease Space," Denver Business Journal, November 28, 2022, <https://www.bizjournals.com/denver/news/2022/11/28/office-markets-biggest-gains-sublease-space.html>.

⁸ ICSC, "Industry Benchmark Report," December 2022, <https://www.icsc.com/news-and-views/industry-insights/marketplace-perspectives/performance-series/industry-benchmark-report>.

in sectors ranging from sporting goods to fresh foods, have enhanced their in-store sales volumes by offering online purchase/delivery options and “buy online, pick up in store” (BOPIS) conveniences.

The omnichannel evolution has played out in the retail real estate sector alongside a steady shift away from selling goods to selling food and services. Since 2016, the share of GLA in shopping centers devoted to retail products has declined from 70.6% to under 64%, while food has risen from 7.1% to almost 9%. The non-retail/nonfood services share has grown from 23.3% to 27.4% as of the third quarter of 2022, according to ICSC Research.⁹

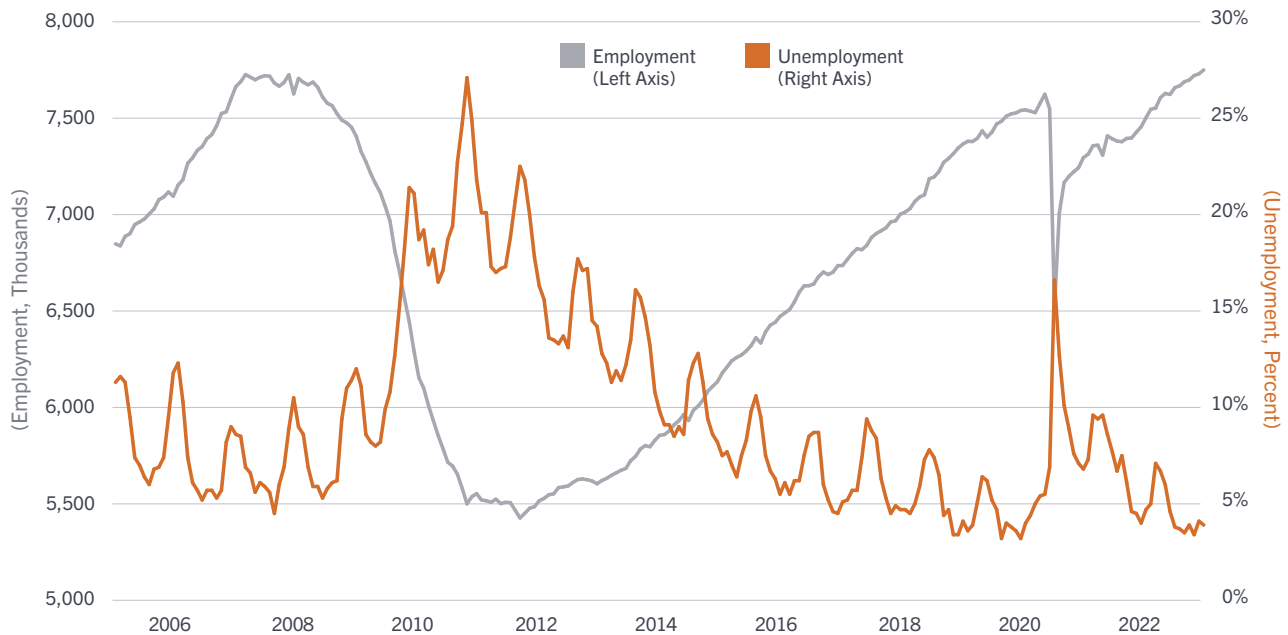
While the drift from goods to services in retail space currently bodes well for the sector, the prospect of declining sales tax receipts and staff wage differentials may reveal unintended longer-term fiscal and social consequences.

Construction employment surpassed its prepandemic peak in March 2022 and reached 7.7 million jobs (seasonally adjusted) in November 2022. Construction unemployment stood at 3.9% (unadjusted) in November 2022, compared to the unadjusted U.S. unemployment rate of 3.4% for the same month.

Industrial: Reshoring the Future

The COVID-exacerbated supply chain crisis was a boon to the industrial and warehouse sector. Major ports and shipping locations experienced near 100% occupancy rates. Logistics and transportation-support services were in short supply, and intentional stockpiling compounded demand. Looking ahead, some of the just-in-time and global sourcing kinks have yet to be ironed out. Consequently, some hangover demand continues to linger. However, the quick-to-build and easy-to-sell (especially to

FIGURE 8: U.S. CONSTRUCTION EMPLOYMENT AND UNEMPLOYMENT, 2006-2022



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

⁹ Ibid.



institutional investors) nature of properties in the industrial/warehouse sector led to significant new construction and a relatively full pipeline of new deals. Prospects of an economic slowdown, flattening e-commerce sales growth and Amazon pausing its rapid expansion have cooled demand for the sector. Employment in the warehouse and storage sector, which soared to record levels in mid-2022, has now had a string of monthly declines.¹⁰ In addition, the Institute for Supply Management index of economic activity in the manufacturing sector registered 49% in November 2022, 1.2 percentage points lower than the 50.2 recorded in October, the first contraction of the index since May 2020.¹¹ Further, while capacity utilization declined 0.2 percentage points in November 2022 from October, it remains at near-record levels and is up 15.1 percentage points from April 2020.

Many of the current supply/demand dynamics are likely short-term and will equilibrate as construction costs rise and pent-up demand moderates. Longer term, the industrial sector is beginning to respond to businesses' plans to "reshore" production of goods. U.S. government programs, such as the CHIPS and Science Act, passed by Congress in the summer of 2022, will allocate billions of dollars to support domestic semiconductor manufacturing. Similarly, the Inflation Reduction Act provides incentives for domestic manufacturing of renewable energy products, all boosting the long-term outlook for the manufacturing sector and commensurate real estate needs.

Conclusion

Total construction spending was up an estimated 10.8% in 2022 and accounted for approximately 20.7% of total GDP (inclusive of the multiplier effect). The subsector of nonresidential construction has been a strong performer for the industry at large in 2022, driven by manufacturing and commercial construction, increasing 7.6% year-to-date in October 2022 after decreasing 6.1% in 2020. Inflation, workforce constraints, interest rates and supply chain issues will potentially pose challenges to the commercial real estate industry in 2023. Slow growth in real (inflation-adjusted) GDP (0.2%) is expected, as well as in nonresidential fixed business investment (0.6%)—both evidence of potential declines in demand for construction and real estate.¹² While expected slowdowns in economic growth in 2023 could dampen demand, the total value of construction is anticipated to increase modestly in 2023, with growth in nonresidential construction, particularly infrastructure, expected to outweigh respective declines in residential construction.

¹⁰ Bureau of Labor Statistics, "Warehousing and Storage: NAICS 493," <https://www.bls.gov/iag/tgs/iag493.htm>.

¹¹ Institute for Supply Management, "Manufacturing PMI at 49%: November 2022 Manufacturing ISM Report on Business," December 1, 2022, <https://www.ismworld.org/supply-management-news-and-reports/reports/ism-report-on-business/pmi/november/>.

¹² GDP and fixed business investment projections from December 2022 issue of Consensus Forecasts.

TABLE 8

Impacts of Operations on State Economies (In Four Categories), 2022

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	\$31,337	\$58,841	\$19,855	1,228
Alaska	3,122	5,006	1,756	93
Arizona	119,563	234,260	81,195	4,323
Arkansas	18,862	33,597	11,314	660
California	303,215	606,884	207,732	10,468
Colorado	122,772	253,106	87,192	4,659
Connecticut	14,306	25,933	8,389	396
Delaware	18,579	30,649	8,665	431
District of Columbia	12,540	15,523	1,603	62
Florida	355,384	700,249	243,083	15,151
Georgia	148,598	319,217	106,173	6,794
Hawaii	6,944	12,385	4,307	213
Idaho	56,602	101,566	35,167	2,099
Illinois	91,676	202,044	65,410	3,575
Indiana	42,704	85,639	27,856	1,561
Iowa	50,123	86,447	28,585	1,585
Kansas	42,854	79,674	23,934	1,273
Kentucky	40,950	78,137	24,271	1,370
Louisiana	37,618	69,807	23,699	1,425
Maine	4,716	8,331	2,880	154
Maryland	64,119	116,414	37,086	1,848
Massachusetts	88,159	162,054	53,028	2,483
Michigan	36,868	73,796	25,104	1,384
Minnesota	64,841	128,009	43,035	2,273
Mississippi	7,015	12,401	4,089	242
Missouri	27,062	53,875	16,703	987
Montana	12,750	21,386	7,544	428
Nebraska	13,963	24,731	8,282	435
Nevada	34,668	60,576	20,652	1,100
New Hampshire	4,527	8,001	2,491	116
New Jersey	68,587	138,862	43,196	2,192
New Mexico	30,850	51,436	17,822	1,001
New York	164,887	285,584	89,533	4,163
North Carolina	84,673	174,994	58,179	3,627
North Dakota	9,849	16,009	5,114	270
Ohio	75,787	158,667	51,709	3,051
Oklahoma	47,636	90,094	30,892	1,893
Oregon	34,919	65,675	21,775	1,086
Pennsylvania	64,840	130,594	42,243	2,194
Rhode Island	17,956	31,084	9,344	440
South Carolina	29,818	60,265	19,632	1,285
South Dakota	13,344	21,879	7,309	400
Tennessee	59,956	129,236	41,826	2,503
Texas	852,601	1,922,871	642,264	41,999
Utah	32,618	67,167	22,803	1,369
Vermont	2,595	4,301	1,432	79
Virginia	131,807	248,126	78,530	3,939
Washington	118,292	219,266	74,133	3,587
West Virginia	9,065	14,740	4,643	231
Wisconsin	51,051	97,620	32,749	1,781
Wyoming	829	1,302	437	24
State Totals	\$3,778,398	\$7,598,311	\$2,526,647	145,930
Interstate Spillovers	-	\$2,589,499	\$1,093,786	7,369
U.S. Totals	\$3,778,398	\$10,187,811	\$3,620,433	153,300

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

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

TABLE 9

Total Impacts of Soft Costs, Site Development, Hard Costs and Tenant Improvements on State Economies (in Four Categories), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$3.17	\$6.94	\$2.67	51,875
Alaska	0.27	0.48	0.21	3,204
Arizona	41.88	91.37	36.61	661,052
Arkansas	5.15	10.51	4.06	77,136
California	16.78	36.45	14.55	223,082
Colorado	5.77	13.26	5.26	85,818
Connecticut	1.06	2.09	0.82	12,608
Delaware	1.51	2.64	0.90	14,661
District of Columbia	0.91	1.09	0.11	1,513
Florida	18.04	39.52	15.89	312,963
Georgia	14.20	33.85	12.94	247,612
Hawaii	0.24	0.47	0.19	3,104
Idaho	3.27	6.54	2.63	51,818
Illinois	7.44	18.25	6.72	107,910
Indiana	4.92	11.26	4.17	74,642
Iowa	3.76	7.41	2.86	53,032
Kansas	2.48	5.23	1.85	33,812
Kentucky	9.76	21.03	7.63	144,898
Louisiana	7.74	16.11	6.33	118,965
Maine	0.34	0.68	0.28	5,352
Maryland	3.49	6.81	2.54	41,565
Massachusetts	5.25	10.37	3.97	59,914
Michigan	7.13	15.97	6.29	112,450
Minnesota	3.63	8.14	3.11	50,187
Mississippi	0.77	1.57	0.60	11,787
Missouri	4.06	9.01	3.20	59,099
Montana	0.77	1.47	0.61	11,861
Nebraska	0.83	1.65	0.65	12,251
Nevada	3.24	6.28	2.53	43,493
New Hampshire	0.28	0.57	0.21	3,314
New Jersey	5.69	12.59	4.60	70,684
New Mexico	4.11	7.56	3.10	59,708
New York	14.79	27.11	10.24	160,772
North Carolina	9.20	21.17	8.12	154,246
North Dakota	1.23	2.26	0.82	14,181
Ohio	27.18	64.41	23.88	423,844
Oklahoma	2.92	6.24	2.47	47,917
Oregon	3.78	7.90	2.97	48,474
Pennsylvania	5.34	12.39	4.57	74,276
Rhode Island	0.82	1.52	0.54	8,918
South Carolina	2.66	6.05	2.26	44,476
South Dakota	0.71	1.34	0.54	10,194
Tennessee	11.41	27.58	10.03	166,338
Texas	70.32	183.97	69.22	1,212,402
Utah	1.91	4.45	1.73	31,676
Vermont	0.34	0.62	0.25	4,729
Virginia	10.00	20.60	7.67	136,977
Washington	7.17	14.88	5.88	91,310
West Virginia	0.92	1.66	0.61	11,697
Wisconsin	2.99	6.46	2.53	43,768
Wyoming	0.90	1.57	0.62	11,901
State Totals	\$362.56	\$819.37	\$313.05	5,519,470
Interstate Spillovers	–	\$223.93	\$73.73	204,564
U.S. Totals	\$362.56	\$1,043.30	\$386.78	5,724,034

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

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 who could be housed within the buildings built in 2022. The total payroll value of these new workers can also be calculated by multiplying this employment estimate by the 2022 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 926 million square feet of new office, industrial, warehouse and retail space constructed in 2022 has the capacity to house 1.9 million new workers with a total estimated annual payroll of \$153 billion.

TABLE 10

Jobs Accommodated and Payroll Generated in Office, Industrial, Warehouse and Retail Space Construction in 2022

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	110	190	576	\$146,258	\$84
Industrial	121	750	161	\$78,888	\$13
Warehouse	631	600	1,051	\$47,870	\$50
Retail/Entertainment	64	475	136	\$40,569	\$5
Total/Average	926	481	1,924	\$79,424	\$153

Sources: Dodge Construction Network; U.S. Bureau of Labor Statistics (QCEW); Newmark; 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

For 2022, full-year construction values were estimated to publish the economic results in January 2023 so that NAIOP members would have current data to use during meetings with congressional representatives and local governments.

The construction estimates (value and area) for 2022 were provided by Dodge Construction Network and were based on activity for the 12 months ending in September 2022, as well as revised annual construction totals for the preceding years. It is important to note that Dodge Construction Network categorizes data centers as office properties.

Economic Multipliers

The output (GDP), personal earnings (wages and salaries) and jobs-supported multipliers used in the 2022 report reflect the most recent revisions that the U.S. Department of Commerce's Bureau of Economic Analysis (BEA) and IMPLAN acquired in December 2022. These multipliers are based on the 2012 Benchmark Input-Output Table for the nation and 2020 regional data.

Multipliers by state were sourced from the Bureau of Economic Analysis (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 finances costs).

Operations Costs

Building maintenance costs were generated using the per-square-foot operating expenses from the NCREIF Property Index (NPI). National aggregated operation costs by property type were utilized, as well as 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 prior reports are expected to differ from data reported in this report, as cost estimates in prior reports utilized Building Owners and Managers Association International (BOMA) 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, 2022**

Building Type	Soft Construction Costs ¹	Site Development Costs	Building Construction Costs	Tenant Improvement Costs
Office				
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
Manufacturing				
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
Warehouse/Flex				
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
Retail				
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
Combined²				
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.

¹ Professional services and administrative and management processes required to support the construction project.

² Weighted average reflecting the numbers 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), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.08	\$0.16	\$0.06	1,039
Alaska	0.02	0.03	0.01	182
Arizona	0.23	0.50	0.19	3,256
Arkansas	0.13	0.24	0.09	1,610
California	1.20	2.60	0.99	14,382
Colorado	0.31	0.71	0.27	4,101
Connecticut	0.02	0.04	0.02	231
Delaware	0.01	0.02	0.01	110
District of Columbia	0.11	0.15	0.02	267
Florida	0.59	1.27	0.49	9,075
Georgia	0.54	1.24	0.46	8,281
Hawaii	0.02	0.03	0.01	202
Idaho	0.30	0.57	0.22	4,136
Illinois	0.44	1.03	0.37	5,559
Indiana	0.08	0.17	0.06	1,105
Iowa	0.16	0.28	0.11	1,812
Kansas	0.09	0.18	0.06	1,003
Kentucky	0.07	0.14	0.05	918
Louisiana	0.11	0.21	0.08	1,405
Maine	0.01	0.02	0.01	139
Maryland	0.16	0.32	0.11	1,664
Massachusetts	0.45	0.92	0.34	4,756
Michigan	0.06	0.12	0.05	759
Minnesota	0.12	0.25	0.09	1,452
Mississippi	0.01	0.02	0.01	136
Missouri	0.10	0.20	0.06	1,081
Montana	0.02	0.04	0.01	260
Nebraska	0.04	0.08	0.03	480
Nevada	0.22	0.42	0.16	2,690
New Hampshire	0.01	0.02	0.01	101
New Jersey	0.06	0.13	0.05	672
New Mexico	0.28	0.49	0.19	3,430
New York	1.02	1.89	0.64	9,503
North Carolina	0.39	0.85	0.32	5,674
North Dakota	0.11	0.20	0.07	1,093
Ohio	0.32	0.68	0.25	4,347
Oklahoma	0.14	0.27	0.11	1,954
Oregon	0.26	0.52	0.19	3,127
Pennsylvania	0.21	0.45	0.16	2,574
Rhode Island	0.01	0.01	0.00	60
South Carolina	0.06	0.13	0.05	869
South Dakota	0.06	0.10	0.04	678
Tennessee	0.21	0.48	0.17	2,821
Texas	2.12	5.25	1.93	31,145
Utah	0.07	0.16	0.06	1,133
Vermont	0.00	0.01	0.00	49
Virginia	1.02	2.09	0.73	11,323
Washington	0.54	1.06	0.41	5,873
West Virginia	0.01	0.02	0.01	112
Wisconsin	0.08	0.16	0.06	1,047
Wyoming	0.00	0.01	0.00	46
State Totals	\$12.70	\$26.95	\$9.93	159,720
Interstate Spillovers	–	\$8.30	\$5.81	48,305
U.S. Total	\$12.70	\$35.25	\$15.74	208,025

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix A–2: Impacts of Soft Costs on State Economies (Industrial), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.21	\$0.41	\$0.16	2,673
Alaska	–	0.00	–	–
Arizona	4.16	8.88	3.41	57,998
Arkansas	0.40	0.73	0.28	4,861
California	0.16	0.35	0.13	1,912
Colorado	0.02	0.04	0.02	240
Connecticut	0.01	0.02	0.01	106
Delaware	0.08	0.13	0.04	617
District of Columbia	0.00	0.00	0.00	1
Florida	0.11	0.24	0.09	1,709
Georgia	0.31	0.71	0.27	4,762
Hawaii	0.00	0.00	0.00	17
Idaho	0.05	0.09	0.04	660
Illinois	0.11	0.26	0.09	1,412
Indiana	0.15	0.31	0.12	2,045
Iowa	0.14	0.25	0.09	1,612
Kansas	0.06	0.11	0.04	634
Kentucky	0.95	1.85	0.66	11,814
Louisiana	0.71	1.38	0.53	9,081
Maine	0.02	0.03	0.01	214
Maryland	0.07	0.13	0.05	687
Massachusetts	0.03	0.07	0.02	345
Michigan	0.66	1.39	0.53	8,457
Minnesota	0.07	0.14	0.05	813
Mississippi	0.04	0.08	0.03	521
Missouri	0.09	0.18	0.06	986
Montana	0.05	0.09	0.04	635
Nebraska	0.01	0.02	0.01	97
Nevada	0.02	0.04	0.02	289
New Hampshire	0.00	0.00	0.00	19
New Jersey	0.12	0.25	0.09	1,280
New Mexico	0.19	0.33	0.13	2,302
New York	0.32	0.59	0.20	2,979
North Carolina	0.25	0.54	0.20	3,616
North Dakota	0.03	0.06	0.02	321
Ohio	2.65	5.70	2.09	36,462
Oklahoma	0.11	0.21	0.08	1,530
Oregon	0.09	0.18	0.07	1,109
Pennsylvania	0.03	0.05	0.02	308
Rhode Island	0.00	0.00	0.00	13
South Carolina	0.05	0.10	0.04	659
South Dakota	0.00	0.01	0.00	58
Tennessee	0.88	1.99	0.72	11,667
Texas	4.23	10.47	3.86	62,122
Utah	0.02	0.04	0.01	259
Vermont	0.03	0.06	0.02	377
Virginia	0.12	0.24	0.08	1,283
Washington	0.07	0.14	0.05	768
West Virginia	0.03	0.06	0.02	361
Wisconsin	0.12	0.23	0.09	1,516
Wyoming	0.10	0.17	0.07	1,155
State Totals	\$18.11	\$39.36	\$14.65	245,364
Interstate Spillovers	–	\$10.90	\$7.78	–
U.S. Total	\$18.11	\$50.26	\$22.43	245,364

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix A-3: Impacts of Soft Costs on State Economies (Warehouse), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.07	\$0.13	\$0.05	853
Alaska	0.02	0.03	0.01	175
Arizona	0.89	1.90	0.73	12,396
Arkansas	0.10	0.18	0.07	1,206
California	0.76	1.64	0.63	9,052
Colorado	0.42	0.95	0.36	5,506
Connecticut	0.08	0.15	0.06	808
Delaware	0.09	0.15	0.05	723
District of Columbia	0.00	0.00	0.00	3
Florida	1.16	2.48	0.96	17,722
Georgia	0.81	1.84	0.69	12,260
Hawaii	0.00	0.01	0.00	43
Idaho	0.09	0.17	0.07	1,224
Illinois	0.37	0.87	0.32	4,698
Indiana	0.38	0.78	0.29	5,124
Iowa	0.17	0.30	0.11	1,902
Kansas	0.14	0.28	0.10	1,577
Kentucky	0.18	0.35	0.12	2,211
Louisiana	0.12	0.23	0.09	1,493
Maine	0.01	0.01	0.01	95
Maryland	0.21	0.41	0.15	2,176
Massachusetts	0.19	0.39	0.14	2,017
Michigan	0.13	0.27	0.10	1,614
Minnesota	0.26	0.56	0.21	3,254
Mississippi	0.03	0.06	0.02	383
Missouri	0.27	0.55	0.18	3,051
Montana	0.01	0.03	0.01	179
Nebraska	0.04	0.08	0.03	520
Nevada	0.18	0.34	0.13	2,191
New Hampshire	0.01	0.03	0.01	155
New Jersey	0.54	1.19	0.41	5,986
New Mexico	0.08	0.14	0.06	992
New York	0.40	0.75	0.25	3,745
North Carolina	0.54	1.19	0.45	7,956
North Dakota	0.02	0.03	0.01	176
Ohio	0.41	0.89	0.33	5,683
Oklahoma	0.06	0.11	0.04	796
Oregon	0.16	0.32	0.12	1,928
Pennsylvania	0.39	0.82	0.30	4,711
Rhode Island	0.10	0.18	0.06	1,024
South Carolina	0.21	0.44	0.16	2,941
South Dakota	0.02	0.04	0.02	273
Tennessee	0.27	0.62	0.23	3,644
Texas	2.33	5.76	2.12	34,161
Utah	0.13	0.28	0.11	1,933
Vermont	0.00	0.01	0.00	38
Virginia	0.24	0.48	0.17	2,622
Washington	0.34	0.67	0.25	3,687
West Virginia	0.06	0.11	0.04	681
Wisconsin	0.16	0.31	0.12	2,018
Wyoming	0.00	0.00	0.00	23
State Totals	\$13.63	\$29.50	\$10.92	179,632
Interstate Spillovers	–	\$8.35	\$5.98	43,690
U.S. Total	\$13.63	\$37.85	\$16.89	223,322

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix A-4: Impacts of Soft Costs on State Economies (Retail and Entertainment), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.07	\$0.15	\$0.06	948
Alaska	0.00	0.01	0.00	33
Arizona	0.14	0.31	0.12	1,996
Arkansas	0.06	0.11	0.04	724
California	0.34	0.73	0.28	4,019
Colorado	0.09	0.21	0.08	1,196
Connecticut	0.04	0.08	0.03	447
Delaware	0.03	0.04	0.01	205
District of Columbia	0.03	0.04	0.00	63
Florida	0.77	1.66	0.64	11,851
Georgia	0.37	0.84	0.31	5,588
Hawaii	0.01	0.03	0.01	154
Idaho	0.04	0.07	0.03	512
Illinois	0.15	0.36	0.13	1,928
Indiana	0.07	0.15	0.06	981
Iowa	0.07	0.12	0.04	749
Kansas	0.06	0.11	0.04	635
Kentucky	0.07	0.13	0.05	850
Louisiana	0.09	0.17	0.07	1,128
Maine	0.01	0.02	0.01	173
Maryland	0.07	0.14	0.05	726
Massachusetts	0.09	0.19	0.07	977
Michigan	0.08	0.18	0.07	1,083
Minnesota	0.07	0.15	0.06	885
Mississippi	0.02	0.04	0.02	285
Missouri	0.13	0.26	0.09	1,461
Montana	0.02	0.04	0.01	256
Nebraska	0.03	0.06	0.02	363
Nevada	0.05	0.09	0.03	560
New Hampshire	0.02	0.03	0.01	160
New Jersey	0.08	0.17	0.06	875
New Mexico	0.04	0.07	0.03	456
New York	0.40	0.74	0.25	3,736
North Carolina	0.12	0.27	0.10	1,800
North Dakota	0.01	0.02	0.01	130
Ohio	0.16	0.34	0.12	2,170
Oklahoma	0.11	0.22	0.08	1,545
Oregon	0.03	0.07	0.03	417
Pennsylvania	0.15	0.32	0.12	1,841
Rhode Island	0.01	0.02	0.01	100
South Carolina	0.07	0.14	0.05	927
South Dakota	0.02	0.03	0.01	228
Tennessee	0.17	0.38	0.14	2,230
Texas	0.94	2.32	0.86	13,770
Utah	0.06	0.14	0.05	953
Vermont	0.00	0.01	0.00	53
Virginia	0.10	0.21	0.07	1,110
Washington	0.10	0.21	0.08	1,137
West Virginia	0.02	0.04	0.01	248
Wisconsin	0.06	0.12	0.05	809
Wyoming	0.01	0.01	0.00	77
State Totals	\$5.76	\$12.34	\$4.56	75,552
Interstate Spillovers	–	\$3.66	\$2.58	18,838
U.S. Total	\$5.76	\$16.00	\$7.14	94,390

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix A-5: Impacts of Soft Costs on State Economies (in Four Categories), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.43	\$0.85	\$0.33	5,512
Alaska	0.04	0.07	0.03	390
Arizona	5.42	11.58	4.44	75,646
Arkansas	0.69	1.25	0.48	8,401
California	2.45	5.30	2.03	29,366
Colorado	0.84	1.90	0.72	11,043
Connecticut	0.15	0.30	0.11	1,592
Delaware	0.21	0.35	0.10	1,654
District of Columbia	0.14	0.19	0.03	334
Florida	2.63	5.65	2.18	40,357
Georgia	2.03	4.63	1.73	30,892
Hawaii	0.04	0.07	0.03	415
Idaho	0.48	0.91	0.35	6,532
Illinois	1.08	2.52	0.91	13,598
Indiana	0.69	1.42	0.52	9,255
Iowa	0.53	0.94	0.36	6,075
Kansas	0.35	0.69	0.23	3,850
Kentucky	1.27	2.48	0.88	15,793
Louisiana	1.02	1.99	0.77	13,107
Maine	0.05	0.09	0.04	620
Maryland	0.50	1.00	0.35	5,253
Massachusetts	0.77	1.56	0.58	8,096
Michigan	0.93	1.96	0.75	11,913
Minnesota	0.52	1.10	0.41	6,403
Mississippi	0.11	0.19	0.07	1,325
Missouri	0.58	1.19	0.39	6,580
Montana	0.11	0.19	0.07	1,331
Nebraska	0.12	0.23	0.09	1,461
Nevada	0.47	0.89	0.34	5,730
New Hampshire	0.04	0.08	0.03	435
New Jersey	0.80	1.75	0.61	8,814
New Mexico	0.58	1.03	0.40	7,180
New York	2.14	3.98	1.35	19,962
North Carolina	1.30	2.86	1.07	19,046
North Dakota	0.18	0.31	0.11	1,720
Ohio	3.54	7.60	2.79	48,663
Oklahoma	0.42	0.82	0.32	5,825
Oregon	0.54	1.09	0.41	6,581
Pennsylvania	0.78	1.65	0.60	9,434
Rhode Island	0.12	0.21	0.07	1,197
South Carolina	0.38	0.81	0.30	5,396
South Dakota	0.10	0.18	0.07	1,237
Tennessee	1.53	3.47	1.26	20,362
Texas	9.61	23.81	8.77	141,199
Utah	0.28	0.62	0.23	4,278
Vermont	0.04	0.08	0.03	517
Virginia	1.47	3.02	1.06	16,338
Washington	1.05	2.08	0.79	11,466
West Virginia	0.13	0.22	0.08	1,402
Wisconsin	0.42	0.82	0.31	5,389
Wyoming	0.11	0.19	0.07	1,301
State Totals	\$50.20	\$108.14	\$40.06	660,268
Interstate Spillovers	-	\$31.21	\$22.14	110,833
U.S. Total	\$50.20	\$139.36	\$62.20	771,102

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix B: Site Development Impacts by State

Appendix B-1: Impacts of Site Development on State Economies (Office), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.06	\$0.12	\$0.05	936
Alaska	0.01	0.02	0.01	153
Arizona	0.16	0.35	0.14	2,542
Arkansas	0.09	0.19	0.07	1,383
California	0.81	1.77	0.71	11,011
Colorado	0.21	0.49	0.19	3,209
Connecticut	0.02	0.03	0.01	184
Delaware	0.01	0.02	0.01	93
District of Columbia	0.07	0.09	0.01	113
Florida	0.40	0.88	0.36	7,103
Georgia	0.37	0.89	0.34	6,574
Hawaii	0.01	0.02	0.01	155
Idaho	0.21	0.41	0.17	3,326
Illinois	0.30	0.74	0.27	4,424
Indiana	0.06	0.13	0.05	860
Iowa	0.11	0.21	0.08	1,554
Kansas	0.06	0.13	0.05	880
Kentucky	0.05	0.11	0.04	761
Louisiana	0.07	0.16	0.06	1,166
Maine	0.01	0.01	0.01	117
Maryland	0.11	0.21	0.08	1,306
Massachusetts	0.31	0.61	0.23	3,565
Michigan	0.04	0.09	0.04	655
Minnesota	0.08	0.18	0.07	1,120
Mississippi	0.01	0.02	0.01	117
Missouri	0.06	0.15	0.05	974
Montana	0.01	0.03	0.01	221
Nebraska	0.03	0.05	0.02	411
Nevada	0.15	0.29	0.12	2,052
New Hampshire	0.01	0.01	0.00	78
New Jersey	0.04	0.09	0.03	524
New Mexico	0.19	0.35	0.14	2,782
New York	0.69	1.27	0.49	7,706
North Carolina	0.26	0.61	0.23	4,509
North Dakota	0.08	0.14	0.05	906
Ohio	0.21	0.52	0.19	3,404
Oklahoma	0.09	0.21	0.08	1,591
Oregon	0.17	0.37	0.14	2,257
Pennsylvania	0.14	0.34	0.13	2,042
Rhode Island	0.00	0.01	0.00	44
South Carolina	0.04	0.10	0.04	710
South Dakota	0.04	0.07	0.03	576
Tennessee	0.14	0.35	0.13	2,122
Texas	1.44	3.79	1.43	25,376
Utah	0.05	0.12	0.05	835
Vermont	0.00	0.01	0.00	41
Virginia	0.69	1.42	0.54	9,766
Washington	0.36	0.76	0.30	4,737
West Virginia	0.01	0.01	0.00	90
Wisconsin	0.06	0.12	0.05	821
Wyoming	0.00	0.00	0.00	37
State Totals	\$8.61	\$19.05	\$7.32	127,921
Interstate Spillovers	–	\$5.88	\$1.63	7,703
U.S. Totals	\$8.61	\$24.93	\$8.95	135,624

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix B-2: Impacts of Site Development on State Economies (Industrial), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.23	\$0.51	\$0.20	3,897
Alaska	–	0.00	–	–
Arizona	4.56	9.99	4.03	73,267
Arkansas	0.44	0.91	0.35	6,756
California	0.18	0.38	0.15	2,368
Colorado	0.02	0.05	0.02	304
Connecticut	0.01	0.02	0.01	136
Delaware	0.08	0.15	0.05	844
District of Columbia	0.00	0.00	0.00	1
Florida	0.12	0.27	0.11	2,164
Georgia	0.34	0.82	0.32	6,116
Hawaii	0.00	0.00	0.00	22
Idaho	0.05	0.11	0.04	859
Illinois	0.12	0.30	0.11	1,818
Indiana	0.17	0.39	0.14	2,575
Iowa	0.15	0.31	0.12	2,237
Kansas	0.06	0.14	0.05	900
Kentucky	1.04	2.28	0.83	15,854
Louisiana	0.77	1.63	0.64	12,199
Maine	0.02	0.04	0.02	292
Maryland	0.07	0.14	0.05	872
Massachusetts	0.04	0.07	0.03	418
Michigan	0.73	1.65	0.65	11,815
Minnesota	0.07	0.16	0.06	1,015
Mississippi	0.05	0.09	0.04	721
Missouri	0.10	0.21	0.08	1,437
Montana	0.06	0.11	0.04	874
Nebraska	0.01	0.02	0.01	135
Nevada	0.03	0.05	0.02	356
New Hampshire	0.00	0.00	0.00	24
New Jersey	0.13	0.28	0.10	1,614
New Mexico	0.20	0.38	0.15	3,020
New York	0.35	0.64	0.25	3,908
North Carolina	0.27	0.63	0.24	4,648
North Dakota	0.04	0.07	0.02	431
Ohio	2.91	6.99	2.60	46,196
Oklahoma	0.12	0.26	0.10	2,014
Oregon	0.10	0.21	0.08	1,295
Pennsylvania	0.03	0.07	0.02	395
Rhode Island	0.00	0.00	0.00	15
South Carolina	0.05	0.12	0.04	871
South Dakota	0.01	0.01	0.00	80
Tennessee	0.96	2.34	0.85	14,199
Texas	4.64	12.24	4.62	81,880
Utah	0.02	0.04	0.02	309
Vermont	0.04	0.07	0.03	508
Virginia	0.13	0.26	0.10	1,790
Washington	0.08	0.16	0.06	1,002
West Virginia	0.04	0.07	0.02	472
Wisconsin	0.13	0.28	0.11	1,924
Wyoming	0.11	0.20	0.08	1,515
State Totals	\$19.87	\$46.12	\$17.68	318,359
Interstate Spillovers	–	\$11.38	\$2.96	–
U.S. Totals	\$19.87	\$57.50	\$20.65	318,359

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix B-3: Impacts of Site Development on State Economies (Warehouse), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.09	\$0.19	\$0.07	1,466
Alaska	0.02	0.04	0.02	280
Arizona	1.15	2.52	1.02	18,470
Arkansas	0.13	0.27	0.10	1,977
California	0.98	2.13	0.85	13,224
Colorado	0.54	1.25	0.50	8,221
Connecticut	0.10	0.20	0.08	1,224
Delaware	0.12	0.21	0.07	1,166
District of Columbia	0.00	0.00	0.00	3
Florida	1.50	3.29	1.33	26,469
Georgia	1.04	2.50	0.96	18,568
Hawaii	0.00	0.01	0.00	63
Idaho	0.12	0.23	0.09	1,878
Illinois	0.48	1.19	0.44	7,135
Indiana	0.49	1.15	0.42	7,610
Iowa	0.21	0.43	0.17	3,112
Kansas	0.19	0.40	0.14	2,641
Kentucky	0.23	0.50	0.18	3,500
Louisiana	0.15	0.32	0.12	2,365
Maine	0.01	0.02	0.01	153
Maryland	0.27	0.52	0.20	3,258
Massachusetts	0.25	0.49	0.19	2,885
Michigan	0.16	0.37	0.15	2,660
Minnesota	0.34	0.77	0.30	4,792
Mississippi	0.04	0.08	0.03	624
Missouri	0.35	0.78	0.28	5,242
Montana	0.02	0.04	0.01	291
Nebraska	0.06	0.11	0.04	849
Nevada	0.23	0.46	0.18	3,190
New Hampshire	0.02	0.04	0.01	228
New Jersey	0.70	1.56	0.57	8,902
New Mexico	0.10	0.19	0.08	1,535
New York	0.52	0.95	0.37	5,795
North Carolina	0.70	1.63	0.63	12,062
North Dakota	0.02	0.04	0.02	278
Ohio	0.54	1.29	0.48	8,493
Oklahoma	0.07	0.16	0.06	1,237
Oregon	0.21	0.43	0.16	2,655
Pennsylvania	0.50	1.18	0.44	7,132
Rhode Island	0.13	0.24	0.09	1,423
South Carolina	0.27	0.61	0.23	4,582
South Dakota	0.03	0.06	0.02	442
Tennessee	0.35	0.86	0.31	5,230
Texas	3.01	7.94	3.00	53,106
Utah	0.16	0.38	0.15	2,720
Vermont	0.00	0.01	0.00	61
Virginia	0.31	0.63	0.24	4,314
Washington	0.44	0.91	0.36	5,674
West Virginia	0.08	0.15	0.05	1,050
Wisconsin	0.20	0.44	0.17	3,021
Wyoming	0.00	0.00	0.00	35
State Totals	\$17.65	\$40.17	\$15.42	273,293
Interstate Spillovers	-	\$10.89	\$2.91	4,513
U.S. Totals	\$17.65	\$51.07	\$18.34	277,806

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix B-4: Impacts of Site Development on State Economies (Retail and Entertainment), 2022

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	1,306
Alaska	0.00	0.01	0.00	42
Arizona	0.15	0.32	0.13	2,384
Arkansas	0.06	0.13	0.05	952
California	0.35	0.76	0.30	4,706
Colorado	0.09	0.22	0.09	1,431
Connecticut	0.04	0.09	0.03	542
Delaware	0.03	0.05	0.02	265
District of Columbia	0.03	0.03	0.00	41
Florida	0.80	1.76	0.71	14,187
Georgia	0.38	0.91	0.35	6,784
Hawaii	0.01	0.03	0.01	181
Idaho	0.04	0.08	0.03	630
Illinois	0.16	0.39	0.14	2,347
Indiana	0.08	0.18	0.07	1,168
Iowa	0.07	0.14	0.05	983
Kansas	0.06	0.13	0.05	852
Kentucky	0.07	0.15	0.06	1,078
Louisiana	0.09	0.19	0.08	1,433
Maine	0.01	0.03	0.01	223
Maryland	0.07	0.14	0.05	872
Massachusetts	0.10	0.19	0.07	1,121
Michigan	0.09	0.20	0.08	1,430
Minnesota	0.07	0.17	0.06	1,044
Mississippi	0.02	0.05	0.02	373
Missouri	0.13	0.30	0.11	2,012
Montana	0.02	0.04	0.02	333
Nebraska	0.03	0.06	0.02	475
Nevada	0.05	0.09	0.04	653
New Hampshire	0.02	0.03	0.01	190
New Jersey	0.08	0.18	0.07	1,043
New Mexico	0.04	0.07	0.03	566
New York	0.42	0.76	0.29	4,634
North Carolina	0.13	0.30	0.11	2,188
North Dakota	0.01	0.03	0.01	165
Ohio	0.16	0.39	0.15	2,599
Oklahoma	0.11	0.25	0.10	1,923
Oregon	0.04	0.07	0.03	460
Pennsylvania	0.16	0.37	0.14	2,234
Rhode Island	0.01	0.02	0.01	111
South Carolina	0.07	0.16	0.06	1,158
South Dakota	0.02	0.04	0.02	296
Tennessee	0.17	0.42	0.15	2,565
Texas	0.97	2.57	0.97	17,158
Utah	0.06	0.15	0.06	1,075
Vermont	0.00	0.01	0.00	67
Virginia	0.10	0.21	0.08	1,465
Washington	0.11	0.22	0.09	1,403
West Virginia	0.02	0.04	0.02	306
Wisconsin	0.07	0.14	0.06	970
Wyoming	0.01	0.01	0.00	96
State Totals	\$5.98	\$13.45	\$5.17	92,521
Interstate Spillovers	–	\$3.85	\$1.04	1,592
U.S. Totals	\$5.98	\$17.30	\$6.21	94,113

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix B-5: Impacts of Site Development on State Economies (in Four Categories), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.45	\$1.00	\$0.39	7,605
Alaska	0.04	0.07	0.03	476
Arizona	6.02	13.17	5.31	96,662
Arkansas	0.72	1.49	0.58	11,069
California	2.32	5.03	2.02	31,308
Colorado	0.87	2.00	0.80	13,164
Connecticut	0.17	0.34	0.13	2,085
Delaware	0.24	0.42	0.14	2,368
District of Columbia	0.10	0.12	0.01	158
Florida	2.82	6.20	2.51	49,923
Georgia	2.14	5.13	1.97	38,041
Hawaii	0.03	0.06	0.03	420
Idaho	0.41	0.83	0.34	6,693
Illinois	1.06	2.62	0.97	15,725
Indiana	0.79	1.84	0.68	12,214
Iowa	0.54	1.09	0.42	7,887
Kansas	0.37	0.80	0.28	5,274
Kentucky	1.39	3.05	1.11	21,193
Louisiana	1.09	2.29	0.90	17,163
Maine	0.05	0.10	0.04	785
Maryland	0.52	1.01	0.38	6,307
Massachusetts	0.69	1.36	0.52	7,989
Michigan	1.02	2.31	0.91	16,560
Minnesota	0.57	1.28	0.49	7,971
Mississippi	0.12	0.24	0.09	1,835
Missouri	0.64	1.44	0.52	9,664
Montana	0.11	0.21	0.09	1,720
Nebraska	0.12	0.25	0.10	1,870
Nevada	0.46	0.89	0.36	6,251
New Hampshire	0.04	0.09	0.03	519
New Jersey	0.95	2.12	0.78	12,083
New Mexico	0.53	0.98	0.41	7,903
New York	1.98	3.62	1.39	22,042
North Carolina	1.37	3.17	1.22	23,407
North Dakota	0.15	0.28	0.10	1,781
Ohio	3.82	9.19	3.41	60,692
Oklahoma	0.40	0.87	0.35	6,766
Oregon	0.52	1.08	0.41	6,668
Pennsylvania	0.83	1.95	0.72	11,804
Rhode Island	0.15	0.27	0.10	1,593
South Carolina	0.43	0.98	0.37	7,320
South Dakota	0.09	0.18	0.07	1,395
Tennessee	1.63	3.98	1.45	24,117
Texas	10.06	26.54	10.02	177,520
Utah	0.29	0.69	0.27	4,940
Vermont	0.05	0.09	0.04	678
Virginia	1.23	2.53	0.95	17,334
Washington	0.98	2.05	0.82	12,816
West Virginia	0.15	0.27	0.10	1,918
Wisconsin	0.45	0.99	0.39	6,737
Wyoming	0.12	0.22	0.09	1,683
State Totals	\$52.11	\$118.79	\$45.60	812,095
Interstate Spillovers	–	\$32.00	\$8.55	13,808
U.S. Totals	\$52.11	\$150.79	\$54.15	825,903

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix C: Hard Cost Impacts by State

Appendix C-1: Impacts of Construction (**Hard Costs**) on State Economies (**Office**), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.29	\$0.64	\$0.25	4,853
Alaska	0.07	0.12	0.05	795
Arizona	0.82	1.80	0.72	13,183
Arkansas	0.47	0.97	0.37	7,172
California	4.22	9.18	3.69	57,099
Colorado	1.10	2.53	1.01	16,641
Connecticut	0.08	0.16	0.06	952
Delaware	0.05	0.08	0.03	481
District of Columbia	0.39	0.45	0.04	588
Florida	2.08	4.58	1.85	36,834
Georgia	1.91	4.60	1.76	34,088
Hawaii	0.06	0.12	0.05	806
Idaho	1.06	2.14	0.87	17,249
Illinois	1.55	3.83	1.41	22,943
Indiana	0.29	0.67	0.25	4,460
Iowa	0.55	1.11	0.43	8,058
Kansas	0.32	0.69	0.25	4,565
Kentucky	0.26	0.57	0.21	3,947
Louisiana	0.38	0.81	0.32	6,048
Maine	0.04	0.08	0.03	607
Maryland	0.56	1.08	0.41	6,770
Massachusetts	1.60	3.14	1.21	18,489
Michigan	0.21	0.47	0.19	3,398
Minnesota	0.41	0.93	0.36	5,810
Mississippi	0.04	0.08	0.03	605
Missouri	0.33	0.75	0.27	5,049
Montana	0.07	0.14	0.06	1,145
Nebraska	0.14	0.28	0.11	2,131
Nevada	0.78	1.52	0.62	10,641
New Hampshire	0.03	0.07	0.03	403
New Jersey	0.21	0.48	0.18	2,717
New Mexico	0.97	1.79	0.74	14,426
New York	3.59	6.56	2.52	39,961
North Carolina	1.37	3.17	1.22	23,381
North Dakota	0.40	0.74	0.27	4,698
Ohio	1.11	2.67	0.99	17,654
Oklahoma	0.49	1.06	0.42	8,251
Oregon	0.91	1.90	0.72	11,704
Pennsylvania	0.75	1.75	0.65	10,591
Rhode Island	0.02	0.04	0.01	227
South Carolina	0.21	0.49	0.18	3,680
South Dakota	0.20	0.39	0.16	2,987
Tennessee	0.74	1.82	0.66	11,005
Texas	7.46	19.68	7.43	131,587
Utah	0.26	0.61	0.24	4,332
Vermont	0.01	0.03	0.01	211
Virginia	3.58	7.38	2.78	50,640
Washington	1.88	3.94	1.57	24,564
West Virginia	0.04	0.07	0.02	467
Wisconsin	0.29	0.63	0.25	4,259
Wyoming	0.01	0.03	0.01	193
State Totals	\$44.67	\$98.79	\$37.94	663,345
Interstate Spillovers	–	\$30.49	\$8.48	39,944
U.S. Totals	\$44.67	\$129.28	\$46.42	703,289

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix C-2: Impacts of Construction (Hard Costs) on State Economies (Industrial), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.85	\$1.89	\$0.73	14,426
Alaska	–	0.00	–	–
Arizona	16.89	36.96	14.90	271,205
Arkansas	1.62	3.37	1.30	25,009
California	0.65	1.41	0.57	8,766
Colorado	0.07	0.17	0.07	1,124
Connecticut	0.04	0.08	0.03	503
Delaware	0.31	0.55	0.19	3,126
District of Columbia	0.00	0.00	0.00	3
Florida	0.45	1.00	0.40	8,012
Georgia	1.27	3.05	1.17	22,637
Hawaii	0.01	0.01	0.00	80
Idaho	0.20	0.40	0.16	3,178
Illinois	0.45	1.12	0.41	6,731
Indiana	0.62	1.44	0.53	9,532
Iowa	0.57	1.14	0.44	8,282
Kansas	0.24	0.51	0.18	3,332
Kentucky	3.86	8.43	3.07	58,685
Louisiana	2.87	6.02	2.37	45,155
Maine	0.07	0.13	0.06	1,080
Maryland	0.27	0.52	0.19	3,226
Massachusetts	0.13	0.26	0.10	1,549
Michigan	2.69	6.09	2.41	43,734
Minnesota	0.27	0.60	0.23	3,755
Mississippi	0.17	0.35	0.14	2,668
Missouri	0.35	0.79	0.28	5,318
Montana	0.20	0.39	0.17	3,236
Nebraska	0.03	0.07	0.03	499
Nevada	0.10	0.19	0.08	1,318
New Hampshire	0.01	0.01	0.01	88
New Jersey	0.47	1.05	0.39	5,973
New Mexico	0.75	1.39	0.57	11,180
New York	1.30	2.38	0.91	14,464
North Carolina	1.00	2.33	0.90	17,205
North Dakota	0.13	0.25	0.09	1,596
Ohio	10.78	25.89	9.62	170,998
Oklahoma	0.44	0.96	0.38	7,457
Oregon	0.37	0.78	0.29	4,794
Pennsylvania	0.10	0.24	0.09	1,463
Rhode Island	0.01	0.01	0.00	57
South Carolina	0.19	0.43	0.16	3,223
South Dakota	0.02	0.04	0.02	297
Tennessee	3.56	8.68	3.16	52,558
Texas	17.18	45.32	17.10	303,086
Utah	0.07	0.16	0.06	1,144
Vermont	0.13	0.24	0.10	1,882
Virginia	0.47	0.97	0.36	6,626
Washington	0.28	0.59	0.24	3,710
West Virginia	0.13	0.24	0.09	1,745
Wisconsin	0.48	1.05	0.41	7,122
Wyoming	0.41	0.73	0.29	5,608
State Totals	\$73.55	\$170.70	\$65.46	1,178,442
Interstate Spillovers	–	\$42.13	\$10.97	–
U.S. Totals	\$73.55	\$212.83	\$76.42	1,178,442

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix C-3: Impacts of Construction (Hard Costs) on State Economies (Warehouse), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.26	\$0.57	\$0.22	4,357
Alaska	0.07	0.12	0.05	832
Arizona	3.42	7.48	3.02	54,903
Arkansas	0.38	0.79	0.31	5,878
California	2.91	6.32	2.54	39,308
Colorado	1.61	3.71	1.48	24,436
Connecticut	0.30	0.59	0.23	3,638
Delaware	0.35	0.61	0.21	3,465
District of Columbia	0.01	0.01	0.00	8
Florida	4.45	9.78	3.96	78,682
Georgia	3.10	7.44	2.85	55,196
Hawaii	0.01	0.03	0.01	186
Idaho	0.34	0.69	0.28	5,583
Illinois	1.43	3.54	1.31	21,211
Indiana	1.47	3.41	1.26	22,622
Iowa	0.64	1.27	0.49	9,252
Kansas	0.56	1.19	0.42	7,851
Kentucky	0.68	1.50	0.54	10,404
Louisiana	0.45	0.94	0.37	7,031
Maine	0.03	0.06	0.02	454
Maryland	0.80	1.55	0.58	9,686
Massachusetts	0.74	1.46	0.56	8,576
Michigan	0.49	1.10	0.44	7,907
Minnesota	1.01	2.29	0.88	14,244
Mississippi	0.12	0.24	0.09	1,856
Missouri	1.03	2.32	0.83	15,581
Montana	0.05	0.11	0.04	866
Nebraska	0.17	0.33	0.13	2,524
Nevada	0.69	1.35	0.55	9,482
New Hampshire	0.06	0.12	0.04	678
New Jersey	2.09	4.64	1.71	26,461
New Mexico	0.31	0.57	0.23	4,564
New York	1.55	2.83	1.09	17,225
North Carolina	2.09	4.86	1.87	35,856
North Dakota	0.07	0.13	0.05	827
Ohio	1.59	3.82	1.42	25,246
Oklahoma	0.22	0.47	0.19	3,677
Oregon	0.61	1.28	0.48	7,893
Pennsylvania	1.49	3.51	1.30	21,202
Rhode Island	0.39	0.72	0.26	4,231
South Carolina	0.80	1.83	0.68	13,620
South Dakota	0.09	0.17	0.07	1,315
Tennessee	1.05	2.57	0.93	15,548
Texas	8.95	23.60	8.91	157,863
Utah	0.48	1.13	0.44	8,085
Vermont	0.01	0.02	0.01	182
Virginia	0.91	1.87	0.70	12,825
Washington	1.29	2.70	1.08	16,868
West Virginia	0.24	0.44	0.16	3,120
Wisconsin	0.60	1.32	0.52	8,980
Wyoming	0.01	0.01	0.01	104
State Totals	\$52.45	\$119.42	\$45.85	812,387
Interstate Spillovers	–	\$32.38	\$8.66	13,416
U.S. Totals	\$52.45	\$151.80	\$54.51	825,803

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix C-4: Impacts of Construction (**Hard Costs**) on State Economies (**Retail and Entertainment**), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.23	\$0.51	\$0.20	3,918
Alaska	0.01	0.02	0.01	127
Arizona	0.45	0.97	0.39	7,151
Arkansas	0.19	0.38	0.15	2,856
California	1.04	2.27	0.91	14,117
Colorado	0.28	0.65	0.26	4,292
Connecticut	0.13	0.27	0.10	1,626
Delaware	0.08	0.14	0.05	794
District of Columbia	0.08	0.09	0.01	122
Florida	2.41	5.29	2.14	42,560
Georgia	1.14	2.74	1.05	20,352
Hawaii	0.04	0.08	0.03	542
Idaho	0.12	0.23	0.10	1,890
Illinois	0.48	1.17	0.43	7,042
Indiana	0.23	0.53	0.20	3,505
Iowa	0.20	0.41	0.16	2,949
Kansas	0.18	0.39	0.14	2,557
Kentucky	0.21	0.46	0.17	3,234
Louisiana	0.27	0.57	0.23	4,299
Maine	0.04	0.08	0.03	669
Maryland	0.22	0.42	0.16	2,615
Massachusetts	0.29	0.57	0.22	3,362
Michigan	0.26	0.60	0.24	4,291
Minnesota	0.22	0.50	0.19	3,133
Mississippi	0.07	0.15	0.06	1,119
Missouri	0.40	0.90	0.32	6,036
Montana	0.06	0.12	0.05	1,000
Nebraska	0.09	0.19	0.07	1,425
Nevada	0.14	0.28	0.11	1,960
New Hampshire	0.05	0.10	0.04	569
New Jersey	0.25	0.55	0.20	3,130
New Mexico	0.11	0.21	0.09	1,697
New York	1.25	2.28	0.88	13,901
North Carolina	0.38	0.89	0.34	6,563
North Dakota	0.04	0.08	0.03	496
Ohio	0.49	1.18	0.44	7,796
Oklahoma	0.34	0.74	0.30	5,770
Oregon	0.11	0.22	0.08	1,381
Pennsylvania	0.47	1.11	0.41	6,701
Rhode Island	0.03	0.06	0.02	333
South Carolina	0.20	0.47	0.17	3,474
South Dakota	0.06	0.12	0.05	889
Tennessee	0.52	1.27	0.46	7,696
Texas	2.92	7.70	2.90	51,475
Utah	0.19	0.45	0.18	3,226
Vermont	0.01	0.03	0.01	202
Virginia	0.31	0.64	0.24	4,394
Washington	0.32	0.67	0.27	4,208
West Virginia	0.07	0.13	0.05	919
Wisconsin	0.20	0.43	0.17	2,911
Wyoming	0.02	0.04	0.01	288
State Totals	\$17.93	\$40.36	\$15.52	277,564
Interstate Spillovers	–	\$11.54	\$3.12	4,776
U.S. Totals	\$17.93	\$51.90	\$18.64	282,340

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix C-5: Impacts of Construction (**Hard Costs**) on State Economies (**in Four Categories**), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$1.63	\$3.62	\$1.40	27,554
Alaska	0.15	0.26	0.11	1,755
Arizona	21.58	47.22	19.04	346,442
Arkansas	2.66	5.51	2.13	40,915
California	8.82	19.18	7.71	119,290
Colorado	3.07	7.07	2.82	46,494
Connecticut	0.55	1.10	0.43	6,718
Delaware	0.79	1.38	0.48	7,867
District of Columbia	0.48	0.55	0.05	721
Florida	9.39	20.64	8.36	166,088
Georgia	7.43	17.83	6.84	132,273
Hawaii	0.12	0.24	0.10	1,614
Idaho	1.72	3.47	1.41	27,900
Illinois	3.91	9.66	3.56	57,926
Indiana	2.60	6.04	2.24	40,119
Iowa	1.96	3.93	1.52	28,540
Kansas	1.30	2.77	0.99	18,305
Kentucky	5.02	10.96	3.99	76,269
Louisiana	3.97	8.34	3.29	62,532
Maine	0.18	0.35	0.14	2,810
Maryland	1.84	3.57	1.34	22,296
Massachusetts	2.76	5.44	2.10	31,975
Michigan	3.66	8.27	3.27	59,329
Minnesota	1.92	4.33	1.66	26,942
Mississippi	0.40	0.82	0.32	6,247
Missouri	2.12	4.76	1.71	31,984
Montana	0.39	0.76	0.32	6,247
Nebraska	0.43	0.86	0.34	6,579
Nevada	1.71	3.34	1.35	23,401
New Hampshire	0.15	0.29	0.11	1,738
New Jersey	3.02	6.71	2.47	38,281
New Mexico	2.14	3.96	1.63	31,867
New York	7.68	14.05	5.40	85,551
North Carolina	4.85	11.24	4.33	83,006
North Dakota	0.64	1.19	0.43	7,617
Ohio	13.97	33.57	12.47	221,695
Oklahoma	1.49	3.24	1.29	25,155
Oregon	1.99	4.19	1.58	25,772
Pennsylvania	2.81	6.62	2.45	39,957
Rhode Island	0.44	0.82	0.30	4,848
South Carolina	1.40	3.22	1.20	23,998
South Dakota	0.37	0.71	0.29	5,488
Tennessee	5.87	14.33	5.21	86,807
Texas	36.50	96.29	36.34	644,011
Utah	1.00	2.35	0.91	16,788
Vermont	0.17	0.32	0.13	2,477
Virginia	5.27	10.86	4.08	74,484
Washington	3.79	7.91	3.15	49,350
West Virginia	0.48	0.88	0.32	6,252
Wisconsin	1.56	3.42	1.34	23,272
Wyoming	0.46	0.80	0.32	6,192
State Totals	\$188.61	\$429.27	\$164.77	2,931,739
Interstate Spillovers	-	\$116.54	\$31.21	58,136
U.S. Totals	\$188.61	\$545.81	\$195.98	2,989,875

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix D: Tenant Improvement Impacts by State

Appendix D-1: Impacts of Tenant Improvements on State Economies (**Office**), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.12	\$0.26	\$0.10	1,997
Alaska	0.03	0.05	0.02	327
Arizona	0.34	0.74	0.30	5,425
Arkansas	0.19	0.40	0.15	2,952
California	1.74	3.78	1.52	23,498
Colorado	0.45	1.04	0.42	6,848
Connecticut	0.03	0.06	0.03	392
Delaware	0.02	0.03	0.01	198
District of Columbia	0.16	0.18	0.02	242
Florida	0.86	1.88	0.76	15,158
Georgia	0.79	1.89	0.73	14,028
Hawaii	0.03	0.05	0.02	332
Idaho	0.44	0.88	0.36	7,099
Illinois	0.64	1.58	0.58	9,442
Indiana	0.12	0.28	0.10	1,835
Iowa	0.23	0.46	0.18	3,316
Kansas	0.13	0.28	0.10	1,879
Kentucky	0.11	0.23	0.08	1,624
Louisiana	0.16	0.33	0.13	2,489
Maine	0.02	0.03	0.01	250
Maryland	0.23	0.45	0.17	2,786
Massachusetts	0.66	1.29	0.50	7,609
Michigan	0.09	0.19	0.08	1,398
Minnesota	0.17	0.38	0.15	2,391
Mississippi	0.02	0.03	0.01	249
Missouri	0.14	0.31	0.11	2,078
Montana	0.03	0.06	0.02	471
Nebraska	0.06	0.12	0.05	877
Nevada	0.32	0.63	0.25	4,379
New Hampshire	0.01	0.03	0.01	166
New Jersey	0.09	0.20	0.07	1,118
New Mexico	0.40	0.74	0.30	5,937
New York	1.48	2.70	1.04	16,445
North Carolina	0.56	1.30	0.50	9,622
North Dakota	0.16	0.30	0.11	1,934
Ohio	0.46	1.10	0.41	7,265
Oklahoma	0.20	0.44	0.17	3,395
Oregon	0.37	0.78	0.29	4,817
Pennsylvania	0.31	0.72	0.27	4,359
Rhode Island	0.01	0.02	0.01	94
South Carolina	0.09	0.20	0.08	1,515
South Dakota	0.08	0.16	0.06	1,229
Tennessee	0.31	0.75	0.27	4,529
Texas	3.07	8.10	3.06	54,152
Utah	0.11	0.25	0.10	1,783
Vermont	0.01	0.01	0.00	87
Virginia	1.47	3.04	1.14	20,840
Washington	0.78	1.62	0.64	10,109
West Virginia	0.01	0.03	0.01	192
Wisconsin	0.12	0.26	0.10	1,753
Wyoming	0.01	0.01	0.00	79
State Totals	\$18.38	\$40.65	\$15.61	272,987
Interstate Spillovers	–	\$12.55	\$3.49	16,438
U.S. Totals	\$18.38	\$53.20	\$19.10	289,425

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix D-2: Impacts of Tenant Improvements on State Economies (Industrial), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.38	\$0.84	\$0.32	6,411
Alaska	–	0.00	–	–
Arizona	7.51	16.43	6.62	120,535
Arkansas	0.72	1.50	0.58	11,115
California	0.29	0.63	0.25	3,896
Colorado	0.03	0.08	0.03	500
Connecticut	0.02	0.04	0.01	223
Delaware	0.14	0.24	0.08	1,389
District of Columbia	0.00	0.00	0.00	1
Florida	0.20	0.44	0.18	3,561
Georgia	0.57	1.36	0.52	10,061
Hawaii	0.00	0.01	0.00	35
Idaho	0.09	0.18	0.07	1,412
Illinois	0.20	0.50	0.18	2,991
Indiana	0.27	0.64	0.24	4,236
Iowa	0.25	0.51	0.20	3,681
Kansas	0.11	0.22	0.08	1,481
Kentucky	1.72	3.75	1.36	26,082
Louisiana	1.27	2.68	1.05	20,069
Maine	0.03	0.06	0.02	480
Maryland	0.12	0.23	0.09	1,434
Massachusetts	0.06	0.12	0.05	688
Michigan	1.20	2.71	1.07	19,437
Minnesota	0.12	0.27	0.10	1,669
Mississippi	0.08	0.16	0.06	1,186
Missouri	0.16	0.35	0.13	2,364
Montana	0.09	0.17	0.07	1,438
Nebraska	0.01	0.03	0.01	222
Nevada	0.04	0.08	0.03	586
New Hampshire	0.00	0.01	0.00	39
New Jersey	0.21	0.47	0.17	2,655
New Mexico	0.33	0.62	0.25	4,969
New York	0.58	1.06	0.41	6,429
North Carolina	0.45	1.04	0.40	7,647
North Dakota	0.06	0.11	0.04	709
Ohio	4.79	11.51	4.27	75,999
Oklahoma	0.20	0.43	0.17	3,314
Oregon	0.16	0.35	0.13	2,130
Pennsylvania	0.05	0.11	0.04	650
Rhode Island	0.00	0.00	0.00	25
South Carolina	0.08	0.19	0.07	1,433
South Dakota	0.01	0.02	0.01	132
Tennessee	1.58	3.86	1.40	23,359
Texas	7.63	20.14	7.60	134,705
Utah	0.03	0.07	0.03	509
Vermont	0.06	0.11	0.04	836
Virginia	0.21	0.43	0.16	2,945
Washington	0.13	0.26	0.11	1,649
West Virginia	0.06	0.11	0.04	776
Wisconsin	0.21	0.47	0.18	3,165
Wyoming	0.18	0.32	0.13	2,492
State Totals	\$32.69	\$75.87	\$29.09	523,752
Interstate Spillovers	–	\$18.73	\$4.87	–
U.S. Totals	\$32.69	\$94.59	\$33.97	523,752

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix D-3: Impacts of Tenant Improvements on State Economies (Warehouse), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.06	\$0.14	\$ 0.05	1,043
Alaska	0.02	0.03	0.01	199
Arizona	0.82	1.79	0.72	13,140
Arkansas	0.09	0.19	0.07	1,407
California	0.70	1.51	0.61	9,408
Colorado	0.39	0.89	0.35	5,848
Connecticut	0.07	0.14	0.06	871
Delaware	0.08	0.15	0.05	829
District of Columbia	0.00	0.00	0.00	2
Florida	1.06	2.34	0.95	18,831
Georgia	0.74	1.78	0.68	13,210
Hawaii	0.00	0.01	0.00	45
Idaho	0.08	0.17	0.07	1,336
Illinois	0.34	0.85	0.31	5,076
Indiana	0.35	0.82	0.30	5,414
Iowa	0.15	0.31	0.12	2,214
Kansas	0.13	0.28	0.10	1,879
Kentucky	0.16	0.36	0.13	2,490
Louisiana	0.11	0.22	0.09	1,683
Maine	0.01	0.01	0.01	109
Maryland	0.19	0.37	0.14	2,318
Massachusetts	0.18	0.35	0.13	2,053
Michigan	0.12	0.26	0.10	1,892
Minnesota	0.24	0.55	0.21	3,409
Mississippi	0.03	0.06	0.02	444
Missouri	0.25	0.56	0.20	3,729
Montana	0.01	0.03	0.01	207
Nebraska	0.04	0.08	0.03	604
Nevada	0.17	0.32	0.13	2,269
New Hampshire	0.01	0.03	0.01	162
New Jersey	0.50	1.11	0.41	6,333
New Mexico	0.07	0.14	0.06	1,092
New York	0.37	0.68	0.26	4,123
North Carolina	0.50	1.16	0.45	8,582
North Dakota	0.02	0.03	0.01	198
Ohio	0.38	0.91	0.34	6,042
Oklahoma	0.05	0.11	0.05	880
Oregon	0.15	0.31	0.12	1,889
Pennsylvania	0.36	0.84	0.31	5,074
Rhode Island	0.09	0.17	0.06	1,013
South Carolina	0.19	0.44	0.16	3,260
South Dakota	0.02	0.04	0.02	315
Tennessee	0.25	0.61	0.22	3,721
Texas	2.14	5.65	2.13	37,782
Utah	0.12	0.27	0.11	1,935
Vermont	0.00	0.01	0.00	43
Virginia	0.22	0.45	0.17	3,069
Washington	0.31	0.65	0.26	4,037
West Virginia	0.06	0.10	0.04	747
Wisconsin	0.14	0.32	0.12	2,149
Wyoming	0.00	0.00	0.00	25
State Totals	\$12.55	\$28.58	\$10.97	194,433
Interstate Spillovers	–	\$7.75	\$2.07	3,211
U.S. Totals	\$12.55	\$36.33	\$13.05	197,644

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix D-4: Impacts of Tenant Improvements on State Economies (Retail and Entertainment), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.10	\$0.23	\$0.09	1,753
Alaska	0.00	0.01	0.00	57
Arizona	0.20	0.44	0.18	3,200
Arkansas	0.08	0.17	0.07	1,278
California	0.47	1.02	0.41	6,317
Colorado	0.13	0.29	0.12	1,920
Connecticut	0.06	0.12	0.05	727
Delaware	0.04	0.06	0.02	355
District of Columbia	0.04	0.04	0.00	55
Florida	1.08	2.37	0.96	19,044
Georgia	0.51	1.23	0.47	9,107
Hawaii	0.02	0.04	0.02	243
Idaho	0.05	0.11	0.04	846
Illinois	0.21	0.53	0.19	3,151
Indiana	0.10	0.24	0.09	1,568
Iowa	0.09	0.18	0.07	1,319
Kansas	0.08	0.17	0.06	1,144
Kentucky	0.10	0.21	0.08	1,447
Louisiana	0.12	0.26	0.10	1,923
Maine	0.02	0.04	0.02	299
Maryland	0.10	0.19	0.07	1,170
Massachusetts	0.13	0.26	0.10	1,504
Michigan	0.12	0.27	0.11	1,920
Minnesota	0.10	0.23	0.09	1,402
Mississippi	0.03	0.07	0.03	501
Missouri	0.18	0.40	0.14	2,701
Montana	0.03	0.05	0.02	448
Nebraska	0.04	0.08	0.03	638
Nevada	0.06	0.13	0.05	877
New Hampshire	0.02	0.04	0.02	255
New Jersey	0.11	0.25	0.09	1,401
New Mexico	0.05	0.09	0.04	759
New York	0.56	1.02	0.39	6,220
North Carolina	0.17	0.40	0.15	2,937
North Dakota	0.02	0.03	0.01	222
Ohio	0.22	0.53	0.20	3,488
Oklahoma	0.15	0.33	0.13	2,582
Oregon	0.05	0.10	0.04	618
Pennsylvania	0.21	0.50	0.18	2,998
Rhode Island	0.01	0.03	0.01	149
South Carolina	0.09	0.21	0.08	1,555
South Dakota	0.03	0.05	0.02	398
Tennessee	0.23	0.57	0.21	3,444
Texas	1.31	3.44	1.30	23,032
Utah	0.09	0.20	0.08	1,444
Vermont	0.01	0.01	0.00	91
Virginia	0.14	0.29	0.11	1,966
Washington	0.14	0.30	0.12	1,883
West Virginia	0.03	0.06	0.02	411
Wisconsin	0.09	0.19	0.08	1,302
Wyoming	0.01	0.02	0.01	129
State Totals	\$8.02	\$18.06	\$6.94	124,195
Interstate Spillovers	–	\$5.16	\$1.39	2,137
U.S. Totals	\$8.02	\$23.22	\$8.34	126,332

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix D-5: Impacts of Tenant Improvements on State Economies (in Four Categories), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.66	\$1.47	\$0.57	11,205
Alaska	0.05	0.09	0.04	583
Arizona	8.86	19.40	7.82	142,301
Arkansas	1.09	2.26	0.87	16,751
California	3.19	6.93	2.79	43,118
Colorado	1.00	2.30	0.92	15,117
Connecticut	0.18	0.36	0.14	2,213
Delaware	0.28	0.49	0.17	2,772
District of Columbia	0.20	0.23	0.02	300
Florida	3.20	7.03	2.85	56,594
Georgia	2.61	6.26	2.40	46,406
Hawaii	0.05	0.10	0.04	654
Idaho	0.66	1.33	0.54	10,693
Illinois	1.39	3.45	1.27	20,661
Indiana	0.85	1.97	0.73	13,054
Iowa	0.72	1.45	0.56	10,531
Kansas	0.45	0.97	0.34	6,383
Kentucky	2.08	4.55	1.65	31,643
Louisiana	1.66	3.49	1.37	26,164
Maine	0.07	0.14	0.06	1,138
Maryland	0.64	1.23	0.46	7,708
Massachusetts	1.02	2.02	0.78	11,854
Michigan	1.52	3.43	1.36	24,648
Minnesota	0.63	1.43	0.55	8,871
Mississippi	0.15	0.31	0.12	2,380
Missouri	0.72	1.62	0.58	10,871
Montana	0.16	0.31	0.13	2,564
Nebraska	0.15	0.31	0.12	2,340
Nevada	0.59	1.16	0.47	8,111
New Hampshire	0.05	0.11	0.04	622
New Jersey	0.91	2.02	0.74	11,506
New Mexico	0.86	1.59	0.65	12,757
New York	2.98	5.46	2.10	33,216
North Carolina	1.68	3.90	1.50	28,787
North Dakota	0.26	0.48	0.17	3,063
Ohio	5.85	14.05	5.22	92,795
Oklahoma	0.60	1.31	0.52	10,171
Oregon	0.73	1.54	0.58	9,454
Pennsylvania	0.92	2.17	0.80	13,082
Rhode Island	0.12	0.22	0.08	1,280
South Carolina	0.45	1.04	0.39	7,761
South Dakota	0.14	0.27	0.11	2,074
Tennessee	2.37	5.79	2.11	35,053
Texas	14.15	37.33	14.09	249,672
Utah	0.34	0.79	0.31	5,670
Vermont	0.07	0.14	0.06	1,057
Virginia	2.04	4.20	1.58	28,820
Washington	1.36	2.83	1.13	17,678
West Virginia	0.16	0.30	0.11	2,126
Wisconsin	0.56	1.23	0.48	8,370
Wyoming	0.20	0.35	0.14	2,725
State Totals	\$71.65	\$163.16	\$62.62	1,115,368
Interstate Spillovers	-	\$44.19	\$11.83	21,786
U.S. Totals	\$71.65	\$207.35	\$74.45	1,137,154

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix E: Total Construction Cost Impacts by State

Appendix E-1: Total Impacts of Soft Cost, Site Development, Hard Costs, and Tenant Improvements on State Economies (**Office**), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.54	\$1.18	\$0.46	8,824
Alaska	0.13	0.22	0.09	1,459
Arizona	1.55	3.38	1.35	24,406
Arkansas	0.88	1.79	0.69	13,117
California	7.98	17.33	6.91	105,990
Colorado	2.07	4.76	1.89	30,800
Connecticut	0.15	0.29	0.11	1,758
Delaware	0.09	0.16	0.05	882
District of Columbia	0.73	0.87	0.08	1,211
Florida	3.93	8.61	3.46	68,170
Georgia	3.62	8.61	3.29	62,971
Hawaii	0.12	0.22	0.09	1,494
Idaho	2.01	4.01	1.62	31,810
Illinois	2.92	7.17	2.64	42,368
Indiana	0.55	1.25	0.46	8,260
Iowa	1.05	2.06	0.80	14,739
Kansas	0.61	1.29	0.46	8,327
Kentucky	0.49	1.05	0.38	7,250
Louisiana	0.72	1.51	0.59	11,107
Maine	0.07	0.14	0.06	1,113
Maryland	1.05	2.06	0.77	12,525
Massachusetts	3.02	5.96	2.28	34,419
Michigan	0.40	0.88	0.35	6,210
Minnesota	0.78	1.75	0.67	10,773
Mississippi	0.07	0.15	0.06	1,107
Missouri	0.63	1.40	0.50	9,182
Montana	0.14	0.26	0.11	2,097
Nebraska	0.26	0.52	0.21	3,899
Nevada	1.47	2.85	1.15	19,762
New Hampshire	0.06	0.13	0.05	748
New Jersey	0.41	0.90	0.33	5,032
New Mexico	1.83	3.37	1.38	26,576
New York	6.78	12.43	4.69	73,614
North Carolina	2.58	5.93	2.27	43,187
North Dakota	0.75	1.38	0.50	8,631
Ohio	2.10	4.97	1.84	32,671
Oklahoma	0.93	1.98	0.78	15,191
Oregon	1.71	3.57	1.34	21,905
Pennsylvania	1.41	3.26	1.20	19,566
Rhode Island	0.04	0.07	0.03	425
South Carolina	0.41	0.92	0.34	6,774
South Dakota	0.38	0.72	0.29	5,471
Tennessee	1.41	3.40	1.24	20,477
Texas	14.08	36.82	13.85	242,260
Utah	0.49	1.14	0.44	8,083
Vermont	0.03	0.05	0.02	388
Virginia	6.76	13.93	5.19	92,569
Washington	3.56	7.38	2.92	45,282
West Virginia	0.07	0.12	0.05	861
Wisconsin	0.54	1.16	0.46	7,880
Wyoming	0.03	0.05	0.02	355
State Totals	\$84.37	\$185.44	\$70.80	1,223,974
Interstate Spillovers	–	\$57.22	\$19.41	112,390
U.S. Totals	\$84.37	\$242.66	\$90.21	1,336,364

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix E-2: Total Impacts of Soft Cost, Site Development, Hard Costs, and Tenant Improvements on State Economies (Industrial), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$1.67	\$3.66	\$1.41	27,408
Alaska	–	0.00	–	–
Arizona	33.12	72.26	28.96	523,005
Arkansas	3.18	6.50	2.51	47,741
California	1.27	2.76	1.10	16,942
Colorado	0.15	0.33	0.13	2,167
Connecticut	0.08	0.16	0.06	968
Delaware	0.61	1.07	0.37	5,976
District of Columbia	0.00	0.00	0.00	6
Florida	0.89	1.95	0.78	15,446
Georgia	2.49	5.95	2.27	43,576
Hawaii	0.01	0.02	0.01	154
Idaho	0.38	0.77	0.31	6,109
Illinois	0.89	2.19	0.80	12,953
Indiana	1.21	2.77	1.03	18,388
Iowa	1.12	2.21	0.85	15,813
Kansas	0.46	0.98	0.35	6,347
Kentucky	7.57	16.31	5.92	112,435
Louisiana	5.62	11.71	4.60	86,503
Maine	0.13	0.26	0.11	2,065
Maryland	0.52	1.02	0.38	6,218
Massachusetts	0.26	0.52	0.20	3,000
Michigan	5.28	11.84	4.66	83,443
Minnesota	0.52	1.17	0.45	7,252
Mississippi	0.33	0.68	0.26	5,096
Missouri	0.69	1.54	0.55	10,105
Montana	0.40	0.76	0.32	6,184
Nebraska	0.06	0.13	0.05	953
Nevada	0.19	0.37	0.15	2,548
New Hampshire	0.01	0.03	0.01	169
New Jersey	0.93	2.05	0.75	11,521
New Mexico	1.47	2.71	1.11	21,471
New York	2.55	4.67	1.77	27,779
North Carolina	1.97	4.54	1.74	33,116
North Dakota	0.26	0.49	0.18	3,058
Ohio	21.13	50.09	18.57	329,656
Oklahoma	0.87	1.86	0.74	14,315
Oregon	0.73	1.52	0.57	9,328
Pennsylvania	0.20	0.47	0.17	2,817
Rhode Island	0.01	0.02	0.01	110
South Carolina	0.37	0.84	0.31	6,186
South Dakota	0.04	0.07	0.03	567
Tennessee	6.97	16.87	6.13	101,782
Texas	33.68	88.18	33.18	581,793
Utah	0.13	0.31	0.12	2,221
Vermont	0.26	0.47	0.19	3,604
Virginia	0.92	1.89	0.71	12,643
Washington	0.56	1.16	0.46	7,130
West Virginia	0.26	0.48	0.18	3,354
Wisconsin	0.94	2.03	0.79	13,727
Wyoming	0.81	1.42	0.56	10,770
State Totals	\$144.21	\$332.04	\$126.89	2,265,918
Interstate Spillovers	–	\$83.14	\$26.58	–
U.S. Totals	\$144.21	\$415.19	\$153.47	2,265,918

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix E-3: Total Impacts of Soft Cost, Site Development, Hard Costs, and Tenant Improvements on State Economies (Warehouse), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.47	\$1.03	\$0.40	7,719
Alaska	0.13	0.22	0.10	1,486
Arizona	6.28	13.69	5.48	98,910
Arkansas	0.70	1.43	0.55	10,469
California	5.34	11.59	4.63	70,992
Colorado	2.96	6.80	2.69	44,012
Connecticut	0.55	1.09	0.42	6,541
Delaware	0.64	1.12	0.38	6,183
District of Columbia	0.01	0.01	0.00	17
Florida	8.16	17.89	7.19	141,704
Georgia	5.69	13.56	5.19	99,234
Hawaii	0.03	0.05	0.02	336
Idaho	0.63	1.26	0.51	10,022
Illinois	2.63	6.45	2.37	38,121
Indiana	2.69	6.15	2.28	40,770
Iowa	1.17	2.30	0.89	16,480
Kansas	1.02	2.16	0.76	13,949
Kentucky	1.26	2.70	0.98	18,605
Louisiana	0.82	1.70	0.67	12,571
Maine	0.05	0.10	0.04	811
Maryland	1.46	2.86	1.07	17,439
Massachusetts	1.36	2.69	1.03	15,530
Michigan	0.89	2.00	0.79	14,073
Minnesota	1.86	4.17	1.59	25,699
Mississippi	0.22	0.44	0.17	3,306
Missouri	1.90	4.21	1.50	27,603
Montana	0.10	0.19	0.08	1,543
Nebraska	0.30	0.60	0.24	4,498
Nevada	1.27	2.47	1.00	17,132
New Hampshire	0.10	0.21	0.08	1,223
New Jersey	3.84	8.50	3.10	47,682
New Mexico	0.56	1.04	0.42	8,183
New York	2.84	5.21	1.97	30,887
North Carolina	3.84	8.85	3.39	64,456
North Dakota	0.13	0.24	0.09	1,479
Ohio	2.92	6.91	2.56	45,464
Oklahoma	0.40	0.86	0.34	6,591
Oregon	1.12	2.34	0.88	14,366
Pennsylvania	2.74	6.36	2.34	38,119
Rhode Island	0.71	1.31	0.47	7,690
South Carolina	1.46	3.32	1.24	24,402
South Dakota	0.16	0.31	0.12	2,345
Tennessee	1.93	4.67	1.70	28,143
Texas	16.42	42.95	16.16	282,913
Utah	0.89	2.06	0.80	14,673
Vermont	0.02	0.04	0.02	325
Virginia	1.66	3.43	1.28	22,830
Washington	2.38	4.93	1.95	30,266
West Virginia	0.44	0.80	0.29	5,597
Wisconsin	1.10	2.39	0.93	16,169
Wyoming	0.01	0.02	0.01	186
State Totals	\$96.29	\$217.67	\$83.16	1,459,745
Interstate Spillovers	–	\$59.37	\$19.62	64,830
U.S. Totals	\$96.29	\$277.04	\$102.78	1,524,576

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix E-4: Total Impacts of Soft Cost, Site Development, Hard Costs, and Tenant Improvements on State Economies (Retail and Entertainment), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$0.49	\$1.06	\$0.41	7,925
Alaska	0.02	0.04	0.02	259
Arizona	0.94	2.04	0.82	14,731
Arkansas	0.39	0.79	0.31	5,810
California	2.19	4.77	1.90	29,158
Colorado	0.60	1.37	0.54	8,839
Connecticut	0.28	0.56	0.22	3,342
Delaware	0.17	0.29	0.10	1,619
District of Columbia	0.17	0.20	0.02	280
Florida	5.06	11.08	4.45	87,642
Georgia	2.40	5.72	2.19	41,831
Hawaii	0.09	0.17	0.07	1,120
Idaho	0.24	0.49	0.20	3,878
Illinois	1.00	2.45	0.90	14,468
Indiana	0.48	1.09	0.40	7,224
Iowa	0.43	0.84	0.32	6,001
Kansas	0.38	0.80	0.28	5,189
Kentucky	0.45	0.96	0.35	6,609
Louisiana	0.57	1.19	0.47	8,783
Maine	0.09	0.17	0.07	1,364
Maryland	0.45	0.88	0.33	5,383
Massachusetts	0.61	1.21	0.46	6,964
Michigan	0.56	1.24	0.49	8,724
Minnesota	0.47	1.05	0.40	6,464
Mississippi	0.15	0.30	0.12	2,277
Missouri	0.84	1.87	0.66	12,209
Montana	0.13	0.25	0.11	2,038
Nebraska	0.20	0.39	0.15	2,901
Nevada	0.30	0.59	0.24	4,051
New Hampshire	0.10	0.20	0.08	1,174
New Jersey	0.52	1.15	0.42	6,450
New Mexico	0.24	0.44	0.18	3,478
New York	2.62	4.81	1.82	28,492
North Carolina	0.81	1.85	0.71	13,487
North Dakota	0.09	0.16	0.06	1,013
Ohio	1.03	2.44	0.90	16,054
Oklahoma	0.72	1.54	0.61	11,820
Oregon	0.22	0.47	0.18	2,876
Pennsylvania	0.99	2.30	0.85	13,774
Rhode Island	0.06	0.12	0.04	692
South Carolina	0.43	0.97	0.36	7,114
South Dakota	0.13	0.24	0.10	1,811
Tennessee	1.09	2.64	0.96	15,935
Texas	6.13	16.03	6.03	105,437
Utah	0.40	0.94	0.36	6,699
Vermont	0.03	0.05	0.02	413
Virginia	0.65	1.35	0.50	8,935
Washington	0.68	1.41	0.56	8,631
West Virginia	0.15	0.27	0.10	1,885
Wisconsin	0.41	0.89	0.35	5,992
Wyoming	0.04	0.08	0.03	589
State Totals	\$37.70	\$84.21	\$32.20	569,833
Interstate Spillovers	–	\$24.20	\$8.12	27,343
U.S. Totals	\$37.70	\$108.42	\$40.33	597,176

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix E-5: Total Impacts of Soft Cost, Site Development, Hard Costs, and Tenant Improvements on State Economies (in Four Categories), 2022

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	\$3.17	\$6.94	\$2.67	51,875
Alaska	0.27	0.48	0.21	3,204
Arizona	41.88	91.37	36.61	661,052
Arkansas	5.15	10.51	4.06	77,136
California	16.78	36.45	14.55	223,082
Colorado	5.77	13.26	5.26	85,818
Connecticut	1.06	2.09	0.82	12,608
Delaware	1.51	2.64	0.90	14,661
District of Columbia	0.91	1.09	0.11	1,513
Florida	18.04	39.52	15.89	312,963
Georgia	14.20	33.85	12.94	247,612
Hawaii	0.24	0.47	0.19	3,104
Idaho	3.27	6.54	2.63	51,818
Illinois	7.44	18.25	6.72	107,910
Indiana	4.92	11.26	4.17	74,642
Iowa	3.76	7.41	2.86	53,032
Kansas	2.48	5.23	1.85	33,812
Kentucky	9.76	21.03	7.63	144,898
Louisiana	7.74	16.11	6.33	118,965
Maine	0.34	0.68	0.28	5,352
Maryland	3.49	6.81	2.54	41,565
Massachusetts	5.25	10.37	3.97	59,914
Michigan	7.13	15.97	6.29	112,450
Minnesota	3.63	8.14	3.11	50,187
Mississippi	0.77	1.57	0.60	11,787
Missouri	4.06	9.01	3.20	59,099
Montana	0.77	1.47	0.61	11,861
Nebraska	0.83	1.65	0.65	12,251
Nevada	3.24	6.28	2.53	43,493
New Hampshire	0.28	0.57	0.21	3,314
New Jersey	5.69	12.59	4.60	70,684
New Mexico	4.11	7.56	3.10	59,708
New York	14.79	27.11	10.24	160,772
North Carolina	9.20	21.17	8.12	154,246
North Dakota	1.23	2.26	0.82	14,181
Ohio	27.18	64.41	23.88	423,844
Oklahoma	2.92	6.24	2.47	47,917
Oregon	3.78	7.90	2.97	48,474
Pennsylvania	5.34	12.39	4.57	74,276
Rhode Island	0.82	1.52	0.54	8,918
South Carolina	2.66	6.05	2.26	44,476
South Dakota	0.71	1.34	0.54	10,194
Tennessee	11.41	27.58	10.03	166,338
Texas	70.32	183.97	69.22	1,212,402
Utah	1.91	4.45	1.73	31,676
Vermont	0.34	0.62	0.25	4,729
Virginia	10.00	20.60	7.67	136,977
Washington	7.17	14.88	5.88	91,310
West Virginia	0.92	1.66	0.61	11,697
Wisconsin	2.99	6.46	2.53	43,768
Wyoming	0.90	1.57	0.62	11,901
State Totals	\$362.56	\$819.37	\$313.05	5,519,470
Interstate Spillovers	–	\$223.93	\$73.73	204,564
U.S. Totals	\$362.56	\$1,043.30	\$386.78	5,724,034

Sources: Dodge Construction Network, BEA, IMPLAN and NAIOP.

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

Appendix F: Operating Impacts by State

Appendix F-1: Impacts of Operations on State Economies (**Office**), 2022

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	\$14,858	\$27,899	\$9,414	582
Alaska	1,836	2,943	1,032	55
Arizona	18,585	36,413	12,621	672
Arkansas	4,411	7,857	2,646	154
California	156,714	313,663	107,365	5,410
Colorado	56,322	116,113	40,000	2,137
Connecticut	2,801	5,077	1,642	78
Delaware	5,825	9,609	2,717	135
District of Columbia	8,536	10,566	1,091	42
Florida	90,367	178,059	61,811	3,853
Georgia	52,929	113,703	37,818	2,420
Hawaii	3,377	6,023	2,094	103
Idaho	36,521	65,534	22,691	1,354
Illinois	37,344	82,303	26,645	1,456
Indiana	5,805	11,642	3,787	212
Iowa	26,026	44,887	14,842	823
Kansas	18,689	34,747	10,438	555
Kentucky	11,819	22,551	7,005	395
Louisiana	16,242	30,140	10,232	615
Maine	2,154	3,805	1,315	70
Maryland	34,894	63,353	20,183	1,006
Massachusetts	56,483	103,826	33,974	1,591
Michigan	5,921	11,851	4,031	222
Minnesota	18,480	36,483	12,265	648
Mississippi	1,888	3,337	1,100	65
Missouri	6,764	13,465	4,175	247
Montana	6,799	11,404	4,023	228
Nebraska	7,070	12,522	4,193	220
Nevada	14,369	25,107	8,560	456
New Hampshire	1,321	2,335	727	34
New Jersey	10,053	20,353	6,331	321
New Mexico	20,481	34,148	11,832	665
New York	71,622	124,049	38,891	1,808
North Carolina	36,500	75,436	25,079	1,564
North Dakota	5,709	9,279	2,964	157
Ohio	18,674	39,096	12,741	752
Oklahoma	21,517	40,695	13,954	855
Oregon	20,619	38,779	12,858	641
Pennsylvania	19,293	38,857	12,569	653
Rhode Island	2,057	3,560	1,070	50
South Carolina	5,861	11,845	3,859	253
South Dakota	9,145	14,994	5,009	274
Tennessee	20,839	44,918	14,537	870
Texas	356,876	804,864	268,835	17,580
Utah	13,361	27,513	9,341	561
Vermont	795	1,318	439	24
Virginia	94,155	177,247	56,098	2,814
Washington	72,695	134,747	45,558	2,204
West Virginia	1,921	3,124	984	49
Wisconsin	28,372	54,253	18,201	990
Wyoming	–	–	–	–
State Totals	\$1,555,691	\$3,106,290	\$1,031,585	58,924
Interstate Spillovers	–	\$1,088,367	\$459,066	3,746
U.S. Totals	\$1,555,691	\$4,194,657	\$1,490,652	62,671

Sources: Dodge Construction Network, NCREIF, BEA, IMPLAN and NAIOP.

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

Appendix F-2: Impacts of Operations on State Economies (Industrial), 2022

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	\$4,006	\$7,522	\$2,538	157
Alaska	-	-	-	-
Arizona	16,212	31,763	11,009	586
Arkansas	3,957	7,048	2,373	138
California	5,248	10,505	3,596	181
Colorado	180	372	128	7
Connecticut	566	1,027	332	16
Delaware	1,450	2,392	676	34
District of Columbia	11	13	1	0
Florida	9,867	19,443	6,749	421
Georgia	6,041	12,978	4,316	276
Hawaii	38	67	23	1
Idaho	2,975	5,338	1,848	110
Illinois	5,554	12,241	3,963	217
Indiana	4,675	9,376	3,050	171
Iowa	1,983	3,420	1,131	63
Kansas	989	1,840	553	29
Kentucky	12,779	24,384	7,574	428
Louisiana	1,710	3,173	1,077	65
Maine	377	666	230	12
Maryland	2,399	4,357	1,388	69
Massachusetts	1,878	3,451	1,129	53
Michigan	11,297	22,611	7,692	424
Minnesota	5,980	11,806	3,969	210
Mississippi	749	1,323	436	26
Missouri	2,371	4,720	1,463	86
Montana	26	43	15	1
Nebraska	282	500	167	9
Nevada	578	1,011	345	18
New Hampshire	32	57	18	1
New Jersey	2,398	4,854	1,510	77
New Mexico	1,595	2,660	922	52
New York	9,581	16,594	5,202	242
North Carolina	4,925	10,178	3,384	211
North Dakota	378	614	196	10
Ohio	11,973	25,066	8,169	482
Oklahoma	7,048	13,330	4,571	280
Oregon	370	695	231	12
Pennsylvania	1,790	3,606	1,166	61
Rhode Island	40	69	21	1
South Carolina	1,510	3,052	994	65
South Dakota	207	340	113	6
Tennessee	13,968	30,108	9,744	583
Texas	35,453	79,956	26,706	1,746
Utah	1,308	2,693	914	55
Vermont	1,136	1,883	627	35
Virginia	5,735	10,795	3,417	171
Washington	2,124	3,937	1,331	64
West Virginia	948	1,542	486	24
Wisconsin	3,543	6,776	2,273	124
Wyoming	-	-	-	-
State Totals	\$210,240	\$422,193	\$139,769	8,109
Interstate Spillovers	-	\$144,683	\$61,681	409
U.S. Totals	\$210,240	\$566,875	\$201,450	8,518

Sources: Dodge Construction Network, NCREIF, BEA, IMPLAN and NAIOP.

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

Appendix F-3: Impacts of Operations on State Economies (Warehouse), 2022

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	\$5,242	\$9,842	\$3,321	205
Alaska	1,234	1,978	694	37
Arizona	71,408	139,909	48,493	2,582
Arkansas	8,369	14,906	5,020	293
California	86,774	173,678	59,449	2,996
Colorado	54,285	111,914	38,553	2,060
Connecticut	6,061	10,987	3,554	168
Delaware	6,504	10,729	3,033	151
District of Columbia	67	83	9	0
Florida	154,639	304,701	105,773	6,593
Georgia	52,438	112,647	37,467	2,397
Hawaii	666	1,187	413	20
Idaho	12,590	22,592	7,822	467
Illinois	34,339	75,679	24,501	1,339
Indiana	27,493	55,134	17,934	1,005
Iowa	13,052	22,511	7,444	413
Kansas	15,492	28,803	8,652	460
Kentucky	9,813	18,724	5,816	328
Louisiana	9,307	17,271	5,864	353
Maine	769	1,358	469	25
Maryland	17,895	32,490	10,350	516
Massachusetts	22,745	41,809	13,681	641
Michigan	7,475	14,961	5,089	281
Minnesota	32,239	63,647	21,397	1,130
Mississippi	1,176	2,079	686	41
Missouri	10,914	21,727	6,736	398
Montana	2,598	4,357	1,537	87
Nebraska	2,984	5,285	1,770	93
Nevada	13,511	23,607	8,048	429
New Hampshire	2,069	3,657	1,138	53
New Jersey	48,805	98,810	30,737	1,560
New Mexico	6,179	10,301	3,569	200
New York	27,153	47,029	14,744	686
North Carolina	29,347	60,651	20,164	1,257
North Dakota	1,492	2,425	775	41
Ohio	23,759	49,742	16,211	956
Oklahoma	6,159	11,648	3,994	245
Oregon	10,953	20,601	6,830	341
Pennsylvania	30,865	62,165	20,109	1,044
Rhode Island	13,899	24,060	7,233	340
South Carolina	15,026	30,369	9,893	648
South Dakota	1,894	3,105	1,037	57
Tennessee	13,566	29,241	9,464	566
Texas	311,723	703,028	234,821	15,355
Utah	11,382	23,438	7,957	478
Vermont	274	454	151	8
Virginia	22,239	41,865	13,250	665
Washington	37,223	68,997	23,328	1,129
West Virginia	3,390	5,513	1,737	86
Wisconsin	12,022	22,988	7,712	419
Wyoming	121	190	64	3
State Totals	\$1,311,615	\$2,664,875	\$888,492	51,645
Interstate Spillovers	-	\$871,672	\$368,287	2,120
U.S. Totals	\$1,311,615	\$3,536,547	\$1,256,780	53,765

Sources: Dodge Construction Network, NCREIF, BEA, IMPLAN and NAIOP.

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

Appendix F-4: Impacts of Operations on State Economies (Retail and Entertainment), 2022

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	\$7,231	\$13,578	\$4,582	283
Alaska	53	85	30	2
Arizona	13,359	26,175	9,072	483
Arkansas	2,125	3,786	1,275	74
California	54,478	109,038	37,323	1,881
Colorado	11,984	24,707	8,511	455
Connecticut	4,878	8,842	2,860	135
Delaware	4,800	7,919	2,239	111
District of Columbia	3,927	4,861	502	19
Florida	100,511	198,047	68,749	4,285
Georgia	37,189	79,890	26,572	1,700
Hawaii	2,864	5,108	1,776	88
Idaho	4,515	8,102	2,805	167
Illinois	14,438	31,820	10,302	563
Indiana	4,730	9,486	3,086	173
Iowa	9,062	15,629	5,168	287
Kansas	7,683	14,285	4,291	228
Kentucky	6,539	12,478	3,876	219
Louisiana	10,359	19,223	6,526	392
Maine	1,417	2,503	865	46
Maryland	8,930	16,214	5,165	257
Massachusetts	7,054	12,967	4,243	199
Michigan	12,177	24,373	8,291	457
Minnesota	8,141	16,073	5,403	285
Mississippi	3,203	5,662	1,867	110
Missouri	7,014	13,964	4,329	256
Montana	3,328	5,581	1,969	112
Nebraska	3,627	6,424	2,151	113
Nevada	6,210	10,851	3,700	197
New Hampshire	1,105	1,952	608	28
New Jersey	7,332	14,845	4,618	234
New Mexico	2,595	4,327	1,499	84
New York	56,531	97,911	30,696	1,427
North Carolina	13,901	28,729	9,551	596
North Dakota	2,270	3,690	1,179	62
Ohio	21,381	44,764	14,588	861
Oklahoma	12,913	24,422	8,374	513
Oregon	2,977	5,599	1,857	93
Pennsylvania	12,892	25,966	8,399	436
Rhode Island	1,961	3,395	1,021	48
South Carolina	7,421	14,999	4,886	320
South Dakota	2,098	3,441	1,149	63
Tennessee	11,584	24,969	8,081	484
Texas	148,549	335,023	111,902	7,317
Utah	6,568	13,524	4,591	276
Vermont	390	647	215	12
Virginia	9,678	18,219	5,766	289
Washington	6,250	11,585	3,917	189
West Virginia	2,805	4,561	1,437	71
Wisconsin	7,114	13,604	4,564	248
Wyoming	708	1,112	374	20
State Totals	\$700,853	\$1,404,953	\$466,800	27,252
Interstate Spillovers	-	\$484,778	\$204,752	1,094
U.S. Totals	\$700,853	\$1,889,731	\$671,552	28,346

Sources: Dodge Construction Network, NCREIF, BEA, IMPLAN and NAIOP.

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

Appendix F-5: Impacts of Operations on State Economies (in Four Categories), 2022

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	\$31,337	\$58,841	\$19,855	1,228
Alaska	3,122	5,006	1,756	93
Arizona	119,563	234,260	81,195	4,323
Arkansas	18,862	33,597	11,314	660
California	303,215	606,884	207,732	10,468
Colorado	122,772	253,106	87,192	4,659
Connecticut	14,306	25,933	8,389	396
Delaware	18,579	30,649	8,665	431
District of Columbia	12,540	15,523	1,603	62
Florida	355,384	700,249	243,083	15,151
Georgia	148,598	319,217	106,173	6,794
Hawaii	6,944	12,385	4,307	213
Idaho	56,602	101,566	35,167	2,099
Illinois	91,676	202,044	65,410	3,575
Indiana	42,704	85,639	27,856	1,561
Iowa	50,123	86,447	28,585	1,585
Kansas	42,854	79,674	23,934	1,273
Kentucky	40,950	78,137	24,271	1,370
Louisiana	37,618	69,807	23,699	1,425
Maine	4,716	8,331	2,880	154
Maryland	64,119	116,414	37,086	1,848
Massachusetts	88,159	162,054	53,028	2,483
Michigan	36,868	73,796	25,104	1,384
Minnesota	64,841	128,009	43,035	2,273
Mississippi	7,015	12,401	4,089	242
Missouri	27,062	53,875	16,703	987
Montana	12,750	21,386	7,544	428
Nebraska	13,963	24,731	8,282	435
Nevada	34,668	60,576	20,652	1,100
New Hampshire	4,527	8,001	2,491	116
New Jersey	68,587	138,862	43,196	2,192
New Mexico	30,850	51,436	17,822	1,001
New York	164,887	285,584	89,533	4,163
North Carolina	84,673	174,994	58,179	3,627
North Dakota	9,849	16,009	5,114	270
Ohio	75,787	158,667	51,709	3,051
Oklahoma	47,636	90,094	30,892	1,893
Oregon	34,919	65,675	21,775	1,086
Pennsylvania	64,840	130,594	42,243	2,194
Rhode Island	17,956	31,084	9,344	440
South Carolina	29,818	60,265	19,632	1,285
South Dakota	13,344	21,879	7,309	400
Tennessee	59,956	129,236	41,826	2,503
Texas	852,601	1,922,871	642,264	41,999
Utah	32,618	67,167	22,803	1,369
Vermont	2,595	4,301	1,432	79
Virginia	131,807	248,126	78,530	3,939
Washington	118,292	219,266	74,133	3,587
West Virginia	9,065	14,740	4,643	231
Wisconsin	51,051	97,620	32,749	1,781
Wyoming	829	1,302	437	24
State Totals	\$3,778,398	\$7,598,311	\$2,526,647	145,930
Interstate Spillovers	-	\$2,589,499	\$1,093,786	7,369
U.S. Totals	\$3,778,398	\$10,187,811	\$3,620,433	153,300

Sources: Dodge Construction Network, NCREIF, BEA, IMPLAN and NAIOP.

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

Appendix G: National and State Multipliers

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

State	MULTIPLIERS		
	Output	Earnings	Jobs
Alabama	2.22	0.86	16.93
Alaska	1.76	0.76	11.99
Arizona	2.19	0.88	16.06
Arkansas	2.08	0.80	15.41
California	2.17	0.87	13.52
Colorado	2.30	0.92	15.16
Connecticut	1.98	0.78	12.13
Delaware	1.76	0.61	9.97
District of Columbia	1.15	0.10	1.52
Florida	2.20	0.89	17.69
Georgia	2.40	0.92	17.81
Hawaii	1.92	0.81	13.04
Idaho	2.02	0.82	16.23
Illinois	2.47	0.91	14.82
Indiana	2.32	0.86	15.44
Iowa	2.00	0.78	14.53
Kansas	2.13	0.76	14.08
Kentucky	2.19	0.80	15.21
Louisiana	2.10	0.83	15.76
Maine	1.99	0.83	15.99
Maryland	1.94	0.73	12.14
Massachusetts	1.97	0.76	11.58
Michigan	2.26	0.89	16.23
Minnesota	2.26	0.87	14.06
Mississippi	2.06	0.79	15.69
Missouri	2.25	0.81	15.08
Montana	1.93	0.81	15.89
Nebraska	2.00	0.79	15.26
Nevada	1.95	0.79	13.65
New Hampshire	2.03	0.76	11.97
New Jersey	2.22	0.82	12.66
New Mexico	1.85	0.76	14.87
New York	1.83	0.70	11.13
North Carolina	2.32	0.89	17.13
North Dakota	1.85	0.68	11.84
Ohio	2.40	0.89	15.87
Oklahoma	2.17	0.86	16.83
Oregon	2.10	0.79	12.92
Pennsylvania	2.35	0.87	14.20
Rhode Island	1.86	0.67	10.95
South Carolina	2.30	0.86	17.12
South Dakota	1.92	0.78	14.84
Tennessee	2.44	0.89	14.78
Texas	2.64	1.00	17.65
Utah	2.35	0.91	16.77
Vermont	1.85	0.75	14.46
Virginia	2.06	0.78	14.14
Washington	2.09	0.83	13.03
West Virginia	1.81	0.67	12.94
Wisconsin	2.19	0.86	14.92
Wyoming	1.76	0.70	13.54
U.S. Totals	2.89	1.04	15.74

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	1.96	0.75	12.74
Alaska	1.70	0.67	9.67
Arizona	2.14	0.82	13.95
Arkansas	1.81	0.70	12.17
California	2.16	0.83	11.98
Colorado	2.26	0.86	13.14
Connecticut	1.93	0.71	10.37
Delaware	1.70	0.51	8.00
District of Columbia	1.39	0.18	2.42
Florida	2.15	0.83	15.33
Georgia	2.28	0.85	15.22
Hawaii	1.92	0.74	11.49
Idaho	1.90	0.74	13.68
Illinois	2.34	0.85	12.63
Indiana	2.06	0.76	13.45
Iowa	1.78	0.68	11.49
Kansas	1.95	0.66	10.88
Kentucky	1.95	0.70	12.43
Louisiana	1.96	0.76	12.87
Maine	1.86	0.73	12.86
Maryland	1.99	0.71	10.49
Massachusetts	2.02	0.74	10.47
Michigan	2.10	0.80	12.75
Minnesota	2.12	0.79	12.36
Mississippi	1.80	0.68	12.45
Missouri	2.05	0.68	11.36
Montana	1.77	0.70	12.67
Nebraska	1.89	0.72	12.10
Nevada	1.88	0.72	12.14
New Hampshire	1.94	0.71	10.50
New Jersey	2.19	0.76	11.02
New Mexico	1.78	0.70	12.44
New York	1.86	0.63	9.31
North Carolina	2.20	0.82	14.62
North Dakota	1.73	0.63	9.69
Ohio	2.15	0.79	13.74
Oklahoma	1.96	0.77	14.02
Oregon	2.01	0.75	12.15
Pennsylvania	2.12	0.77	12.14
Rhode Island	1.82	0.61	10.20
South Carolina	2.13	0.78	14.23
South Dakota	1.74	0.68	11.85
Tennessee	2.27	0.82	13.32
Texas	2.48	0.91	14.69
Utah	2.22	0.84	15.43
Vermont	1.75	0.68	11.77
Virginia	2.05	0.72	11.12
Washington	1.99	0.76	10.96
West Virginia	1.69	0.62	10.87
Wisconsin	1.97	0.75	12.90
Wyoming	1.66	0.64	11.34
U.S. Totals	2.78	1.24	16.38

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	1.88	0.63	20.86
Alaska	1.60	0.56	18.59
Arizona	1.96	0.68	18.45
Arkansas	1.78	0.60	19.63
California	2.00	0.69	17.25
Colorado	2.06	0.71	18.41
Connecticut	1.81	0.59	15.28
Delaware	1.65	0.47	14.05
District of Columbia	1.24	0.13	3.99
Florida	1.97	0.68	21.64
Georgia	2.15	0.71	21.28
Hawaii	1.78	0.62	17.18
Idaho	1.79	0.62	20.67
Illinois	2.20	0.71	17.70
Indiana	2.01	0.65	18.23
Iowa	1.72	0.57	18.34
Kansas	1.86	0.56	15.98
Kentucky	1.91	0.59	17.53
Louisiana	1.86	0.63	20.41
Maine	1.77	0.61	18.50
Maryland	1.82	0.58	15.87
Massachusetts	1.84	0.60	15.32
Michigan	2.00	0.68	18.76
Minnesota	1.97	0.66	17.76
Mississippi	1.77	0.58	19.51
Missouri	1.99	0.62	18.32
Montana	1.68	0.59	20.00
Nebraska	1.77	0.59	17.60
Nevada	1.75	0.60	18.17
New Hampshire	1.77	0.55	14.49
New Jersey	2.02	0.63	15.78
New Mexico	1.67	0.58	19.46
New York	1.73	0.54	14.58
North Carolina	2.07	0.69	20.73
North Dakota	1.63	0.52	16.87
Ohio	2.09	0.68	19.23
Oklahoma	1.89	0.65	21.01
Oregon	1.88	0.62	16.54
Pennsylvania	2.01	0.65	16.80
Rhode Island	1.73	0.52	14.15
South Carolina	2.02	0.66	21.33
South Dakota	1.64	0.55	18.28
Tennessee	2.16	0.70	19.37
Texas	2.26	0.75	21.84
Utah	2.06	0.70	20.38
Vermont	1.66	0.55	18.40
Virginia	1.88	0.60	15.88
Washington	1.85	0.63	16.36
West Virginia	1.63	0.51	15.66
Wisconsin	1.91	0.64	18.24
Wyoming	1.57	0.53	18.17
U.S. Totals	2.70	0.96	20.18

Sources: BEA and IMPLAN.

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

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