2021
U.S. EDITION

Economic Impacts of Commercial Real Estate

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Produced in conjunction with

DODGE DATA & ANALYTICS

NAIOP RESEARCH FOUNDATION

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 Data & Analytics

Dodge Data & Analytics is the leading provider of data, analytics, news and intelligence serving the North American construction industry. The company's information enables building product manufacturers, general contractors and subcontractors, architects and engineers to size markets, prioritize prospects, target and build relationships, strengthen market positions and optimize sales strategies. The company's brands include Dodge, Dodge MarketShare™, Dodge BuildShare®, Dodge SpecShare®, Sweets, Architectural Record and Engineering News-Record. For more information, visit construction.com.

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 and Dodge Data & Analytics. It applies several estimating and impact-assessment methodologies to take snapshots of the commercial real estate development industry from various perspectives.

Building and Nonbuilding Construction. The broadest measure taken calculates 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, based on U.S. Census data on the value of construction put in place. The most recent multipliers from the U.S. Department of Commerce's Bureau of Economic Analysis (BEA)[1] are applied to reflect the effects of construction expenditures on U.S. gross domestic product (GDP), the associated generation of new personal earnings and the jobs supported by these direct expenditures (Table 1).

TABLE 1 **Economic Contributions from Building and Nonbuilding Construction, 2011-2020**

Year	Direct Expenditures (In Billions of Dollars)	Total Economic Contribution[1] to GDP (In Trillions of Dollars, Includes Multiplier Effect)	Percent Contribution to GDP	Personal Earnings[2] (In Billions of Dollars, Includes Multiplier Effect)	Jobs Supported[3] (In Millions, Includes Multiplier Effect)
2020	$1,438.5	$4.338	21.0%	$1,458.4	28.5
2019[4]	1,386.8	4.187	19.5	1,407.8	28.1
2018[4]	1,277.4	3.857	18.6	1,296.8	26.0
2017	1,247.5	3.586	18.2	1,136.0	24.0
2016	1,160.0	3.376	18.3	1,068.2	23.8
2015	1,104.2	3.214	17.9	1,016.9	22.7
2014	993.4	2.891	16.6	914.8	20.4
2013	910.8	2.80	16.7	887.0	21.3
2012	857.0	2.65	16.3	836.9	20.1
2011	787.4	2.27	15.0	677.0	17.2

Sources: Value of Construction Put in Place, United States Census Bureau, November 2020; 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.
[2] The additional earnings (wages and salaries) generated within the U.S. 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] Revised third-quarter 2018 and 2019 Value of Construction Put in Place, U.S. Census.

[1] RIMS II, Regional Product Division, Bureau of Economic Analysis, https://apps.bea.gov/regional/rims/rimsii/home.aspx.

Development of New Commercial Real Estate Buildings. Zeroing in on commercial real estate — the core of this study — the analysis begins with Dodge Data & Analytics data relating to square footage and construction values for office, industrial, warehouse and retail projects. 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, insurance and taxes are not included in this analysis within the soft construction costs category, because they have little immediate economic impact.

This study also examines the contribution of building operations that are reported as a stand-alone phase that follows development. Additionally, it shows the impacts for the estimated 565.0 million square feet of commercial buildings that commenced construction in 2020, according to Dodge Data & Analytics, and for the nationwide 49.9 billion-square-foot inventory of commercial space existing at the end of the third quarter of 2020, according to Newmark.

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 (Table 2).

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.

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 49.9 billion square feet at the end of the third quarter of 2020 — direct expenditures for building operations totaled an estimated $178.2 billion and contributed $477.1 billion to GDP. These direct expenditures also generated $156.0 billion in personal earnings (wages and salaries) and supported 4.46 million jobs (Table 3).

Combining New and Existing Commercial Real Estate Buildings. Combining the economic contributions of new development with the economic contributions from operations of existing buildings in 2020 (data from Tables 2 and 3) resulted in direct expenditures of $357.8 billion. Collectively, these expenditures:

- Contributed $1.01 trillion to U.S. GDP;
- Generated $338.1 billion in personal earnings; and
- Supported a total of 8.0 million jobs.

TABLE 2 **Economic Contributions to the U.S. Economy from Development of Commercial Real Estate Buildings, 2015-2020** (In Billions of Dollars)

		Development Phases					Operations Phase
		Pre-Construction	Construction			Totals	Post-Construction
		Soft Construction (Soft Costs)	Site Development	Hard (Hard Costs)	Tenant Improvements		Building Operations
		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)	**2020**	$27.99	$24.76	$93.83	$31.09	$177.68	$1.88
	2019	34.05	29.52	114.31	39.27	217.15	2.02
	2018	31.71	27.88	109.01	38.27	207.77	1.76
	2017	28.58	24.73	98.55	35.23	187.09	1.66
	2016	25.06	21.42	82.96	30.60	160.04	1.42
	2015	23.84	20.20	81.17	29.80	155.01	1.39
	In 2020, direct expenditures of $177.7 billion contributed $531.2 billion to U.S. GDP.						
Total Economic Contribution[1] to GDP (In Billions of Dollars, Includes Multiplier Effect)	**2020**	$79.85	$74.66	$ 282.93	$93.76	$531.20	$5.04
	2019	97.27	91.92	355.98	122.28	667.45	5.41
	2018	94.66	80.15	315.96	110.03	600.80	4.47
	2017	85.33	71.09	283.31	101.28	541.01	4.22
	2016	72.19	62.34	241.40	89.06	464.99	3.74
	2015	68.68	58.79	236.20	86.71	450.38	3.67
	In 2020, direct expenditures of $177.7 billion generated $180.5 billion in personal earnings in the U.S.						
Personal Earnings[2] (In Billions of Dollars, Includes Multiplier Effect)	**2020**	$28.72	$25.10	$95.12	$31.52	$180.47	$1.65
	2019	34.98	33.52	129.81	44.59	242.91	1.77
	2018	32.39	25.39	100.08	34.85	192.71	1.39
	2017	29.20	22.52	89.74	32.08	173.54	1.32
	2016	26.18	19.73	76.39	28.18	150.49	1.07
	2015	24.91	18.60	74.75	27.44	145.70	1.05
	In 2020, direct expenditures of $177.7 billion supported 3.5 million jobs in the U.S. economy.						
Jobs Supported[3] (Includes Multiplier Effect)	**2020**	515,998	491,196	1,861,362	616,826	3,485,383	47,129
	2019	644,661	657,281	2,545,622	874,410	4,721,974	51,870
	2018	635,078	535,778	2,111,982	735,486	4,018,323	44,795
	2017	572,497	475,171	1,893,727	677,023	3,618,418	42,330
	2016	538,680	439,801	1,703,149	628,352	3,309,982	27,833
	2015	512,509	414,765	1,666,470	611,755	3,205,499	27,299

Sources: NAIOP, Dodge Data & Analytics; 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.

[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.

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.

The combined economic contributions of new development and existing building operations in 2020 supported a total of 8 million jobs.

TABLE 3 **Economic Contribution to the U.S. Economy from Operations of Existing Buildings, 2013-2020** (In Billions of Current Year Dollars)

Year	Total Square Feet (In Billions)	Direct Expenditures for Building Operations	Total Economic Contribution[1] to GDP	Personal Earnings[2]	Jobs Supported[3] (In Millions)
2020	49.930	$178.2	$477.1	$156.0	4.458
2019	49.550	173.0	464.0	151.7	4.448
2018	49.190	168.2	427.2	133.2	4.285
2017	46.380	155.2	394.1	112.9	3.952
2016	45.820	150.1	396.0	113.9	2.944
2015	45.070	145.6	384.1	110.1	2.856
2014	44.010	138.1	381.3	120.1	3.023
2013	43.934	134.3	370.9	116.8	2.941

Sources: BOMA; Newmark, author's calculations.

[1] The total value of goods and services generated directly and indirectly as a result of building operating expenditures within the U.S.

[2] The earnings generated within the U.S. from direct expenditures for building operations.

[3] The jobs supported by the spending and re-spending of direct outlays associated with building operations.

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

Economic Contributions

Building and Nonbuilding Expenditures

The longest economic expansion in U.S. history — 128 months — unexpectedly ended in February 2020 with the onset of the COVID-19 pandemic. At the beginning of the year, the U.S. economy (expressed as GDP) was projected to grow 2.1%.[2] This multiyear economic expansion peaked at 2.8% GDP growth in 2018, but was expected to last at least another five years with no recession in sight. The rapid contraction of the economy beginning in March resulted in second-quarter GDP declining 9.0% from its first-quarter value, a decline of 31.7% on an annualized basis. This decline was accompanied by a sharp decrease in employment — 22.8 million jobs were lost in March and April, and unemployment rose from its lowest level in 50 years in February (3.5%) to 14.7% in April, the highest rate since the Great Depression. At the end of 2020, only about half of the jobs lost during the second quarter had been replaced as the economy restarted and began its recovery (in December, the economy lost 140,000 jobs and unemployment remained at 6.7%).

While disrupted by the pandemic, construction was not as hard hit as most of the economy's other sectors. Still, different segments of the construction sector experienced different short-term disruptions during the second quarter and through the rest of the year. Altogether, the overall value of construction put-in-place, as reported by the U.S. Census, totaled $1.44 trillion, an increase of $51.7 billion or 3.7% compared to 2019 (October to October). This increase was driven by a 14.6% increase in the value of residential construction and an increase in the value of public construction (this category includes some residential construction, which is a small number, and nonresidential construction, primarily infrastructure) that totaled $335.4 billion, up $10.5 billion or 3.2% from 2019. These value gains in residential and public construction were partially offset by a decrease of 8.2% in the total value of private sector nonresidential construction. That total construction spending remained positive in 2020, despite the economy experiencing its most serious contraction since the Great Depression, underscores the construction industry's resilience and its critical importance to the vitality of the U.S. economy.

Both short-term and long-term variables explain the $26.4 billion (4.9%) reduction in nonresidential building construction in 2020, as reported in Table 4. The unfavorable but short-term market conditions that impacted commercial construction beginning in March were all pandemic-related, and most have subsided with the economy's reacceleration. However, some of these altered conditions have persisted through the early stages of recovery; some may permanently affect how commercial buildings are used, and some may change demand patterns for particular categories of commercial space.

With the coronavirus vaccine becoming generally available during 2021 and the economy regaining its footing in most sectors (the full recovery of the hospitality sector may lag other sectors), GDP growth in 2021 is currently projected at 4.0%, with unemployment falling to 5.2%.[3] Full employment is projected to be achieved by mid-2022.[4]

As was demonstrated in the aftermath of the Great Recession in 2009 and 2010, a national economic recovery is dependent on the full recovery of the construction sector. As commercial building construction turned positive in April 2011, U.S. GDP accelerated along with job growth and decreases in unemployment. Thereafter, increases in construction expenditures led GDP growth in each subsequent year of the expansion through 2019.

[2] IHS Markit, January 2020.
[3] IHS Markit, January 2021.
[4] Ibid.

TABLE 4 **Nonresidential Construction Spending, 2019 and 2020**
(In Billions of Current Year Dollars)

Type of Structure	2019[1]	2020[2]	Percent Change 2019-2020[3]
Transportation	$56.5	$56.8	0.6%
Health Care	46.9	47.8	1.9
Retail	82.4	82.0	- 0.5
Manufacturing[4]	79.0	69.7	- 11.8
Amusement/Recreation	28.9	26.2	- 9.4
Education	108.3	103.5	- 4.5
Public Safety	11.6	16.2	39.5
Office	86.5	80.0	- 7.5
Religious	3.5	3.0	- 13.3
Lodgings	34.0	26.1	- 23.4
Total[5]	**$537.8**	**$511.4**	**- 4.9%**

Source: Value of Construction Put in Place, U.S. Census Bureau, November 2020.

[1] Change in construction values between October 2018 and 2019.
[2] Change in construction values between October 2019 and 2020.
[3] Percentage change between October 2019 and 2020 calculated based on unrounded totals.
[4] Includes warehouse/flex space.
[5] Totals include some miscellaneous state and local government buildings but exclude spending for nonbuilding construction on items relating to communications, power, highways, sewer and water, and reflect the sum of unrounded structure type totals.

Construction Activity Was A Counter-Cyclical Force in a Declining Economy in 2020. During the economic expansion (mid-2009 to February 2020), the growth of total construction spending exceeded the GDP growth rate each year beginning in 2011, gaining 74.3% between October 2011 and October 2019. For the year ending in October 2020, total construction spending was up 3.7% while GDP in 2020 is estimated to have fallen 3.6%. This performance confirms that construction spending was an important source of growth during the severe economic contraction in the second quarter of 2020, and it continued to bolster the economy in the early stages of the recovery during the year's second half.

Residential construction spending gained 14.6% for the 12-month period ending in October 2020 after growing 10.2% during the same period in 2019. For 2020, projections show that residential starts will total 1.383 million units[5], up 6.8% from 2019. That would mark the sixth consecutive year that residential starts exceeded 1 million units. Residential starts are projected to increase 8.0% in 2021 to 1.493 million units, then slow in 2022 to 1.298 million units, and then hold near 1.2 million annually during the 2023-2025 period. This will happen as mortgage interest rates tighten slowly beginning in 2022 and the economy settles into a more predictable and moderate growth pattern (averaging 2.8% annual real growth) through 2025.[6]

Despite the economy's sharp and rapid second-quarter contraction in March, residential starts grew at a faster rate in 2020 than had been predicted at the beginning of the year (3.1% vs. 5.2%). The key factors behind this growth were historically low home mortgage rates; increased demand for owner-occupied units and larger rental units (due to increased needs for home-based space); and demographic trends, particularly millennials who transitioned from rental to ownership housing. Additionally, the construction sector in most states was considered an essential business during the pandemic. Employing outdoor workers allowed these companies to avoid the disruptions that many businesses experienced during mandated shutdowns early in the pandemic and again during the second wave of infections in the fourth quarter of 2020.

[5] IHS Markit, November 2020.
[6] IHS Markit, January 2021.

Taken as a whole, the $4.3 trillion in GDP generated by construction spending accounted for 21.0% of all U.S. economic activity in 2020.

The value of nonresidential building construction declined 4.9% in 2020 (October 2019-October 2020) for the first time since 2011, following a 4.6% increase for the same period in 2019. This decrease in nonresidential construction value reflected a mixed performance among commercial building categories, as shown in Table 4. This is consistent with the differential impacts on those sectors of pandemic-related shutdowns and lost business. Lodging, manufacturing and amusement/recreation were among the building types experiencing the greatest decreases in construction spending in 2020.

Over the full economic expansion, nonresidential building construction spending increased 66.0% (October 2011-October 2019). This gain contributed to an overall increase of $591.1 billion in construction spending, up 74.3% over this eight-year period, with all but one of the 10 building-type categories (religious structures) experiencing growth.

Building and Nonbuilding Construction, Output Multipliers and GDP. Based on U.S. Census data, the estimated total value of building and nonbuilding construction spending put in place in the U.S. in 2020 was $1.4 trillion. This construction spending directly accounted for 7.0% of the nation's third-quarter estimated GDP of $20.7 trillion in 2020. With an output multiplier of 3.0154, each $1 of construction spending generated a total value of $3.02 to the economy, reflecting the cumulative effects of the initial construction expenditures as they cycle throughout the economy. Applying this multiplier to the total value of direct construction spending in 2020 brings the value of its overall contribution to GDP — direct, indirect and induced — to $4.3 trillion.

Contribution of Building and Nonbuilding Construction Expenditures to GDP. Taken as a whole, this $4.3 trillion accounted for 21.0% of all U.S. economic activity in 2020. Due to the severe pandemic-induced contraction during the second quarter of 2020, estimates show that GDP decreased for the year by $771.6 billion from 2019, measured in current dollar values. In contrast to this overall decline in GDP value, the total value of construction spending increased by $51.7 billion from 2019 to $1.4 trillion. This gain in construction spending during a unprecedented, rapid and deep economic contraction underscores the importance of construction spending as a driving force in the economy's recovery during the year's second half.

The Bottom Line. The total contribution to GDP of building and nonbuilding expenditures also generated new personal earnings and supported jobs across all sectors of the economy (Table 1). In 2020, the $1.4 trillion in construction spending:

- Contributed $4.3 trillion to U.S. GDP;
- Generated $1.5 trillion in new personal earnings; and
- Supported a total of 28.5 million jobs throughout the U.S. economy.

Office, Industrial, Warehouse and Retail Development Expenditures

Construction data provided by Dodge Data & Analytics for office, industrial, warehouse and retail buildings provides 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 totaled $93.8 billion, down $39.9 billion, or 29.8%, from the revised annual total for 2019.

Office construction expenditures totaled $38.9 billion in 2020, down 28.5% from 2019 after increasing 12.7% in 2019.

Industrial (manufacturing) construction spending was hard hit by the contraction in 2020, declining 29.5%. During the past five years, industrial construction spending had declined sharply in 2015 and 2016

TABLE 5 **Comparing Construction Expenditures (Hard Costs), 2019 and 2020**
(In Billions of Current-Year Dollars)

Building Type	2019*	2020	Change (2019-2020) Dollars	Change (2019-2020) Percent
Office	$54.33	$38.86	- $15.47	- 28.5%
Industrial	32.47	13.18	- 19.29	- 59.1
Warehouse	30.15	30.07	- 0.08	- 0.3
Retail/Entertainment	16.62	11.72	- 4.90	- 29.5
Total	**$133.57**	**$93.83**	**- $39.94**	**- 29.8%**

Sources: Dodge Data & Analytics; author's calculations.

*Revised year-end data.

before increasing in 2017 and 2018, and then declined 1.0% in 2019. The manufacturing sector that had been negatively impacted by uncertainty in foreign markets due to tariff issues in 2019 was severely affected by the pandemic and subsequent shutdown of the global economy. This disrupted supply chains and undermined domestic and foreign consumer demand during the last three quarters of 2020.

Warehouse construction outlays only decreased marginally in 2020, down 0.3% from 2019. In 2019, construction spending had been up sharply (up 27.4%), continuing a positive trajectory that began in 2011.

Retail construction expenditures totaled $11.7 billion in 2020, a decrease of 29.5% from 2019. This decrease marks the fifth straight year of decline; expenditures fell 2.3% in 2019; 9.5% in 2018; 0.8% in 2017; and 7.0% in 2016. The last time retail construction spending increased was in 2015.

Expenditures and Square Footage (All Structures Combined). The total amount of new construction in 2020, as measured in square feet for these four building types, decreased 13.3% from revised year-end construction data for 2019. Square footage for 2019 was revised higher from early estimates, up 9.4% over the final 2018 construction level. This 2020 decline follows an upward trend from 2014 to 2019 that averaged nearly 6% annually.

A continuing change in the mix of building types affected the square footage of new construction in 2020. Warehouses accounted for 61.7% of all new space built in 2020, up from 54.3% in 2019 and 49.2% in 2018. And, as warehouse space has increased its share, the other three building types lost share. Retail space has seen its share decrease from 13.7% of the total square footage added in 2018 to 11.7% in 2019 to 9.3% in 2020. Manufacturing buildings accounted for 14.2% of new construction space in 2018, 10.6% in 2019 and 9.2% in 2020. And, while office increased its share of space constructed in 2019 to 23.4%, up from 22.9% in 2018, its share declined to 19.9% in 2020.

Due to differences in construction costs per square foot for different building types, the patterns of construction value by building type present a somewhat different distribution, as shown in Table 6. Office construction value increased its share slightly (40.7% to 41.4%) from 2019 to 2020 while retail construction value increased only marginally (12.4% to 12.5%). In comparison, between 2019 and 2020, manufacturing construction expenditures declined as a percentage of the total from 24.3% to 14.0% while warehousing construction increased its share from 22.6% to 32.0%.

Hard Construction Expenditures (All Structures Combined), Multipliers and GDP. Applying national construction multipliers from the BEA yields the economic impact of this construction activity. The multipliers measure contribution to GDP (3.0154), personal earnings (1.0138) and employment (19.8379 jobs supported per $1 million of construction expenditure).

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

TABLE 6 **Office, Industrial/Manufacturing, Warehouse and Retail Construction, 2019 and 2020**

Building Type	Square Feet (In Millions) 2019*	Square Feet (In Millions) 2020	Construction Value[1] (Billions of Dollars) 2019* (In 2019 Dollars)	Construction Value[1] (Billions of Dollars) 2020 (In 2020 Dollars)
Office	152.2	112.2	$54.33	$38.86
Industrial	69.2	51.8	32.47	13.18
Warehouse	353.8	348.4	30.15	30.07
Retail/Entertainment	76.5	52.6	16.62	11.72
Total	**652.0**	**565.0**	**$133.57**	**$93.83**

Sources: Dodge Data & Analytics; author's calculations.

[1] Hard costs only; columns may not add up due to rounding.

*Revised year-end data.

TABLE 7 **Office, Industrial, Warehouse and Retail Construction and Operations Contribution to the Economy, 2020** (In Billions of 2020 Dollars)

	Direct Expenditures	Total Economic Contribution to GDP[1]	Personal Earnings[2]	Jobs Supported[3]
Development Phase	**$177.68**	**$531.20**	**$180.47**	**3,485,383**
Soft Construction (Soft Costs)	27.99	79.85	28.72	515,998
Site Development[4]	24.76	74.66	25.10	491,196
Hard Construction (Hard Costs)	93.83	282.93	95.12	1,861,362
Tenant Improvements[5]	31.09	93.76	31.52	616,826
Annual Operations	**$1.884**	**$5.044**	**$1.649**	**47,129**

Sources: Dodge Data & Analytics; author's calculations.

Column totals may not add up due to rounding.

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

[2] The additional earnings generated within the U.S. from direct expenditures during the construction phase and post-construction phase for building operations.

[3] The jobs supported nationwide by the spending and re-spending of direct expenditures associated with building construction or operations.

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

[5] Tenant improvements exclude furniture and equipment.

Note: See Appendices for state-level data.

spending flows that leak out of one state economy to other states (spill-over effects) are excluded. Smaller states, or states with less-well-developed economies, tend to retain smaller portions of construction-related spending benefits than larger states or those with more complex economies. In other words, a greater share of the smaller states' direct construction spending leaks out to other states.

The Bottom Line. The four phases of development tracked in this study make substantial contributions to U.S. GDP. Applying the latest BEA multipliers shows that direct construction expenditures — soft costs, site development costs, hard costs, tenant improvements — of $177.68 billion in 2020 resulted in a contribution of $531.20 billion to U.S. GDP, generated $180.47 billion in personal earnings and supported 3.5 million jobs, as presented in Table 7.

Outlook: The U.S. Economy and Residential and Nonresidential Construction

The U.S. economy fell into recession in March 2020, ending the longest economic expansion in history (spanning 128 months from July 2009 through February 2020). The abrupt end to this economic expansion, which at the beginning of 2020 was projected to continue for several more years, was caused by a global pandemic the likes of which had not been experienced since the 1918 flu pandemic that killed more than 675,000 Americans between February 1918 and April 1920. The rapid increase in COVID-19 cases in March resulted in a broad-based shutdown of many businesses and interrupted world trade and travel, resulting in the most rapid economic contraction in history. During the second quarter, real GDP declined 9.0% on a quarterly basis (31.7% on an annual basis). Construction spending also contracted sharply in parallel with this GDP contraction but recovered quickly and regained its upward trend in June. In spite of the pandemic-induced contraction in GDP in 2020, total construction spending for the year increased an estimated 3.7%.

The January economic forecast for 2020 was for 2.1% GDP growth. The expansion that began in mid-2009 was expected to continue through 2020 with only passing thought of a future recession. The outlook for the building industry was for continuing growth, with housing starts increasing toward their equilibrium level in 2022 and nonresidential building construction paralleling the projected growth of the U.S. economy.

However, beginning in March, the underlying conditions that supported the year's early economic forecasts — low unemployment and continuing job growth, personal income growth and strong consumer spending, and expanding construction expenditures — experienced their most significant and rapid disruption ever due to the onset of the coronavirus pandemic (COVID-19).

Clearly, 2020 was not the year that had been expected, and 2021 will be a recovery year. Job growth and unemployment rates will continue to improve but are not expected to reach pre-pandemic levels; full employment is not projected to be reached until mid-2022, and unemployment is projected to remain above 4.0% through 2025.[7] All GDP growth in 2021 will be make-up or replacement growth that was lost or foregone in 2020. So, while a seemingly robust 4.0% GDP growth is projected for 2021, all of this new GDP value will be needed to bring the value of total GDP near to its pre-pandemic level in February 2020.

The recovery process will be variable in 2021. Not all sectors of the economy have experienced the unprecedented contraction with the same severity. The construction sector, while being slowed by supply chain and workforce disruptions, efficiency losses from social distancing and market uncertainty, was not as seriously impacted in 2020 as other sectors. Still, the construction sector's outlook in 2021 is uneven, as was demonstrated by its performance during the second half of 2020.

The key drivers of 2021's performance will be the traditional market forces that re-emerged following the disruptions, and the business and consumer uncertainty that governed the market during the recession. Additionally, demand for new space will be dampened where quality surplus building space — vacant space — can accommodate current and near-term growth. The shift to remote or at-home work and virtual schooling, along with changing consumer preferences, will continue to shape the market well beyond the end of the pandemic. Increased space requirements for health and safety concerns will further influence the demand for building space. Due to a combination of excess building capacity (which impacts manufacturing, retail and office markets), changing building space utilization, shifting employer and consumer preferences (impacting retail and warehouse, especially distribution centers), and evolving domestic and global market conditions, the recovery of the commercial real estate industry is expected to lag GDP recovery.

Residential building construction spending has grown each year during the past decade, increasing 170.1% through October 2020 from its low point in August 2010. While residential construction slowed in 2019 due to normal market factors — rising mortgage interest rates, increased uncertainty reflected in lower consumer expectations, rising building costs and home prices, less favorable homeownership-related

[7] IHS Markit, January 2021.

personal income tax deductions and an unusually wet first half of the year — beginning-of-the-year forecasts for 2020 continued to be favorable, with housing starts projected to increase 3.1%.[8]

The value of residential construction put in place during the first quarter of 2020 showed that the year was off to a strong start. In March, residential construction value was up 9.0% over March 2019. However, with the onset of the pandemic, residential construction slowed due to supply constraints and market uncertainty. In April, with the U.S. economy in free fall, the value of residential construction put in place declined 4.6%. May saw the value of residential construction put in place decline 3.9% from April's reading. By June, demand for housing was gaining strength. This was from a combination of significant decreases in mortgage interest rates and the realities of living and working from home, which pushed renters into markets for larger rental units and accelerated their shift to owner-occupied housing. June's value of residential construction put in place was only 0.6% lower than in May. Since that time, residential construction has risen each month, ending 2020 with double-digit increases in value put in place (up 14.6% as of November). Housing starts are up an estimated 6.8%.[9]

The demographic factors that have been shaping the housing market for the past decade and especially during the past five years — lower household formation, declining fertility rates and changing cultural values among millennials and immigrants — have favored the rental market. The large student loan debt levels held by younger households, which tempered demand for owner-occupied housing, are still part of the demand equation. However, their market impacts have been diminished, at least in the short term, by the psycho-social effects of isolating at home for working, schooling, recreating, exercising and eating as a result of the pandemic. Accommodating these functions that previously had their own spaces outside of the home has given priority to acquiring larger and better-suited residential spaces for many households that would not have entered the housing market in 2020. Remote working and continuing concerns for personal health and safety are likely to continue through 2021. Some of these lifestyle changes are likely to become permanent; for example, technology has made working from remote locations a key factor in residential design and development.

Residential construction will remain strong in 2021, but is not projected to sustain the pandemic-induced surge that drove the industry in 2020. The tenure shifts and the trend toward upgrading to larger units will be substantially accommodated within the built housing stock. This dynamic will include increasing numbers of older, empty-nester homeowners downsizing into smaller units (condos, age-restricted communities and rentals). As in the past, new residential construction will be largely shaped by demographic and economic factors such as slowing population growth and moderate growth in household incomes. Mortgage interest rates, while remaining low by historic standards, are expected to slowly rise starting in 2021, increasing toward 4% over the next three years.

The post-pandemic recovery will result in a different economy. Many of the job losses during 2020 will be permanent, with growth shifting to occupations that may have different wage and salary profiles as well as different geographic distributions. Consequently, the income disparities that existed prior to 2020 are not likely to decrease in the absence of public policy initiatives in the post-pandemic economy.

Residential fixed investment provides a broader measure of residential construction activity, including both new construction, renovation/remodeling and conversion outlays. Beginning-of-the-year projections for residential fixed investment in 2020 called for an increase of 1.6%; the December 2020 estimates had residential fixed investment up 5.7%, an increase reflecting the uptick in residential starts in 2020.

[8] IHS Markit, January 2020.
[9] Ibid.

Residential fixed investment is projected to accelerate in 2021, increasing 8.6% from 2020. However, it will turn negative in 2022 and 2023, reflecting modest decreases in the number of starts as home mortgage rates begin to rise and the residential market returns to near normal after the turbulence caused by the pandemic.

Nonresidential building construction expenditures turned positive in April 2011 and increased each year through 2019. In 2020, the value of construction put in place for nonresidential construction fell by an estimated 4.9% (October 2019 to October 2020), its first decrease since 2011. Even with this decline, nonresidential building construction values increased 68.6% between April 2011 and October 2020. During this period, investment has varied across the broad range of building types with only one category — religious buildings — reporting a decline.

Construction spending for **manufacturing buildings** decreased in 2020, down 11.8% from October 2019 to October 2020 after rising 140.1% from April 2011 to October 2019. This decline in the value of manufacturing construction put in place reflects a longer-term trend that was further accelerated by the pandemic-driven economic shutdown. The demand for manufactured goods in the U.S. had softened over the previous two years due to the aging economic expansion (capital purchases generally lead a recovery), tariff wars and inventory accumulation. Factory orders, as measured by the Institute for Supply Management's Manufacturing Index, peaked in August 2018 and then grew more slowly each month until July 2019, when the index turned negative. This decrease dramatically accelerated during the second quarter of 2020 before turning positive in July as the manufacturing sector began to recover.

This pattern was reflected in manufacturing fixed investment trends for this period, with a downturn beginning in 2016 and extending through 2020. In 2020, the slowing of the manufacturing sector (and its evolving space requirements), combined with the economy's severe contraction in the second quarter, resulted in manufacturing fixed investment declining 14.1% for the year.[10]

Dodge Data & Analytics construction data (Table 5) show construction outlays for manufacturing buildings fell 59.1% in 2020 while square footage fell 25.1%. This variance between the size and value of new industrial construction suggests that the types of buildings being constructed in 2020 were significantly different than the building mix reported in previous years. Manufacturing buildings undertaken in 2020 averaged $254.18 per square foot compared to $469.26 per square foot in 2019, $385.68 per square foot in 2018 and $365.58 per square foot in 2017.

Demand for new manufacturing building space is projected to lag the economic recovery, with fixed investment in manufacturing structures declining in 2021 by 8.3%. However, manufacturing building construction is projected to rebound in 2022 and 2023, increasing 16.7% and 17.0%, respectively. These double-digit increases in fixed investment for manufacturing structures (excluding equipment) will be driven by repositioning and upgrading existing manufacturing space and new construction to support technological advances and products focused on high-value-added production. As a result, the cost per square foot of this new construction is likely to be considerably higher than what was reported in 2020 when these high-value-added manufacturers were waiting for the global economy to return to normal after the pandemic.

Construction spending for **office buildings** increased each year since 2015, gaining 73.1% over this five-year period through 2019. In 2019, office building construction outlays increased 11.8% compared to 2018. However, office building construction spending fell in 2020 by 28.5%, with total square footage of

[10] Ibid.

Office building construction spending fell in 2020 by 28.5%, with total square footage of office construction declining 26.3%.

office construction declining 26.3%. This decline in construction activity reflects the current market's rising vacancy rates and increased uncertainty about space use in the future. With real-time utilization rates of office space below the vacancy rates and many tenants finding that remote work has not hurt their bottom lines, it is likely that some employees will continue to work remotely in the post-pandemic years. This will further reduce the future demand for office space.

Employers' experience with the pandemic and the need to provide healthy work environments will also continue beyond the pandemic. Interior spaces will be redesigned and reapproportioned. More research must be conducted to determine the full effects of the pandemic on the workplace. Still, 2020 will cast a long shadow on the office market well into the future. This uncertainty is likely to dampen office construction trends well beyond the economy's full recovery in 2022.

Retail building construction activity (including restaurants) has been slowing since 2016, according to data from Dodge Data & Analytics. It declined 21.2% between 2016 and 2019, and then declined further by 29.5% in 2020. This pattern reflects changing tastes, demographic and cultural shifts, and the substitution of online for in-store shopping. The pandemic's onset accelerated the consequences of these market trends in March 2020, which saw stay-at-home orders in many jurisdictions and increasing concerns for personal health and safety among shoppers. The rise of take-out restaurant services, grocery home-delivery and a shift to online services for many other retailers will permanently alter retail space demand patterns and further reduce the need for new retail construction. As existing retail spaces become obsolete and their traditional markets shrink, there will be an increased focus on repositioning these spaces to alternative uses. This will create opportunities for redesign and redevelopment services.

Warehouse building construction has been the positive story of 2020. Warehouse space has experienced a continuing pattern of expansion over the past decade with the growth of construction spending being the strongest among the four categories in this study. It increased 95.1% between 2015 and 2019, with total square footage of warehouse construction increasing 59.8%. In 2020, despite the economic turmoil caused by the pandemic, warehouse construction spending decreased only 0.3%, with total square footage of warehouse construction declining just 1.5%.

The underlying strength of warehouse demand reflects the shift of consumers to online shopping and the expanding range of goods that can be delivered overnight from distribution centers scattered across every state. Consumer demand did not decline in 2020, except temporarily during the second quarter. Rather, it shifted from on-site shopping to online providers, to the detriment of traditional in-store retailers. This shift in consumer preferences has benefited grocery stores at the expense of restaurants, with home delivery grocery services further increasing the demand for warehouse and distribution spaces. Demand for warehouse and distribution space will continue to grow in 2021, tracking a trajectory that exceeds GDP growth for the foreseeable future.

The 4.0% GDP growth projected for 2021 will only bring total GDP value back to its pre-pandemic level. Therefore, the building space existing at the beginning of 2021 will theoretically be sufficient to accommodate the level of economic output at the beginning of 2021. New construction will be primarily driven by replacement requirements for obsolete structures and uneven distribution of renewed economic growth across local jurisdictions. These market conditions will support modest increases in construction activity in 2021. It will be led by warehouse construction, with retail and manufacturing building construction likely to keep declining or holding steady at 2020 levels.

Office building construction will increase in markets where vacancy rates were low at the beginning of the pandemic and as the economy accelerates in 2021. With GDP growth registering real gains over pre-pandemic GDP levels in 2021 and projected to grow at above-trend levels during the 2022-2025 period, commercial construction can be expected to ramp up to provide the required capacity to support this economic growth. This will include both new and replacement space across all building types, with hotels and recreation spaces (movie theaters and restaurants) lagging other building types.

Construction employment peaked in November 2019 at 7.6 million jobs (not seasonally adjusted), with unemployment standing at 4.4% compared to the U.S. unemployment rate of 3.5%. During the Great Recession, the economy shed 2.8 million construction jobs between August 2006 and January 2011. Construction employment increased each of the next nine years, adding a total of 2.5 million jobs. Still, this job gain was 226,000 fewer than the jobs lost during the Great Recession.

In January 2020, there were 7.2 million jobs across all types of construction (not seasonally adjusted). With the economy's severe contraction in the second quarter, construction employment declined to 6.4 million from January through June, down 11.7%, and unemployment in the sector increased from 5.4% to 16.6%. By comparison, U.S. unemployment increased from 4.0% to 14.4% over this same period. As residential building led the recovery in construction activity that began in May, construction employment also bounced back. By November 2020, construction employment totaled 7.4 million, which represented the addition of 965,000 jobs from the April low for a 14.9% increase. For the year through November, construction employment gained 192,000 jobs, an increase of 2.6%, while total U.S. employment remained almost 10 million jobs below January's total.

Conclusion. The importance of the construction sector to the U.S. economy is well established. The sluggishness of the recovery from the Great Recession between 2010 and 2016 is partially attributed to the magnitude of the correction within the construction sector. Its recession actually lasted until mid-2011, while the U.S. National Bureau of Economic Research says the overall recession officially ended in June 2009. Spending on residential and nonresidential building construction, which has increased steadily since its low in 2011, contributed to the economy's sustained growth over the lengthy expansion that ended in February 2020. Nonresidential building construction spending led the national expansion, averaging a 5.7% annual increase over the past nine years while GDP growth averaged only 2.3% during that period.

Total construction spending was up 8.6% in 2019 and accounted for an estimated 19.5% of total GDP. With GDP declining in 2020 and total construction spending increasing 3.7%, the total output value (contribution to GDP) of its estimated $1.44 billion in direct expenditures will equal 21.0% of GDP in 2020. This positive performance, in an otherwise down year, helped to cushion the U.S. economy from the negative effects of the pandemic; that is, had construction spending not been positive in 2020, GDP would have declined even further and the recession would have been deeper.

The growth in construction spending since 2011 has been the one continuously positive force in the national economy's performance over the last business cycle. Historically, construction spending leads an economic expansion, as it did between 2011 and 2020. The foundational importance of the industry's contribution to GDP growth is underscored by its continued growth in 2020 despite the economy's fastest and deepest contraction in more than 80 years. Its increased contribution to GDP (Table 1) and renewed growth beginning in June before the recession bottomed out helped mitigate the depth of the contraction and accelerated the pace of the emerging recovery during the second half of 2020. Public and private construction expenditures will need to grow annually to furnish the commercial and residential building space required to support the forecasted above-trend growth rates into 2025.

TABLE 8 Impacts of Operations on State Economies (in Four Categories), 2020

State	Direct Spending (Thousands of Dollars)	Total Output (Thousands of Dollars)	Personal Earnings (Thousands of Dollars)	Jobs Supported
Alabama	$11,772	$21,981	$7,418	268
Alaska	952	1,518	532	18
Arizona	61,370	119,769	41,529	1,283
Arkansas	18,390	32,428	10,957	397
California	151,504	306,977	104,962	2,921
Colorado	48,516	99,142	34,203	1,003
Connecticut	19,298	34,919	11,291	328
Delaware	12,578	20,622	5,844	199
District of Columbia	22,670	27,930	2,884	98
Florida	144,651	285,396	99,013	3,374
Georgia	54,518	117,268	38,997	1,280
Hawaii	2,079	3,684	1,283	39
Idaho	7,462	12,796	4,446	165
Illinois	88,398	195,421	63,284	1,734
Indiana	23,263	46,083	15,009	470
Iowa	14,756	25,179	8,321	293
Kansas	19,647	36,317	10,920	349
Kentucky	18,344	34,781	10,817	358
Louisiana	9,299	17,209	5,842	208
Maine	6,010	10,588	3,654	127
Maryland	31,084	56,738	18,026	542
Massachusetts	76,724	142,577	46,587	1,319
Michigan	21,758	43,591	14,852	461
Minnesota	13,049	25,662	8,625	254
Mississippi	4,331	7,617	2,514	92
Missouri	38,881	75,534	23,554	789
Montana	1,770	2,937	1,036	39
Nebraska	5,075	8,832	2,962	101
Nevada	13,501	23,281	7,955	270
New Hampshire	2,874	5,067	1,575	46
New Jersey	30,796	62,230	19,334	543
New Mexico	2,994	4,945	1,716	64
New York	151,947	269,888	84,574	2,433
North Carolina	46,689	95,942	31,903	1,076
North Dakota	3,798	6,074	1,947	63
Ohio	59,777	125,405	40,947	1,246
Oklahoma	11,811	21,986	7,550	271
Oregon	12,737	23,572	7,839	235
Pennsylvania	35,499	72,674	23,426	670
Rhode Island	1,312	2,265	681	21
South Carolina	11,799	23,516	7,685	274
South Dakota	5,032	8,029	2,689	99
Tennessee	59,179	126,023	40,810	1,272
Texas	289,292	650,416	217,635	6,975
Utah	19,671	40,109	13,622	446
Vermont	1,248	2,051	684	26
Virginia	84,621	158,140	50,028	1,475
Washington	74,356	136,920	46,316	1,349
West Virginia	3,636	5,883	1,855	63
Wisconsin	32,100	60,753	20,419	652
Wyoming	919	1,397	471	18
State Totals	**$1,883,738**	**$3,740,060**	**$1,231,019**	**38,094**
Interstate Spillovers		**1,303,837**	**418,382**	**9,035**
U.S. Totals	**$1,883,738**	**$5,043,897**	**$1,649,401**	**47,129**

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

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

TABLE 9 Total Impacts of Soft Cost, Site Development, Hard Costs and Tenant Improvements on State Economies (in Four Categories), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$1.876	$4.033	$1.412	30,322
Alaska	0.084	0.145	0.055	953
Arizona	5.151	10.993	4.035	83,805
Arkansas	1.658	3.319	1.150	24,467
California	12.061	26.036	9.494	162,515
Colorado	4.226	9.438	3.435	64,589
Connecticut	1.627	3.142	1.098	19,068
Delaware	1.728	3.029	0.909	16,862
District of Columbia	1.908	2.274	0.201	3,057
Florida	12.825	27.706	10.201	220,212
Georgia	4.769	11.244	3.963	84,249
Hawaii	0.342	0.641	0.242	4,361
Idaho	0.524	0.990	0.364	7,916
Illinois	7.853	18.779	6.359	111,433
Indiana	3.337	7.409	2.504	50,266
Iowa	1.329	2.546	0.887	18,062
Kansas	2.225	4.629	1.480	30,294
Kentucky	1.486	3.133	1.032	21,911
Louisiana	1.198	2.443	0.860	17,238
Maine	0.301	0.581	0.213	4,616
Maryland	3.106	6.058	2.048	37,061
Massachusetts	6.714	13.157	4.537	76,942
Michigan	3.275	7.171	2.579	50,570
Minnesota	1.085	2.350	0.817	14,749
Mississippi	0.542	1.076	0.368	7,882
Missouri	3.859	8.235	2.670	54,832
Montana	0.107	0.198	0.074	1,588
Nebraska	0.670	1.293	0.461	9,727
Nevada	1.203	2.273	0.833	16,398
New Hampshire	0.199	0.395	0.133	2,350
New Jersey	4.179	9.043	2.988	51,790
New Mexico	0.926	1.670	0.611	13,135
New York	18.068	33.328	11.336	191,474
North Carolina	3.993	8.994	3.168	67,041
North Dakota	0.211	0.376	0.123	2,205
Ohio	4.826	11.191	3.795	75,137
Oklahoma	1.162	2.426	0.868	18,568
Oregon	1.682	3.427	1.177	22,265
Pennsylvania	3.544	8.167	2.742	49,605
Rhode Island	0.159	0.290	0.093	1,799
South Carolina	1.277	2.815	0.968	21,090
South Dakota	0.234	0.423	0.155	3,226
Tennessee	7.924	18.486	6.173	116,612
Texas	25.743	65.556	22.823	428,007
Utah	2.171	4.907	1.741	35,684
Vermont	0.113	0.205	0.074	1,595
Virginia	6.106	12.312	4.157	82,065
Washington	4.378	8.905	3.187	54,983
West Virginia	0.436	0.781	0.258	5,016
Wisconsin	3.214	6.772	2.413	46,675
Wyoming	0.061	0.102	0.036	766
State Totals	**$177.675**	**$384.895**	**$133.301**	**2,537,032**
Interstate Spillovers		**146.307**	**47.171**	**948,350**
U.S. Totals	**$177.675**	**$531.202**	**$180.471**	**3,485,383**

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

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

Jobs Housed and Payroll Value

In addition to the annual operating expenditures associated with new building space, these structures represent new productive capacity within the national economy. While the value of this added capacity depends on how each building is used, two common measures are the number of jobs this new capacity can accommodate and the amount of payroll these new jobs can potentially generate. Using an average-jobs-per-square-foot estimate for each category of building, it is possible to estimate the total number of employees that could be housed within the buildings built in 2020. The total payroll value of these new workers can also be calculated by multiplying this employment estimate by the 2020 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 565.0 million square feet of new office, industrial, warehouse and retail space constructed in 2020 has the capacity to house 1.35 million new workers with a total estimated annual payroll of $78.2 billion.

TABLE 10 **Jobs Accommodated and Payroll Generated in Office, Industrial, Warehouse and Retail Space Constructed in 2020**

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	112.2	190	590.5	$75,595	$44.639
Industrial	51.8	750	69.1	57,054	3.942
Warehouse	348.4	600	580.7	44,172	25.651
Retail/Entertainment	52.6	475	110.7	35,499	3.930
Total/Average	**565.0**	**393**	**1,351.0**	**$57,877**	**$78.162**

Sources: Dodge Data & Analytics; Occupational Employment Statistics, U.S. Bureau of Labor Statistics; Newmark; author's calculations.

Note on 2020 Methodology

For 2020, full-year construction values were estimated to publish the economic results in January 2021 so that NAIOP members would have current data to use during meetings with congressional representatives and local governments.

The estimates are based on the following:

- actual construction values for the year's first nine months;
- the annual construction totals for the five preceding years (2015-2019); and
- the percentage of these values reported respectively for the first nine months of those years by building type (office, industrial/manufacturing, warehouse and retail) and by state, calculated and averaged for each independently.

These nine-month averages were applied to the actual 2020 values for nine months to estimate the year's 12-month values by building type and by state (for details regarding the data cleaning, please contact the author). Dodge Data & Analytics provided the data for these calculations.

Please note that there are three listings of multipliers: construction, soft costs (A&E services) and operations (services to buildings).

Economic Multipliers

The output (GDP), personal earnings (wages and salaries) and jobs-supported multipliers used in the 2020 report reflect the most recent revisions that the U.S. Department of Commerce's Bureau of Economic Analysis (BEA) acquired as of October 22, 2020. These multipliers are based on the 2012 Benchmark Input-Output Table for the nation and 2018 regional data.

- **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 local taxes and finances costs).

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. For this year's report, as in last year's, the percentages used to calculate these costs reflected the average of the survey results from 2016 and 2018.

TABLE 11 **Survey of NAIOP Members Building Cost Allocation Percentages (%), by Building Type 2006, 2008, 2013, 2016, 2018**

Building Type	Soft Construction Costs[1]	Site Development Costs	Building Construction Costs	Tenant Improvement Costs
Office				
2018	18.09%	11.61%	52.43%	17.87%
2016	16.44	13.71	49.21	20.63
2013	14.40	14.50	49.50	21.60
2008	17.43	14.24	49.74	18.58
2006	17.13	15.76	49.49	17.62
Manufacturing				
2018	10.03	14.88	56.18	18.93
2016	12.25	9.38	57.13	21.25
2013	16.90	13.80	54.00	15.30
2008	14.34	19.32	52.59	13.75
2006	12.05	18.58	55.69	13.68
Warehouse/Flex				
2018	14.67	17.54	54.93	12.86
2016	14.08	15.47	57.85	12.61
2013	14.60	19.00	53.30	13.10
2008	17.09	18.54	53.64	13.73
2006	14.23	16.81	55.00	14.07
Retail				
2018	19.10	13.67	45.97	21.27
2016	17.70	14.41	49.26	18.63
2013	17.00	21.80	44.30	16.90
2008	15.76	20.82	47.00	16.41
2006	17.72	16.06	52.39	13.83
Combined[2]				
2018	15.47	14.42	52.38	17.73
2016	15.37	14.19	53.24	17.20
2013	15.20	17.32	49.12	17.30
2008	15.62	17.19	51.24	15.94
2006	16.29	16.40	52.48	14.85

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

[2] Weighted average reflecting the numbers of responses by type.

Note: These percentages were averaged for 2016 and 2018 to broaden the survey response base for use in this analysis.

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), Gross County Product (GCP) — the value of goods and services produced within the economy of the respective geographic area (nation, state, county/city).

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**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.059	$0.115	$0.044	810
Alaska	0.008	0.014	0.005	84
Arizona	0.269	0.574	0.220	4,076
Arkansas	0.077	0.138	0.053	1,006
California	1.112	2.438	0.930	14,701
Colorado	0.175	0.391	0.150	2,531
Connecticut	0.120	0.231	0.085	1,342
Delaware	0.019	0.032	0.010	161
District of Columbia	0.282	0.390	0.051	706
Florida	0.664	1.426	0.550	10,922
Georgia	0.296	0.679	0.254	4,922
Hawaii	0.019	0.037	0.014	246
Idaho	0.051	0.092	0.036	713
Illinois	0.850	2.000	0.723	11,752
Indiana	0.077	0.156	0.058	1,096
Iowa	0.108	0.190	0.072	1,314
Kansas	0.065	0.127	0.043	761
Kentucky	0.061	0.118	0.042	815
Louisiana	0.058	0.114	0.044	790
Maine	0.031	0.058	0.023	439
Maryland	0.164	0.327	0.116	1,861
Massachusetts	0.893	1.824	0.670	10,400
Michigan	0.134	0.280	0.108	1,857
Minnesota	0.061	0.128	0.048	812
Mississippi	0.020	0.035	0.013	257
Missouri	0.282	0.566	0.188	3,414
Montana	0.009	0.016	0.006	123
Nebraska	0.062	0.116	0.044	797
Nevada	0.085	0.157	0.061	1,087
New Hampshire	0.008	0.015	0.005	89
New Jersey	0.070	0.152	0.053	843
New Mexico	0.110	0.194	0.077	1,487
New York	2.007	3.835	1.303	20,075
North Carolina	0.270	0.587	0.220	4,241
North Dakota	0.020	0.034	0.013	196
Ohio	0.281	0.605	0.222	4,218
Oklahoma	0.111	0.215	0.084	1,650
Oregon	0.149	0.295	0.110	1,989
Pennsylvania	0.196	0.423	0.152	2,606
Rhode Island	0.003	0.005	0.002	31
South Carolina	0.048	0.102	0.037	732
South Dakota	0.027	0.045	0.018	323
Tennessee	0.660	1.475	0.536	9,468
Texas	1.397	3.448	1.272	21,928
Utah	0.167	0.366	0.139	2,760
Vermont	0.004	0.006	0.002	47
Virginia	0.771	1.571	0.550	9,180
Washington	0.653	1.284	0.490	7,734
West Virginia	0.007	0.013	0.005	87
Wisconsin	0.132	0.257	0.098	1,816
Wyoming	0.003	0.004	0.002	32
State Totals	**$13.207**	**$ 27.702**	**$10.052**	**171,325**
Interstate Spillovers		**9.970**	**3.500**	**72,117**
U.S. Total	**$ 13.207**	**$37.672**	**$13.551**	**243,442**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix A-2: Impacts of Soft Costs on State Economies (**Industrial**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.121	$0.236	$0.091	1,662
Alaska	–	–	–	–
Arizona	0.106	0.226	0.087	1,604
Arkansas	0.017	0.030	0.012	221
California	0.027	0.060	0.023	363
Colorado	0.057	0.127	0.049	821
Connecticut	0.005	0.009	0.003	52
Delaware	0.004	0.006	0.002	30
District of Columbia	–	–	–	–
Florida	0.067	0.144	0.055	1,102
Georgia	0.066	0.152	0.057	1,100
Hawaii	0.000	0.000	0.000	2
Idaho	0.010	0.018	0.007	142
Illinois	0.049	0.115	0.042	678
Indiana	0.117	0.237	0.088	1,660
Iowa	0.013	0.023	0.009	160
Kansas	0.034	0.067	0.023	400
Kentucky	0.012	0.023	0.008	156
Louisiana	0.042	0.083	0.032	572
Maine	0.010	0.018	0.007	140
Maryland	0.002	0.005	0.002	27
Massachusetts	0.059	0.120	0.044	685
Michigan	0.108	0.226	0.087	1,498
Minnesota	0.016	0.033	0.012	212
Mississippi	0.029	0.052	0.020	382
Missouri	0.031	0.061	0.020	371
Montana	0.000	0.000	0.000	4
Nebraska	0.020	0.038	0.014	259
Nevada	0.014	0.026	0.010	177
New Hampshire	0.007	0.013	0.005	76
New Jersey	0.005	0.011	0.004	63
New Mexico	0.004	0.007	0.003	53
New York	0.174	0.333	0.113	1,743
North Carolina	0.036	0.078	0.029	566
North Dakota	–	–	–	–
Ohio	0.155	0.334	0.123	2,326
Oklahoma	0.010	0.020	0.008	152
Oregon	0.024	0.047	0.018	316
Pennsylvania	0.014	0.030	0.011	186
Rhode Island	0.004	0.007	0.002	42
South Carolina	0.028	0.059	0.022	423
South Dakota	0.002	0.004	0.001	26
Tennessee	0.077	0.172	0.062	1,101
Texas	0.764	1.885	0.696	11,987
Utah	0.077	0.169	0.064	1,276
Vermont	0.001	0.001	0.000	7
Virginia	0.004	0.007	0.003	43
Washington	0.004	0.008	0.003	47
West Virginia	0.021	0.036	0.013	246
Wisconsin	0.144	0.280	0.107	1,980
Wyoming	0.002	0.002	0.001	18
State Totals	**$2.591**	**$5.638**	**$2.090**	**37,156**
Interstate Spillovers		**1.754**	**0.569**	**10,612**
U.S. Total	**$2.591**	**$7.392**	**$2.659**	**47,768**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix A-3: Impacts of Soft Costs on State Economies (**Warehouse**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.017	$0.034	$0.013	236
Alaska	0.002	0.004	0.002	24
Arizona	0.327	0.697	0.268	4,954
Arkansas	0.133	0.238	0.092	1,732
California	0.590	1.292	0.493	7,793
Colorado	0.326	0.729	0.279	4,715
Connecticut	0.100	0.192	0.071	1,114
Delaware	0.214	0.365	0.108	1,822
District of Columbia	–	–	–	–
Florida	0.706	1.518	0.585	11,623
Georgia	0.198	0.453	0.169	3,284
Hawaii	0.013	0.025	0.010	163
Idaho	0.009	0.017	0.007	128
Illinois	0.249	0.585	0.211	3,437
Indiana	0.215	0.435	0.161	3,053
Iowa	0.052	0.092	0.035	634
Kansas	0.179	0.348	0.118	2,081
Kentucky	0.106	0.205	0.073	1,413
Louisiana	0.030	0.059	0.023	411
Maine	0.001	0.001	0.000	7
Maryland	0.225	0.450	0.159	2,561
Massachusetts	0.069	0.142	0.052	808
Michigan	0.142	0.297	0.114	1,965
Minnesota	0.047	0.099	0.037	628
Mississippi	0.012	0.021	0.008	152
Missouri	0.193	0.387	0.128	2,334
Montana	0.001	0.001	0.000	8
Nebraska	0.005	0.009	0.003	61
Nevada	0.047	0.087	0.034	606
New Hampshire	0.004	0.008	0.003	48
New Jersey	0.433	0.948	0.330	5,241
New Mexico	0.017	0.031	0.012	235
New York	0.562	1.075	0.365	5,626
North Carolina	0.190	0.413	0.155	2,986
North Dakota	0.001	0.002	0.001	10
Ohio	0.146	0.315	0.116	2,195
Oklahoma	0.010	0.020	0.008	153
Oregon	0.051	0.100	0.037	674
Pennsylvania	0.257	0.554	0.199	3,417
Rhode Island	0.004	0.008	0.003	49
South Carolina	0.060	0.126	0.047	909
South Dakota	0.001	0.002	0.001	16
Tennessee	0.382	0.854	0.310	5,485
Texas	0.973	2.401	0.886	15,270
Utah	0.045	0.098	0.037	743
Vermont	0.012	0.021	0.008	153
Virginia	0.136	0.277	0.097	1,618
Washington	0.041	0.080	0.031	482
West Virginia	0.002	0.004	0.001	25
Wisconsin	0.131	0.254	0.097	1,797
Wyoming	0.000	0.001	0.000	4
State Totals	**$7.666**	**$16.373**	**$5.997**	**$104,884**
Interstate Spillovers		**5.494**	**1.869**	**36,419**
U.S. Total	**$7.666**	**$21.866**	**$7.866**	**$141,303**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix A-4: Impacts of Soft Costs on State Economies (**Retail and Entertainment**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.060	$0.117	$0.045	826
Alaska	0.004	0.007	0.003	41
Arizona	0.067	0.142	0.055	1,011
Arkansas	0.025	0.045	0.017	327
California	0.234	0.513	0.196	3,096
Colorado	0.080	0.179	0.068	1,158
Connecticut	0.036	0.069	0.025	401
Delaware	0.018	0.031	0.009	153
District of Columbia	0.050	0.070	0.009	126
Florida	0.638	1.370	0.528	10,496
Georgia	0.200	0.458	0.171	3,320
Hawaii	0.026	0.049	0.019	323
Idaho	0.013	0.024	0.009	184
Illinois	0.140	0.330	0.119	1,941
Indiana	0.064	0.131	0.048	916
Iowa	0.041	0.072	0.027	499
Kansas	0.054	0.106	0.036	633
Kentucky	0.054	0.104	0.037	721
Louisiana	0.049	0.096	0.037	662
Maine	0.005	0.009	0.004	68
Maryland	0.105	0.209	0.074	1,191
Massachusetts	0.098	0.200	0.073	1,138
Michigan	0.100	0.210	0.080	1,388
Minnesota	0.049	0.102	0.038	648
Mississippi	0.016	0.029	0.011	209
Missouri	0.111	0.223	0.074	1,345
Montana	0.009	0.015	0.006	115
Nebraska	0.018	0.033	0.012	226
Nevada	0.048	0.090	0.035	620
New Hampshire	0.012	0.024	0.009	139
New Jersey	0.132	0.288	0.100	1,595
New Mexico	0.024	0.042	0.017	324
New York	0.179	0.342	0.116	1,790
North Carolina	0.145	0.315	0.118	2,274
North Dakota	0.016	0.027	0.010	157
Ohio	0.147	0.316	0.116	2,205
Oklahoma	0.065	0.127	0.050	972
Oregon	0.046	0.092	0.034	619
Pennsylvania	0.092	0.198	0.071	1,220
Rhode Island	0.015	0.027	0.009	167
South Carolina	0.061	0.128	0.047	921
South Dakota	0.009	0.016	0.006	113
Tennessee	0.139	0.311	0.113	1,995
Texas	0.741	1.828	0.675	11,624
Utah	0.036	0.078	0.030	590
Vermont	0.001	0.001	0.000	9
Virginia	0.122	0.248	0.087	1,450
Washington	0.051	0.100	0.038	604
West Virginia	0.034	0.058	0.021	400
Wisconsin	0.046	0.090	0.034	636
Wyoming	0.005	0.008	0.003	60
State Totals	**$4.529**	**$9.695**	**$3.573**	**63,645**
Interstate Spillovers		**3.224**	**1.074**	**19,841**
U.S. Total	**$4.529**	**$12.919**	**$4.647**	**83,486**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix A-5: Impacts of Soft Costs on State Economies (**in Four Categories**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.258	$0.502	$0.192	3,534
Alaska	0.014	0.024	0.010	149
Arizona	0.769	1.639	0.629	11,645
Arkansas	0.252	0.452	0.174	3,285
California	1.963	4.304	1.642	25,953
Colorado	0.638	1.427	0.545	9,225
Connecticut	0.261	0.501	0.184	2,909
Delaware	0.254	0.434	0.129	2,165
District of Columbia	0.333	0.459	0.060	832
Florida	2.075	4.458	1.719	34,142
Georgia	0.760	1.742	0.651	12,627
Hawaii	0.058	0.111	0.043	733
Idaho	0.084	0.151	0.059	1,168
Illinois	1.288	3.031	1.096	17,807
Indiana	0.473	0.959	0.355	6,725
Iowa	0.214	0.377	0.143	2,608
Kansas	0.333	0.648	0.220	3,876
Kentucky	0.232	0.450	0.161	3,106
Louisiana	0.180	0.352	0.136	2,435
Maine	0.047	0.086	0.034	655
Maryland	0.496	0.991	0.351	5,640
Massachusetts	1.119	2.286	0.840	13,031
Michigan	0.484	1.013	0.389	6,708
Minnesota	0.172	0.361	0.136	2,301
Mississippi	0.076	0.136	0.052	1,000
Missouri	0.617	1.238	0.411	7,463
Montana	0.019	0.033	0.013	250
Nebraska	0.105	0.195	0.074	1,343
Nevada	0.194	0.359	0.139	2,489
New Hampshire	0.031	0.059	0.022	352
New Jersey	0.640	1.400	0.487	7,742
New Mexico	0.156	0.274	0.108	2,098
New York	2.922	5.585	1.897	29,234
North Carolina	0.640	1.393	0.523	10,066
North Dakota	0.037	0.063	0.023	364
Ohio	0.728	1.570	0.577	10,944
Oklahoma	0.197	0.382	0.149	2,927
Oregon	0.270	0.534	0.200	3,599
Pennsylvania	0.558	1.205	0.433	7,429
Rhode Island	0.025	0.046	0.015	288
South Carolina	0.197	0.415	0.153	2,984
South Dakota	0.039	0.066	0.026	477
Tennessee	1.258	2.812	1.022	18,050
Texas	3.875	9.561	3.529	60,809
Utah	0.326	0.712	0.270	5,369
Vermont	0.017	0.029	0.011	215
Virginia	1.033	2.103	0.736	12,292
Washington	0.749	1.472	0.562	8,866
West Virginia	0.065	0.111	0.041	758
Wisconsin	0.453	0.880	0.336	6,229
Wyoming	0.010	0.016	0.006	113
State Totals	**$27.993**	**$59.408**	**$21.712**	**377,010**
Interstate Spillovers		**20.442**	**7.011**	**138,989**
U.S. Total	**$27.993**	**$79.850**	**$28.723**	**515,998**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix B-1: Impacts of Site Development on State Economies (**Office**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.043	$0.094	$0.033	716
Alaska	0.006	0.010	0.004	68
Arizona	0.197	0.422	0.153	3,251
Arkansas	0.057	0.115	0.039	851
California	0.815	1.755	0.634	11,026
Colorado	0.128	0.286	0.103	1,979
Connecticut	0.088	0.170	0.059	1,042
Delaware	0.014	0.024	0.007	138
District of Columbia	0.207	0.238	0.018	292
Florida	0.487	1.052	0.384	8,422
Georgia	0.217	0.515	0.179	3,878
Hawaii	0.014	0.027	0.010	182
Idaho	0.038	0.071	0.026	575
Illinois	0.623	1.494	0.500	8,885
Indiana	0.057	0.127	0.042	859
Iowa	0.079	0.154	0.053	1,097
Kansas	0.048	0.101	0.032	668
Kentucky	0.045	0.096	0.031	670
Louisiana	0.043	0.088	0.031	624
Maine	0.023	0.045	0.016	357
Maryland	0.120	0.233	0.078	1,444
Massachusetts	0.655	1.272	0.433	7,480
Michigan	0.098	0.217	0.077	1,543
Minnesota	0.045	0.097	0.033	607
Mississippi	0.014	0.029	0.010	212
Missouri	0.207	0.447	0.144	3,026
Montana	0.007	0.013	0.005	103
Nebraska	0.046	0.089	0.031	676
Nevada	0.062	0.117	0.043	854
New Hampshire	0.006	0.011	0.004	68
New Jersey	0.051	0.110	0.036	635
New Mexico	0.081	0.147	0.053	1,159
New York	1.471	2.695	0.917	15,758
North Carolina	0.198	0.448	0.156	3,361
North Dakota	0.015	0.026	0.008	156
Ohio	0.206	0.483	0.162	3,221
Oklahoma	0.081	0.172	0.061	1,320
Oregon	0.109	0.224	0.076	1,447
Pennsylvania	0.144	0.335	0.111	2,028
Rhode Island	0.002	0.004	0.001	23
South Carolina	0.035	0.079	0.027	593
South Dakota	0.020	0.036	0.013	277
Tennessee	0.484	1.137	0.374	7,151
Texas	1.024	2.623	0.904	17,200
Utah	0.123	0.279	0.098	2,015
Vermont	0.003	0.005	0.002	38
Virginia	0.565	1.138	0.381	7,775
Washington	0.479	0.981	0.346	6,085
West Virginia	0.005	0.010	0.003	63
Wisconsin	0.097	0.206	0.073	1,416
Wyoming	0.002	0.003	0.001	26
State Totals	**$9.681**	**$20.551**	**$7.014**	**133,344**
Interstate Spillovers		**8.642**	**2.801**	**58,714**
U.S. Totals	**$9.681**	**$29.193**	**$9.815**	**192,058**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix B-2: Impacts of Site Development on State Economies (**Industrial**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.132	$0.288	$0.099	2,184
Alaska	0.000	0.000	0.000	-
Arizona	0.115	0.246	0.090	1,900
Arkansas	0.018	0.038	0.013	277
California	0.030	0.064	0.023	404
Colorado	0.062	0.138	0.050	954
Connecticut	0.005	0.010	0.003	60
Delaware	0.004	0.007	0.002	38
District of Columbia	0.000	0.000	0.000	-
Florida	0.073	0.158	0.058	1,262
Georgia	0.072	0.171	0.060	1,288
Hawaii	0.000	0.000	0.000	2
Idaho	0.011	0.021	0.008	171
Illinois	0.053	0.128	0.043	761
Indiana	0.127	0.286	0.095	1,931
Iowa	0.014	0.028	0.010	199
Kansas	0.037	0.079	0.025	522
Kentucky	0.013	0.027	0.009	191
Louisiana	0.046	0.095	0.033	672
Maine	0.011	0.021	0.008	170
Maryland	0.003	0.005	0.002	32
Massachusetts	0.064	0.125	0.042	732
Michigan	0.118	0.260	0.092	1,848
Minnesota	0.017	0.038	0.013	235
Mississippi	0.032	0.064	0.022	468
Missouri	0.033	0.072	0.023	488
Montana	0.000	0.001	0.000	5
Nebraska	0.022	0.043	0.015	326
Nevada	0.015	0.028	0.010	207
New Hampshire	0.007	0.014	0.005	85
New Jersey	0.006	0.012	0.004	71
New Mexico	0.004	0.008	0.003	61
New York	0.190	0.347	0.118	2,032
North Carolina	0.039	0.089	0.031	666
North Dakota	0.000	0.000	0.000	-
Ohio	0.168	0.396	0.132	2,639
Oklahoma	0.011	0.024	0.008	181
Oregon	0.026	0.053	0.018	342
Pennsylvania	0.015	0.035	0.012	215
Rhode Island	0.004	0.007	0.002	46
South Carolina	0.030	0.067	0.023	509
South Dakota	0.002	0.004	0.002	33
Tennessee	0.084	0.197	0.065	1,236
Texas	0.832	2.130	0.734	13,966
Utah	0.084	0.191	0.067	1,383
Vermont	0.001	0.001	0.000	8
Virginia	0.004	0.008	0.003	55
Washington	0.004	0.009	0.003	54
West Virginia	0.023	0.042	0.014	265
Wisconsin	0.157	0.334	0.118	2,294
Wyoming	0.002	0.003	0.001	21
State Totals	**$2.822**	**$6.411**	**$2.209**	**43,489**
Interstate Spillovers		**2.098**	**0.652**	**12,488**
U.S. Totals	**$2.822**	**$8.509**	**$2.861**	**55,977**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix B-3: Impacts of Site Development on State Economies (**Warehouse**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.020	$0.043	$0.015	327
Alaska	0.003	0.005	0.002	31
Arizona	0.376	0.802	0.292	6,190
Arkansas	0.152	0.311	0.106	2,296
California	0.677	1.457	0.526	9,155
Colorado	0.374	0.836	0.301	5,776
Connecticut	0.115	0.221	0.077	1,355
Delaware	0.246	0.433	0.130	2,452
District of Columbia	0.000	0.000	0.000	–
Florida	0.811	1.754	0.640	14,037
Georgia	0.227	0.538	0.187	4,052
Hawaii	0.015	0.028	0.010	189
Idaho	0.011	0.020	0.007	162
Illinois	0.285	0.685	0.229	4,070
Indiana	0.246	0.555	0.185	3,746
Iowa	0.060	0.116	0.040	830
Kansas	0.205	0.432	0.137	2,864
Kentucky	0.121	0.260	0.084	1,820
Louisiana	0.035	0.072	0.025	509
Maine	0.001	0.001	0.000	9
Maryland	0.259	0.502	0.168	3,114
Massachusetts	0.080	0.155	0.053	910
Michigan	0.163	0.359	0.128	2,557
Minnesota	0.054	0.118	0.040	736
Mississippi	0.013	0.027	0.009	196
Missouri	0.222	0.479	0.155	3,240
Montana	0.001	0.001	0.000	11
Nebraska	0.005	0.011	0.004	81
Nevada	0.054	0.103	0.037	745
New Hampshire	0.005	0.010	0.003	57
New Jersey	0.497	1.074	0.351	6,188
New Mexico	0.020	0.036	0.013	287
New York	0.646	1.183	0.402	6,916
North Carolina	0.218	0.494	0.172	3,706
North Dakota	0.001	0.002	0.001	13
Ohio	0.168	0.394	0.132	2,625
Oklahoma	0.012	0.025	0.009	192
Oregon	0.058	0.119	0.040	768
Pennsylvania	0.295	0.687	0.228	4,165
Rhode Island	0.005	0.009	0.003	56
South Carolina	0.069	0.153	0.052	1,154
South Dakota	0.002	0.003	0.001	21
Tennessee	0.439	1.032	0.339	6,489
Texas	1.117	2.861	0.986	18,761
Utah	0.052	0.118	0.041	849
Vermont	0.014	0.025	0.009	198
Virginia	0.156	0.314	0.105	2,147
Washington	0.047	0.096	0.034	594
West Virginia	0.002	0.004	0.001	28
Wisconsin	0.150	0.320	0.113	2,195
Wyoming	0.000	0.001	0.000	5
State Totals	**$8.802**	**$19.280**	**$6.624**	**128,876**
Interstate Spillovers		**7.260**	**2.299**	**45,728**
U.S. Totals	**$8.802**	**$26.540**	**$8.923**	**174,604**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix B-4: Impacts of Site Development on State Economies (**Retail and Entertainment**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.046	$0.100	$0.035	760
Alaska	0.003	0.005	0.002	35
Arizona	0.051	0.109	0.040	839
Arkansas	0.019	0.039	0.013	288
California	0.179	0.385	0.139	2,417
Colorado	0.061	0.136	0.049	943
Connecticut	0.027	0.053	0.018	324
Delaware	0.014	0.024	0.007	137
District of Columbia	0.038	0.044	0.003	54
Florida	0.487	1.053	0.384	8,425
Georgia	0.152	0.361	0.126	2,723
Hawaii	0.019	0.036	0.014	249
Idaho	0.010	0.019	0.007	155
Illinois	0.107	0.257	0.086	1,527
Indiana	0.049	0.111	0.037	747
Iowa	0.031	0.061	0.021	434
Kansas	0.041	0.087	0.028	579
Kentucky	0.041	0.088	0.029	617
Louisiana	0.037	0.077	0.027	544
Maine	0.004	0.007	0.003	58
Maryland	0.080	0.155	0.052	963
Massachusetts	0.075	0.145	0.049	852
Michigan	0.076	0.168	0.060	1,200
Minnesota	0.037	0.081	0.028	505
Mississippi	0.012	0.025	0.008	180
Missouri	0.085	0.183	0.059	1,241
Montana	0.007	0.012	0.005	100
Nebraska	0.013	0.026	0.009	199
Nevada	0.037	0.070	0.025	507
New Hampshire	0.009	0.018	0.006	110
New Jersey	0.101	0.217	0.071	1,252
New Mexico	0.018	0.033	0.012	263
New York	0.137	0.250	0.085	1,463
North Carolina	0.110	0.250	0.087	1,876
North Dakota	0.012	0.022	0.007	130
Ohio	0.112	0.263	0.088	1,753
Oklahoma	0.050	0.106	0.037	809
Oregon	0.035	0.073	0.025	468
Pennsylvania	0.070	0.163	0.054	988
Rhode Island	0.011	0.020	0.006	127
South Carolina	0.046	0.103	0.035	777
South Dakota	0.007	0.013	0.005	101
Tennessee	0.106	0.249	0.082	1,568
Texas	0.565	1.447	0.499	9,491
Utah	0.027	0.062	0.022	449
Vermont	0.001	0.001	0.000	7
Virginia	0.093	0.187	0.063	1,278
Washington	0.039	0.080	0.028	494
West Virginia	0.026	0.048	0.015	302
Wisconsin	0.035	0.075	0.027	517
Wyoming	0.004	0.007	0.002	51
State Totals	**$3.456**	**$7.606**	**$2.618**	**51,874**
Interstate Spillovers		**2.815**	**0.886**	**16,684**
U.S. Totals	**$3.456**	**$10.421**	**$3.504**	**68,558**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix B-5: Impacts of Site Development on State Economies (**in Four Categories**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.241	$0.525	$0.181	3,986
Alaska	0.012	0.020	0.007	133
Arizona	0.740	1.579	0.575	12,181
Arkansas	0.246	0.503	0.171	3,713
California	1.701	3.661	1.323	23,003
Colorado	0.626	1.397	0.504	9,652
Connecticut	0.235	0.454	0.157	2,781
Delaware	0.277	0.488	0.147	2,765
District of Columbia	0.245	0.283	0.022	346
Florida	1.857	4.016	1.465	32,146
Georgia	0.668	1.584	0.552	11,941
Hawaii	0.049	0.091	0.034	621
Idaho	0.069	0.132	0.048	1,062
Illinois	1.069	2.564	0.857	15,243
Indiana	0.479	1.079	0.360	7,284
Iowa	0.185	0.359	0.123	2,560
Kansas	0.332	0.698	0.221	4,634
Kentucky	0.220	0.471	0.153	3,298
Louisiana	0.161	0.332	0.115	2,349
Maine	0.038	0.074	0.027	594
Maryland	0.461	0.895	0.300	5,553
Massachusetts	0.873	1.697	0.577	9,973
Michigan	0.455	1.004	0.357	7,148
Minnesota	0.153	0.333	0.114	2,084
Mississippi	0.072	0.144	0.049	1,057
Missouri	0.547	1.181	0.381	7,995
Montana	0.014	0.027	0.010	217
Nebraska	0.086	0.168	0.059	1,282
Nevada	0.168	0.318	0.116	2,313
New Hampshire	0.027	0.054	0.018	319
New Jersey	0.655	1.413	0.463	8,146
New Mexico	0.124	0.224	0.081	1,770
New York	2.443	4.475	1.522	26,169
North Carolina	0.565	1.282	0.446	9,609
North Dakota	0.028	0.051	0.016	299
Ohio	0.654	1.535	0.513	10,239
Oklahoma	0.154	0.327	0.115	2,501
Oregon	0.229	0.469	0.158	3,025
Pennsylvania	0.523	1.221	0.405	7,396
Rhode Island	0.022	0.041	0.013	251
South Carolina	0.181	0.402	0.137	3,033
South Dakota	0.031	0.056	0.020	432
Tennessee	1.112	2.615	0.859	16,444
Texas	3.539	9.061	3.122	59,418
Utah	0.286	0.650	0.228	4,696
Vermont	0.018	0.032	0.011	252
Virginia	0.818	1.647	0.552	11,255
Washington	0.569	1.165	0.411	7,228
West Virginia	0.057	0.104	0.034	659
Wisconsin	0.438	0.935	0.330	6,421
Wyoming	0.008	0.014	0.005	104
State Totals	**$24.760**	**$53.848**	**$18.464**	**357,582**
Interstate Spillovers		**20.815**	**6.638**	**133,614**
U.S. Totals	**$24.760**	**$74.66**	**$25.10**	**491,196**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix C: Hard Cost Impacts by State

Appendix C-1: Impacts of Construction (**Hard Costs**) on State Economies (**Office**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.174	$0.379	$0.131	2,875
Alaska	0.024	0.041	0.015	272
Arizona	0.792	1.692	0.616	13,052
Arkansas	0.227	0.463	0.157	3,417
California	3.273	7.044	2.545	44,262
Colorado	0.515	1.150	0.415	7,946
Connecticut	0.354	0.683	0.237	4,182
Delaware	0.056	0.098	0.029	554
District of Columbia	0.830	0.957	0.074	1,173
Florida	1.953	4.224	1.541	33,807
Georgia	0.871	2.065	0.720	15,567
Hawaii	0.057	0.107	0.040	731
Idaho	0.151	0.287	0.104	2,310
Illinois	2.501	5.999	2.005	35,665
Indiana	0.227	0.511	0.170	3,448
Iowa	0.318	0.618	0.212	4,406
Kansas	0.192	0.404	0.128	2,682
Kentucky	0.179	0.384	0.125	2,691
Louisiana	0.172	0.354	0.123	2,505
Maine	0.092	0.179	0.065	1,435
Maryland	0.482	0.935	0.313	5,798
Massachusetts	2.629	5.107	1.737	30,025
Michigan	0.394	0.870	0.309	6,193
Minnesota	0.179	0.390	0.133	2,438
Mississippi	0.058	0.116	0.039	852
Missouri	0.831	1.794	0.579	12,147
Montana	0.027	0.051	0.019	412
Nebraska	0.183	0.355	0.125	2,712
Nevada	0.249	0.472	0.171	3,428
New Hampshire	0.023	0.046	0.015	271
New Jersey	0.205	0.442	0.145	2,550
New Mexico	0.325	0.589	0.212	4,654
New York	5.905	10.817	3.680	63,254
North Carolina	0.794	1.800	0.626	13,492
North Dakota	0.059	0.106	0.034	626
Ohio	0.825	1.938	0.648	12,932
Oklahoma	0.327	0.692	0.244	5,297
Oregon	0.439	0.900	0.304	5,808
Pennsylvania	0.576	1.344	0.446	8,141
Rhode Island	0.008	0.015	0.005	91
South Carolina	0.142	0.316	0.107	2,381
South Dakota	0.079	0.144	0.052	1,113
Tennessee	1.942	4.565	1.500	28,707
Texas	4.112	10.529	3.628	69,045
Utah	0.492	1.119	0.392	8,088
Vermont	0.011	0.020	0.007	154
Virginia	2.269	4.566	1.530	31,211
Washington	1.922	3.937	1.390	24,426
West Virginia	0.022	0.040	0.013	253
Wisconsin	0.388	0.828	0.292	5,685
Wyoming	0.008	0.014	0.005	105
State Totals	**$38.863**	**$82.496**	**$28.154**	**535,270**
Interstate Spillovers		**34.692**	**11.245**	**235,691**
U.S. Totals	**$38.863**	**$117.188**	**$39.399**	**770,961**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix C-2: Impacts of Construction (**Hard Costs**) on State Economies (**Industrial**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.616	$1.344	$0.464	10,196
Alaska	0.000	0.000	0.000	–
Arizona	0.539	1.150	0.419	8,873
Arkansas	0.086	0.175	0.060	1,295
California	0.140	0.301	0.109	1,888
Colorado	0.289	0.645	0.232	4,454
Connecticut	0.024	0.046	0.016	279
Delaware	0.018	0.031	0.009	178
District of Columbia	0.000	0.000	0.000	–
Florida	0.341	0.737	0.269	5,895
Georgia	0.337	0.798	0.278	6,013
Hawaii	0.001	0.001	0.000	8
Idaho	0.052	0.099	0.036	797
Illinois	0.249	0.598	0.200	3,555
Indiana	0.593	1.336	0.445	9,019
Iowa	0.067	0.130	0.045	929
Kansas	0.175	0.368	0.116	2,440
Kentucky	0.059	0.127	0.041	892
Louisiana	0.216	0.443	0.153	3,137
Maine	0.051	0.099	0.036	792
Maryland	0.012	0.024	0.008	148
Massachusetts	0.299	0.581	0.198	3,418
Michigan	0.549	1.212	0.431	8,631
Minnesota	0.081	0.176	0.060	1,099
Mississippi	0.148	0.298	0.100	2,186
Missouri	0.156	0.336	0.109	2,278
Montana	0.001	0.003	0.001	21
Nebraska	0.103	0.199	0.070	1,523
Nevada	0.070	0.133	0.048	964
New Hampshire	0.034	0.067	0.022	397
New Jersey	0.027	0.057	0.019	331
New Mexico	0.020	0.036	0.013	285
New York	0.886	1.623	0.552	9,489
North Carolina	0.183	0.415	0.144	3,112
North Dakota	0.000	0.000	0.000	–
Ohio	0.787	1.847	0.618	12,322
Oklahoma	0.052	0.110	0.039	844
Oregon	0.121	0.247	0.084	1,597
Pennsylvania	0.071	0.165	0.055	1,002
Rhode Island	0.019	0.034	0.011	213
South Carolina	0.142	0.315	0.107	2,376
South Dakota	0.011	0.020	0.007	153
Tennessee	0.390	0.918	0.302	5,770
Texas	3.884	9.945	3.427	65,213
Utah	0.393	0.894	0.313	6,460
Vermont	0.003	0.005	0.002	39
Virginia	0.019	0.037	0.013	255
Washington	0.020	0.041	0.014	254
West Virginia	0.108	0.195	0.063	1,238
Wisconsin	0.731	1.560	0.550	10,710
Wyoming	0.008	0.013	0.005	100
State Totals	**$13.176**	**$29.934**	**$10.313**	**203,067**
Interstate Spillovers		**9.796**	**3.045**	**58,312**
U.S. Totals	**$13.176**	**$39.730**	**$13.358**	**261,380**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix C-3: Impacts of Construction (**Hard Costs**) on State Economies (**Warehouse**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.067	$0.147	$0.051	1,116
Alaska	0.009	0.016	0.006	104
Arizona	1.284	2.742	0.998	21,149
Arkansas	0.521	1.062	0.361	7,844
California	2.313	4.978	1.798	31,280
Colorado	1.279	2.855	1.030	19,732
Connecticut	0.392	0.756	0.262	4,630
Delaware	0.840	1.479	0.445	8,379
District of Columbia	0.000	0.000	0.000	-
Florida	2.771	5.992	2.186	47,959
Georgia	0.775	1.837	0.640	13,845
Hawaii	0.050	0.094	0.035	644
Idaho	0.036	0.069	0.025	553
Illinois	0.975	2.339	0.782	13,904
Indiana	0.842	1.896	0.632	12,800
Iowa	0.205	0.398	0.136	2,835
Kansas	0.701	1.475	0.467	9,785
Kentucky	0.415	0.887	0.288	6,217
Louisiana	0.120	0.246	0.085	1,740
Maine	0.002	0.004	0.001	32
Maryland	0.884	1.716	0.575	10,639
Massachusetts	0.272	0.529	0.180	3,108
Michigan	0.556	1.226	0.436	8,735
Minnesota	0.184	0.402	0.138	2,516
Mississippi	0.045	0.092	0.031	671
Missouri	0.758	1.635	0.528	11,070
Montana	0.002	0.005	0.002	37
Nebraska	0.019	0.036	0.013	278
Nevada	0.185	0.350	0.127	2,547
New Hampshire	0.016	0.033	0.011	195
New Jersey	1.699	3.669	1.201	21,142
New Mexico	0.068	0.124	0.045	979
New York	2.206	4.041	1.375	23,630
North Carolina	0.745	1.689	0.588	12,663
North Dakota	0.004	0.007	0.002	44
Ohio	0.573	1.344	0.450	8,970
Oklahoma	0.040	0.086	0.030	654
Oregon	0.198	0.407	0.137	2,624
Pennsylvania	1.007	2.349	0.779	14,229
Rhode Island	0.017	0.031	0.010	192
South Carolina	0.235	0.522	0.177	3,942
South Dakota	0.005	0.010	0.003	73
Tennessee	1.500	3.526	1.159	22,170
Texas	3.817	9.774	3.368	64,097
Utah	0.177	0.402	0.141	2,902
Vermont	0.047	0.086	0.031	675
Virginia	0.533	1.073	0.360	7,335
Washington	0.160	0.327	0.116	2,029
West Virginia	0.008	0.015	0.005	97
Wisconsin	0.512	1.092	0.385	7,499
Wyoming	0.001	0.002	0.001	18
State Totals	**$30.071**	**$65.872**	**$22.630**	**440,309**
Interstate Spillovers		**24.804**	**7.855**	**156,232**
U.S. Totals	**$30.071**	**$90.675**	**$30.486**	**596,540**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix C-4: Impacts of Construction (**Hard Costs**) on State Economies (**Retail and Entertainment**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.156	$0.340	$0.117	2,577
Alaska	0.010	0.018	0.007	118
Arizona	0.173	0.369	0.134	2,847
Arkansas	0.065	0.132	0.045	977
California	0.606	1.304	0.471	8,196
Colorado	0.207	0.463	0.167	3,196
Connecticut	0.093	0.180	0.062	1,099
Delaware	0.046	0.082	0.025	463
District of Columbia	0.130	0.150	0.012	184
Florida	1.651	3.569	1.302	28,568
Georgia	0.517	1.225	0.427	9,233
Hawaii	0.066	0.123	0.046	844
Idaho	0.034	0.065	0.024	524
Illinois	0.363	0.871	0.291	5,180
Indiana	0.167	0.375	0.125	2,534
Iowa	0.106	0.206	0.071	1,470
Kansas	0.141	0.296	0.094	1,964
Kentucky	0.140	0.299	0.097	2,092
Louisiana	0.127	0.261	0.090	1,845
Maine	0.013	0.024	0.009	195
Maryland	0.271	0.526	0.176	3,265
Massachusetts	0.253	0.491	0.167	2,888
Michigan	0.259	0.571	0.203	4,070
Minnesota	0.126	0.274	0.094	1,712
Mississippi	0.041	0.083	0.028	611
Missouri	0.288	0.621	0.201	4,207
Montana	0.022	0.042	0.015	338
Nebraska	0.046	0.088	0.031	675
Nevada	0.125	0.237	0.086	1,720
New Hampshire	0.031	0.063	0.021	372
New Jersey	0.341	0.737	0.241	4,245
New Mexico	0.062	0.113	0.041	891
New York	0.463	0.848	0.289	4,960
North Carolina	0.374	0.849	0.295	6,360
North Dakota	0.042	0.075	0.024	441
Ohio	0.380	0.891	0.298	5,946
Oklahoma	0.169	0.358	0.126	2,742
Oregon	0.120	0.246	0.083	1,588
Pennsylvania	0.237	0.553	0.183	3,352
Rhode Island	0.038	0.069	0.022	430
South Carolina	0.157	0.349	0.119	2,635
South Dakota	0.024	0.044	0.016	341
Tennessee	0.360	0.846	0.278	5,318
Texas	1.917	4.908	1.691	32,185
Utah	0.093	0.211	0.074	1,521
Vermont	0.002	0.003	0.001	25
Virginia	0.315	0.634	0.212	4,333
Washington	0.132	0.270	0.095	1,676
West Virginia	0.089	0.161	0.052	1,024
Wisconsin	0.120	0.255	0.090	1,752
Wyoming	0.013	0.023	0.008	173
State Totals	**$11.719**	**$25.793**	**$8.877**	**175,905**
Interstate Spillovers		**9.544**	**3.004**	**56,576**
U.S. Totals	**$11.719**	**$35.338**	**$11.881**	**232,481**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix C-5: Impacts of Construction (**Hard Costs**) on State Economies (**in Four Categories**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$1.013	$2.209	$0.763	16,764
Alaska	0.043	0.074	0.028	494
Arizona	2.788	5.953	2.168	45,921
Arkansas	0.898	1.832	0.624	13,534
California	6.331	13.627	4.923	85,626
Colorado	2.290	5.112	1.844	35,329
Connecticut	0.862	1.665	0.576	10,190
Delaware	0.960	1.690	0.508	9,574
District of Columbia	0.961	1.107	0.086	1,357
Florida	6.715	14.522	5.298	116,229
Georgia	2.500	5.925	2.065	44,658
Hawaii	0.174	0.326	0.122	2,228
Idaho	0.273	0.520	0.188	4,183
Illinois	4.088	9.807	3.278	58,304
Indiana	1.829	4.118	1.372	27,801
Iowa	0.696	1.353	0.464	9,640
Kansas	1.208	2.542	0.805	16,871
Kentucky	0.793	1.697	0.551	11,892
Louisiana	0.634	1.304	0.451	9,227
Maine	0.158	0.307	0.111	2,454
Maryland	1.649	3.201	1.072	19,849
Massachusetts	3.453	6.709	2.282	39,440
Michigan	1.758	3.879	1.380	27,629
Minnesota	0.569	1.241	0.425	7,766
Mississippi	0.292	0.590	0.199	4,320
Missouri	2.033	4.387	1.416	29,703
Montana	0.053	0.100	0.037	807
Nebraska	0.350	0.680	0.239	5,188
Nevada	0.629	1.191	0.433	8,659
New Hampshire	0.104	0.208	0.069	1,236
New Jersey	2.271	4.905	1.605	28,267
New Mexico	0.475	0.861	0.310	6,809
New York	9.460	17.328	5.895	101,333
North Carolina	2.096	4.753	1.654	35,627
North Dakota	0.105	0.188	0.060	1,111
Ohio	2.564	6.021	2.014	40,169
Oklahoma	0.589	1.247	0.439	9,538
Oregon	0.879	1.800	0.608	11,617
Pennsylvania	1.892	4.411	1.463	26,724
Rhode Island	0.082	0.149	0.047	926
South Carolina	0.676	1.502	0.510	11,334
South Dakota	0.119	0.218	0.079	1,681
Tennessee	4.191	9.855	3.238	61,964
Texas	13.730	35.156	12.114	230,540
Utah	1.155	2.625	0.920	18,971
Vermont	0.062	0.114	0.041	893
Virginia	3.136	6.311	2.115	43,134
Washington	2.234	4.575	1.616	28,386
West Virginia	0.227	0.411	0.133	2,612
Wisconsin	1.751	3.736	1.317	25,646
Wyoming	0.031	0.053	0.018	396
State Totals	**$93.829**	**$204.095**	**$69.974**	**1,354,551**
Interstate Spillovers		**78.836**	**25.149**	**506,811**
U.S. Totals	**$93.829**	**$282.931**	**$95.123**	**1,861,362**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix D: Tenant Improvement Impacts by State

Appendix D-1: Impacts of Tenant Improvements on State Economies (**Office**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.066	$0.144	$0.050	1,089
Alaska	0.009	0.016	0.006	103
Arizona	0.300	0.641	0.233	4,944
Arkansas	0.086	0.175	0.060	1,294
California	1.240	2.668	0.964	16,766
Colorado	0.195	0.436	0.157	3,010
Connecticut	0.134	0.259	0.090	1,584
Delaware	0.021	0.037	0.011	210
District of Columbia	0.315	0.362	0.028	444
Florida	0.740	1.600	0.584	12,805
Georgia	0.330	0.782	0.273	5,897
Hawaii	0.022	0.041	0.015	277
Idaho	0.057	0.109	0.039	875
Illinois	0.947	2.272	0.760	13,510
Indiana	0.086	0.193	0.064	1,306
Iowa	0.120	0.234	0.080	1,669
Kansas	0.073	0.153	0.048	1,016
Kentucky	0.068	0.145	0.047	1,019
Louisiana	0.065	0.134	0.046	949
Maine	0.035	0.068	0.025	544
Maryland	0.182	0.354	0.119	2,196
Massachusetts	0.996	1.935	0.658	11,373
Michigan	0.149	0.329	0.117	2,346
Minnesota	0.068	0.148	0.051	924
Mississippi	0.022	0.044	0.015	323
Missouri	0.315	0.680	0.219	4,601
Montana	0.010	0.019	0.007	156
Nebraska	0.069	0.135	0.047	1,027
Nevada	0.094	0.179	0.065	1,298
New Hampshire	0.009	0.017	0.006	103
New Jersey	0.078	0.168	0.055	966
New Mexico	0.123	0.223	0.080	1,763
New York	2.237	4.097	1.394	23,960
North Carolina	0.301	0.682	0.237	5,111
North Dakota	0.022	0.040	0.013	237
Ohio	0.313	0.734	0.246	4,898
Oklahoma	0.124	0.262	0.092	2,006
Oregon	0.166	0.341	0.115	2,200
Pennsylvania	0.218	0.509	0.169	3,084
Rhode Island	0.003	0.006	0.002	34
South Carolina	0.054	0.120	0.041	902
South Dakota	0.030	0.055	0.020	422
Tennessee	0.735	1.729	0.568	10,874
Texas	1.558	3.988	1.374	26,154
Utah	0.187	0.424	0.149	3,064
Vermont	0.004	0.007	0.003	58
Virginia	0.860	1.730	0.580	11,822
Washington	0.728	1.491	0.527	9,252
West Virginia	0.008	0.015	0.005	96
Wisconsin	0.147	0.314	0.111	2,153
Wyoming	0.003	0.005	0.002	40
State Totals	**$14.721**	**$31.248**	**$10.664**	**202,754**
Interstate Spillovers		**13.141**	**4.260**	**89,277**
U.S. Totals	**$14.721**	**$44.389**	**$14.924**	**292,031**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix D-2: Impacts of Tenant Improvements on State Economies (**Industrial**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.219	$0.477	$0.165	3,617
Alaska	0.000	0.000	0.000	–
Arizona	0.191	0.408	0.149	3,147
Arkansas	0.030	0.062	0.021	459
California	0.050	0.107	0.039	670
Colorado	0.102	0.229	0.082	1,580
Connecticut	0.008	0.016	0.006	99
Delaware	0.006	0.011	0.003	63
District of Columbia	0.000	0.000	0.000	–
Florida	0.121	0.261	0.095	2,091
Georgia	0.119	0.283	0.099	2,133
Hawaii	0.000	0.000	0.000	3
Idaho	0.018	0.035	0.013	283
Illinois	0.088	0.212	0.071	1,261
Indiana	0.210	0.474	0.158	3,199
Iowa	0.024	0.046	0.016	330
Kansas	0.062	0.130	0.041	865
Kentucky	0.021	0.045	0.015	316
Louisiana	0.076	0.157	0.054	1,113
Maine	0.018	0.035	0.013	281
Maryland	0.004	0.008	0.003	52
Massachusetts	0.106	0.206	0.070	1,212
Michigan	0.195	0.430	0.153	3,061
Minnesota	0.029	0.062	0.021	390
Mississippi	0.052	0.106	0.036	775
Missouri	0.055	0.119	0.039	808
Montana	0.000	0.001	0.000	8
Nebraska	0.036	0.071	0.025	540
Nevada	0.025	0.047	0.017	342
New Hampshire	0.012	0.024	0.008	141
New Jersey	0.009	0.020	0.007	117
New Mexico	0.007	0.013	0.005	101
New York	0.314	0.576	0.196	3,366
North Carolina	0.065	0.147	0.051	1,104
North Dakota	0.000	0.000	0.000	–
Ohio	0.279	0.655	0.219	4,370
Oklahoma	0.018	0.039	0.014	299
Oregon	0.043	0.088	0.030	566
Pennsylvania	0.025	0.059	0.019	356
Rhode Island	0.007	0.012	0.004	76
South Carolina	0.050	0.112	0.038	843
South Dakota	0.004	0.007	0.003	54
Tennessee	0.138	0.325	0.107	2,047
Texas	1.378	3.527	1.215	23,131
Utah	0.139	0.317	0.111	2,291
Vermont	0.001	0.002	0.001	14
Virginia	0.007	0.013	0.004	90
Washington	0.007	0.015	0.005	90
West Virginia	0.038	0.069	0.022	439
Wisconsin	0.259	0.553	0.195	3,799
Wyoming	0.003	0.005	0.002	35
State Totals	**$4.673**	**$10.618**	**$3.658**	**72,027**
Interstate Spillovers		**3.475**	**1.080**	**20,683**
U.S. Totals	**$4.673**	**$14.092**	**$4.738**	**92,710**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix D-3: Impacts of Tenant Improvements on State Economies (**Warehouse**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.015	$0.033	$0.011	252
Alaska	0.002	0.004	0.001	24
Arizona	0.290	0.619	0.225	4,774
Arkansas	0.118	0.240	0.082	1,771
California	0.522	1.124	0.406	7,061
Colorado	0.289	0.645	0.232	4,455
Connecticut	0.088	0.171	0.059	1,045
Delaware	0.190	0.334	0.100	1,891
District of Columbia	0.000	0.000	0.000	-
Florida	0.626	1.353	0.494	10,827
Georgia	0.175	0.415	0.145	3,125
Hawaii	0.011	0.021	0.008	145
Idaho	0.008	0.016	0.006	125
Illinois	0.220	0.528	0.176	3,139
Indiana	0.190	0.428	0.143	2,890
Iowa	0.046	0.090	0.031	640
Kansas	0.158	0.333	0.105	2,209
Kentucky	0.094	0.200	0.065	1,404
Louisiana	0.027	0.055	0.019	393
Maine	0.000	0.001	0.000	7
Maryland	0.199	0.387	0.130	2,402
Massachusetts	0.061	0.119	0.041	702
Michigan	0.125	0.277	0.098	1,972
Minnesota	0.042	0.091	0.031	568
Mississippi	0.010	0.021	0.007	151
Missouri	0.171	0.369	0.119	2,499
Montana	0.001	0.001	0.000	8
Nebraska	0.004	0.008	0.003	63
Nevada	0.042	0.079	0.029	575
New Hampshire	0.004	0.007	0.002	44
New Jersey	0.384	0.828	0.271	4,773
New Mexico	0.015	0.028	0.010	221
New York	0.498	0.912	0.310	5,335
North Carolina	0.168	0.381	0.133	2,859
North Dakota	0.001	0.002	0.001	10
Ohio	0.129	0.304	0.102	2,025
Oklahoma	0.009	0.019	0.007	148
Oregon	0.045	0.092	0.031	592
Pennsylvania	0.227	0.530	0.176	3,212
Rhode Island	0.004	0.007	0.002	43
South Carolina	0.053	0.118	0.040	890
South Dakota	0.001	0.002	0.001	17
Tennessee	0.339	0.796	0.262	5,005
Texas	0.862	2.207	0.760	14,470
Utah	0.040	0.091	0.032	655
Vermont	0.011	0.019	0.007	152
Virginia	0.120	0.242	0.081	1,656
Washington	0.036	0.074	0.026	458
West Virginia	0.002	0.003	0.001	22
Wisconsin	0.116	0.247	0.087	1,693
Wyoming	0.000	0.001	0.000	4
State Totals	**$6.788**	**$14.870**	**$5.109**	**99,399**
Interstate Spillovers		**5.599**	**1.773**	**35,269**
U.S. Totals	**$6.788**	**$20.470**	**$6.882**	**134,669**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix D-4: Impacts of Tenant Improvements on State Economies (**Retail and Entertainment**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.065	$0.142	$0.049	1,080
Alaska	0.004	0.007	0.003	49
Arizona	0.072	0.155	0.056	1,193
Arkansas	0.027	0.055	0.019	410
California	0.254	0.547	0.197	3,434
Colorado	0.087	0.194	0.070	1,339
Connecticut	0.039	0.075	0.026	461
Delaware	0.019	0.034	0.010	194
District of Columbia	0.055	0.063	0.005	77
Florida	0.692	1.496	0.546	11,971
Georgia	0.217	0.513	0.179	3,869
Hawaii	0.028	0.052	0.019	353
Idaho	0.014	0.027	0.010	220
Illinois	0.152	0.365	0.122	2,170
Indiana	0.070	0.157	0.052	1,062
Iowa	0.044	0.086	0.030	616
Kansas	0.059	0.124	0.039	823
Kentucky	0.058	0.125	0.041	877
Louisiana	0.053	0.109	0.038	773
Maine	0.005	0.010	0.004	82
Maryland	0.114	0.221	0.074	1,368
Massachusetts	0.106	0.206	0.070	1,210
Michigan	0.109	0.239	0.085	1,705
Minnesota	0.053	0.115	0.039	717
Mississippi	0.017	0.035	0.012	256
Missouri	0.121	0.260	0.084	1,763
Montana	0.009	0.018	0.006	142
Nebraska	0.019	0.037	0.013	283
Nevada	0.052	0.099	0.036	721
New Hampshire	0.013	0.026	0.009	156
New Jersey	0.143	0.309	0.101	1,779
New Mexico	0.026	0.047	0.017	373
New York	0.194	0.355	0.121	2,078
North Carolina	0.157	0.356	0.124	2,665
North Dakota	0.017	0.031	0.010	185
Ohio	0.159	0.373	0.125	2,491
Oklahoma	0.071	0.150	0.053	1,149
Oregon	0.050	0.103	0.035	666
Pennsylvania	0.099	0.232	0.077	1,405
Rhode Island	0.016	0.029	0.009	180
South Carolina	0.066	0.146	0.050	1,104
South Dakota	0.010	0.019	0.007	143
Tennessee	0.151	0.354	0.116	2,228
Texas	0.803	2.057	0.709	13,486
Utah	0.039	0.088	0.031	638
Vermont	0.001	0.001	0.000	11
Virginia	0.132	0.266	0.089	1,816
Washington	0.055	0.113	0.040	702
West Virginia	0.037	0.068	0.022	429
Wisconsin	0.050	0.107	0.038	734
Wyoming	0.006	0.010	0.003	73
State Totals	**$4.911**	**$10.808**	**$3.720**	**73,709**
Interstate Spillovers		**3.999**	**1.259**	**23,707**
U.S. Totals	**$4.911**	**$14.807**	**$4.978**	**97,416**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix D-5: Impacts of Tenant Improvements on State Economies (**in Four Categories**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.365	$0.796	$0.275	6,037
Alaska	0.015	0.026	0.010	176
Arizona	0.854	1.822	0.664	14,058
Arkansas	0.261	0.532	0.181	3,934
California	2.065	4.445	1.606	27,932
Colorado	0.673	1.502	0.542	10,384
Connecticut	0.270	0.521	0.180	3,189
Delaware	0.236	0.416	0.125	2,359
District of Columbia	0.369	0.425	0.033	521
Florida	2.178	4.710	1.718	37,694
Georgia	0.841	1.993	0.695	15,024
Hawaii	0.061	0.114	0.043	779
Idaho	0.098	0.187	0.068	1,502
Illinois	1.408	3.377	1.129	20,080
Indiana	0.556	1.253	0.417	8,456
Iowa	0.235	0.457	0.157	3,254
Kansas	0.352	0.740	0.234	4,913
Kentucky	0.241	0.516	0.167	3,616
Louisiana	0.222	0.456	0.158	3,227
Maine	0.059	0.114	0.041	913
Maryland	0.500	0.971	0.325	6,018
Massachusetts	1.269	2.466	0.839	14,498
Michigan	0.578	1.275	0.454	9,085
Minnesota	0.191	0.415	0.142	2,599
Mississippi	0.102	0.206	0.069	1,506
Missouri	0.662	1.428	0.461	9,671
Montana	0.021	0.039	0.014	313
Nebraska	0.129	0.251	0.088	1,913
Nevada	0.213	0.404	0.147	2,936
New Hampshire	0.037	0.075	0.025	444
New Jersey	0.613	1.325	0.434	7,635
New Mexico	0.172	0.311	0.112	2,458
New York	3.243	5.940	2.021	34,738
North Carolina	0.691	1.566	0.545	11,738
North Dakota	0.041	0.073	0.023	432
Ohio	0.880	2.066	0.691	13,785
Oklahoma	0.222	0.471	0.166	3,603
Oregon	0.304	0.624	0.211	4,024
Pennsylvania	0.570	1.330	0.441	8,056
Rhode Island	0.029	0.054	0.017	334
South Carolina	0.223	0.496	0.168	3,739
South Dakota	0.045	0.082	0.030	635
Tennessee	1.363	3.205	1.053	20,153
Texas	4.600	11.779	4.059	77,240
Utah	0.405	0.920	0.322	6,648
Vermont	0.016	0.030	0.011	235
Virginia	1.119	2.251	0.754	15,384
Washington	0.827	1.693	0.598	10,503
West Virginia	0.086	0.155	0.050	986
Wisconsin	0.572	1.221	0.430	8,379
Wyoming	0.012	0.020	0.007	152
State Totals	**$31.093**	**$67.545**	**$23.151**	**447,890**
Interstate Spillovers		**26.214**	**8.372**	**168,936**
U.S. Totals	**$31.093**	**$93.759**	**$31.522**	**616,826**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

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**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.342	$0.732	$0.257	5,491
Alaska	0.047	0.080	0.030	527
Arizona	1.559	3.328	1.223	25,323
Arkansas	0.446	0.891	0.310	6,569
California	6.440	13.905	5.073	86,755
Colorado	1.013	2.263	0.825	15,466
Connecticut	0.696	1.344	0.470	8,150
Delaware	0.109	0.191	0.057	1,062
District of Columbia	1.634	1.947	0.172	2,616
Florida	3.843	8.302	3.058	65,955
Georgia	1.715	4.041	1.426	30,264
Hawaii	0.113	0.211	0.080	1,436
Idaho	0.296	0.560	0.206	4,473
Illinois	4.921	11.766	3.987	69,811
Indiana	0.446	0.988	0.335	6,710
Iowa	0.625	1.196	0.417	8,486
Kansas	0.378	0.785	0.251	5,127
Kentucky	0.353	0.743	0.245	5,195
Louisiana	0.339	0.690	0.244	4,867
Maine	0.181	0.350	0.128	2,775
Maryland	0.948	1.849	0.626	11,299
Massachusetts	5.172	10.139	3.498	59,278
Michigan	0.775	1.696	0.611	11,939
Minnesota	0.352	0.762	0.265	4,781
Mississippi	0.113	0.224	0.077	1,644
Missouri	1.636	3.487	1.131	23,189
Montana	0.053	0.099	0.037	794
Nebraska	0.360	0.694	0.248	5,213
Nevada	0.490	0.925	0.339	6,667
New Hampshire	0.045	0.089	0.030	531
New Jersey	0.403	0.873	0.289	4,993
New Mexico	0.639	1.153	0.422	9,062
New York	11.619	21.444	7.294	123,047
North Carolina	1.562	3.517	1.240	26,204
North Dakota	0.116	0.207	0.068	1,216
Ohio	1.624	3.760	1.278	25,269
Oklahoma	0.643	1.342	0.481	10,274
Oregon	0.864	1.761	0.606	11,445
Pennsylvania	1.134	2.610	0.878	15,860
Rhode Island	0.016	0.029	0.009	178
South Carolina	0.280	0.615	0.212	4,607
South Dakota	0.155	0.280	0.103	2,135
Tennessee	3.821	8.907	2.978	56,200
Texas	8.091	20.588	7.178	134,327
Utah	0.969	2.188	0.778	15,927
Vermont	0.021	0.038	0.014	297
Virginia	4.466	9.005	3.041	59,989
Washington	3.783	7.693	2.754	47,497
West Virginia	0.043	0.078	0.026	499
Wisconsin	0.764	1.605	0.573	11,071
Wyoming	0.016	0.027	0.010	203
State Totals	**$76.472**	**$161.997**	**$55.884**	**1,042,693**
Interstate Spillovers	**0.000**	**66.445**	**21.806**	**455,799**
U.S. Totals	**$76.472**	**$228.442**	**$77.690**	**1,498,491**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix E-2: Total Impacts of Soft Cost, Site Development, Hard Costs, and Tenant Improvements on State Economies (**Industrial**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$1.088	$2.344	$0.819	17,659
Alaska	0.000	0.000	0.000	–
Arizona	0.951	2.030	0.744	15,523
Arkansas	0.152	0.305	0.105	2,253
California	0.247	0.532	0.193	3,326
Colorado	0.510	1.138	0.413	7,809
Connecticut	0.042	0.080	0.028	489
Delaware	0.031	0.055	0.017	309
District of Columbia	0.000	0.000	0.000	–
Florida	0.601	1.299	0.477	10,350
Georgia	0.594	1.403	0.493	10,533
Hawaii	0.001	0.002	0.001	15
Idaho	0.092	0.174	0.064	1,393
Illinois	0.440	1.053	0.355	6,255
Indiana	1.047	2.333	0.786	15,809
Iowa	0.118	0.228	0.079	1,618
Kansas	0.308	0.644	0.205	4,228
Kentucky	0.105	0.222	0.073	1,555
Louisiana	0.381	0.778	0.273	5,494
Maine	0.090	0.174	0.063	1,383
Maryland	0.022	0.042	0.014	259
Massachusetts	0.528	1.032	0.354	6,048
Michigan	0.970	2.127	0.763	15,039
Minnesota	0.142	0.309	0.107	1,937
Mississippi	0.261	0.520	0.177	3,812
Missouri	0.275	0.589	0.191	3,945
Montana	0.002	0.005	0.002	37
Nebraska	0.181	0.350	0.125	2,648
Nevada	0.124	0.234	0.085	1,690
New Hampshire	0.059	0.117	0.039	698
New Jersey	0.047	0.101	0.033	582
New Mexico	0.035	0.064	0.023	500
New York	1.564	2.879	0.979	16,629
North Carolina	0.323	0.730	0.256	5,448
North Dakota	0.000	0.000	0.000	–
Ohio	1.389	3.231	1.092	21,657
Oklahoma	0.092	0.193	0.069	1,477
Oregon	0.213	0.435	0.149	2,821
Pennsylvania	0.125	0.290	0.097	1,758
Rhode Island	0.033	0.061	0.019	377
South Carolina	0.250	0.553	0.190	4,151
South Dakota	0.019	0.035	0.013	266
Tennessee	0.689	1.611	0.535	10,154
Texas	6.857	17.486	6.071	114,296
Utah	0.694	1.572	0.556	11,410
Vermont	0.005	0.009	0.003	67
Virginia	0.033	0.066	0.022	443
Washington	0.035	0.072	0.026	446
West Virginia	0.190	0.342	0.112	2,189
Wisconsin	1.291	2.727	0.970	18,782
Wyoming	0.014	0.023	0.008	175
State Totals	**$23.262**	**$52.601**	**$18.269**	**355,740**
Interstate Spillovers	**0.000**	**17.122**	**5.346**	**102,096**
U.S. Totals	**$23.262**	**$69.723**	**$23.615**	**457,836**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix E-3: Total Impacts of Soft Cost, Site Development, Hard Costs, and Tenant Improvements on State Economies (**Warehouse**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.120	$0.257	$0.090	1,930
Alaska	0.016	0.028	0.010	183
Arizona	2.277	4.860	1.783	37,068
Arkansas	0.923	1.851	0.641	13,643
California	4.102	8.851	3.224	55,290
Colorado	2.268	5.065	1.842	34,677
Connecticut	0.694	1.341	0.468	8,144
Delaware	1.490	2.611	0.784	14,544
District of Columbia	0.000	0.000	0.000	–
Florida	4.914	10.616	3.905	84,446
Georgia	1.374	3.242	1.141	24,307
Hawaii	0.089	0.168	0.063	1,141
Idaho	0.064	0.121	0.044	967
Illinois	1.729	4.136	1.398	24,549
Indiana	1.493	3.315	1.121	22,488
Iowa	0.363	0.696	0.242	4,939
Kansas	1.243	2.587	0.827	16,940
Kentucky	0.735	1.552	0.510	10,854
Louisiana	0.212	0.433	0.152	3,054
Maine	0.004	0.007	0.003	55
Maryland	1.567	3.055	1.032	18,716
Massachusetts	0.483	0.945	0.325	5,528
Michigan	0.986	2.159	0.776	15,229
Minnesota	0.327	0.709	0.246	4,448
Mississippi	0.081	0.160	0.055	1,170
Missouri	1.343	2.870	0.930	19,144
Montana	0.004	0.008	0.003	64
Nebraska	0.033	0.064	0.023	483
Nevada	0.328	0.620	0.227	4,473
New Hampshire	0.029	0.058	0.019	344
New Jersey	3.013	6.518	2.153	37,343
New Mexico	0.121	0.219	0.080	1,722
New York	3.912	7.211	2.453	41,507
North Carolina	1.321	2.979	1.048	22,214
North Dakota	0.007	0.013	0.004	77
Ohio	1.015	2.356	0.799	15,815
Oklahoma	0.072	0.150	0.053	1,147
Oregon	0.352	0.717	0.246	4,658
Pennsylvania	1.786	4.121	1.382	25,022
Rhode Island	0.030	0.055	0.018	341
South Carolina	0.417	0.920	0.316	6,894
South Dakota	0.009	0.017	0.006	127
Tennessee	2.659	6.208	2.070	39,149
Texas	6.769	17.243	6.000	112,598
Utah	0.313	0.708	0.251	5,149
Vermont	0.084	0.152	0.055	1,178
Virginia	0.946	1.907	0.643	12,756
Washington	0.283	0.577	0.206	3,564
West Virginia	0.015	0.027	0.009	172
Wisconsin	0.908	1.913	0.682	13,184
Wyoming	0.002	0.004	0.001	32
State Totals	**$53.326**	**$116.395**	**$40.360**	**773,467**
Interstate Spillovers	**0.000**	**43.157**	**13.797**	**273,648**
U.S. Totals	**$53.326**	**$159.552**	**$54.157**	**1,047,115**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix E-4: Total Impacts of Soft Cost, Site Development, Hard Costs, and Tenant Improvements on State Economies (**Retail and Entertainment**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$0.327	$0.700	$0.246	5,243
Alaska	0.022	0.037	0.014	243
Arizona	0.363	0.775	0.285	5,890
Arkansas	0.136	0.272	0.095	2,002
California	1.273	2.749	1.004	17,144
Colorado	0.435	0.972	0.354	6,636
Connecticut	0.195	0.377	0.132	2,285
Delaware	0.098	0.171	0.051	947
District of Columbia	0.274	0.327	0.029	441
Florida	3.467	7.488	2.760	59,460
Georgia	1.086	2.557	0.903	19,145
Hawaii	0.139	0.260	0.098	1,768
Idaho	0.072	0.135	0.050	1,082
Illinois	0.763	1.824	0.619	10,818
Indiana	0.350	0.774	0.263	5,259
Iowa	0.223	0.426	0.149	3,018
Kansas	0.295	0.613	0.196	4,000
Kentucky	0.293	0.616	0.203	4,307
Louisiana	0.266	0.542	0.192	3,824
Maine	0.026	0.051	0.019	402
Maryland	0.570	1.112	0.376	6,787
Massachusetts	0.531	1.042	0.360	6,089
Michigan	0.544	1.189	0.429	8,363
Minnesota	0.264	0.571	0.199	3,583
Mississippi	0.087	0.171	0.059	1,256
Missouri	0.605	1.288	0.418	8,555
Montana	0.047	0.087	0.032	694
Nebraska	0.096	0.184	0.066	1,383
Nevada	0.262	0.495	0.182	3,568
New Hampshire	0.066	0.131	0.044	777
New Jersey	0.717	1.551	0.514	8,871
New Mexico	0.131	0.235	0.086	1,850
New York	0.973	1.796	0.611	10,291
North Carolina	0.786	1.769	0.624	13,174
North Dakota	0.087	0.155	0.051	912
Ohio	0.797	1.844	0.627	12,396
Oklahoma	0.355	0.741	0.266	5,672
Oregon	0.252	0.514	0.177	3,341
Pennsylvania	0.498	1.146	0.386	6,965
Rhode Island	0.080	0.145	0.047	903
South Carolina	0.330	0.727	0.251	5,438
South Dakota	0.051	0.091	0.034	697
Tennessee	0.756	1.760	0.589	11,109
Texas	4.026	10.240	3.573	66,787
Utah	0.195	0.439	0.156	3,198
Vermont	0.004	0.007	0.002	52
Virginia	0.662	1.335	0.451	8,876
Washington	0.277	0.563	0.202	3,476
West Virginia	0.187	0.335	0.111	2,155
Wisconsin	0.251	0.527	0.189	3,639
Wyoming	0.028	0.048	0.017	356
State Totals	**$24.615**	**$53.903**	**$18.788**	**365,132**
Interstate Spillovers	**0.000**	**19.582**	**6.222**	**116,808**
U.S. Totals	**$24.615**	**$73.485**	**$25.010**	**481,940**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix E-5: Total Impacts of Soft Cost, Site Development, Hard Costs, and Tenant Improvements on State Economies (**in Four Categories**), 2020

State	Direct Spending (Billions of Dollars)	Total Output (Billions of Dollars)	Personal Earnings (Billions of Dollars)	Jobs Supported
Alabama	$1.876	$4.033	$1.412	30,322
Alaska	0.084	0.145	0.055	953
Arizona	5.151	10.993	4.035	83,805
Arkansas	1.658	3.319	1.150	24,467
California	12.061	26.036	9.494	162,515
Colorado	4.226	9.438	3.435	64,589
Connecticut	1.627	3.142	1.098	19,068
Delaware	1.728	3.029	0.909	16,862
District of Columbia	1.908	2.274	0.201	3,057
Florida	12.825	27.706	10.201	220,212
Georgia	4.769	11.244	3.963	84,249
Hawaii	0.342	0.641	0.242	4,361
Idaho	0.524	0.990	0.364	7,916
Illinois	7.853	18.779	6.359	111,433
Indiana	3.337	7.409	2.504	50,266
Iowa	1.329	2.546	0.887	18,062
Kansas	2.225	4.629	1.480	30,294
Kentucky	1.486	3.133	1.032	21,911
Louisiana	1.198	2.443	0.860	17,238
Maine	0.301	0.581	0.213	4,616
Maryland	3.106	6.058	2.048	37,061
Massachusetts	6.714	13.157	4.537	76,942
Michigan	3.275	7.171	2.579	50,570
Minnesota	1.085	2.350	0.817	14,749
Mississippi	0.542	1.076	0.368	7,882
Missouri	3.859	8.235	2.670	54,832
Montana	0.107	0.198	0.074	1,588
Nebraska	0.670	1.293	0.461	9,727
Nevada	1.203	2.273	0.833	16,398
New Hampshire	0.199	0.395	0.133	2,350
New Jersey	4.179	9.043	2.988	51,790
New Mexico	0.926	1.670	0.611	13,135
New York	18.068	33.328	11.336	191,474
North Carolina	3.993	8.994	3.168	67,041
North Dakota	0.211	0.376	0.123	2,205
Ohio	4.826	11.191	3.795	75,137
Oklahoma	1.162	2.426	0.868	18,568
Oregon	1.682	3.427	1.177	22,265
Pennsylvania	3.544	8.167	2.742	49,605
Rhode Island	0.159	0.290	0.093	1,799
South Carolina	1.277	2.815	0.968	21,090
South Dakota	0.234	0.423	0.155	3,226
Tennessee	7.924	18.486	6.173	116,612
Texas	25.743	65.556	22.823	428,007
Utah	2.171	4.907	1.741	35,684
Vermont	0.113	0.205	0.074	1,595
Virginia	6.106	12.312	4.157	82,065
Washington	4.378	8.905	3.187	54,983
West Virginia	0.436	0.781	0.258	5,016
Wisconsin	3.214	6.772	2.413	46,675
Wyoming	0.061	0.102	0.036	766
State Totals	**$177.675**	**$384.895**	**$133.301**	**2,537,032**
Interstate Spillovers	**0.000**	**146.307**	**47.171**	**948,350**
U.S. Totals	**$177.675**	**$531.202**	**$180.471**	**3,485,383**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix F-1: Impacts of Operations on State Economies (**Office**), 2020

State	Direct Spending (Thousands of Dollars)	Total Output (Thousands of Dollars)	Personal Earnings (Thousands of Dollars)	Jobs Supported
Alabama	$6,516	$12,166	$4,106	148
Alaska	748	1,193	418	14
Arizona	34,881	68,074	23,604	729
Arkansas	11,171	19,698	6,656	241
California	111,512	225,945	77,255	2,150
Colorado	29,037	59,338	20,471	600
Connecticut	10,776	19,498	6,305	183
Delaware	3,884	6,369	1,805	61
District of Columbia	21,022	25,899	2,674	91
Florida	79,817	157,480	54,635	1,862
Georgia	33,695	72,478	24,102	791
Hawaii	1,127	1,998	696	21
Idaho	5,978	10,252	3,562	132
Illinois	67,539	149,307	48,351	1,325
Indiana	8,176	16,196	5,275	165
Iowa	9,838	16,787	5,548	196
Kansas	9,380	17,340	5,214	166
Kentucky	7,803	14,795	4,601	152
Louisiana	5,377	9,951	3,378	120
Maine	5,671	9,991	3,448	120
Maryland	17,017	31,062	9,868	297
Massachusetts	68,705	127,674	41,718	1,181
Michigan	8,371	16,772	5,714	178
Minnesota	7,205	14,168	4,762	140
Mississippi	2,405	4,230	1,396	51
Missouri	24,980	48,529	15,133	507
Montana	1,622	2,691	949	36
Nebraska	3,685	6,412	2,150	74
Nevada	7,930	13,675	4,672	158
New Hampshire	1,488	2,623	815	24
New Jersey	8,072	16,311	5,068	142
New Mexico	1,719	2,839	985	37
New York	128,303	227,893	71,414	2,054
North Carolina	28,921	59,430	19,762	667
North Dakota	2,049	3,277	1,050	34
Ohio	34,102	71,542	23,360	711
Oklahoma	7,566	14,083	4,836	173
Oregon	8,315	15,387	5,117	153
Pennsylvania	20,777	42,534	13,710	392
Rhode Island	581	1,003	302	9
South Carolina	4,309	8,587	2,806	100
South Dakota	4,818	7,686	2,574	95
Tennessee	31,851	67,826	21,964	684
Texas	186,484	419,273	140,292	4,496
Utah	13,753	28,041	9,524	312
Vermont	758	1,246	415	16
Virginia	74,331	138,909	43,944	1,295
Washington	70,321	129,489	43,803	1,275
West Virginia	324	525	165	6
Wisconsin	20,387	38,585	12,968	414
Wyoming	434	659	222	8
State Totals	**$1,255,529**	**$2,477,715**	**$813,563**	**24,989**
Interstate Spillovers		**884,090**	**285,778**	**6,423**
U.S. Totals	**$1,255,529**	**$3,361,805**	**$1,099,341**	**31,412**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix F-2: Impacts of Operations on State Economies (**Industrial**), 2020

State	Direct Spending (Thousands of Dollars)	Total Output (Thousands of Dollars)	Personal Earnings (Thousands of Dollars)	Jobs Supported
Alabama	$1,629	$3,043	$1,027	37
Alaska	–	–	–	0
Arizona	5,812	11,344	3,933	122
Arkansas	628	1,108	374	14
California	921	1,867	638	18
Colorado	815	1,665	574	17
Connecticut	143	258	83	2
Delaware	205	336	95	3
District of Columbia	–	–	–	0
Florida	2,330	4,597	1,595	54
Georgia	4,734	10,184	3,387	111
Hawaii	–	–	–	0
Idaho	173	296	103	4
Illinois	3,456	7,639	2,474	68
Indiana	2,494	4,940	1,609	50
Iowa	466	796	263	9
Kansas	986	1,823	548	17
Kentucky	1,180	2,237	696	23
Louisiana	456	844	287	10
Maine	134	236	81	3
Maryland	6	11	3	0
Massachusetts	1,497	2,783	909	26
Michigan	1,976	3,959	1,349	42
Minnesota	706	1,389	467	14
Mississippi	538	946	312	11
Missouri	1,362	2,647	825	28
Montana	5	8	3	0
Nebraska	143	250	84	3
Nevada	536	925	316	11
New Hampshire	217	382	119	3
New Jersey	245	496	154	4
New Mexico	168	278	96	4
New York	2,642	4,692	1,470	42
North Carolina	1,069	2,196	730	25
North Dakota	–	–	–	0
Ohio	11,046	23,173	7,566	230
Oklahoma	521	970	333	12
Oregon	659	1,220	406	12
Pennsylvania	413	845	273	8
Rhode Island	7	13	4	0
South Carolina	909	1,812	592	21
South Dakota	–	–	–	0
Tennessee	2,115	4,505	1,459	45
Texas	11,965	26,900	9,001	288
Utah	1,498	3,054	1,037	34
Vermont	51	84	28	1
Virginia	202	378	120	4
Washington	150	276	93	3
West Virginia	197	319	101	3
Wisconsin	2,804	5,307	1,784	57
Wyoming	81	124	42	2
State Totals	**$70,293**	**$143,152**	**$47,443**	**1,496**
Interstate Spillovers		**45,065**	**14,105**	**263**
U.S. Totals	**$70,293**	**$188,217**	**$61,549**	**1,759**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix F-3: Impacts of Operations on State Economies (**Warehouse**), 2020

State	Direct Spending (Thousands of Dollars)	Total Output (Thousands of Dollars)	Personal Earnings (Thousands of Dollars)	Jobs Supported
Alabama	$519	$968	$327	12
Alaska	158	252	88	3
Arizona	16,687	32,567	11,292	349
Arkansas	5,699	10,049	3,395	123
California	25,230	51,120	17,479	486
Colorado	14,515	29,662	10,233	300
Connecticut	5,556	10,054	3,251	95
Delaware	8,031	13,168	3,731	127
District of Columbia	–	–	–	0
Florida	32,429	63,982	22,197	756
Georgia	8,891	19,124	6,360	209
Hawaii	276	488	170	5
Idaho	321	551	191	7
Illinois	11,273	24,922	8,070	221
Indiana	10,228	20,261	6,599	207
Iowa	2,569	4,384	1,449	51
Kansas	6,697	12,379	3,722	119
Kentucky	6,965	13,206	4,107	136
Louisiana	1,010	1,869	634	23
Maine	24	42	14	1
Maryland	9,371	17,105	5,434	163
Massachusetts	2,932	5,449	1,781	50
Michigan	6,961	13,947	4,752	148
Minnesota	2,071	4,072	1,369	40
Mississippi	714	1,255	414	15
Missouri	8,058	15,654	4,881	164
Montana	42	70	25	1
Nebraska	257	447	150	5
Nevada	2,593	4,472	1,528	52
New Hampshire	294	519	161	5
New Jersey	17,423	35,207	10,938	307
New Mexico	275	453	157	6
New York	16,226	28,820	9,031	260
North Carolina	8,305	17,065	5,675	191
North Dakota	53	85	27	1
Ohio	8,387	17,594	5,745	175
Oklahoma	351	653	224	8
Oregon	1,859	3,441	1,144	34
Pennsylvania	10,079	20,634	6,651	190
Rhode Island	216	373	112	3
South Carolina	2,926	5,831	1,906	68
South Dakota	41	65	22	1
Tennessee	17,771	37,843	12,255	382
Texas	55,753	125,350	41,943	1344
Utah	2,063	4,207	1,429	47
Vermont	394	648	216	8
Virginia	4,421	8,261	2,613	77
Washington	1,895	3,489	1,180	34
West Virginia	21	34	11	0
Wisconsin	6,684	12,651	4,252	136
Wyoming	12	18	6	0
State Totals	**$345,524**	**$694,761**	**$229,345**	**7,145**
Interstate Spillovers		**230,415**	**73,196**	**1,499**
U.S. Totals	**$345,524**	**$925,176**	**$302,541**	**8,645**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix F-4: Impacts of Operations on State Economies (**Retail and Entertainment**), 2020

State	Direct Spending (Thousands of Dollars)	Total Output (Thousands of Dollars)	Personal Earnings (Thousands of Dollars)	Jobs Supported
Alabama	$3,108	$5,804	$1,959	71
Alaska	46	73	25	1
Arizona	3,989	7,785	2,699	83
Arkansas	892	1,573	532	19
California	13,841	28,045	9,589	267
Colorado	4,148	8,477	2,924	86
Connecticut	2,823	5,109	1,652	48
Delaware	457	750	212	7
District of Columbia	1,649	2,031	210	7
Florida	30,075	59,338	20,586	701
Georgia	7,198	15,483	5,149	169
Hawaii	676	1,197	417	13
Idaho	990	1,697	590	22
Illinois	6,130	13,553	4,389	120
Indiana	2,366	4,686	1,526	48
Iowa	1,882	3,211	1,061	37
Kansas	2,583	4,775	1,436	46
Kentucky	2,396	4,543	1,413	47
Louisiana	2,456	4,545	1,543	55
Maine	182	320	110	4
Maryland	4,690	8,561	2,720	82
Massachusetts	3,590	6,671	2,180	62
Michigan	4,449	8,914	3,037	94
Minnesota	3,067	6,032	2,028	60
Mississippi	674	1,185	391	14
Missouri	4,481	8,705	2,714	91
Montana	101	168	59	2
Nebraska	991	1,724	578	20
Nevada	2,441	4,210	1,438	49
New Hampshire	875	1,542	479	14
New Jersey	5,056	10,216	3,174	89
New Mexico	833	1,375	477	18
New York	4,776	8,484	2,658	76
North Carolina	8,395	17,250	5,736	193
North Dakota	1,696	2,712	869	28
Ohio	6,243	13,097	4,276	130
Oklahoma	3,374	6,280	2,156	77
Oregon	1,904	3,524	1,172	35
Pennsylvania	4,230	8,661	2,792	80
Rhode Island	508	877	264	8
South Carolina	3,655	7,285	2,381	85
South Dakota	174	278	93	3
Tennessee	7,442	15,848	5,132	160
Texas	35,090	78,894	26,399	846
Utah	2,357	4,806	1,632	53
Vermont	45	74	25	1
Virginia	5,667	10,591	3,350	99
Washington	1,990	3,665	1,240	36
West Virginia	3,093	5,004	1,578	53
Wisconsin	2,225	4,210	1,415	45
Wyoming	392	596	201	8
State Totals	**$212,391**	**$424,432**	**$140,667**	**4,464**
Interstate Spillovers		**144,267**	**45,302**	**850**
U.S. Totals	**$212,391**	**$568,699**	**$185,970**	**5,314**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

Appendix F-5: Impacts of Operations on State Economies (**in Four Categories**), 2020

State	Direct Spending (Thousands of Dollars)	Total Output (Thousands of Dollars)	Personal Earnings (Thousands of Dollars)	Jobs Supported
Alabama	$11,772	$21,981	$7,418	268
Alaska	952	1,518	532	18
Arizona	61,370	119,769	41,529	1,283
Arkansas	18,390	32,428	10,957	397
California	151,504	306,977	104,962	2,921
Colorado	48,516	99,142	34,203	1,003
Connecticut	19,298	34,919	11,291	328
Delaware	12,578	20,622	5,844	199
District of Columbia	22,670	27,930	2,884	98
Florida	144,651	285,396	99,013	3,374
Georgia	54,518	117,268	38,997	1,280
Hawaii	2,079	3,684	1,283	39
Idaho	7,462	12,796	4,446	165
Illinois	88,398	195,421	63,284	1,734
Indiana	23,263	46,083	15,009	470
Iowa	14,756	25,179	8,321	293
Kansas	19,647	36,317	10,920	349
Kentucky	18,344	34,781	10,817	358
Louisiana	9,299	17,209	5,842	208
Maine	6,010	10,588	3,654	127
Maryland	31,084	56,738	18,026	542
Massachusetts	76,724	142,577	46,587	1,319
Michigan	21,758	43,591	14,852	461
Minnesota	13,049	25,662	8,625	254
Mississippi	4,331	7,617	2,514	92
Missouri	38,881	75,534	23,554	789
Montana	1,770	2,937	1,036	39
Nebraska	5,075	8,832	2,962	101
Nevada	13,501	23,281	7,955	270
New Hampshire	2,874	5,067	1,575	46
New Jersey	30,796	62,230	19,334	543
New Mexico	2,994	4,945	1,716	64
New York	151,947	269,888	84,574	2,433
North Carolina	46,689	95,942	31,903	1,076
North Dakota	3,798	6,074	1,947	63
Ohio	59,777	125,405	40,947	1,246
Oklahoma	11,811	21,986	7,550	271
Oregon	12,737	23,572	7,839	235
Pennsylvania	35,499	72,674	23,426	670
Rhode Island	1,312	2,265	681	21
South Carolina	11,799	23,516	7,685	274
South Dakota	5,032	8,029	2,689	99
Tennessee	59,179	126,023	40,810	1,272
Texas	289,292	650,416	217,635	6,975
Utah	19,671	40,109	13,622	446
Vermont	1,248	2,051	684	26
Virginia	84,621	158,140	50,028	1,475
Washington	74,356	136,920	46,316	1,349
West Virginia	3,636	5,883	1,855	63
Wisconsin	32,100	60,753	20,419	652
Wyoming	919	1,397	471	18
State Totals	**$1,883,738**	**$3,740,060**	**$1,231,019**	**38,094**
Interstate Spillovers		**1,303,837**	**418,382**	**9,035**
U.S. Totals	**$1,883,738**	**$5,043,897**	**$1,649,401**	**47,129**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

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

	MULTIPLIERS		
State	Output	Earnings	Jobs
Alabama	2.1811	0.7533	16.5493
Alaska	1.7250	0.6414	11.4662
Arizona	2.1351	0.7774	16.4697
Arkansas	2.0391	0.6941	15.0658
California	2.1523	0.7776	13.5244
Colorado	2.2324	0.8052	15.4283
Connecticut	1.9321	0.6690	11.8255
Delaware	1.7612	0.5297	9.9750
District of Columbia	1.1520	0.0890	1.4123
Florida	2.1626	0.7890	17.3085
Georgia	2.3700	0.8259	17.8633
Hawaii	1.8678	0.6990	12.7727
Idaho	1.9050	0.6908	15.3305
Illinois	2.3988	0.8018	14.2615
Indiana	2.2519	0.7503	15.2016
Iowa	1.9448	0.6673	13.8602
Kansas	2.1043	0.6661	13.9637
Kentucky	2.1402	0.6946	14.9980
Louisiana	2.0560	0.7118	14.5526
Maine	1.9445	0.7045	15.5633
Maryland	1.9415	0.6505	12.0394
Massachusetts	1.9430	0.6608	11.4223
Michigan	2.2065	0.7848	15.7155
Minnesota	2.1789	0.7465	13.6393
Mississippi	2.0166	0.6789	14.7743
Missouri	2.1585	0.6969	14.6138
Montana	1.8884	0.6925	15.2308
Nebraska	1.9425	0.6844	14.8294
Nevada	1.8953	0.6880	13.7744
New Hampshire	1.9909	0.6627	11.8519
New Jersey	2.1594	0.7067	12.4446
New Mexico	1.8120	0.6521	14.3262
New York	1.8318	0.6232	10.7121
North Carolina	2.2672	0.7890	16.9940
North Dakota	1.7938	0.5746	10.5773
Ohio	2.3481	0.7855	15.6655
Oklahoma	2.1182	0.7451	16.2063
Oregon	2.0490	0.6924	13.2216
Pennsylvania	2.3321	0.7734	14.1279
Rhode Island	1.8288	0.5802	11.3405
South Carolina	2.2213	0.7546	16.7596
South Dakota	1.8370	0.6646	14.1589
Tennessee	2.3513	0.7727	14.7847
Texas	2.5606	0.8823	16.7915
Utah	2.2730	0.7967	16.4249
Vermont	1.8297	0.6542	14.3323
Virginia	2.0122	0.6743	13.7530
Washington	2.0479	0.7233	12.7061
West Virginia	1.8101	0.5871	11.4966
Wisconsin	2.1332	0.7520	14.6440
Wyoming	1.7064	0.5936	12.8310
U.S. Totals	**3.0154**	**1.0138**	**19.8379**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

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

	MULTIPLIERS		
State	**Output**	**Earnings**	**Jobs**
Alabama	1.9496	0.7472	13.7191
Alaska	1.6964	0.6695	10.4122
Arizona	2.1298	0.8174	15.1346
Arkansas	1.7965	0.6916	13.0474
California	2.1919	0.8363	13.2183
Colorado	2.2367	0.8549	14.4610
Connecticut	1.9241	0.7067	11.1651
Delaware	1.7050	0.5067	8.5086
District of Columbia	1.3814	0.1819	2.5032
Florida	2.1484	0.8283	16.4545
Georgia	2.2925	0.8572	16.6216
Hawaii	1.9063	0.7428	12.6396
Idaho	1.8051	0.7097	13.9361
Illinois	2.3534	0.8508	13.8280
Indiana	2.0289	0.7517	14.2220
Iowa	1.7598	0.6675	12.1657
Kansas	1.9487	0.6599	11.6512
Kentucky	1.9373	0.6920	13.3742
Louisiana	1.9508	0.7538	13.4997
Maine	1.8446	0.7237	14.0168
Maryland	1.9979	0.7071	11.3684
Massachusetts	2.0422	0.7501	11.6427
Michigan	2.0939	0.8043	13.8681
Minnesota	2.0996	0.7882	13.3651
Mississippi	1.7879	0.6802	13.1101
Missouri	2.0054	0.6650	12.0865
Montana	1.7435	0.6950	13.4161
Nebraska	1.8586	0.7058	12.8277
Nevada	1.8544	0.7162	12.8474
New Hampshire	1.9364	0.7026	11.4590
New Jersey	2.1882	0.7610	12.1008
New Mexico	1.7619	0.6950	13.4667
New York	1.9112	0.6493	10.0041
North Carolina	2.1755	0.8167	15.7184
North Dakota	1.7024	0.6232	9.7602
Ohio	2.1564	0.7922	15.0353
Oklahoma	1.9385	0.7582	14.8575
Oregon	1.9776	0.7397	13.3253
Pennsylvania	2.1587	0.7761	13.3086
Rhode Island	1.8093	0.6041	11.3651
South Carolina	2.1070	0.7765	15.1579
South Dakota	1.6781	0.6579	12.0913
Tennessee	2.2352	0.8122	14.3497
Texas	2.4673	0.9106	15.6926
Utah	2.1863	0.8304	16.4928
Vermont	1.7383	0.6740	12.7685
Virginia	2.0370	0.7127	11.9041
Washington	1.9655	0.7500	11.8379
West Virginia	1.6951	0.6240	11.6250
Wisconsin	1.9449	0.7433	13.7651
Wyoming	1.5881	0.6211	11.4398
U.S. Totals	**2.8525**	**1.0261**	**18.4332**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

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

	MULTIPLIERS		
State	**Output**	**Earnings**	**Jobs**
Alabama	1.8672	0.6301	22.7245
Alaska	1.5941	0.5588	19.3330
Arizona	1.9516	0.6767	20.9072
Arkansas	1.7633	0.5958	21.5707
California	2.0262	0.6928	19.2782
Colorado	2.0435	0.7050	20.6705
Connecticut	1.8095	0.5851	17.0224
Delaware	1.6396	0.4646	15.8230
District of Columbia	1.2320	0.1272	4.3424
Florida	1.9730	0.6845	23.3249
Georgia	2.1510	0.7153	23.4820
Hawaii	1.7723	0.6174	18.7311
Idaho	1.7148	0.5958	22.1404
Illinois	2.2107	0.7159	19.6133
Indiana	1.9810	0.6452	20.2099
Iowa	1.7064	0.5639	19.8803
Kansas	1.8485	0.5558	17.7418
Kentucky	1.8961	0.5897	19.5127
Louisiana	1.8506	0.6282	22.3868
Maine	1.7617	0.6080	21.1357
Maryland	1.8253	0.5799	17.4245
Massachusetts	1.8583	0.6072	17.1876
Michigan	2.0035	0.6826	21.2089
Minnesota	1.9666	0.6610	19.4415
Mississippi	1.7588	0.5804	21.2116
Missouri	1.9427	0.6058	20.3050
Montana	1.6591	0.5854	21.9487
Nebraska	1.7402	0.5836	19.9659
Nevada	1.7244	0.5892	19.9671
New Hampshire	1.7631	0.5480	16.0363
New Jersey	2.0207	0.6278	17.6242
New Mexico	1.6519	0.5732	21.4281
New York	1.7762	0.5566	16.0095
North Carolina	2.0549	0.6833	23.0462
North Dakota	1.5990	0.5125	16.6872
Ohio	2.0979	0.6850	20.8418
Oklahoma	1.8615	0.6392	22.9033
Oregon	1.8506	0.6154	18.4264
Pennsylvania	2.0472	0.6599	18.8735
Rhode Island	1.7261	0.5188	15.8608
South Carolina	1.9930	0.6513	23.2493
South Dakota	1.5955	0.5343	19.6764
Tennessee	2.1295	0.6896	21.4884
Texas	2.2483	0.7523	24.1096
Utah	2.0390	0.6925	22.6950
Vermont	1.6431	0.5479	20.4592
Virginia	1.8688	0.5912	17.4265
Washington	1.8414	0.6229	18.1379
West Virginia	1.6178	0.5101	17.2395
Wisconsin	1.8926	0.6361	20.3241
Wyoming	1.5194	0.5123	19.4859
U.S. Totals	**2.6776**	**0.8756**	**25.0188**

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

Sources: Dodge Data & Analytics, BEA, NAIOP; author's calculations.

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