

# Economic Impacts of Commercial Real Estate

2014 Edition



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McGraw-Hill Construction**

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George Mason University  
Arlington, Virginia

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## 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 15,000 members in North America. NAIOP advances responsible commercial real estate development and advocates for effective public policy. For more information, visit [www.naiop.org](http://www.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 these individuals and organizations with the highest level of research information on 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 fund established to fund future research. For more information, visit [www.naiopr.org](http://www.naiopr.org).

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There are many ways to give to the Foundation and support projects and initiatives that advance the commercial real estate industry. If you would like to do your part in helping this unique and valuable resource, please contact Bennett Gray, senior director, at 703-904-7100, ext. 168, or [gray@naiop.org](mailto:gray@naiop.org).

Requests for funding should be submitted to [research@naiop.org](mailto:research@naiop.org). For additional information, please contact Margarita Foster, NAIOP Research Foundation, 2201 Cooperative Way, Herndon, VA 20171, at 703-904-7100, ext. 117, or [foster@naiop.org](mailto:foster@naiop.org).



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## 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 project 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.

# Introduction

Since 2008, NAIOP has conducted this study for purposes of estimating 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 and McGraw-Hill Construction. It applies several processes and methodologies to take “snapshots” of the commercial real estate development industry from various angles and across several scales.

At the largest scale, the study calculates the contribution of building and nonbuilding construction to the U.S. economy for the year in review. The product types included in this broad measure are residential, nonresidential and infrastructure projects in the construction pipeline, based on U.S. Census data on the value of construction put in place. Appropriate multipliers supplied by the Bureau of Economic Analysis 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. (See Table 1.)

**Table 1**  
**Economic Contributions to the U.S. Economy from Building and Nonbuilding Construction**

Year	Direct Expenditures (In Billions of Dollars)	Total Economic Contribution <sup>1</sup> to GDP (In Trillions of Dollars, Includes Multiplier Effect)	Percent Contribution to U.S. GDP	Personal Earnings <sup>2</sup> (In Billions of Dollars, Excludes Multiplier Effect)	Jobs Supported <sup>3</sup> (In Millions, Includes Multiplier Effect)
2013	\$898.4	\$2.77	16.5%	\$877.4	21.0
2012 <sup>4</sup>	857.0	2.65	16.3	836.9	20.1
2011	787.4	2.27	15.0	677.0	17.2
2010	803.6	2.31	15.9	691.0	17.6
2009	907.8	2.90	20.5	870.0	24.0
2007	1,160.0	3.97	28.8	1,225.0	33.2

Sources: U.S. Census, Value of Construction Put in Place; GMU Center for Regional Analysis

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

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

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

<sup>4</sup> Revised 2012 data for construction spending and GDP.

Note: Data includes residential and nonresidential buildings as well as infrastructure such as water, sewer, highways and power.

Zeroing in exclusively on commercial real estate — the core of this study — the analysis begins with McGraw-Hill Construction data relating to square footage and values for office, industrial, warehouse and retail projects. It examines expenditures made during four distinct phases of the development process, including pre-construction (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 category, because they have little immediate economic impact.) This study also examines the contribution of building operations, which is reported as a stand-alone phase that follows development. These impacts are shown for the estimated 363.6 million square feet of buildings constructed in 2013. (See Table 2.)

Appropriate 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. Apartment and hotel properties are not included in these calculations. (See Table 2.)

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

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



Table 2  
**Economic Contributions to the U.S. Economy from Development of Commercial Real Estate Buildings**

		Development Phases				Operations Phase	
		Pre-Construction	Construction			Post-Construction	
		Soft Construction (Soft Costs)	Site Development	Hard Construction (Hard Costs)	Tenant Improvements	Totals	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
<b>Direct Expenditures</b> (In Billions of Dollars)	<b>2013</b>	\$19.66	\$21.07	\$61.65	\$21.84	\$124.22	\$1.11
	<b>2012</b>	15.88	17.34	49.18	17.73	100.13	0.96
	<b>2011</b>	13.42	15.45	47.83	15.58	92.28	0.80
	<b>2010</b>	13.11	13.99	41.72	13.05	81.87	0.73
<b>In 2013, direct expenditures of \$124.22 billion contributed \$376.35 billion to U.S. GDP.</b>							
<b>Total Economic Contribution<sup>1</sup> to GDP</b> (In Billions of Dollars, Includes Multiplier Effect)	<b>2013</b>	53.73	65.00	190.22	67.40	376.35	3.07
	<b>2012</b>	43.39	53.51	151.75	54.71	303.36	2.64
	<b>2011</b>	34.37	44.53	137.82	44.91	261.63	2.05
	<b>2010</b>	33.58	40.30	120.21	37.61	231.70	1.86
<b>In 2013, direct expenditures of \$124.22 billion generated \$120.02 billion in personal earnings in the U.S.</b>							
<b>Personal Earnings<sup>2</sup></b> (In Billions of Dollars, Includes Multiplier Effect)	<b>2013</b>	17.91	20.57	60.21	21.33	120.02	0.97
	<b>2012</b>	14.46	16.94	48.03	17.32	96.75	0.83
	<b>2011</b>	11.23	13.29	41.15	13.40	79.07	0.61
	<b>2010</b>	10.97	12.03	35.89	11.23	70.12	0.54
<b>In 2013, direct expenditures of \$124.22 billion supported 2.81 million jobs to the U.S. economy.</b>							
<b>Jobs Supported<sup>3</sup></b> (Includes Multiplier Effect)	<b>2013</b>	361,866	493,314	1,443,779	511,530	2,810,510	24,285
	<b>2012</b>	292,219	406,107	1,151,784	415,236	2,265,346	20,929
	<b>2011</b>	259,805	339,156	1,049,630	341,981	1,990,572	15,600
	<b>2010</b>	253,838	306,953	915,518	286,413	1,762,722	13,114

Sources: NAIOP, McGraw-Hill Construction Analytics, and GMU Center For Regional Analysis

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

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

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

Note: Data includes 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.

This year, the study also examines the economic contributions of existing building operations. Based on the existing stock of commercial buildings, totaling 43.9 billion square feet in 2013, direct expenditures totaled \$134.3 billion, contribution to GDP came in at \$370.9 billion, personal earnings (wages and salaries paid) totaled \$116.8 billion and 2.9 million jobs were supported. (See Table 3.)

Table 3  
**Economic Contributions to the U.S. Economy from Operations of Existing Buildings, 2013**  
(In Billions of Current Year Dollars)

Year	Total Square Feet (In Billions)	Direct Expenditures for Building Operations	Total Economic Contribution <sup>1</sup> to GDP	Personal Earnings <sup>2</sup>	Jobs Supported <sup>3</sup> (In Millions)
2013	43.934	\$134.3	\$370.9	\$116.8	2.941
2012	43.208	134.5	371.5	117.0	2.945
2011	42.098	140.7	366.6	107.6	2.758
2010	42.008	134.8	342.4	100.2	2.413

Sources: BOMA; CoStar; Delta Associates; GMU Center for Regional Analysis

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

<sup>2</sup> The earnings generated within the U.S. from direct expenditures for building operations.

<sup>3</sup> The jobs supported by the spending and re-spending of direct outlay associated with building operations.

Note: Building operations include maintenance repair, cleaning, utilities, security, building management and administrative expenses; column values may not add up to overall totals due to rounding; see Appendix G for state and building type data.

Combining the economic contributions of new development with operation of existing buildings in 2013, direct expenditures of \$258.5 billion resulted in the following economic contributions to the U.S. economy:

- Contributed \$747.25 billion to U.S. GDP;
- Generated \$236.8 billion in personal earnings; and
- Supported a total of 5.7 million jobs.

To an economist, buildings are much more than structures providing shelter. They are structures that create economic capacity for businesses. While the economic contributions accruing from the actual construction phase for new buildings are widely understood and valued, the pre-construction and post-construction impacts of the development process often are overlooked and undervalued.

Likewise, the job growth and income generated and supported by annual building operations represent a continuing flow of expenditures into local, state and national economies that extend over the life of the structures. These new buildings represent an expansion of the productive capacity of their local economies and serve as enablers that further enlarge the local, state and national economies. The jobs and output associated with the newly built capacity generate significant annual economic and fiscal (i.e., tax revenue) benefits at all governmental levels. Because these post-construction benefits are cumulative, their economic impacts become increasingly significant to the economy's growth.

## **Summary of Construction Activity**

The commercial construction sector continued its recovery in 2013 after first showing signs of a rebound in 2011, following several consecutive years of decreased spending from its peak in 2008. The 2013 gains spanned most commercial building types and generated increased construction employment. Forecasts for 2014 project accelerating construction spending, with high single-digit gains in fixed investment in commercial structures such as office, retail, commercial, health care and manufacturing facilities. These positive trends in construction spending, especially in commercial and health care buildings, are projected to gain further strength in 2015 and 2016.

The contribution of construction spending to the U.S. economy is well understood. This linkage between the national economy's accelerating expansion and the continuing slow recovery of residential and nonresidential construction spending in 2013 will become more pronounced with projected increases each year going forward through 2017. The construction industry is expected to achieve equilibrium in terms of supply and demand in 2018. With the direct and indirect impact of construction spending on the U.S. economy (GDP) in 2013 totaling \$2.8 billion and accounting for 16.5 percent of GDP, the accelerating growth of construction spending that began in 2011 will be responsible for significantly boosting the economy's rate of growth between 2014 and 2017.

**Measuring Economic Value.** To fully understand the impact of development expenditures on the performance of the national, state and local economies, one must identify and measure the range and composition of activities and associated spending and their interdependencies with the economy's other sectors. The economic value of commercial buildings extends well beyond their initial construction value, and even this construction value is often understated. In order to establish the comprehensive measure of this value, it is necessary to understand that the process of creating the built environment is carried out in a logical sequence, and the underlying elements in each phase must be examined to determine the full expenditures associated with commercial buildings. These key phases consist of the following:

- Pre-construction (soft costs), including design, engineering, legal and other processes;
- Construction, including site development, building activity (hard costs) and tenant improvements; and
- Post-construction, including ongoing building operations.

Direct spending during these three development phases provides the foundation for calculating the contribution of development to the national economy as well as to respective state and local economies.

Five expenditure types are examined to determine the monetary expenditures associated with development, construction and operations. These consist of the following:

- Soft construction costs (architecture, engineering, marketing, legal, management, administration);
- Site development costs (grading, paving, landscaping, roadway, parking, off-site improvements);
- Hard construction costs (labor, materials, construction management);

- Tenant improvements (interior design and construction, excluding furniture and equipment); and
- Building operations (maintenance, repair, custodial services, utilities, property management).

The direct spending for development and operations generates additional jobs and increases payrolls. These dollars are re-spent within the local, state and national economies, generating additional economic benefits. The total economic impact of these direct development-related expenditures can be calculated by applying national, state and local multipliers. These multipliers measure the far-reaching effects of the initial expenditures on the overall U.S. economy as these initial expenditures are recycled/re-spent within the economy. Using the multipliers, this report calculates the following:

- Total economic contribution to the U.S. economy (GDP);
- New personal earnings (wages and salaries) generated; and
- Jobs supported throughout the U.S. economy, including direct construction jobs.

The “jobs supported” figures do not equate only to net new jobs; they include both new and existing jobs already in the economy needed to support the 2013 level of development, construction and operations reported herein.

Combined, the pre-construction, construction and operations phases — and their associated economic impacts — represent commercial real estate development’s enduring financial strength and compounded contribution to the economy. The economic contributions associated with new office, industrial, warehouse and retail development in 2013 are summarized in Table 2.

#### **The Importance of the Construction Sector to U.S. GDP.**

In 2013, construction spending nationwide for residential and nonresidential buildings and nonbuildings (e.g., roads, bridges, pipelines) totaled \$898.4 billion and, when multiplied to reflect its full contribution, accounted for 16.5 percent of GDP. (See Table 1.) This spending level remains well off its high in 2007, when construction spending totaled \$1.16 trillion and accounted, with the full multiplier effect, for 28.8 percent of GDP. The importance of the construction sector to the vitality of the national economy is illustrated by this decline of 29.12 percentage points, which translated into significant job losses extending beyond the construction sector (down 2.2 million jobs between 2006 and 2010) to

the manufacturing, professional and business services, and retail sectors, as well as to declining personal earnings across all sectors as payroll expenditures fell during the building industry's long recession.

The long and deep decline in construction spending reached its low point during the first half of 2011, with both residential and nonresidential building expenditures experiencing increased spending in the second half of the year. The emerging recovery in the construction sector accelerated in 2012 and expanded further in 2013, becoming an increasingly positive force in the continuing recovery of the U.S. economy in 2013.

The construction sector's recovery beginning in mid-2011 established the foundation for the forecasts for the U.S. economy going forward. The recovery lost momentum in 2013 (when GDP was up 1.9 percent, compared to 2.8 percent in 2012), as the global economy continued to struggle with its recovery (especially in Europe) and the U.S. economy digested changes in fiscal policy and federal spending reductions. In spite of these challenges to the national economy in 2013, the residential sector achieved a 17.5 percent increase in total construction spending and is projected to continue expanding through 2017, when it will attain its pre-recession level of starts of 1.6 million units. Nonresidential building investment also is projected to increase through this period, peaking in 2017. These trends in construction spending will support strong growth rates (ranging between 2.5 and 3.4 percent) for the national economy going forward through the remainder of this decade, with GDP growth projected to achieve its peak rate for this business cycle in 2016 at 3.4 percent.

Table 4  
**Total U.S. Construction Spending, 2010-2013**  
(In Billions of Current Year Dollars)

Type	Value	Percent Change 2012-2013
Residential Building		
2013	\$336.6	17.5%
2012 <sup>1</sup>	286.5	
2011	244.4	
2010	248.7	
Nonresidential Building		
2013	\$340.2	1.0%
2012 <sup>1</sup>	336.7	
2011	312.7	
2010	327.1	
Nonbuilding <sup>2</sup>		
2013	\$221.6	4.8%
2012 <sup>1</sup>	238.8	
2011	230.3	
2010	227.8	
<b>Total</b>		
<b>2013</b>	<b>\$898.3</b>	<b>4.8%</b>
<b>2012<sup>1</sup></b>	<b>857.0</b>	
<b>2011</b>	<b>787.4</b>	
<b>2010</b>	<b>803.6</b>	

Source: U.S. Census, Value of Construction Put In Place

<sup>1</sup> Revised 2012 data for construction spending and GDP.

<sup>2</sup> Includes infrastructure such as water, sewer, highways and power.

Note: Column values may not add up due to rounding.

**Office, Industrial, Warehouse and Retail Hard Construction Spending Grows for a Third Year.**

At the pre-recession peak in 2007, hard construction expenditures totaled \$89.2 billion and accounted for 839 million square feet of new office, industrial, warehouse and retail building space. (See Table 5.) During the next three years, hard construction spending declined by 53.2 percent and the amount of space constructed declined by 72.8 percent.

Hard construction spending reversed this downward trend in 2011, when it increased for the first time since 2007. This recovery has continued each year since. In 2013, hard construction spending for office, industrial, warehouse and retail development increased to \$61.6 billion for a gain of 25.2 percent from 2012. A total of 363.6 million square feet of building space was added to the inventory in 2013, representing an increase of 18.2 percent over building space additions in 2012.

As the U.S. economic recovery moved to a self-sustaining growth path beginning in 2010, hard construction spending has generated important economic benefits and has helped drive the economy's expansion, beginning in 2011 with the generation of 309,000 direct construction jobs that have added to the gains being registered more broadly across the economy and to the substantial reduction in the nation's unemployment rate over this period. As this pattern of stronger growth in hard construction spending continues in 2014 and beyond, it will become an even more important source of job growth. (Annual employment growth is projected to peak at 2.1 percent in 2016, up from 1.7 percent in 2013.)

Table 5  
**Office, Industrial, Warehouse and Retail Construction in the U.S.**

Year	Value (In Billions of Current Year Dollars)	New Square Feet
2013	\$61.6	363.6
2012 <sup>1</sup>	52.2	329.2
2012 <sup>2</sup>	49.2	307.5
2011	47.8	238.4
2010	41.7	228.4
2009	46.6	264.5
2007	89.2	839.0

Source: McGraw-Hill Construction Analytics

<sup>1</sup> As reported February 2014

<sup>2</sup> As reported February 2013



As shown in Table 2 on page 7, the effects of \$61.65 billion in hard construction expenditures added \$190.2 billion to the national economy (GDP) in 2013, as the full impact of these hard construction expenditures (payroll and purchases) circulated through the economy. This hard construction spending supported 1.4 million jobs (full-time, year-round equivalent) across all sectors of the economy, generating personal earnings totaling \$60.2 billion. This hard construction spending accounted for 49.6 percent of total spending for office, industrial, warehouse and retail building development in 2013.

The other 50.4 percent of total development-related expenditures included soft construction (soft costs), site development and tenant improvement costs. In 2013, this spending totaled an estimated \$62.6 billion. It also:

- Contributed \$186.1 billion to U.S. GDP;
- Generated \$59.8 billion in new personal earnings; and
- Supported a total of 1.4 million jobs.

The combined economic contributions of the expenditures made during all four phases of development added 363.6 million square feet of new office, industrial, warehouse and retail building space to the existing inventory during 2013. It also:

- Contributed \$376.4 billion to U.S. GDP;
- Generated \$120.0 billion in new personal earnings; and
- Supported a total of 2.8 million direct and indirect jobs.

**Contributions of Building Operations in 2013.** In addition to the significant contribution to GDP and job and income growth nationwide that constructing 363.6 million square feet of new building space represents, these buildings continue to provide economic benefits to their economies long after construction is completed. These economic impacts include spending required to maintain and operate the buildings and the value of the work done in them. The operating expenditures associated with the office, industrial, warehouse and retail space built in 2013 are estimated to total \$1.1 billion annually. This direct spending for building operations will:

- Contribute \$3.1 billion to U.S. GDP;
- Generate \$966 million in new personal earnings; and
- Support 24,285 jobs.

These operating expenditures are annual and recur yearly over the life span of the building. Adding these new operating expenditures to those required to operate the total 43.9 billion square foot inventory of office, retail and industrial/flex building space in 2013 brings this operating expenditure total to \$134.3 billion with an overall contribution to GDP totaling \$370.9 billion. These total operating expenditures would support 2.9 million jobs nationwide with personal earnings (wages and salaries) of \$116.8 billion.

**Jobs Housed in New 2013 Space.** The potential productive value of these new building spaces represents a significant annual contribution to the local, state and national economies. The actual total output value of this new space is the sum of the values of the work done in these buildings. A partial measure of this total value is represented by the jobs that could be housed in this space and the earnings that these jobs may generate. Using updated jobs-per-square foot estimates reflecting current occupancy patterns and current average salary levels, this new space would have the capacity to house 923,630 jobs with an annual payroll of \$43.1 billion. (See Table 17 on p. 41.)

**Outlook: Construction Spending and U.S. GDP.** The strength of the U.S. economy's recovery is directly linked to the pace of recovery experienced by the construction sector, both residential and nonresidential. As construction expenditures move toward normal levels between 2014 and 2017, the U.S. economy's growth rate is projected to increase to 3.5 percent in 2016, its highest level of the current decade (IHS Global Insight, May 2014). Building on the gains in residential construction spending and increasing nonresidential construction expenditures in transportation, retail, manufacturing, office and lodgings in 2013, these broad-based gains in residential and nonresidential building construction in 2013 extended the national recovery to a fourth year in a year of slower GDP growth due to substantial reductions in federal government spending in fiscal year 2013.

With projections that both residential and nonresidential (commercial, health care, manufacturing and warehousing) construction expenditures will continue to expand in 2014 and beyond, with the peak growth rate to be achieved in 2017, the U.S. economy will experience stronger growth once it digests the federal budget adjustments that began in 2012 and are projected to stabilize in 2016. Both GDP and employment growth rates are projected to attain their highest levels of the current business cycle between 2015 and 2017, as increases in residential and nonresidential construction expenditures combine to generate significant new capital spending and job growth. Going forward, the U.S. economy cannot achieve a sustained expansion in the absence of the construction industry's full recovery, which currently is projected to be achieved in 2017.

The analyses presented in this report define the economic contributions of the nonresidential building construction industry, highlighting the economic impacts generated by office, industrial, warehouse and retail construction and operations. As the economy moves into a sustained expansion in 2014, it is important for government officials at all levels — as well as investors, developers and builders — to understand the range and magnitude of the construction industry's contributions to the national, state and local economies; their patterns of performance during the business cycle; and the direct correlation between the magnitude and length of the expansion and the health and performance of the building industry.

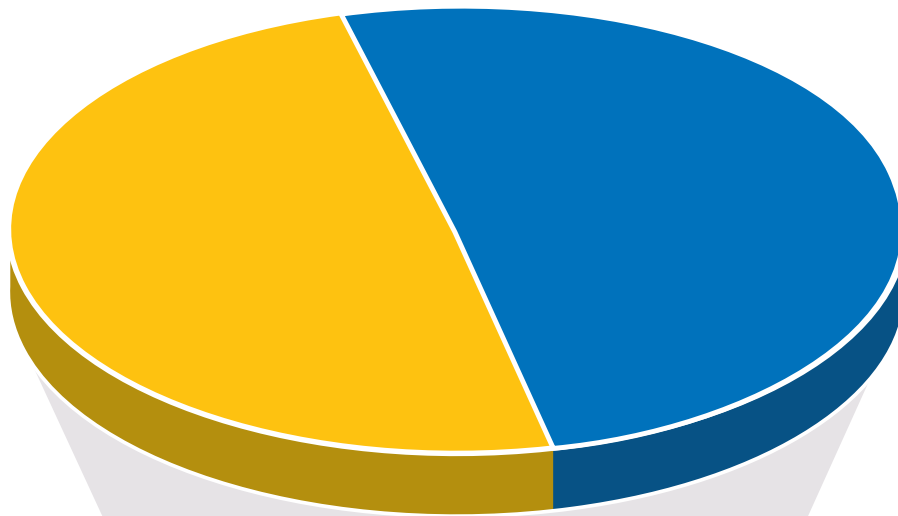
Figure 1

How Commercial Building Development Contributed to the U.S. Economy in 2013

## TOTAL CONTRIBUTION = \$376.3 BILLION

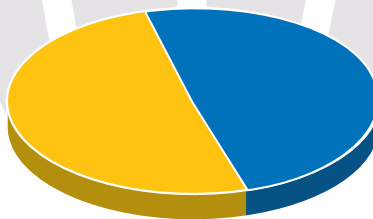
**SOFT COSTS,  
SITE IMPROVEMENTS,  
TENANT IMPROVEMENTS**  
186.1 BILLION, 49.4%

**HARD COSTS**  
\$190.2 BILLION, 50.6%



# MULTIPLIER =

A number used to calculate the final economic impact of one dollar spent



## DIRECT EXPENDITURES = \$124.2 BILLION

**SOFT COSTS,  
SITE IMPROVEMENTS,  
TENANT IMPROVEMENTS**  
\$62.6 BILLION, 50.4%

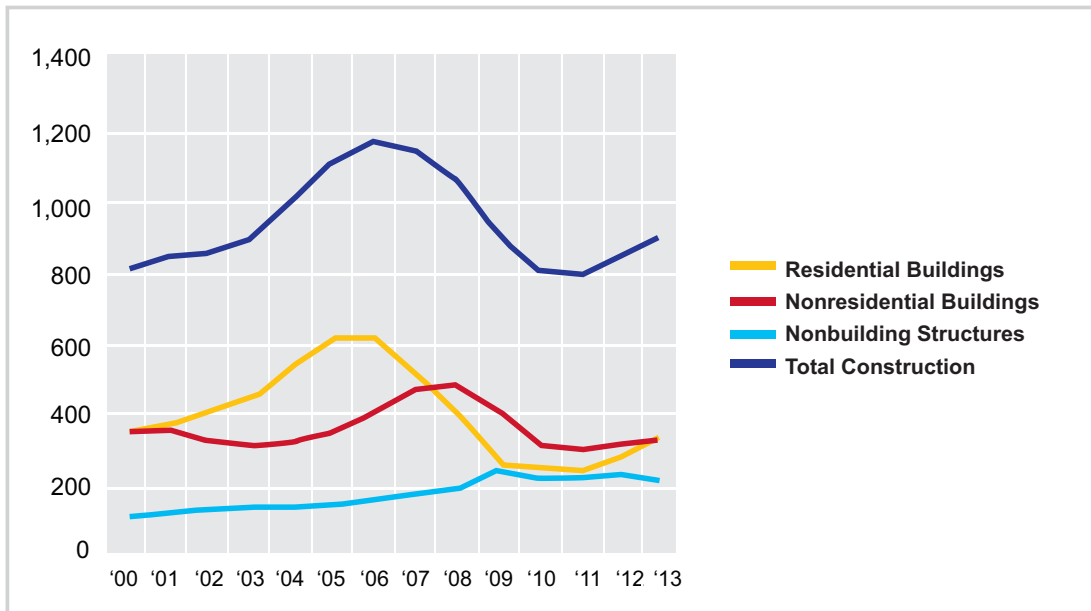
**HARD COSTS**  
\$61.6 BILLION, 49.6%

## Construction Sector Trends and Outlook

The Great Recession began in December 2007 and ended in June 2009. Although the economy has been in recovery for five years, the consequences of the recession remain evident. Job growth remains slow and uneven, and many sectors have not recovered the jobs they lost during the downturn. This is particularly evident in the construction sector, which, according to the U.S. Bureau of Labor Statistics, shed 2.2 million jobs between 2006 and 2010 but only gained 309,000 of these construction jobs back between 2011 and 2013. Full recovery — that is, when the national economy will have achieved full employment — is now projected to occur in 2017 or 2018.

Construction was one of the hardest-hit sectors during the recession. The value of total construction put in place, according to data provided by the U.S. Census, decreased from \$1.160 trillion to \$787.4 billion, a decline of 32.1 percent, from its peak in 2006 to the bottom of the business cycle (for the construction sector) in mid-2011. The value of residential construction declined 60.2 percent from its peak in 2006 to its trough in 2011. For nonresidential construction (buildings and nonbuildings), the value of construction activity peaked in 2008 and declined 25 percent over three years to 2011, when it began the recovery that continued through 2013. (See Figure 2.)

Figure 2  
**Construction Spending in the U.S., 2000-2013**  
 (In Billions of Current Year Dollars)



Source: U.S. Census, Value of Construction Put In Place

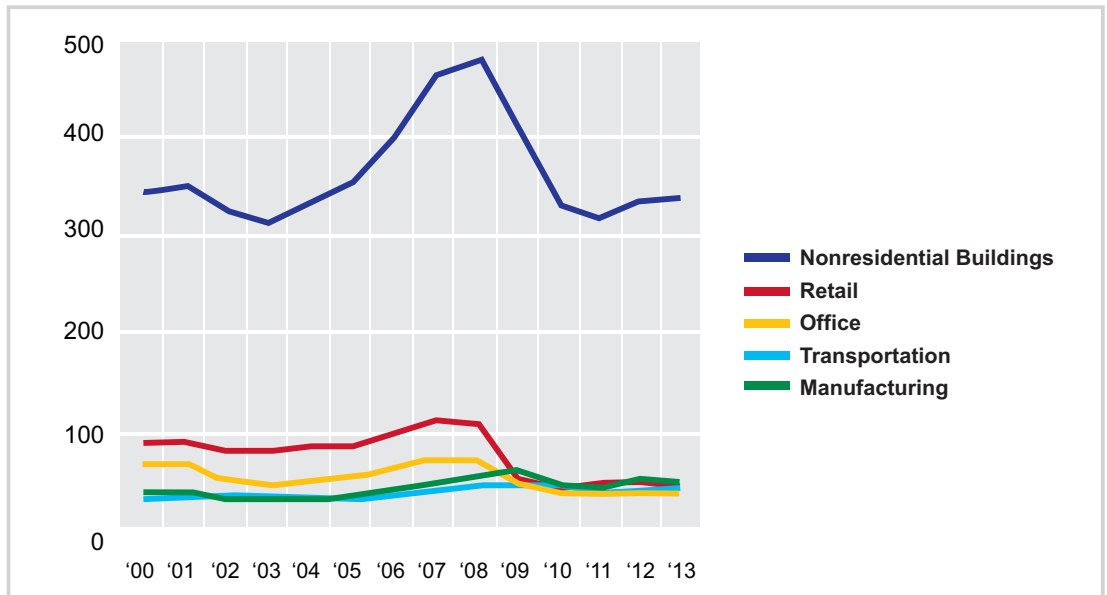
**Construction Sector Expands in 2013.** It has taken four years of recovery in the national economy to bring the construction sector back to a position that could support broad-based increases in construction spending. In 2013, the total value of construction put in place was up 14.1 percent from its low point in 2011. The value of residential construction spending increased 72.6 percent over this period, accounting for 83.1 percent of the total increase in construction value across all three categories (residential buildings, nonresidential buildings and nonbuildings). During this recovery period, the value of nonresidential building construction expenditures increased 8.8 percent while nonbuilding construction expenditures registered gains in 2010, 2011 and 2012 as a result of government spending undertaken to stimulate the recovery, but then declined in 2013 as government spending tightened in the face of restrictive fiscal policies. Current forecasts show the construction sector continuing to build back to its pre-recession levels of investment and employment by 2017 or 2018.

**Residential Construction Gains Strength.** The patterns of total construction spending by major category over the business cycle are shown in Figure 2. Residential construction spending peaked as a percentage of total construction spending in 2005 at 56 percent, with its share declining each subsequent year to 2009, when it reached 28.1 percent. Since 2010, residential construction has regained share as nonresidential spending slowed at an increasing rate while the decline in residential construction bottomed out and then began to grow in mid-2011. By 2013, residential construction spending accounted for 37.5 percent of total construction (both building and nonbuilding), and both residential and nonresidential building construction were growing for a second year in a row.

**Nonresidential Building Construction Grows in 2013.** The value of nonresidential building construction peaked in 2008. In 2009, nonresidential building construction spending declined by 12.8 percent. This contraction accelerated in 2010, with the value of new nonresidential construction dropping 20.7 percent. During this three-year period (2008-2011), the value of nonresidential construction spending declined 33.9 percent. This pattern of decreasing construction spending slowed to 4.4 percent in 2011 and, for several building types, turned positive. Nonresidential building construction spending has increased each year since 2011, although at a modest annual rate in comparison to increases in residential construction spending.

As shown in Figure 3, construction spending for four categories of nonresidential building types — office, retail, transportation (which, in the U.S. Census data set, includes warehouse properties) and manufacturing — has tracked a relatively smooth pattern through each category's respective growth cycle. However, since 2008, the office and retail categories experienced decreased construction spending, while the transportation (warehouse) and manufacturing categories sustained small gains in 2008 and 2009, respectively, before declining again in 2010 and 2011. In 2013, nonresidential construction spending increased in five of the 10 categories shown in Table 6.

Figure 3  
**Nonresidential Construction Spending in the U.S., 2000-2013**  
 (In Billions of Current Year Dollars)



Source: U.S. Census, Value of Construction Put In Place

**Outlook: Residential and Nonresidential Construction.** The U.S. economy completed its fifth year of recovery in June 2014, a recovery that has been characterized by uneven growth rates in both jobs and income, a slowly declining unemployment rate and a slow recovery of the residential and nonresidential construction sectors.

**Residential** building construction spending turned positive in the second quarter of 2011, led by gains in multifamily construction, and is projected to increase each year, with single-family housing construction regaining its normal (equilibrium) production level by 2017. Current forecasts (IHS Global Insight, May 2014) indicate that residential construction spending is projected to increase 4.0 percent in 2014 after gaining 12.2 percent in 2013. IHS Global Insight is projecting accelerating gains in residential fixed investment in 2015, up 19.8 percent over 2014, and in 2016, up 11.4 percent over 2015.

The projected pattern of residential construction points to annual housing starts increasing to 1.02 million in 2014, for a gain of 10.2 percent from 2013 following a strong gain of 18.6 percent in 2013 over 2012. Housing starts are projected to increase to 1.4 million units in 2015 and 1.58 million in 2016. Current forecasts have residential building peaking in 2017 at slightly more than 1.6 million starts and maintaining this equilibrium level over the next several years.



Table 6  
**U.S. Nonresidential Construction Spending, 2010-2013**  
(In Billions of Current Year Dollars)

Type of Structure	2010	2011	2012 <sup>1</sup>	2013	% Change 2010-2013
Transportation	\$38.3	\$34.9	\$38.2	\$41.6	8.6%
Healthcare	39.3	39.7	41.8	40.7	3.6
Retail	39.4	43.6	46.3	49.3	25.4
Manufacturing <sup>2</sup>	40.4	41.4	46.8	49.4	22.5
Amusement/Recreation	16.9	16.2	15.0	14.4	- 14.8
Education	88.4	84.3	84.6	79.1	- 10.5
Public Safety	11.2	10.2	10.3	9.4	- 16.1
Office	37.8	34.6	38.4	38.5	1.8
Religious	5.3	4.2	3.8	3.4	- 35.8
Lodgings	11.6	8.8	11.4	14.4	25.0
<b>Total<sup>3</sup></b>	<b>\$328.6</b>	<b>\$317.6</b>	<b>\$336.7</b>	<b>\$340.2</b>	<b>3.5%</b>

Source: U. S. Census, Value of Construction Put In Place

<sup>1</sup> Revised 2012 data.

<sup>2</sup> Includes warehouse/flex space.

<sup>3</sup> Totals include some miscellaneous state and local government buildings, but exclude spending for nonbuilding construction on items such as communications, power, highways, sewer and water.

Construction expenditures for **nonresidential** buildings increased in both 2012 and 2013, following three years of contraction after peaking in 2008. The pattern of growth within this broad range of building types reflects a combination of both unevenness and consistency. Transportation, retail, manufacturing, office and lodgings have registered construction spending gains in both 2012 and 2013, while construction spending for recreation and religious buildings decreased in both years. Construction spending for healthcare, education and public safety increased in 2012 but decreased in 2013. Furthermore, these construction spending increases and decreases have been largely double-digit percent changes from one year to the next. This variability suggests that nonresidential building construction is still suffering from the unevenness of supply and demand conditions, and that sustained growth will require further expansion of the broader economy before all segments of the building industry are able to enjoy sustained growth.

**Construction employment**, which declined by 2.2 million jobs between 2006 and 2010, added net new jobs beginning in 2011 and has now increased for a third year, gaining 309,000 net new jobs between 2011 and 2013. The nation added a total of 181,000 construction jobs in 2013.

**Outlook: The U.S. Economy.** The importance of the construction sector to the recovery of the U.S. economy is well established. The recovery's unevenness during its first five years (dating from June 2009) can be partially attributed to the magnitude of the correction that the construction sector endured, which extended its recession to mid-2011. Now that residential and nonresidential building construction spending are increasing, the U.S. economy has gained traction in spite of its disappointing performance in 2013, when GDP was up only 1.9 percent. This slowing of the recovery in 2013 was tied to significant reductions in federal government spending, combined with weakened consumer and business confidence and continuing turbulence in the global economy. Still, the construction sector's gathering strength in 2013 helped to buttress the national economy during this period of reduced government spending. With that adjustment now largely history, the forecast for 2014 and on through 2017 and even to 2019 is for a solid economic performance, including accelerated gains in construction spending for both residential and nonresidential buildings through 2017.

While the outlook continues to be good for both residential and nonresidential building construction spending, the construction industry's performance in 2014 has already suffered some downward revisions in its forecast, pushing some of the spending projected at the beginning of the year to occur in 2014 into 2015. This has extended the full period of recovery for the industry, as described above, to 2017. The first quarter of 2014 was seriously impacted by weather-related disruptions that directly affected the start of new construction projects as well as influenced almost all other aspects of the economy. Job growth was hampered by lost work days and closed businesses, transportation delays and increased costs undermined the economy's growth, and consumers and businesses were discouraged from their normal spending and investment patterns. As a result of these weather-related cost increases, delayed hiring, and lost wages and salaries, in May the GDP forecast for the year was revised down from 2.8 percent growth at the beginning of the year to 2.4 percent growth. As a result, construction activity and all major sectors of the economy are projected to grow more slowly in 2014 than had been projected initially. Still, the economy will perform more strongly in 2014 than it did in 2013, and it is still projected to register growth rates above 3 percent each year from 2015 to 2017, coinciding with an equally strong performance from the construction sector.

## Building and Nonbuilding Expenditures (U.S. Census Data)

The U.S. economy continued its slow recovery during 2012. Uncertainty regarding federal spending reductions and tax increases scheduled to go into effect January 1, 2013 (the “fiscal cliff”), the weakening of the European economy, and the national elections helped to undermine both consumer and investor confidence in 2012, while continuing economic stimulus was provided by the Federal Reserve Board’s commitment to low interest rates and further quantitative easing. Despite this mixed economic news, the economy gained 2.2 percent in 2012; this was an improvement over its 1.8 percent growth rate in 2011. Construction data provided by the U.S. Census Bureau offer a “big picture” view of the impacts of building and nonbuilding expenditures over time.

**Construction Activity Buttresses the Economy in 2013.** A key factor in the economy’s ability to overcome the negative impacts of the sequester and federal spending reductions was continued improvement in the construction sector in 2013. The total value of construction put in place increased 4.8 percent.

**Residential** construction registered a strong gain in 2013, with year-over-year starts (numbers of units) increasing 18.6 percent and the total value of residential construction put in place gaining 17.5 percent. This gain followed last year’s increase in residential construction value, the first since 2006.

The value of **nonresidential building construction** increased just 1 percent in 2013, after having gained 6 percent in 2012. However, this small gain in 2013 was the result of significant increases in several types of nonresidential construction, such as retail and manufacturing, being offset by large declines in several other types of nonresidential construction, including education and public safety facilities, as is shown in Table 6 on page 23.

**Construction employment** increased in 2013 with the addition of 181,000 new construction jobs nationwide. After losing 2.2 million jobs during the Great Recession, the construction sector has now added 309,000 jobs since 2011. This can be seen as one indication — along with gains in construction spending — that the construction sector has sustained its recovery for a second year. It also provides the foundation for continuing expansion as forecast over the coming four years, by which time the industry is expected to have replaced all of the construction jobs lost in the downturn.

**Building and Nonbuilding Construction, Output Multiplier and GDP.** According to the U.S. Census, the total value of building and nonbuilding construction spending put in place in the U.S. in 2013 was \$898.4 billion. This accounted directly for 5.35 percent of the nation's GDP of \$16.798 trillion. With an output multiplier of 3.0855, each \$1.00 of this construction spending generated an additional \$2.09 of value to the economy, reflecting the cumulative effects of the initial construction expenditures as they are re-spent throughout the economy. Applying this multiplier to the total value of direct construction spending in 2013 increases the value of its overall contribution to GDP to \$2.772 trillion or 16.5 percent.

**Contribution of Building and Nonbuilding Construction Expenditures to GDP.** The total impact of construction spending — direct, indirect and induced — on the U.S. economy accounted for 16.5 percent of all economic activity in 2013. For the year, GDP increased by \$552.9 billion from its 2012 value (in 2013 dollars). In comparison to this overall gain in GDP during 2013, the total value of construction spending was 1.6 times greater than the year's annual GDP growth.

**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. In 2013, the \$898.4 billion in development spending (see Table 1 on page 5):

- Contributed \$2.8 trillion to U.S. GDP;
- Generated \$877.4 billion in new personal earnings; and
- Supported a total of 21 million jobs throughout the U.S. economy.

## Office, Industrial, Warehouse and Retail Development Expenditures (McGraw-Hill Data)

**Construction** data provided by McGraw-Hill Construction for office, industrial, warehouse and retail buildings offer a more refined definition of hard construction expenditures over time. As presented in Table 7, total hard construction expenditures for these four building types increased in 2013 by 25.4 percent from 2012, as shown in last year's edition of this report.

**Office** construction expenditures increased for a second year in 2013, up 23.3 percent from 2012 and building on the 4.7 percent increase registered that year, which had reversed a negative trend in office construction dating from 2008.

**Retail** construction expenditures also increased for a second year in 2013, gaining 4.8 percent from 2012. That year, retail construction registered a strong 21.5 percent increase from 2011, reversing a downward trend in construction expenditures that dated back to 2007.

**Warehouse** construction registered a third strong year of increased expenditures in 2013. In 2011, expenditures for warehouse construction increased 17.8 percent; in 2012, they gained 28.4 percent; and in 2013, they were up 38.1 percent.

Table 7  
**Comparing Construction Expenditures (Hard Costs), 2012 and 2013**  
(In Billions of Current Year Dollars)

Building Type	2012 <sup>1</sup>	2013	\$ Change
Office	\$16.49	\$20.34	\$3.85
Industrial	11.85	17.57	5.72
Warehouse	5.70	7.87	2.17
Retail/Entertainment	15.14	15.87	0.73
<b>Total</b>	<b>\$49.18</b>	<b>\$61.65</b>	<b>\$12.47</b>

Sources: McGraw-Hill Construction Analytics, GMU Center for Regional Analysis  
<sup>1</sup> McGraw-Hill Construction Analytics has revised its construction reports for 2012 since publication of the 2012 NAIOP Report; the total value of office, industrial, warehouse and retail construction in 2012 is now reported at \$52.2 billion, accounting for 329.2 million square feet of building space.

Construction spending for **industrial** facilities increased in 2013 by 48.3 percent from 2012, more than offsetting the 21.9 percent decline experienced in 2012.

**Expenditures and Square Footage (All Structures Combined).** With all building types experiencing growth in 2013, the **combined categories** of nongovernment office, industrial, warehouse and retail building construction increased in both value of expenditures (25.4 percent) and square footage, with the addition of 363.6 million gross square feet of new building space, up (18.2 percent), accounting for expenditures totaling \$61.65 billion (see Table 8).

Building Type	Square Feet (In Millions)	Construction Value (In Billions of 2013 Dollars)
Office	79.3	\$20.34
Industrial	46.8	17.57
Warehouse	127.9	7.87
Retail	109.6	15.87
<b>Total</b>	<b>363.6</b>	<b>\$61.65</b>

Sources: McGraw-Hill Construction Analytics; GMU Center for Regional Analysis

**Hard Construction Expenditures (All Structures Combined), Multipliers and GDP.** The economic impact of this construction activity can be calculated by applying the national construction multipliers for its contribution to GDP (3.09), personal earnings (0.9766) and employment (23.4185). State-level direct spending and associated economic impacts for pre-construction, construction and post-construction spending are included in the Appendices.

It should be noted that **individual state construction multipliers are smaller than the U.S. multipliers.** They measure only the share of construction expenditures that are retained within the respective state economies. Construction-related spending flows that leak out of each state economy to other states are excluded. Smaller states and state economies that are less well developed tend to retain smaller portions of the benefits from construction spending than do states with larger and more complex economies; that is, a greater share of the smaller states' direct construction spending leaks out to other states.

**The Bottom Line.** The total contribution to U.S. GDP of all structures combined across all phases of development is substantial. The \$61.65 billion in hard construction expenditures (hard costs) for office, industrial, warehouse and retail buildings in 2013 added \$128.57 billion in indirect and induced benefits to the national economy for a total contribution of \$190.22 billion to GDP (see Table 9).

Soft construction (soft costs), site development and tenant improvement expenditures totaled \$62.57 billion or 50.4 percent of total building costs. Adding these direct expenditures and their indirect and induced benefits to those generated by the hard construction expenditures increases their total contribution to the nation's GDP to \$376.35 billion in 2013.

The economic activity supported by this construction spending generates new personal earnings (wages and salaries) and supports jobs directly in the construction and related industries. As the payroll dollars generated by these activities are spent for consumer goods and services across the economy, indirect and induced benefits are realized. The total direct spending of \$124.22 billion in 2012:

- Contributed \$376.4 billion to U.S. GDP;
- Generated \$120.0 billion in new personal earnings; and
- Supported a total of 2.8 million full-time equivalent, year-round jobs.

Table 9  
**Office, Industrial, Warehouse and Retail Construction and  
 Operations Contribution to the U.S. Economy, 2013**  
 (In Billions of 2013 Dollars)

Source	Direct Expenditures	Total Economic Contribution to GDP <sup>1</sup>	Personal Earnings <sup>2</sup>	Jobs Supported <sup>3</sup>
<b>Development Phase</b>	<b>\$124.22</b>	<b>\$376.35</b>	<b>\$120.02</b>	<b>2,810,510</b>
Soft Construction (Soft Costs)	19.66	53.73	17.91	361,886
Site Development <sup>4</sup>	21.07	65.00	20.57	493,314
Hard Construction (Hard Costs)	61.65	190.22	60.21	1,443,780
Tenant Improvements <sup>5</sup>	21.84	67.40	21.33	511,530
<b>Annual Operations</b>	<b>\$1.110</b>	<b>\$3.067</b>	<b>\$0.966</b>	<b>24,285</b>

Sources: McGraw-Hill Construction Analytics; GMU Center for Regional Analysis

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

<sup>2</sup> The additional earnings generated within the U.S. from direct expenditures during the construction phase and post-construction phase for building operations.

<sup>3</sup> The jobs supported nationwide by the spending and re-spending of direct expenditures associated with building construction or operations.

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

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

Note: See Appendices F and G for state-level data.



# Calculating Economic Contributions

## Soft Construction (Soft Costs), Site Development and Tenant Improvement Expenditures

To estimate the expenditures associated with the non-hard construction phases of development, NAIOP surveyed its membership in January and February 2013. This survey updated previous surveys from November 2006, April 2007 and February 2012. The 2013 survey captured changes in construction spending by building type for the four phases of development (soft construction, site development, hard construction and tenant improvement) that reflect the continuing change in the mix, location and market conditions describing the commercial building sector. The results of the 2013 survey have been utilized in these 2014 calculations. The methodology and results of the 2013 survey are reported in Appendix I.

Soft construction (soft costs), site development and tenant improvement expenditures in 2013 totaled an estimated \$62.57 billion. Table 10 presents the spending that occurred for each phase. The variations in the distribution of these costs by building type reflect differences in building design and function. Tenant improvement costs for office buildings, for example, are typically more expensive than those for warehouses because of the more expensive finishes required by office tenants.

Building Type	Soft Construction (Soft Costs)	Site Development	Tenant Improvements	Total
Office	\$5.92	\$5.96	\$8.87	\$20.75
Industrial	5.50	4.90	4.98	14.98
Warehouse	2.15	2.80	1.93	6.88
Retail	6.09	7.81	6.06	19.96
<b>Total</b>	<b>\$19.66</b>	<b>\$21.07</b>	<b>\$21.84</b>	<b>\$62.57</b>

Sources: NAIOP; GMU Center for Regional Analysis

Note: Column and row values may not add up due to rounding; see Appendices B, C and E for state and building type data.

**Output Multipliers and GDP.** The direct spending associated with the soft construction (soft costs), site development and tenant improvement phases of development generate economic impacts beyond the initial value of these expenditures.

Financing fees, insurance and taxes are not included in this analysis within the soft construction category, as these have little immediate economic impact. These economic impacts are calculated by applying national multipliers to determine their contributions to GDP, personal earnings and employment. Composite multipliers were developed to reflect the mix of services and activities associated with each category of expenditure, as described below:

Soft Construction Expenditures (Soft Costs):

- For each \$1 of soft construction expenditures, a total contribution to GDP of \$2.73 is generated; and
- For each \$1 million of soft construction expenditures, personal earnings increase by \$910,800 and 18.4 jobs are supported.

Site Development and Tenant Improvements:

- For each \$1 of site development and tenant improvement spending, a total contribution to GDP of \$3.09 is generated; and
- For each \$1 million of site development and tenant improvement expenditures, personal earnings increase by \$976,600 and 23.4 jobs are supported.

State multipliers (see Appendix H) are smaller than the national multipliers because they reflect only the portion of expenditures retained within the state economy. Development-related spending that is captured by other states is excluded. Smaller states and less well-developed state economies tend to retain smaller portions of the benefits from construction spending as this spending circulates through the national economy.

Nationwide, the \$19.66 billion in direct soft construction expenditures in 2013:

- Contributed \$53.7 billion to U.S. GDP;
- Generated \$17.9 billion in new personal earnings; and
- Supported a total of 361,886 jobs.

Site development expenditures of \$21.07 billion in 2013:

- Contributed \$65.0 billion to U.S. GDP;
- Generated \$20.6 billion in new personal earnings; and
- Supported a total of 493,314 jobs.

Tenant improvement expenditures of \$21.84 billion in 2013:

- Contributed \$67.4 billion to U.S. GDP;
- Generated \$21.3 billion in new personal earnings; and
- Supported a total of 511,530 jobs.

These economic contributions for office, industrial, warehouse and retail products under construction in 2013 are detailed in Table 11.

Table 11  
**Contributions of Direct Expenditures for Soft Construction (Soft Costs),  
 Site Development and Tenant Improvements to the U.S. Economy, 2013**  
 (In Billions of 2013 Dollars)

Building Type/ Source	Direct Expenditures	Total Economic Contribution to GDP <sup>1</sup>	Personal Earnings <sup>2</sup>	Jobs Supported <sup>3</sup>
<b>Office</b>				
Soft Costs	\$5.92	\$16.17	\$5.39	108,888
Site Dev. <sup>4</sup>	5.96	18.38	5.82	139,514
Tenant Imp. <sup>5</sup>	8.87	27.38	8.66	207,827
<b>Total</b>	<b>\$20.75</b>	<b>\$61.93</b>	<b>\$19.87</b>	<b>456,229</b>
<b>Industrial</b>				
Soft Costs	\$5.50	\$15.02	\$5.01	101,190
Site Dev.	4.90	13.85	4.38	105,138
Tenant Imp.	4.98	15.36	4.86	116,566
<b>Total</b>	<b>\$14.98</b>	<b>\$44.23</b>	<b>\$14.25</b>	<b>322,894</b>
<b>Warehouse</b>				
Soft Costs	\$2.15	\$5.89	\$1.96	39,671
Site Dev.	2.80	8.65	2.74	65,691
Tenant Imp.	1.93	5.97	1.89	45,292
<b>Total</b>	<b>\$6.88</b>	<b>\$20.51</b>	<b>\$6.59</b>	<b>150,654</b>
<b>Retail</b>				
Soft Costs	\$6.09	\$16.65	\$5.55	112,137
Site Dev.	7.81	24.11	7.63	182,972
Tenant Imp.	6.06	18.69	5.91	141,845
<b>Total</b>	<b>\$19.96</b>	<b>\$59.45</b>	<b>\$19.09</b>	<b>436,954</b>
<b>Total</b>				
Soft Costs	\$19.66	\$53.73	\$17.91	361,886
Site Dev.	21.07	65.00	20.57	493,314
Tenant Imp.	21.84	67.40	21.33	511,530
<b>Total</b>	<b>\$62.57</b>	<b>\$186.13</b>	<b>\$59.81</b>	<b>1,366,730</b>

Sources: NAIOP; GMU Center for Regional Analysis

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

<sup>2</sup> The additional earnings generated within the U.S. from direct outlays during the construction phase.

<sup>3</sup> The jobs supported nationwide by the spending and re-spending of direct outlays associated with building construction.

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

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

Note: Column values may not add up to overall totals due to rounding; see Appendices B, C and E for state and building type data.

## Hard Construction Expenditures (Hard Costs)

Commercial construction spending in 2013 (for the hard construction phase only) reported by McGraw-Hill Construction for office, industrial, warehouse and retail structures totaled \$61.65 billion and represented the addition of 363.6 million square feet of new building space. Applying the national construction multiplier of 3.0855, the full economic contribution to GDP of this spending can be calculated as \$190.22 billion. (See Table 12.) These direct, indirect and induced benefits supported 1.44 million jobs across all sectors of the economy and generated \$60.21 billion in new personal earnings.

Table 12  
**Economic Contributions of Hard Construction Expenditures (Hard Costs)  
to the U.S. Economy, 2013**  
(In Billions of 2013 Dollars)

Building Type	Direct Expenditures	Total Economic Contribution to GDP <sup>1</sup>	Personal Earnings <sup>2</sup>	Jobs Supported <sup>3</sup>
Office	\$20.34	\$62.75	\$19.86	467,270
Industrial	17.57	54.20	17.16	411,411
Warehouse	7.87	24.28	7.68	184,279
Retail	15.87	48.99	15.51	371,819
<b>Total</b>	<b>\$61.65</b>	<b>\$190.22</b>	<b>\$60.21</b>	<b>1,443,779</b>

Sources: McGraw-Hill Construction Analytics; GMU Center for Regional Analysis

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

<sup>2</sup> The additional earnings generated within the U.S. from the direct outlays during the construction phase.

<sup>3</sup> The jobs supported nationwide by the spending and re-spending of direct outlays associated with building construction.

Note: Column values may not add up due to rounding; see Appendix D for state-level hard cost data.

**Construction Value by State.** The 10 states with the largest construction values (\$33.3 billion) accounted for 54.0 percent of the construction expenditures in the U.S., while the top 20 states accounted for 76.8 percent. This year's top 10 states for all four product types combined (hard construction costs only) reflected several changes from this listing for 2012. Four new states joined the list: Louisiana at No. 2, Maryland at No. 7, West Virginia at No. 9 and Georgia at No. 10. Illinois, Ohio, Massachusetts and North Carolina dropped off the top 10 list, slipping to Nos. 11, 14, 15 and 18, respectively.

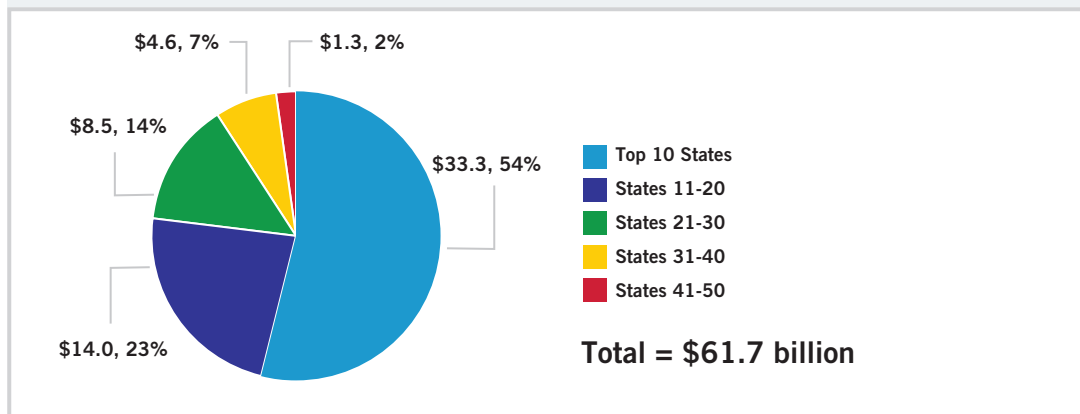
The top 10 rankings are shown in Table 13 and Figure 4. The values for all states are shown in Appendix A, Tables 1-5.

Table 13  
**Top 10 States by Construction Value, 2013**

Ranking	Office	Industrial	Warehouse	Retail	All Categories
1	Texas	Louisiana	Texas	Texas	Texas
2	New York	Iowa	California	New York	Louisiana
3	California	West Virginia	New Jersey	Florida	New York
4	Maryland	Oregon	Florida	California	California
5	Iowa	Georgia	Pennsylvania	Illinois	Iowa
6	Massachusetts	New York	Indiana	Georgia	Florida
7	New Jersey	Kansas	Ohio	Massachusetts	Maryland
8	Washington	Pennsylvania	Arizona	Ohio	Georgia
9	Virginia	Alabama	Tennessee	North Carolina	West Virginia
10	Arizona	Indiana	Illinois	Virginia	Oregon

Sources: McGraw-Hill Construction Analytics; GMU Center for Regional Analysis

Figure 4  
**Top 10 States Combined by Construction Value in Four Categories, 2013**  
 (Hard Costs Only; In Billions of 2013 Dollars)



Sources: McGraw-Hill Construction Analytics; GMU Center for Regional Analysis

## Building Operations Expenditures

The **existing stock** of built space represents a large and continuing source of economic activity that supports job and income growth across the full breadth of local and state economies. While the expenditures associated with the soft construction, site development, hard construction and tenant improvement phases of development in 2013 represent an important contribution to the national economy, these benefits end once construction is completed. However, the expenditures that support the operations of buildings constructed in 2013 generate ongoing economic contributions that accumulate during the life span of these new buildings. These expenditures extend and magnify the economic benefits that the development of office, industrial, warehouse and retail buildings have on their local economies.

Building operations include expenditures for the following:

- Regular maintenance and repair;
- Custodial (cleaning) services;
- Utilities; and
- Management.

Management expenditures represent a wide range of services, including:

- Building management;
- Marketing;
- Leasing;
- Security;
- Building engineering services; and
- Finance and accounting.

**Output Multipliers and GDP.** Each of these services has a multiplier effect on the economy and supports on- and off-site jobs within the local, regional and national economies, generating additional personal earnings to the benefit of local residents. These multipliers vary by type of service and state. (See Appendix Tables H-3 to H-6). A sampling of national multipliers is presented in Table 14.

Table 14

**Multipliers for Contributions to GDP, Personal Earnings and Jobs Supported for Select Categories of Building Operations, 2013**

Category	GDP Multipliers <sup>1</sup>	Personal Earnings Multipliers <sup>2</sup>	Jobs Supported Multipliers <sup>3</sup>
Building Services	2.8333	0.8844	33.7
Management	2.7621	0.9290	17.7
Utilities	2.4640	0.7268	16.0
Repair and Maintenance	3.0855	0.9766	23.4

Source: U.S. Department of Commerce, Bureau of Economic Analysis

<sup>1</sup> The total value of goods and services generated directly and indirectly as a result of building operating outlays within the U.S.

<sup>2</sup> The additional earnings generated within the U.S. from direct outlays for building operations.

<sup>3</sup> The jobs supported nationwide by the spending and re-spending of direct outlays associated with building operations. These multipliers represent the number of jobs supported per \$1 million of direct expenditures.



**Annual Operating Expenditures.** Operating and managing the 363.3 million square feet of new office, industrial, warehouse and retail building space under construction in 2013 will require \$1.1 billion in annual operating expenditures each year going forward.

Adjusted for inflation and changes in the level and quality of services, operating and managing these buildings will:

- Contribute \$3.1 billion to U.S. GDP each year;
- Generate \$966.0 million in total personal earnings each year; and
- Support a total of 24,285 jobs each year.

These economic contributions are detailed by building type in Table 15.

Table 15				
Annual Contribution to the U.S. Economy of Expenditures for New Building Operations, 2013 (In Millions of 2013 Dollars)				
Building Type	Direct Expenditures	Total Economic Contribution to GDP <sup>1</sup>	Personal Earnings <sup>2</sup>	Jobs Supported <sup>3</sup>
Office	\$571.8	\$1,579.4	\$497.4	12,506
Industrial	55.7	153.8	48.5	1,218
Warehouse	111.1	306.9	96.7	2,430
Retail	371.8	1,026.8	323.4	8,131
<b>Total</b>	<b>\$1,110.4</b>	<b>\$3,066.9</b>	<b>\$966.0</b>	<b>24,285</b>

Sources: BOMA; Delta Associates Inc.; GMU Center for Regional Analysis

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

<sup>2</sup> The earnings generated within the U.S. from direct expenditures for building operations.

<sup>3</sup> The jobs supported nationwide by the spending and re-spending of direct outlays associated with building operations.

Note: Building operations include maintenance and repair, cleaning, utilities, security, building management and administrative expenses; column values may not add up to overall totals due to rounding; see Appendix G for state and building type data.

**Economic Contribution of Building Operations in 2013 of New and Existing Inventory.**

The economic contribution of annual building operation expenditures is determined by adding these new operating expenditures for buildings delivered in 2013 to the operating expenditures associated with the existing office, industrial, retail and warehouse stock of 2012. (See Table 16.)

In 2013, the inventory of existing office, retail and industrial/flex building space in the U.S. was estimated by CoStar to total 43.65 billion square feet, reflecting a net increase of 80 million square feet from 2012. This increase of just 0.2 percent masks larger actual changes that have occurred in the inventory, including the retirement of older buildings as well as the repurposing of some of these buildings from commercial to other uses, such as multifamily housing. The 2012-2013 trends in the nation's total building inventory are shown in Table 16.

Table 16  
**National Building Space Inventory, 2012 and 2013**  
(In Billions of Square Feet)

Building Type	2012	2013	% Change
Industrial/Flex	20.70	20.87	0.8
Retail	12.60	12.41	- 1.5
Office	10.27	10.37	1.0
<b>Total</b>	<b>43.57</b>	<b>43.65</b>	<b>0.2</b>

Source: CoStar

This existing building inventory totaled 43.65 billion square feet in 2013 (excluding buildings being constructed in 2013) and would have generated annual operating expenditures estimated to total \$133.2 billion. The addition of 363.3 million square feet of new building space to the 2013 inventory brought total spending in 2013 to \$134.3 billion for building operations of 43.9 billion square feet (existing plus new building space in 2013) with an overall contribution to the U.S. economy (GDP) of \$370.9 billion. This total spending for building operations supported 2.9 million jobs and generated personal earnings (wages and salaries) of \$116.8 billion, as shown in Table 17.

The total annual and recurring economic impacts resulting from the operating expenditures associated with the nation's office, retail and industrial/flex space is significant, accounting for 2.2 percent of GDP in 2013. Unlike the expenditures associated with the construction of new building space, this annual and recurring contribution to the national economy does not vary greatly from year to year.

As shown in Table 17, these expenditures (and their related economic impacts, as shown in Table 3) can decrease slightly even when the total amount of building space being operated in one year increases from the previous year. These variations in annual expenditures for building operations reflect not only an increase in new building space, but also a decrease in existing building space as buildings are demolished or repurposed. (As some commercial space is converted to other uses, such as office space to multifamily housing, that space is subtracted from the commercial space inventory.)

Table 17		
Square Footage and Direct Expenditures From Existing Building Operations		
	Total Square Feet (In Billions)	Direct Expenditures (In Billions of Dollars)
2013	43.934	\$134.30
2012	43.208	134.50
2011	42.098	140.70
2010	42.008	134.80

Sources: BOMA; CoStar; Delta Associates; GMU Center for Regional Analysis

Changes in the mix of commercial space during the business cycle also affect operating costs on a per-square-foot basis. For example, industrial space costs less to operate on a per-square-foot basis than office space. So, in a year when more industrial space is added to the building inventory than office space, square footage will rise but operating costs may not rise proportionately.

Lastly, building owners tend to become more efficient and cost conscious in their management practices during periods of economic uncertainty. Increased energy efficiency and advanced technology also contribute to lower operating costs. For these reasons, the average per-square-foot cost of operating building space in the U.S. across all office, retail and industrial/flex buildings has decreased from \$3.20 per square foot in 2010 to \$3.06 in 2013.

Still, it is the magnitude and constancy of this annual contribution to the U.S., state and local economies that underscore the importance of post-construction spending associated with the operations of the total inventory of office, retail and industrial/flex building space. These building operations expenditures continue over the life spans of each year's newly constructed buildings and extend their economic value to the economy well beyond initial construction expenditures.

**Jobs Housed and Payroll Value in 2013 Buildings Under Construction.**

In addition to the annual operating expenditures associated with this new building space, these buildings represent new productive capacity within the national economy. While the value of this added capacity depends on how each building is used, two measures of this value are the number of jobs this new capacity can accommodate and the amount of payroll these jobs would generate. Using a standard jobs-per-square-foot estimate for each category of building, the number of employees that could be housed within the buildings built in 2013 can be estimated. The total payroll value of these new workers also can be calculated by multiplying this employment estimate by the U.S. average wage earnings per worker for jobs associated with each building category.

These calculations are presented in Table 18. They show that the 363.3 million square feet of new office, industrial, warehouse and retail building space constructed in 2013 have the capacity to house 923,630 new workers with a total estimated payroll of \$43.1 billion.

Table 18					
<b>Jobs Accommodated and Payroll Generated in Office, Industrial, Warehouse and Retail Space Constructed in 2013</b>					
(Square Feet in Millions; Payroll in Billions of 2013 Dollars)					
Building Type	Square Feet	Square Feet per Job <sup>1</sup>	Jobs Accommodated	Average Earnings <sup>1</sup>	Total Payroll
Office	79.29	190	417,320	\$64,580	\$26.950
Industrial	46.83	750	62,440	34,500	2.154
Warehouse	127.90	600	213,270	33,590	7.160
Retail	109.58	475	230,700	29,690	6.850
<b>Total/Average</b>	<b>363.60</b>	<b>394</b>	<b>923,630</b>	<b>\$46,679</b>	<b>\$43.114</b>

Sources: GMU Center for Regional Analysis; U.S. Bureau of Labor Statistics; Delta Associates Inc.  
<sup>1</sup>Weighted Averages

# Appendix A: Construction Expenditures by State (Hard Costs Only)

Appendix A-1  
Value of Construction in Rank Order (**Office**), 2013  
(Hard Costs Only)

STATE	Direct Spending (In Billions of Dollars)	STATE	Direct Spending (In Billions of Dollars)
1 Texas	2.649	31 Wisconsin	0.126
2 New York	2.586	32 South Carolina	0.106
3 California	2.427	33 Kentucky	0.104
4 Maryland	1.481	34 Nevada	0.094
5 Iowa	0.856	35 Rhode Island	0.080
6 Massachusetts	0.792	36 New Mexico	0.065
7 New Jersey	0.738	37 Alaska	0.059
8 Washington	0.693	38 Minnesota	0.052
9 Virginia	0.669	39 Maine	0.049
10 Arizona	0.499	40 Arkansas	0.047
<b>TOP 10 STATES TOTAL</b>	<b>13.389</b>	<b>NEXT 10 STATES TOTAL (31-40)</b>	<b>0.780</b>
11 District of Columbia	0.466	41 New Hampshire	0.042
12 Colorado	0.452	42 South Dakota	0.037
13 Illinois	0.447	43 Hawaii	0.036
14 Florida	0.446	44 North Dakota	0.035
15 North Carolina	0.400	45 Vermont	0.028
16 Pennsylvania	0.385	46 Mississippi	0.027
17 Tennessee	0.381	47 Wyoming	0.027
18 Nebraska	0.362	48 Idaho	0.026
19 Georgia	0.294	49 Delaware	0.022
20 Oregon	0.273	50 West Virginia	0.010
<b>NEXT 10 STATES TOTAL (11-20)</b>	<b>3.907</b>	51 Montana	0.009
21 Michigan	0.270	<b>NEXT 11 STATES TOTAL (41-51)</b>	<b>0.281</b>
22 Ohio	0.255	<b>U.S. Total</b>	<b>20.337</b>
23 Louisiana	0.236		
24 Utah	0.218		
25 Indiana	0.188		
26 Alabama	0.175		
27 Oklahoma	0.172		
28 Kansas	0.152		
29 Missouri	0.151		
30 Connecticut	0.147		
<b>NEXT 10 STATES TOTAL (21-30)</b>	<b>1.963</b>		

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

Appendix A-2  
Value of Construction in Rank Order (**Industrial**), 2013  
(Hard Costs Only)

STATE	Direct Spending (In Billions of Dollars)	STATE	Direct Spending (In Billions of Dollars)
1 Louisiana	4.859	31 Virginia	0.059
2 Iowa	2.048	32 Washington	0.059
3 West Virginia	1.680	33 Maryland	0.054
4 Oregon	1.001	34 Tennessee	0.050
5 Georgia	0.991	35 Nebraska	0.044
6 New York	0.698	36 Vermont	0.037
7 Kansas	0.603	37 Oklahoma	0.028
8 Pennsylvania	0.484	38 Hawaii	0.023
9 Alabama	0.459	39 Wyoming	0.020
10 Indiana	0.450	40 New Hampshire	0.019
<b>TOP 10 STATES TOTAL</b>	<b>13.274</b>	<b>NEXT 10 STATES TOTAL (31-40)</b>	<b>0.393</b>
11 North Dakota	0.443	41 Arizona	0.014
12 Texas	0.441	42 Arkansas	0.012
13 North Carolina	0.328	43 Idaho	0.006
14 Ohio	0.312	44 Rhode Island	0.002
15 South Carolina	0.227	45 New Mexico	0.002
16 Illinois	0.214	46 South Dakota	0.002
17 Minnesota	0.205	47 Delaware	0.001
18 Wisconsin	0.204	48 Maine	0.000
19 Utah	0.183	49 Alaska	0.000
20 Mississippi	0.160	50 District of Columbia	0.000
<b>NEXT 10 STATES TOTAL (11-20)</b>	<b>2.716</b>	51 Montana	0.000
21 Michigan	0.159	<b>NEXT 11 STATES TOTAL (41-51)</b>	<b>0.039</b>
22 Florida	0.144	<b>U.S. Total</b>	<b>17.568</b>
23 Massachusetts	0.122		
24 Colorado	0.121		
25 Kentucky	0.120		
26 California	0.118		
27 Missouri	0.111		
28 Connecticut	0.108		
29 New Jersey	0.073		
30 Nevada	0.071		
<b>NEXT 10 STATES TOTAL (21-30)</b>	<b>1.146</b>		

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

Appendix A-3  
Value of Construction in Rank Order (**Warehouse**), 2013  
(Hard Costs Only)

STATE	Direct Spending (In Billions of Dollars)	STATE	Direct Spending (In Billions of Dollars)
1 Texas	1.139	31 Alabama	0.042
2 California	0.700	32 Iowa	0.040
3 New Jersey	0.427	33 North Carolina	0.039
4 Florida	0.424	34 Montana	0.038
5 Pennsylvania	0.423	35 Oklahoma	0.034
6 Indiana	0.419	36 North Dakota	0.024
7 Ohio	0.413	37 West Virginia	0.023
8 Arizona	0.343	38 New Mexico	0.017
9 Tennessee	0.318	39 Maine	0.015
10 Illinois	0.298	40 South Dakota	0.013
<b>TOP 10 STATES TOTAL</b>	<b>4.903</b>	<b>NEXT 10 STATES TOTAL (31-40)</b>	<b>0.283</b>
11 Washington	0.248	41 Arkansas	0.013
12 New York	0.243	42 Nebraska	0.011
13 Wisconsin	0.215	43 Alaska	0.009
14 Georgia	0.200	44 Vermont	0.007
15 Maryland	0.168	45 Idaho	0.006
16 Kansas	0.153	46 New Hampshire	0.006
17 Colorado	0.145	47 Wyoming	0.004
18 South Carolina	0.141	48 Hawaii	0.002
19 Missouri	0.131	49 District of Columbia	0.001
20 Mississippi	0.129	50 Rhode Island	0.000
<b>NEXT 10 STATES TOTAL (11-20)</b>	<b>1.773</b>	51 Delaware	0.000
21 Connecticut	0.116	<b>NEXT 11 STATES TOTAL (41-51)</b>	<b>0.059</b>
22 Oregon	0.114	<b>U.S. Total</b>	<b>7.869</b>
23 Michigan	0.107		
24 Minnesota	0.090		
25 Kentucky	0.089		
26 Louisiana	0.087		
27 Utah	0.073		
28 Virginia	0.064		
29 Nevada	0.058		
30 Massachusetts	0.055		
<b>NEXT 10 STATES TOTAL (21-30)</b>	<b>0.851</b>		

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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



## Appendix A-4

### Value of Construction in Rank Order **(Retail and Entertainment)**, 2013 (Hard Costs Only)

STATE	Direct Spending (In Billions of Dollars)	STATE	Direct Spending (In Billions of Dollars)
1 Texas	1.563	31 Hawaii	0.201
2 New York	1.283	32 Iowa	0.171
3 Florida	1.282	33 Nevada	0.165
4 California	1.103	34 Nebraska	0.144
5 Illinois	0.628	35 Utah	0.143
6 Georgia	0.522	36 Mississippi	0.142
7 Massachusetts	0.496	37 North Dakota	0.105
8 Ohio	0.489	38 Arkansas	0.099
9 North Carolina	0.483	39 New Hampshire	0.086
10 Virginia	0.422	40 South Dakota	0.084
<b>TOP 10 STATES TOTAL</b>	<b>8.270</b>	<b>NEXT 10 STATES TOTAL (31-40)</b>	<b>1.340</b>
11 Tennessee	0.400	41 New Mexico	0.075
12 Louisiana	0.359	42 Alaska	0.075
13 Maryland	0.354	43 Delaware	0.075
14 Kansas	0.322	44 District of Columbia	0.062
15 New Jersey	0.319	45 Idaho	0.056
16 Washington	0.317	46 Vermont	0.039
17 Michigan	0.312	47 Rhode Island	0.034
18 Indiana	0.309	48 Montana	0.031
19 Colorado	0.302	49 Maine	0.031
20 Pennsylvania	0.288	50 West Virginia	0.028
<b>NEXT 10 STATES TOTAL (11-20)</b>	<b>3.282</b>	51 Wyoming	0.028
21 Missouri	0.286	<b>NEXT 11 STATES TOTAL (41-51)</b>	<b>0.534</b>
22 Arizona	0.274	<b>U.S. Total</b>	<b>15.877</b>
23 Connecticut	0.266		
24 Minnesota	0.260		
25 South Carolina	0.243		
26 Kentucky	0.238		
27 Wisconsin	0.234		
28 Alabama	0.222		
29 Oregon	0.217		
30 Oklahoma	0.212		
<b>NEXT 10 STATES TOTAL (21-30)</b>	<b>2.452</b>		

**Source:** CRA, McGraw-Hill Construction, BEA and NAIOP

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

Appendix A-5  
Value of Construction in Rank Order (in Four Categories), 2013  
(Hard Costs Only)

STATE		Direct Spending (In Billions of Dollars)	STATE		Direct Spending (In Billions of Dollars)	
1	Texas	5.7919	31	North Dakota	0.6072	
2	Louisiana	5.5406	32	Minnesota	0.6059	
3	New York	4.8098	33	Nebraska	0.5608	
4	California	4.3490	34	Kentucky	0.5500	
5	Iowa	3.1143	35	District of Columbia	0.5291	
6	Florida	2.2954	36	Mississippi	0.4585	
7	Maryland	2.0566	37	Oklahoma	0.4453	
8	Georgia	2.0062	38	Nevada	0.3873	
9	West Virginia	1.7413	39	Hawaii	0.2617	
10	Oregon	1.6058	40	Arkansas	0.1702	
<b>TOP 10 STATES TOTAL</b>		<b>33.311</b>	<b>NEXT 10 STATES TOTAL (31-40)</b>		<b>4.576</b>	
11	Illinois	1.5864	41	New Mexico	0.1582	
12	Pennsylvania	1.5792	42	New Hampshire	0.1526	
13	New Jersey	1.5570	43	Alaska	0.1430	
14	Ohio	1.4688	44	South Dakota	0.1349	
15	Massachusetts	1.4638	45	Rhode Island	0.1168	
16	Indiana	1.3666	46	Vermont	0.1109	
17	Washington	1.3169	47	Delaware	0.0982	
18	North Carolina	1.2502	48	Maine	0.0941	
19	Kansas	1.2298	49	Idaho	0.0941	
20	Virginia	1.2134	50	Wyoming	0.0788	
<b>NEXT 10 STATES TOTAL (11-20)</b>		<b>14.032</b>	51	Montana	0.0778	
21	Tennessee	1.1493	<b>NEXT 11 STATES TOTAL (41-51)</b>		<b>1.259</b>	
22	Arizona	1.1288	<b>U.S. Total</b>			<b>61.6512</b>
23	Colorado	1.0198				
24	Alabama	0.8977				
25	Michigan	0.8491				
26	Wisconsin	0.7792				
27	South Carolina	0.7167				
28	Missouri	0.6792				
29	Connecticut	0.6365				
30	Utah	0.6165				
<b>NEXT 10 STATES TOTAL (21-30)</b>		<b>8.473</b>				

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

Appendix A-6  
 Top 10 States by Construction Value **(in Four Categories)**, 2013  
 (Hard Costs Only in Billions of Dollars)

Groupings of States	OFFICE		INDUSTRIAL		WAREHOUSE		RETAIL		TOTAL	
	Value	%	Value	%	Value	%	Value	%	Value	%
Top 10 States	\$13.4	65.9	\$13.3	75.6	\$4.9	62.3	\$8.3	52.1	\$33.3	54.0
States 11-20	\$3.9	19.2	\$2.7	15.5	\$1.8	22.5	\$3.3	20.7	\$14.0	22.8
States 21-30	\$2.0	9.7	\$1.1	6.5	\$0.9	10.8	\$2.5	15.4	\$8.5	13.7
States 31-40	\$0.8	3.8	\$0.4	2.2	\$0.3	3.6	\$1.3	8.4	\$4.6	7.4
States 41-51	\$0.3	1.4	\$0.0	0.2	\$0.1	0.8	\$0.5	3.4	\$1.3	2.0
<b>Total</b>	<b>\$20.3</b>	<b>100.0</b>	<b>\$17.6</b>	<b>100.0</b>	<b>\$7.9</b>	<b>100.0</b>	<b>\$15.9</b>	<b>100.0</b>	<b>\$61.7</b>	<b>100.0</b>

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

## Appendix A-7

### New Personal Income Generated by Construction Outlays by State in Rank Order (in Four Categories), 2013

STATE	Personal Earnings (In Billions of Dollars)	STATE	Personal Earnings (In Billions of Dollars)
1 Texas	4.826	31 Connecticut	0.418
2 Louisiana	3.945	32 Kentucky	0.366
3 California	3.417	33 North Dakota	0.342
4 New York	2.983	34 Nebraska	0.326
5 Iowa	1.886	35 Oklahoma	0.323
6 Florida	1.707	36 Mississippi	0.303
7 Georgia	1.529	37 Nevada	0.258
8 Maryland	1.318	38 Hawaii	0.179
9 Illinois	1.231	39 Arkansas	0.109
10 Pennsylvania	1.216	40 New Mexico	0.104
<b>TOP 10 STATES TOTAL</b>	<b>24.059</b>	<b>NEXT 10 STATES TOTAL (31-40)</b>	<b>2.728</b>
11 Ohio	1.126	41 New Hampshire	0.102
12 New Jersey	1.099	42 Alaska	0.090
13 Oregon	1.098	43 South Dakota	0.079
14 West Virginia	1.044	44 Vermont	0.070
15 Massachusetts	0.993	45 Rhode Island	0.070
16 Indiana	0.970	46 Maine	0.066
17 Washington	0.965	47 Idaho	0.060
18 North Carolina	0.920	48 Delaware	0.053
19 Tennessee	0.839	49 Montana	0.051
20 Arizona	0.834	50 District of Columbia	0.048
<b>NEXT 10 STATES TOTAL (11-20)</b>	<b>9.889</b>	51 Wyoming	0.046
21 Virginia	0.804	<b>NEXT 11 STATES TOTAL (41-51)</b>	<b>0.736</b>
22 Colorado	0.798	<b>State Totals</b>	<b>43.508</b>
23 Kansas	0.730	<b>Interstate Spillovers</b>	<b>16.700</b>
24 Alabama	0.652	<b>U.S. Total</b>	<b>60.209</b>
25 Michigan	0.641		
26 Wisconsin	0.556		
27 South Carolina	0.522		
28 Utah	0.489		
29 Missouri	0.470		
30 Minnesota	0.436		
<b>NEXT 10 STATES TOTAL (21-30)</b>	<b>6.097</b>		

**Source:** CRA, McGraw-Hill Construction, BEA and NAIOP

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

# Appendix B: Soft Costs Impacts by State

## Appendix B-1

### Impacts of **Office** Soft Costs on State Economies, 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.051	0.096	0.033	716
Alaska	0.017	0.030	0.010	196
Arizona	0.145	0.297	0.104	2,207
Arkansas	0.014	0.023	0.008	167
California	0.706	1.583	0.546	9,768
Colorado	0.132	0.298	0.103	1,915
Connecticut	0.043	0.085	0.028	482
Delaware	0.006	0.011	0.003	56
District of Columbia	0.136	0.190	0.015	238
Florida	0.130	0.275	0.096	2,059
Georgia	0.085	0.190	0.064	1,312
Hawaii	0.010	0.020	0.007	138
Idaho	0.007	0.013	0.005	95
Illinois	0.130	0.297	0.099	1,811
Indiana	0.055	0.104	0.034	765
Iowa	0.249	0.412	0.139	2,975
Kansas	0.044	0.077	0.024	484
Kentucky	0.030	0.057	0.018	400
Louisiana	0.069	0.128	0.045	924
Maine	0.014	0.026	0.009	207
Maryland	0.431	0.869	0.277	4,963
Massachusetts	0.230	0.486	0.162	2,732
Michigan	0.079	0.161	0.056	1,131
Minnesota	0.015	0.031	0.011	204
Mississippi	0.008	0.014	0.005	103
Missouri	0.044	0.090	0.027	550
Montana	0.003	0.005	0.002	37
Nebraska	0.105	0.175	0.060	1,189
Nevada	0.027	0.051	0.018	359
New Hampshire	0.012	0.024	0.007	147
New Jersey	0.215	0.467	0.147	2,547
New Mexico	0.019	0.033	0.012	257
New York	0.752	1.474	0.436	7,281
North Carolina	0.116	0.242	0.082	1,745
North Dakota	0.010	0.016	0.006	109
Ohio	0.074	0.157	0.053	1,083
Oklahoma	0.050	0.095	0.033	729
Oregon	0.079	0.157	0.053	1,138
Pennsylvania	0.112	0.243	0.080	1,541
Rhode Island	0.023	0.044	0.013	263
South Carolina	0.031	0.061	0.020	458
South Dakota	0.011	0.017	0.006	110
Tennessee	0.111	0.234	0.078	1,579
Texas	0.771	1.760	0.598	11,882
Utah	0.063	0.138	0.048	1,129
Vermont	0.008	0.015	0.005	111
Virginia	0.195	0.395	0.125	2,300
Washington	0.202	0.402	0.136	2,557
West Virginia	0.003	0.005	0.002	36
Wisconsin	0.037	0.071	0.024	520
Wyoming	0.008	0.012	0.004	85
<b>State Totals</b>	<b>5.916</b>	<b>12.155</b>	<b>3.976</b>	<b>75,792</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>4.012</b>	<b>1.413</b>	<b>33,096</b>
<b>U.S. Total</b>	<b>5.916</b>	<b>16.167</b>	<b>5.389</b>	<b>108,888</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

Appendix B-2  
Impacts of **Industrial** Soft Costs on State Economies, 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.144	0.271	0.094	2,026
Alaska	0.000	0.000	0.000	1
Arizona	0.004	0.009	0.003	64
Arkansas	0.004	0.006	0.002	46
California	0.037	0.083	0.029	511
Colorado	0.038	0.086	0.030	551
Connecticut	0.034	0.067	0.022	380
Delaware	0.000	0.001	0.000	3
District of Columbia	0.000	0.000	0.000	0
Florida	0.045	0.096	0.034	716
Georgia	0.310	0.690	0.232	4,763
Hawaii	0.007	0.014	0.005	97
Idaho	0.002	0.003	0.001	24
Illinois	0.067	0.153	0.051	931
Indiana	0.141	0.269	0.089	1,970
Iowa	0.641	1.061	0.359	7,660
Kansas	0.189	0.326	0.104	2,059
Kentucky	0.038	0.072	0.023	499
Louisiana	1.521	2.833	0.997	20,491
Maine	0.000	0.000	0.000	2
Maryland	0.017	0.034	0.011	194
Massachusetts	0.038	0.080	0.027	453
Michigan	0.050	0.102	0.035	716
Minnesota	0.064	0.133	0.045	870
Mississippi	0.050	0.086	0.029	654
Missouri	0.035	0.071	0.022	434
Montana	0.000	0.000	0.000	0
Nebraska	0.014	0.023	0.008	155
Nevada	0.022	0.041	0.014	291
New Hampshire	0.006	0.011	0.004	71
New Jersey	0.023	0.050	0.016	271
New Mexico	0.001	0.001	0.000	7
New York	0.218	0.428	0.127	2,114
North Carolina	0.103	0.213	0.072	1,536
North Dakota	0.139	0.221	0.075	1,479
Ohio	0.098	0.208	0.069	1,430
Oklahoma	0.009	0.016	0.006	126
Oregon	0.313	0.620	0.208	4,490
Pennsylvania	0.151	0.329	0.109	2,085
Rhode Island	0.001	0.001	0.000	7
South Carolina	0.071	0.140	0.047	1,050
South Dakota	0.001	0.001	0.000	5
Tennessee	0.016	0.033	0.011	223
Texas	0.138	0.315	0.107	2,127
Utah	0.057	0.125	0.043	1,020
Vermont	0.012	0.021	0.007	157
Virginia	0.019	0.038	0.012	220
Washington	0.019	0.037	0.012	235
West Virginia	0.526	0.889	0.299	6,562
Wisconsin	0.064	0.123	0.042	903
Wyoming	0.006	0.010	0.003	69
<b>State Totals</b>	<b>5.498</b>	<b>10.438</b>	<b>3.535</b>	<b>72,752</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>4.586</b>	<b>1.473</b>	<b>28,438</b>
<b>U.S. Total</b>	<b>5.498</b>	<b>15.024</b>	<b>5.008</b>	<b>101,190</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

### Appendix B-3

#### Impacts of Warehouse Soft Costs on State Economies, 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.011	0.022	0.008	162
Alaska	0.003	0.004	0.002	29
Arizona	0.094	0.192	0.067	1,429
Arkansas	0.003	0.006	0.002	42
California	0.192	0.430	0.148	2,654
Colorado	0.040	0.090	0.031	578
Connecticut	0.032	0.064	0.021	360
Delaware	0.000	0.000	0.000	0
District of Columbia	0.000	0.000	0.000	0
Florida	0.116	0.247	0.086	1,844
Georgia	0.055	0.122	0.041	843
Hawaii	0.000	0.001	0.000	7
Idaho	0.002	0.003	0.001	22
Illinois	0.082	0.186	0.062	1,137
Indiana	0.115	0.218	0.072	1,602
Iowa	0.011	0.018	0.006	131
Kansas	0.042	0.072	0.023	457
Kentucky	0.024	0.046	0.015	323
Louisiana	0.024	0.044	0.016	319
Maine	0.004	0.007	0.003	59
Maryland	0.046	0.093	0.030	530
Massachusetts	0.015	0.032	0.010	177
Michigan	0.029	0.060	0.021	423
Minnesota	0.025	0.051	0.017	333
Mississippi	0.035	0.061	0.021	462
Missouri	0.036	0.074	0.022	450
Montana	0.010	0.018	0.006	144
Nebraska	0.003	0.005	0.002	34
Nevada	0.016	0.029	0.010	209
New Hampshire	0.002	0.003	0.001	20
New Jersey	0.117	0.254	0.080	1,386
New Mexico	0.005	0.008	0.003	62
New York	0.067	0.130	0.039	644
North Carolina	0.011	0.022	0.007	159
North Dakota	0.006	0.010	0.004	69
Ohio	0.113	0.240	0.080	1,654
Oklahoma	0.009	0.018	0.006	135
Oregon	0.031	0.062	0.021	447
Pennsylvania	0.116	0.252	0.083	1,594
Rhode Island	0.000	0.000	0.000	1
South Carolina	0.038	0.076	0.025	570
South Dakota	0.003	0.005	0.002	35
Tennessee	0.087	0.184	0.061	1,240
Texas	0.312	0.713	0.242	4,812
Utah	0.020	0.043	0.015	355
Vermont	0.002	0.003	0.001	25
Virginia	0.017	0.035	0.011	206
Washington	0.068	0.136	0.046	863
West Virginia	0.006	0.011	0.004	78
Wisconsin	0.059	0.113	0.039	831
Wyoming	0.001	0.002	0.001	12
<b>State Totals</b>	<b>2.155</b>	<b>4.517</b>	<b>1.514</b>	<b>29,962</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>1.373</b>	<b>0.449</b>	<b>9,709</b>
<b>U.S. Total</b>	<b>2.155</b>	<b>5.890</b>	<b>1.963</b>	<b>39,671</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

Appendix B-4

Impacts of **Retail and Entertainment** Soft Costs on State Economies, 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.085	0.160	0.056	1,199
Alaska	0.029	0.050	0.017	332
Arizona	0.105	0.215	0.075	1,597
Arkansas	0.038	0.065	0.023	469
California	0.423	0.949	0.327	5,855
Colorado	0.116	0.262	0.090	1,685
Connecticut	0.102	0.204	0.068	1,153
Delaware	0.029	0.050	0.014	247
District of Columbia	0.024	0.033	0.003	42
Florida	0.492	1.045	0.366	7,816
Georgia	0.200	0.446	0.150	3,075
Hawaii	0.077	0.145	0.051	1,020
Idaho	0.021	0.037	0.013	272
Illinois	0.241	0.550	0.184	3,353
Indiana	0.119	0.226	0.075	1,658
Iowa	0.066	0.108	0.037	783
Kansas	0.123	0.213	0.068	1,347
Kentucky	0.091	0.174	0.056	1,214
Louisiana	0.138	0.257	0.090	1,859
Maine	0.012	0.022	0.008	173
Maryland	0.136	0.274	0.087	1,565
Massachusetts	0.190	0.401	0.134	2,255
Michigan	0.120	0.246	0.085	1,725
Minnesota	0.100	0.207	0.070	1,353
Mississippi	0.055	0.094	0.032	714
Missouri	0.110	0.226	0.069	1,376
Montana	0.012	0.020	0.007	165
Nebraska	0.055	0.092	0.031	621
Nevada	0.063	0.118	0.041	837
New Hampshire	0.033	0.065	0.020	401
New Jersey	0.123	0.267	0.084	1,454
New Mexico	0.029	0.051	0.018	397
New York	0.492	0.965	0.286	4,766
North Carolina	0.185	0.385	0.131	2,779
North Dakota	0.040	0.065	0.022	431
Ohio	0.188	0.399	0.133	2,745
Oklahoma	0.081	0.155	0.054	1,189
Oregon	0.083	0.165	0.055	1,195
Pennsylvania	0.110	0.240	0.079	1,520
Rhode Island	0.013	0.024	0.007	146
South Carolina	0.093	0.184	0.062	1,384
South Dakota	0.032	0.049	0.016	329
Tennessee	0.153	0.324	0.107	2,184
Texas	0.600	1.370	0.465	9,245
Utah	0.055	0.119	0.041	976
Vermont	0.015	0.027	0.009	203
Virginia	0.162	0.328	0.104	1,913
Washington	0.121	0.242	0.082	1,541
West Virginia	0.011	0.018	0.006	136
Wisconsin	0.090	0.173	0.059	1,272
Wyoming	0.011	0.017	0.006	116
<b>State Totals</b>	<b>6.093</b>	<b>12.521</b>	<b>4.173</b>	<b>82,081</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>4.128</b>	<b>1.376</b>	<b>30,055</b>
<b>U.S. Total</b>	<b>6.093</b>	<b>16.649</b>	<b>5.549</b>	<b>112,137</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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



Appendix B-5  
Impacts of Soft Costs in **Four Categories** on State Economies, 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.291	0.549	0.190	4,102
Alaska	0.048	0.084	0.029	558
Arizona	0.348	0.713	0.249	5,298
Arkansas	0.059	0.101	0.035	725
California	1.358	3.045	1.050	18,789
Colorado	0.325	0.735	0.254	4,729
Connecticut	0.210	0.420	0.139	2,375
Delaware	0.036	0.062	0.017	306
District of Columbia	0.160	0.223	0.018	280
Florida	0.783	1.662	0.582	12,435
Georgia	0.651	1.448	0.487	9,993
Hawaii	0.095	0.180	0.063	1,262
Idaho	0.033	0.056	0.020	414
Illinois	0.519	1.185	0.397	7,232
Indiana	0.429	0.817	0.270	5,995
Iowa	0.966	1.599	0.541	11,549
Kansas	0.398	0.688	0.219	4,346
Kentucky	0.183	0.349	0.112	2,436
Louisiana	1.751	3.262	1.148	23,593
Maine	0.030	0.056	0.020	440
Maryland	0.629	1.270	0.405	7,253
Massachusetts	0.474	0.999	0.333	5,617
Michigan	0.278	0.569	0.196	3,996
Minnesota	0.203	0.422	0.143	2,761
Mississippi	0.148	0.255	0.087	1,934
Missouri	0.224	0.462	0.140	2,810
Montana	0.025	0.043	0.015	346
Nebraska	0.177	0.295	0.101	1,999
Nevada	0.129	0.239	0.084	1,696
New Hampshire	0.053	0.103	0.032	639
New Jersey	0.477	1.037	0.325	5,658
New Mexico	0.053	0.093	0.033	724
New York	1.530	2.998	0.887	14,805
North Carolina	0.415	0.862	0.293	6,220
North Dakota	0.196	0.313	0.106	2,089
Ohio	0.473	1.004	0.336	6,912
Oklahoma	0.149	0.284	0.098	2,180
Oregon	0.507	1.003	0.337	7,271
Pennsylvania	0.490	1.064	0.351	6,741
Rhode Island	0.037	0.069	0.021	418
South Carolina	0.234	0.461	0.154	3,462
South Dakota	0.047	0.072	0.024	480
Tennessee	0.367	0.775	0.257	5,226
Texas	1.820	4.158	1.413	28,065
Utah	0.195	0.425	0.147	3,479
Vermont	0.037	0.066	0.022	495
Virginia	0.392	0.796	0.252	4,638
Washington	0.410	0.817	0.276	5,196
West Virginia	0.546	0.922	0.310	6,812
Wisconsin	0.249	0.479	0.165	3,526
Wyoming	0.026	0.040	0.014	282
<b>State Totals</b>	<b>19.663</b>	<b>39.631</b>	<b>13.198</b>	<b>260,587</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>14.098</b>	<b>4.711</b>	<b>101,299</b>
<b>U.S. Total</b>	<b>19.663</b>	<b>53.729</b>	<b>17.909</b>	<b>361,886</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

# Appendix C: Site Development Impacts by State

## Appendix C-1

### Impacts of Site Development on State Economies (Office), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.051	0.110	0.037	997
Alaska	0.017	0.031	0.011	237
Arizona	0.146	0.305	0.108	2,639
Arkansas	0.014	0.027	0.009	246
California	0.711	1.628	0.559	11,915
Colorado	0.132	0.300	0.104	2,497
Connecticut	0.043	0.084	0.028	600
Delaware	0.007	0.012	0.003	85
District of Columbia	0.137	0.164	0.012	243
Florida	0.131	0.273	0.097	2,619
Georgia	0.086	0.195	0.066	1,722
Hawaii	0.011	0.020	0.007	165
Idaho	0.008	0.014	0.005	137
Illinois	0.131	0.310	0.102	2,235
Indiana	0.055	0.120	0.039	1,011
Iowa	0.251	0.452	0.152	4,096
Kansas	0.045	0.086	0.026	678
Kentucky	0.030	0.064	0.020	561
Louisiana	0.069	0.144	0.049	1,197
Maine	0.014	0.028	0.010	279
Maryland	0.434	0.855	0.278	6,069
Massachusetts	0.232	0.474	0.157	3,331
Michigan	0.079	0.172	0.060	1,619
Minnesota	0.015	0.033	0.011	271
Mississippi	0.008	0.016	0.005	148
Missouri	0.044	0.097	0.031	771
Montana	0.003	0.005	0.002	51
Nebraska	0.106	0.182	0.062	1,578
Nevada	0.027	0.052	0.018	422
New Hampshire	0.012	0.025	0.008	198
New Jersey	0.216	0.476	0.153	3,240
New Mexico	0.019	0.036	0.012	336
New York	0.757	1.432	0.470	9,950
North Carolina	0.117	0.256	0.086	2,369
North Dakota	0.010	0.018	0.006	149
Ohio	0.075	0.174	0.057	1,468
Oklahoma	0.050	0.108	0.036	1,005
Oregon	0.080	0.166	0.055	1,392
Pennsylvania	0.113	0.267	0.087	2,018
Rhode Island	0.024	0.044	0.014	344
South Carolina	0.031	0.068	0.023	637
South Dakota	0.011	0.018	0.006	177
Tennessee	0.112	0.253	0.082	2,087
Texas	0.776	1.934	0.647	14,813
Utah	0.064	0.149	0.051	1,309
Vermont	0.008	0.015	0.005	147
Virginia	0.196	0.401	0.130	3,210
Washington	0.203	0.438	0.149	3,321
West Virginia	0.003	0.005	0.002	46
Wisconsin	0.037	0.077	0.026	672
Wyoming	0.008	0.014	0.005	111
<b>State Totals</b>	<b>5.957</b>	<b>12.631</b>	<b>4.176</b>	<b>97,420</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>5.751</b>	<b>1.642</b>	<b>42,093</b>
<b>U.S. Total</b>	<b>5.957</b>	<b>18.382</b>	<b>5.818</b>	<b>139,514</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

Appendix C-2

Impacts of Site Development on State Economies (**Industrial**), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.117	0.252	0.085	2,290
Alaska	0.000	0.000	0.000	1
Arizona	0.003	0.007	0.003	62
Arkansas	0.003	0.006	0.002	55
California	0.030	0.069	0.024	506
Colorado	0.031	0.070	0.024	583
Connecticut	0.027	0.054	0.018	384
Delaware	0.000	0.000	0.000	3
District of Columbia	0.000	0.000	0.000	0
Florida	0.037	0.077	0.027	738
Georgia	0.253	0.573	0.193	5,071
Hawaii	0.006	0.012	0.004	94
Idaho	0.002	0.003	0.001	28
Illinois	0.055	0.129	0.042	932
Indiana	0.115	0.251	0.082	2,112
Iowa	0.523	0.943	0.317	8,554
Kansas	0.154	0.298	0.091	2,341
Kentucky	0.031	0.065	0.020	567
Louisiana	1.242	2.599	0.884	21,541
Maine	0.000	0.000	0.000	2
Maryland	0.014	0.027	0.009	192
Massachusetts	0.031	0.064	0.021	447
Michigan	0.041	0.088	0.031	832
Minnesota	0.052	0.113	0.038	936
Mississippi	0.041	0.083	0.027	762
Missouri	0.028	0.062	0.020	493
Montana	0.000	0.000	0.000	0
Nebraska	0.011	0.019	0.007	166
Nevada	0.018	0.034	0.012	277
New Hampshire	0.005	0.010	0.003	77
New Jersey	0.019	0.041	0.013	280
New Mexico	0.000	0.001	0.000	8
New York	0.178	0.337	0.111	2,343
North Carolina	0.084	0.183	0.062	1,691
North Dakota	0.113	0.200	0.064	1,637
Ohio	0.080	0.186	0.061	1,571
Oklahoma	0.007	0.015	0.005	141
Oregon	0.256	0.530	0.175	4,454
Pennsylvania	0.124	0.293	0.095	2,214
Rhode Island	0.001	0.001	0.000	8
South Carolina	0.058	0.126	0.042	1,184
South Dakota	0.000	0.001	0.000	7
Tennessee	0.013	0.029	0.009	239
Texas	0.113	0.281	0.094	2,150
Utah	0.047	0.109	0.037	959
Vermont	0.009	0.018	0.006	168
Virginia	0.015	0.031	0.010	249
Washington	0.015	0.033	0.011	247
West Virginia	0.429	0.805	0.257	6,826
Wisconsin	0.052	0.109	0.037	946
Wyoming	0.005	0.009	0.003	73
<b>State Totals</b>	<b>4.490</b>	<b>9.247</b>	<b>3.079</b>	<b>77,444</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>4.605</b>	<b>1.305</b>	<b>27,695</b>
<b>U.S. Total</b>	<b>4.490</b>	<b>13.852</b>	<b>4.384</b>	<b>105,138</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

Appendix C-3

Impacts of Site Development on State Economies (Warehouse), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.015	0.032	0.011	292
Alaska	0.003	0.006	0.002	45
Arizona	0.122	0.255	0.090	2,209
Arkansas	0.004	0.009	0.003	81
California	0.250	0.572	0.196	4,184
Colorado	0.052	0.117	0.040	975
Connecticut	0.041	0.081	0.027	579
Delaware	0.000	0.000	0.000	0
District of Columbia	0.000	0.000	0.000	1
Florida	0.151	0.316	0.112	3,032
Georgia	0.071	0.162	0.054	1,431
Hawaii	0.001	0.001	0.000	10
Idaho	0.002	0.004	0.001	42
Illinois	0.106	0.252	0.082	1,813
Indiana	0.149	0.325	0.106	2,739
Iowa	0.014	0.026	0.009	233
Kansas	0.054	0.105	0.032	827
Kentucky	0.032	0.067	0.021	584
Louisiana	0.031	0.065	0.022	535
Maine	0.005	0.010	0.004	102
Maryland	0.060	0.118	0.038	838
Massachusetts	0.019	0.040	0.013	279
Michigan	0.038	0.083	0.029	783
Minnesota	0.032	0.069	0.023	571
Mississippi	0.046	0.093	0.030	857
Missouri	0.047	0.103	0.032	815
Montana	0.013	0.025	0.009	255
Nebraska	0.004	0.007	0.002	58
Nevada	0.021	0.039	0.014	316
New Hampshire	0.002	0.004	0.001	35
New Jersey	0.152	0.334	0.107	2,278
New Mexico	0.006	0.011	0.004	105
New York	0.087	0.164	0.054	1,138
North Carolina	0.014	0.030	0.010	279
North Dakota	0.008	0.015	0.005	122
Ohio	0.147	0.343	0.113	2,897
Oklahoma	0.012	0.026	0.009	241
Oregon	0.041	0.084	0.028	707
Pennsylvania	0.151	0.357	0.116	2,696
Rhode Island	0.000	0.000	0.000	2
South Carolina	0.050	0.109	0.036	1,024
South Dakota	0.004	0.008	0.003	73
Tennessee	0.113	0.257	0.083	2,117
Texas	0.406	1.012	0.338	7,753
Utah	0.026	0.061	0.021	532
Vermont	0.002	0.004	0.002	42
Virginia	0.023	0.046	0.015	371
Washington	0.089	0.191	0.065	1,449
West Virginia	0.008	0.015	0.005	130
Wisconsin	0.076	0.160	0.055	1,389
Wyoming	0.001	0.002	0.001	20
<b>State Totals</b>	<b>2.805</b>	<b>6.217</b>	<b>2.075</b>	<b>49,888</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>2.438</b>	<b>0.664</b>	<b>15,802</b>
<b>U.S. Total</b>	<b>2.805</b>	<b>8.655</b>	<b>2.739</b>	<b>65,691</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

## Appendix C-4

### Impacts of Site Development on State Economies (**Retail and Entertainment**), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.109	0.235	0.079	2,128
Alaska	0.037	0.067	0.023	511
Arizona	0.135	0.281	0.100	2,432
Arkansas	0.049	0.096	0.031	879
California	0.543	1.243	0.427	9,096
Colorado	0.148	0.337	0.116	2,798
Connecticut	0.131	0.256	0.086	1,828
Delaware	0.037	0.069	0.020	480
District of Columbia	0.030	0.037	0.003	54
Florida	0.631	1.319	0.469	12,662
Georgia	0.257	0.581	0.196	5,141
Hawaii	0.099	0.190	0.068	1,548
Idaho	0.027	0.050	0.018	500
Illinois	0.309	0.732	0.240	5,269
Indiana	0.152	0.332	0.108	2,792
Iowa	0.084	0.151	0.051	1,374
Kansas	0.158	0.306	0.094	2,405
Kentucky	0.117	0.248	0.078	2,163
Louisiana	0.177	0.370	0.126	3,068
Maine	0.015	0.030	0.011	297
Maryland	0.174	0.343	0.112	2,438
Massachusetts	0.244	0.498	0.165	3,502
Michigan	0.154	0.333	0.116	3,147
Minnesota	0.128	0.276	0.092	2,286
Mississippi	0.070	0.142	0.046	1,306
Missouri	0.141	0.310	0.097	2,455
Montana	0.015	0.029	0.010	288
Nebraska	0.071	0.121	0.041	1,050
Nevada	0.081	0.154	0.054	1,250
New Hampshire	0.042	0.088	0.028	688
New Jersey	0.157	0.346	0.111	2,355
New Mexico	0.037	0.070	0.024	660
New York	0.631	1.194	0.392	8,296
North Carolina	0.238	0.520	0.175	4,805
North Dakota	0.052	0.092	0.029	750
Ohio	0.241	0.561	0.185	4,737
Oklahoma	0.104	0.224	0.076	2,087
Oregon	0.107	0.222	0.073	1,861
Pennsylvania	0.142	0.335	0.109	2,534
Rhode Island	0.017	0.031	0.010	243
South Carolina	0.120	0.261	0.087	2,450
South Dakota	0.041	0.070	0.024	671
Tennessee	0.197	0.446	0.144	3,675
Texas	0.769	1.917	0.641	14,679
Utah	0.070	0.165	0.056	1,441
Vermont	0.019	0.036	0.012	341
Virginia	0.208	0.425	0.138	3,400
Washington	0.156	0.337	0.114	2,549
West Virginia	0.014	0.026	0.008	222
Wisconsin	0.115	0.241	0.082	2,093
Wyoming	0.014	0.024	0.008	194
<b>State Totals</b>	<b>7.813</b>	<b>16.763</b>	<b>5.601</b>	<b>135,877</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>7.345</b>	<b>2.029</b>	<b>47,095</b>
<b>U.S. Total</b>	<b>7.813</b>	<b>24.107</b>	<b>7.630</b>	<b>182,972</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

Appendix C-5

Impacts of Site Development on State Economies (in Four Categories), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.293	0.629	0.212	5,708
Alaska	0.057	0.105	0.036	795
Arizona	0.406	0.848	0.300	7,343
Arkansas	0.070	0.137	0.045	1,261
California	1.534	3.512	1.205	25,701
Colorado	0.363	0.824	0.284	6,853
Connecticut	0.243	0.475	0.159	3,392
Delaware	0.044	0.082	0.023	568
District of Columbia	0.167	0.201	0.015	298
Florida	0.949	1.985	0.706	19,051
Georgia	0.667	1.510	0.509	13,365
Hawaii	0.116	0.224	0.079	1,817
Idaho	0.039	0.070	0.025	708
Illinois	0.601	1.423	0.466	10,248
Indiana	0.472	1.028	0.335	8,654
Iowa	0.872	1.572	0.528	14,257
Kansas	0.411	0.795	0.244	6,251
Kentucky	0.210	0.445	0.139	3,875
Louisiana	1.518	3.178	1.081	26,341
Maine	0.035	0.069	0.024	680
Maryland	0.682	1.344	0.437	9,537
Massachusetts	0.526	1.075	0.357	7,560
Michigan	0.312	0.676	0.235	6,381
Minnesota	0.227	0.490	0.163	4,065
Mississippi	0.165	0.334	0.109	3,073
Missouri	0.260	0.573	0.180	4,535
Montana	0.031	0.059	0.021	594
Nebraska	0.192	0.329	0.112	2,852
Nevada	0.147	0.278	0.098	2,265
New Hampshire	0.062	0.127	0.041	999
New Jersey	0.544	1.197	0.384	8,152
New Mexico	0.062	0.118	0.041	1,109
New York	1.654	3.127	1.026	21,726
North Carolina	0.453	0.989	0.333	9,144
North Dakota	0.184	0.325	0.104	2,658
Ohio	0.542	1.265	0.416	10,674
Oklahoma	0.174	0.372	0.126	3,474
Oregon	0.484	1.002	0.331	8,414
Pennsylvania	0.529	1.252	0.407	9,462
Rhode Island	0.041	0.077	0.024	597
South Carolina	0.259	0.563	0.188	5,295
South Dakota	0.057	0.096	0.033	927
Tennessee	0.435	0.984	0.317	8,119
Texas	2.064	5.144	1.720	39,395
Utah	0.207	0.484	0.164	4,241
Vermont	0.039	0.073	0.025	698
Virginia	0.441	0.904	0.292	7,229
Washington	0.462	0.999	0.339	7,566
West Virginia	0.454	0.852	0.272	7,223
Wisconsin	0.281	0.586	0.200	5,100
Wyoming	0.028	0.049	0.017	398
<b>State Totals</b>	<b>21.065</b>	<b>44.858</b>	<b>14.931</b>	<b>360,629</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>20.139</b>	<b>5.641</b>	<b>132,686</b>
<b>U.S. Total</b>	<b>21.065</b>	<b>64.997</b>	<b>20.572</b>	<b>493,314</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

# Appendix D: Hard Costs Impacts by State

Appendix D-1  
Impacts of Construction on State Economies (Office), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.175	0.375	0.127	3,405
Alaska	0.059	0.107	0.037	811
Arizona	0.499	1.040	0.369	9,010
Arkansas	0.047	0.091	0.030	840
California	2.427	5.557	1.907	40,675
Colorado	0.452	1.026	0.354	8,525
Connecticut	0.147	0.287	0.096	2,050
Delaware	0.022	0.042	0.012	289
District of Columbia	0.466	0.561	0.042	830
Florida	0.446	0.932	0.331	8,941
Georgia	0.294	0.664	0.224	5,880
Hawaii	0.036	0.069	0.025	563
Idaho	0.026	0.046	0.016	468
Illinois	0.447	1.059	0.347	7,630
Indiana	0.188	0.410	0.134	3,452
Iowa	0.856	1.542	0.518	13,984
Kansas	0.152	0.295	0.090	2,316
Kentucky	0.104	0.220	0.069	1,914
Louisiana	0.236	0.493	0.168	4,087
Maine	0.049	0.096	0.034	953
Maryland	1.481	2.919	0.949	20,720
Massachusetts	0.792	1.618	0.537	11,371
Michigan	0.270	0.586	0.204	5,528
Minnesota	0.052	0.112	0.037	926
Mississippi	0.027	0.055	0.018	506
Missouri	0.151	0.333	0.105	2,633
Montana	0.009	0.017	0.006	172
Nebraska	0.362	0.622	0.211	5,385
Nevada	0.094	0.177	0.062	1,439
New Hampshire	0.042	0.086	0.028	677
New Jersey	0.738	1.624	0.521	11,060
New Mexico	0.065	0.122	0.042	1,148
New York	2.586	4.889	1.603	33,966
North Carolina	0.400	0.875	0.295	8,088
North Dakota	0.035	0.062	0.020	510
Ohio	0.255	0.594	0.195	5,012
Oklahoma	0.172	0.368	0.124	3,431
Oregon	0.273	0.566	0.187	4,753
Pennsylvania	0.385	0.912	0.296	6,887
Rhode Island	0.080	0.152	0.048	1,173
South Carolina	0.106	0.231	0.077	2,175
South Dakota	0.037	0.063	0.022	603
Tennessee	0.381	0.864	0.279	7,126
Texas	2.649	6.603	2.207	50,570
Utah	0.218	0.510	0.173	4,468
Vermont	0.028	0.052	0.018	500
Virginia	0.669	1.370	0.443	10,957
Washington	0.693	1.497	0.508	11,336
West Virginia	0.010	0.018	0.006	156
Wisconsin	0.126	0.264	0.090	2,293
Wyoming	0.027	0.046	0.016	378
<b>State Totals</b>	<b>20.337</b>	<b>43.118</b>	<b>14.257</b>	<b>332,572</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>19.633</b>	<b>5.605</b>	<b>143,698</b>
<b>U.S. Total</b>	<b>20.337</b>	<b>62.751</b>	<b>19.861</b>	<b>476,270</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

## Appendix D-2

### Impacts of Construction on State Economies (**Industrial**), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.459	0.988	0.334	8,962
Alaska	0.000	0.000	0.000	4
Arizona	0.014	0.028	0.010	244
Arkansas	0.012	0.024	0.008	217
California	0.118	0.270	0.093	1,979
Colorado	0.121	0.275	0.095	2,282
Connecticut	0.108	0.210	0.071	1,502
Delaware	0.001	0.002	0.001	13
District of Columbia	0.000	0.000	0.000	0
Florida	0.144	0.301	0.107	2,890
Georgia	0.991	2.242	0.755	19,842
Hawaii	0.023	0.045	0.016	367
Idaho	0.006	0.011	0.004	111
Illinois	0.214	0.506	0.166	3,646
Indiana	0.450	0.982	0.320	8,264
Iowa	2.048	3.690	1.240	33,471
Kansas	0.603	1.166	0.358	9,161
Kentucky	0.120	0.254	0.080	2,217
Louisiana	4.859	10.170	3.460	84,289
Maine	0.000	0.001	0.000	7
Maryland	0.054	0.106	0.035	753
Massachusetts	0.122	0.249	0.083	1,751
Michigan	0.159	0.345	0.120	3,256
Minnesota	0.205	0.442	0.147	3,663
Mississippi	0.160	0.324	0.106	2,981
Missouri	0.111	0.244	0.077	1,930
Montana	0.000	0.000	0.000	0
Nebraska	0.044	0.075	0.025	651
Nevada	0.071	0.133	0.047	1,085
New Hampshire	0.019	0.038	0.012	303
New Jersey	0.073	0.161	0.052	1,094
New Mexico	0.002	0.003	0.001	30
New York	0.698	1.320	0.433	9,169
North Carolina	0.328	0.716	0.241	6,618
North Dakota	0.443	0.783	0.250	6,406
Ohio	0.312	0.728	0.239	6,148
Oklahoma	0.028	0.059	0.020	552
Oregon	1.001	2.075	0.685	17,427
Pennsylvania	0.484	1.147	0.373	8,662
Rhode Island	0.002	0.004	0.001	31
South Carolina	0.227	0.493	0.165	4,632
South Dakota	0.002	0.003	0.001	28
Tennessee	0.050	0.113	0.037	936
Texas	0.441	1.099	0.367	8,413
Utah	0.183	0.428	0.145	3,752
Vermont	0.037	0.069	0.023	658
Virginia	0.059	0.122	0.039	973
Washington	0.059	0.128	0.043	968
West Virginia	1.680	3.152	1.007	26,710
Wisconsin	0.204	0.426	0.145	3,703
Wyoming	0.020	0.035	0.012	287
<b>State Totals</b>	<b>17.568</b>	<b>36.185</b>	<b>12.048</b>	<b>303,040</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>18.021</b>	<b>5.108</b>	<b>108,371</b>
<b>U.S. Total</b>	<b>17.568</b>	<b>54.205</b>	<b>17.157</b>	<b>411,411</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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



### Appendix D-3

#### Impacts of Construction on State Economies (Warehouse), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.042	0.090	0.030	818
Alaska	0.009	0.017	0.006	127
Arizona	0.343	0.715	0.253	6,196
Arkansas	0.013	0.025	0.008	226
California	0.700	1.604	0.550	11,738
Colorado	0.145	0.329	0.114	2,735
Connecticut	0.116	0.228	0.076	1,625
Delaware	0.000	0.000	0.000	1
District of Columbia	0.001	0.001	0.000	2
Florida	0.424	0.886	0.315	8,504
Georgia	0.200	0.453	0.153	4,013
Hawaii	0.002	0.003	0.001	28
Idaho	0.006	0.012	0.004	118
Illinois	0.298	0.706	0.231	5,085
Indiana	0.419	0.913	0.297	7,682
Iowa	0.040	0.072	0.024	653
Kansas	0.153	0.295	0.091	2,321
Kentucky	0.089	0.188	0.059	1,638
Louisiana	0.087	0.181	0.062	1,501
Maine	0.015	0.029	0.010	287
Maryland	0.168	0.331	0.108	2,351
Massachusetts	0.055	0.111	0.037	783
Michigan	0.107	0.233	0.081	2,198
Minnesota	0.090	0.193	0.064	1,602
Mississippi	0.129	0.261	0.085	2,405
Missouri	0.131	0.289	0.091	2,287
Montana	0.038	0.071	0.025	716
Nebraska	0.011	0.019	0.006	163
Nevada	0.058	0.109	0.038	887
New Hampshire	0.006	0.012	0.004	98
New Jersey	0.427	0.938	0.301	6,391
New Mexico	0.017	0.031	0.011	295
New York	0.243	0.459	0.151	3,191
North Carolina	0.039	0.085	0.029	782
North Dakota	0.024	0.042	0.013	342
Ohio	0.413	0.963	0.317	8,128
Oklahoma	0.034	0.072	0.025	675
Oregon	0.114	0.236	0.078	1,984
Pennsylvania	0.423	1.001	0.325	7,564
Rhode Island	0.000	0.001	0.000	7
South Carolina	0.141	0.306	0.102	2,874
South Dakota	0.013	0.021	0.007	205
Tennessee	0.318	0.720	0.232	5,939
Texas	1.139	2.840	0.949	21,750
Utah	0.073	0.170	0.058	1,492
Vermont	0.007	0.012	0.004	119
Virginia	0.064	0.130	0.042	1,041
Washington	0.248	0.537	0.182	4,065
West Virginia	0.023	0.043	0.014	364
Wisconsin	0.215	0.448	0.153	3,895
Wyoming	0.004	0.007	0.002	56
<b>State Totals</b>	<b>7.869</b>	<b>17.441</b>	<b>5.821</b>	<b>139,949</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>6.839</b>	<b>1.864</b>	<b>44,330</b>
<b>U.S. Total</b>	<b>7.869</b>	<b>24.280</b>	<b>7.685</b>	<b>184,279</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

## Appendix D-4

### Impacts of Construction on State Economies (**Retail and Entertainment**), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.222	0.477	0.161	4,325
Alaska	0.075	0.137	0.047	1,039
Arizona	0.274	0.571	0.202	4,943
Arkansas	0.099	0.194	0.064	1,786
California	1.103	2.525	0.867	18,484
Colorado	0.302	0.684	0.236	5,685
Connecticut	0.266	0.520	0.175	3,715
Delaware	0.075	0.141	0.040	975
District of Columbia	0.062	0.074	0.006	110
Florida	1.282	2.681	0.953	25,730
Georgia	0.522	1.181	0.398	10,447
Hawaii	0.201	0.387	0.137	3,146
Idaho	0.056	0.101	0.036	1,017
Illinois	0.628	1.487	0.487	10,707
Indiana	0.309	0.674	0.220	5,673
Iowa	0.171	0.308	0.103	2,792
Kansas	0.322	0.622	0.191	4,886
Kentucky	0.238	0.505	0.158	4,396
Louisiana	0.359	0.752	0.256	6,235
Maine	0.031	0.061	0.021	603
Maryland	0.354	0.698	0.227	4,953
Massachusetts	0.496	1.012	0.336	7,116
Michigan	0.312	0.677	0.236	6,394
Minnesota	0.260	0.560	0.187	4,646
Mississippi	0.142	0.288	0.094	2,654
Missouri	0.286	0.630	0.198	4,990
Montana	0.031	0.058	0.020	585
Nebraska	0.144	0.246	0.084	2,133
Nevada	0.165	0.312	0.110	2,540
New Hampshire	0.086	0.178	0.057	1,398
New Jersey	0.319	0.703	0.225	4,785
New Mexico	0.075	0.143	0.049	1,341
New York	1.283	2.426	0.796	16,857
North Carolina	0.483	1.056	0.356	9,764
North Dakota	0.105	0.186	0.059	1,524
Ohio	0.489	1.141	0.375	9,626
Oklahoma	0.212	0.455	0.154	4,241
Oregon	0.217	0.450	0.149	3,783
Pennsylvania	0.288	0.682	0.222	5,150
Rhode Island	0.034	0.064	0.020	494
South Carolina	0.243	0.530	0.177	4,978
South Dakota	0.084	0.141	0.049	1,363
Tennessee	0.400	0.905	0.292	7,469
Texas	1.563	3.895	1.302	29,828
Utah	0.143	0.334	0.113	2,929
Vermont	0.039	0.073	0.025	693
Virginia	0.422	0.864	0.280	6,909
Washington	0.317	0.684	0.232	5,181
West Virginia	0.028	0.053	0.017	452
Wisconsin	0.234	0.489	0.167	4,254
Wyoming	0.028	0.048	0.016	394
<b>State Totals</b>	<b>15.877</b>	<b>34.063</b>	<b>11.382</b>	<b>276,117</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>14.925</b>	<b>4.124</b>	<b>95,702</b>
<b>U.S. Total</b>	<b>15.877</b>	<b>48.989</b>	<b>15.506</b>	<b>371,819</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

Appendix D-5

Impacts of Construction on State Economies (in Four Categories), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.8977	1.9298	0.6517	17,510
Alaska	0.1430	0.2606	0.0901	1,981
Arizona	1.1288	2.3548	0.8342	20,393
Arkansas	0.1702	0.3336	0.1093	3,069
California	4.3490	9.9570	3.4174	72,876
Colorado	1.0198	2.3132	0.7981	19,227
Connecticut	0.6365	1.2449	0.4180	8,893
Delaware	0.0982	0.1849	0.0527	1,278
District of Columbia	0.5291	0.6361	0.0479	942
Florida	2.2954	4.7995	1.7069	46,066
Georgia	2.0062	4.5407	1.5294	40,182
Hawaii	0.2617	0.5050	0.1791	4,104
Idaho	0.0941	0.1701	0.0601	1,714
Illinois	1.5864	3.7583	1.2311	27,068
Indiana	1.3666	2.9789	0.9703	25,072
Iowa	3.1143	5.6114	1.8860	50,899
Kansas	1.2298	2.3774	0.7299	18,684
Kentucky	0.5500	1.1667	0.3657	10,165
Louisiana	5.5406	11.5965	3.9455	96,112
Maine	0.0941	0.1868	0.0659	1,849
Maryland	2.0566	4.0547	1.3182	28,777
Massachusetts	1.4638	2.9905	0.9926	21,022
Michigan	0.8491	1.8410	0.6406	17,376
Minnesota	0.6059	1.3071	0.4357	10,837
Mississippi	0.4585	0.9280	0.3032	8,546
Missouri	0.6792	1.4959	0.4699	11,840
Montana	0.0778	0.1462	0.0513	1,474
Nebraska	0.5608	0.9620	0.3263	8,333
Nevada	0.3873	0.7314	0.2580	5,952
New Hampshire	0.1526	0.3149	0.1018	2,476
New Jersey	1.5570	3.4252	1.0989	23,330
New Mexico	0.1582	0.2999	0.1036	2,814
New York	4.8098	9.0944	2.9826	63,183
North Carolina	1.2502	2.7319	0.9198	25,252
North Dakota	0.6072	1.0728	0.3425	8,781
Ohio	1.4688	3.4261	1.1262	28,914
Oklahoma	0.4453	0.9538	0.3229	8,899
Oregon	1.6058	3.3280	1.0982	27,947
Pennsylvania	1.5792	3.7412	1.2160	28,263
Rhode Island	0.1168	0.2207	0.0697	1,705
South Carolina	0.7167	1.5600	0.5217	14,659
South Dakota	0.1349	0.2283	0.0793	2,199
Tennessee	1.1493	2.6029	0.8395	21,470
Texas	5.7919	14.4358	4.8258	110,562
Utah	0.6165	1.4435	0.4892	12,641
Vermont	0.1109	0.2066	0.0704	1,970
Virginia	1.2134	2.4861	0.8043	19,880
Washington	1.3169	2.8448	0.9654	21,549
West Virginia	1.7413	3.2661	1.0439	27,681
Wisconsin	0.7792	1.6260	0.5556	14,146
Wyoming	0.0788	0.1361	0.0464	1,115
<b>State Totals</b>	<b>61.6512</b>	<b>130.8076</b>	<b>43.5083</b>	<b>1,051,678</b>
<b>Interstate Spillovers</b>	<b>0.0000</b>	<b>59.4172</b>	<b>16.7003</b>	<b>392,101</b>
<b>U.S. Total</b>	<b>61.6512</b>	<b>190.2248</b>	<b>60.2086</b>	<b>1,443,779</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

# Appendix E: Tenant Improvement Impacts by State

## Appendix E-1

### Impacts of Tenant Improvements on State Economies (Office), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.076	0.164	0.055	1,486
Alaska	0.026	0.047	0.016	354
Arizona	0.218	0.454	0.161	3,932
Arkansas	0.020	0.040	0.013	367
California	1.059	2.425	0.832	17,749
Colorado	0.197	0.448	0.154	3,720
Connecticut	0.064	0.125	0.042	894
Delaware	0.010	0.018	0.005	126
District of Columbia	0.203	0.245	0.018	362
Florida	0.194	0.407	0.145	3,902
Georgia	0.128	0.290	0.098	2,566
Hawaii	0.016	0.030	0.011	246
Idaho	0.011	0.020	0.007	204
Illinois	0.195	0.462	0.151	3,330
Indiana	0.082	0.179	0.058	1,506
Iowa	0.373	0.673	0.226	6,102
Kansas	0.067	0.129	0.039	1,010
Kentucky	0.045	0.096	0.030	835
Louisiana	0.103	0.215	0.073	1,784
Maine	0.021	0.042	0.015	416
Maryland	0.646	1.274	0.414	9,041
Massachusetts	0.346	0.706	0.234	4,962
Michigan	0.118	0.256	0.089	2,412
Minnesota	0.023	0.049	0.016	404
Mississippi	0.012	0.024	0.008	221
Missouri	0.066	0.145	0.046	1,149
Montana	0.004	0.007	0.003	75
Nebraska	0.158	0.271	0.092	2,350
Nevada	0.041	0.077	0.027	628
New Hampshire	0.018	0.038	0.012	295
New Jersey	0.322	0.709	0.227	4,826
New Mexico	0.028	0.053	0.018	501
New York	1.128	2.133	0.700	14,822
North Carolina	0.175	0.382	0.129	3,529
North Dakota	0.015	0.027	0.009	222
Ohio	0.111	0.259	0.085	2,187
Oklahoma	0.075	0.160	0.054	1,497
Oregon	0.119	0.247	0.082	2,074
Pennsylvania	0.168	0.398	0.129	3,005
Rhode Island	0.035	0.066	0.021	512
South Carolina	0.046	0.101	0.034	949
South Dakota	0.016	0.027	0.009	263
Tennessee	0.166	0.377	0.122	3,110
Texas	1.156	2.881	0.963	22,067
Utah	0.095	0.223	0.075	1,950
Vermont	0.012	0.023	0.008	218
Virginia	0.292	0.598	0.193	4,781
Washington	0.302	0.653	0.222	4,947
West Virginia	0.004	0.008	0.003	68
Wisconsin	0.055	0.115	0.039	1,001
Wyoming	0.012	0.020	0.007	165
<b>State Totals</b>	<b>8.874</b>	<b>18.815</b>	<b>6.221</b>	<b>145,122</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>8.567</b>	<b>2.446</b>	<b>62,705</b>
<b>U.S. Total</b>	<b>8.874</b>	<b>27.382</b>	<b>8.667</b>	<b>207,827</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

## Appendix E-2

### Impacts of Tenant Improvements on State Economies (**Industrial**), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.130	0.280	0.094	2,539
Alaska	0.000	0.000	0.000	1
Arizona	0.004	0.008	0.003	69
Arkansas	0.003	0.007	0.002	62
California	0.033	0.077	0.026	561
Colorado	0.034	0.078	0.027	647
Connecticut	0.030	0.060	0.020	426
Delaware	0.000	0.001	0.000	4
District of Columbia	0.000	0.000	0.000	0
Florida	0.041	0.085	0.030	819
Georgia	0.281	0.635	0.214	5,622
Hawaii	0.007	0.013	0.005	104
Idaho	0.002	0.003	0.001	32
Illinois	0.061	0.143	0.047	1,033
Indiana	0.128	0.278	0.091	2,342
Iowa	0.580	1.045	0.351	9,483
Kansas	0.171	0.330	0.101	2,596
Kentucky	0.034	0.072	0.023	628
Louisiana	1.377	2.881	0.980	23,882
Maine	0.000	0.000	0.000	2
Maryland	0.015	0.030	0.010	213
Massachusetts	0.035	0.071	0.023	496
Michigan	0.045	0.098	0.034	922
Minnesota	0.058	0.125	0.042	1,038
Mississippi	0.045	0.092	0.030	845
Missouri	0.031	0.069	0.022	547
Montana	0.000	0.000	0.000	0
Nebraska	0.012	0.021	0.007	184
Nevada	0.020	0.038	0.013	307
New Hampshire	0.005	0.011	0.004	86
New Jersey	0.021	0.046	0.015	310
New Mexico	0.000	0.001	0.000	9
New York	0.198	0.374	0.123	2,598
North Carolina	0.093	0.203	0.068	1,875
North Dakota	0.125	0.222	0.071	1,815
Ohio	0.088	0.206	0.068	1,742
Oklahoma	0.008	0.017	0.006	156
Oregon	0.284	0.588	0.194	4,938
Pennsylvania	0.137	0.325	0.106	2,454
Rhode Island	0.001	0.001	0.000	9
South Carolina	0.064	0.140	0.047	1,313
South Dakota	0.000	0.001	0.000	8
Tennessee	0.014	0.032	0.010	265
Texas	0.125	0.311	0.104	2,384
Utah	0.052	0.121	0.041	1,063
Vermont	0.010	0.020	0.007	186
Virginia	0.017	0.034	0.011	276
Washington	0.017	0.036	0.012	274
West Virginia	0.476	0.893	0.285	7,568
Wisconsin	0.058	0.121	0.041	1,049
Wyoming	0.006	0.010	0.003	81
<b>State Totals</b>	<b>4.978</b>	<b>10.252</b>	<b>3.414</b>	<b>85,861</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>5.106</b>	<b>1.447</b>	<b>30,705</b>
<b>U.S. Total</b>	<b>4.978</b>	<b>15.358</b>	<b>4.861</b>	<b>116,566</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

Appendix E-3

Impacts of Tenant Improvements on State Economies (Warehouse), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.010	0.022	0.007	201
Alaska	0.002	0.004	0.001	31
Arizona	0.084	0.176	0.062	1,523
Arkansas	0.003	0.006	0.002	56
California	0.172	0.394	0.135	2,885
Colorado	0.036	0.081	0.028	672
Connecticut	0.029	0.056	0.019	400
Delaware	0.000	0.000	0.000	0
District of Columbia	0.000	0.000	0.000	0
Florida	0.104	0.218	0.077	2,090
Georgia	0.049	0.111	0.038	986
Hawaii	0.000	0.001	0.000	7
Idaho	0.002	0.003	0.001	29
Illinois	0.073	0.174	0.057	1,250
Indiana	0.103	0.224	0.073	1,888
Iowa	0.010	0.018	0.006	161
Kansas	0.038	0.073	0.022	570
Kentucky	0.022	0.046	0.014	403
Louisiana	0.021	0.045	0.015	369
Maine	0.004	0.007	0.003	70
Maryland	0.041	0.081	0.026	578
Massachusetts	0.013	0.027	0.009	192
Michigan	0.026	0.057	0.020	540
Minnesota	0.022	0.048	0.016	394
Mississippi	0.032	0.064	0.021	591
Missouri	0.032	0.071	0.022	562
Montana	0.009	0.017	0.006	176
Nebraska	0.003	0.005	0.002	40
Nevada	0.014	0.027	0.009	218
New Hampshire	0.001	0.003	0.001	24
New Jersey	0.105	0.231	0.074	1,571
New Mexico	0.004	0.008	0.003	72
New York	0.060	0.113	0.037	784
North Carolina	0.010	0.021	0.007	192
North Dakota	0.006	0.010	0.003	84
Ohio	0.101	0.237	0.078	1,998
Oklahoma	0.008	0.018	0.006	166
Oregon	0.028	0.058	0.019	488
Pennsylvania	0.104	0.246	0.080	1,859
Rhode Island	0.000	0.000	0.000	2
South Carolina	0.035	0.075	0.025	706
South Dakota	0.003	0.005	0.002	50
Tennessee	0.078	0.177	0.057	1,460
Texas	0.280	0.698	0.233	5,346
Utah	0.018	0.042	0.014	367
Vermont	0.002	0.003	0.001	29
Virginia	0.016	0.032	0.010	256
Washington	0.061	0.132	0.045	999
West Virginia	0.006	0.011	0.003	89
Wisconsin	0.053	0.110	0.038	957
Wyoming	0.001	0.002	0.001	14
<b>State Totals</b>	<b>1.934</b>	<b>4.287</b>	<b>1.431</b>	<b>34,397</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>1.681</b>	<b>0.458</b>	<b>10,895</b>
<b>U.S. Total</b>	<b>1.934</b>	<b>5.967</b>	<b>1.889</b>	<b>45,292</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

Appendix E-4

Impacts of Tenant Improvements on State Economies (**Retail and Entertainment**), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.085	0.182	0.061	1,650
Alaska	0.029	0.052	0.018	397
Arizona	0.104	0.218	0.077	1,886
Arkansas	0.038	0.074	0.024	681
California	0.421	0.963	0.331	7,051
Colorado	0.115	0.261	0.090	2,169
Connecticut	0.101	0.198	0.067	1,417
Delaware	0.029	0.054	0.015	372
District of Columbia	0.024	0.028	0.002	42
Florida	0.489	1.023	0.364	9,816
Georgia	0.199	0.450	0.152	3,985
Hawaii	0.077	0.148	0.052	1,200
Idaho	0.021	0.039	0.014	388
Illinois	0.239	0.567	0.186	4,084
Indiana	0.118	0.257	0.084	2,164
Iowa	0.065	0.117	0.039	1,065
Kansas	0.123	0.237	0.073	1,864
Kentucky	0.091	0.192	0.060	1,677
Louisiana	0.137	0.287	0.098	2,379
Maine	0.012	0.023	0.008	230
Maryland	0.135	0.266	0.087	1,890
Massachusetts	0.189	0.386	0.128	2,715
Michigan	0.119	0.258	0.090	2,439
Minnesota	0.099	0.214	0.071	1,772
Mississippi	0.054	0.110	0.036	1,012
Missouri	0.109	0.240	0.076	1,903
Montana	0.012	0.022	0.008	223
Nebraska	0.055	0.094	0.032	814
Nevada	0.063	0.119	0.042	969
New Hampshire	0.033	0.068	0.022	533
New Jersey	0.122	0.268	0.086	1,826
New Mexico	0.029	0.055	0.019	512
New York	0.490	0.926	0.304	6,431
North Carolina	0.184	0.403	0.136	3,725
North Dakota	0.040	0.071	0.023	581
Ohio	0.187	0.435	0.143	3,672
Oklahoma	0.081	0.173	0.059	1,618
Oregon	0.083	0.172	0.057	1,443
Pennsylvania	0.110	0.260	0.085	1,965
Rhode Island	0.013	0.024	0.008	189
South Carolina	0.093	0.202	0.068	1,899
South Dakota	0.032	0.054	0.019	520
Tennessee	0.153	0.345	0.111	2,849
Texas	0.596	1.486	0.497	11,379
Utah	0.054	0.128	0.043	1,117
Vermont	0.015	0.028	0.009	264
Virginia	0.161	0.330	0.107	2,636
Washington	0.121	0.261	0.089	1,976
West Virginia	0.011	0.020	0.006	172
Wisconsin	0.089	0.187	0.064	1,623
Wyoming	0.011	0.018	0.006	150
<b>State Totals</b>	<b>6.057</b>	<b>12.995</b>	<b>4.342</b>	<b>105,336</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>5.694</b>	<b>1.573</b>	<b>36,509</b>
<b>U.S. Total</b>	<b>6.057</b>	<b>18.689</b>	<b>5.915</b>	<b>141,845</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

Appendix E-5

Impacts of Tenant Improvements on State Economies (in Four Categories), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.301	0.648	0.219	5,876
Alaska	0.056	0.103	0.036	783
Arizona	0.410	0.856	0.303	7,409
Arkansas	0.065	0.127	0.042	1,165
California	1.686	3.859	1.325	28,246
Colorado	0.382	0.867	0.299	7,208
Connecticut	0.225	0.439	0.147	3,137
Delaware	0.039	0.073	0.021	502
District of Columbia	0.227	0.273	0.021	405
Florida	0.828	1.732	0.616	16,626
Georgia	0.657	1.487	0.501	13,159
Hawaii	0.099	0.192	0.068	1,557
Idaho	0.036	0.065	0.023	652
Illinois	0.568	1.346	0.441	9,697
Indiana	0.431	0.939	0.306	7,900
Iowa	1.029	1.853	0.623	16,811
Kansas	0.398	0.769	0.236	6,041
Kentucky	0.192	0.407	0.127	3,543
Louisiana	1.638	3.428	1.166	28,413
Maine	0.037	0.073	0.026	718
Maryland	0.838	1.652	0.537	11,722
Massachusetts	0.582	1.190	0.395	8,365
Michigan	0.309	0.669	0.233	6,314
Minnesota	0.202	0.435	0.145	3,608
Mississippi	0.143	0.290	0.095	2,669
Missouri	0.239	0.526	0.165	4,161
Montana	0.025	0.047	0.017	475
Nebraska	0.228	0.391	0.133	3,388
Nevada	0.138	0.261	0.092	2,123
New Hampshire	0.058	0.119	0.039	939
New Jersey	0.569	1.253	0.402	8,532
New Mexico	0.061	0.117	0.040	1,094
New York	1.875	3.546	1.163	24,635
North Carolina	0.461	1.008	0.340	9,321
North Dakota	0.187	0.330	0.105	2,703
Ohio	0.488	1.137	0.374	9,599
Oklahoma	0.172	0.368	0.125	3,437
Oregon	0.514	1.065	0.351	8,942
Pennsylvania	0.519	1.229	0.399	9,283
Rhode Island	0.049	0.092	0.029	711
South Carolina	0.238	0.518	0.173	4,867
South Dakota	0.052	0.087	0.030	841
Tennessee	0.411	0.932	0.300	7,684
Texas	2.157	5.376	1.797	41,176
Utah	0.219	0.513	0.174	4,497
Vermont	0.039	0.073	0.025	698
Virginia	0.485	0.994	0.322	7,949
Washington	0.501	1.082	0.367	8,196
West Virginia	0.497	0.932	0.298	7,898
Wisconsin	0.255	0.532	0.182	4,630
Wyoming	0.029	0.050	0.017	410
<b>State Totals</b>	<b>21.843</b>	<b>46.349</b>	<b>15.408</b>	<b>370,716</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>21.047</b>	<b>5.924</b>	<b>140,814</b>
<b>U.S. Total</b>	<b>21.843</b>	<b>67.397</b>	<b>21.332</b>	<b>511,530</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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



# Appendix F: Total Impacts by State

## Appendix F-1

Impacts of Soft Costs, Site Development, Hard Costs and Tenant Improvements on State Economies (**Office**), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.353	0.745	0.252	6,604
Alaska	0.118	0.214	0.074	1,598
Arizona	1.007	2.096	0.741	17,788
Arkansas	0.094	0.181	0.060	1,620
California	4.904	11.193	3.844	80,106
Colorado	0.913	2.071	0.715	16,657
Connecticut	0.296	0.582	0.195	4,027
Delaware	0.045	0.084	0.024	556
District of Columbia	0.942	1.159	0.088	1,673
Florida	0.900	1.886	0.669	17,521
Georgia	0.593	1.339	0.451	11,480
Hawaii	0.073	0.140	0.049	1,112
Idaho	0.052	0.093	0.033	903
Illinois	0.903	2.129	0.700	15,006
Indiana	0.380	0.814	0.266	6,735
Iowa	1.728	3.078	1.035	27,156
Kansas	0.308	0.586	0.181	4,488
Kentucky	0.209	0.437	0.137	3,709
Louisiana	0.476	0.981	0.335	7,992
Maine	0.098	0.193	0.068	1,855
Maryland	2.991	5.917	1.919	40,793
Massachusetts	1.600	3.283	1.090	22,396
Michigan	0.546	1.174	0.408	10,691
Minnesota	0.105	0.224	0.075	1,805
Mississippi	0.055	0.109	0.036	979
Missouri	0.305	0.666	0.208	5,104
Montana	0.018	0.034	0.012	335
Nebraska	0.732	1.250	0.425	10,502
Nevada	0.189	0.356	0.126	2,848
New Hampshire	0.084	0.173	0.056	1,318
New Jersey	1.491	3.275	1.047	21,673
New Mexico	0.130	0.245	0.085	2,243
New York	5.224	9.929	3.209	66,019
North Carolina	0.809	1.755	0.592	15,731
North Dakota	0.071	0.124	0.040	991
Ohio	0.514	1.184	0.390	9,750
Oklahoma	0.347	0.731	0.248	6,662
Oregon	0.552	1.136	0.376	9,358
Pennsylvania	0.777	1.820	0.593	13,452
Rhode Island	0.162	0.306	0.096	2,292
South Carolina	0.215	0.461	0.154	4,219
South Dakota	0.075	0.125	0.043	1,154
Tennessee	0.771	1.728	0.559	13,902
Texas	5.352	13.178	4.415	99,332
Utah	0.440	1.020	0.347	8,855
Vermont	0.057	0.105	0.036	976
Virginia	1.351	2.764	0.891	21,248
Washington	1.399	2.990	1.014	22,160
West Virginia	0.020	0.037	0.012	305
Wisconsin	0.255	0.526	0.180	4,485
Wyoming	0.054	0.092	0.031	738
<b>State Totals</b>	<b>41.086</b>	<b>86.719</b>	<b>28.630</b>	<b>650,907</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>37.962</b>	<b>11.105</b>	<b>281,592</b>
<b>U.S. Total</b>	<b>41.086</b>	<b>124.681</b>	<b>39.735</b>	<b>932,499</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

## Appendix F-2

### Impacts of Soft Costs, Site Development, Hard Costs and Tenant Improvements on State Economies (**Industrial**), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.851	1.791	0.607	15,817
Alaska	0.000	0.001	0.000	7
Arizona	0.025	0.052	0.018	440
Arkansas	0.022	0.043	0.014	381
California	0.219	0.499	0.171	3,557
Colorado	0.224	0.508	0.175	4,063
Connecticut	0.199	0.391	0.131	2,692
Delaware	0.002	0.003	0.001	23
District of Columbia	0.000	0.000	0.000	0
Florida	0.267	0.559	0.198	5,163
Georgia	1.835	4.141	1.394	35,298
Hawaii	0.043	0.083	0.030	662
Idaho	0.011	0.020	0.007	196
Illinois	0.396	0.932	0.306	6,542
Indiana	0.834	1.780	0.581	14,687
Iowa	3.792	6.739	2.267	59,167
Kansas	1.117	2.120	0.654	16,158
Kentucky	0.222	0.463	0.146	3,912
Louisiana	8.998	18.484	6.321	150,203
Maine	0.001	0.001	0.000	13
Maryland	0.100	0.197	0.064	1,353
Massachusetts	0.226	0.464	0.154	3,147
Michigan	0.295	0.633	0.220	5,727
Minnesota	0.379	0.813	0.272	6,508
Mississippi	0.296	0.585	0.192	5,242
Missouri	0.205	0.446	0.140	3,403
Montana	0.000	0.000	0.000	0
Nebraska	0.081	0.138	0.047	1,156
Nevada	0.131	0.246	0.087	1,961
New Hampshire	0.035	0.071	0.023	536
New Jersey	0.135	0.297	0.095	1,954
New Mexico	0.003	0.006	0.002	54
New York	1.292	2.459	0.793	16,224
North Carolina	0.607	1.315	0.443	11,721
North Dakota	0.820	1.426	0.460	11,337
Ohio	0.578	1.329	0.438	10,890
Oklahoma	0.051	0.107	0.036	975
Oregon	1.854	3.813	1.262	31,309
Pennsylvania	0.896	2.094	0.682	15,416
Rhode Island	0.004	0.007	0.002	55
South Carolina	0.419	0.898	0.301	8,179
South Dakota	0.003	0.005	0.002	48
Tennessee	0.093	0.208	0.067	1,664
Texas	0.816	2.006	0.672	15,074
Utah	0.339	0.784	0.267	6,794
Vermont	0.069	0.127	0.043	1,169
Virginia	0.110	0.225	0.073	1,717
Washington	0.110	0.234	0.079	1,725
West Virginia	3.111	5.738	1.849	47,666
Wisconsin	0.378	0.778	0.266	6,602
Wyoming	0.038	0.064	0.022	511
<b>State Totals</b>	<b>32.533</b>	<b>66.122</b>	<b>22.076</b>	<b>539,097</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>32.317</b>	<b>9.334</b>	<b>195,209</b>
<b>U.S. Total</b>	<b>32.533</b>	<b>98.440</b>	<b>31.410</b>	<b>734,306</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

### Appendix F-3

## Impacts of Soft Costs, Site Development, Hard Costs and Tenant Improvements on State Economies (Warehouse), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.079	0.166	0.056	1,473
Alaska	0.017	0.031	0.011	233
Arizona	0.643	1.339	0.473	11,357
Arkansas	0.024	0.045	0.015	405
California	1.314	3.000	1.030	21,462
Colorado	0.272	0.617	0.213	4,961
Connecticut	0.218	0.428	0.144	2,964
Delaware	0.000	0.000	0.000	2
District of Columbia	0.002	0.002	0.000	3
Florida	0.795	1.666	0.591	15,470
Georgia	0.376	0.849	0.286	7,273
Hawaii	0.003	0.006	0.002	52
Idaho	0.012	0.022	0.008	211
Illinois	0.559	1.318	0.433	9,285
Indiana	0.786	1.681	0.549	13,911
Iowa	0.075	0.133	0.045	1,177
Kansas	0.287	0.545	0.168	4,176
Kentucky	0.166	0.348	0.109	2,948
Louisiana	0.162	0.334	0.114	2,724
Maine	0.027	0.054	0.019	518
Maryland	0.315	0.623	0.202	4,296
Massachusetts	0.102	0.210	0.070	1,432
Michigan	0.201	0.433	0.151	3,945
Minnesota	0.168	0.361	0.121	2,901
Mississippi	0.242	0.479	0.157	4,315
Missouri	0.246	0.537	0.168	4,115
Montana	0.071	0.132	0.046	1,292
Nebraska	0.021	0.035	0.012	295
Nevada	0.108	0.204	0.072	1,631
New Hampshire	0.011	0.023	0.007	177
New Jersey	0.800	1.757	0.562	11,626
New Mexico	0.031	0.058	0.020	535
New York	0.456	0.866	0.280	5,757
North Carolina	0.073	0.158	0.053	1,413
North Dakota	0.044	0.077	0.025	617
Ohio	0.775	1.784	0.588	14,677
Oklahoma	0.063	0.134	0.045	1,217
Oregon	0.214	0.440	0.146	3,626
Pennsylvania	0.793	1.856	0.604	13,713
Rhode Island	0.001	0.002	0.001	12
South Carolina	0.264	0.566	0.189	5,175
South Dakota	0.024	0.039	0.014	364
Tennessee	0.597	1.338	0.433	10,756
Texas	2.138	5.263	1.763	39,660
Utah	0.137	0.316	0.108	2,746
Vermont	0.013	0.023	0.008	215
Virginia	0.119	0.244	0.079	1,874
Washington	0.466	0.995	0.338	7,376
West Virginia	0.043	0.079	0.026	661
Wisconsin	0.403	0.830	0.284	7,073
Wyoming	0.007	0.013	0.004	101
<b>State Totals</b>	<b>14.764</b>	<b>32.462</b>	<b>10.841</b>	<b>254,195</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>12.330</b>	<b>3.435</b>	<b>80,737</b>
<b>U.S. Total</b>	<b>14.764</b>	<b>44.792</b>	<b>14.276</b>	<b>334,933</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

Appendix F-4

Impacts of Soft Costs, Site Development, Hard Costs and  
 Tenant Improvements on State Economies (**Retail and Entertainment**), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.501	1.053	0.357	9,302
Alaska	0.169	0.306	0.106	2,279
Arizona	0.618	1.284	0.454	10,859
Arkansas	0.223	0.429	0.142	3,814
California	2.490	5.681	1.951	40,486
Colorado	0.681	1.543	0.533	12,336
Connecticut	0.600	1.178	0.395	8,113
Delaware	0.169	0.315	0.089	2,073
District of Columbia	0.140	0.173	0.013	248
Florida	2.894	6.067	2.152	56,023
Georgia	1.177	2.657	0.895	22,647
Hawaii	0.453	0.870	0.308	6,914
Idaho	0.126	0.226	0.080	2,177
Illinois	1.417	3.335	1.096	23,413
Indiana	0.698	1.489	0.486	12,287
Iowa	0.386	0.685	0.231	6,015
Kansas	0.726	1.378	0.425	10,502
Kentucky	0.537	1.119	0.352	9,450
Louisiana	0.811	1.666	0.570	13,540
Maine	0.069	0.136	0.048	1,302
Maryland	0.799	1.582	0.513	10,846
Massachusetts	1.119	2.298	0.763	15,588
Michigan	0.705	1.515	0.526	13,705
Minnesota	0.586	1.257	0.420	10,057
Mississippi	0.321	0.634	0.208	5,686
Missouri	0.646	1.407	0.440	10,724
Montana	0.070	0.129	0.045	1,261
Nebraska	0.324	0.553	0.188	4,619
Nevada	0.373	0.703	0.248	5,596
New Hampshire	0.195	0.398	0.128	3,021
New Jersey	0.721	1.583	0.506	10,419
New Mexico	0.170	0.319	0.111	2,910
New York	2.897	5.511	1.777	36,350
North Carolina	1.091	2.364	0.797	21,072
North Dakota	0.238	0.413	0.133	3,286
Ohio	1.104	2.536	0.836	20,781
Oklahoma	0.479	1.006	0.342	9,136
Oregon	0.491	1.009	0.334	8,282
Pennsylvania	0.650	1.517	0.494	11,169
Rhode Island	0.076	0.144	0.045	1,072
South Carolina	0.549	1.177	0.394	10,710
South Dakota	0.189	0.314	0.108	2,882
Tennessee	0.903	2.020	0.654	16,177
Texas	3.527	8.667	2.905	65,131
Utah	0.322	0.746	0.254	6,463
Vermont	0.088	0.163	0.056	1,501
Virginia	0.952	1.947	0.628	14,858
Washington	0.715	1.524	0.517	11,248
West Virginia	0.064	0.118	0.038	983
Wisconsin	0.529	1.089	0.372	9,242
Wyoming	0.063	0.107	0.036	855
<b>State Totals</b>	<b>35.840</b>	<b>76.342</b>	<b>25.498</b>	<b>599,411</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>32.092</b>	<b>9.102</b>	<b>209,361</b>
<b>U.S. Total</b>	<b>35.840</b>	<b>108.434</b>	<b>34.600</b>	<b>808,772</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

## Appendix F-5

### Impacts of Soft Costs, Site Development, Hard Costs and Tenant Improvements on State Economies (in Four Categories), 2013

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	1.783	3.755	1.273	33,196
Alaska	0.305	0.552	0.191	4,116
Arizona	2.294	4.772	1.687	40,444
Arkansas	0.363	0.699	0.231	6,220
California	8.927	20.373	6.997	145,611
Colorado	2.090	4.740	1.636	38,017
Connecticut	1.314	2.579	0.864	17,796
Delaware	0.216	0.402	0.114	2,654
District of Columbia	1.083	1.334	0.102	1,925
Florida	4.856	10.179	3.611	94,178
Georgia	3.981	8.986	3.026	76,699
Hawaii	0.572	1.100	0.390	8,740
Idaho	0.201	0.361	0.128	3,487
Illinois	3.275	7.713	2.535	54,245
Indiana	2.698	5.763	1.881	47,621
Iowa	5.982	10.636	3.578	93,516
Kansas	2.437	4.629	1.429	35,323
Kentucky	1.135	2.367	0.744	20,019
Louisiana	10.448	21.465	7.341	174,459
Maine	0.195	0.384	0.135	3,688
Maryland	4.205	8.320	2.697	57,289
Massachusetts	3.046	6.255	2.077	42,564
Michigan	1.747	3.756	1.305	34,068
Minnesota	1.238	2.654	0.888	21,270
Mississippi	0.915	1.807	0.594	16,223
Missouri	1.402	3.056	0.955	23,346
Montana	0.159	0.295	0.104	2,889
Nebraska	1.158	1.977	0.671	16,572
Nevada	0.801	1.510	0.532	12,036
New Hampshire	0.325	0.664	0.213	5,053
New Jersey	3.147	6.912	2.210	45,673
New Mexico	0.335	0.627	0.218	5,741
New York	9.869	18.766	6.058	124,349
North Carolina	2.580	5.591	1.885	49,937
North Dakota	1.174	2.040	0.658	16,232
Ohio	2.971	6.833	2.251	56,098
Oklahoma	0.940	1.978	0.672	17,990
Oregon	3.111	6.398	2.117	52,575
Pennsylvania	3.116	7.287	2.373	53,749
Rhode Island	0.244	0.459	0.144	3,431
South Carolina	1.447	3.102	1.038	28,283
South Dakota	0.290	0.484	0.167	4,448
Tennessee	2.362	5.294	1.714	42,499
Texas	11.833	29.113	9.756	219,198
Utah	1.238	2.866	0.974	24,858
Vermont	0.226	0.419	0.143	3,861
Virginia	2.532	5.180	1.670	39,697
Washington	2.690	5.742	1.948	42,508
West Virginia	3.238	5.973	1.924	49,614
Wisconsin	1.565	3.223	1.103	27,401
Wyoming	0.162	0.275	0.094	2,205
<b>State Totals</b>	<b>124.222</b>	<b>261.645</b>	<b>87.045</b>	<b>2,043,610</b>
<b>Interstate Spillovers</b>	<b>0.000</b>	<b>114.702</b>	<b>32.976</b>	<b>766,900</b>
<b>U.S. Total</b>	<b>124.222</b>	<b>376.347</b>	<b>120.021</b>	<b>2,810,510</b>

Source: CRA, McGraw-Hill Construction, BEA and NAIOP

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

# Appendix G: Operating Impacts by State

## Appendix G-1

### Impacts of Operations on State Economies (Office), 2013

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	4,145.12	8,079.67	2,631.24	79
Alaska	1,068.50	1,895.53	618.96	16
Arizona	20,901.51	41,972.71	14,010.93	366
Arkansas	1,656.07	2,952.55	940.39	28
California	65,421.32	144,638.76	47,298.04	1,084
Colorado	14,935.76	33,035.14	10,850.52	280
Connecticut	4,665.18	8,975.21	2,850.10	65
Delaware	402.20	726.27	193.50	5
District of Columbia	6,211.54	8,136.08	647.47	19
Florida	17,722.24	36,438.61	12,209.06	338
Georgia	9,264.46	20,047.29	6,450.34	176
Hawaii	158.15	299.49	99.75	3
Idaho	512.95	880.13	293.49	9
Illinois	6,113.13	13,739.66	4,352.81	104
Indiana	6,978.28	13,788.93	4,292.72	118
Iowa	10,624.00	17,721.13	5,622.21	164
Kansas	8,497.35	15,230.52	4,560.11	126
Kentucky	4,623.77	9,009.91	2,720.22	80
Louisiana	6,259.20	12,119.07	3,971.04	113
Maine	477.75	896.03	300.03	9
Maryland	32,436.63	63,368.62	19,483.71	478
Massachusetts	19,035.65	38,445.86	12,195.21	277
Michigan	8,852.69	17,931.36	5,886.18	158
Minnesota	2,032.83	4,144.45	1,327.16	34
Mississippi	436.60	799.18	254.43	8
Missouri	3,801.82	7,843.54	2,329.45	60
Montana	219.37	389.35	129.27	4
Nebraska	7,058.72	11,571.93	3,693.30	103
Nevada	1,411.00	2,585.57	854.01	22
New Hampshire	2,038.74	3,948.35	1,194.63	31
New Jersey	27,220.80	58,003.80	17,522.25	397
New Mexico	1,503.99	2,720.08	898.26	26
New York	30,613.74	57,925.14	17,110.66	390
North Carolina	15,008.13	30,746.33	9,896.35	286
North Dakota	1,476.17	2,466.36	769.30	23
Ohio	10,235.57	21,855.23	6,891.41	179
Oklahoma	6,503.64	12,882.17	4,186.69	121
Oregon	11,432.43	22,267.24	7,042.06	194
Pennsylvania	16,240.79	35,560.96	11,135.66	275
Rhode Island	721.70	1,334.22	395.14	10
South Carolina	4,329.37	8,621.79	2,720.26	80
South Dakota	1,945.91	3,058.20	974.68	29
Tennessee	14,635.07	30,773.72	9,597.71	255
Texas	106,656.77	247,120.96	79,384.31	2,044
Utah	7,742.85	16,913.38	5,506.80	163
Vermont	586.51	1,045.09	331.58	10
Virginia	20,804.77	41,425.51	12,658.91	340
Washington	21,562.34	43,472.89	13,880.33	349
West Virginia	340.89	595.48	183.27	5
Wisconsin	3,986.02	7,686.37	2,509.63	67
Wyoming	316.93	518.88	168.80	5
<b>State Totals</b>	<b>571,826.88</b>	<b>1,188,604.70</b>	<b>376,024.35</b>	<b>9,606</b>
<b>Interstate Spillovers</b>	<b>0.00</b>	<b>390,783.43</b>	<b>121,420.43</b>	<b>2,900</b>
<b>U.S. Total</b>	<b>571,826.88</b>	<b>1,579,388.12</b>	<b>497,444.78</b>	<b>12,506</b>

Source: CRA, BOMA and BEA

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

Appendix G-2  
Impacts of Operations on State Economies (**Industrial**), 2013

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	2,690.72	5,244.76	1,708.01	51
Alaska	0.00	0.00	0.00	0
Arizona	60.42	121.34	40.50	1
Arkansas	163.19	290.94	92.67	3
California	1,431.00	3,163.77	1,034.58	24
Colorado	1,211.91	2,680.52	880.43	23
Connecticut	508.72	978.71	310.79	7
Delaware	0.00	0.00	0.00	0
District of Columbia	0.00	0.00	0.00	0
Florida	1,066.44	2,192.70	734.68	20
Georgia	4,407.78	9,537.96	3,068.90	84
Hawaii	190.31	360.40	120.04	3
Idaho	57.09	97.96	32.67	1
Illinois	2,186.76	4,914.89	1,557.07	37
Indiana	6,205.24	12,261.43	3,817.18	105
Iowa	1,005.78	1,677.67	532.26	15
Kansas	667.86	1,197.07	358.41	10
Kentucky	1,140.54	2,222.47	671.00	20
Louisiana	1,811.50	3,507.43	1,149.27	33
Maine	8.80	16.51	5.53	0
Maryland	181.98	355.52	109.31	3
Massachusetts	621.00	1,254.22	397.84	9
Michigan	1,515.21	3,069.10	1,007.47	27
Minnesota	1,201.32	2,449.20	784.30	20
Mississippi	1,217.26	2,228.16	709.35	22
Missouri	1,393.41	2,874.75	853.77	22
Montana	0.00	0.00	0.00	0
Nebraska	525.25	861.09	274.82	8
Nevada	261.20	478.63	158.09	4
New Hampshire	178.89	346.45	104.82	3
New Jersey	126.44	269.42	81.39	2
New Mexico	0.00	0.00	0.00	0
New York	2,064.61	3,906.51	1,153.95	26
North Carolina	2,774.22	5,683.39	1,829.32	53
North Dakota	169.49	283.19	88.33	3
Ohio	3,041.96	6,495.27	2,048.09	53
Oklahoma	540.12	1,069.85	347.70	10
Oregon	1,308.37	2,548.35	805.92	22
Pennsylvania	2,518.61	5,514.78	1,726.91	43
Rhode Island	25.22	46.62	13.81	0
South Carolina	2,416.32	4,812.02	1,518.24	45
South Dakota	24.50	38.51	12.27	0
Tennessee	517.76	1,088.71	339.55	9
Texas	4,177.39	9,678.90	3,109.22	80
Utah	118.94	259.82	84.59	3
Vermont	444.73	792.45	251.42	8
Virginia	411.78	819.92	250.55	7
Washington	705.57	1,422.53	454.20	11
West Virginia	0.00	0.00	0.00	0
Wisconsin	2,401.69	4,631.26	1,512.12	41
Wyoming	0.00	0.00	0.00	0
<b>State Totals</b>	<b>55,697.33</b>	<b>113,745.14</b>	<b>36,141.36</b>	<b>969</b>
<b>Interstate Spillovers</b>	<b>0.00</b>	<b>40,091.12</b>	<b>12,310.97</b>	<b>249</b>
<b>U.S. Total</b>	<b>55,697.33</b>	<b>153,836.26</b>	<b>48,452.34</b>	<b>1,218</b>

Source: CRA, Delta Associates Inc. and BEA

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

### Appendix G-3

#### Impacts of Operations on State Economies (Warehouse), 2013

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	610.16	1,189.32	387.32	12
Alaska	48.57	86.16	28.13	1
Arizona	4,086.48	8,206.14	2,739.30	72
Arkansas	170.55	304.06	96.84	3
California	11,340.09	25,071.59	8,198.61	188
Colorado	1,783.04	3,943.75	1,295.34	33
Connecticut	1,515.19	2,915.02	925.67	21
Delaware	0.00	0.00	0.00	0
District of Columbia	0.00	0.00	0.00	0
Florida	5,489.42	11,286.77	3,781.73	105
Georgia	2,653.49	5,741.86	1,847.48	50
Hawaii	0.00	0.00	0.00	0
Idaho	71.68	122.98	41.01	1
Illinois	3,215.95	7,228.06	2,289.89	55
Indiana	7,863.07	15,537.26	4,837.00	133
Iowa	599.12	999.36	317.06	9
Kansas	1,101.90	1,975.03	591.33	16
Kentucky	2,075.74	4,044.80	1,221.18	36
Louisiana	735.09	1,423.28	466.37	13
Maine	177.58	333.06	111.52	3
Maryland	2,686.41	5,248.21	1,613.65	40
Massachusetts	468.72	946.66	300.28	7
Michigan	1,319.01	2,671.69	877.01	24
Minnesota	1,339.78	2,731.47	874.69	22
Mississippi	2,664.78	4,877.80	1,552.88	48
Missouri	1,054.20	2,174.92	645.93	17
Montana	126.84	225.13	74.75	2
Nebraska	66.90	109.67	35.00	1
Nevada	324.93	595.42	196.67	5
New Hampshire	51.00	98.77	29.88	1
New Jersey	3,494.92	7,447.19	2,249.71	51
New Mexico	159.25	288.02	95.11	3
New York	2,057.32	3,892.71	1,149.88	26
North Carolina	291.92	598.03	192.49	6
North Dakota	153.86	257.07	80.19	2
Ohio	7,298.70	15,584.36	4,914.07	128
Oklahoma	610.85	1,209.95	393.23	11
Oregon	1,837.68	3,579.31	1,131.96	31
Pennsylvania	5,729.47	12,545.30	3,928.47	97
Rhode Island	7.21	13.33	3.95	0
South Carolina	2,309.36	4,599.00	1,451.03	43
South Dakota	138.66	217.92	69.45	2
Tennessee	4,626.10	9,727.47	3,033.80	81
Texas	21,460.56	49,723.56	15,973.03	411
Utah	766.02	1,673.29	544.80	16
Vermont	122.33	217.97	69.16	2
Virginia	842.39	1,677.32	512.56	14
Washington	3,004.57	6,057.66	1,934.13	49
West Virginia	249.87	436.48	134.34	4
Wisconsin	2,294.24	4,424.05	1,444.47	39
Wyoming	25.02	40.97	13.33	0
<b>State Totals</b>	<b>111,119.96</b>	<b>234,299.21</b>	<b>74,695.70</b>	<b>1,933</b>
<b>Interstate Spillovers</b>	<b>0.00</b>	<b>72,614.57</b>	<b>21,970.00</b>	<b>497</b>
<b>U.S. Total</b>	<b>111,119.96</b>	<b>306,913.79</b>	<b>96,665.70</b>	<b>2,430</b>

Source: CRA, Delta Associates Inc. and BEA

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



## Appendix G-4

### Impacts of Operations on State Economies (Retail), 2013

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	5,356.01	10,439.93	3,399.88	102
Alaska	1,448.58	2,569.78	839.13	21
Arizona	6,989.81	14,036.37	4,685.49	122
Arkansas	2,537.22	4,523.52	1,440.74	43
California	22,707.74	50,204.10	16,417.15	376
Colorado	6,268.92	13,865.69	4,554.24	117
Connecticut	3,888.09	7,480.19	2,375.35	54
Delaware	2,779.44	5,018.94	1,337.23	35
District of Columbia	1,045.55	1,369.50	108.99	3
Florida	35,033.20	72,031.59	24,134.79	669
Georgia	13,553.54	29,328.39	9,436.59	257
Hawaii	3,652.66	6,917.21	2,303.98	59
Idaho	1,739.99	2,985.52	995.57	30
Illinois	13,220.06	29,712.95	9,413.25	225
Indiana	8,374.95	16,548.73	5,151.89	141
Iowa	3,727.63	6,217.79	1,972.66	57
Kansas	7,157.06	12,828.21	3,840.84	106
Kentucky	7,085.14	13,806.18	4,168.28	123
Louisiana	7,775.85	15,055.61	4,933.25	141
Maine	495.64	929.58	311.27	9
Maryland	6,458.56	12,617.52	3,879.46	95
Massachusetts	7,254.76	14,652.28	4,647.77	106
Michigan	6,423.95	13,011.90	4,271.31	115
Minnesota	7,997.71	16,305.38	5,221.40	133
Mississippi	2,282.44	4,177.94	1,330.08	41
Missouri	7,072.25	14,590.75	4,333.30	112
Montana	759.91	1,348.73	447.81	14
Nebraska	4,027.52	6,602.65	2,107.30	59
Nevada	2,401.86	4,401.27	1,453.74	38
New Hampshire	2,123.34	4,112.18	1,244.20	32
New Jersey	6,536.92	13,929.28	4,207.87	95
New Mexico	1,741.69	3,149.97	1,040.23	30
New York	21,321.24	40,342.53	11,916.89	271
North Carolina	13,145.08	26,929.61	8,667.86	251
North Dakota	4,376.61	7,312.35	2,280.86	68
Ohio	10,776.81	23,010.92	7,255.82	189
Oklahoma	5,598.23	11,088.76	3,603.83	104
Oregon	4,624.26	9,006.78	2,848.41	78
Pennsylvania	6,702.13	14,675.05	4,595.38	113
Rhode Island	687.99	1,271.90	376.69	9
South Carolina	6,075.21	12,098.57	3,817.22	113
South Dakota	2,866.96	4,505.73	1,436.03	43
Tennessee	10,344.61	21,752.01	6,784.02	180
Texas	49,129.87	113,832.63	36,567.21	941
Utah	3,487.10	7,617.19	2,480.07	73
Vermont	716.49	1,276.70	405.06	12
Virginia	9,392.01	18,700.95	5,714.68	153
Washington	5,572.45	11,234.88	3,587.15	90
West Virginia	515.31	900.18	277.05	8
Wisconsin	5,867.59	11,314.65	3,694.28	99
Wyoming	645.24	1,056.42	343.67	10
<b>State Totals</b>	<b>371,763.18</b>	<b>762,697.43</b>	<b>242,657.22</b>	<b>6,371</b>
<b>Interstate Spillovers</b>	<b>0.00</b>	<b>264,113.95</b>	<b>80,747.74</b>	<b>1,759</b>
<b>U.S. Total</b>	<b>371,763.18</b>	<b>1,026,811.38</b>	<b>323,404.97</b>	<b>8,130</b>

Source: CRA, Delta Associates Inc. and BEA

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

## Appendix G-5

### Impacts of Operations on State Economies (in Four Categories), 2013

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	12,802.01	24,953.68	8,126.45	243
Alaska	2,565.65	4,551.47	1,486.22	38
Arizona	32,038.24	64,336.56	21,476.22	561
Arkansas	4,527.02	8,071.07	2,570.64	78
California	100,900.15	223,078.22	72,948.39	1,672
Colorado	24,199.62	53,525.09	17,580.52	453
Connecticut	10,577.18	20,349.14	6,461.92	148
Delaware	3,181.64	5,745.21	1,530.74	40
District of Columbia	7,257.09	9,505.58	756.46	22
Florida	59,311.31	121,949.68	40,860.27	1,133
Georgia	29,879.26	64,655.50	20,803.32	567
Hawaii	4,001.11	7,577.10	2,523.78	65
Idaho	2,381.70	4,086.59	1,362.74	42
Illinois	24,735.90	55,595.56	17,613.02	420
Indiana	29,421.55	58,136.36	18,098.78	496
Iowa	15,956.53	26,615.94	8,444.18	246
Kansas	17,424.17	31,230.82	9,350.70	258
Kentucky	14,925.18	29,083.36	8,780.68	259
Louisiana	16,581.63	32,105.39	10,519.93	301
Maine	1,159.77	2,175.18	728.35	21
Maryland	41,763.58	81,589.87	25,086.13	616
Massachusetts	27,380.13	55,299.02	17,541.11	398
Michigan	18,110.86	36,684.06	12,041.97	324
Minnesota	12,571.64	25,630.50	8,207.55	209
Mississippi	6,601.09	12,083.08	3,846.74	119
Missouri	13,321.69	27,483.95	8,162.45	210
Montana	1,106.12	1,963.21	651.83	21
Nebraska	11,678.39	19,145.34	6,110.42	171
Nevada	4,398.98	8,060.90	2,662.51	70
New Hampshire	4,391.97	8,505.75	2,573.53	66
New Jersey	37,379.08	79,649.69	24,061.21	545
New Mexico	3,404.93	6,158.06	2,033.60	59
New York	56,056.90	106,066.89	31,331.38	714
North Carolina	31,219.35	63,957.37	20,586.01	595
North Dakota	6,176.14	10,318.98	3,218.68	96
Ohio	31,353.03	66,945.78	21,109.40	550
Oklahoma	13,252.84	26,250.74	8,531.45	247
Oregon	19,202.74	37,401.68	11,828.35	326
Pennsylvania	31,191.01	68,296.08	21,386.43	528
Rhode Island	1,442.12	2,666.07	789.59	20
South Carolina	15,130.26	30,131.39	9,506.75	281
South Dakota	4,976.04	7,820.35	2,492.44	75
Tennessee	30,123.54	63,341.91	19,755.08	525
Texas	181,424.59	420,356.05	135,033.78	3,476
Utah	12,114.92	26,463.68	8,616.26	255
Vermont	1,870.05	3,332.21	1,057.22	32
Virginia	31,450.94	62,623.70	19,136.70	514
Washington	30,844.92	62,187.96	19,855.80	499
West Virginia	1,106.07	1,932.14	594.67	17
Wisconsin	14,549.54	28,056.32	9,160.51	246
Wyoming	987.19	1,616.27	525.80	15
<b>State Totals</b>	<b>1,110,407.35</b>	<b>2,299,346.48</b>	<b>729,518.64</b>	<b>18,880</b>
<b>Interstate Spillovers</b>	<b>0.00</b>	<b>767,603.07</b>	<b>236,449.14</b>	<b>5,405</b>
<b>U.S. Total</b>	<b>1,110,407.35</b>	<b>3,066,949.55</b>	<b>965,967.78</b>	<b>24,285</b>

Source: CRA, Delta Associates Inc. and BEA

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

# Appendix H: National and State Multipliers

## Appendix H-1

### Output, Earnings and Employment Multipliers: **Construction**

State	MULTIPLIERS		
	Output	Earnings	Jobs
Alabama	2.1497	0.7259	19.5051
Alaska	1.8233	0.6304	13.8568
Arizona	2.0861	0.7390	18.0662
Arkansas	1.9602	0.6425	18.0346
California	2.2895	0.7858	16.7569
Colorado	2.2683	0.7826	18.8544
Connecticut	1.9558	0.6567	13.9706
Delaware	1.8839	0.5373	13.0196
District of Columbia	1.2023	0.0906	1.7804
Florida	2.0909	0.7436	20.0685
Georgia	2.2633	0.7623	20.0285
Hawaii	1.9298	0.6843	15.6851
Idaho	1.8088	0.6387	18.2189
Illinois	2.3690	0.7760	17.0620
Indiana	2.1798	0.7100	18.3468
Iowa	1.8018	0.6056	16.3436
Kansas	1.9332	0.5935	15.1935
Kentucky	2.1213	0.6649	18.4821
Louisiana	2.0930	0.7121	17.3469
Maine	1.9845	0.7003	19.6496
Maryland	1.9716	0.6410	13.9927
Massachusetts	2.0430	0.6781	14.3615
Michigan	2.1682	0.7544	20.4644
Minnesota	2.1572	0.7191	17.8845
Mississippi	2.0237	0.6612	18.6380
Missouri	2.2024	0.6918	17.4321
Montana	1.8796	0.6591	18.9537
Nebraska	1.7156	0.5819	14.8600
Nevada	1.8886	0.6661	15.3689
New Hampshire	2.0629	0.6668	16.2221
New Jersey	2.1999	0.7058	14.9839
New Mexico	1.8956	0.6547	17.7908
New York	1.8908	0.6201	13.1364
North Carolina	2.1852	0.7357	20.1983
North Dakota	1.7667	0.5640	14.4620
Ohio	2.3325	0.7667	19.6846
Oklahoma	2.1421	0.7251	19.9859
Oregon	2.0724	0.6839	17.4030
Pennsylvania	2.3690	0.7700	17.8969
Rhode Island	1.8886	0.5965	14.5946
South Carolina	2.1765	0.7279	20.4522
South Dakota	1.6919	0.5875	16.2962
Tennessee	2.2647	0.7304	18.6808
Texas	2.4924	0.8332	19.0890
Utah	2.3414	0.7935	20.5042
Vermont	1.8622	0.6343	17.7543
Virginia	2.0488	0.6628	16.3838
Washington	2.1603	0.7331	16.3640
West Virginia	1.8757	0.5995	15.8972
Wisconsin	2.0866	0.7130	18.1530
Wyoming	1.7276	0.5893	14.1577
<b>U.S. Total</b>	<b>3.0855</b>	<b>0.9766</b>	<b>23.4185</b>

Source: BEA

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

## Appendix H-2

### Output, Earnings and Employment Multipliers: **Soft Costs**

State	MULTIPLIERS		
	Output	Earnings	Jobs
Alabama	1.8846	0.6526	14.0886
Alaska	1.7349	0.6062	11.5208
Arizona	2.0482	0.7156	15.2140
Arkansas	1.7237	0.5932	12.3408
California	2.2420	0.7729	13.8327
Colorado	2.2626	0.7814	14.5581
Connecticut	1.9983	0.6617	11.2952
Delaware	1.7525	0.4724	8.6054
District of Columbia	1.3990	0.1119	1.7536
Florida	2.1237	0.7438	15.8857
Georgia	2.2266	0.7489	15.3625
Hawaii	1.8870	0.6647	13.2486
Idaho	1.7084	0.6065	12.7035
Illinois	2.2824	0.7646	13.9237
Indiana	1.9048	0.6298	13.9713
Iowa	1.6550	0.5600	11.9515
Kansas	1.7274	0.5487	10.9119
Kentucky	1.9067	0.6104	13.2968
Louisiana	1.8631	0.6555	13.4748
Maine	1.8757	0.6570	14.6829
Maryland	2.0170	0.6440	11.5221
Massachusetts	2.1090	0.7023	11.8612
Michigan	2.0506	0.7071	14.3898
Minnesota	2.0741	0.7048	13.5772
Mississippi	1.7251	0.5869	13.0708
Missouri	2.0575	0.6252	12.5228
Montana	1.7108	0.6079	13.9290
Nebraska	1.6630	0.5679	11.2783
Nevada	1.8600	0.6512	13.1902
New Hampshire	1.9520	0.6072	12.1289
New Jersey	2.1749	0.6823	11.8630
New Mexico	1.7605	0.6254	13.7125
New York	1.9601	0.5802	9.6792
North Carolina	2.0755	0.7047	14.9829
North Dakota	1.5974	0.5431	10.6702
Ohio	2.1255	0.7102	14.6255
Oklahoma	1.9006	0.6591	14.6034
Oregon	1.9768	0.6644	14.3280
Pennsylvania	2.1733	0.7164	13.7669
Rhode Island	1.8660	0.5666	11.2437
South Carolina	1.9721	0.6607	14.8135
South Dakota	1.5351	0.5120	10.2573
Tennessee	2.1112	0.6996	14.2327
Texas	2.2840	0.7763	15.4176
Utah	2.1751	0.7525	17.8055
Vermont	1.7988	0.6118	13.5330
Virginia	2.0293	0.6418	11.8208
Washington	1.9937	0.6740	12.6873
West Virginia	1.6898	0.5684	12.4794
Wisconsin	1.9208	0.6612	14.1425
Wyoming	1.5542	0.5380	10.8880
<b>U.S. Total</b>	<b>2.7326</b>	<b>0.9108</b>	<b>18.4048</b>

Source: BEA

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

### Appendix H-3

#### Output, Earnings and Employment Multipliers: **Services to Buildings**

State	MULTIPLIERS		
	Output	Earnings	Jobs
Alabama	1.9195	0.6230	31.3204
Alaska	1.8270	0.5752	26.2612
Arizona	1.9861	0.6635	27.0989
Arkansas	1.7951	0.5693	29.7650
California	2.2934	0.7348	27.3860
Colorado	2.2420	0.7287	30.2194
Connecticut	1.9176	0.6049	24.5205
Delaware	1.8830	0.4987	23.1526
District of Columbia	1.3567	0.1573	9.0222
Florida	2.0532	0.6866	30.4299
Georgia	2.1703	0.7013	30.3782
Hawaii	1.9695	0.6408	26.3318
Idaho	1.6724	0.5567	29.0749
Illinois	2.3144	0.7263	28.3021
Indiana	2.0401	0.6324	27.5716
Iowa	1.6574	0.5267	26.1009
Kansas	1.8515	0.5308	23.3555
Kentucky	2.0037	0.6000	28.6623
Louisiana	2.0022	0.6426	30.4363
Maine	1.8398	0.6128	27.6313
Maryland	1.9517	0.6044	26.3137
Massachusetts	1.9997	0.6350	25.4153
Michigan	2.0160	0.6663	28.6892
Minnesota	2.0837	0.6631	29.2546
Mississippi	1.8682	0.5787	30.0690
Missouri	2.0358	0.6049	24.5135
Montana	1.8032	0.5807	30.7879
Nebraska	1.6180	0.5224	27.9226
Nevada	1.8071	0.5998	27.2603
New Hampshire	1.9350	0.5974	24.2693
New Jersey	2.2116	0.6612	24.8598
New Mexico	1.8844	0.6094	27.0986
New York	1.9225	0.5840	22.9368
North Carolina	2.0581	0.6656	32.4116
North Dakota	1.7075	0.5126	27.1567
Ohio	2.1932	0.6880	27.8022
Oklahoma	2.0562	0.6606	29.6054
Oregon	1.9204	0.6167	26.3187
Pennsylvania	2.1848	0.6738	28.2785
Rhode Island	1.8702	0.5705	23.6325
South Carolina	1.9807	0.6284	29.2726
South Dakota	1.5399	0.5023	27.5631
Tennessee	2.1041	0.6578	26.1652
Texas	2.4004	0.7573	32.4342
Utah	2.2430	0.7138	33.0803
Vermont	1.7463	0.5587	29.1488
Virginia	1.9729	0.5998	29.0661
Washington	2.0722	0.6605	27.4735
West Virginia	1.7604	0.5307	25.3580
Wisconsin	1.9134	0.6298	29.0307
Wyoming	1.6741	0.5234	27.9495
<b>U.S. Total</b>	<b>2.8333</b>	<b>0.8844</b>	<b>33.6972</b>

Source: BEA

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

## Appendix H-4

### Output, Earnings and Employment Multipliers: **Management Services**

State	MULTIPLIERS		
	Output	Earnings	Jobs
Alabama	1.8774	0.6667	13.9341
Alaska	1.7416	0.6234	12.1443
Arizona	2.0429	0.7206	15.2567
Arkansas	1.7138	0.5976	10.8812
California	2.2677	0.7889	13.3516
Colorado	2.2846	0.7979	13.8113
Connecticut	2.0382	0.6890	10.6363
Delaware	1.7542	0.4905	8.3227
District of Columbia	1.4148	0.1096	1.4967
Florida	2.1406	0.7578	14.9140
Georgia	2.2480	0.7629	14.4007
Hawaii	1.8770	0.6722	12.9897
Idaho	1.6966	0.6130	12.1818
Illinois	2.3072	0.7835	12.8448
Indiana	1.8784	0.6210	12.6370
Iowa	1.6670	0.5744	11.4780
Kansas	1.7434	0.5778	10.7983
Kentucky	1.8859	0.6121	11.9801
Louisiana	1.8530	0.6659	13.7427
Maine	1.8807	0.6786	14.3239
Maryland	2.0198	0.6486	10.8358
Massachusetts	2.1310	0.7228	11.2533
Michigan	2.0372	0.7053	13.1004
Minnesota	2.0917	0.7183	12.1393
Mississippi	1.7181	0.6070	12.5578
Missouri	2.0998	0.6631	12.3747
Montana	1.7212	0.6239	13.5091
Nebraska	1.6724	0.5799	10.7662
Nevada	1.8686	0.6684	12.2021
New Hampshire	1.9314	0.5976	11.2132
New Jersey	2.1820	0.6867	10.9858
New Mexico	1.7430	0.6328	13.3714
New York	1.9610	0.5553	8.4943
North Carolina	2.0668	0.7122	13.5596
North Dakota	1.6061	0.5637	11.3550
Ohio	2.1193	0.7180	13.2829
Oklahoma	1.8988	0.6646	13.9207
Oregon	1.9665	0.6703	13.4257
Pennsylvania	2.1915	0.7377	12.9221
Rhode Island	1.8928	0.5978	10.1788
South Carolina	1.9644	0.6751	14.7763
South Dakota	1.5231	0.4890	8.6665
Tennessee	2.1106	0.7067	13.5985
Texas	2.2873	0.7838	15.3875
Utah	2.1786	0.7643	17.3845
Vermont	1.8336	0.6503	13.6645
Virginia	2.0482	0.6570	11.1778
Washington	1.9738	0.6632	11.6529
West Virginia	1.6887	0.5788	11.9726
Wisconsin	1.9173	0.6675	12.7906
Wyoming	1.5638	0.5697	10.6140
<b>U.S. Total</b>	<b>2.7621</b>	<b>0.9290</b>	<b>17.7163</b>

Source: BEA

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

## Appendix H-5

### Output, Earnings and Employment Multipliers: **Utilities**

State	MULTIPLIERS		
	Output	Earnings	Jobs
Alabama	1.8785	0.5455	14.3083
Alaska	1.7272	0.5047	9.6554
Arizona	1.9336	0.5789	12.3658
Arkansas	1.6982	0.4838	13.0050
California	2.0436	0.6094	11.6455
Colorado	2.0843	0.6200	14.8482
Connecticut	1.8047	0.5124	9.4379
Delaware	1.7364	0.4176	8.1464
District of Columbia	1.2685	0.0729	1.2154
Florida	1.9582	0.5889	14.0518
Georgia	2.0103	0.5843	14.1927
Hawaii	1.8276	0.5468	12.2934
Idaho	1.6916	0.4966	13.4898
Illinois	2.0560	0.5911	12.6255
Indiana	1.8594	0.5253	11.9313
Iowa	1.5738	0.4332	10.6138
Kansas	1.6855	0.4615	11.9886
Kentucky	1.8320	0.5008	13.1403
Louisiana	1.8419	0.5419	13.9172
Maine	1.8125	0.5394	12.9789
Maryland	1.8838	0.5256	10.6277
Massachusetts	1.9193	0.5447	9.9580
Michigan	1.9127	0.5603	12.4247
Minnesota	1.8706	0.5382	10.7826
Mississippi	1.7533	0.5044	13.6348
Missouri	1.9436	0.5139	11.3272
Montana	1.7212	0.5118	14.0685
Nebraska	1.5673	0.4297	8.4541
Nevada	1.7758	0.5077	11.3863
New Hampshire	1.8456	0.5059	10.8808
New Jersey	1.9771	0.5466	10.2162
New Mexico	1.7456	0.5139	13.7173
New York	1.8122	0.4976	8.9541
North Carolina	1.9216	0.5508	13.6335
North Dakota	1.6276	0.4574	11.9251
Ohio	1.9572	0.5526	12.3597
Oklahoma	1.8753	0.5515	13.9431
Oregon	1.8550	0.5163	13.1816
Pennsylvania	2.0538	0.5842	11.6897
Rhode Island	1.7649	0.4503	9.0428
South Carolina	1.8806	0.5114	12.8949
South Dakota	1.5436	0.4438	11.2142
Tennessee	1.9708	0.5531	13.6697
Texas	2.1498	0.6328	13.1925
Utah	2.0280	0.6003	16.2978
Vermont	1.7004	0.4435	11.8314
Virginia	1.9103	0.5308	11.8448
Washington	1.9031	0.5466	12.0593
West Virginia	1.6890	0.4594	10.5994
Wisconsin	1.8270	0.5327	11.0676
Wyoming	1.6058	0.4635	10.6296
<b>U.S. Total</b>	<b>2.4640</b>	<b>0.7268</b>	<b>16.0036</b>

Source: BEA

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

## Appendix H-6

### Output, Earnings and Employment Multipliers: **Building Operations**

State	MULTIPLIERS		
	Output	Earnings	Jobs
Alabama	1.9492	0.6348	18.9788
Alaska	1.7740	0.5793	14.7561
Arizona	2.0081	0.6703	17.5225
Arkansas	1.7829	0.5678	17.1292
California	2.2109	0.7230	16.5702
Colorado	2.2118	0.7265	18.7280
Connecticut	1.9239	0.6109	13.9594
Delaware	1.8057	0.4811	12.4644
District of Columbia	1.3098	0.1042	3.0579
Florida	2.0561	0.6889	19.0992
Georgia	2.1639	0.6962	18.9880
Hawaii	1.8937	0.6308	16.2026
Idaho	1.7158	0.5722	17.5103
Illinois	2.2476	0.7120	16.9950
Indiana	1.9760	0.6152	16.8748
Iowa	1.6680	0.5292	15.4086
Kansas	1.7924	0.5367	14.8033
Kentucky	1.9486	0.5883	17.3269
Louisiana	1.9362	0.6344	18.1297
Maine	1.8755	0.6280	17.9399
Maryland	1.9536	0.6007	14.7498
Massachusetts	2.0197	0.6407	14.5536
Michigan	2.0255	0.6649	17.8651
Minnesota	2.0388	0.6529	16.6479
Mississippi	1.8305	0.5827	17.9567
Missouri	2.0631	0.6127	15.7728
Montana	1.7749	0.5893	18.5577
Nebraska	1.6394	0.5232	14.6170
Nevada	1.8324	0.6053	15.8479
New Hampshire	1.9367	0.5860	15.0073
New Jersey	2.1309	0.6437	14.5880
New Mexico	1.8086	0.5973	17.3743
New York	1.8921	0.5589	12.7328
North Carolina	2.0486	0.6594	19.0676
North Dakota	1.6708	0.5211	15.5590
Ohio	2.1352	0.6733	17.5274
Oklahoma	1.9808	0.6437	18.6162
Oregon	1.9477	0.6160	16.9748
Pennsylvania	2.1896	0.6857	16.9214
Rhode Island	1.8487	0.5475	13.6789
South Carolina	1.9915	0.6283	18.5616
South Dakota	1.5716	0.5009	15.1539
Tennessee	2.1027	0.6558	17.4278
Texas	2.3170	0.7443	19.1602
Utah	2.1844	0.7112	21.0721
Vermont	1.7819	0.5653	17.3069
Virginia	1.9912	0.6085	16.3318
Washington	2.0161	0.6437	16.1807
West Virginia	1.7469	0.5376	15.2742
Wisconsin	1.9283	0.6296	16.9175
Wyoming	1.6372	0.5326	15.0742
<b>U.S. Total</b>	<b>2.7620</b>	<b>0.8699</b>	<b>21.8700</b>

Source: BEA

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



## Appendix I: NAIOP Survey of Members

NAIOP conducted a survey of its membership between January 22 and February 9, 2013, to determine the values of soft costs, site development improvements, and expenditures for tenant improvements relative to the hard costs associated with building office, industrial, warehouse, and retail buildings. The results of this survey are used in calculating the total building costs based on the value of hard construction data provided by McGraw-Hill Construction in order to capture the full economic value of building development on the U.S. and state economies. This is the fourth NAIOP survey (others were conducted in 2006, 2008, and 2012, and the results of past surveys were included in Appendix I of the preceding years' reports). The distribution of these costs across the four building types differ and have changed during the past seven years in response to general economic conditions, changes in the marketplace, and the locations where new building construction is occurring.

Questionnaires were emailed to 5,004 NAIOP members throughout the U.S.; 129 of these emails could not be delivered. Survey participants were mainly commercial real estate developers and owners involved in the construction of office, warehouse, manufacturing, and retail buildings. There were a total of 177 responses to the survey, for a response rate of 3.54 percent. Sixty-nine survey respondents indicated that their primary area of work was office building development; 19 indicated manufacturing facility development; 60 indicated warehouse or flex building development; and 27 indicated retail development.

The results of this survey are presented in the table on the next page as percentages of total building costs. These percent distributions by building type are used in this report to calculate soft construction costs, site improvement costs, and costs of tenant improvements based on the value of hard construction costs provided by McGraw-Hill Construction.

**Building Cost Allocation Percentages (%), by Building Type, 2006, 2008, 2013**

Building Type	Soft Construction Costs <sup>1</sup>	Site Development Costs	Building Construction Costs	Tenant Improvement Costs
<b>Office</b>				
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
<b>Manufacturing</b>				
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
<b>Warehouse/Flex</b>				
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
<b>Retail</b>				
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
<b>Combined<sup>2</sup></b>				
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

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

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

# Appendix J: 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.

**Construction 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 with 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 and 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 within which 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 structures, 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 benefitting 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 reflect 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 builder 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 inclusive of 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.

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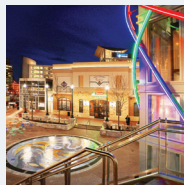
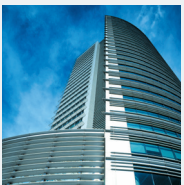
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