How Office, Industrial and Retail Development Contributed to the U.S. Economy in 2012



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McGraw-Hill Construction

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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.

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.naioprf.org.

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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 and several processes and methodologies to take "snapshots" of the development industry from various angles and across several scales, including different product types, economic measures, and disciplines.

At the greatest scale, the study calculates the contribution of building and nonbuilding construction on 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), personal earnings, and jobs supported. (See Table 1.)

Table 1

Economic Contributions from Building and Nonbuilding Construction

Year	Direct Expenditures (in billions of dollars)	Total Economic Contribution to the U.S. Economy (GDP) (in trillions of dollars, includes multiplier effect)	Percent Contribution to U.S. GDP	Personal Earnings (in billions of dollars)	Jobs Supported (in millions)
2012	$855.4	$2.64	16.80%	$835.0	20.0
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	1225.0	33.2

Source: U.S. Census, Value of Construction Put in Place; GMU Center for Regional Analysis
Note: Data include 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 soft construction (soft costs), site development, hard 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.) Appropriate multipliers are applied to the initial expenditures to calculate 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.)

This study also examines the contribution of building operations, which is reported as a stand-alone phase that follows development. The figures are limited to buildings constructed in the year in review, estimated to be 307.5 million square feet in 2012. The ongoing operations and maintenance costs associated with the existing commercial inventory, estimated to be 43.57 billion square feet as of December 31, 2012, are not included in this study. (See last column of Table 2.)

The full measure of the economic impact of office, industrial, warehouse, and retail construction include 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, and employment.

Table 2

Economic Contributions 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
Direct Expenditures (in billions of dollars)	**2012**	$15.88	$17.34	$49.18	$17.73	$100.13	$0.96
	2011	13.42	15.45	47.83	15.58	92.28	0.80
	2010	13.11	13.99	41.72	13.05	81.87	0.73
In 2012, direct expenditures of $100.13 billion contributed $303.36 billion to U.S. GDP.							
Total Economic Contribution to the U.S. Economy (GDP) (in billions of dollars, includes multiplier effect)	**2012**	43.39	53.51	151.75	54.71	303.36	2.64
	2011	34.37	44.53	137.82	44.91	261.63	2.05
	2010	33.58	40.30	120.21	37.61	231.70	1.86
In 2012, direct expenditures of $100.13 billion generated $96.75 billion in personal earnings in the U.S.							
Personal Earnings (in billions of dollars)	**2012**	14.46	16.94	48.03	17.32	96.75	0.83
	2011	11.23	13.29	41.15	13.40	79.07	0.61
	2010	10.97	12.03	35.89	11.23	70.12	0.54
In 2012, direct expenditures of $100.13 billion supported 2.27 million jobs to the U.S. economy.							
Jobs Supported	**2012**	292,219	406,107	1,151,784	415,236	2,265,346	20,929
	2011	259,805	339,156	1,049,630	341,981	1,990,572	15,600
	2010	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

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.

Executive Summary: How Commercial Development Contributed to the U.S. Economy in 2012

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 further enlarge their state economies as well as the national economy. The jobs and output associated with the newly built capacity generate significant annual economic and fiscal benefits at all governmental levels. Because these post-construction benefits are cumulative, their economic impacts become increasingly significant to the economy's growth as they expand and extend the initial economic benefits of up-front construction expenditures.

Summary of 2012 Construction Activity

The commercial construction sector continued its recovery in 2012 after first showing signs of a rebound in 2011. Before then, it had experienced several consecutive years of decreased spending since its peak in 2008. The 2012 gains spanned most commercial building types and have generated increased construction employment. Forecasts for 2013 project accelerating construction spending, with single-digit gains in fixed investment in commercial structures. These positive trends in commercial construction spending are projected to gain further strength going forward, especially in industrial and warehouse building types.

The contribution of construction spending to the U.S. economy is well understood. This linkage between the national economy's accelerating expansion and the recovery of residential and nonresidential construction spending will be particularly evident beginning in the second half of 2013 and continuing through 2014 and 2015, as the construction industry's recovery achieves momentum. With the direct and indirect impact of construction spending on the U.S. economy (GDP) in 2012 totaling $2.6 billion and accounting for 16.8 percent of GDP, the accelerating growth of construction spending that began in 2011 will significantly boost the economy's rate of growth during the next several years.

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.

This base of direct spending during these three development phases provides the starting point for calculating its contribution to the national economy as well as to local economies.

Five expenditure types are examined to determine 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. The multipliers measure the far-reaching effects of the initial expenditures on the overall U.S. economy. Using the multipliers, this report calculates the following:

- Total economic contribution to the U.S. economy (GDP);
- New personal earnings (payroll) 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 necessary to support the 2012 level of development, construction, and operations reported in this study.

Combined, the pre-construction, construction, and operations phases — and their associated economic spinoffs — represent commercial real estate development's enduring financial strength and compounded economic impact. The economic contributions associated with new office, industrial, warehouse, and retail development in 2012 are summarized in Table 2.

The Importance of the Construction Sector to U.S. GDP. In 2012, construction spending nationwide for residential and nonresidential buildings and nonbuildings (e.g., roads, bridges, pipelines) totaled $855.4 billion and accounted for 5.45 percent of GDP. (See Table 1.) This spending level was well off its high in 2007, when construction spending totaled $1.16 trillion and accounted directly

for 8.5 percent of GDP. The importance of the construction sector to the vitality of the national economy is illustrated by this decline of three percentage points, which translated into significant job losses extending beyond the construction sector to the manufacturing, professional and business services, and retail sectors, and 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 in 2011 broadened and accelerated in 2012 and contributed to the improving national economy in 2012, with GDP gaining 2.2 percent, up from 1.8 percent in 2011.

Nonresidential building construction expenditures accounted for 39.4 percent of all construction spending in 2012, exceeding the share accounted for by residential building construction spending for a fifth consecutive year. While residential construction spending began to decline in 2006, nonresidential building construction expenditures continued to grow through 2008, helping to offset an industry-wide decline that extended from 2006 through 2011, with construction expenditures declining 33.3 percent during that period.

The construction sector's long-delayed recovery in 2012 has established the foundation for the forecasts for the U.S. economy going forward. This recovery is expected to lose momentum in 2013 as the global economy continues to struggle with its recovery (especially in Europe) and the U.S. economy digests changes in fiscal policy and federal spending reductions. In spite of this continuing uncertainty in the national economy, the residential sector is projected to register double-digit gains in 2013 and in each subsequent year through 2015, with construction starts rising to the level of 1.5 to 1.6 million units by 2016. Nonresidential building investment is projected to accelerate in both 2014 and 2015. These trends in construction spending will support higher growth rates for the national economy in 2014 and 2015, with GDP growth projected to achieve its peak rate for this business cycle in 2015.

Table 3

Total U.S. Construction Spending, 2010–2012
(in billions of current year dollars)

Type	Value	Percent Change (2011–2012)
Residential Building		
2012	$282.8	15.1%
2011	244.4	
2010	248.7	
Nonresidential Building		
2012	336.6	5.8
2011	312.7	
2010	327.1	
Nonbuilding Structures[1]		
2012	236.0	10.0
2011	230.3	
2010	227.8	
Total		
2012	**$855.4**	**9.9**
2011	**787.4**	
2010	**803.6**	

Source: U.S. Census, Value of Construction Put In Place
[1] Includes infrastructure such as water, sewer, highways, and power.

The length and depth of the recession as it impacted the building industry is seen in the decline in office, industrial, warehouse, and retail building construction activity between 2007 and 2011, as reported in NAIOP's 2008, 2010, 2011, and 2012 editions of "The Contribution of Office, Industrial and Retail Development and Construction to the U.S. Economy."

Office, Industrial, Warehouse, and Retail Hard Construction Spending Grows for a Second 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 4.) 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 continued in 2012, when hard construction spending for office, industrial, warehouse, and retail development increased 15 percent to $49.2 billion in 2012. A total of 238.4 million and 307.5 million square feet of building space was added to the inventory in 2011 and 2012, respectively, representing an annualized increase of 15.9 percent during this two-year period.

Table 4

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

Year	Value (in billions of current year dollars)	Net New Square Feet (2011–2012)
2007	$89.2	839.0
2009	46.6	264.6
2010	41.71	228.4
2011	47.83	238.4
2012	49.2	307.5

Source: McGraw-Hill Construction

In spite of the construction industry's contraction between 2006 and 2011, hard construction spending and its directly related pre- and post-construction expenditures generated important economic effects that helped counter the recessionary forces that undermined the economy's performance. As the U.S. economic recovery moved to a self-sustaining growth path in 2012, hard construction spending has continued to generate important economic benefits and has helped drive the economy's expansion far enough to generate greater levels of job growth and declining unemployment. As this pattern of stronger growth in hard construction spending continues into 2013, 2014, and 2015, it will help generate further job growth and contribute to lowering the national unemployment rate. (Employment growth is projected to average 1.7 percent annually from 2013 to 2015, up from 1.2 percent in 2011.)

As shown in Table 2 on page 6, the effects of $49.2 billion in hard construction expenditures added $151.8 billion to the national economy (GDP) in 2012, as the full impact of these hard construction expenditures (payroll and purchases) circulated through the economy. This hard construction spending supported 1.15 million jobs (full-time, year-round equivalent) across all sectors of the economy, generating personal earnings totaling $48 billion. This hard construction spending accounted for 49.1 percent of total spending for office, industrial, warehouse, and retail building development in 2012.

The other 50.9 percent included soft construction (soft costs), site development, and tenant improvement costs. In 2012, this development-related spending totaled an estimated $50.4 billion. It also:

- Contributed $151.6 billion to U.S. GDP;
- Generated $48.7 billion in new personal earnings; and
- Supported a total of 1.11 million jobs.

The combined economic contributions of the expenditures made during all four phases of development added 307.5 million square of new office, industrial, warehouse, and retail building space to the existing inventory during 2012. It also:

- Contributed $303.4 billion to U.S. GDP;
- Generated $96.7 billion in new personal earnings; and
- Supported a total of 2.3 million jobs that spanned the full breadth of the economy.

Contributions of Building Operations in 2012. In addition to the significant contribution to GDP and job and income growth nationwide that constructing 307.5 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 2012 are estimated to total $957 million annually. This direct spending for building operations will:

- Add $2.6 billion to U.S. GDP;
- Generate $832.5 million in new personal earnings; and
- Support 20,929 new jobs.

These operating expenditures are annual and recur yearly over the life span of the building.

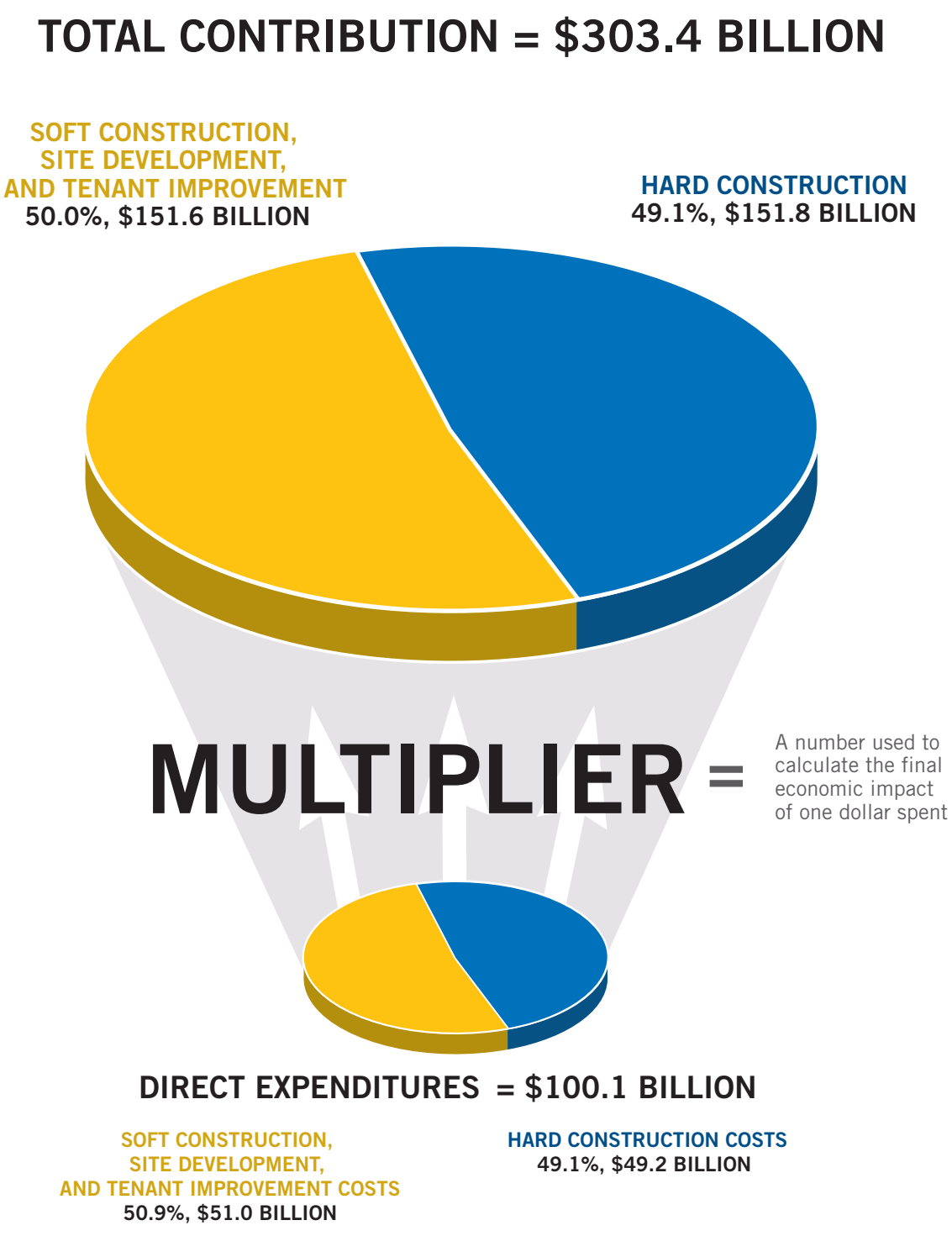
Jobs Housed in Net New 2012 Space. Similarly, the potential productive value of these new building spaces represents a significant annual contribution to the local, state, and national economies. The actual total output value of this new space is the sum of the values of the work done in these buildings. 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 feet estimates reflecting current occupancy patterns and current average salary levels, this new space would have the capacity to house 775,800 jobs with an annual payroll of $34.2 billion. (See Table 16 on p. 39.)

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 2013 and 2015, the U.S. economy's growth rate is projected to increase from 2.2 percent in 2012 to 3.5 percent in 2015. Building on the gains in residential construction spending and increased nonresidential construction expenditures in manufacturing, health care, and some types of commercial buildings in 2011, broad-based gains in residential and nonresidential building construction in 2012 contributed to the national economy's stronger performance in 2012 compared to 2011.

With projections that both residential and nonresidential (commercial, health care, and manufacturing and warehousing) construction expenditures will accelerate in 2013, 2014, and 2015, the U.S. economy will experience stronger growth once it digests this year's increase in federal taxes and decrease in federal spending. Both GDP and employment growth rates are projected to attain their highest levels of the current business cycle between 2014 and 2015, 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, and this is currently projected to continue to at least 2018.

The analyses presented in this report define the economic impacts of the nonresidential building construction industry, highlighting the economic impacts flowing from office, industrial, warehouse, and retail construction and operations. As the economy moves into a sustained expansion in the second half of 2013, 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 2012

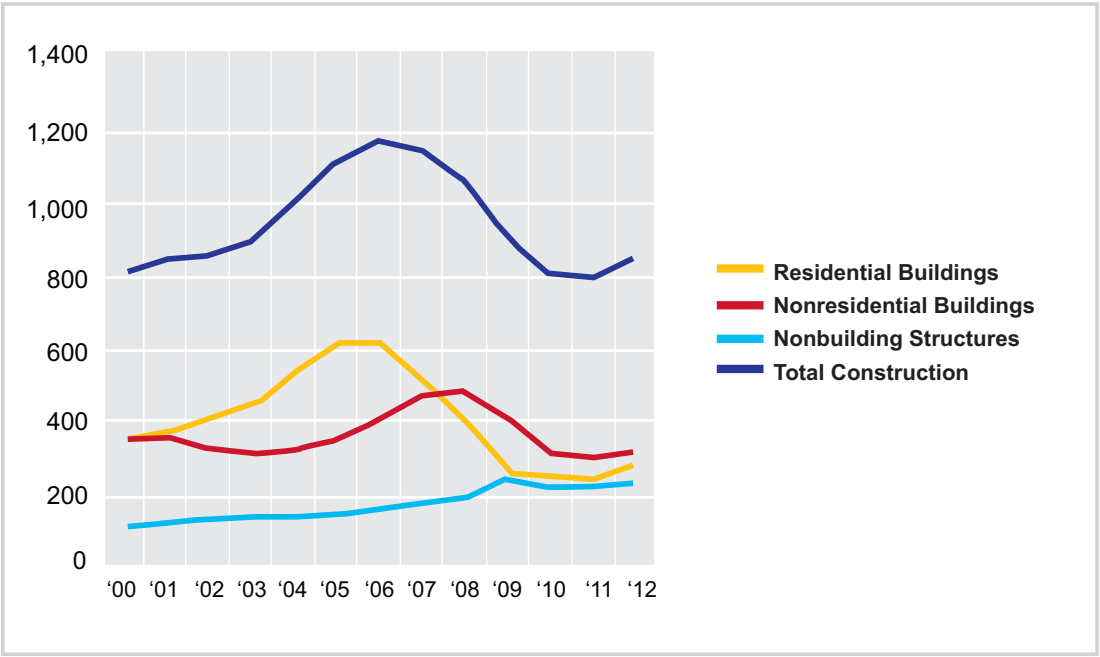


Construction Sector Trends and Outlook

The Great Recession began in December 2007 and ended in June 2009. Today, the economy has been in recovery for a full four years. Still, the consequences of the recession remain evident. Job growth remains slow, and many sectors have not recovered the jobs lost during the downturn. This can be seen in persistently high unemployment rates across the states and their slow trends toward normalization, which are projected to extend until 2016 or 2017. 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 $1.167 trillion to $778.2 billion, a decline of 33.3 percent, from its peak in 2006 to the bottom of the business cycle (for the construction sector) in 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. (See Figure 2.)

Figure 2

Construction Spending in the U.S., 2000-2012
(in billions of current year dollars)



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

Construction Sector Reaches Equilibrium in 2012. It has taken two and one-half years of recovery in the national economy to bring the construction sector back to an equilibrium position that could support broad-based increases in construction spending. In 2012, the total value of construction put in place increased 9.9 percent from 2011, with the value of residential construction spending increasing 15.1 percent and the value of nonresidential building construction expenditures increasing 6 percent. While not all categories of construction spending were in full recovery during 2012, the industry experienced gains in total fixed investment and in employment and is poised to increase these gains going forward through at least 2017.

Residential Construction Improves. These patterns of total construction spending by major category over the business cycle are shown in Figure 2. As residential construction spending accelerated following the 2001 recession, its share of total construction spending increased from 45 percent to a high of 56 percent in 2005, after which its share fell each 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 2012, residential construction spending accounted for 33.1 percent of total construction (both building and nonbuilding), and both residential and nonresidential construction were growing after five years of decline.

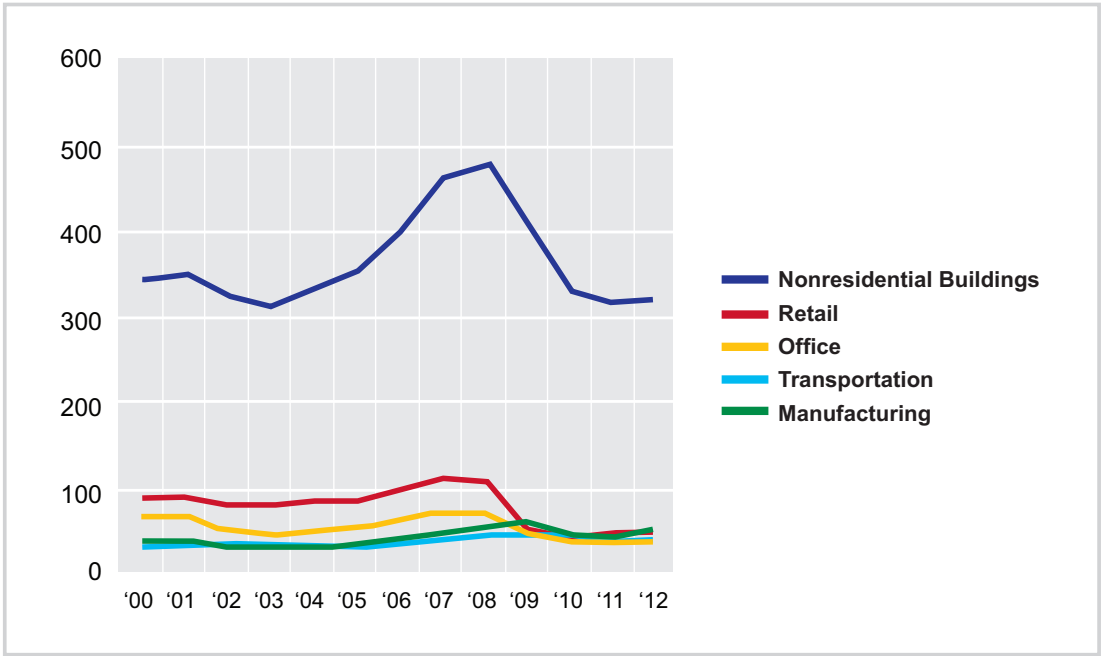
Nonresidential Construction Leads the Way in 2012. Nonresidential building construction spending followed a more gradual upward trend than residential construction spending during the 2002-2008 period. The total value of nonresidential building construction surpassed the total value of residential construction in 2008, accounting for 44.3 percent of total construction spending. In 2009, even as nonresidential building construction spending began to decline, its total value continued to exceed that of total residential spending. During this period of increasing nonresidential building construction spending (2002-2008), the total value of construction put in place increased by 57.2 percent. In 2009, nonresidential building construction spending declined from its 2008 peak by 12.8 percent. In 2010, the value of nonresidential building construction declined at a more rapid rate, 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 in 2011 and, for several building types, turned positive. For that year, the rate of decline for nonresidential building construction spending slowed to 3.3 percent. Quarterly reports show that nonresidential construction expenditures were positive in the second and third quarters of 2011, but the value of residential construction put in place for the year declined 1.4 percent from 2010. In 2012, the value of residential construction put in place increased 15.1 percent and housing starts were up 27.9 percent to 783,000 units (after having bottomed out in 2009 at 554,000 units, down from their peak of 2.1 million in 2005).

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.

Figure 3

Nonresidential Construction Spending in the U.S., 2000-2012
(in billions of current year dollars)



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

Nonresidential construction spending in 2012 increased in seven of the 10 categories shown in Table 5. Construction spending for religious, amusement/recreation, and public safety buildings declined slightly between 2011 and 2012, while all other building types experienced gains representing a significant reversal of construction spending trends dating back to 2008.

Table 5

U.S. Nonresidential Construction Spending, 2009–2012
(in billions of current year dollars)

Type of Structure	2009	2010	2011	2012	% Change (2009–2012)
Transportation	$36.7	$38.3	$34.9	$37.3	1.7%
Healthcare	44.8	39.3	39.7	40.6	-9.5
Retail	54.1	39.4	43.6	47.1	- 12.9
Manufacturing[1]	56.8	40.4	41.4	49.0	- 13.7
Amusement/Recreation	19.4	16.9	16.2	16.0	- 17.6
Education	103.2	88.4	84.3	84.9	- 17.7
Public Safety	13.8	11.2	10.2	10.1	- 26.4
Office	51.9	37.8	34.6	36.6	- 29.6
Religious	6.2	5.3	4.2	3.9	- 37.0
Lodgings	25.5	11.6	8.8	11.0	- 56.7
Total[2]	**$412.4**	**$328.6**	**$317.6**	**$336.6**	**- 18.4**

Source: U.S. Census, Value of Construction Put In Place
[1] Includes warehouse/flex space.
[2] 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.

Total U.S. construction spending across all categories in 2012 is presented in Table 3 on page 10 and shows a strong gain of 9.9 percent from 2011 after sustaining double-digit contractions since peaking in 2008.

The impact of the 2008-2009 recession and slow recovery on construction spending is reported by nonresidential building categories in Table 5. These trends document the substantial slowing of construction through 2011 and the broad-based reversal in construction spending in 2012, as measured by the U.S. Census's "value of construction put in place."

Outlook: Residential and Nonresidential Construction. The residential construction sector began to contract two years before the U.S. economy officially slipped into recession in December 2007, and joined the economic recovery two years after it began in mid-2009. The cycle of nonresidential building construction spending differed from that of residential construction spending. It turned negative three years after the residential building sector started its contraction, had a shorter period of contraction, and turned positive only about six months after the residential sector. Both sectors achieved strong gains in 2012.

While the U.S. economy completed its fourth year of recovery in June 2013, residential building construction spending began to accelerate in the second quarter of 2011, with strong gains in multifamily construction, and is projected to increase each year through at least 2016. Current forecasts (IHS Global Insight, August 2013) indicate that residential construction spending is projected to increase 13.5 percent in 2013 after increasing 12.9 percent in 2012. IHS Global Insight is projecting accelerating gains in residential fixed investment in 2014 and 2015. The projected pattern of residential construction points to annual housing starts increasing to 959,000 in 2013 for a gain of 20.0 percent from 2012. Housing starts are projected to increase to 1.2 million units in 2014 and 1.56 million in 2015. Current forecasts have residential building peaking in 2016 at 1.61 million starts and attaining equilibrium at 1.5-1.6 million units in 2017 and 2018.

Construction expenditures for industrial and warehouse buildings turned positive in 2011; most other nonresidential building categories followed in 2012. Construction expenditures for office and health care buildings were up 7.8 percent in 2012 but are projected to decline moderately in 2013, losing 0.8 percent, followed by accelerating gains in 2014 (up 10.8 percent) and 2015 (up 26.3 percent). In 2014, total expenditures for retail, health care, and manufacturing building construction are projected to increase 5.4 percent, with gains of 16.2 percent in 2015. While many national and global factors (both economic and noneconomic) will impact the pace of the residential and nonresidential building industry's recovery, it is clear now that the recovery of the construction sectors is underway and is projected to accelerate through 2015. After 2015, the construction industry's rate of growth is expected to moderate but remain positive.

Outlook: The U.S. Economy. The link between the recovery of the construction sector and the recovery of the U.S. economy is well established. Now that residential and nonresidential building construction spending both are increasing, the U.S. economy is forecast to sustain GDP growth rates during the next several years that will generate job growth levels sufficient to slowly reduce unemployment and assure economic sustainability.

The sequence of the construction industry's recovery in this business cycle has seen residential building construction spending turning positive during the second quarter of 2011, followed by the resumption of broad-based nonresidential building construction spending in 2012. Both residential and nonresidential building construction spending are projected to increase in 2013, and construction spending will accelerate further in 2014 and 2015. By 2015, these growing rates of construction spending will help drive the national economy to its highest levels of annual GDP growth since 2004.

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 Brings About Improved Economic Performance in 2012. A key factor in the economy's slightly improved performance in 2012 was the recovery of the construction sector, with the total value of construction put in place increasing 9.9 percent, reversing its decline of 3.3 percent between 2010 and 2011.

Residential construction registered a strong gain in 2012, with starts (numbers of units) increasing 27.9 percent and the total value of residential construction put in place gaining 15.1 percent. This gain was the first increase in residential construction value since 2006; during the five-year decline in residential construction value, the annual value of construction put in place decreased 60.4 percent. In 2011, the value of residential construction put in place declined 1.4 percent.

The value of **nonresidential construction** increased 6 percent during 2012, after having decreased each year since its peak in 2008, with construction value decreasing 32.9 percent during that period.

Construction employment increased in 2012 with the addition of 102,000 new construction jobs nationally. While these gains were not experienced by all building types, they do confirm that the construction sector reached the bottom of its business cycle in 2011 and achieved broad-based gains in both residential and nonresidential building in 2012.

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 2012 was $855.4 billion. This accounted directly for 5.45 percent of the nation's GDP of $15.685 trillion. With an output multiplier of 3.0855, each dollar 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 2012 increases the value of its overall contribution to GDP to $2.64 trillion or 16.8 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 16.8 percent of all economic activity in 2012. For the year, GDP increased by $595 billion from its 2011 value (in 2012 dollars). In comparison to this overall gain in GDP during 2012, the total value of construction spending was 1.5 times greater than the year's annual GDP growth.

The Bottom Line. The total contribution to GDP of building and nonbuilding expenditures across all four development phases (soft construction (soft costs), site development, hard construction (hard costs), and tenant improvements) also generated new personal earnings and supported jobs across all sectors of the economy. In 2012, the $855.4 billion in development spending (see Table 1 on page 5):

- Contributed $2.64 trillion to U.S. GDP;
- Generated $835 billion in new personal earnings; and
- Supported a total of 20 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 6, total hard construction expenditures for these four building types increased in 2012 by 2.8 percent from 2011, as shown in last year's edition of this report.

Office construction expenditures declined through 2011 since peaking in 2008. This downward trend reversed in 2012 with year-over-year office building construction expenditures increasing 4.7 percent.

Retail construction also increased in 2012, gaining 21.5 percent from 2011, and reversed its downward trend in construction expenditures that dated back to 2007.

Warehouse construction registered a second strong year of increased expenditures in 2012. In 2011, expenditures for warehouse construction increased 17.8 percent; in 2012, they increased another 28.4 percent.

Table 6

Comparing Construction Expenditures (Hard Costs), 2011 and 2012
(in billions of current year dollars)

Building Type	2011[1]	2012	$ Change
Office	$15.75	$16.49	0.74
Industrial	15.18	11.85	- 3.33
Warehouse	4.44	5.70	1.26
Retail/Entertainment	12.46	15.14	2.68
Total	**$47.83**	**$49.18**	**$1.35**

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

[1] McGraw-Hill Construction Analytics has revised its construction reports for 2011 since publication of the 2011 NAIOP Report; the total value of office, industrial, warehouse, and retail construction in 2011 is now reported at $53.1 billion, accounting for 261.1 million square feet of building space.

In contrast to the increases in office, retail, and warehouse building construction expenditures in 2012, construction spending for **industrial** facilities declined by 21.9 percent in 2012 after having increased 60.8 percent in 2011. Even with this decline, industrial construction expenditures in 2012 exceeded those in 2010, when industrial construction was at its lowest level of this cycle.

Expenditures and Square Footage (All Structures Combined). In spite of the decline in industrial building construction expenditures in 2012, the **combined categories** of nongovernment office, industrial, warehouse, and retail building construction increased in both value of expenditures and square footage with the addition of 307.5 million gross square feet of new building space accounting for expenditures totaling $49.2 billion (see Table 7). These totals exceeded their 2011 values by 29 percent and 2.8 percent, respectively.

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 (3.08), personal earnings (0.9766), and employment (23.4186). State-level direct spending and associated economic impacts for pre-construction, construction, and post-construction spending are included in the Appendices.

Table 7

Office, Industrial, Warehouse, and Retail Construction, 2012

Building Type	Square Feet (in millions)	Construction Value (in billions of 2012 dollars)
Office	63.5	$16.50
Industrial	51.7	11.85
Warehouse	91.8	5.70
Retail	100.4	15.14
Total	**307.5**	**$49.18**

Sources: McGraw-Hill Construction Analytics; GMU Center for Regional Analysis
Note: Column values may not add up due to rounding.

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 $49.2 billion in hard construction expenditures (hard costs) for office, industrial, warehouse, and retail buildings in 2012 added $102.6 billion in indirect and induced benefits to the national economy for a total contribution of $151.8 billion to GDP (see Table 8).

Soft construction (soft costs), site development, and tenant improvement expenditures totaled $50.95 billion or 50.9 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 $303.4 billion in 2012.

The economic activity supported by this construction spending generates new personal earnings (payroll) 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 $100.1 billion in 2012:

- Contributed $303.4 billion to U.S. GDP;
- Generated $96.7 billion in new personal earnings; and
- Supported a total of 2.3 million full-time equivalent, year-round jobs.

Table 8

Office, Industrial, Warehouse, and Retail Construction and Operations Contributions to the U.S. Economy, 2012
(in billions of 2012 dollars)

Source	Direct Expenditures	Total Economic Contribution to GDP[1]	Personal Earnings[2]	Jobs Supported[3]
Development Phase	**$100.13**	**$303.36**	**$96.74**	**2,265,346**
Soft Construction (Soft Costs)	15.88	43.39	14.46	292,219
Site Development[4]	17.34	53.51	16.93	406,107
Hard Construction (Hard Costs)	49.18	151.75	48.03	1,151,784
Tenant Improvement[5]	17.73	54.71	17.32	415,236
Annual Operations	**$0.957**	**$2,643.10**	**$0.832**	**20,929**

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

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

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

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

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

[5] Tenant improvements exclude furniture and equipment.

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

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 updates previous surveys from November 2006, April 2007, and February 2012. The new survey has 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 methodology and results of this new survey are reported in Appendix I.

Soft construction (soft costs), site development, and tenant improvement expenditures in 2012 totaled an estimated $50.95 billion. Table 9 presents the spending that occurs 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.

Table 9

Direct Expenditures by Building Type, 2012
(in billions of 2012 dollars)

Building Type	Soft Construction (Soft Costs)	Site Development	Tenant Improvement	Total
Office	$4.80	$4.83	$7.20	$16.83
Industrial	3.71	3.03	3.36	10.09
Warehouse	1.56	2.03	1.40	4.99
Retail	5.81	7.45	5.77	19.03
Total	**$15.88**	**$17.34**	**$17.73**	**$50.95**

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 $3.08 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 $15.88 billion in direct soft construction expenditures in 2012:

- Contributed $43.4 billion to U.S. GDP;
- Generated $14.5 billion in new personal earnings; and
- Supported a total of 292,219 jobs.

Site development expenditures of $17.34 billion in 2012:

- Contributed $53.5 billion to U.S. GDP;
- Generated $16.9 billion in new personal earnings; and
- Supported a total of 406,107 jobs.

Tenant improvement expenditures of $17.73 billion in 2012:

- Contributed $54.7 billion to U.S. GDP;
- Generated $17.3 billion in new personal earnings; and
- Supported a total of 415,236 jobs.

These economic contributions for office, industrial, warehouse, and retail products under construction in 2012 are detailed in Table 10.

Table 10

The Contributions of Direct Expenditures for Soft Construction (Soft Costs), Site Development, and Tenant Improvements on the U. S. Economy, 2012
(in billions of 2012 dollars)

Source	Direct Expenditures	Total Economic Contribution to GDP[1]	Personal Earnings[2]	Jobs Supported[3]
Office				
Soft Const.	$4.80	$13.11	$4.37	88,321
Site Dev.[4]	4.83	14.91	4.72	113,161
Tenant Imp.[5]	7.20	22.21	7.03	168,571
Total	**$16.83**	**$50.23**	**$16.12**	**370,053**
Industrial				
Soft Const.	$3.71	$10.13	$3.38	68,248
Site Dev.	3.03	9.34	2.96	70,910
Tenant Imp.	3.36	10.36	3.28	78,618
Total	**$10.09**	**$29.83**	**$9.62**	**217,776**
Warehouse				
Soft Const.	$1.56	$4.29	$1.42	28,744
Site Dev.	2.03	6.27	1.98	47,597
Tenant Imp.	1.40	4.32	1.37	32,817
Total	**$4.99**	**$14.88**	**$4.77**	**109,158**
Retail				
Soft Const.	$5.81	$15.87	$5.29	106,906
Site Dev.	7.45	22.98	7.27	174,438
Tenant Imp.	5.77	17.82	5.64	135,229
Total	**$19.03**	**$56.67**	**$18.20**	**416,573**
Total				
Soft Const.	$15.88	$43.39	$14.46	292,219
Site Dev.	17.34	53.51	16.94	406,107
Tenant Imp.	17.73	54.71	17.32	415,236
Total	**$50.95**	**$151.61**	**$48.72**	**1,113,562**

Sources: NAIOP; GMU Center for Regional Analysis
[1] The total value of goods and services generated directly and indirectly as a result of initial construction outlays within the United States.
[2] The additional earnings generated within the United States from direct outlays during the construction phase.
[3] The jobs supported nationwide by the spending and re-spending of direct outlays associated with building construction.
[4] Site development includes grading, infrastructure, parking, and landscaping.
[5] 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 2012 (for the hard construction phase only) reported by McGraw-Hill Construction for office, industrial, warehouse, and retail structures totaled $49.2 billion and represented the addition of 307.5 million square feet of new building space. Applying the national construction multiplier of 3.09, the full economic contribution to GDP of this spending can be calculated as $151.8 billion (see Table 11). These direct, indirect, and induced benefits supported 1.2 million jobs across all sectors of the economy and generated $48 billion in new personal earnings.

Table 11

Economic Contributions of Hard Construction Expenditures (Hard Costs) on the U. S. Economy, 2012
(in billions of 2012 dollars)

Building Type	Direct Expenditures	Total Economic Contribution to GDP[1]	Personal Earnings[2]	Jobs Supported[3]
Office	$16.50	$50.90	$16.11	386,309
Industrial	11.85	36.56	11.57	277,476
Warehouse	5.70	17.59	5.57	133,523
Retail	15.14	46.70	14.78	354,477
Total	**$49.18**	**$151.75**	**$48.03**	**1,151,784**

Sources: McGraw-Hill Construction Analytics; GMU Center for Regional Analysis
[1] The total value of goods and services generated directly and indirectly as a result of initial construction outlays within the United States.
[2] The additional earnings generated within the United States from the direct outlays during the construction phase.
[3] 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 of state-level hard cost data.

Construction Value by State. The 10 states with the largest construction values accounted for 52.3 percent of the construction expenditures in the U.S., while the top 20 states accounted for 76.3 percent. This year's top 10 states for all four product types combined (hard construction costs only) reflected several changes from this listing for 2011. Three new states joined the list: Iowa at number three, Ohio at number five, and Georgia at number 10. West Virginia, which was ranked number two in 2011, dropped to number 51. Arizona and Utah also dropped off the top 10 list, slipping to numbers 16 and 28, respectively.

The top 10 rankings are shown in Table 12 and Figure 4. The values for all states are shown in Appendix A, Tables 1-5.

Table 12

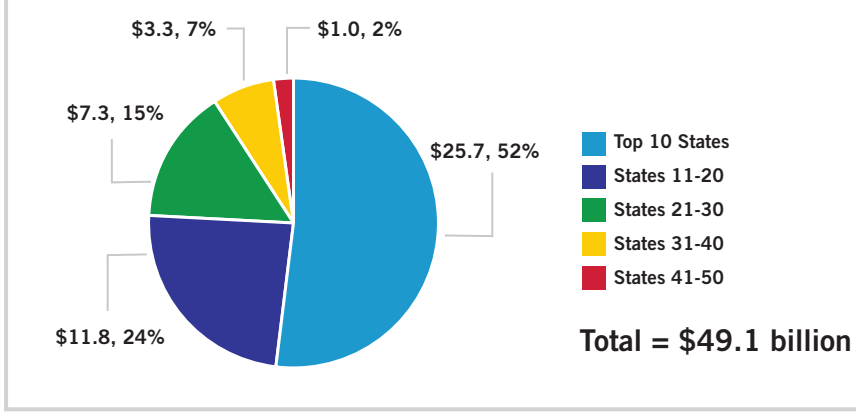
Top 10 States by Construction Value, 2012

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

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

Figure 4

Top 10 States by Construction Value in Four Categories, 2012
(hard costs only; in billions of 2012 dollars)



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 2012 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 2012 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 13.

Table 13

Multipliers for Contributions to GDP, Personal Earnings, and Jobs Supported for Select Categories of Building Operations, 2012

Category	GDP Multipliers[1]	Personal Earnings Multipliers[2]	Jobs Supported Multipliers[3]
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

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

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

[3] 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 307.5 million square feet of new office, industrial, warehouse, and retail building space under construction in 2012 will require $957 million 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 $2.64 billion to U.S. GDP each year;
- Generate $832.5 million in total personal earnings each year; and
- Support a total of 20,929 jobs each year.

These economic contributions are detailed by building type in Table 14.

Table 14

Annual Contributions of Post-Construction Expenditures from Building Operations to the U.S. Economy, 2012
(in millions of 2012 dollars)

Source	Direct Expenditures	Total Economic Contribution to GDP[1]	Personal Earnings[2]	Jobs Supported[3]
Office	$482.2	$1,331.9	$419.5	10,546
Industrial	60.6	167.4	52.7	1,326
Warehouse	78.6	217.1	68.4	1,719
Retail	335.5	926.7	291.9	7,338
Total	**$957.0**	**$2,643.1**	**$832.5**	**20,929**

Sources: BOMA; ULI, Dollars and Cents of Shopping Centers; GMU Center for Regional Analysis
[1] The total value of goods and services generated directly and indirectly as a result of building operating expenditures within the United States.
[2] The earnings generated within the U.S. from direct expenditures for building operations.
[3] 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 2012 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 2012 to the operating expenditures associated with the existing office, industrial, retail, and warehouse stock of 2011 (see Table 15). This existing building inventory totaled 42.9 billion square feet in 2011 and would have generated annual operating expenditures estimated to total $143.3 billion. The addition of 307.5 million square feet to the 2011 inventory would bring total spending in 2012 for building operations to $144.3 billion.

Table 15

National Building Space Inventory, 2011 and 2012
(in billions of square feet)

Sector	2011	2012	% Change
Industrial/Flex	20.49	20.70	1.0
Retail	12.31	12.60	2.4
Office	10.10	10.27	1.7
Total	**42.90**	**43.57**	**1.6**

Source: CoStar

Jobs Housed and Payroll Value in 2012 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 and the amount of payroll this new capacity can accommodate. Using a standard jobs-per-square-foot estimate for each category of building, the total number of employees that could be housed within the buildings built in 2012 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 16 and show that the 307.5 million square feet of new office, industrial, warehouse and retail building space constructed in 2012 have the capacity to house 775,800 new workers with a total estimated payroll of $34.2 billion.

Table 16

Jobs Accommodated and Payroll Generated in Office, Industrial, Warehouse, and Retail Space Constructed, 2012

(square feet in millions; jobs in thousands; payroll in billions of 2012 dollars)

Building Category	Square Feet	Square Feet per Job	Jobs Accommodated	Average Earnings	Total Payroll
Office	63.54	190	334.4	$56,835	$19.006
Industrial	51.74	750	71.4	39,405	2.813
Warehouse/Flex	91.84	600	204.1	33,970	6.932
Retail	100.38	475	165.9	32,610	5.410
Total/Average	**307.50**	**388**	**775.8**	**44,035**	**34.161**

Sources: GMU Center for Regional Analysis; U.S. Bureau of Labor Statistics; Delta Associates, Inc.

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

Appendix A-1

Value of Construction in Rank Order **(Office),** 2012

(Hard Costs Only)

	STATE	Direct Spending (In Billions of Dollars)
1	New York	2.437
2	Texas	1.942
3	California	1.034
4	Massachusetts	0.944
5	Florida	0.688
6	Pennsylvania	0.654
7	Virginia	0.616
8	North Carolina	0.581
9	New Jersey	0.567
10	Iowa	0.514
	TOP 10 STATES TOTAL	**9.977**
11	Ohio	0.505
12	Illinois	0.489
13	District of Columbia	0.450
14	Maryland	0.331
15	Kansas	0.302
16	Washington	0.282
17	Colorado	0.280
18	Tennessee	0.272
19	Indiana	0.264
20	Minnesota	0.258
	NEXT 10 STATES TOTAL (11-20)	**3.433**
21	Wisconsin	0.235
22	Missouri	0.228
23	Arizona	0.227
24	Oregon	0.215
25	Georgia	0.194
26	Michigan	0.189
27	Louisiana	0.182
28	Utah	0.168
29	Alabama	0.165
30	Nevada	0.154
	NEXT 10 STATES TOTAL (21-30)	**1.959**

	STATE	Direct Spending (In Billions of Dollars)
31	Oklahoma	0.130
32	South Carolina	0.127
33	Kentucky	0.100
34	Connecticut	0.079
35	Idaho	0.074
36	New Hampshire	0.072
37	Arkansas	0.068
38	Hawaii	0.068
39	Mississippi	0.068
40	Nebraska	0.060
	NEXT 10 STATES TOTAL (31-40)	**0.846**
41	Maine	0.058
42	Delaware	0.047
43	New Mexico	0.043
44	Alaska	0.039
45	North Dakota	0.032
46	South Dakota	0.023
47	Vermont	0.018
48	Wyoming	0.008
49	West Virginia	0.007
50	Rhode Island	0.003
51	Montana	0.003
	NEXT 11 STATES TOTAL (41-51)	**0.281**
	U.S. Total	**16.496**

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),** 2012

(Hard Costs Only)

	STATE	Direct Spending (In Billions of Dollars)
1	Iowa	2.172
2	Ohio	0.894
3	Louisiana	0.889
4	Alabama	0.596
5	Tennessee	0.568
6	North Carolina	0.565
7	Georgia	0.548
8	New York	0.517
9	South Carolina	0.459
10	Texas	0.453
	TOP 10 STATES TOTAL	**7.662**
11	Massachusetts	0.434
12	Indiana	0.425
13	Michigan	0.336
14	New Mexico	0.333
15	Arizona	0.308
16	Wisconsin	0.299
17	Pennsylvania	0.234
18	Illinois	0.202
19	Kentucky	0.185
20	Minnesota	0.169
	NEXT 10 STATES TOTAL (11-20)	**2.925**
21	Nevada	0.150
22	Missouri	0.148
23	California	0.123
24	Colorado	0.112
25	Florida	0.110
26	Oregon	0.105
27	Idaho	0.062
28	New Hampshire	0.058
29	Wyoming	0.050
30	Maryland	0.047
	NEXT 10 STATES TOTAL (21-30)	**0.965**

	STATE	Direct Spending (In Billions of Dollars)
31	Kansas	0.045
32	Connecticut	0.041
33	Utah	0.037
34	Oklahoma	0.032
35	Delaware	0.028
36	Virginia	0.020
37	South Dakota	0.016
38	Arkansas	0.013
39	Nebraska	0.012
40	Rhode Island	0.011
	NEXT 10 STATES TOTAL (31-40)	**0.255**
41	Maine	0.010
42	Washington	0.010
43	New Jersey	0.006
44	Montana	0.005
45	Vermont	0.005
46	Hawaii	0.002
47	Mississippi	0.002
48	North Dakota	0.001
49	District of Columbia	0.001
50	Alaska	0.000
51	West Virginia	0.000
	NEXT 11 STATES TOTAL (41-51)	**0.042**
	U.S. Total	**11.849**

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),** 2012

(Hard Costs Only)

	STATE	Direct Spending (In Billions of Dollars)
1	Texas	0.575
2	California	0.500
3	New Jersey	0.424
4	Indiana	0.338
5	Georgia	0.324
6	Florida	0.281
7	Illinois	0.266
8	Arizona	0.235
9	South Carolina	0.207
10	Pennsylvania	0.205
	TOP 10 STATES TOTAL	**3.356**
11	Ohio	0.189
12	Virginia	0.178
13	Tennessee	0.176
14	Utah	0.172
15	Colorado	0.124
16	Mississippi	0.123
17	Connecticut	0.121
18	New York	0.119
19	Wisconsin	0.115
20	Minnesota	0.112
	NEXT 10 STATES TOTAL (11-20)	**1.428**
21	North Carolina	0.095
22	Delaware	0.092
23	Kansas	0.078
24	Washington	0.078
25	Iowa	0.052
26	Maryland	0.051
27	Oklahoma	0.050
28	Missouri	0.048
29	Massachusetts	0.040
30	Louisiana	0.038
	NEXT 10 STATES TOTAL (21-30)	**0.620**

	STATE	Direct Spending (In Billions of Dollars)
31	Nevada	0.034
32	Kentucky	0.033
33	North Dakota	0.033
34	Michigan	0.030
35	Nebraska	0.021
36	Alabama	0.017
37	Rhode Island	0.016
38	Hawaii	0.015
39	Vermont	0.014
40	Oregon	0.013
	NEXT 10 STATES TOTAL (31-40)	**0.226**
41	Arkansas	0.013
42	Alaska	0.012
43	New Mexico	0.008
44	West Virginia	0.008
45	Montana	0.007
46	Idaho	0.007
47	Maine	0.005
48	South Dakota	0.005
49	District of Columbia	0.003
50	New Hampshire	0.002
51	Wyoming	0.001
	NEXT 11 STATES TOTAL (41-51)	**0.071**
	U.S. Total	**5.702**

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),** 2012
(Hard Costs Only)

	STATE	Direct Spending (In Billions of Dollars)
1	New York	1.731
2	Texas	1.372
3	California	1.230
4	Florida	0.892
5	Illinois	0.692
6	Georgia	0.517
7	North Carolina	0.513
8	Ohio	0.462
9	Nevada	0.439
10	Missouri	0.415
	TOP 10 STATES TOTAL	**8.262**
11	Pennsylvania	0.381
12	Massachusetts	0.365
13	Michigan	0.332
14	Tennessee	0.321
15	Virginia	0.312
16	Maryland	0.299
17	Indiana	0.286
18	Washington	0.278
19	Arizona	0.277
20	Wisconsin	0.277
	NEXT 10 STATES TOTAL (11-20)	**3.129**
21	Minnesota	0.272
22	Colorado	0.265
23	South Carolina	0.243
24	Louisiana	0.231
25	Oregon	0.211
26	Alabama	0.208
27	New Jersey	0.205
28	District of Columbia	0.196
29	Kansas	0.196
30	Oklahoma	0.189
	NEXT 10 STATES TOTAL (21-30)	**2.216**

	STATE	Direct Spending (In Billions of Dollars)
31	Iowa	0.184
32	Utah	0.165
33	Connecticut	0.153
34	Kentucky	0.131
35	Arkansas	0.118
36	New Mexico	0.092
37	Nebraska	0.085
38	Idaho	0.079
39	New Hampshire	0.074
40	Mississippi	0.059
	NEXT 10 STATES TOTAL (31-40)	**1.141**
41	Hawaii	0.059
42	Alaska	0.043
43	Rhode Island	0.042
44	South Dakota	0.040
45	Montana	0.036
46	West Virginia	0.036
47	North Dakota	0.035
48	Maine	0.031
49	Vermont	0.028
50	Wyoming	0.025
51	Delaware	0.015
	NEXT 11 STATES TOTAL (41-51)	**0.389**
	U.S. Total	**15.137**

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),** 2012

(Hard Costs Only)

	STATE	Direct Spending (In Billions of Dollars)
1	New York	4.8034
2	Texas	4.3423
3	Iowa	2.9228
4	California	2.8864
5	Ohio	2.0499
6	Florida	1.9710
7	Massachusetts	1.7832
8	North Carolina	1.7533
9	Illinois	1.6489
10	Georgia	1.5836
	TOP 10 STATES TOTAL	**25.745**
11	Pennsylvania	1.4736
12	Louisiana	1.3404
13	Tennessee	1.3362
14	Indiana	1.3126
15	New Jersey	1.2021
16	Virginia	1.1267
17	Arizona	1.0480
18	South Carolina	1.0368
19	Alabama	0.9859
20	Wisconsin	0.9257
	NEXT 10 STATES TOTAL (11-20)	**11.788**
21	Michigan	0.8867
22	Missouri	0.8388
23	Minnesota	0.8115
24	Colorado	0.7811
25	Nevada	0.7768
26	Maryland	0.7287
27	District of Columbia	0.6492
28	Washington	0.6478
29	Kansas	0.6201
30	Oregon	0.5439
	NEXT 10 STATES TOTAL (21-30)	**7.285**

	STATE	Direct Spending (In Billions of Dollars)
31	Utah	0.5413
32	New Mexico	0.4775
33	Kentucky	0.4486
34	Oklahoma	0.4010
35	Connecticut	0.3941
36	Mississippi	0.2524
37	Idaho	0.2226
38	Arkansas	0.2123
39	New Hampshire	0.2051
40	Delaware	0.1824
	NEXT 10 STATES TOTAL (31-40)	**3.337**
41	Nebraska	0.1787
42	Hawaii	0.1439
43	Maine	0.1047
44	North Dakota	0.1007
45	Alaska	0.0941
46	Wyoming	0.0849
47	South Dakota	0.0834
48	Rhode Island	0.0718
49	Vermont	0.0650
50	Montana	0.0509
51	West Virginia	0.0501
	NEXT 11 STATES TOTAL (41-51)	**1.028**
	U.S. Total	**49.1827**

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 Ten States by Construction Value **(in Four Categories)**, 2012
(Hard Costs Only in Billions of Dollars)

Groupings of States	OFFICE		INDUSTRIAL		WAREHOUSE		RETAIL		TOTAL	
	Value	%	Value	%	Value	%	Value	%	Value	%
Top Ten States	$10.0	60.5	$7.7	64.7	$3.4	58.9	$8.3	54.6	$25.7	52.3
States 11-20	$3.4	20.8	$2.9	24.7	$1.4	25.1	$3.1	20.7	$11.8	24.0
States 21-30	$2.0	11.9	$1.0	8.1	$0.6	10.9	$2.2	14.6	$7.3	14.8
States 31-40	$0.8	5.1	$0.3	2.2	$0.2	4.0	$1.1	7.5	$3.3	6.8
States 41-51	$0.3	1.7	$0.0	0.4	$0.1	1.2	$0.4	2.6	$1.0	2.1
Totals	**$16.5**	**100.0**	**$11.8**	**100.0**	**$5.7**	**100.0**	**$15.1**	**100.0**	**$49.2**	**100.0**

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)**, 2012

	STATE	Personal Earnings (In Billions of Dollars)
1	Texas	3.529
2	New York	2.913
3	California	2.211
4	Iowa	1.743
5	Ohio	1.569
6	Florida	1.438
7	North Carolina	1.296
8	Illinois	1.274
9	Georgia	1.224
10	Massachusetts	1.190
	TOP 10 STATES TOTAL	**18.388**
11	Pennsylvania	1.132
12	Tennessee	0.973
13	Indiana	0.924
14	Louisiana	0.915
15	New Jersey	0.834
16	Arizona	0.758
17	South Carolina	0.750
18	Virginia	0.741
19	Alabama	0.709
20	Michigan	0.669
	NEXT 10 STATES TOTAL (11-20)	**8.405**
21	Wisconsin	0.661
22	Colorado	0.603
23	Missouri	0.582
24	Minnesota	0.580
25	Nevada	0.507
26	Washington	0.467
27	Maryland	0.456
28	Utah	0.420
29	Oregon	0.374
30	Kansas	0.356
	NEXT 10 STATES TOTAL (21-30)	**5.005**

	STATE	Personal Earnings (In Billions of Dollars)
31	New Mexico	0.298
32	Kentucky	0.298
33	Oklahoma	0.282
34	Connecticut	0.256
35	Mississippi	0.163
36	Idaho	0.139
37	New Hampshire	0.135
38	Arkansas	0.135
39	Nebraska	0.101
40	Hawaii	0.094
	NEXT 10 STATES TOTAL (31-40)	**1.901**
41	Delaware	0.093
42	Maine	0.072
43	Alaska	0.057
44	District of Columbia	0.056
45	North Dakota	0.054
46	South Dakota	0.048
47	Wyoming	0.048
48	Rhode Island	0.042
49	Vermont	0.040
50	Montana	0.032
51	West Virginia	0.029
	NEXT 11 STATES TOTAL (41-51)	**0.571**
	State Totals	**34.271**
	Interstate Spillovers	**13.761**
	U.S. Total	**48.032**

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, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.048	0.090	0.031	676
Alaska	0.011	0.020	0.007	131
Arizona	0.066	0.135	0.047	1,004
Arkansas	0.020	0.034	0.012	244
California	0.301	0.675	0.233	4,162
Colorado	0.081	0.184	0.064	1,185
Connecticut	0.023	0.046	0.015	259
Delaware	0.014	0.024	0.007	119
District of Columbia	0.131	0.183	0.015	229
Florida	0.200	0.425	0.149	3,181
Georgia	0.056	0.126	0.042	867
Hawaii	0.020	0.037	0.013	261
Idaho	0.022	0.037	0.013	274
Illinois	0.142	0.325	0.109	1,982
Indiana	0.077	0.146	0.048	1,073
Iowa	0.150	0.248	0.084	1,788
Kansas	0.088	0.152	0.048	957
Kentucky	0.029	0.056	0.018	388
Louisiana	0.053	0.099	0.035	715
Maine	0.017	0.032	0.011	247
Maryland	0.096	0.194	0.062	1,111
Massachusetts	0.275	0.579	0.193	3,257
Michigan	0.055	0.113	0.039	793
Minnesota	0.075	0.156	0.053	1,020
Mississippi	0.020	0.034	0.012	257
Missouri	0.066	0.137	0.042	832
Montana	0.001	0.001	0.000	10
Nebraska	0.017	0.029	0.010	197
Nevada	0.045	0.084	0.029	593
New Hampshire	0.021	0.041	0.013	254
New Jersey	0.165	0.359	0.113	1,958
New Mexico	0.013	0.022	0.008	173
New York	0.709	1.389	0.411	6,861
North Carolina	0.169	0.351	0.119	2,531
North Dakota	0.009	0.015	0.005	99
Ohio	0.147	0.312	0.104	2,149
Oklahoma	0.038	0.072	0.025	553
Oregon	0.062	0.124	0.042	895
Pennsylvania	0.190	0.413	0.136	2,618
Rhode Island	0.001	0.001	0.000	9
South Carolina	0.037	0.073	0.024	549
South Dakota	0.007	0.010	0.003	68
Tennessee	0.079	0.167	0.055	1,125
Texas	0.565	1.290	0.438	8,708
Utah	0.049	0.106	0.037	870
Vermont	0.005	0.010	0.003	72
Virginia	0.179	0.364	0.115	2,119
Washington	0.082	0.164	0.055	1,041
West Virginia	0.002	0.003	0.001	25
Wisconsin	0.068	0.131	0.045	968
Wyoming	0.002	0.004	0.001	26
State Totals	**4.799**	**9.821**	**3.195**	**61,484**
Interstate Spillovers	**0.000**	**3.292**	**1.176**	**26,836**
U.S. Totals	**4.799**	**13.113**	**4.371**	**88,321**

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, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.187	0.352	0.122	2,628
Alaska	0.000	0.000	0.000	1
Arizona	0.097	0.198	0.069	1,469
Arkansas	0.004	0.007	0.002	51
California	0.038	0.086	0.030	531
Colorado	0.035	0.079	0.027	511
Connecticut	0.013	0.026	0.009	145
Delaware	0.009	0.015	0.004	75
District of Columbia	0.000	0.000	0.000	0
Florida	0.034	0.073	0.026	547
Georgia	0.172	0.382	0.129	2,637
Hawaii	0.001	0.001	0.001	10
Idaho	0.020	0.033	0.012	248
Illinois	0.063	0.144	0.048	878
Indiana	0.133	0.253	0.084	1,857
Iowa	0.680	1.125	0.381	8,125
Kansas	0.014	0.024	0.008	153
Kentucky	0.058	0.110	0.035	769
Louisiana	0.278	0.519	0.182	3,751
Maine	0.003	0.006	0.002	47
Maryland	0.015	0.030	0.010	170
Massachusetts	0.136	0.287	0.095	1,612
Michigan	0.105	0.215	0.074	1,511
Minnesota	0.053	0.110	0.037	719
Mississippi	0.001	0.001	0.000	9
Missouri	0.046	0.095	0.029	579
Montana	0.002	0.003	0.001	22
Nebraska	0.004	0.006	0.002	42
Nevada	0.047	0.087	0.031	620
New Hampshire	0.018	0.035	0.011	218
New Jersey	0.002	0.004	0.001	21
New Mexico	0.104	0.184	0.065	1,431
New York	0.162	0.317	0.094	1,567
North Carolina	0.177	0.367	0.125	2,650
North Dakota	0.000	0.001	0.000	5
Ohio	0.280	0.595	0.199	4,091
Oklahoma	0.010	0.019	0.007	145
Oregon	0.033	0.065	0.022	469
Pennsylvania	0.073	0.159	0.052	1,007
Rhode Island	0.003	0.006	0.002	39
South Carolina	0.144	0.283	0.095	2,129
South Dakota	0.005	0.008	0.003	51
Tennessee	0.178	0.375	0.124	2,528
Texas	0.142	0.324	0.110	2,185
Utah	0.011	0.025	0.009	205
Vermont	0.001	0.003	0.001	20
Virginia	0.006	0.013	0.004	75
Washington	0.003	0.006	0.002	40
West Virginia	0.000	0.000	0.000	0
Wisconsin	0.093	0.180	0.062	1,322
Wyoming	0.016	0.024	0.008	171
State Totals	**3.708**	**7.261**	**2.445**	**50,088**
Interstate Spillovers	**0.000**	**2.872**	**0.933**	**18,160**
U.S. Totals	**3.708**	**10.133**	**3.377**	**68,248**

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, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.005	0.009	0.003	65
Alaska	0.003	0.006	0.002	37
Arizona	0.064	0.132	0.046	980
Arkansas	0.003	0.006	0.002	43
California	0.137	0.307	0.106	1,894
Colorado	0.034	0.077	0.027	495
Connecticut	0.033	0.066	0.022	374
Delaware	0.025	0.044	0.012	218
District of Columbia	0.001	0.001	0.000	1
Florida	0.077	0.163	0.057	1,223
Georgia	0.089	0.197	0.066	1,362
Hawaii	0.004	0.008	0.003	55
Idaho	0.002	0.003	0.001	24
Illinois	0.073	0.166	0.056	1,016
Indiana	0.093	0.176	0.058	1,293
Iowa	0.014	0.024	0.008	170
Kansas	0.021	0.037	0.012	233
Kentucky	0.009	0.017	0.006	120
Louisiana	0.010	0.019	0.007	139
Maine	0.001	0.003	0.001	21
Maryland	0.014	0.028	0.009	161
Massachusetts	0.011	0.023	0.008	129
Michigan	0.008	0.017	0.006	119
Minnesota	0.031	0.064	0.022	417
Mississippi	0.034	0.058	0.020	442
Missouri	0.013	0.027	0.008	163
Montana	0.002	0.003	0.001	28
Nebraska	0.006	0.010	0.003	66
Nevada	0.009	0.017	0.006	121
New Hampshire	0.001	0.001	0.000	6
New Jersey	0.116	0.253	0.079	1,379
New Mexico	0.002	0.004	0.001	32
New York	0.033	0.064	0.019	315
North Carolina	0.026	0.054	0.018	389
North Dakota	0.009	0.014	0.005	96
Ohio	0.052	0.110	0.037	756
Oklahoma	0.014	0.026	0.009	199
Oregon	0.004	0.007	0.002	51
Pennsylvania	0.056	0.122	0.040	772
Rhode Island	0.004	0.008	0.002	49
South Carolina	0.057	0.112	0.038	842
South Dakota	0.001	0.002	0.001	15
Tennessee	0.048	0.102	0.034	686
Texas	0.158	0.360	0.122	2,430
Utah	0.047	0.102	0.035	838
Vermont	0.004	0.007	0.002	52
Virginia	0.049	0.099	0.031	576
Washington	0.021	0.042	0.014	270
West Virginia	0.002	0.004	0.001	26
Wisconsin	0.031	0.060	0.021	444
Wyoming	0.000	0.000	0.000	3
State Totals	**1.562**	**3.263**	**1.090**	**21,636**
Interstate Spillovers	**0.000**	**1.005**	**0.332**	**7,108**
U.S. Totals	**1.562**	**4.268**	**1.422**	**28,744**

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, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.080	0.151	0.052	1,125
Alaska	0.017	0.029	0.010	190
Arizona	0.106	0.218	0.076	1,620
Arkansas	0.045	0.078	0.027	560
California	0.472	1.058	0.365	6,527
Colorado	0.102	0.230	0.080	1,482
Connecticut	0.059	0.117	0.039	664
Delaware	0.006	0.010	0.003	49
District of Columbia	0.075	0.105	0.008	132
Florida	0.342	0.727	0.254	5,435
Georgia	0.199	0.442	0.149	3,051
Hawaii	0.022	0.042	0.015	298
Idaho	0.030	0.052	0.018	386
Illinois	0.265	0.606	0.203	3,696
Indiana	0.110	0.209	0.069	1,533
Iowa	0.071	0.117	0.040	845
Kansas	0.075	0.130	0.041	820
Kentucky	0.050	0.096	0.031	667
Louisiana	0.089	0.165	0.058	1,194
Maine	0.012	0.023	0.008	177
Maryland	0.115	0.231	0.074	1,322
Massachusetts	0.140	0.296	0.098	1,662
Michigan	0.127	0.261	0.090	1,831
Minnesota	0.104	0.216	0.074	1,417
Mississippi	0.023	0.039	0.013	297
Missouri	0.159	0.328	0.100	1,995
Montana	0.014	0.024	0.008	192
Nebraska	0.033	0.054	0.019	369
Nevada	0.168	0.313	0.110	2,221
New Hampshire	0.028	0.055	0.017	343
New Jersey	0.079	0.171	0.054	932
New Mexico	0.035	0.062	0.022	486
New York	0.664	1.302	0.385	6,429
North Carolina	0.197	0.408	0.139	2,948
North Dakota	0.013	0.021	0.007	142
Ohio	0.177	0.377	0.126	2,594
Oklahoma	0.073	0.138	0.048	1,062
Oregon	0.081	0.160	0.054	1,162
Pennsylvania	0.146	0.318	0.105	2,015
Rhode Island	0.016	0.030	0.009	182
South Carolina	0.093	0.184	0.062	1,380
South Dakota	0.015	0.023	0.008	156
Tennessee	0.123	0.260	0.086	1,754
Texas	0.527	1.203	0.409	8,120
Utah	0.063	0.138	0.048	1,126
Vermont	0.011	0.019	0.007	145
Virginia	0.120	0.243	0.077	1,416
Washington	0.107	0.213	0.072	1,353
West Virginia	0.014	0.023	0.008	170
Wisconsin	0.106	0.204	0.070	1,504
Wyoming	0.010	0.015	0.005	106
State Totals	**5.809**	**11.935**	**3.947**	**77,277**
Interstate Spillovers	**0.000**	**3.937**	**1.343**	**29,630**
U.S. Totals	**5.809**	**15.872**	**5.291**	**106,906**

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, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.319	0.601	0.208	4,494
Alaska	0.031	0.054	0.019	359
Arizona	0.333	0.683	0.239	5,073
Arkansas	0.073	0.125	0.043	898
California	0.948	2.125	0.733	13,114
Colorado	0.252	0.571	0.197	3,672
Connecticut	0.128	0.255	0.084	1,442
Delaware	0.053	0.094	0.025	460
District of Columbia	0.207	0.290	0.023	363
Florida	0.654	1.388	0.486	10,386
Georgia	0.515	1.147	0.386	7,916
Hawaii	0.047	0.089	0.031	624
Idaho	0.073	0.125	0.044	932
Illinois	0.544	1.241	0.416	7,572
Indiana	0.412	0.785	0.259	5,756
Iowa	0.914	1.513	0.512	10,928
Kansas	0.198	0.342	0.109	2,163
Kentucky	0.146	0.279	0.089	1,943
Louisiana	0.430	0.802	0.282	5,799
Maine	0.034	0.063	0.022	492
Maryland	0.240	0.484	0.155	2,765
Massachusetts	0.562	1.184	0.394	6,661
Michigan	0.296	0.606	0.209	4,254
Minnesota	0.263	0.546	0.185	3,573
Mississippi	0.077	0.133	0.045	1,005
Missouri	0.285	0.586	0.178	3,569
Montana	0.018	0.031	0.011	252
Nebraska	0.060	0.099	0.034	675
Nevada	0.269	0.501	0.175	3,554
New Hampshire	0.068	0.132	0.041	822
New Jersey	0.362	0.786	0.247	4,290
New Mexico	0.155	0.272	0.097	2,121
New York	1.567	3.072	0.909	15,171
North Carolina	0.569	1.180	0.401	8,518
North Dakota	0.032	0.051	0.017	341
Ohio	0.656	1.394	0.466	9,591
Oklahoma	0.134	0.255	0.088	1,958
Oregon	0.180	0.356	0.120	2,578
Pennsylvania	0.466	1.012	0.334	6,412
Rhode Island	0.025	0.046	0.014	279
South Carolina	0.331	0.652	0.219	4,900
South Dakota	0.028	0.043	0.014	289
Tennessee	0.428	0.904	0.299	6,092
Texas	1.391	3.177	1.080	21,443
Utah	0.171	0.371	0.128	3,039
Vermont	0.021	0.038	0.013	289
Virginia	0.354	0.719	0.227	4,186
Washington	0.213	0.425	0.144	2,704
West Virginia	0.018	0.030	0.010	221
Wisconsin	0.300	0.576	0.198	4,238
Wyoming	0.028	0.044	0.015	306
State Totals	**15.877**	**32.280**	**10.677**	**210,485**
Interstate Spillovers	**0.000**	**11.106**	**3.784**	**81,735**
U.S. Totals	**15.877**	**43.386**	**14.461**	**292,219**

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)**, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.048	0.109	0.035	934
Alaska	0.011	0.021	0.007	153
Arizona	0.066	0.142	0.048	1,170
Arkansas	0.020	0.041	0.013	353
California	0.303	0.699	0.232	4,975
Colorado	0.082	0.190	0.063	1,524
Connecticut	0.023	0.047	0.015	318
Delaware	0.014	0.026	0.007	174
District of Columbia	0.132	0.160	0.011	227
Florida	0.202	0.436	0.147	3,933
Georgia	0.057	0.138	0.044	1,146
Hawaii	0.020	0.038	0.013	297
Idaho	0.022	0.041	0.014	388
Illinois	0.143	0.349	0.111	2,444
Indiana	0.077	0.175	0.054	1,417
Iowa	0.151	0.282	0.090	2,419
Kansas	0.088	0.172	0.051	1,306
Kentucky	0.029	0.065	0.019	543
Louisiana	0.053	0.111	0.036	895
Maine	0.017	0.035	0.012	327
Maryland	0.097	0.196	0.061	1,324
Massachusetts	0.277	0.581	0.185	3,899
Michigan	0.055	0.127	0.042	1,125
Minnesota	0.076	0.168	0.054	1,343
Mississippi	0.020	0.041	0.013	361
Missouri	0.067	0.155	0.046	1,171
Montana	0.001	0.001	0.000	14
Nebraska	0.018	0.031	0.010	255
Nevada	0.045	0.088	0.030	676
New Hampshire	0.021	0.045	0.014	340
New Jersey	0.166	0.372	0.115	2,456
New Mexico	0.013	0.024	0.008	217
New York	0.714	1.387	0.433	9,082
North Carolina	0.170	0.394	0.126	3,434
North Dakota	0.009	0.016	0.005	130
Ohio	0.148	0.360	0.113	2,912
Oklahoma	0.038	0.082	0.027	742
Oregon	0.063	0.138	0.043	1,092
Pennsylvania	0.191	0.472	0.147	3,435
Rhode Island	0.001	0.002	0.000	11
South Carolina	0.037	0.086	0.027	753
South Dakota	0.007	0.012	0.004	105
Tennessee	0.080	0.189	0.058	1,486
Texas	0.569	1.431	0.462	10,657
Utah	0.049	0.116	0.038	995
Vermont	0.005	0.010	0.003	93
Virginia	0.181	0.387	0.119	2,948
Washington	0.083	0.183	0.060	1,337
West Virginia	0.002	0.004	0.001	32
Wisconsin	0.069	0.151	0.049	1,253
Wyoming	0.002	0.004	0.001	32
State Totals	**4.832**	**10.528**	**3.317**	**78,652**
Interstate Spillovers	**0.000**	**4.381**	**1.402**	**34,510**
U.S. Total	**4.832**	**14.910**	**4.719**	**113,161**

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),** 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.152	0.342	0.110	2,944
Alaska	0.000	0.000	0.000	1
Arizona	0.079	0.169	0.057	1,388
Arkansas	0.003	0.007	0.002	60
California	0.031	0.072	0.024	515
Colorado	0.029	0.067	0.022	533
Connecticut	0.011	0.021	0.007	145
Delaware	0.007	0.013	0.004	90
District of Columbia	0.000	0.000	0.000	0
Florida	0.028	0.061	0.021	548
Georgia	0.140	0.339	0.108	2,826
Hawaii	0.001	0.001	0.000	9
Idaho	0.016	0.030	0.010	285
Illinois	0.052	0.125	0.040	878
Indiana	0.109	0.245	0.076	1,989
Iowa	0.555	1.040	0.331	8,912
Kansas	0.011	0.022	0.007	170
Kentucky	0.047	0.104	0.031	873
Louisiana	0.227	0.473	0.155	3,807
Maine	0.003	0.005	0.002	50
Maryland	0.012	0.024	0.008	165
Massachusetts	0.111	0.233	0.074	1,565
Michigan	0.086	0.196	0.065	1,739
Minnesota	0.043	0.096	0.031	768
Mississippi	0.001	0.001	0.000	10
Missouri	0.038	0.087	0.026	660
Montana	0.001	0.002	0.001	23
Nebraska	0.003	0.005	0.002	44
Nevada	0.038	0.075	0.025	573
New Hampshire	0.015	0.032	0.010	237
New Jersey	0.001	0.003	0.001	21
New Mexico	0.085	0.159	0.053	1,459
New York	0.132	0.257	0.080	1,682
North Carolina	0.144	0.335	0.107	2,917
North Dakota	0.000	0.001	0.000	5
Ohio	0.228	0.556	0.175	4,494
Oklahoma	0.008	0.017	0.006	158
Oregon	0.027	0.059	0.018	464
Pennsylvania	0.060	0.147	0.046	1,072
Rhode Island	0.003	0.005	0.002	40
South Carolina	0.117	0.270	0.085	2,369
South Dakota	0.004	0.007	0.002	65
Tennessee	0.145	0.344	0.106	2,709
Texas	0.116	0.291	0.094	2,169
Utah	0.009	0.022	0.007	190
Vermont	0.001	0.002	0.001	21
Virginia	0.005	0.011	0.003	84
Washington	0.003	0.006	0.002	41
West Virginia	0.000	0.000	0.000	0
Wisconsin	0.076	0.167	0.054	1,388
Wyoming	0.013	0.022	0.007	174
State Totals	**3.028**	**6.573**	**2.098**	**53,328**
Interstate Spillovers	**0.000**	**2.770**	**0.859**	**17,583**
U.S. Total	**3.028**	**9.343**	**2.957**	**70,910**

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),** 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.006	0.013	0.004	116
Alaska	0.004	0.007	0.003	55
Arizona	0.084	0.180	0.061	1,476
Arkansas	0.005	0.009	0.003	81
California	0.178	0.411	0.136	2,926
Colorado	0.044	0.103	0.034	822
Connecticut	0.043	0.087	0.028	595
Delaware	0.033	0.061	0.017	412
District of Columbia	0.001	0.001	0.000	2
Florida	0.100	0.216	0.073	1,954
Georgia	0.115	0.279	0.089	2,327
Hawaii	0.005	0.010	0.004	81
Idaho	0.002	0.005	0.002	44
Illinois	0.095	0.231	0.073	1,618
Indiana	0.120	0.272	0.085	2,208
Iowa	0.018	0.035	0.011	297
Kansas	0.028	0.054	0.016	411
Kentucky	0.012	0.026	0.008	218
Louisiana	0.013	0.028	0.009	225
Maine	0.002	0.004	0.001	37
Maryland	0.018	0.037	0.011	249
Massachusetts	0.014	0.030	0.009	199
Michigan	0.011	0.025	0.008	218
Minnesota	0.040	0.089	0.029	710
Mississippi	0.044	0.091	0.028	799
Missouri	0.017	0.039	0.012	297
Montana	0.003	0.005	0.002	49
Nebraska	0.008	0.013	0.004	110
Nevada	0.012	0.023	0.008	178
New Hampshire	0.001	0.001	0.000	11
New Jersey	0.151	0.339	0.105	2,236
New Mexico	0.003	0.006	0.002	52
New York	0.042	0.082	0.026	539
North Carolina	0.034	0.078	0.025	682
North Dakota	0.012	0.021	0.006	162
Ohio	0.067	0.164	0.051	1,323
Oklahoma	0.018	0.038	0.012	344
Oregon	0.005	0.010	0.003	81
Pennsylvania	0.073	0.180	0.056	1,309
Rhode Island	0.006	0.011	0.003	81
South Carolina	0.074	0.170	0.053	1,493
South Dakota	0.002	0.003	0.001	29
Tennessee	0.063	0.149	0.046	1,171
Texas	0.205	0.516	0.167	3,844
Utah	0.061	0.145	0.047	1,240
Vermont	0.005	0.010	0.003	86
Virginia	0.063	0.136	0.042	1,035
Washington	0.028	0.061	0.020	448
West Virginia	0.003	0.005	0.002	42
Wisconsin	0.041	0.089	0.029	742
Wyoming	0.000	0.001	0.000	5
State Totals	**2.032**	**4.600**	**1.469**	**35,670**
Interstate Spillovers	**0.000**	**1.671**	**0.516**	**11,928**
U.S. Total	**2.032**	**6.271**	**1.985**	**47,597**

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)**, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.102	0.230	0.074	1,979
Alaska	0.021	0.038	0.013	283
Arizona	0.137	0.293	0.099	2,404
Arkansas	0.058	0.119	0.037	1,030
California	0.605	1.395	0.463	9,936
Colorado	0.131	0.303	0.101	2,426
Connecticut	0.075	0.152	0.049	1,038
Delaware	0.007	0.014	0.004	91
District of Columbia	0.096	0.117	0.008	166
Florida	0.439	0.948	0.320	8,558
Georgia	0.255	0.616	0.197	5,135
Hawaii	0.029	0.055	0.019	431
Idaho	0.039	0.073	0.024	695
Illinois	0.340	0.829	0.263	5,803
Indiana	0.141	0.318	0.099	2,578
Iowa	0.091	0.170	0.054	1,456
Kansas	0.096	0.188	0.055	1,426
Kentucky	0.064	0.142	0.043	1,189
Louisiana	0.114	0.237	0.078	1,903
Maine	0.015	0.032	0.011	297
Maryland	0.147	0.297	0.092	2,007
Massachusetts	0.180	0.377	0.120	2,534
Michigan	0.163	0.373	0.123	3,309
Minnesota	0.134	0.297	0.096	2,376
Mississippi	0.029	0.060	0.019	530
Missouri	0.204	0.473	0.142	3,575
Montana	0.018	0.033	0.011	322
Nebraska	0.042	0.074	0.024	608
Nevada	0.216	0.422	0.141	3,223
New Hampshire	0.036	0.078	0.024	583
New Jersey	0.101	0.226	0.070	1,489
New Mexico	0.045	0.085	0.028	778
New York	0.852	1.655	0.517	10,837
North Carolina	0.252	0.584	0.187	5,095
North Dakota	0.017	0.030	0.009	236
Ohio	0.227	0.554	0.174	4,476
Oklahoma	0.093	0.199	0.066	1,814
Oregon	0.104	0.229	0.071	1,805
Pennsylvania	0.188	0.463	0.144	3,367
Rhode Island	0.021	0.040	0.012	297
South Carolina	0.119	0.275	0.086	2,412
South Dakota	0.020	0.034	0.011	309
Tennessee	0.158	0.375	0.115	2,951
Texas	0.675	1.699	0.549	12,655
Utah	0.081	0.191	0.063	1,641
Vermont	0.014	0.026	0.009	237
Virginia	0.154	0.330	0.101	2,509
Washington	0.137	0.302	0.099	2,211
West Virginia	0.017	0.034	0.010	272
Wisconsin	0.136	0.299	0.097	2,479
Wyoming	0.012	0.021	0.007	169
State Totals	**7.449**	**16.404**	**5.226**	**125,929**
Interstate Spillovers	**0.000**	**6.580**	**2.049**	**48,509**
U.S. Total	**7.449**	**22.983**	**7.274**	**174,438**

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)**, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.309	0.695	0.222	5,972
Alaska	0.037	0.066	0.022	493
Arizona	0.366	0.784	0.265	6,438
Arkansas	0.086	0.175	0.055	1,524
California	1.118	2.577	0.856	18,353
Colorado	0.285	0.663	0.220	5,305
Connecticut	0.152	0.307	0.099	2,096
Delaware	0.061	0.114	0.031	766
District of Columbia	0.229	0.279	0.020	395
Florida	0.769	1.661	0.561	14,994
Georgia	0.567	1.372	0.438	11,435
Hawaii	0.055	0.105	0.036	819
Idaho	0.079	0.149	0.050	1,412
Illinois	0.630	1.535	0.487	10,743
Indiana	0.447	1.009	0.315	8,192
Iowa	0.815	1.526	0.486	13,084
Kansas	0.224	0.436	0.129	3,313
Kentucky	0.153	0.337	0.101	2,822
Louisiana	0.408	0.849	0.279	6,830
Maine	0.037	0.076	0.025	711
Maryland	0.275	0.555	0.172	3,745
Massachusetts	0.581	1.221	0.388	8,199
Michigan	0.315	0.721	0.238	6,392
Minnesota	0.293	0.650	0.209	5,198
Mississippi	0.093	0.193	0.060	1,699
Missouri	0.326	0.754	0.226	5,702
Montana	0.022	0.042	0.014	407
Nebraska	0.070	0.124	0.040	1,017
Nevada	0.311	0.608	0.203	4,649
New Hampshire	0.073	0.156	0.048	1,170
New Jersey	0.420	0.939	0.291	6,202
New Mexico	0.146	0.273	0.091	2,506
New York	1.740	3.382	1.055	22,141
North Carolina	0.601	1.391	0.444	12,128
North Dakota	0.038	0.068	0.021	533
Ohio	0.671	1.633	0.514	13,205
Oklahoma	0.157	0.336	0.111	3,057
Oregon	0.198	0.436	0.136	3,442
Pennsylvania	0.512	1.262	0.393	9,184
Rhode Island	0.030	0.058	0.018	429
South Carolina	0.348	0.801	0.252	7,027
South Dakota	0.032	0.056	0.018	507
Tennessee	0.445	1.057	0.324	8,317
Texas	1.565	3.938	1.272	29,325
Utah	0.201	0.474	0.156	4,065
Vermont	0.025	0.049	0.016	437
Virginia	0.403	0.864	0.265	6,576
Washington	0.250	0.551	0.180	4,037
West Virginia	0.022	0.043	0.013	346
Wisconsin	0.322	0.707	0.230	5,861
Wyoming	0.028	0.048	0.016	380
State Totals	**17.341**	**38.105**	**12.109**	**293,578**
Interstate Spillovers	**0.000**	**15.402**	**4.826**	**112,529**
U.S. Total	**17.341**	**53.507**	**16.935**	**406,107**

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)**, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.165	0.371	0.119	3,187
Alaska	0.039	0.071	0.024	524
Arizona	0.227	0.486	0.164	3,995
Arkansas	0.068	0.139	0.043	1,205
California	1.034	2.385	0.792	16,984
Colorado	0.280	0.650	0.216	5,201
Connecticut	0.079	0.159	0.051	1,087
Delaware	0.047	0.088	0.024	593
District of Columbia	0.450	0.547	0.038	775
Florida	0.688	1.487	0.502	13,428
Georgia	0.194	0.470	0.150	3,914
Hawaii	0.068	0.130	0.044	1,014
Idaho	0.074	0.139	0.046	1,324
Illinois	0.489	1.192	0.378	8,342
Indiana	0.264	0.596	0.186	4,838
Iowa	0.514	0.963	0.307	8,256
Kansas	0.302	0.587	0.173	4,460
Kentucky	0.100	0.221	0.067	1,853
Louisiana	0.182	0.380	0.125	3,054
Maine	0.058	0.119	0.040	1,115
Maryland	0.331	0.670	0.207	4,521
Massachusetts	0.944	1.982	0.630	13,312
Michigan	0.189	0.433	0.143	3,842
Minnesota	0.258	0.573	0.185	4,585
Mississippi	0.068	0.139	0.044	1,231
Missouri	0.228	0.529	0.158	3,996
Montana	0.003	0.005	0.002	47
Nebraska	0.060	0.106	0.034	871
Nevada	0.154	0.302	0.101	2,306
New Hampshire	0.072	0.155	0.047	1,160
New Jersey	0.567	1.270	0.394	8,384
New Mexico	0.043	0.081	0.027	741
New York	2.437	4.736	1.478	31,004
North Carolina	0.581	1.345	0.429	11,724
North Dakota	0.032	0.056	0.017	442
Ohio	0.505	1.229	0.387	9,940
Oklahoma	0.130	0.278	0.092	2,532
Oregon	0.215	0.472	0.148	3,729
Pennsylvania	0.654	1.612	0.502	11,728
Rhode Island	0.003	0.005	0.002	38
South Carolina	0.127	0.293	0.092	2,571
South Dakota	0.023	0.039	0.013	358
Tennessee	0.272	0.645	0.198	5,074
Texas	1.942	4.885	1.578	36,381
Utah	0.168	0.396	0.130	3,396
Vermont	0.018	0.035	0.011	318
Virginia	0.616	1.322	0.405	10,062
Washington	0.282	0.623	0.203	4,563
West Virginia	0.007	0.013	0.004	108
Wisconsin	0.235	0.516	0.168	4,277
Wyoming	0.008	0.014	0.005	111
State Totals	**16.496**	**35.941**	**11.323**	**268,500**
Interstate Spillovers	**0.000**	**14.957**	**4.787**	**117,809**
U.S. Totals	**16.496**	**50.898**	**16.110**	**386,309**

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),** 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.596	1.340	0.429	11,518
Alaska	0.000	0.000	0.000	3
Arizona	0.308	0.661	0.223	5,432
Arkansas	0.013	0.027	0.008	235
California	0.123	0.283	0.094	2,016
Colorado	0.112	0.261	0.087	2,084
Connecticut	0.041	0.083	0.027	567
Delaware	0.028	0.052	0.014	351
District of Columbia	0.001	0.001	0.000	1
Florida	0.110	0.238	0.080	2,145
Georgia	0.548	1.327	0.424	11,060
Hawaii	0.002	0.005	0.002	36
Idaho	0.062	0.117	0.039	1,114
Illinois	0.202	0.491	0.156	3,436
Indiana	0.425	0.959	0.299	7,783
Iowa	2.172	4.068	1.296	34,875
Kansas	0.045	0.087	0.026	664
Kentucky	0.185	0.408	0.123	3,415
Louisiana	0.889	1.852	0.607	14,896
Maine	0.010	0.021	0.007	196
Maryland	0.047	0.095	0.030	644
Massachusetts	0.434	0.912	0.290	6,126
Michigan	0.336	0.768	0.253	6,806
Minnesota	0.169	0.376	0.121	3,005
Mississippi	0.002	0.004	0.001	39
Missouri	0.148	0.342	0.102	2,583
Montana	0.005	0.009	0.003	91
Nebraska	0.012	0.021	0.007	174
Nevada	0.150	0.293	0.098	2,241
New Hampshire	0.058	0.124	0.038	926
New Jersey	0.006	0.013	0.004	84
New Mexico	0.333	0.623	0.208	5,709
New York	0.517	1.005	0.314	6,581
North Carolina	0.565	1.309	0.418	11,413
North Dakota	0.001	0.002	0.001	19
Ohio	0.894	2.175	0.684	17,587
Oklahoma	0.032	0.068	0.022	617
Oregon	0.105	0.230	0.072	1,817
Pennsylvania	0.234	0.576	0.180	4,194
Rhode Island	0.011	0.021	0.006	156
South Carolina	0.459	1.057	0.332	9,271
South Dakota	0.016	0.028	0.009	252
Tennessee	0.568	1.347	0.413	10,600
Texas	0.453	1.140	0.368	8,487
Utah	0.037	0.087	0.028	742
Vermont	0.005	0.009	0.003	81
Virginia	0.020	0.043	0.013	330
Washington	0.010	0.022	0.007	162
West Virginia	0.000	0.000	0.000	0
Wisconsin	0.299	0.655	0.213	5,430
Wyoming	0.050	0.086	0.028	679
State Totals	**11.849**	**25.721**	**8.208**	**208,675**
Interstate Spillovers	**0.000**	**10.838**	**3.363**	**68,801**
U.S. Totals	**11.849**	**36.559**	**11.571**	**277,476**

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),** 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.017	0.038	0.012	325
Alaska	0.012	0.021	0.007	155
Arizona	0.235	0.504	0.170	4,141
Arkansas	0.013	0.026	0.008	226
California	0.500	1.153	0.383	8,209
Colorado	0.124	0.288	0.096	2,306
Connecticut	0.121	0.244	0.079	1,668
Delaware	0.092	0.172	0.047	1,155
District of Columbia	0.003	0.003	0.000	5
Florida	0.281	0.607	0.205	5,481
Georgia	0.324	0.783	0.250	6,527
Hawaii	0.015	0.029	0.010	227
Idaho	0.007	0.013	0.004	124
Illinois	0.266	0.649	0.206	4,539
Indiana	0.338	0.763	0.238	6,193
Iowa	0.052	0.097	0.031	833
Kansas	0.078	0.152	0.045	1,152
Kentucky	0.033	0.073	0.022	611
Louisiana	0.038	0.079	0.026	632
Maine	0.005	0.011	0.004	103
Maryland	0.051	0.103	0.032	698
Massachusetts	0.040	0.083	0.026	560
Michigan	0.030	0.069	0.023	612
Minnesota	0.112	0.249	0.080	1,993
Mississippi	0.123	0.254	0.079	2,242
Missouri	0.048	0.110	0.033	833
Montana	0.007	0.014	0.005	136
Nebraska	0.021	0.037	0.012	308
Nevada	0.034	0.065	0.022	500
New Hampshire	0.002	0.004	0.001	30
New Jersey	0.424	0.950	0.295	6,272
New Mexico	0.008	0.016	0.005	145
New York	0.119	0.231	0.072	1,513
North Carolina	0.095	0.219	0.070	1,913
North Dakota	0.033	0.058	0.018	455
Ohio	0.189	0.459	0.144	3,711
Oklahoma	0.050	0.106	0.035	965
Oregon	0.013	0.029	0.009	226
Pennsylvania	0.205	0.505	0.157	3,673
Rhode Island	0.016	0.031	0.009	228
South Carolina	0.207	0.477	0.150	4,188
South Dakota	0.005	0.009	0.003	82
Tennessee	0.176	0.418	0.128	3,285
Texas	0.575	1.448	0.468	10,783
Utah	0.172	0.406	0.133	3,477
Vermont	0.014	0.027	0.009	242
Virginia	0.178	0.382	0.117	2,905
Washington	0.078	0.172	0.056	1,258
West Virginia	0.008	0.015	0.004	119
Wisconsin	0.115	0.251	0.082	2,082
Wyoming	0.001	0.002	0.001	15
State Totals	**5.702**	**12.904**	**4.121**	**100,063**
Interstate Spillovers	**0.000**	**4.688**	**1.447**	**33,461**
U.S. Totals	**5.702**	**17.592**	**5.568**	**133,523**

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)**, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.208	0.468	0.150	4,022
Alaska	0.043	0.077	0.026	575
Arizona	0.277	0.595	0.201	4,885
Arkansas	0.118	0.241	0.075	2,093
California	1.230	2.835	0.942	20,192
Colorado	0.265	0.616	0.205	4,931
Connecticut	0.153	0.309	0.099	2,110
Delaware	0.015	0.027	0.008	184
District of Columbia	0.196	0.238	0.017	338
Florida	0.892	1.927	0.650	17,391
Georgia	0.517	1.252	0.400	10,436
Hawaii	0.059	0.112	0.038	876
Idaho	0.079	0.149	0.050	1,413
Illinois	0.692	1.685	0.534	11,793
Indiana	0.286	0.645	0.201	5,238
Iowa	0.184	0.345	0.110	2,959
Kansas	0.196	0.381	0.113	2,897
Kentucky	0.131	0.289	0.087	2,416
Louisiana	0.231	0.481	0.158	3,867
Maine	0.031	0.065	0.022	604
Maryland	0.299	0.604	0.187	4,079
Massachusetts	0.365	0.767	0.244	5,150
Michigan	0.332	0.758	0.250	6,723
Minnesota	0.272	0.603	0.194	4,828
Mississippi	0.059	0.122	0.038	1,077
Missouri	0.415	0.961	0.288	7,265
Montana	0.036	0.068	0.023	654
Nebraska	0.085	0.150	0.048	1,235
Nevada	0.439	0.857	0.286	6,549
New Hampshire	0.074	0.158	0.048	1,185
New Jersey	0.205	0.458	0.142	3,025
New Mexico	0.092	0.172	0.058	1,581
New York	1.731	3.364	1.050	22,023
North Carolina	0.513	1.188	0.379	10,353
North Dakota	0.035	0.061	0.019	480
Ohio	0.462	1.125	0.354	9,095
Oklahoma	0.189	0.405	0.133	3,686
Oregon	0.211	0.464	0.145	3,668
Pennsylvania	0.381	0.940	0.293	6,843
Rhode Island	0.042	0.082	0.025	603
South Carolina	0.243	0.559	0.176	4,901
South Dakota	0.040	0.069	0.023	627
Tennessee	0.321	0.762	0.234	5,996
Texas	1.372	3.453	1.115	25,716
Utah	0.165	0.389	0.128	3,335
Vermont	0.028	0.054	0.017	482
Virginia	0.312	0.670	0.205	5,098
Washington	0.278	0.614	0.200	4,493
West Virginia	0.036	0.068	0.021	552
Wisconsin	0.277	0.607	0.198	5,037
Wyoming	0.025	0.043	0.014	343
State Totals	**15.137**	**33.334**	**10.619**	**255,901**
Interstate Spillovers	**0.000**	**13.370**	**4.163**	**98,575**
U.S. Totals	**15.137**	**46.704**	**14.782**	**354,477**

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)**, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.9859	2.2157	0.7090	19,052
Alaska	0.0941	0.1694	0.0569	1,257
Arizona	1.0480	2.2467	0.7582	18,452
Arkansas	0.2123	0.4326	0.1349	3,759
California	2.8864	6.6551	2.2110	47,402
Colorado	0.7811	1.8158	0.6033	14,523
Connecticut	0.3941	0.7946	0.2557	5,432
Delaware	0.1824	0.3405	0.0934	2,283
District of Columbia	0.6492	0.7899	0.0555	1,119
Florida	1.9710	4.2588	1.4377	38,445
Georgia	1.5836	3.8313	1.2242	31,936
Hawaii	0.1439	0.2761	0.0943	2,154
Idaho	0.2226	0.4182	0.1394	3,975
Illinois	1.6489	4.0165	1.2739	28,111
Indiana	1.3126	2.9631	0.9237	24,053
Iowa	2.9228	5.4735	1.7434	46,923
Kansas	0.6201	1.2073	0.3563	9,173
Kentucky	0.4486	0.9907	0.2978	8,295
Louisiana	1.3404	2.7909	0.9155	22,450
Maine	0.1047	0.2161	0.0722	2,018
Maryland	0.7287	1.4731	0.4562	9,943
Massachusetts	1.7832	3.7450	1.1901	25,147
Michigan	0.8867	2.0281	0.6688	17,984
Minnesota	0.8115	1.8011	0.5800	14,412
Mississippi	0.2524	0.5199	0.1626	4,588
Missouri	0.8388	1.9412	0.5815	14,676
Montana	0.0509	0.0959	0.0323	928
Nebraska	0.1787	0.3146	0.1015	2,588
Nevada	0.7768	1.5168	0.5066	11,596
New Hampshire	0.2051	0.4408	0.1350	3,301
New Jersey	1.2021	2.6909	0.8345	17,765
New Mexico	0.4775	0.8915	0.2982	8,175
New York	4.8034	9.3359	2.9133	61,121
North Carolina	1.7533	4.0610	1.2962	35,404
North Dakota	0.1007	0.1771	0.0543	1,396
Ohio	2.0499	4.9883	1.5692	40,333
Oklahoma	0.4010	0.8576	0.2819	7,800
Oregon	0.5439	1.1951	0.3738	9,439
Pennsylvania	1.4736	3.6332	1.1321	26,438
Rhode Island	0.0718	0.1396	0.0420	1,025
South Carolina	1.0368	2.3860	0.7500	20,931
South Dakota	0.0834	0.1452	0.0477	1,319
Tennessee	1.3362	3.1722	0.9729	24,954
Texas	4.3423	10.9261	3.5290	81,368
Utah	0.5413	1.2773	0.4195	10,951
Vermont	0.0650	0.1252	0.0402	1,123
Virginia	1.1267	2.4169	0.7408	18,394
Washington	0.6478	1.4307	0.4668	10,475
West Virginia	0.0501	0.0966	0.0293	779
Wisconsin	0.9257	2.0286	0.6607	16,825
Wyoming	0.0849	0.1453	0.0475	1,149
State Totals	**49.1827**	**107.8996**	**34.2709**	**833,138**
Interstate Spillovers	**0.0000**	**43.8535**	**13.7609**	**318,646**
U.S. Totals	**49.1827**	**151.7531**	**48.0318**	**1,151,784**

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)**, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.072	0.162	0.052	1,391
Alaska	0.017	0.031	0.010	229
Arizona	0.099	0.212	0.072	1,743
Arkansas	0.030	0.061	0.019	526
California	0.451	1.041	0.346	7,411
Colorado	0.122	0.284	0.094	2,270
Connecticut	0.034	0.069	0.022	474
Delaware	0.021	0.039	0.011	259
District of Columbia	0.196	0.239	0.017	338
Florida	0.300	0.649	0.219	5,859
Georgia	0.085	0.205	0.065	1,708
Hawaii	0.030	0.057	0.019	443
Idaho	0.032	0.061	0.020	578
Illinois	0.214	0.520	0.165	3,640
Indiana	0.115	0.260	0.081	2,111
Iowa	0.224	0.420	0.134	3,603
Kansas	0.132	0.256	0.076	1,946
Kentucky	0.044	0.097	0.029	808
Louisiana	0.080	0.166	0.054	1,333
Maine	0.025	0.052	0.017	487
Maryland	0.145	0.292	0.091	1,973
Massachusetts	0.412	0.865	0.275	5,809
Michigan	0.083	0.189	0.062	1,677
Minnesota	0.113	0.250	0.081	2,001
Mississippi	0.030	0.061	0.019	537
Missouri	0.100	0.231	0.069	1,744
Montana	0.001	0.002	0.001	20
Nebraska	0.026	0.046	0.015	380
Nevada	0.067	0.132	0.044	1,006
New Hampshire	0.031	0.068	0.021	506
New Jersey	0.248	0.554	0.172	3,658
New Mexico	0.019	0.035	0.012	323
New York	1.063	2.067	0.645	13,529
North Carolina	0.253	0.587	0.187	5,116
North Dakota	0.014	0.024	0.008	193
Ohio	0.220	0.536	0.169	4,337
Oklahoma	0.057	0.121	0.040	1,105
Oregon	0.094	0.206	0.064	1,627
Pennsylvania	0.285	0.703	0.219	5,118
Rhode Island	0.001	0.002	0.001	16
South Carolina	0.056	0.128	0.040	1,122
South Dakota	0.010	0.017	0.006	156
Tennessee	0.119	0.281	0.086	2,214
Texas	0.847	2.132	0.689	15,875
Utah	0.073	0.173	0.057	1,482
Vermont	0.008	0.015	0.005	139
Virginia	0.269	0.577	0.177	4,391
Washington	0.123	0.272	0.089	1,991
West Virginia	0.003	0.006	0.002	47
Wisconsin	0.103	0.225	0.073	1,866
Wyoming	0.004	0.006	0.002	48
State Totals	**7.198**	**15.683**	**4.941**	**117,164**
Interstate Spillovers	**0.000**	**6.527**	**2.089**	**51,408**
U.S. Totals	**7.198**	**22.210**	**7.030**	**168,571**

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),** 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.169	0.380	0.121	3,264
Alaska	0.000	0.000	0.000	1
Arizona	0.087	0.187	0.063	1,539
Arkansas	0.004	0.008	0.002	67
California	0.035	0.080	0.027	571
Colorado	0.032	0.074	0.025	591
Connecticut	0.012	0.023	0.008	161
Delaware	0.008	0.015	0.004	99
District of Columbia	0.000	0.000	0.000	0
Florida	0.031	0.067	0.023	608
Georgia	0.155	0.376	0.120	3,134
Hawaii	0.001	0.001	0.000	10
Idaho	0.018	0.033	0.011	316
Illinois	0.057	0.139	0.044	974
Indiana	0.120	0.272	0.085	2,205
Iowa	0.615	1.153	0.367	9,881
Kansas	0.013	0.025	0.007	188
Kentucky	0.052	0.116	0.035	968
Louisiana	0.252	0.525	0.172	4,221
Maine	0.003	0.006	0.002	55
Maryland	0.013	0.027	0.008	183
Massachusetts	0.123	0.258	0.082	1,736
Michigan	0.095	0.217	0.072	1,929
Minnesota	0.048	0.106	0.034	851
Mississippi	0.001	0.001	0.000	11
Missouri	0.042	0.097	0.029	732
Montana	0.001	0.003	0.001	26
Nebraska	0.003	0.006	0.002	49
Nevada	0.043	0.083	0.028	635
New Hampshire	0.016	0.035	0.011	262
New Jersey	0.002	0.004	0.001	24
New Mexico	0.094	0.176	0.059	1,617
New York	0.147	0.285	0.089	1,865
North Carolina	0.160	0.371	0.118	3,234
North Dakota	0.000	0.001	0.000	5
Ohio	0.253	0.616	0.194	4,983
Oklahoma	0.009	0.019	0.006	175
Oregon	0.030	0.065	0.020	515
Pennsylvania	0.066	0.163	0.051	1,188
Rhode Island	0.003	0.006	0.002	44
South Carolina	0.130	0.299	0.094	2,627
South Dakota	0.005	0.008	0.003	72
Tennessee	0.161	0.382	0.117	3,003
Texas	0.128	0.323	0.104	2,405
Utah	0.010	0.025	0.008	210
Vermont	0.001	0.003	0.001	23
Virginia	0.006	0.012	0.004	93
Washington	0.003	0.006	0.002	46
West Virginia	0.000	0.000	0.000	0
Wisconsin	0.085	0.185	0.060	1,539
Wyoming	0.014	0.024	0.008	193
State Totals	**3.357**	**7.288**	**2.326**	**59,124**
Interstate Spillovers	**0.000**	**3.071**	**0.953**	**19,494**
U.S. Totals	**3.357**	**10.358**	**3.279**	**78,618**

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),** 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.004	0.009	0.003	80
Alaska	0.003	0.005	0.002	38
Arizona	0.058	0.124	0.042	1,018
Arkansas	0.003	0.006	0.002	56
California	0.123	0.283	0.094	2,018
Colorado	0.030	0.071	0.024	567
Connecticut	0.030	0.060	0.019	410
Delaware	0.023	0.042	0.012	284
District of Columbia	0.001	0.001	0.000	1
Florida	0.069	0.149	0.050	1,347
Georgia	0.080	0.192	0.061	1,604
Hawaii	0.004	0.007	0.002	56
Idaho	0.002	0.003	0.001	31
Illinois	0.065	0.159	0.051	1,116
Indiana	0.083	0.188	0.058	1,522
Iowa	0.013	0.024	0.008	205
Kansas	0.019	0.037	0.011	283
Kentucky	0.008	0.018	0.005	150
Louisiana	0.009	0.019	0.006	155
Maine	0.001	0.003	0.001	25
Maryland	0.013	0.025	0.008	171
Massachusetts	0.010	0.020	0.007	138
Michigan	0.007	0.017	0.006	150
Minnesota	0.028	0.061	0.020	490
Mississippi	0.030	0.062	0.020	551
Missouri	0.012	0.027	0.008	205
Montana	0.002	0.003	0.001	33
Nebraska	0.005	0.009	0.003	76
Nevada	0.008	0.016	0.005	123
New Hampshire	0.000	0.001	0.000	7
New Jersey	0.104	0.233	0.072	1,541
New Mexico	0.002	0.004	0.001	36
New York	0.029	0.057	0.018	372
North Carolina	0.023	0.054	0.017	470
North Dakota	0.008	0.014	0.004	112
Ohio	0.046	0.113	0.035	912
Oklahoma	0.012	0.026	0.009	237
Oregon	0.003	0.007	0.002	56
Pennsylvania	0.050	0.124	0.039	903
Rhode Island	0.004	0.008	0.002	56
South Carolina	0.051	0.117	0.037	1,029
South Dakota	0.001	0.002	0.001	20
Tennessee	0.043	0.103	0.031	807
Texas	0.141	0.356	0.115	2,650
Utah	0.042	0.100	0.033	855
Vermont	0.003	0.007	0.002	59
Virginia	0.044	0.094	0.029	714
Washington	0.019	0.042	0.014	309
West Virginia	0.002	0.004	0.001	29
Wisconsin	0.028	0.062	0.020	512
Wyoming	0.000	0.000	0.000	4
State Totals	**1.401**	**3.172**	**1.013**	**24,593**
Interstate Spillovers	**0.000**	**1.152**	**0.356**	**8,224**
U.S. Totals	**1.401**	**4.324**	**1.369**	**32,817**

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)**, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.079	0.178	0.057	1,534
Alaska	0.016	0.030	0.010	219
Arizona	0.106	0.227	0.077	1,864
Arkansas	0.045	0.092	0.029	798
California	0.469	1.081	0.359	7,703
Colorado	0.101	0.235	0.078	1,881
Connecticut	0.058	0.118	0.038	805
Delaware	0.006	0.010	0.003	70
District of Columbia	0.075	0.091	0.006	129
Florida	0.340	0.735	0.248	6,635
Georgia	0.197	0.478	0.153	3,981
Hawaii	0.022	0.043	0.015	334
Idaho	0.030	0.057	0.019	539
Illinois	0.264	0.643	0.204	4,499
Indiana	0.109	0.246	0.077	1,998
Iowa	0.070	0.132	0.042	1,129
Kansas	0.075	0.145	0.043	1,105
Kentucky	0.050	0.110	0.033	922
Louisiana	0.088	0.183	0.060	1,475
Maine	0.012	0.025	0.008	231
Maryland	0.114	0.231	0.071	1,556
Massachusetts	0.139	0.293	0.093	1,965
Michigan	0.126	0.289	0.095	2,565
Minnesota	0.104	0.230	0.074	1,842
Mississippi	0.023	0.047	0.015	411
Missouri	0.158	0.367	0.110	2,771
Montana	0.014	0.026	0.009	250
Nebraska	0.033	0.057	0.018	471
Nevada	0.167	0.327	0.109	2,498
New Hampshire	0.028	0.060	0.018	452
New Jersey	0.078	0.175	0.054	1,154
New Mexico	0.035	0.066	0.022	603
New York	0.660	1.283	0.400	8,401
North Carolina	0.196	0.453	0.145	3,950
North Dakota	0.013	0.023	0.007	183
Ohio	0.176	0.429	0.135	3,470
Oklahoma	0.072	0.155	0.051	1,406
Oregon	0.081	0.177	0.055	1,399
Pennsylvania	0.145	0.359	0.112	2,610
Rhode Island	0.016	0.031	0.009	230
South Carolina	0.093	0.213	0.067	1,870
South Dakota	0.015	0.026	0.009	239
Tennessee	0.122	0.291	0.089	2,287
Texas	0.524	1.317	0.425	9,811
Utah	0.063	0.148	0.049	1,272
Vermont	0.011	0.021	0.007	184
Virginia	0.119	0.256	0.078	1,945
Washington	0.106	0.234	0.076	1,714
West Virginia	0.014	0.026	0.008	211
Wisconsin	0.106	0.232	0.075	1,921
Wyoming	0.010	0.017	0.005	131
State Totals	**5.774**	**12.716**	**4.051**	**97,624**
Interstate Spillovers	**0.000**	**5.101**	**1.588**	**37,606**
U.S. Totals	**5.774**	**17.817**	**5.639**	**135,229**

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)**, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.324	0.729	0.233	6,268
Alaska	0.036	0.066	0.022	487
Arizona	0.350	0.750	0.253	6,163
Arkansas	0.082	0.166	0.052	1,446
California	1.078	2.486	0.826	17,703
Colorado	0.285	0.664	0.220	5,308
Connecticut	0.134	0.271	0.087	1,850
Delaware	0.057	0.106	0.029	712
District of Columbia	0.272	0.331	0.023	469
Florida	0.741	1.601	0.540	14,449
Georgia	0.517	1.251	0.400	10,427
Hawaii	0.056	0.108	0.037	843
Idaho	0.082	0.154	0.051	1,463
Illinois	0.600	1.461	0.464	10,228
Indiana	0.428	0.965	0.301	7,837
Iowa	0.923	1.728	0.551	14,818
Kansas	0.238	0.464	0.137	3,523
Kentucky	0.154	0.340	0.102	2,848
Louisiana	0.429	0.893	0.293	7,184
Maine	0.041	0.085	0.029	798
Maryland	0.285	0.575	0.178	3,883
Massachusetts	0.684	1.437	0.457	9,647
Michigan	0.312	0.713	0.235	6,320
Minnesota	0.292	0.648	0.209	5,184
Mississippi	0.083	0.171	0.053	1,510
Missouri	0.312	0.721	0.216	5,451
Montana	0.018	0.034	0.011	329
Nebraska	0.067	0.119	0.038	976
Nevada	0.286	0.558	0.186	4,262
New Hampshire	0.076	0.164	0.050	1,228
New Jersey	0.432	0.966	0.300	6,378
New Mexico	0.151	0.281	0.094	2,579
New York	1.899	3.691	1.152	24,167
North Carolina	0.632	1.465	0.468	12,769
North Dakota	0.036	0.063	0.019	493
Ohio	0.696	1.695	0.533	13,702
Oklahoma	0.150	0.321	0.106	2,923
Oregon	0.207	0.455	0.142	3,597
Pennsylvania	0.547	1.349	0.420	9,819
Rhode Island	0.024	0.047	0.014	347
South Carolina	0.329	0.758	0.238	6,648
South Dakota	0.031	0.054	0.018	487
Tennessee	0.445	1.057	0.324	8,312
Texas	1.641	4.128	1.333	30,741
Utah	0.189	0.445	0.146	3,819
Vermont	0.023	0.045	0.015	405
Virginia	0.438	0.939	0.288	7,143
Washington	0.251	0.554	0.181	4,060
West Virginia	0.018	0.036	0.011	287
Wisconsin	0.321	0.704	0.229	5,838
Wyoming	0.028	0.048	0.016	376
State Totals	**17.731**	**38.859**	**12.330**	**298,505**
Interstate Spillovers	**0.000**	**15.850**	**4.986**	**116,731**
U.S. Totals	**17.731**	**54.709**	**17.316**	**415,236**

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)**, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.333	0.731	0.236	6,187
Alaska	0.079	0.142	0.048	1,038
Arizona	0.458	0.976	0.331	7,912
Arkansas	0.137	0.274	0.087	2,328
California	2.089	4.798	1.603	33,533
Colorado	0.565	1.309	0.437	10,179
Connecticut	0.159	0.321	0.104	2,139
Delaware	0.096	0.177	0.048	1,144
District of Columbia	0.909	1.130	0.081	1,570
Florida	1.391	2.998	1.017	26,402
Georgia	0.392	0.938	0.302	7,636
Hawaii	0.137	0.262	0.090	2,015
Idaho	0.150	0.278	0.093	2,564
Illinois	0.989	2.386	0.763	16,408
Indiana	0.533	1.177	0.370	9,439
Iowa	1.039	1.913	0.614	16,066
Kansas	0.609	1.167	0.348	8,670
Kentucky	0.202	0.438	0.133	3,591
Louisiana	0.368	0.755	0.250	5,997
Maine	0.117	0.238	0.080	2,176
Maryland	0.669	1.353	0.421	8,930
Massachusetts	1.907	4.007	1.282	26,277
Michigan	0.383	0.862	0.286	7,437
Minnesota	0.522	1.147	0.372	8,949
Mississippi	0.137	0.275	0.087	2,386
Missouri	0.461	1.051	0.315	7,742
Montana	0.005	0.010	0.003	91
Nebraska	0.122	0.212	0.069	1,704
Nevada	0.312	0.605	0.204	4,581
New Hampshire	0.146	0.309	0.095	2,260
New Jersey	1.146	2.555	0.794	16,456
New Mexico	0.087	0.162	0.055	1,454
New York	4.922	9.579	2.967	60,476
North Carolina	1.173	2.676	0.861	22,804
North Dakota	0.064	0.112	0.035	864
Ohio	1.021	2.438	0.773	19,339
Oklahoma	0.263	0.553	0.183	4,931
Oregon	0.434	0.940	0.297	7,343
Pennsylvania	1.321	3.200	1.005	22,899
Rhode Island	0.005	0.010	0.003	74
South Carolina	0.257	0.580	0.184	4,995
South Dakota	0.046	0.078	0.026	686
Tennessee	0.549	1.282	0.397	9,899
Texas	3.922	9.738	3.167	71,621
Utah	0.339	0.791	0.262	6,743
Vermont	0.037	0.071	0.023	622
Virginia	1.245	2.650	0.816	19,520
Washington	0.570	1.241	0.407	8,931
West Virginia	0.014	0.027	0.008	212
Wisconsin	0.475	1.023	0.336	8,363
Wyoming	0.017	0.028	0.009	217
State Totals	**33.325**	**71.974**	**22.775**	**525,799**
Interstate Spillovers	**0.000**	**29.157**	**9.454**	**230,563**
U.S. Total	**33.325**	**101.131**	**32.229**	**756,362**

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)**, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	1.104	2.413	0.781	20,354
Alaska	0.000	0.001	0.000	5
Arizona	0.571	1.216	0.413	9,828
Arkansas	0.025	0.049	0.015	413
California	0.227	0.522	0.174	3,634
Colorado	0.208	0.480	0.161	3,718
Connecticut	0.076	0.153	0.050	1,017
Delaware	0.052	0.096	0.026	615
District of Columbia	0.001	0.002	0.000	2
Florida	0.204	0.439	0.149	3,848
Georgia	1.016	2.424	0.781	19,656
Hawaii	0.005	0.009	0.003	66
Idaho	0.116	0.214	0.072	1,962
Illinois	0.373	0.900	0.288	6,166
Indiana	0.787	1.729	0.544	13,835
Iowa	4.023	7.385	2.375	61,793
Kansas	0.083	0.159	0.047	1,175
Kentucky	0.342	0.738	0.224	6,025
Louisiana	1.647	3.368	1.117	26,674
Maine	0.019	0.038	0.013	348
Maryland	0.087	0.177	0.055	1,162
Massachusetts	0.804	1.691	0.542	11,039
Michigan	0.621	1.397	0.464	11,986
Minnesota	0.313	0.688	0.223	5,343
Mississippi	0.004	0.008	0.002	68
Missouri	0.273	0.621	0.186	4,553
Montana	0.009	0.017	0.006	161
Nebraska	0.022	0.039	0.013	310
Nevada	0.278	0.538	0.181	4,068
New Hampshire	0.107	0.225	0.069	1,644
New Jersey	0.011	0.023	0.007	151
New Mexico	0.618	1.142	0.386	10,216
New York	0.958	1.864	0.577	11,694
North Carolina	1.047	2.382	0.768	20,214
North Dakota	0.003	0.004	0.001	33
Ohio	1.655	3.942	1.252	31,156
Oklahoma	0.059	0.123	0.041	1,094
Oregon	0.194	0.419	0.132	3,266
Pennsylvania	0.433	1.046	0.329	7,462
Rhode Island	0.020	0.039	0.012	279
South Carolina	0.850	1.910	0.606	16,397
South Dakota	0.030	0.050	0.017	440
Tennessee	1.051	2.449	0.760	18,840
Texas	0.839	2.078	0.676	15,246
Utah	0.068	0.158	0.052	1,347
Vermont	0.009	0.017	0.005	145
Virginia	0.037	0.079	0.024	582
Washington	0.019	0.040	0.013	289
West Virginia	0.000	0.000	0.000	0
Wisconsin	0.553	1.187	0.390	9,678
Wyoming	0.093	0.157	0.052	1,217
State Totals	**21.942**	**46.842**	**15.076**	**371,215**
Interstate Spillovers	**0.000**	**19.550**	**6.109**	**124,038**
U.S. Total	**21.942**	**66.393**	**21.184**	**495,252**

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)**, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.032	0.069	0.022	586
Alaska	0.022	0.039	0.013	286
Arizona	0.441	0.940	0.319	7,614
Arkansas	0.024	0.048	0.015	406
California	0.938	2.154	0.719	15,047
Colorado	0.233	0.539	0.180	4,190
Connecticut	0.227	0.457	0.148	3,047
Delaware	0.173	0.320	0.088	2,069
District of Columbia	0.005	0.006	0.000	9
Florida	0.527	1.136	0.386	10,005
Georgia	0.607	1.452	0.467	11,820
Hawaii	0.028	0.054	0.019	419
Idaho	0.013	0.024	0.008	223
Illinois	0.500	1.206	0.385	8,289
Indiana	0.634	1.399	0.439	11,217
Iowa	0.097	0.179	0.058	1,504
Kansas	0.146	0.280	0.083	2,079
Kentucky	0.062	0.134	0.041	1,100
Louisiana	0.071	0.145	0.048	1,152
Maine	0.010	0.020	0.007	186
Maryland	0.096	0.194	0.060	1,279
Massachusetts	0.074	0.156	0.050	1,026
Michigan	0.057	0.128	0.042	1,100
Minnesota	0.211	0.463	0.150	3,611
Mississippi	0.231	0.465	0.147	4,033
Missouri	0.089	0.203	0.061	1,497
Montana	0.014	0.026	0.009	247
Nebraska	0.040	0.070	0.023	560
Nevada	0.063	0.122	0.041	923
New Hampshire	0.004	0.007	0.002	55
New Jersey	0.796	1.775	0.551	11,428
New Mexico	0.016	0.029	0.010	264
New York	0.223	0.434	0.134	2,740
North Carolina	0.178	0.406	0.131	3,454
North Dakota	0.062	0.107	0.033	825
Ohio	0.354	0.845	0.268	6,702
Oklahoma	0.093	0.196	0.065	1,745
Oregon	0.024	0.053	0.017	413
Pennsylvania	0.384	0.931	0.292	6,657
Rhode Island	0.030	0.058	0.017	414
South Carolina	0.389	0.877	0.278	7,552
South Dakota	0.010	0.017	0.005	146
Tennessee	0.330	0.771	0.239	5,949
Texas	1.080	2.680	0.872	19,708
Utah	0.322	0.752	0.249	6,410
Vermont	0.026	0.050	0.016	439
Virginia	0.334	0.710	0.219	5,230
Washington	0.146	0.318	0.104	2,286
West Virginia	0.014	0.027	0.008	217
Wisconsin	0.215	0.462	0.152	3,780
Wyoming	0.002	0.003	0.001	27
State Totals	**10.697**	**23.938**	**7.694**	**181,961**
Interstate Spillovers	**0.000**	**8.517**	**2.651**	**60,721**
U.S. Total	**10.697**	**32.455**	**10.344**	**242,682**

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)**, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	0.470	1.027	0.333	8,660
Alaska	0.097	0.174	0.059	1,267
Arizona	0.626	1.332	0.452	10,772
Arkansas	0.267	0.529	0.168	4,480
California	2.775	6.369	2.129	44,357
Colorado	0.599	1.385	0.463	10,720
Connecticut	0.346	0.696	0.225	4,617
Delaware	0.033	0.061	0.017	394
District of Columbia	0.442	0.552	0.040	764
Florida	2.013	4.336	1.473	38,019
Georgia	1.168	2.788	0.898	22,603
Hawaii	0.132	0.253	0.087	1,939
Idaho	0.179	0.330	0.111	3,033
Illinois	1.561	3.763	1.204	25,791
Indiana	0.645	1.418	0.446	11,347
Iowa	0.416	0.764	0.246	6,389
Kansas	0.442	0.844	0.252	6,248
Kentucky	0.295	0.636	0.193	5,192
Louisiana	0.521	1.066	0.354	8,440
Maine	0.071	0.144	0.048	1,309
Maryland	0.675	1.364	0.425	8,965
Massachusetts	0.824	1.733	0.555	11,311
Michigan	0.748	1.681	0.558	14,427
Minnesota	0.614	1.347	0.438	10,463
Mississippi	0.134	0.268	0.085	2,314
Missouri	0.937	2.128	0.639	15,606
Montana	0.081	0.150	0.051	1,418
Nebraska	0.192	0.336	0.109	2,683
Nevada	0.990	1.918	0.646	14,491
New Hampshire	0.166	0.352	0.108	2,562
New Jersey	0.462	1.029	0.320	6,600
New Mexico	0.208	0.385	0.130	3,448
New York	3.907	7.604	2.352	47,690
North Carolina	1.157	2.633	0.849	22,346
North Dakota	0.078	0.135	0.042	1,042
Ohio	1.043	2.484	0.789	19,634
Oklahoma	0.428	0.897	0.298	7,967
Oregon	0.477	1.030	0.326	8,033
Pennsylvania	0.861	2.080	0.654	14,835
Rhode Island	0.095	0.184	0.056	1,312
South Carolina	0.548	1.230	0.391	10,563
South Dakota	0.090	0.153	0.050	1,332
Tennessee	0.725	1.688	0.524	12,987
Texas	3.098	7.673	2.499	56,302
Utah	0.372	0.866	0.287	7,375
Vermont	0.063	0.120	0.039	1,049
Virginia	0.705	1.498	0.462	10,967
Washington	0.627	1.362	0.447	9,770
West Virginia	0.080	0.151	0.047	1,204
Wisconsin	0.626	1.342	0.441	10,941
Wyoming	0.057	0.097	0.032	750
State Totals	**34.168**	**74.389**	**23.843**	**556,730**
Interstate Spillovers	**0.000**	**28.988**	**9.144**	**214,320**
U.S. Total	**34.168**	**103.376**	**32.987**	**771,050**

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)**, 2012

State	Direct Spending (In Billions of Dollars)	Total Output (In Billions of Dollars)	Personal Earnings (In Billions of Dollars)	Jobs Supported
Alabama	1.938	4.240	1.373	35,787
Alaska	0.199	0.355	0.120	2,596
Arizona	2.097	4.464	1.515	36,126
Arkansas	0.453	0.900	0.285	7,627
California	6.030	13.843	4.625	96,572
Colorado	1.604	3.713	1.241	28,807
Connecticut	0.808	1.627	0.526	10,821
Delaware	0.354	0.655	0.179	4,221
District of Columbia	1.358	1.689	0.122	2,345
Florida	4.134	8.909	3.025	78,274
Georgia	3.183	7.601	2.448	61,715
Hawaii	0.302	0.578	0.198	4,439
Idaho	0.457	0.846	0.285	7,782
Illinois	3.423	8.254	2.640	56,654
Indiana	2.599	5.722	1.799	45,837
Iowa	5.575	10.242	3.292	85,753
Kansas	1.280	2.449	0.731	18,172
Kentucky	0.901	1.947	0.591	15,908
Louisiana	2.607	5.335	1.769	42,263
Maine	0.217	0.441	0.148	4,019
Maryland	1.528	3.087	0.961	20,336
Massachusetts	3.610	7.587	2.429	49,653
Michigan	1.809	4.068	1.350	34,950
Minnesota	1.659	3.644	1.183	28,366
Mississippi	0.506	1.016	0.321	8,801
Missouri	1.761	4.003	1.202	29,398
Montana	0.109	0.203	0.069	1,917
Nebraska	0.376	0.656	0.214	5,256
Nevada	1.643	3.184	1.071	24,062
New Hampshire	0.422	0.893	0.274	6,521
New Jersey	2.415	5.383	1.672	34,634
New Mexico	0.929	1.718	0.580	15,382
New York	10.010	19.481	6.030	122,600
North Carolina	3.555	8.097	2.608	68,819
North Dakota	0.207	0.358	0.112	2,764
Ohio	4.073	9.710	3.082	76,830
Oklahoma	0.843	1.770	0.586	15,738
Oregon	1.129	2.442	0.772	19,056
Pennsylvania	2.998	7.257	2.280	51,853
Rhode Island	0.151	0.291	0.088	2,079
South Carolina	2.045	4.597	1.459	39,506
South Dakota	0.174	0.298	0.098	2,603
Tennessee	2.655	6.190	1.921	47,675
Texas	8.939	22.168	7.214	162,877
Utah	1.102	2.568	0.850	21,875
Vermont	0.135	0.258	0.083	2,255
Virginia	2.321	4.938	1.521	36,299
Washington	1.362	2.961	0.971	21,277
West Virginia	0.109	0.205	0.063	1,633
Wisconsin	1.869	4.015	1.318	32,762
Wyoming	0.169	0.285	0.094	2,211
State Totals	**100.132**	**217.143**	**69.387**	**1,635,706**
Interstate Spillovers	**0.000**	**86.212**	**27.357**	**629,641**
U.S. Total	**100.132**	**303.355**	**96.745**	**2,265,346**

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)**, 2012

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	6,324.00	12,468.84	4,004.59	120
Alaska	1,166.06	2,062.42	668.58	17
Arizona	5,951.94	12,031.32	3,968.55	104
Arkansas	1,357.51	2,444.57	768.76	23
California	36,946.64	81,822.28	26,543.28	609
Colorado	7,045.63	15,674.86	5,101.81	132
Connecticut	6,823.52	13,222.83	4,156.29	95
Delaware	923.37	1,663.85	438.92	11
District of Columbia	13,569.06	17,818.15	1,398.48	41
Florida	20,579.73	42,644.26	14,110.41	390
Georgia	5,799.11	12,756.86	4,052.01	110
Hawaii	2,117.28	4,004.43	1,321.39	34
Idaho	2,603.62	4,508.92	1,482.22	45
Illinois	7,256.59	16,421.33	5,161.33	123
Indiana	10,179.25	20,295.67	6,247.06	172
Iowa	5,569.54	9,380.97	2,935.74	85
Kansas	11,725.81	21,053.85	6,241.43	172
Kentucky	3,992.10	7,859.10	2,347.68	69
Louisiana	5,152.73	9,963.93	3,234.58	93
Maine	2,531.23	4,793.38	1,583.24	45
Maryland	18,028.08	35,426.39	10,766.73	264
Massachusetts	23,756.05	48,292.07	15,160.87	344
Michigan	6,369.01	13,074.94	4,234.48	114
Minnesota	14,328.93	29,418.49	9,340.31	238
Mississippi	1,318.16	2,423.83	762.96	24
Missouri	5,190.27	10,841.61	3,181.97	82
Montana	160.96	285.93	93.93	3
Nebraska	2,997.55	4,944.95	1,558.60	44
Nevada	4,641.09	8,572.76	2,794.21	73
New Hampshire	1,585.65	3,102.19	926.03	24
New Jersey	10,023.69	21,448.33	6,425.59	146
New Mexico	646.49	1,164.95	381.61	11
New York	31,136.48	59,292.36	17,305.44	394
North Carolina	16,544.86	34,393.04	10,923.36	315
North Dakota	2,308.88	3,853.49	1,190.36	36
Ohio	11,943.72	25,779.71	8,038.18	209
Oklahoma	7,155.53	14,167.64	4,570.13	132
Oregon	9,518.83	18,813.97	5,870.78	161
Pennsylvania	22,544.76	49,865.09	15,449.23	382
Rhode Island	41.20	76.69	22.45	1
South Carolina	4,773.11	9,642.49	2,994.13	88
South Dakota	660.66	1,045.74	328.55	10
Tennessee	10,388.18	22,104.78	6,807.10	181
Texas	85,031.74	197,481.81	62,887.95	1,622
Utah	6,897.21	15,095.05	4,876.02	145
Vermont	336.54	604.64	189.06	6
Virginia	11,867.53	23,893.22	7,206.47	194
Washington	4,761.13	9,652.04	3,051.20	77
West Virginia	198.16	348.50	105.83	3
Wisconsin	9,169.03	17,902.13	5,774.58	155
Wyoming	278.81	455.48	146.62	4
State Totals	**482,216.99**	**996,356.11**	**309,131.09**	**7,974**
Interstate Spillovers	**0.00**	**335,529.16**	**110,360.09**	**2,573**
U.S. Total	**482,216.99**	**1,331,885.27**	**419,491.17**	**10,546**

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),** 2012

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	4,888.96	9,639.42	3,095.87	93
Alaska	0.00	0.00	0.00	0
Arizona	406.87	822.44	271.28	7
Arkansas	246.44	443.78	139.56	4
California	889.55	1,970.01	639.07	15
Colorado	1,190.83	2,649.32	862.29	22
Connecticut	460.30	891.99	280.38	6
Delaware	400.42	721.54	190.34	5
District of Columbia	0.00	0.00	0.00	0
Florida	767.21	1,589.77	526.03	15
Georgia	5,027.35	11,059.15	3,512.76	96
Hawaii	0.00	0.00	0.00	0
Idaho	555.57	962.14	316.28	10
Illinois	2,884.16	6,526.71	2,051.39	49
Indiana	6,172.25	12,306.40	3,787.94	104
Iowa	2,401.36	4,044.69	1,265.77	37
Kansas	389.64	699.60	207.40	6
Kentucky	1,478.76	2,911.18	869.63	26
Louisiana	376.05	727.17	236.06	7
Maine	180.23	341.30	112.73	3
Maryland	311.48	612.07	186.02	5
Massachusetts	1,236.30	2,513.19	789.00	18
Michigan	2,270.34	4,660.78	1,509.45	40
Minnesota	822.64	1,688.95	536.24	14
Mississippi	7.97	14.65	4.61	0
Missouri	1,523.64	3,182.63	934.09	24
Montana	46.87	83.27	27.35	1
Nebraska	175.31	289.20	91.15	3
Nevada	196.87	363.65	118.53	3
New Hampshire	666.55	1,304.05	389.27	10
New Jersey	47.11	100.80	30.20	1
New Mexico	233.55	420.84	137.86	4
New York	2,833.53	5,395.82	1,574.86	36
North Carolina	1,372.94	2,854.03	906.45	26
North Dakota	0.00	0.00	0.00	0
Ohio	2,715.76	5,861.79	1,827.72	48
Oklahoma	376.87	746.18	240.70	7
Oregon	80.04	158.19	49.36	1
Pennsylvania	1,514.26	3,349.29	1,037.68	26
Rhode Island	0.00	0.00	0.00	0
South Carolina	3,776.52	7,629.21	2,368.98	70
South Dakota	116.95	185.12	58.16	2
Tennessee	3,707.85	7,889.85	2,429.65	65
Texas	3,417.35	7,936.62	2,527.41	65
Utah	133.83	292.89	94.61	3
Vermont	56.72	101.90	31.86	1
Virginia	198.39	399.43	120.47	3
Washington	36.21	73.41	23.21	1
West Virginia	0.00	0.00	0.00	0
Wisconsin	3,672.81	7,171.01	2,313.11	62
Wyoming	363.27	593.47	191.04	5
State Totals	**60,627.89**	**124,178.91**	**38,913.85**	**1,045**
Interstate Spillovers	**0.00**	**43,275.56**	**13,827.68**	**280**
U.S. Total	**60,627.89**	**167,454.46**	**52,741.53**	**1,326**

Source: *CRA, BOMA 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),** 2012

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	165.80	326.90	104.99	3
Alaska	75.32	133.23	43.19	1
Arizona	3,616.52	7,310.47	2,411.37	63
Arkansas	143.37	258.18	81.19	2
California	7,185.44	15,912.93	5,162.18	119
Colorado	1,758.40	3,912.02	1,273.27	33
Connecticut	1,592.51	3,086.03	970.02	22
Delaware	877.96	1,582.03	417.33	11
District of Columbia	25.85	33.94	2.66	0
Florida	2,905.30	6,020.21	1,992.01	55
Georgia	5,205.44	11,450.89	3,637.19	99
Hawaii	40.14	75.93	25.05	1
Idaho	59.66	103.32	33.96	1
Illinois	3,336.53	7,550.42	2,373.15	57
Indiana	6,181.91	12,325.67	3,793.87	104
Iowa	685.97	1,155.40	361.58	11
Kansas	1,146.30	2,058.20	610.15	17
Kentucky	411.12	809.35	241.77	7
Louisiana	466.41	901.91	292.79	8
Maine	85.51	161.93	53.49	2
Maryland	721.49	1,417.77	430.89	11
Massachusetts	388.26	789.27	247.79	6
Michigan	273.14	560.72	181.60	5
Minnesota	1,508.12	3,096.29	983.07	25
Mississippi	2,231.06	4,102.46	1,291.36	40
Missouri	406.41	848.92	249.16	6
Montana	99.21	176.23	57.89	2
Nebraska	287.09	473.60	149.27	4
Nevada	214.50	396.22	129.14	3
New Hampshire	24.57	48.06	14.35	0
New Jersey	3,216.95	6,883.52	2,062.20	47
New Mexico	16.01	28.84	9.45	0
New York	984.18	1,874.15	547.00	12
North Carolina	1,053.26	2,189.49	695.39	20
North Dakota	578.20	965.01	298.10	9
Ohio	3,055.01	6,594.02	2,056.03	54
Oklahoma	648.48	1,283.95	414.17	12
Oregon	183.35	362.38	113.08	3
Pennsylvania	3,773.76	8,346.89	2,586.04	64
Rhode Island	143.12	266.41	78.00	2
South Carolina	2,604.94	5,262.43	1,634.06	48
South Dakota	104.00	164.62	51.72	2
Tennessee	2,844.61	6,052.98	1,864.00	50
Texas	9,336.55	21,683.66	6,905.15	178
Utah	2,431.78	5,322.14	1,719.16	51
Vermont	88.85	159.63	49.91	2
Virginia	2,929.52	5,898.09	1,778.93	48
Washington	832.51	1,687.71	533.52	13
West Virginia	73.27	128.86	39.13	1
Wisconsin	1,583.44	3,091.60	997.24	27
Wyoming	9.42	15.38	4.95	0
State Totals	**78,610.51**	**165,340.28**	**52,052.95**	**1,360**
Interstate Spillovers	**0.00**	**51,782.27**	**16,332.06**	**359**
U.S. Total	**78,610.51**	**217,122.54**	**68,385.01**	**1,719**

Source: *CRA, Delta Associates 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),** 2012

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	5,055.59	9,967.97	3,201.39	96
Alaska	531.43	939.95	304.70	8
Arizona	5,555.60	11,230.17	3,704.29	97
Arkansas	3,982.71	7,171.99	2,255.42	68
California	23,212.41	51,406.37	16,676.31	383
Colorado	5,912.23	13,153.32	4,281.10	110
Connecticut	4,170.21	8,081.18	2,540.13	58
Delaware	470.60	847.99	223.70	6
District of Columbia	4,368.41	5,736.36	450.23	13
Florida	26,449.45	54,807.20	18,134.96	502
Georgia	13,035.72	28,675.90	9,108.45	248
Hawaii	869.67	1,644.82	542.76	14
Idaho	2,067.22	3,579.99	1,176.86	36
Illinois	16,225.63	36,717.83	11,540.66	276
Indiana	6,517.52	12,994.82	3,999.84	110
Iowa	5,546.91	9,342.86	2,923.81	85
Kansas	5,281.53	9,483.06	2,811.26	78
Kentucky	3,543.19	6,975.36	2,083.69	61
Louisiana	4,334.32	8,381.35	2,720.83	78
Maine	1,102.30	2,087.41	689.47	20
Maryland	8,592.77	16,885.37	5,131.77	126
Massachusetts	7,405.58	15,054.30	4,726.17	107
Michigan	8,071.70	16,570.38	5,366.53	144
Minnesota	6,169.25	12,666.00	4,021.43	103
Mississippi	1,736.34	3,192.76	1,005.01	31
Missouri	8,956.08	18,707.77	5,490.65	141
Montana	1,190.87	2,115.42	694.95	22
Nebraska	2,420.17	3,992.47	1,258.39	35
Nevada	3,676.22	6,790.50	2,213.30	58
New Hampshire	1,935.20	3,786.07	1,130.18	29
New Jersey	3,422.54	7,323.42	2,193.98	50
New Mexico	2,015.08	3,631.08	1,189.47	35
New York	19,028.16	36,234.82	10,575.72	240
North Carolina	12,633.97	26,263.18	8,341.29	241
North Dakota	1,638.74	2,735.04	844.87	25
Ohio	10,581.79	22,840.06	7,121.59	185
Oklahoma	5,542.24	10,973.39	3,539.74	102
Oregon	2,508.08	4,957.21	1,546.87	43
Pennsylvania	10,602.51	23,450.90	7,265.57	180
Rhode Island	863.99	1,608.32	470.86	12
South Carolina	6,831.03	13,799.85	4,285.05	126
South Dakota	991.00	1,568.62	492.82	15
Tennessee	6,808.64	14,487.95	4,461.52	119
Texas	36,564.98	84,920.27	27,042.80	698
Utah	3,874.08	8,478.72	2,738.81	81
Vermont	1,028.43	1,847.69	577.73	18
Virginia	7,104.10	14,302.88	4,313.92	116
Washington	4,736.74	9,602.59	3,035.56	76
West Virginia	944.21	1,660.51	504.25	14
Wisconsin	8,417.30	16,434.41	5,301.15	142
Wyoming	986.32	1,611.32	518.69	15
State Totals	**335,510.77**	**691,719.18**	**216,770.48**	**5,675**
Interstate Spillovers	**0.00**	**234,962.92**	**75,097.72**	**1,662**
U.S. Total	**335,510.77**	**926,682.09**	**291,868.20**	**7,338**

Source: *CRA, Urban Land Institute 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)**, 2012

State	Direct Spending (In Thousands of Dollars)	Total Output (In Thousands of Dollars)	Personal Earnings (In Thousands of Dollars)	Jobs Supported
Alabama	16,434.35	32,403.12	10,406.85	311
Alaska	1,772.81	3,135.59	1,016.47	26
Arizona	15,530.92	31,394.40	10,355.49	271
Arkansas	5,730.03	10,318.53	3,244.93	98
California	68,234.04	151,111.59	49,020.84	1,125
Colorado	15,907.09	35,389.52	11,518.48	297
Connecticut	13,046.54	25,282.03	7,946.82	182
Delaware	2,672.34	4,815.41	1,270.28	33
District of Columbia	17,963.32	23,588.46	1,851.37	55
Florida	50,701.69	105,061.45	34,763.41	962
Georgia	29,067.62	63,942.80	20,310.42	553
Hawaii	3,027.09	5,725.17	1,889.21	49
Idaho	5,286.08	9,154.36	3,009.33	92
Illinois	29,702.91	67,216.29	21,126.52	505
Indiana	29,050.94	57,922.56	17,828.71	490
Iowa	14,203.77	23,923.91	7,486.89	218
Kansas	18,543.29	33,294.72	9,870.24	273
Kentucky	9,425.16	18,555.00	5,542.78	163
Louisiana	10,329.51	19,974.36	6,484.25	186
Maine	3,899.27	7,384.03	2,438.93	70
Maryland	27,653.82	54,341.61	16,515.41	406
Massachusetts	32,786.19	66,648.85	20,923.82	475
Michigan	16,984.20	34,866.82	11,292.06	303
Minnesota	22,828.94	46,869.72	14,881.04	379
Mississippi	5,293.52	9,733.71	3,063.94	94
Missouri	16,076.40	33,580.94	9,855.86	254
Montana	1,497.91	2,660.84	874.13	28
Nebraska	5,880.12	9,700.22	3,057.42	85
Nevada	8,728.68	16,123.12	5,255.17	137
New Hampshire	4,211.96	8,240.36	2,459.82	63
New Jersey	16,710.29	35,756.07	10,711.96	243
New Mexico	2,911.13	5,245.71	1,718.40	50
New York	53,982.36	102,797.14	30,003.02	682
North Carolina	31,605.03	65,699.74	20,866.49	603
North Dakota	4,525.82	7,553.54	2,333.33	70
Ohio	28,296.27	61,075.58	19,043.53	496
Oklahoma	13,723.10	27,171.17	8,764.74	254
Oregon	12,290.29	24,291.76	7,580.09	208
Pennsylvania	38,435.29	85,012.18	26,338.51	651
Rhode Island	1,048.30	1,951.42	571.31	14
South Carolina	17,985.61	36,333.99	11,282.23	333
South Dakota	1,872.61	2,964.10	931.25	28
Tennessee	23,749.29	50,535.56	15,562.27	414
Texas	134,350.63	312,022.35	99,363.31	2,563
Utah	13,336.90	29,188.79	9,428.60	280
Vermont	1,510.54	2,713.85	848.56	26
Virginia	22,099.55	44,493.62	13,419.80	361
Washington	10,366.59	21,015.74	6,643.48	167
West Virginia	1,215.64	2,137.86	649.21	18
Wisconsin	22,842.58	44,599.15	14,386.07	387
Wyoming	1,637.82	2,675.66	861.31	24
State Totals	**956,966.16**	**1,977,594.47**	**616,868.37**	**16,054**
Interstate Spillovers	**0.00**	**665,549.90**	**215,617.55**	**4,875**
U.S. Total	**956,966.16**	**2,643,144.37**	**832,485.92**	**20,929**

Source: *CRA, BOMA, Delta Associates, Urban Land Institute 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	2.2474	0.7192	19.3251
Alaska	1.8003	0.6047	13.3633
Arizona	2.1439	0.7235	17.6072
Arkansas	2.0381	0.6358	17.7102
California	2.3057	0.7660	16.4225
Colorado	2.3246	0.7723	18.5922
Connecticut	2.0165	0.6488	13.7842
Delaware	1.8674	0.5122	12.5191
District of Columbia	1.2167	0.0855	1.7229
Florida	2.1607	0.7294	19.5049
Georgia	2.4194	0.7731	20.1676
Hawaii	1.9192	0.6553	14.9695
Idaho	1.8782	0.6262	17.8556
Illinois	2.4359	0.7726	17.0485
Indiana	2.2574	0.7037	18.3242
Iowa	1.8727	0.5965	16.0542
Kansas	1.9468	0.5745	14.7925
Kentucky	2.2085	0.6639	18.4909
Louisiana	2.0822	0.6830	16.7490
Maine	2.0635	0.6893	19.2678
Maryland	2.0214	0.6260	13.6436
Massachusetts	2.1002	0.6674	14.1025
Michigan	2.2872	0.7542	20.2816
Minnesota	2.2195	0.7147	17.7593
Mississippi	2.0599	0.6441	18.1760
Missouri	2.3143	0.6933	17.4962
Montana	1.8862	0.6342	18.2462
Nebraska	1.7603	0.5677	14.4831
Nevada	1.9525	0.6522	14.9274
New Hampshire	2.1488	0.6583	16.0936
New Jersey	2.2386	0.6942	14.7789
New Mexico	1.8668	0.6244	17.1194
New York	1.9436	0.6065	12.7245
North Carolina	2.3162	0.7393	20.1926
North Dakota	1.7589	0.5397	13.8656
Ohio	2.4334	0.7655	19.6751
Oklahoma	2.1386	0.7031	19.4510
Oregon	2.1975	0.6873	17.3560
Pennsylvania	2.4656	0.7683	17.9417
Rhode Island	1.9442	0.5855	14.2774
South Carolina	2.3013	0.7234	20.1880
South Dakota	1.7409	0.5719	15.8190
Tennessee	2.3740	0.7281	18.6752
Texas	2.5162	0.8127	18.7384
Utah	2.3596	0.7750	20.2304
Vermont	1.9262	0.6187	17.2743
Virginia	2.1452	0.6575	16.3262
Washington	2.2086	0.7206	16.1712
West Virginia	1.9269	0.5839	15.5388
Wisconsin	2.1915	0.7138	18.1768
Wyoming	1.7121	0.5600	13.5343
U.S. Total	**3.0855**	**0.9766**	**23.4185**

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
U.S. Total	**2.7326**	**0.9108**	**18.4048**

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
U.S. Total	**2.8333**	**0.8844**	**33.6972**

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
U.S. Total	**2.7621**	**0.9290**	**17.7163**

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
U.S. Total	**2.4640**	**0.7268**	**16.0036**

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	1.9717	0.6332	18.9374
Alaska	1.7687	0.5734	14.6425
Arizona	2.0214	0.6668	17.4169
Arkansas	1.8008	0.5663	17.0546
California	2.2146	0.7184	16.4933
Colorado	2.2248	0.7241	18.6677
Connecticut	1.9378	0.6091	13.9165
Delaware	1.8019	0.4753	12.3493
District of Columbia	1.3131	0.1031	3.0447
Florida	2.0721	0.6856	18.9696
Georgia	2.1998	0.6987	19.0200
Hawaii	1.8913	0.6241	16.0380
Idaho	1.7318	0.5693	17.4267
Illinois	2.2630	0.7113	16.9919
Indiana	1.9938	0.6137	16.8696
Iowa	1.6843	0.5271	15.3421
Kansas	1.7955	0.5323	14.7111
Kentucky	1.9687	0.5881	17.3289
Louisiana	1.9337	0.6277	17.9922
Maine	1.8937	0.6255	17.8521
Maryland	1.9651	0.5972	14.6695
Massachusetts	2.0328	0.6382	14.4940
Michigan	2.0529	0.6649	17.8230
Minnesota	2.0531	0.6519	16.6191
Mississippi	1.8388	0.5788	17.8504
Missouri	2.0888	0.6131	15.7875
Montana	1.7764	0.5836	18.3950
Nebraska	1.6497	0.5200	14.5303
Nevada	1.8471	0.6021	15.7464
New Hampshire	1.9564	0.5840	14.9778
New Jersey	2.1398	0.6410	14.5409
New Mexico	1.8019	0.5903	17.2199
New York	1.9043	0.5558	12.6381
North Carolina	2.0788	0.6602	19.0663
North Dakota	1.6690	0.5156	15.4218
Ohio	2.1584	0.6730	17.5252
Oklahoma	1.9800	0.6387	18.4932
Oregon	1.9765	0.6168	16.9640
Pennsylvania	2.2118	0.6853	16.9317
Rhode Island	1.8615	0.5450	13.6060
South Carolina	2.0202	0.6273	18.5008
South Dakota	1.5829	0.4973	15.0442
Tennessee	2.1279	0.6553	17.4265
Texas	2.3224	0.7396	19.0795
Utah	2.1886	0.7070	21.0092
Vermont	1.7966	0.5618	17.1965
Virginia	2.0133	0.6072	16.3186
Washington	2.0273	0.6409	16.1364
West Virginia	1.7586	0.5341	15.1918
Wisconsin	1.9525	0.6298	16.9229
Wyoming	1.6337	0.5259	14.9308
U.S. Total	**2.7620**	**0.8699**	**21.8700**

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[1]	Site Development Costs	Building Construction Costs	Tenant Improvement Costs
Office				
2013	14.40%	14.50%	49.50%	21.60%
2008	17.43	14.24	49.74	18.58
2006	17.13	15.76	49.49	17.62
Manufacturing				
2013	16.90	13.80	54.00	15.30
2008	14.34	19.32	52.59	13.75
2006	12.05	18.58	55.69	13.68
Warehouse/Flex				
2013	14.60	19.00	53.30	13.10
2008	17.09	18.54	53.64	13.73
2006	14.23	16.81	55.00	14.07
Retail				
2013	17.00	21.80	44.30	16.90
2008	15.76	20.82	47.00	16.41
2006	17.72	16.06	52.39	13.83
Combined[2]				
2013	15.20	17.32	49.12	17.30
2008	15.62	17.19	51.24	15.94
2006	16.29	16.40	52.48	14.85

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

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

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 associated with each phase of development as well as with the operation phase (after the building delivers).

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.

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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Ronald L. Rayevich, Founding Chairman
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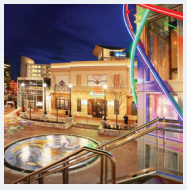


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