How Office, Industrial and Retail Development and Construction Contributed to the U.S. Economy in 2011

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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, investors and related professionals in office, industrial and mixed-use real estate. NAIOP comprises 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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Requests for funding should be submitted to research@naiop.org. For additional information, please contact Shirley Maloney, NAIOP Research Foundation, 2201 Cooperative Way, Herndon, VA, 20171, at (703) 904-7100, ext. 107, or Maloney@naiop.org

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About this Report

It is important to remember that the data collection measures included in this report should be regarded as guidelines rather than as absolute standards. The information readily available 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.

Executive Summary

Key Terms

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

Hard Costs — a category of construction costs that reflect the outlays for the building construction phase. Costs for labor and materials are two basic types of hard costs. Soft costs, site development and tenant improvement costs are reported independently from hard costs.

Multipler — A number used to calculate the final economic impact of one dollar spent. Types of multipliers include: Output multipler, employment multiplier and personal earnings multiplier.

The value of commercial building construction to the U.S. economy is best understood as a sequence of development and occupancy activities, each one generating economic benefits that span the structure's lifespan. The comprehensive measure of this value requires calculating the following outlays associated with commercial buildings:

- Pre-construction
- Construction
- Post-construction

This base of direct construction spending provides the starting point for calculating its contribution to the national as well as the local economies.

The first phase is the pre-construction period (soft costs). This initial phase is followed by construction activities, including site development, building construction and tenant improvements. Next is the buildings' ongoing operations following construction which generate additional value to the local, state and national economies from the building management and upkeep, as well as the spending of workers and businesses housed there.

Three phases of development contribute to commercial real estate's ongoing sustainability:

- Hard costs (actual construction costs);
- Soft costs (architecture, engineering, marketing, legal, management), site development and tenant improvements; and
- Building operations (maintenance, repair, custodial services, utilities and management).

Combined, the three phases of development represent commercial real estate development's enduring financial strength and compounded economic impact:

- The total economic impact of construction spending (hard costs) on the U.S. economy totaled $137.8 billion;
- Another $123.8 billion was spent on soft costs, site development and tenant improvements;
- Overall, this combined contribution to Gross Domestic Product (GDP) for all construction phases totaled $261.6 billion; and

Note: This executive summary has been prepared solely to provide a general overview. It should not be relied upon for any purpose except that for which it was prepared. Please rely on the full report for detailed information about findings, definitions and discussion points.

- The ongoing maintenance and operating costs associated with this new building space contributed $2.05 billion to the GDP each year over the post-construction life of the building space added to the inventory in 2011.

The full contribution of office, industrial, warehouse and retail development (construction and operations) to the nation's Gross Domestic Product (GDP) and to state and local economies consists of this annual direct spending and the cumulative economic benefits resulting from the re-spending of these outlays (the multiplier effect).

The direct spending for construction-related services and materials and the operations of completed buildings all generate additional jobs and payroll. These dollars are re-spent within the local and national economies, generating additional economic benefits. The total economic impact of these initial or direct construction-related outlays can be calculated by applying national, state and local multipliers. The multipliers measure the outlays' multiple impacts on the overall U.S. economy:

- Total contribution to the economy – GDP;
- New personal earnings generated; and
- Total jobs supported throughout the economy (in addition to the direct construction jobs).

The construction sector began its recovery in 2011 following five years of contraction. For the full year, construction employment increased by 65,000 jobs nationwide. While the growth in construction spending overall still declined 2 percent (it was down 44.3 percent between 2006 and 2010), several categories of construction spending were either positive for the year or turned positive during the year. **Forecasts for 2012 call for project construction spending to increase for both residential and non-residential building construction and then to accelerate in 2013 and 2014.**

Key Point

- The direct and indirect impact of construction spending on the U.S. economy in 2011 totaled $2.27 trillion and accounted for 15 percent of GDP.

The contribution of construction spending to the United States economy is well understood, as is the link between the pace of the construction sector's recovery and the economy's expansion. **Until residential and non-residential building construction spending are both increasing, the U.S. economy will not achieve a GDP growth rate sufficient to generate the job growth levels required to significantly reduce unemployment and to assure economic sustainability.** The direct and indirect impact of construction spending on the U.S. economy in 2011 totaled $2.27 trillion and accounted for 15 percent of GDP. The accelerated growth of construction spending that began in 2011 will significantly boost the economy's rate of growth going forward.

While residential building construction spending turned positive during the second half of 2011 — a year before non-residential building construction spending is projected to register continuing growth — the

Key Points

- Building and non-building construction (roads, bridges, etc.) spending in 2011 totaled $787.4 billion, accounting for 5.2 percent of GDP, well off of its high in 2007 when construction spending totaled $1.16 trillion and accounted directly for 8.5 percent of GDP.
- While residential construction spending began to decline in 2006, non-residential building construction spending continued to grow through 2008, helping to offset an industry-wide decline that worsened in 2009 and extended through 2011.

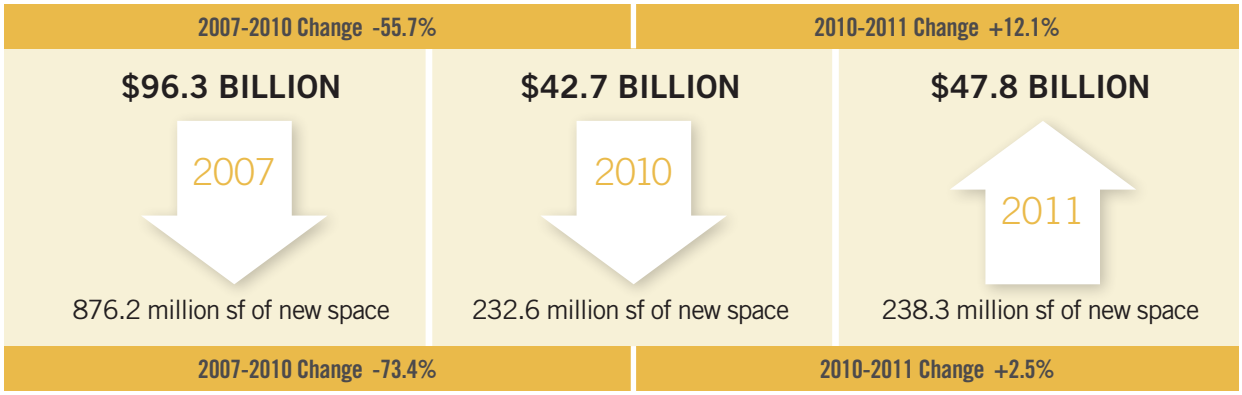
GDP growth rate is projected to have increased only 1.7 percent in 2011. **The first year that residential and non-residential building construction spending are projected to both register double-digit gains is 2014. Current projections indicate that this will propel GDP in 2014 to its greatest growth rate (3.4 percent) of the current business cycle.**

In 2011, construction spending nationwide for residential and non-residential buildings and non-buildings totaled $787.4 billion and accounted for 5.2 percent of GDP. This spending level was *well off of 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. The decrease in non-residential construction spending negatively impacted GDP growth, jobs and personal earnings across all sectors during building industry's long recession. To completely understand the importance of the development, construction and property management sectors to the economy's recovery, the full dimensions of this industry need to be identified and measured.

Although the long and deep decline construction spending appears to have reached its low point by mid-2011, residential as well as industrial building outlays began to increase. Construction spending in general still generated an important contribution to the U.S. economy upon which the full recovery depends going forward.

- Building and non-building construction (e.g., roads, bridges, pipe lines) spending totaled $787.4 billion in 2011, accounting directly for approximately 5.2 percent of GDP. Total construction spending fell in 2011 for a fifth consecutive year, although its 2 percent rate of decline was by far the smallest and announces the industry's recovery.
- Non-residential building construction outlays accounted for 39.7 percent of all construction spending in 2011, exceeding the share accounted for by residential building construction spending for a fourth consecutive year.
- While residential construction spending began to decline in 2006, non-residential building construction spending continued to grow through 2008, helping to offset an industry-wide decline that worsened in 2009 and extended through 2011.
- 2011 was a transition year for the U.S. economy and the construction sector. The U.S. economy shifted from a federal-stimulus to a private-sector driven growth pattern and construction spending began to grow in those categories experiencing growth in demand — multi-family housing and manufacturing/warehousing — with the future pace of economic growth linked closely with the recovery of the construction sector. **Achieving the economy's maximum growth**

Construction Spending Grows in 2011 After Taking a Big Hit



Key Points

- At the pre-recession peak in 2007, construction outlays (hard costs) totaled $96.3 billion and accounted for 876.2 million square feet of new office, industrial, warehouse and retail building space. During the next three years, construction spending declined by 55.7 percent and the building space delivered declined by 73.4 percent. In 2011, however, construction spending reversed this downward trend and increased slightly for the first time since 2007.

- Construction spending for office, industrial, warehouse and retail totaled $47.8 billion in 2011, for a gain of 12.1 percent over 2010. A total of 238.3 million square feet of building space was added to the inventory representing an increase of 2.5 percent.

rate will not occur before 2014 when the construction sector is projected to be expanding at its peak rate.

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

At the pre-recession peak in 2007, construction outlays (hard costs) totaled $96.3 billion and accounted for 876.2 million square feet of new office, industrial, warehouse and retail building space. During the next three years, construction spending declined by 55.7 percent and the building space delivered declined by 73.4 percent. In 2011, however, construction spending reversed this downward trend and increased slightly for the first time since 2007. **Construction spending for office, industrial, warehouse and retail totaled $47.8 billion in 2011, for a gain of 12.1 percent over 2010. A total of 238.3 million square feet of building space was added to the inventory, representing an increase of 2.5 percent.**

In spite of the industry's contraction during the 2007-2010 period, construction spending and its directly related pre- and post-construction outlays generated important economic impacts 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 2011, construction spending continued to generate important economic benefits. These accelerations will drive the economy's expansion to levels sufficient to generate greater levels of job growth and declining unemployment in 2012 and beyond.

As shown in the economic benefits table on page 9, the combined direct and indirect impacts of $47.8 billion in building construction (hard costs) outlays added $123.8 billion to the national economy (GDP) in 2011. This construction spending supported 1.05 million jobs (full-time, year-round equivalent) across all sectors of the economy, generating personal earnings totaling $41.2 billion.

Economic Benefits of Office, Industrial, Warehouse and Retail Construction Spending in 2011
($s in billions, jobs in millions)

Sources	Direct Outlays	Total Output	Personal Income	Jobs Supported
Construction	$92.3	$261.6	$79.1	1.991
Hard Costs	47.8	137.8	41.2	1.050
Other*	44.5	123.8	37.9	0.941

*includes soft costs, site development and tenant improvements.

Key Points

- The total economic benefit of office, industrial, warehouse and retail construction spending in 2011 was $261.6 billion. This construction spending supported 1.99 million jobs (full-time, year-round equivalent) across all sectors of the economy generating personal earnings totaling $79.1 billion.
- The annual operating outlays associated with the office, warehouse and retail space built in 2011 are estimated to total $796.6 million. This direct spending for building operations:
  - adds $2.05 billion to GDP;
  - supports 15,600 new jobs; and
  - generates $609.2 million in new personal earnings.

This direct construction (hard cost) spending accounted for 51.8 percent of the total construction budget for the office, industrial, warehouse and retail building space in 2011. The remaining 48.2 percent included soft costs, site development costs and outlays for tenant improvements. In 2011, construction-related spending totaled an estimated $44.5 billion and:

- Contributed $123.8 billion to GDP;
- Supported a total of 941,000 jobs; and
- Generated $37.9 billion in new personal earnings.

The combined economic impacts of the direct spending (hard and soft costs, site development and tenant improvements) added 238.3 million square feet of new office, industrial, warehouse and retail building space to the existing inventory during 2011 and:

- Contributed $261.6 billion to GDP;
- Generated $79.1 billion in new personal earnings; and
- Supported a total of 1.99 million jobs that spanned the full breadth of the economy.

In addition to the significant contribution to GDP and job and income growth nationwide that constructing 238.3 million square feet of new building space represents, these buildings continue to provide economic benefits to their economies after construction is completed. These economic impacts include outlays required to maintain and operate these buildings and the value of the work done in them. **The operating outlays associated with the office, industrial, warehouse and retail space built in 2011 are estimated to total $796.6 million annually. This direct spending for building operations would:**

- **Add $2.05 billion to GDP;**
- **Support 15,600 new jobs; and**
- **Generate $609.2 million in new personal earnings.**

These operating outlays are annual and recur yearly over the lifespan of the building.

Key Point

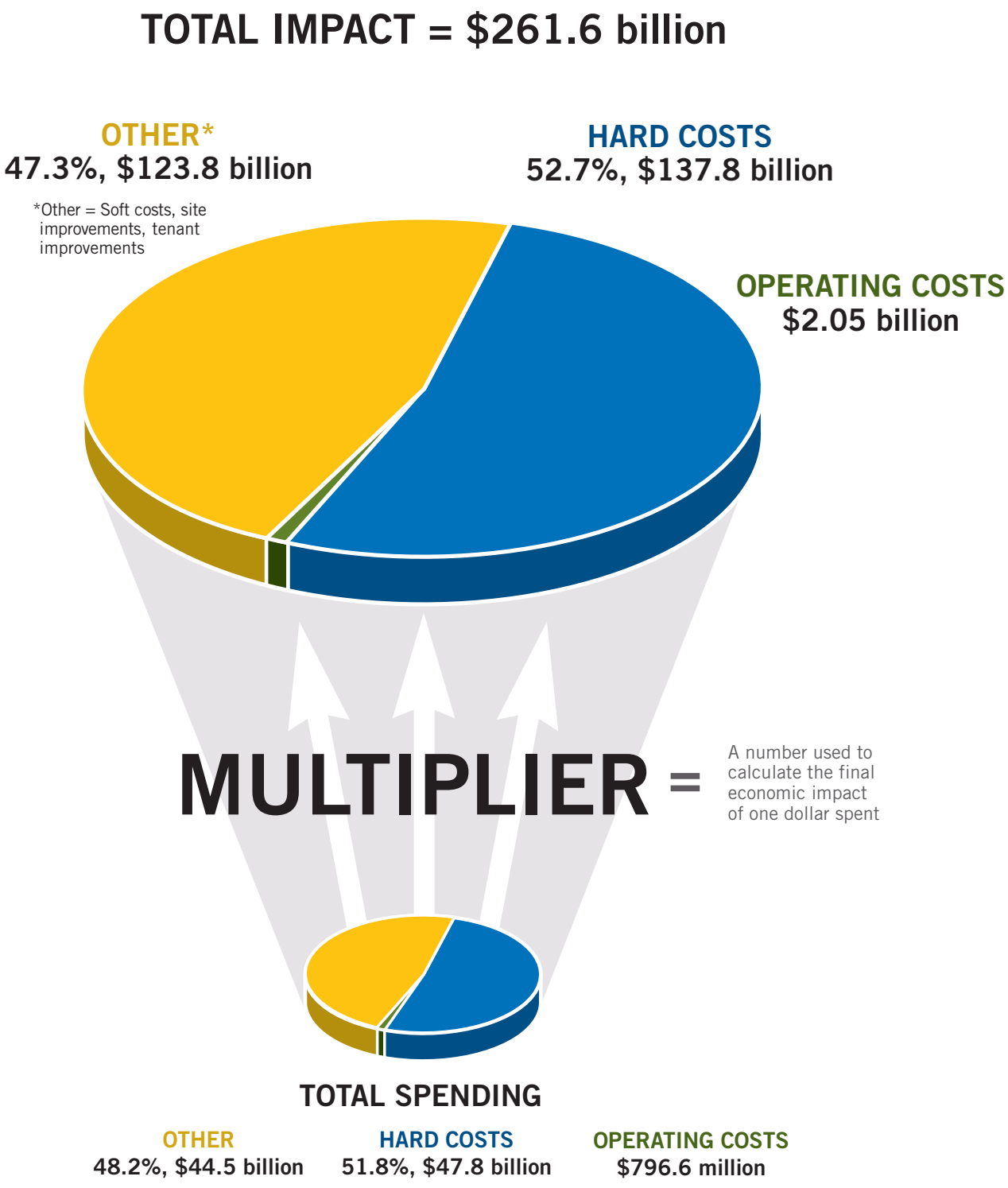
- Using updated jobs-per-square foot estimates reflecting post-recession occupancy patterns and current average salary levels, this new space has the capacity to house 610,000 jobs with an annual payroll of $26.8 billion.

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 post-recession occupancy patterns and current average salary levels, this new space has the capacity to house 610,000 jobs with an annual payroll of $26.8 billion.**

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 non-residential. **As construction outlays move toward normal levels over the 2012-2014 period, the U.S. economy's growth rate is projected to increase from 1.7 percent in 2011 to 3.4 percent in 2014. During the second half of 2011 some signs of construction spending gains emerged in multi-family residential. With projections that both residential construction outlays will accelerate in 2012 and 2013 and non-residential construction spending will accelerate in 2013 and 2014, the U.S. economy will experience a significant increase in its growth rate. GDP and employment growth rates are both projected to attain their highest levels of the current business cycle by the end of 2014 as increases in residential and non-residential construction outlays combine to generate significant new capital spending and job growth.** While not all building types will recover at the same time, all will become positive contributors to GDP over the 2012-2014 time period.

The analyses presented in this report define the economic impacts of this industry, highlighting the economic impacts flowing from office, industrial, warehouse and retail construction and operations. As the economy moves into a sustainable expansion, 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. It is also necessary to understand the industry's patterns of performance over 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 Construction Contributes to the U.S. Economy



Introduction

While the economic contributions accruing from the actual construction phase of new buildings is widely understood and valued, the pre-construction and post-construction impacts are often overlooked and undervalued. The job growth and income generated and supported by annual building operations represent a continuing flow of expenditures into the local, state and national economies that extend throughout the life of the structures. Additionally, these new buildings represent an expansion of the productive capacity of their local economies. The jobs and output associated with the newly built capacity contribute 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, expanding and extending the initial economic benefits of the larger up-front construction outlays.

GDP contracted 5 percent over the Great Recession, the most severe of the 11 recessions since World War II. However, recent data now confirm that this recession was even worse than had been previously reported. The most recent revisions to GDP by the U.S. Department of Commerce, released on July 29, 2011, indicated that GDP contracted 0.3 percent in 2008 (it had been previously reported as having been flat). In 2009, GDP had been reported to decline by 2.6 percent and was revised downward to a negative 3.5 percent. While the effects of this recession were felt by all segments of the economy, the construction sector was disproportionately impacted by the collapse of the financial markets and subsequent decrease in demand for new housing and non-residential building space.

Residential construction peaked in 2005 with starts totaling 2.07 million units and declined to 554,000 housing units in 2009, a decrease of 73 percent. Non-residential building construction outlays continued to increase during the first three years of declining residential construction activity and peaked in 2008. However, with the national economy's accelerating recession, non-residential building construction outlays fell by 21.2 percent in 2009 and 15.8 percent in 2010. **The trend reversed in 2011, with non-residential construction outlays registering a gain of 4.4 percent.**

The value of construction totaled $1.167 trillion in 2006. Residential construction declined by 19.2 percent in 2007 and spending contracted further in 2008, 2009 and 2010 — declining by 28.5 percent, 29 percent and 2 percent, respectively. In contrast to this sharp decline in the 2007 and 2008 period, non-residential construction spending continued to grow, increasing in 2006, 2007 and 2008 by 12.5 percent, 19.5 percent and 8.9 percent, respectively.

In 2006, increased outlays for non-residential construction offset losses in residential construction spending. In 2007, overall construction spending was down just 1.3 percent for the year, nearly compensating for the rapid decline in residential construction spending. By 2008, the U.S. economy was in a deepening recession and, in spite of increased non-residential construction outlays that year, the financial crisis undermined investment across the broader economy, with total consumption spending declining by 7.4 percent. The declining performance of the U.S. and global economies in 2008 drove the 2009 economy to its poorest one-year performance in 60 years.

These patterns of total construction spending by major category over the business cycle are shown in Figure 2 for the 1999-2011 period. 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 reaching 28.1 percent. In 2010 and again in 2011, residential construction regained share as non-residential spending slowed at a greater rate while the decline in residential construction bottomed out and accounted for 30.9 and 31 percent respectively of total construction spending (including non-buildings).

Non-residential building construction spending followed a more gradual upward trend during the 2002-2008 period. The total value of non-residential building construction surpassed the total value of residential construction in 2008, accounting for 44.3 percent of total construction spending. In 2009, even as non-residential building construction spending began to decline, its total value continued to exceed total residential spending. During this period of increasing non-residential building construction spending (2002 through 2008), the total value of construction put in place increased by 57.2 percent. In 2009, non-residential building construction spending declined from its 2008 peak by 12.8 percent. **In 2010, the value of non-residential building construction declined at a more rapid rate, dropping 20.7 percent. During this three-year period (2008-2010), the value of non-residential construction spending declined 33.9 percent.**

This pattern of decreasing construction spending slowed in 2011 and for several building types turned positive. **The rate of decline for non-residential building construction spending slowed to -4.4 percent in 2011.** Quarterly reports show that non-residential construction outlays were positive in the second and third quarters of 2011. **Forecasts for 2012 have non-residential construction increasing each of the first three quarters, then slowing in the fourth quarter, followed by continuing and accelerating spending increases through 2013 and beyond.** This forecast and the pattern of construction outlays in 2011 suggest that the bottom was reached in early 2011, although not all segments of the non-residential building industry turned positive during the year.

Non-residential building construction spending is composed of 10 categories of building types. As shown in Figure 2, construction spending for office, industrial, transportation (warehouse) and commercial (retail) categories have tracked a relatively smooth pattern through their respective growth cycles. However, since 2008, office and commercial (retail) experienced decreased construction spending while industrial and warehouse categories sustained small gains in 2008 and 2009 respectively before declining through 2011. **Total U.S. construction spending across all categories in 2011 is presented in Table 1 and shows only a small overall decline from 2010 after sustaining double-digit contractions in the previous three years.**

Figure 2

Construction Spending in the United States, 2000-2011
(in billions of current year dollars)

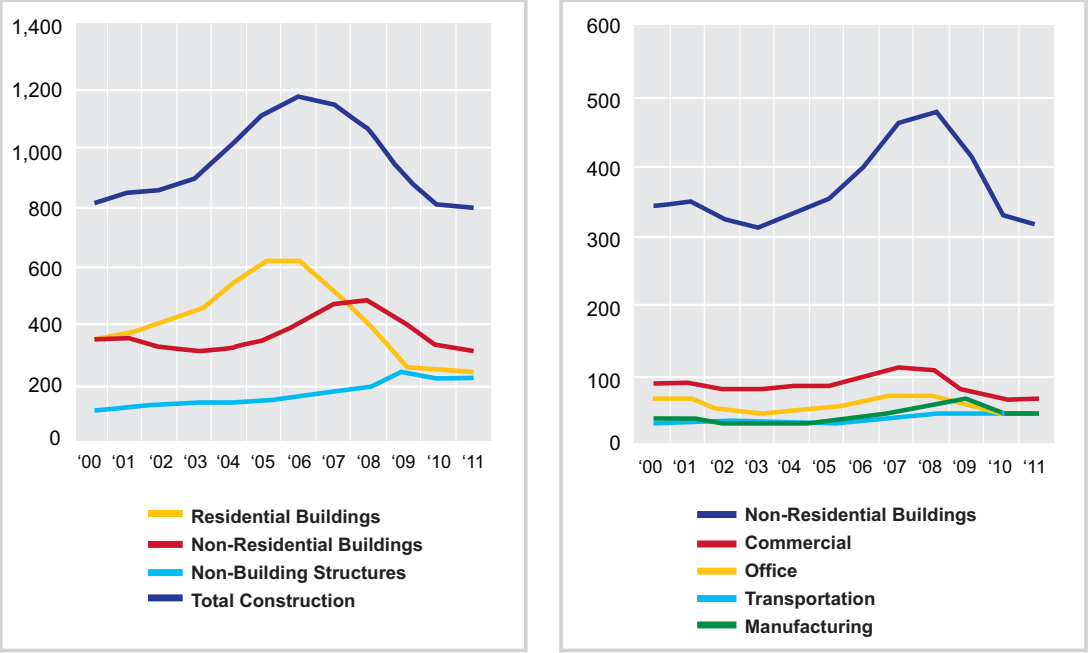


Table 1

U.S. Total Construction Spending, 2011
(in billions of 2011 dollars)

Type	Value	Percent Change*
Residential	$244.4	- 1.7
Non-residential Building	312.7	- 4.4
Non-building**	230.3	1.1
Total	**$787.4**	**- 2.0**

Source: U.S. Census, Value of Construction Put In Place
*change in value between 2010 and 2011
**infrastructure such as water and sewer, highways, power

Table 2

U.S. Non-residential Construction Spending, 2008–2011
(in billions of current year dollars)

Type	2008	2009	2010	2011	% Change*
Lodgings	$35.8	$25.5	$11.3	$8.5	- 76.2
Office	68.6	51.9	37.6	34.4	- 50.0
Retail	86.2	54.1	40.5	43.5	- 49.5
Religious	7.2	6.2	5.2	4.2	- 41.7
Manufacturing**	53.2	56.8	38.1	36.9	- 30.6
Amusement/Recreation	21.8	19.4	17.0	15.5	- 28.9
Public Safety	13.1	13.8	11.1	9.9	- 24.4
Healthcare	46.9	44.8	39.9	39.7	- 15.4
Education	104.9	103.2	88.2	84.7	- 19.2
Transportation	35.5	36.7	38.2	35.4	- 0.3
Totals* **	**$473.2**	**$412.4**	**$327.1**	**$312.7**	**- 33.9**

Sources: U.S. Census, Value of Construction Put In Place
* change in value between 2008 and 2011
** includes warehouse/flex space
*** totals include some miscellaneous state and local government buildings but excludes construction spending for non-buildings (communications, power, highways sewer and water)

The impact of the national recession on construction spending is reported by non-residential building category in Table 2. These trends confirm the substantial slowing of contraction compared to 2010 across all building types with retail increasing as measured by the U.S. Census value of construction.

The residential construction sector began to contract two years before the U.S. economy officially slipped into recession in December 2007. The cycle of non-residential building construction spending has been shown to be different from the residential construction spending cycle. It turned negative three years after the residential building sector started its contraction.

With the U.S. economy completing its third year of recovery in June 2012, residential building construction spending began to accelerate starting during the second half of 2011 with strong gains in multi-family construction. Residential spending is projected to increase each year through at least 2016. Current forecasts (IHS Global Insight, March 2012) indicate that residential construction spending will declined slightly in 2011 (-1.4 percent, a lower rate than previously projected) followed by accelerating gains. The projected pattern of residential construction spending points to annual housing starts

Key Point

- Construction outlays for industrial and warehouse buildings turned positive in 2011 and retail and entertainment are projected to turn positive in 2012 along with industrial and warehouse. Outlays for office and health care are projected to turn positive during the year and to register strong gains in 2013, along with the other types of commercial building, registering an annual gain of 12.8 percent.

increasing to 745,000 in 2012 for a gain of 21.9 percent from 2010. Housing starts are projected to increase to 1 million units in 2013 and 1.4 million by 2014. Current forecasts have residential building peaking in 2016-2017 at 1.75 million starts.

Construction outlays for industrial and warehouse buildings turned positive in 2011 and retail and entertainment are projected to turn positive in 2012 along with industrial and warehouse. **Outlays for office and health care are projected to turn positive during the year and to register strong gains in 2013, along with the other types of commercial building, registering an annual gain of 12.8 percent. In 2014, total outlays of non-residential building construction are projected to increase 18.8 percent with the greatest annual gain being achieved in 2015, with an overall increase of 23.6 percent. While many national and global factors (economic and non-economic) will impact the pace of the residential and non-residential building industry's recovery, it is clear now that this recovery is underway and is expected to accelerate through mid-decade and should be sustained at least through 2017.**

The link between the recovery of the U. S. economy and the recovery of the construction sector is well established. **Until residential and non-residential building construction spending are both increasing, the U.S. economy will not achieve a GDP growth rate sufficient to generate the job growth levels required to significantly reduce unemployment and to assure economic sustainability.** While residential building construction spending turned positive during the second half of 2011 — a year before non-residential building construction spending is projected to register continuing growth — the GDP growth rate is projected to have increased only 1.7 percent in 2011. **The first year that residential and non-residential building construction spending are projected to both register double-digit gains is 2014. Current projections indicate that this will propel GDP in 2014 to its greatest growth rate (3.4 percent) of the current business cycle.**

Economic Impacts of Construction Spending

Key Point

- The construction sector contributed to the national economy's acceleration during 2011 with investment (expenditures) in non-residential structures' construction increasing 4.4 percent after decreasing in 2009 (-21.2 percent) and 2010 (-15.8 percent).
- The total impact of construction spending — direct, indirect and induced — on the U.S. economy accounted for 15 percent of all economic activity in 2011.

The U.S. economy struggled to gain traction during 2011 starting slowly and gaining momentum. Each quarter's performance exceeded the previous quarter over the year with the fourth quarter sustaining a 3 percent gain in GDP for its strongest performance in four years. **The construction sector contributed to the national economy's acceleration during 2011 with investment (expenditures) in non-residential structures' construction increasing 4.4 percent after decreasing in 2009 (-21.2 percent) and 2010 (-15.8 percent).** Residential fixed investment turning positive in the third quarter for the first time since the third quarter of 2005. For the full year, construction employment increased nationally by 65,000 jobs, the sector's first increase in employment since 2007. While these gains were not experienced by all building types, they do suggest that the construction sector has passed its low point and is beginning its recovery following its worst contraction in recent memory.

In 2011, the total value of building and non-building construction spending (put in place) in the United States was $787.4 billion and accounted directly for 5.2 percent of the nation's GDP of $15.1 trillion. With an output multiplier of 2.88, each dollar of this construction spending generated an additional $1.88 of value to the economy, reflecting the cumulative effects of the initial construction outlays as they are re-spent throughout the economy. Applying this multiplier to the total value of direct construction spending in 2011 increases the value of its overall contribution to GDP to $2.27 trillion or 15 percent. **The total impact of construction spending — direct, indirect and induced — on the U.S. economy accounted for 15 percent of all economic activity in 2011.** For the year, GDP increased by $574 billion from its 2010 value (in inflation-adjusted 2011 dollars). In comparison to this overall gain in GDP during 2011, the total value of construction spending was 1.4 times as large as the annual increase in GDP between 2010 and 2011.

The direct construction spending (soft costs, site development costs, hard costs and outlays for tenant improvements) also generates new personal earnings and supports jobs across all sectors of the economy. **In 2011, the $787.4 billion in direct construction spending:**

- **Contributed a total of $2.27 trillion to the U.S. GDP;**
- **Supported a total of 17.2 million jobs throughout the U.S. economy; and**
- **Generated new personal earnings totaling $677 billion.**

While total construction outlays for residential and non-residential building and non-building construction in 2011 declined 2 percent from construction spending in 2010, there were several categories of

Table 3

Comparing Construction (Hard Costs) Outlays in 2010 and 2011
(in billions of current year dollars)

Building Type	2010*	2011	$ Change	% Change
Office	$16.80	$15.75	- 1.05	- 6.2
Industrial	9.44	15.18	5.74	60.8
Warehouse	3.77	4.44	0.67	17.8
Retail/Entertainment	12.65	12.46	- 0.19	- 1.5
Total	**$42.66**	**$47.83**	**$5.17**	**12.1**

Sources: McGraw-Hill Construction Analytics, GMU Center for Regional Analysis.
* McGraw-Hill Construction Analytics has revised its construction reports for 2010 since publication of the NAIOP report; the total value of office, industrial, warehouse and retail construction in 2010 is now reported at $42.65 billion accounting for 232.5 million square feet of building space.

construction that experienced renewed growth during the year. Multi-family residential construction outlays increased during the year's second half and the construction of manufacturing and warehouse structures turned positive for the year, as shown in Table 3.

Office construction outlays, after peaking in 2007, declined each year through 2010. In 2011, the construction value (hard costs) for office buildings continued to decline by $1 billion from 2010, a decrease of 6.2 percent. In comparison, between 2007 and 2011, office construction outlays declined from $32.6 billion to $15.7 billion, a decrease of 48.3 percent. **The decline in office construction spending in 2011 was the smallest annual decrease registered over this period.**

Retail construction also experienced a small continuing decline in 2011, decreasing 1.5 percent from 2010. From its peak year in 2007, retail construction outlays have declined from $29.5 billion to $12.5 billion in 2011, an overall decrease of 42.3 percent. This decline in construction spending in 2011 was by far the smallest decrease experienced over this four-year period.

In contrast to these decreases in office and retail building construction outlays, construction spending for industrial and warehouse/flex buildings turned positive in 2011. The value of industrial construction increased 60.8 percent over 2010 and exceeded total outlays in this category in 2005, 2006 and 2009. However, it was still below the peak of $31 billion registered in 2008, the first year of the Great Recession. Outlays for warehouse/flex construction registered a 17.8 percent increase over 2010, but remained well below the peak value of $13.4 billion in 2007.

Table 4

Office, Industrial, Warehouse and Retail Construction in the United States, 2011
(square feet in millions, values in billions of 2011 dollars)

Building Type	Square Feet (in millions)	Construction Value (in billions)
Office	54.4	$15.75
Industrial	47.4	15.18
Warehouse and Transportation Terminals	58.1	4.44
Retail and Entertainment	78.5	12.46
Totals	**238.4**	**$47.83**

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

In spite of the continuing decline in office and retail building construction outlays 2011, non-government office, industrial, warehouse and retail building construction added 238.3 million gross square feet of new building space accounting for outlays totaling $47.8 billion (see Table 4). These totals exceeded their respective values in 2010 by 2.5 percent and 12.1 percent, respectively.

The economic impact of this construction activity can be calculated by applying the national construction multipliers for its contribution to GDP (2.88), personal earnings (0.86) and employment (21.95). State-level direct spending and associated economic impacts for pre-construction, construction and post-construction spending are included in the Appendices.

It should be noted that individual state construction multipliers are smaller than the U.S. multipliers. They measure only the share of construction outlays that are retained within the respective state economies. Construction-related spending flows that leak out of each state economy to other states are excluded. The smaller states and state economies that are less well developed tend to retain smaller portions of the benefits from construction spending than 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 $47.8 billion in construction spending (hard costs) for office, industrial, warehouse and retail buildings in 2011 added $90 billion in indirect (and induced) benefits to the national economy for a total contribution of $137.8 billion to GDP (see Table 5). Soft costs, site development and tenant improvements totaled $44.45 billion or 48.2 percent of total building costs. Adding these direct outlays and their indirect and induced benefits to those generated by the outlays for hard costs increases their total contribution to the nation's GDP to $261.6 billion in 2011. The economic activity supported by this construction spending generates new personal earnings (payroll) and supports jobs

directly in the construction and related industries. When the payroll dollars generated by these activities are spent for consumer goods and services across the economy, indirect benefits are realized.

The total direct spending of $92.3 billion that underlies the total output of $261.6 billion in 2011 also:

- Supported 2.0 million jobs (full-time equivalent, year-round) during 2011; and,

Generated new personal earnings totaling $79.1 billion.

Table 5

Summary of Office, Industrial, Warehouse and Retail Construction and Annual Operations Impacts on the U.S. Economy, 2011
(in billions of 2011 dollars)

Sources	Direct Outlays	Total Output (1)	Personal Earnings (2)	Jobs Supported (3)
Construction	**$92.28**	**$261.63**	**$79.08**	**1,990,572**
Soft Costs	13.42	34.37	11.23	259,805
Site Dev.*	15.45	44.53	13.29	339,156
Hard Costs	47.83	137.82	41.15	1,049,630
Tenant Imp.**	15.58	44.91	13.41	341,981
Operations	**$0.797**	**$2,048.60**	**$0.609**	**15,600**

Sources: McGraw-Hill Construction Analytics; GMU Center for Regional Analysis
Notes: (1) the total value of goods and services generated directly and indirectly as a result of the initial construction or building operating outlays within the United States; (2) the additional earnings generated within the United States from the direct outlays during the construction phase and post-construction for building operations; (3) the additional new jobs supported nationwide by the spending and re-spending of direct outlays associated with building construction or operations.
*Site development includes grading, infrastructure, parking and landscaping
**Tenant improvements exclude furniture and equipment

See Appendices F and G for state-level data.

Calculating Economic Impact

The full measure of the economic impact of office, industrial, warehouse and retail construction must include all the outlays associated with the development process — soft costs, site development costs, hard costs and costs associated with tenant improvements. In addition to the wide range of onsite construction services, these outlays 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 represent this 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.

National Building Space Inventory, 2010 and 2011
(in billions of square feet)

Sector	2010	2011	% Change
Industrial	**20.04**	**20.49**	**2.2**
Retail	**11.95**	**12.31**	**3.0**
Office	**9.87**	**10.10**	**2.3**
Total	**41.86**	**42.90**	**2.5**

Source: CoStar

Calculating Economic Impact of Soft Costs, Site Development and Outlays for Tenant Improvements

To estimate the non-hard cost expenditures associated with the delivery of new building space, NAIOP surveyed its membership in February 2012. This survey updates previous surveys from 2006 and 2008. This new survey captured changes in construction spending outlays by building type for the four stages of project development (soft costs, site development costs, hard costs and outlays for tenant improvements excluding furnishings) that have occurred in response to the Great Recession. The methodology and results of this new survey are reported in Appendix I along with cost distributions from the two previous surveys.

Taken together, the soft costs, site development costs and tenant improvement outlays in 2011 totaled an estimated $44.45 billion, accounting for 48.2 percent of the $92.28 billion in total construction spending, inclusive of hard costs.

Table 6 presents the additional spending that is linked directly to the hard cost outlays. The variations in the distribution of these costs by building type reflect differences in building design and function. For example, office costs are typically more expensive than warehouse due to the finishes required by office tenants.

Table 6

Estimated Outlays by Building Category:
Soft Costs, Site Development and Tenant Improvements, 2011
(in billions of 2011 dollars)

Sources	Soft Costs	Site Development	Tenant Improvements	Total
Office	$4.77	$4.30	$6.51	$15.58
Industrial	3.49	4.56	3.38	11.43
Warehouse	1.07	1.33	1.07	3.47
Retail	4.09	5.26	4.62	13.97
Total*	**$13.42**	**$15.45**	**$15.58**	**$44.45**

Sources: NAIOP; GMU Center for Regional Analysis.
*Column and row values may not add up to overall totals due to rounding

See Appendices B, C and E for state and building type data.

The direct spending associated with soft costs, site development costs and outlays for tenant improvements generate economic impacts beyond the initial value of these outlays. Financing fees, insurance and taxes are not included 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 outlay:

Soft Costs:

- For each $1 of soft cost expenditure, a total contribution to GDP of $2.56 is generated; and
- For each $1 million of soft cost outlays, personal earnings increase by $836,800 and 19.4 jobs are supported.

Site Development and Tenant Improvement:

- For each $1 of site development and tenant improvement spending, a total contribution to GDP of $2.88 is generated; and
- For each $1 million of site development and tenant improvement outlays, personal earnings increase by $860,300 and 21.9 jobs are supported.

State multipliers (see Appendix H) are smaller than the national multipliers because they reflect only the portion of construction outlays retained within the state economy. Construction-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 $13.42 billion in direct soft cost outlays in 2011

- Added $34.4 billion to the nation's economy (GDP);
- Generated $11.2 billion in new personal earnings for U.S. residents; and
- Supported 259,805 jobs.

Site development outlays of $15.45 billion in 2011

- Added $44.5 billion to the U.S. economy (GDP);
- Generated $13.3 billion in new personal earnings for U.S. residents; and
- Supported 339,156 jobs.

Tenant improvement outlays of $15.6 billion in 2011

- Added $44.9 billion to the U. S. economy (GDP);
- Generated $13.4 billion in new personal earnings for U.S. residents; and
- Supported 341,981 jobs.

These economic impacts for office, industrial, warehouse and retail construction in 2011 are shown in Table 7.

Table 7

The Impacts of Construction Outlays for Soft Costs, Site Development and Tenant Improvements on the U.S. Economy, 2011
(in billions of 2011 dollars)

Sources	Direct Outlays	Total Output (1)	Personal Earnings (2)	Jobs Supported (3)
Office				
Soft Costs	$4.77	$12.21	$3.99	92,299
Site Dev.*	4.30	12.40	3.70	94,404
Tenant Imp.**	6.51	18.77	5.60	142,948
Totals	**$15.58**	**$43.38**	**$13.29**	**329,651**
Industrial				
Soft Costs	$3.49	$8.95	$2.92	67,626
Site Dev.	4.56	13.13	3.92	99,975
Tenant Imp.	3.38	9.75	2.91	74,222
Totals	**$11.43**	**$31.83**	**$9.75**	**241,823**
Warehouse				
Soft Costs	$1.07	$2.74	$0.90	20,711
Site Dev.	1.33	3.84	1.14	29,220
Tenant Imp.	1.07	3.08	0.92	23,483
Totals	**$3.47**	**$9.66**	**$2.96**	**73,414**
Retail				
Soft Costs	$4.09	$10.47	$3.42	79,168
Site Dev.	5.26	15.17	4.53	115,556
Tenant Imp.	4.62	13.30	3.97	101,329
Totals	**$13.97**	**$38.94**	**$11.92**	**296,053**
Total				
Soft Costs	$13.42	$34.37	$11.23	259,805
Site Dev.	15.45	44.54	13.29	339,156
Tenant Imp.	15.58	44.90	13.40	341,981
Total	**$44.45**	**$123.81**	**$37.92**	**940,942**

Sources: NAIOP; GMU Center for Regional Analysis.
*Column values may not add up to overall totals due to rounding.
Notes: (1) the total value of goods and services generated directly and indirectly as a result of the 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 additional new jobs supported nationwide by the spending and re-spending of direct outlays associated with building construction.

See Appendices B, C and E for state and building type data.

Calculating Economic Impact of Hard Costs

The U.S. Census reported that construction spending in 2011 totaled $787.4 billion, with non-residential building construction outlays totaling $312.7 billion. Construction spending in 2011 (hard costs only) reported by McGraw-Hill Construction Analytics for office, industrial, warehouse and retail structures totaled $47.8 billion and represented the addition of 238.3 million square feet of new building space. **By applying the national construction multiplier of 2.88, the full economic impact of this spending (contribution to GDP) can be calculated to have been $137.8 billion (see Table 8). These direct and indirect and induced benefits supported 1,049,630 jobs across all sectors of the economy and generated $41.2 billion in new personal earnings.**

Table 8

The Impacts of Direct Construction Outlays on the U.S. Economy, 2011
(in billions of 2011 dollars)

Sources	Direct Outlays	Total Output (1)	Personal Earnings (2)	Jobs Supported (3)
Office	$15.75	$45.37	$13.55	345,577
Industrial	15.18	43.74	13.06	333,095
Warehouse	4.44	12.80	3.82	97,452
Retail	12.46	35.91	10.72	273,507
Total*	**$47.83**	**$137.82**	**$41.15**	**1,049,630**

Sources: McGraw-Hill Construction Analytics; GMU Center for Regional Analysis.
*Column values may not add up to overall totals due to rounding.
Notes: (1) the total value of goods and services generated directly and indirectly as a result of the 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 additional new jobs supported nationwide by the spending and re-spending of direct outlays associated with building construction.

See Appendix D of state-level hard cost data.

Construction Value by State

The 10 states with the largest construction values accounted for 49.5 percent of the construction outlays in the United States while the top 20 states accounted for 76.1 percent. This year's top 10 states for all four categories of construction (hard costs only) reflected several significant changes from this listing in 2010. There were four new states on the list:

- Massachusetts moved from twenty-first to ninth;
- Utah moved up from twenty-sixth to sixth;

- Arizona moved up from eleventh to fourth; and
- West Virginia leap frogged from forty-eighth to second.

The large increase in industrial building construction outlays explains the change in rankings for West Virginia and Arizona while increased office building construction boosted Utah and Massachusetts into the top 10. Texas moved up to number one (after holding second place in 2010) based on its first-place ranking in warehouse and retail construction spending and a third-place ranking in office and industrial construction outlays. The top 10 rankings across all building categories are shown in Table 9 and Figure 3. The values for all states are shown in Appendix A, Tables 1-6

Table 9

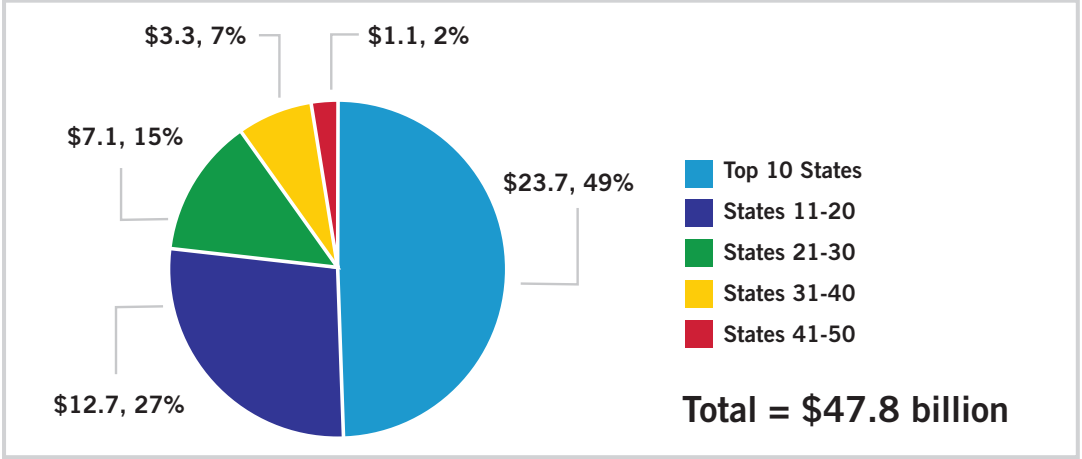
Top 10 States by Construction Value, 2011

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

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

Figure 3

Top 10 States by Construction Value in Four Categories, 2011
(hard costs only; in billions of 2011 dollars)



Calculating Economic Impact of Building Operations

The existing stock of *built space* represents a large and continuing source of economic activities that support job and income growth across the full breadth of local and state economies. While the construction outlays associated with *new building* in 2011 represent an important contribution to the national economy, these benefits end once construction is completed. However, the outlays that support the new buildings' operations generate on-going economic benefits that accumulate during the life span of the buildings. These outlays extend and magnify the economic benefits that the construction of office, industrial, warehouse/flex and retail buildings have on their local economies.

Building operations include outlays for:

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

Management outlays represent a wide range of services, including:

- Building supervision
- Marketing
- Leasing
- Security
- Building engineering services
- Finance and accounting

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 10.

Table 10

Total U.S. Output, Income and Employment Multipliers For Selected Categories of Building Operations

Categories	Total Output (1)	Personal Earnings (2)	Jobs Supported (3)
Building Services	2.8176	0.8778	32.6
Management	2.7861	0.9959	23.0
Utilities	1.9757	0.4119	5.6
Repair and Maintenance	2.8817	0.8603	21.9

Sources: U.S. Department of Commerce, Bureau of Economic Analysis
Notes: (1) the total value of goods and services generated directly and indirectly as a result of building operating outlays within the United States; (2) the additional earnings generated within the United States from the direct outlays for building operations; (3) the additional new jobs supported nationwide by the spending and re-spending of direct outlays associated with building operations.

See Appendix H for multipliers by state.

Key Point

- Maintaining and servicing the 238.3 million square feet of new office, industrial, warehouse and retail building space built in 2011 will require $796.6 million in annual operating outlay each year going forward. Adjusted for inflation and changes in the level and quality of services, maintaining and servicing these new buildings will annually contribute $2.05 billion to the national economy (GDP); support a total of 15,600 jobs; and generate total personal earnings of $609.2 million.

- The addition of the 238.3 million square feet built in 2011 to the 2010 inventory would bring total spending in 2011 for building operations to $140.8 billion.

Maintaining and servicing the 238.3 million square of new office, industrial, warehouse and retail building space built in 2011 will require $796.6 million in annual operating outlay each year going forward.

Adjusted for inflation and changes in the level and quality of services, maintaining and servicing these buildings will annually:

- Contribute $2.05 billion to the national economy (GDP);
- Support a total of 15,600 jobs; and
- Generate total personal earnings of $609.2 million.

These economic impacts are presented by building type in Table 11.

The cumulative economic impact of the annual building operations outlays is determined by adding these new operating outlays for buildings added to the 2011 inventory to the operating outlays associated with the total office, industrial, retail and warehouse building stock existing in 2010. This existing building stock totaled 41.9 billion square feet in 2010 and would have generated annual operating expenditures estimated to total $140 billion. **The addition of 238.3 million square feet built in 2011 to the 2010 inventory brought total 2011 spending for building operations to $140.8 billion.**

Table 11

Annual Impacts of Post-Construction Outlays on the U.S. Economy, 2011
(in millions of 2011 dollars)

Sources	Direct Outlays	Total Output (1)	Personal Earnings (2)	Jobs Supported (3)
Office	$435.7	$1,120.6	$333.2	8,533
Industrial	54.5	140.2	41.7	1,068
Warehouse	48.7	125.3	37.3	954
Retail	257.6	662.4	197.0	5,045
Totals*	**$796.6**	**$2,048.6**	**$609.2**	**15,600**

Sources: BOMA; ULI, Dollars and Cents of Shopping Centers; GMU Center for Regional Analysis
*Column values may not add up to overall totals due to rounding.
Notes: (1) the total value of goods and services generated directly and indirectly as a result of building operating outlays within the United States; (2) the additional earnings generated within the United States from the direct outlays for building operations; (3) the additional new jobs supported nationwide by the spending and re-spending of direct outlays associated with building operations. Building operations include: maintenance and repair, cleaning, utilities, security, building management and administrative expenses.

See Appendix G for state and building type data.

In addition to the annual operating outlays associated with this new building space, these buildings represent new productive capacity within the national economy. While the value of this added productive capacity depends on the usage of each building, one measure of the value of this work is the jobs (and payroll) they support. 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 2011 can be calculated. 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 respectively for jobs associated with each category of building.

These calculations are presented in Table 12 and show that the 238.3 million square of new office, industrial, warehouse and retail building space constructed in 2011 has the capacity to house 610,000 new workers with a total estimated payroll of $26.87 billion.

Table 12

Employment and Income Impacts of the Office, Industrial, Warehouse and Retail Building Space Constructed in 2011

(square feet in millions; jobs in thousands; payroll in billions of 2011 $s)

Building Category	Square Feet	Sq. Ft. per Job	New Jobs	Average Earnings	Total Earnings
Office	54.38	190	286.2	$55,504	$15.89
Industrial	47.41	725	65.4	38,630	2.53
Warehouse/Flex	58.02	450	128.9	33,300	4.29
Retail	78.53	605	129.8	32,130	4.17
Total	**238.34**	**390**	**610.3**	**$41,971**	**$26.87**

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

The total post-construction value of this new office, industrial, warehouse and retail space to local, state and national economies includes these buildings' daily operations and the productive capacity they add to the existing building stock. These contributions to the economy include jobs, income and the economic activities supported by the spending and re-spending of this new income as it circulates throughout the local and national economies.

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

Appendix A-1
Value of Office Construction in Rank Order, 2011
(hard costs only)

	STATE	Direct Spending (in billions of $s)
1	New York	2.153
2	Utah	1.451
3	Texas	1.291
4	California	0.884
5	Massachusetts	0.819
6	Ohio	0.644
7	North Carolina	0.608
8	Georgia	0.579
9	Illinois	0.500
10	New Jersey	0.494
	TOP 10 STATES	**9.422**
11	Washington	0.489
12	Florida	0.451
13	District of Columbia	0.418
14	Virginia	0.391
15	Minnesota	0.355
16	Oregon	0.289
17	Colorado	0.274
18	Pennsylvania	0.260
19	Tennessee	0.246
20	Maryland	0.243
	NEXT 10 STATES (11-20)	**3.417**
21	Louisiana	0.206
22	Indiana	0.206
23	Oklahoma	0.188
24	Arizona	0.182
25	Alabama	0.180
26	South Carolina	0.171
27	Missouri	0.168
28	West Virginia	0.154
29	Wisconsin	0.144
30	Michigan	0.144
	NEXT 10 STATES (21-30)	**1.744**

	STATE	Direct Spending (in billions of $s)
31	Connecticut	0.127
32	Hawaii	0.120
33	Kansas	0.092
34	Iowa	0.090
35	Nebraska	0.078
36	New Mexico	0.078
37	Kentucky	0.078
38	Alaska	0.075
39	Mississippi	0.067
40	Nevada	0.064
	NEXT 10 STATES (31-40)	**0.869**
41	Arkansas	0.055
42	South Dakota	0.049
43	New Hampshire	0.049
44	North Dakota	0.035
45	Wyoming	0.025
46	Idaho	0.022
47	Rhode Island	0.021
48	Maine	0.018
49	Vermont	0.011
50	Delaware	0.008
51	Montana	0.001
	NEXT 11 STATES (41-51)	**0.294**
	USA Total	**15.746**

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

Appendix A-2

Value of Industrial Construction in Rank Order, 2011

(hard costs only)

	STATE	Direct Spending (in billions of $s)
1	West Virginia	3.036
2	Arizona	1.750
3	Texas	1.021
4	Oregon	0.912
5	Tennessee	0.783
6	Kansas	0.695
7	Louisiana	0.676
8	Illinois	0.490
9	Washington	0.452
10	Kentucky	0.450
	TOP 10 STATES	**10.265**
11	South Carolina	0.447
12	Mississippi	0.322
13	Ohio	0.312
14	Massachusetts	0.304
15	Michigan	0.288
16	North Carolina	0.284
17	Alabama	0.278
18	Georgia	0.270
19	California	0.262
20	Indiana	0.246
	NEXT 10 STATES (11-20)	**3.013**
21	Maryland	0.209
22	Florida	0.182
23	Idaho	0.172
24	Minnesota	0.171
25	New York	0.145
26	Wisconsin	0.143
27	Utah	0.138
28	New Jersey	0.114
29	Connecticut	0.086
30	Delaware	0.075
	NEXT 10 STATES (21-30)	**1.434**

	STATE	Direct Spending (in billions of $s)
31	Colorado	0.073
32	Iowa	0.059
33	Pennsylvania	0.053
34	Maine	0.050
35	Arkansas	0.038
36	New Hampshire	0.034
37	Oklahoma	0.031
38	North Dakota	0.026
39	Alaska	0.021
40	Missouri	0.020
	NEXT 10 STATES (31-40)	**0.405**
41	Nevada	0.013
42	Wyoming	0.013
43	South Dakota	0.011
44	Vermont	0.008
45	Virginia	0.005
46	Rhode Island	0.004
47	Nebraska	0.003
48	New Mexico	0.001
49	Montana	0.001
50	District of Columbia	0.001
51	Hawaii	0.001
	NEXT 11 STATES (41-51)	**0.060**
	USA Total	**15.177**

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

Appendix A-3

Value of Warehouse Construction in Rank Order, 2011

(hard costs only)

	STATE	Direct Spending (in billions of $s)
1	Texas	0.392
2	Pennsylvania	0.324
3	California	0.254
4	Indiana	0.240
5	Florida	0.210
6	Georgia	0.193
7	Tennessee	0.189
8	New York	0.187
9	Arizona	0.187
10	Louisiana	0.177
	TOP 10 STATES	**2.354**
11	North Carolina	0.160
12	West Virginia	0.154
13	Illinois	0.140
14	New Jersey	0.135
15	Ohio	0.103
16	South Carolina	0.103
17	Massachusetts	0.102
18	Virginia	0.101
19	Utah	0.086
20	Nevada	0.083
	NEXT 10 STATES (11-20)	**1.166**
21	Washington	0.082
22	Oklahoma	0.081
23	Maryland	0.072
24	Alabama	0.070
25	Iowa	0.067
26	Oregon	0.057
27	Kansas	0.050
28	Colorado	0.048
29	Minnesota	0.047
30	Wyoming	0.040
	NEXT 10 STATES (21-30)	**0.616**

	STATE	Direct Spending (in billions of $s)
31	Wisconsin	0.039
32	Kentucky	0.036
33	New Mexico	0.035
34	Michigan	0.032
35	North Dakota	0.027
36	Vermont	0.019
37	Mississippi	0.018
38	Missouri	0.013
39	Alaska	0.012
40	Connecticut	0.012
	NEXT 10 STATES (31-40)	**0.245**
41	South Dakota	0.012
42	New Hampshire	0.011
43	Nebraska	0.009
44	Arkansas	0.008
45	Maine	0.007
46	Hawaii	0.006
47	Montana	0.003
48	Idaho	0.002
49	Delaware	0.001
50	Rhode Island	0.001
51	District of Columbia	0.000
	NEXT 11 STATES (41-51)	**0.060**
	USA Total	**4.440**

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

Appendix A-4

Value of Retail and Entertainment Construction in Rank Order, 2011

(hard costs only)

	STATE	Direct Spending (in billions of $s)
1	Texas	1.364
2	California	0.899
3	Florida	0.893
4	New York	0.783
5	New Jersey	0.508
6	North Carolina	0.503
7	Illinois	0.465
8	Ohio	0.431
9	Georgia	0.427
10	Pennsylvania	0.422
	TOP 10 STATES	**6.694**
11	Virginia	0.359
12	Massachusetts	0.336
13	Wisconsin	0.313
14	Tennessee	0.312
15	Missouri	0.288
16	Washington	0.281
17	Arizona	0.231
18	Indiana	0.228
19	Maryland	0.225
20	Minnesota	0.221
	NEXT 10 STATES (11-20)	**2.795**
21	Louisiana	0.221
22	Michigan	0.220
23	South Carolina	0.189
24	Alabama	0.184
25	Iowa	0.181
26	Oregon	0.172
27	Colorado	0.168
28	Utah	0.166
29	Kansas	0.153
30	New Hampshire	0.129
	NEXT 10 STATES (21-30)	**1.782**

	STATE	Direct Spending (in billions of $s)
31	Kentucky	0.125
32	Oklahoma	0.123
33	Mississippi	0.120
34	Connecticut	0.106
35	Arkansas	0.106
36	Nevada	0.094
37	Idaho	0.084
38	Nebraska	0.071
39	District of Columbia	0.066
40	New Mexico	0.062
	NEXT 10 STATES (31-40)	**0.957**
41	West Virginia	0.040
42	Alaska	0.026
43	Hawaii	0.023
44	Delaware	0.022
45	South Dakota	0.022
46	Maine	0.021
47	North Dakota	0.019
48	Rhode Island	0.019
49	Montana	0.018
50	Wyoming	0.017
51	Vermont	0.008
	NEXT 11 STATES (41-51)	**0.234**
	USA Total	**12.462**

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

Appendix A-5

Value of Construction in Four Categories in Rank Order, 2011

(hard costs only)

	STATE	Direct Spending (in billions of $s)
1	Texas	4.067
2	West Virginia	3.384
3	New York	3.267
4	Arizona	2.350
5	California	2.299
6	Utah	1.841
7	Florida	1.736
8	Illinois	1.595
9	Massachusetts	1.562
10	North Carolina	1.555
	TOP 10 STATES	**23.656**
11	Tennessee	1.531
12	Ohio	1.490
13	Georgia	1.469
14	Oregon	1.429
15	Washington	1.304
16	Louisiana	1.280
17	New Jersey	1.252
18	Pennsylvania	1.059
19	Kansas	0.990
20	Indiana	0.920
	NEXT 10 STATES (11-20)	**12.723**
21	South Carolina	0.910
22	Virginia	0.856
23	Minnesota	0.795
24	Maryland	0.749
25	Alabama	0.712
26	Kentucky	0.689
27	Michigan	0.684
28	Wisconsin	0.640
29	Colorado	0.563
30	Mississippi	0.527
	NEXT 10 STATES (21-30)	**7.125**

	STATE	Direct Spending (in billions of $s)
31	Missouri	0.490
32	District of Columbia	0.485
33	Oklahoma	0.423
34	Iowa	0.397
35	Connecticut	0.331
36	Idaho	0.280
37	Nevada	0.254
38	New Hampshire	0.222
39	Arkansas	0.207
40	New Mexico	0.176
	NEXT 10 STATES (31-40)	**3.266**
41	Nebraska	0.161
42	Hawaii	0.151
43	Alaska	0.134
44	North Dakota	0.107
45	Delaware	0.107
46	Maine	0.095
47	Wyoming	0.095
48	South Dakota	0.094
49	Vermont	0.046
50	Rhode Island	0.045
51	Montana	0.022
	NEXT 11 STATES (41-51)	**1.057**
	USA Total	**47.826**

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

Appendix A-6

Top Ten States by Construction Value, All Categories, 2011

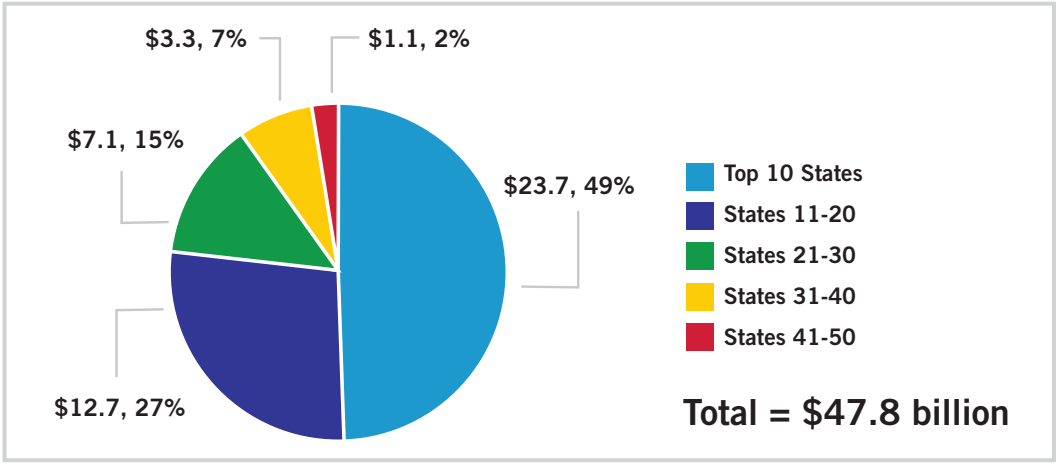
(hard costs only in billions of $)

Groupings of States	Office		Industrial		Warehouse		Retail		Total	
	Value	%	Value	%	Value	%	Value	%	Value	%
Top Ten States	$9.4	59.8	$10.3	67.6	$2.4	53.0	$6.7	53.7	$23.7	49.5
State 11-20	$3.4	21.7	$3.0	19.9	$1.2	26.3	$2.8	22.4	$12.7	26.6
States 21-30	$1.7	11.1	$1.4	9.4	$0.6	13.9	$1.8	14.3	$7.1	14.9
States 31-40	$0.9	5.5	$0.4	2.7	$0.2	5.5	$1.0	7.7	$3.3	6.8
States 41-51	$0.3	1.9	$0.1	0.4	$0.1	1.3	$0.2	1.9	$1.1	2.2
Totals	**$15.7**	**100.0**	**$15.2**	**100.0**	**$4.4**	**100.0**	**$12.5**	**100.0**	**$47.8**	**100.0**

Figure 3

Top 10 States by Construction Value in Four Categories, 2011

(hard costs only; in billions of 2011 dollars)



Appendix A-7

New Personal Income Generated by all Four Categories of Construction Outlays by State in Rank Order, 2011

	STATE	Personal Earnings (in billions of $s)
1	Texas	3.158
2	West Virginia	1.896
3	New York	1.813
4	California	1.691
5	Arizona	1.596
6	Utah	1.354
7	Florida	1.195
8	Illinois	1.140
9	Georgia	1.052
10	Ohio	1.050
	TOP 10 STATES	**15.945**
11	Tennessee	1.033
12	North Carolina	1.011
13	Massachusetts	0.970
14	Oregon	0.906
15	Washington	0.892
16	Louisiana	0.843
17	New Jersey	0.813
18	Pennsylvania	0.760
19	South Carolina	0.617
20	Indiana	0.606
	NEXT 10 STATES (11-20)	**8.451**
21	Kansas	0.542
22	Virginia	0.534
23	Minnesota	0.524
24	Alabama	0.482
25	Michigan	0.478
26	Maryland	0.442
27	Wisconsin	0.425
28	Kentucky	0.424
29	Colorado	0.408
30	Mississippi	0.320
	NEXT 10 STATES (21-30)	**4.580**

	STATE	Personal Earnings (in billions of $s)
31	Missouri	0.311
32	Oklahoma	0.285
33	Iowa	0.218
34	Connecticut	0.199
35	Idaho	0.164
36	Nevada	0.156
37	New Hampshire	0.135
38	Arkansas	0.122
39	New Mexico	0.107
40	Hawaii	0.095
	NEXT 10 STATES (31-40)	**1.791**
41	Nebraska	0.085
42	Alaska	0.077
43	Maine	0.061
44	North Dakota	0.053
45	Delaware	0.052
46	Wyoming	0.051
47	South Dakota	0.050
48	District of Columbia	0.040
49	Vermont	0.027
50	Rhode Island	0.024
51	Montana	0.014
	NEXT 11 STATES (41-51)	**0.536**
	State Totals	**31.303**
	Interstate Spillovers	**9.843**
	USA Total	**41.146**

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

Key Term

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

Appendix B: Soft Costs Impacts by State

Appendix B-1

Impacts of Office Soft Costs on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.055	0.084	0.031	917
Alaska	0.023	0.043	0.014	401
Arizona	0.055	0.091	0.032	1,153
Arkansas	0.017	0.029	0.010	264
California	0.268	0.561	0.188	4,224
Colorado	0.083	0.174	0.061	1,457
Connecticut	0.038	0.067	0.022	445
Delaware	0.002	0.003	0.000	7
District of Columbia	0.127	0.210	0.079	1,518
Florida	0.137	0.259	0.093	2,600
Georgia	0.175	0.334	0.114	2,792
Hawaii	0.036	0.064	0.022	708
Idaho	0.007	0.010	0.003	117
Illinois	0.151	0.246	0.087	3,021
Indiana	0.062	0.122	0.041	922
Iowa	0.027	0.042	0.014	406
Kansas	0.028	0.046	0.014	400
Kentucky	0.024	0.040	0.013	393
Louisiana	0.062	0.113	0.039	1,109
Maine	0.005	0.010	0.003	71
Maryland	0.074	0.130	0.042	1,006
Massachusetts	0.248	0.410	0.140	4,319
Michigan	0.044	0.077	0.027	678
Minnesota	0.108	0.195	0.066	1,686
Mississippi	0.020	0.036	0.011	288
Missouri	0.051	0.083	0.027	839
Montana	0.000	0.001	0.000	8
Nebraska	0.024	0.038	0.013	313
Nevada	0.019	0.031	0.010	349
New Hampshire	0.015	0.025	0.009	289
New Jersey	0.150	0.253	0.082	1,969
New Mexico	0.024	0.048	0.015	303
New York	0.652	1.117	0.398	11,933
North Carolina	0.184	0.278	0.097	2,319
North Dakota	0.011	0.018	0.005	100
Ohio	0.195	0.367	0.124	3,395
Oklahoma	0.057	0.110	0.036	1,193
Oregon	0.087	0.150	0.050	1,565
Pennsylvania	0.079	0.150	0.049	1,145
Rhode Island	0.006	0.010	0.003	96
South Carolina	0.052	0.088	0.031	935
South Dakota	0.015	0.021	0.007	217
Tennessee	0.075	0.139	0.046	1,233
Texas	0.391	0.848	0.286	6,625
Utah	0.439	0.896	0.307	10,120
Vermont	0.003	0.006	0.002	42
Virginia	0.118	0.191	0.067	2,016
Washington	0.148	0.271	0.093	2,589
West Virginia	0.047	0.090	0.031	935
Wisconsin	0.044	0.064	0.023	749
Wyoming	0.008	0.012	0.004	135
State Totals	**4.768**	**8.703**	**2.982**	**82,313**
Interstate Spillovers	**0.000**	**3.508**	**1.008**	**9,986**
USA Totals	**4.768**	**12.211**	**3.990**	**92,299**

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

Appendix B-2

Impacts of Industrial Soft Costs on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.064	0.099	0.036	1,076
Alaska	0.005	0.009	0.003	85
Arizona	0.403	0.668	0.236	8,424
Arkansas	0.009	0.015	0.005	138
California	0.060	0.127	0.042	953
Colorado	0.017	0.035	0.012	294
Connecticut	0.020	0.035	0.011	230
Delaware	0.017	0.022	0.002	50
District of Columbia	0.000	0.000	0.000	2
Florida	0.042	0.079	0.028	795
Georgia	0.062	0.118	0.041	989
Hawaii	0.000	0.000	0.000	3
Idaho	0.040	0.060	0.021	696
Illinois	0.113	0.183	0.065	2,253
Indiana	0.057	0.111	0.037	836
Iowa	0.014	0.021	0.007	202
Kansas	0.160	0.265	0.082	2,284
Kentucky	0.103	0.177	0.058	1,730
Louisiana	0.156	0.281	0.097	2,765
Maine	0.011	0.021	0.007	148
Maryland	0.048	0.085	0.027	656
Massachusetts	0.070	0.116	0.040	1,219
Michigan	0.066	0.117	0.041	1,033
Minnesota	0.039	0.071	0.024	618
Mississippi	0.074	0.131	0.040	1,047
Missouri	0.005	0.008	0.002	77
Montana	0.000	0.000	0.000	4
Nebraska	0.001	0.001	0.000	9
Nevada	0.003	0.005	0.002	55
New Hampshire	0.008	0.013	0.005	156
New Jersey	0.026	0.044	0.014	345
New Mexico	0.000	0.000	0.000	2
New York	0.033	0.057	0.020	609
North Carolina	0.065	0.099	0.035	824
North Dakota	0.006	0.010	0.003	55
Ohio	0.072	0.135	0.045	1,249
Oklahoma	0.007	0.014	0.005	150
Oregon	0.210	0.361	0.121	3,758
Pennsylvania	0.012	0.023	0.008	178
Rhode Island	0.001	0.001	0.000	13
South Carolina	0.103	0.175	0.061	1,860
South Dakota	0.002	0.003	0.001	36
Tennessee	0.180	0.336	0.111	2,980
Texas	0.235	0.509	0.172	3,982
Utah	0.032	0.065	0.022	731
Vermont	0.002	0.003	0.001	25
Virginia	0.001	0.002	0.001	20
Washington	0.104	0.191	0.065	1,820
West Virginia	0.699	1.352	0.460	14,004
Wisconsin	0.033	0.048	0.017	564
Wyoming	0.003	0.005	0.002	53
State Totals	**3.494**	**6.310**	**2.136**	**62,086**
Interstate Spillovers	**0.000**	**2.638**	**0.787**	**5,540**
USA Totals	**3.494**	**8.947**	**2.923**	**67,626**

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

Appendix B-3

Impacts of Warehouse Soft Costs on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.017	0.026	0.010	283
Alaska	0.003	0.006	0.002	53
Arizona	0.045	0.075	0.026	942
Arkansas	0.002	0.003	0.001	30
California	0.061	0.128	0.043	966
Colorado	0.012	0.024	0.008	203
Connecticut	0.003	0.005	0.002	34
Delaware	0.000	0.000	0.000	1
District of Columbia	0.000	0.000	0.000	0
Florida	0.051	0.096	0.034	964
Georgia	0.047	0.089	0.030	743
Hawaii	0.002	0.003	0.001	30
Idaho	0.001	0.001	0.000	9
Illinois	0.034	0.055	0.019	675
Indiana	0.058	0.114	0.038	856
Iowa	0.016	0.025	0.008	242
Kansas	0.012	0.020	0.006	172
Kentucky	0.009	0.015	0.005	145
Louisiana	0.043	0.077	0.027	756
Maine	0.002	0.003	0.001	20
Maryland	0.017	0.031	0.010	239
Massachusetts	0.025	0.041	0.014	429
Michigan	0.008	0.014	0.005	120
Minnesota	0.011	0.020	0.007	177
Mississippi	0.004	0.008	0.002	61
Missouri	0.003	0.005	0.002	53
Montana	0.001	0.001	0.000	13
Nebraska	0.002	0.004	0.001	29
Nevada	0.020	0.032	0.010	360
New Hampshire	0.003	0.004	0.001	50
New Jersey	0.032	0.055	0.018	427
New Mexico	0.008	0.017	0.005	109
New York	0.045	0.077	0.028	826
North Carolina	0.038	0.058	0.020	485
North Dakota	0.007	0.011	0.003	61
Ohio	0.025	0.047	0.016	431
Oklahoma	0.020	0.038	0.012	411
Oregon	0.014	0.024	0.008	246
Pennsylvania	0.078	0.150	0.049	1,139
Rhode Island	0.000	0.000	0.000	4
South Carolina	0.025	0.042	0.015	447
South Dakota	0.003	0.004	0.001	42
Tennessee	0.046	0.085	0.028	753
Texas	0.094	0.205	0.069	1,601
Utah	0.021	0.042	0.015	479
Vermont	0.005	0.008	0.003	58
Virginia	0.024	0.039	0.014	415
Washington	0.020	0.036	0.012	347
West Virginia	0.037	0.072	0.024	741
Wisconsin	0.009	0.014	0.005	162
Wyoming	0.010	0.015	0.005	174
State Totals	**1.070**	**1.963**	**0.666**	**18,013**
Interstate Spillovers	**0.000**	**0.777**	**0.229**	**2,699**
USA Totals	**1.070**	**2.740**	**0.895**	**20,711**

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

Appendix B-4

Impacts of Retail and Entertainment Soft Costs on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.060	0.093	0.034	1,012
Alaska	0.009	0.016	0.005	153
Arizona	0.076	0.125	0.044	1,584
Arkansas	0.035	0.061	0.022	554
California	0.295	0.619	0.208	4,657
Colorado	0.055	0.116	0.041	971
Connecticut	0.035	0.061	0.020	404
Delaware	0.007	0.009	0.001	21
District of Columbia	0.022	0.036	0.013	259
Florida	0.293	0.556	0.199	5,574
Georgia	0.140	0.267	0.092	2,234
Hawaii	0.008	0.013	0.005	150
Idaho	0.028	0.042	0.014	486
Illinois	0.153	0.248	0.088	3,047
Indiana	0.075	0.147	0.049	1,104
Iowa	0.059	0.091	0.031	885
Kansas	0.050	0.083	0.026	716
Kentucky	0.041	0.071	0.023	688
Louisiana	0.072	0.131	0.045	1,287
Maine	0.007	0.013	0.004	90
Maryland	0.074	0.131	0.042	1,010
Massachusetts	0.110	0.183	0.062	1,921
Michigan	0.072	0.128	0.045	1,126
Minnesota	0.073	0.131	0.045	1,139
Mississippi	0.039	0.069	0.021	555
Missouri	0.095	0.154	0.050	1,554
Montana	0.006	0.009	0.003	123
Nebraska	0.023	0.037	0.012	307
Nevada	0.031	0.050	0.016	556
New Hampshire	0.042	0.071	0.025	828
New Jersey	0.167	0.282	0.091	2,194
New Mexico	0.020	0.041	0.013	260
New York	0.257	0.440	0.157	4,701
North Carolina	0.165	0.249	0.087	2,078
North Dakota	0.006	0.010	0.003	58
Ohio	0.141	0.266	0.090	2,462
Oklahoma	0.040	0.078	0.026	844
Oregon	0.056	0.097	0.032	1,009
Pennsylvania	0.138	0.265	0.086	2,017
Rhode Island	0.006	0.010	0.003	93
South Carolina	0.062	0.106	0.037	1,124
South Dakota	0.007	0.010	0.003	104
Tennessee	0.102	0.191	0.063	1,694
Texas	0.448	0.970	0.327	7,586
Utah	0.054	0.111	0.038	1,253
Vermont	0.002	0.004	0.001	31
Virginia	0.118	0.190	0.067	2,009
Washington	0.092	0.169	0.058	1,611
West Virginia	0.013	0.025	0.009	263
Wisconsin	0.103	0.150	0.053	1,761
Wyoming	0.005	0.009	0.003	98
State Totals	**4.090**	**7.436**	**2.532**	**68,242**
Interstate Spillovers	**0.000**	**3.038**	**0.891**	**10,926**
USA Totals	**4.090**	**10.474**	**3.422**	**79,168**

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

Appendix B-5

Impacts of Soft Costs in Four Categories on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.196	0.303	0.110	3,288
Alaska	0.039	0.074	0.025	691
Arizona	0.579	0.959	0.339	12,102
Arkansas	0.062	0.109	0.039	986
California	0.684	1.435	0.482	10,800
Colorado	0.167	0.349	0.122	2,925
Connecticut	0.096	0.168	0.055	1,113
Delaware	0.027	0.035	0.004	78
District of Columbia	0.148	0.246	0.092	1,779
Florida	0.522	0.991	0.355	9,933
Georgia	0.424	0.808	0.277	6,757
Hawaii	0.046	0.080	0.028	890
Idaho	0.074	0.114	0.039	1,308
Illinois	0.451	0.732	0.259	8,996
Indiana	0.252	0.494	0.165	3,718
Iowa	0.116	0.179	0.060	1,736
Kansas	0.250	0.415	0.128	3,572
Kentucky	0.177	0.303	0.099	2,956
Louisiana	0.333	0.601	0.208	5,917
Maine	0.025	0.046	0.016	329
Maryland	0.213	0.378	0.122	2,911
Massachusetts	0.453	0.750	0.256	7,889
Michigan	0.190	0.336	0.118	2,956
Minnesota	0.231	0.418	0.142	3,620
Mississippi	0.138	0.243	0.074	1,951
Missouri	0.153	0.250	0.080	2,523
Montana	0.007	0.011	0.004	147
Nebraska	0.050	0.080	0.027	657
Nevada	0.073	0.118	0.038	1,320
New Hampshire	0.067	0.114	0.040	1,323
New Jersey	0.375	0.634	0.204	4,935
New Mexico	0.053	0.107	0.033	674
New York	0.987	1.691	0.603	18,070
North Carolina	0.453	0.683	0.240	5,706
North Dakota	0.029	0.048	0.014	274
Ohio	0.433	0.814	0.274	7,537
Oklahoma	0.124	0.239	0.079	2,598
Oregon	0.367	0.632	0.212	6,579
Pennsylvania	0.307	0.588	0.192	4,479
Rhode Island	0.014	0.022	0.007	205
South Carolina	0.241	0.412	0.143	4,366
South Dakota	0.027	0.038	0.012	400
Tennessee	0.403	0.750	0.248	6,660
Texas	1.168	2.532	0.854	19,793
Utah	0.546	1.114	0.382	12,583
Vermont	0.012	0.022	0.007	156
Virginia	0.262	0.423	0.148	4,460
Washington	0.364	0.668	0.229	6,367
West Virginia	0.796	1.540	0.523	15,944
Wisconsin	0.189	0.276	0.097	3,236
Wyoming	0.026	0.041	0.014	461
State Totals	**13.422**	**24.412**	**8.316**	**230,654**
Interstate Spillovers	**0.000**	**9.961**	**2.915**	**29,151**
USA Totals	**13.422**	**34.373**	**11.231**	**259,805**

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

Appendix C: Site Development Impacts by State

Appendix C-1

Impacts of Office Site Development on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.049	0.107	0.033	999
Alaska	0.020	0.037	0.012	261
Arizona	0.050	0.102	0.034	839
Arkansas	0.015	0.029	0.009	271
California	0.241	0.554	0.178	3,721
Colorado	0.075	0.169	0.054	1,304
Connecticut	0.035	0.066	0.021	429
Delaware	0.002	0.004	0.001	26
District of Columbia	0.114	0.138	0.009	189
Florida	0.123	0.255	0.085	2,291
Georgia	0.158	0.360	0.113	3,113
Hawaii	0.033	0.063	0.021	475
Idaho	0.006	0.011	0.004	108
Illinois	0.136	0.318	0.098	2,128
Indiana	0.056	0.123	0.037	1,001
Iowa	0.025	0.044	0.014	390
Kansas	0.025	0.049	0.014	381
Kentucky	0.021	0.045	0.013	395
Louisiana	0.056	0.117	0.037	979
Maine	0.005	0.010	0.003	97
Maryland	0.066	0.129	0.039	906
Massachusetts	0.224	0.444	0.139	2,876
Michigan	0.039	0.085	0.027	711
Minnesota	0.097	0.206	0.064	1,605
Mississippi	0.018	0.037	0.011	345
Missouri	0.046	0.100	0.029	777
Montana	0.000	0.001	0.000	6
Nebraska	0.021	0.036	0.011	324
Nevada	0.017	0.033	0.011	241
New Hampshire	0.013	0.027	0.008	201
New Jersey	0.135	0.292	0.088	1,845
New Mexico	0.021	0.041	0.013	376
New York	0.588	1.063	0.326	6,969
North Carolina	0.166	0.341	0.108	3,201
North Dakota	0.010	0.016	0.005	134
Ohio	0.176	0.404	0.124	3,349
Oklahoma	0.051	0.111	0.035	1,047
Oregon	0.079	0.163	0.050	1,360
Pennsylvania	0.071	0.168	0.051	1,232
Rhode Island	0.006	0.011	0.003	79
South Carolina	0.047	0.102	0.032	960
South Dakota	0.013	0.022	0.007	221
Tennessee	0.067	0.152	0.045	1,261
Texas	0.353	0.881	0.274	6,776
Utah	0.396	0.925	0.292	8,340
Vermont	0.003	0.006	0.002	54
Virginia	0.107	0.221	0.067	1,698
Washington	0.134	0.292	0.091	2,153
West Virginia	0.042	0.080	0.024	689
Wisconsin	0.039	0.082	0.026	691
Wyoming	0.007	0.012	0.004	95
State Totals	**4.302**	**9.081**	**2.794**	**69,924**
Interstate Spillovers	**0.000**	**3.314**	**0.907**	**24,481**
USA Total	**4.302**	**12.396**	**3.701**	**94,404**

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

Appendix C-2

Impacts of Industrial Site Development on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.084	0.181	0.057	1,695
Alaska	0.006	0.011	0.004	80
Arizona	0.525	1.080	0.357	8,866
Arkansas	0.011	0.022	0.007	205
California	0.079	0.181	0.058	1,214
Colorado	0.022	0.049	0.016	381
Connecticut	0.026	0.049	0.016	320
Delaware	0.023	0.042	0.011	274
District of Columbia	0.000	0.000	0.000	0
Florida	0.055	0.113	0.038	1,013
Georgia	0.081	0.184	0.058	1,594
Hawaii	0.000	0.000	0.000	3
Idaho	0.052	0.092	0.030	930
Illinois	0.147	0.343	0.105	2,293
Indiana	0.074	0.162	0.049	1,312
Iowa	0.018	0.031	0.010	281
Kansas	0.208	0.402	0.114	3,150
Kentucky	0.135	0.287	0.083	2,515
Louisiana	0.203	0.422	0.134	3,530
Maine	0.015	0.029	0.010	296
Maryland	0.063	0.122	0.037	854
Massachusetts	0.091	0.181	0.057	1,174
Michigan	0.086	0.186	0.060	1,566
Minnesota	0.051	0.109	0.034	850
Mississippi	0.097	0.195	0.059	1,810
Missouri	0.006	0.013	0.004	103
Montana	0.000	0.000	0.000	4
Nebraska	0.001	0.001	0.000	13
Nevada	0.004	0.007	0.002	55
New Hampshire	0.010	0.021	0.006	156
New Jersey	0.034	0.074	0.022	468
New Mexico	0.000	0.000	0.000	4
New York	0.043	0.078	0.024	514
North Carolina	0.085	0.175	0.055	1,644
North Dakota	0.008	0.013	0.004	107
Ohio	0.094	0.215	0.066	1,781
Oklahoma	0.009	0.020	0.006	191
Oregon	0.274	0.565	0.174	4,720
Pennsylvania	0.016	0.038	0.011	277
Rhode Island	0.001	0.002	0.001	16
South Carolina	0.134	0.293	0.091	2,762
South Dakota	0.003	0.005	0.002	53
Tennessee	0.235	0.532	0.159	4,407
Texas	0.306	0.766	0.238	5,887
Utah	0.041	0.097	0.030	871
Vermont	0.003	0.005	0.001	46
Virginia	0.002	0.003	0.001	24
Washington	0.136	0.297	0.093	2,189
West Virginia	0.911	1.735	0.511	14,908
Wisconsin	0.043	0.090	0.029	752
Wyoming	0.004	0.007	0.002	54
State Totals	**4.555**	**9.528**	**2.933**	**78,213**
Interstate Spillovers	**0.000**	**3.599**	**0.986**	**21,762**
USA Total	**4.555**	**13.127**	**3.919**	**99,975**

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

Appendix C-3

Impacts of Warehouse Site Development on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.021	0.045	0.014	426
Alaska	0.004	0.007	0.002	48
Arizona	0.056	0.115	0.038	946
Arkansas	0.002	0.005	0.001	43
California	0.076	0.175	0.056	1,174
Colorado	0.014	0.032	0.010	251
Connecticut	0.004	0.007	0.002	45
Delaware	0.000	0.001	0.000	5
District of Columbia	0.000	0.000	0.000	—
Florida	0.063	0.130	0.043	1,171
Georgia	0.058	0.132	0.042	1,142
Hawaii	0.002	0.004	0.001	28
Idaho	0.001	0.001	0.000	12
Illinois	0.042	0.098	0.030	656
Indiana	0.072	0.158	0.047	1,281
Iowa	0.020	0.036	0.011	321
Kansas	0.015	0.029	0.008	227
Kentucky	0.011	0.023	0.007	201
Louisiana	0.053	0.110	0.035	921
Maine	0.002	0.004	0.001	39
Maryland	0.022	0.042	0.013	296
Massachusetts	0.031	0.061	0.019	394
Michigan	0.010	0.021	0.007	173
Minnesota	0.014	0.030	0.009	232
Mississippi	0.005	0.011	0.003	100
Missouri	0.004	0.009	0.003	68
Montana	0.001	0.001	0.000	15
Nebraska	0.003	0.005	0.001	42
Nevada	0.025	0.047	0.015	343
New Hampshire	0.003	0.006	0.002	48
New Jersey	0.040	0.087	0.026	552
New Mexico	0.011	0.020	0.006	186
New York	0.056	0.101	0.031	665
North Carolina	0.048	0.098	0.031	923
North Dakota	0.008	0.014	0.004	113
Ohio	0.031	0.071	0.022	586
Oklahoma	0.024	0.052	0.016	497
Oregon	0.017	0.035	0.011	295
Pennsylvania	0.097	0.230	0.070	1,690
Rhode Island	0.000	0.001	0.000	4
South Carolina	0.031	0.067	0.021	634
South Dakota	0.004	0.006	0.002	59
Tennessee	0.057	0.128	0.038	1,063
Texas	0.118	0.294	0.091	2,258
Utah	0.026	0.060	0.019	545
Vermont	0.006	0.011	0.003	104
Virginia	0.030	0.063	0.019	482
Washington	0.025	0.054	0.017	398
West Virginia	0.046	0.088	0.026	753
Wisconsin	0.012	0.025	0.008	207
Wyoming	0.012	0.021	0.007	169
State Totals	**1.331**	**2.870**	**0.892**	**22,830**
Interstate Spillovers	**0.000**	**0.966**	**0.253**	**6,390**
USA Total	**1.331**	**3.837**	**1.145**	**29,220**

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

Appendix C-4

Impacts of Retail and Entertainment Site Development on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.078	0.168	0.053	1,574
Alaska	0.011	0.020	0.006	142
Arizona	0.098	0.200	0.066	1,646
Arkansas	0.045	0.088	0.026	811
California	0.380	0.872	0.279	5,856
Colorado	0.071	0.161	0.052	1,240
Connecticut	0.045	0.086	0.027	557
Delaware	0.009	0.017	0.005	114
District of Columbia	0.028	0.033	0.002	46
Florida	0.377	0.780	0.260	7,007
Georgia	0.180	0.411	0.129	3,554
Hawaii	0.010	0.019	0.006	144
Idaho	0.036	0.063	0.021	641
Illinois	0.196	0.458	0.140	3,062
Indiana	0.096	0.211	0.063	1,711
Iowa	0.076	0.135	0.042	1,214
Kansas	0.065	0.124	0.035	975
Kentucky	0.053	0.113	0.033	988
Louisiana	0.093	0.194	0.061	1,623
Maine	0.009	0.017	0.006	176
Maryland	0.095	0.185	0.056	1,297
Massachusetts	0.142	0.282	0.088	1,826
Michigan	0.093	0.200	0.065	1,686
Minnesota	0.094	0.199	0.062	1,548
Mississippi	0.051	0.102	0.031	947
Missouri	0.122	0.264	0.077	2,054
Montana	0.007	0.014	0.005	144
Nebraska	0.030	0.050	0.016	453
Nevada	0.040	0.075	0.024	549
New Hampshire	0.054	0.109	0.033	820
New Jersey	0.215	0.465	0.140	2,934
New Mexico	0.026	0.049	0.016	460
New York	0.331	0.598	0.183	3,918
North Carolina	0.212	0.436	0.138	4,093
North Dakota	0.008	0.014	0.004	110
Ohio	0.182	0.418	0.128	3,465
Oklahoma	0.052	0.112	0.035	1,057
Oregon	0.073	0.150	0.046	1,251
Pennsylvania	0.178	0.422	0.128	3,095
Rhode Island	0.008	0.015	0.004	110
South Carolina	0.080	0.175	0.054	1,647
South Dakota	0.009	0.015	0.005	151
Tennessee	0.132	0.298	0.089	2,473
Texas	0.576	1.440	0.447	11,073
Utah	0.070	0.163	0.052	1,473
Vermont	0.003	0.006	0.002	57
Virginia	0.152	0.315	0.095	2,414
Washington	0.119	0.259	0.081	1,912
West Virginia	0.017	0.032	0.009	277
Wisconsin	0.132	0.277	0.088	2,321
Wyoming	0.007	0.012	0.004	98
State Totals	**5.265**	**11.321**	**3.518**	**88,796**
Interstate Spillovers	**0.000**	**3.852**	**1.011**	**26,760**
USA Total	**5.265**	**15.173**	**4.530**	**115,556**

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

Appendix C-5

Impacts of Site Development in Four Categories on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.231	0.501	0.157	4,694
Alaska	0.041	0.075	0.024	530
Arizona	0.729	1.498	0.495	12,297
Arkansas	0.074	0.144	0.043	1,331
California	0.776	1.781	0.571	11,964
Colorado	0.182	0.411	0.132	3,176
Connecticut	0.109	0.208	0.065	1,352
Delaware	0.034	0.064	0.017	420
District of Columbia	0.142	0.171	0.012	235
Florida	0.618	1.278	0.425	11,481
Georgia	0.477	1.086	0.342	9,403
Hawaii	0.045	0.086	0.028	649
Idaho	0.094	0.167	0.055	1,691
Illinois	0.522	1.216	0.373	8,139
Indiana	0.298	0.654	0.197	5,305
Iowa	0.139	0.246	0.076	2,206
Kansas	0.313	0.604	0.171	4,734
Kentucky	0.220	0.469	0.135	4,099
Louisiana	0.405	0.844	0.267	7,052
Maine	0.031	0.060	0.020	608
Maryland	0.246	0.478	0.145	3,353
Massachusetts	0.488	0.969	0.303	6,270
Michigan	0.228	0.492	0.159	4,136
Minnesota	0.256	0.544	0.169	4,235
Mississippi	0.171	0.346	0.104	3,203
Missouri	0.178	0.385	0.113	3,003
Montana	0.009	0.017	0.005	169
Nebraska	0.055	0.092	0.029	831
Nevada	0.086	0.161	0.053	1,188
New Hampshire	0.081	0.163	0.049	1,225
New Jersey	0.425	0.919	0.276	5,798
New Mexico	0.058	0.110	0.035	1,026
New York	1.018	1.841	0.565	12,067
North Carolina	0.512	1.051	0.333	9,860
North Dakota	0.033	0.057	0.017	464
Ohio	0.483	1.108	0.340	9,179
Oklahoma	0.137	0.295	0.092	2,791
Oregon	0.442	0.913	0.280	7,627
Pennsylvania	0.362	0.858	0.260	6,294
Rhode Island	0.015	0.028	0.008	210
South Carolina	0.292	0.638	0.198	6,003
South Dakota	0.030	0.049	0.016	484
Tennessee	0.491	1.111	0.331	9,205
Texas	1.353	3.381	1.050	25,994
Utah	0.534	1.245	0.393	11,229
Vermont	0.014	0.027	0.008	261
Virginia	0.290	0.602	0.181	4,618
Washington	0.413	0.902	0.282	6,652
West Virginia	1.016	1.935	0.570	16,627
Wisconsin	0.227	0.474	0.150	3,972
Wyoming	0.030	0.051	0.016	417
State Totals	**15.454**	**32.801**	**10.138**	**259,763**
Interstate Spillovers	**0.000**	**11.731**	**3.158**	**79,394**
USA Total	**15.454**	**44.532**	**13.295**	**339,156**

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

Appendix D: Hard Costs Impacts by State

Appendix D-1

Impacts of Office Construction on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.180	0.390	0.122	3,657
Alaska	0.075	0.134	0.043	954
Arizona	0.182	0.374	0.124	3,072
Arkansas	0.055	0.107	0.032	993
California	0.884	2.027	0.650	13,622
Colorado	0.274	0.618	0.199	4,775
Connecticut	0.127	0.242	0.076	1,571
Delaware	0.008	0.015	0.004	97
District of Columbia	0.418	0.504	0.035	692
Florida	0.451	0.933	0.311	8,385
Georgia	0.579	1.317	0.414	11,395
Hawaii	0.120	0.230	0.075	1,739
Idaho	0.022	0.039	0.013	396
Illinois	0.500	1.164	0.357	7,788
Indiana	0.206	0.452	0.136	3,666
Iowa	0.090	0.159	0.049	1,429
Kansas	0.092	0.178	0.051	1,396
Kentucky	0.078	0.165	0.048	1,447
Louisiana	0.206	0.429	0.136	3,585
Maine	0.018	0.035	0.012	356
Maryland	0.243	0.472	0.144	3,315
Massachusetts	0.819	1.626	0.508	10,530
Michigan	0.144	0.310	0.100	2,604
Minnesota	0.355	0.754	0.234	5,876
Mississippi	0.067	0.136	0.041	1,263
Missouri	0.168	0.365	0.107	2,845
Montana	0.001	0.002	0.001	24
Nebraska	0.078	0.132	0.041	1,185
Nevada	0.064	0.120	0.039	883
New Hampshire	0.049	0.098	0.030	734
New Jersey	0.494	1.070	0.321	6,753
New Mexico	0.078	0.148	0.047	1,378
New York	2.153	3.892	1.194	25,512
North Carolina	0.608	1.249	0.395	11,716
North Dakota	0.035	0.060	0.018	489
Ohio	0.644	1.480	0.454	12,258
Oklahoma	0.188	0.405	0.127	3,831
Oregon	0.289	0.596	0.183	4,980
Pennsylvania	0.260	0.615	0.186	4,510
Rhode Island	0.021	0.039	0.011	291
South Carolina	0.171	0.373	0.116	3,514
South Dakota	0.049	0.082	0.026	808
Tennessee	0.246	0.557	0.166	4,618
Texas	1.291	3.226	1.002	24,805
Utah	1.451	3.386	1.067	30,528
Vermont	0.011	0.020	0.006	199
Virginia	0.391	0.810	0.244	6,216
Washington	0.489	1.068	0.334	7,882
West Virginia	0.154	0.293	0.086	2,522
Wisconsin	0.144	0.302	0.096	2,531
Wyoming	0.025	0.043	0.013	349
State Totals	**15.746**	**33.243**	**10.227**	**255,962**
Interstate Spillovers	**0.000**	**12.132**	**3.320**	**89,615**
USA Totals	**15.746**	**45.375**	**13.547**	**345,577**

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

Appendix D-2

Impacts of Industrial Construction on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.278	0.603	0.189	5,648
Alaska	0.021	0.037	0.012	265
Arizona	1.750	3.599	1.189	29,540
Arkansas	0.038	0.074	0.022	684
California	0.262	0.602	0.193	4,043
Colorado	0.073	0.164	0.053	1,269
Connecticut	0.086	0.164	0.052	1,067
Delaware	0.075	0.139	0.037	913
District of Columbia	0.001	0.001	0.000	1
Florida	0.182	0.376	0.125	3,374
Georgia	0.270	0.614	0.193	5,311
Hawaii	0.001	0.001	0.000	9
Idaho	0.172	0.306	0.100	3,100
Illinois	0.490	1.142	0.350	7,641
Indiana	0.246	0.539	0.162	4,371
Iowa	0.059	0.104	0.032	936
Kansas	0.695	1.339	0.380	10,495
Kentucky	0.450	0.958	0.277	8,380
Louisiana	0.676	1.407	0.445	11,760
Maine	0.050	0.097	0.032	985
Maryland	0.209	0.405	0.123	2,845
Massachusetts	0.304	0.604	0.189	3,910
Michigan	0.288	0.620	0.201	5,219
Minnesota	0.171	0.364	0.113	2,832
Mississippi	0.322	0.651	0.196	6,032
Missouri	0.020	0.044	0.013	344
Montana	0.001	0.001	0.000	14
Nebraska	0.003	0.005	0.002	44
Nevada	0.013	0.025	0.008	183
New Hampshire	0.034	0.069	0.021	521
New Jersey	0.114	0.247	0.074	1,559
New Mexico	0.001	0.002	0.000	14
New York	0.145	0.261	0.080	1,714
North Carolina	0.284	0.584	0.185	5,476
North Dakota	0.026	0.044	0.013	357
Ohio	0.312	0.716	0.220	5,932
Oklahoma	0.031	0.067	0.021	635
Oregon	0.912	1.882	0.578	15,727
Pennsylvania	0.053	0.126	0.038	922
Rhode Island	0.004	0.007	0.002	52
South Carolina	0.447	0.978	0.303	9,202
South Dakota	0.011	0.018	0.006	178
Tennessee	0.783	1.772	0.529	14,685
Texas	1.021	2.551	0.793	19,615
Utah	0.138	0.322	0.101	2,901
Vermont	0.008	0.016	0.005	153
Virginia	0.005	0.010	0.003	80
Washington	0.452	0.988	0.309	7,292
West Virginia	3.036	5.780	1.702	49,670
Wisconsin	0.143	0.299	0.095	2,507
Wyoming	0.013	0.022	0.007	180
State Totals	**15.177**	**31.746**	**9.773**	**260,589**
Interstate Spillovers	**0.000**	**11.990**	**3.284**	**72,506**
USA Totals	**15.177**	**43.736**	**13.058**	**333,095**

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

Appendix D-3

Impacts of Warehouse Construction on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.070	0.152	0.047	1,421
Alaska	0.012	0.022	0.007	159
Arizona	0.187	0.384	0.127	3,155
Arkansas	0.008	0.015	0.005	143
California	0.254	0.582	0.187	3,914
Colorado	0.048	0.108	0.035	835
Connecticut	0.012	0.023	0.007	152
Delaware	0.001	0.003	0.001	18
District of Columbia	0.000	0.000	0.000	-
Florida	0.210	0.435	0.145	3,905
Georgia	0.193	0.440	0.139	3,809
Hawaii	0.006	0.012	0.004	92
Idaho	0.002	0.004	0.001	40
Illinois	0.140	0.327	0.100	2,187
Indiana	0.240	0.527	0.158	4,273
Iowa	0.067	0.119	0.037	1,070
Kansas	0.050	0.097	0.027	757
Kentucky	0.036	0.076	0.022	669
Louisiana	0.177	0.367	0.116	3,071
Maine	0.007	0.013	0.004	130
Maryland	0.072	0.141	0.043	988
Massachusetts	0.102	0.203	0.064	1,316
Michigan	0.032	0.069	0.022	577
Minnesota	0.047	0.099	0.031	774
Mississippi	0.018	0.036	0.011	335
Missouri	0.013	0.029	0.009	227
Montana	0.003	0.005	0.002	49
Nebraska	0.009	0.015	0.005	139
Nevada	0.083	0.156	0.051	1,144
New Hampshire	0.011	0.021	0.006	160
New Jersey	0.135	0.292	0.088	1,841
New Mexico	0.035	0.067	0.021	620
New York	0.187	0.338	0.104	2,219
North Carolina	0.160	0.328	0.104	3,077
North Dakota	0.027	0.046	0.014	377
Ohio	0.103	0.236	0.072	1,954
Oklahoma	0.081	0.175	0.055	1,658
Oregon	0.057	0.118	0.036	985
Pennsylvania	0.324	0.768	0.233	5,637
Rhode Island	0.001	0.002	0.001	15
South Carolina	0.103	0.224	0.070	2,113
South Dakota	0.012	0.020	0.006	196
Tennessee	0.189	0.428	0.128	3,546
Texas	0.392	0.980	0.304	7,531
Utah	0.086	0.202	0.064	1,817
Vermont	0.019	0.035	0.011	346
Virginia	0.101	0.209	0.063	1,606
Washington	0.082	0.180	0.056	1,328
West Virginia	0.154	0.292	0.086	2,512
Wisconsin	0.039	0.082	0.026	690
Wyoming	0.040	0.069	0.022	565
State Totals	**4.440**	**9.573**	**2.975**	**76,140**
Interstate Spillovers	**0.000**	**3.222**	**0.845**	**21,312**
USA Totals	**4.440**	**12.796**	**3.820**	**97,452**

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

Appendix D-4

Impacts of Retail and Entertainment Construction on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.184	0.397	0.124	3,725
Alaska	0.026	0.047	0.015	336
Arizona	0.231	0.474	0.157	3,895
Arkansas	0.106	0.207	0.063	1,920
California	0.899	2.063	0.661	13,860
Colorado	0.168	0.380	0.122	2,936
Connecticut	0.106	0.203	0.064	1,317
Delaware	0.022	0.041	0.011	270
District of Columbia	0.066	0.079	0.005	109
Florida	0.893	1.846	0.615	16,586
Georgia	0.427	0.972	0.306	8,413
Hawaii	0.023	0.045	0.015	340
Idaho	0.084	0.150	0.049	1,517
Illinois	0.465	1.083	0.332	7,248
Indiana	0.228	0.499	0.150	4,049
Iowa	0.181	0.320	0.099	2,873
Kansas	0.153	0.295	0.084	2,309
Kentucky	0.125	0.267	0.077	2,339
Louisiana	0.221	0.459	0.145	3,840
Maine	0.021	0.041	0.014	418
Maryland	0.225	0.437	0.133	3,071
Massachusetts	0.336	0.668	0.209	4,322
Michigan	0.220	0.474	0.154	3,990
Minnesota	0.221	0.470	0.146	3,663
Mississippi	0.120	0.242	0.073	2,241
Missouri	0.288	0.624	0.183	4,863
Montana	0.018	0.033	0.011	340
Nebraska	0.071	0.119	0.037	1,072
Nevada	0.094	0.176	0.058	1,299
New Hampshire	0.129	0.258	0.078	1,942
New Jersey	0.508	1.100	0.330	6,944
New Mexico	0.062	0.117	0.037	1,088
New York	0.783	1.415	0.434	9,274
North Carolina	0.503	1.033	0.327	9,688
North Dakota	0.019	0.032	0.009	261
Ohio	0.431	0.990	0.304	8,200
Oklahoma	0.123	0.264	0.083	2,502
Oregon	0.172	0.354	0.109	2,962
Pennsylvania	0.422	0.998	0.303	7,326
Rhode Island	0.019	0.035	0.010	261
South Carolina	0.189	0.414	0.128	3,899
South Dakota	0.022	0.036	0.012	358
Tennessee	0.312	0.706	0.211	5,854
Texas	1.364	3.409	1.059	26,207
Utah	0.166	0.387	0.122	3,487
Vermont	0.008	0.014	0.004	135
Virginia	0.359	0.745	0.224	5,715
Washington	0.281	0.613	0.192	4,526
West Virginia	0.040	0.076	0.022	655
Wisconsin	0.313	0.655	0.208	5,494
Wyoming	0.017	0.028	0.009	233
State Totals	**12.462**	**26.796**	**8.328**	**210,168**
Interstate Spillovers	**0.000**	**9.116**	**2.394**	**63,339**
USA Totals	**12.462**	**35.912**	**10.722**	**273,507**

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

Appendix D-5

Impacts of Construction in Four Categories on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.712	1.542	0.482	14,451
Alaska	0.134	0.241	0.077	1,715
Arizona	2.350	4.832	1.596	39,662
Arkansas	0.207	0.404	0.122	3,740
California	2.299	5.274	1.691	35,439
Colorado	0.563	1.271	0.408	9,814
Connecticut	0.331	0.632	0.199	4,107
Delaware	0.107	0.198	0.052	1,298
District of Columbia	0.485	0.584	0.040	802
Florida	1.736	3.590	1.195	32,249
Georgia	1.469	3.342	1.052	28,928
Hawaii	0.151	0.288	0.095	2,180
Idaho	0.280	0.499	0.164	5,053
Illinois	1.595	3.715	1.140	24,864
Indiana	0.920	2.017	0.606	16,359
Iowa	0.397	0.704	0.218	6,309
Kansas	0.990	1.909	0.542	14,957
Kentucky	0.689	1.467	0.424	12,835
Louisiana	1.280	2.662	0.843	22,256
Maine	0.095	0.186	0.061	1,889
Maryland	0.749	1.455	0.442	10,219
Massachusetts	1.562	3.101	0.970	20,077
Michigan	0.684	1.473	0.478	12,390
Minnesota	0.795	1.687	0.524	13,145
Mississippi	0.527	1.066	0.320	9,870
Missouri	0.490	1.063	0.311	8,278
Montana	0.022	0.042	0.014	427
Nebraska	0.161	0.271	0.085	2,440
Nevada	0.254	0.477	0.156	3,509
New Hampshire	0.222	0.447	0.135	3,357
New Jersey	1.252	2.709	0.813	17,096
New Mexico	0.176	0.334	0.107	3,100
New York	3.267	5.906	1.813	38,719
North Carolina	1.555	3.194	1.011	29,957
North Dakota	0.107	0.182	0.053	1,484
Ohio	1.490	3.421	1.050	28,344
Oklahoma	0.423	0.911	0.285	8,626
Oregon	1.429	2.950	0.906	24,653
Pennsylvania	1.059	2.507	0.760	18,394
Rhode Island	0.045	0.082	0.024	619
South Carolina	0.910	1.989	0.617	18,729
South Dakota	0.094	0.156	0.050	1,540
Tennessee	1.531	3.464	1.033	28,702
Texas	4.067	10.166	3.158	78,159
Utah	1.841	4.296	1.354	38,734
Vermont	0.046	0.085	0.027	833
Virginia	0.856	1.774	0.534	13,617
Washington	1.304	2.850	0.892	21,028
West Virginia	3.384	6.442	1.896	55,359
Wisconsin	0.640	1.338	0.425	11,221
Wyoming	0.095	0.162	0.051	1,327
State Totals	**47.826**	**101.358**	**31.303**	**802,859**
Interstate Spillovers	**0.000**	**36.461**	**9.843**	**246,771**
USA Totals	**47.826**	**137.819**	**41.146**	**1,049,630**

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

Appendix E: Tenant Improvement Impacts by State

Appendix E-1

Impacts of Office Tenant Improvement on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.075	0.161	0.051	1,513
Alaska	0.031	0.056	0.018	395
Arizona	0.075	0.155	0.051	1,271
Arkansas	0.023	0.044	0.013	411
California	0.365	0.839	0.269	5,635
Colorado	0.113	0.256	0.082	1,975
Connecticut	0.052	0.100	0.031	650
Delaware	0.003	0.006	0.002	40
District of Columbia	0.173	0.208	0.014	286
Florida	0.187	0.386	0.129	3,468
Georgia	0.239	0.545	0.171	4,714
Hawaii	0.050	0.095	0.031	719
Idaho	0.009	0.016	0.005	164
Illinois	0.207	0.481	0.148	3,222
Indiana	0.085	0.187	0.056	1,516
Iowa	0.037	0.066	0.020	591
Kansas	0.038	0.074	0.021	578
Kentucky	0.032	0.068	0.020	599
Louisiana	0.085	0.177	0.056	1,483
Maine	0.007	0.014	0.005	147
Maryland	0.101	0.195	0.059	1,371
Massachusetts	0.339	0.673	0.210	4,356
Michigan	0.059	0.128	0.042	1,077
Minnesota	0.147	0.312	0.097	2,430
Mississippi	0.028	0.056	0.017	522
Missouri	0.070	0.151	0.044	1,177
Montana	0.001	0.001	0.000	10
Nebraska	0.032	0.055	0.017	490
Nevada	0.026	0.050	0.016	365
New Hampshire	0.020	0.040	0.012	304
New Jersey	0.205	0.443	0.133	2,794
New Mexico	0.032	0.061	0.020	570
New York	0.890	1.610	0.494	10,553
North Carolina	0.251	0.517	0.164	4,846
North Dakota	0.015	0.025	0.007	202
Ohio	0.267	0.612	0.188	5,071
Oklahoma	0.078	0.167	0.052	1,585
Oregon	0.119	0.246	0.076	2,060
Pennsylvania	0.107	0.254	0.077	1,865
Rhode Island	0.009	0.016	0.005	120
South Carolina	0.071	0.154	0.048	1,454
South Dakota	0.020	0.034	0.011	334
Tennessee	0.102	0.231	0.069	1,910
Texas	0.534	1.335	0.415	10,261
Utah	0.600	1.401	0.441	12,628
Vermont	0.005	0.008	0.003	82
Virginia	0.162	0.335	0.101	2,571
Washington	0.202	0.442	0.138	3,260
West Virginia	0.064	0.121	0.036	1,043
Wisconsin	0.060	0.125	0.040	1,047
Wyoming	0.010	0.018	0.006	144
State Totals	**6.513**	**13.751**	**4.230**	**105,879**
Interstate Spillovers	**0.000**	**5.018**	**1.373**	**37,069**
USA Totals	**6.513**	**18.769**	**5.604**	**142,948**

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

Appendix E-2

Impacts of Industrial Tenant Improvement on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.062	0.134	0.042	1,259
Alaska	0.005	0.008	0.003	59
Arizona	0.390	0.802	0.265	6,582
Arkansas	0.008	0.016	0.005	152
California	0.058	0.134	0.043	901
Colorado	0.016	0.037	0.012	283
Connecticut	0.019	0.037	0.012	238
Delaware	0.017	0.031	0.008	203
District of Columbia	0.000	0.000	0.000	0
Florida	0.040	0.084	0.028	752
Georgia	0.060	0.137	0.043	1,183
Hawaii	0.000	0.000	0.000	2
Idaho	0.038	0.068	0.022	691
Illinois	0.109	0.254	0.078	1,703
Indiana	0.055	0.120	0.036	974
Iowa	0.013	0.023	0.007	209
Kansas	0.155	0.298	0.085	2,339
Kentucky	0.100	0.213	0.062	1,867
Louisiana	0.151	0.313	0.099	2,620
Maine	0.011	0.022	0.007	220
Maryland	0.046	0.090	0.027	634
Massachusetts	0.068	0.135	0.042	871
Michigan	0.064	0.138	0.045	1,163
Minnesota	0.038	0.081	0.025	631
Mississippi	0.072	0.145	0.044	1,344
Missouri	0.005	0.010	0.003	77
Montana	0.000	0.000	0.000	3
Nebraska	0.001	0.001	0.000	10
Nevada	0.003	0.006	0.002	41
New Hampshire	0.008	0.015	0.005	116
New Jersey	0.025	0.055	0.017	347
New Mexico	0.000	0.000	0.000	3
New York	0.032	0.058	0.018	382
North Carolina	0.063	0.130	0.041	1,220
North Dakota	0.006	0.010	0.003	79
Ohio	0.069	0.160	0.049	1,322
Oklahoma	0.007	0.015	0.005	142
Oregon	0.203	0.419	0.129	3,504
Pennsylvania	0.012	0.028	0.008	205
Rhode Island	0.001	0.002	0.000	12
South Carolina	0.100	0.218	0.068	2,051
South Dakota	0.002	0.004	0.001	40
Tennessee	0.175	0.395	0.118	3,272
Texas	0.227	0.568	0.177	4,371
Utah	0.031	0.072	0.023	647
Vermont	0.002	0.003	0.001	34
Virginia	0.001	0.002	0.001	18
Washington	0.101	0.220	0.069	1,625
West Virginia	0.677	1.288	0.379	11,068
Wisconsin	0.032	0.067	0.021	559
Wyoming	0.003	0.005	0.002	40
State Totals	**3.382**	**7.074**	**2.178**	**58,066**
Interstate Spillovers	**0.000**	**2.672**	**0.732**	**16,156**
USA Totals	**3.382**	**9.746**	**2.910**	**74,222**

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

Appendix E-3

Impacts of Warehouse Tenant Improvement on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.017	0.037	0.011	343
Alaska	0.003	0.005	0.002	38
Arizona	0.045	0.093	0.031	760
Arkansas	0.002	0.004	0.001	34
California	0.061	0.140	0.045	943
Colorado	0.012	0.026	0.008	201
Connecticut	0.003	0.006	0.002	37
Delaware	0.000	0.001	0.000	4
District of Columbia	0.000	0.000	0.000	0
Florida	0.051	0.105	0.035	941
Georgia	0.047	0.106	0.033	918
Hawaii	0.002	0.003	0.001	22
Idaho	0.001	0.001	0.000	10
Illinois	0.034	0.079	0.024	527
Indiana	0.058	0.127	0.038	1,030
Iowa	0.016	0.029	0.009	258
Kansas	0.012	0.023	0.007	182
Kentucky	0.009	0.018	0.005	161
Louisiana	0.043	0.089	0.028	740
Maine	0.002	0.003	0.001	31
Maryland	0.017	0.034	0.010	238
Massachusetts	0.025	0.049	0.015	317
Michigan	0.008	0.017	0.005	139
Minnesota	0.011	0.024	0.007	186
Mississippi	0.004	0.009	0.003	81
Missouri	0.003	0.007	0.002	55
Montana	0.001	0.001	0.000	12
Nebraska	0.002	0.004	0.001	33
Nevada	0.020	0.037	0.012	276
New Hampshire	0.003	0.005	0.002	39
New Jersey	0.032	0.070	0.021	444
New Mexico	0.008	0.016	0.005	149
New York	0.045	0.082	0.025	535
North Carolina	0.038	0.079	0.025	741
North Dakota	0.007	0.011	0.003	91
Ohio	0.025	0.057	0.017	471
Oklahoma	0.020	0.042	0.013	399
Oregon	0.014	0.028	0.009	237
Pennsylvania	0.078	0.185	0.056	1,358
Rhode Island	0.000	0.000	0.000	4
South Carolina	0.025	0.054	0.017	509
South Dakota	0.003	0.005	0.002	47
Tennessee	0.046	0.103	0.031	854
Texas	0.094	0.236	0.073	1,815
Utah	0.021	0.049	0.015	438
Vermont	0.005	0.008	0.003	83
Virginia	0.024	0.050	0.015	387
Washington	0.020	0.043	0.014	320
West Virginia	0.037	0.070	0.021	605
Wisconsin	0.009	0.020	0.006	166
Wyoming	0.010	0.017	0.005	136
State Totals	**1.070**	**2.307**	**0.717**	**18,347**
Interstate Spillovers	**0.000**	**0.776**	**0.204**	**5,136**
USA Totals	**1.070**	**3.083**	**0.921**	**23,483**

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

Appendix E-4

Impacts of Retail And Entertainment Tenant Improvement on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.068	0.147	0.046	1,380
Alaska	0.010	0.018	0.006	124
Arizona	0.085	0.176	0.058	1,443
Arkansas	0.039	0.077	0.023	711
California	0.333	0.764	0.245	5,135
Colorado	0.062	0.141	0.045	1,088
Connecticut	0.039	0.075	0.024	488
Delaware	0.008	0.015	0.004	100
District of Columbia	0.024	0.029	0.002	40
Florida	0.331	0.684	0.228	6,145
Georgia	0.158	0.360	0.113	3,117
Hawaii	0.009	0.017	0.005	126
Idaho	0.031	0.056	0.018	562
Illinois	0.172	0.401	0.123	2,685
Indiana	0.084	0.185	0.056	1,500
Iowa	0.067	0.119	0.037	1,064
Kansas	0.057	0.109	0.031	855
Kentucky	0.046	0.099	0.029	867
Louisiana	0.082	0.170	0.054	1,423
Maine	0.008	0.015	0.005	155
Maryland	0.083	0.162	0.049	1,138
Massachusetts	0.125	0.247	0.077	1,601
Michigan	0.082	0.176	0.057	1,478
Minnesota	0.082	0.174	0.054	1,357
Mississippi	0.044	0.090	0.027	830
Missouri	0.107	0.231	0.068	1,802
Montana	0.007	0.012	0.004	126
Nebraska	0.026	0.044	0.014	397
Nevada	0.035	0.065	0.021	481
New Hampshire	0.048	0.096	0.029	719
New Jersey	0.188	0.408	0.122	2,572
New Mexico	0.023	0.043	0.014	403
New York	0.290	0.524	0.161	3,436
North Carolina	0.186	0.383	0.121	3,589
North Dakota	0.007	0.012	0.003	97
Ohio	0.160	0.367	0.113	3,038
Oklahoma	0.045	0.098	0.031	927
Oregon	0.064	0.131	0.040	1,097
Pennsylvania	0.156	0.370	0.112	2,714
Rhode Island	0.007	0.013	0.004	97
South Carolina	0.070	0.153	0.048	1,445
South Dakota	0.008	0.013	0.004	133
Tennessee	0.116	0.262	0.078	2,169
Texas	0.505	1.263	0.392	9,709
Utah	0.061	0.143	0.045	1,292
Vermont	0.003	0.005	0.002	50
Virginia	0.133	0.276	0.083	2,117
Washington	0.104	0.227	0.071	1,677
West Virginia	0.015	0.028	0.008	243
Wisconsin	0.116	0.243	0.077	2,035
Wyoming	0.006	0.011	0.003	86
State Totals	**4.617**	**9.927**	**3.085**	**77,863**
Interstate Spillovers	**0.000**	**3.377**	**0.887**	**23,466**
USA Totals	**4.617**	**13.305**	**3.972**	**101,329**

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

Appendix E-5

Impacts of Tenant Improvement in Four Categories on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.221	0.480	0.150	4,494
Alaska	0.048	0.087	0.028	617
Arizona	0.596	1.225	0.405	10,056
Arkansas	0.072	0.141	0.043	1,309
California	0.818	1.877	0.602	12,614
Colorado	0.204	0.459	0.148	3,547
Connecticut	0.114	0.217	0.068	1,412
Delaware	0.029	0.053	0.014	348
District of Columbia	0.198	0.238	0.016	327
Florida	0.609	1.259	0.419	11,306
Georgia	0.504	1.147	0.361	9,932
Hawaii	0.060	0.115	0.038	870
Idaho	0.079	0.141	0.046	1,426
Illinois	0.522	1.216	0.373	8,136
Indiana	0.282	0.619	0.186	5,020
Iowa	0.133	0.237	0.073	2,122
Kansas	0.262	0.505	0.143	3,954
Kentucky	0.187	0.399	0.115	3,494
Louisiana	0.360	0.750	0.237	6,266
Maine	0.028	0.054	0.018	553
Maryland	0.248	0.482	0.146	3,381
Massachusetts	0.556	1.104	0.345	7,145
Michigan	0.213	0.459	0.149	3,857
Minnesota	0.278	0.591	0.184	4,605
Mississippi	0.148	0.300	0.090	2,777
Missouri	0.184	0.399	0.117	3,110
Montana	0.008	0.015	0.005	151
Nebraska	0.061	0.103	0.032	931
Nevada	0.084	0.158	0.052	1,163
New Hampshire	0.078	0.157	0.047	1,178
New Jersey	0.451	0.976	0.293	6,157
New Mexico	0.064	0.121	0.039	1,126
New York	1.258	2.274	0.698	14,905
North Carolina	0.540	1.109	0.351	10,397
North Dakota	0.034	0.057	0.017	470
Ohio	0.521	1.195	0.367	9,901
Oklahoma	0.150	0.322	0.101	3,053
Oregon	0.400	0.825	0.254	6,899
Pennsylvania	0.354	0.837	0.254	6,143
Rhode Island	0.017	0.031	0.009	232
South Carolina	0.265	0.580	0.180	5,458
South Dakota	0.034	0.056	0.018	554
Tennessee	0.438	0.990	0.295	8,205
Texas	1.361	3.402	1.057	26,155
Utah	0.713	1.664	0.525	15,004
Vermont	0.014	0.025	0.008	250
Virginia	0.320	0.664	0.200	5,093
Washington	0.427	0.933	0.292	6,882
West Virginia	0.792	1.508	0.444	12,959
Wisconsin	0.217	0.454	0.144	3,807
Wyoming	0.029	0.050	0.016	407
State Totals	**15.582**	**33.059**	**10.210**	**260,155**
Interstate Spillovers	**15.582**	**11.844**	**3.196**	**81,826**
USA Totals	**15.582**	**44.903**	**13.406**	**341,981**

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

Appendix F: Total Impacts by State

Appendix F-1

Impacts of Office Soft Cost, Site Development, Hard Costs and Tenant Improvement on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.359	0.743	0.237	7,085
Alaska	0.149	0.269	0.087	2,010
Arizona	0.362	0.723	0.241	6,335
Arkansas	0.109	0.210	0.065	1,939
California	1.758	3.981	1.285	27,202
Colorado	0.545	1.217	0.396	9,511
Connecticut	0.252	0.475	0.150	3,096
Delaware	0.016	0.028	0.007	170
District of Columbia	0.833	1.060	0.137	2,685
Florida	0.898	1.834	0.617	16,744
Georgia	1.151	2.555	0.813	22,013
Hawaii	0.239	0.452	0.150	3,641
Idaho	0.044	0.076	0.025	785
Illinois	0.994	2.209	0.689	16,159
Indiana	0.410	0.885	0.270	7,106
Iowa	0.179	0.311	0.098	2,817
Kansas	0.184	0.347	0.100	2,755
Kentucky	0.154	0.319	0.094	2,834
Louisiana	0.410	0.836	0.268	7,156
Maine	0.036	0.069	0.023	672
Maryland	0.484	0.927	0.284	6,598
Massachusetts	1.630	3.154	0.998	22,081
Michigan	0.286	0.599	0.196	5,070
Minnesota	0.707	1.467	0.461	11,597
Mississippi	0.134	0.266	0.080	2,418
Missouri	0.335	0.699	0.207	5,637
Montana	0.002	0.005	0.001	48
Nebraska	0.156	0.261	0.082	2,313
Nevada	0.127	0.234	0.076	1,839
New Hampshire	0.097	0.190	0.059	1,528
New Jersey	0.984	2.058	0.623	13,361
New Mexico	0.155	0.298	0.095	2,628
New York	4.283	7.681	2.413	54,967
North Carolina	1.210	2.385	0.764	22,082
North Dakota	0.070	0.119	0.035	925
Ohio	1.282	2.863	0.889	24,073
Oklahoma	0.374	0.792	0.250	7,655
Oregon	0.574	1.155	0.359	9,965
Pennsylvania	0.516	1.187	0.363	8,753
Rhode Island	0.042	0.075	0.023	586
South Carolina	0.340	0.718	0.226	6,862
South Dakota	0.098	0.159	0.051	1,580
Tennessee	0.490	1.079	0.326	9,022
Texas	2.568	6.290	1.977	48,467
Utah	2.887	6.608	2.107	61,614
Vermont	0.022	0.040	0.013	377
Virginia	0.778	1.557	0.478	12,502
Washington	0.973	2.073	0.657	15,884
West Virginia	0.307	0.585	0.176	5,189
Wisconsin	0.287	0.573	0.184	5,017
Wyoming	0.050	0.084	0.027	724
State totals	**31.329**	**64.778**	**20.233**	**514,077**
Interstate spillovers	**0.000**	**23.973**	**6.608**	**161,151**
USA Total	**31.329**	**88.751**	**26.841**	**675,228**

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

Appendix F-2

Impacts of Industrial Soft Cost, Site Development, Hard Costs and Tenant Improvement on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.488	1.017	0.323	9,678
Alaska	0.036	0.066	0.021	489
Arizona	3.069	6.149	2.046	53,413
Arkansas	0.066	0.128	0.039	1,181
California	0.460	1.043	0.336	7,111
Colorado	0.128	0.285	0.093	2,227
Connecticut	0.151	0.285	0.090	1,854
Delaware	0.131	0.234	0.058	1,440
District of Columbia	0.001	0.002	0.000	4
Florida	0.318	0.651	0.219	5,933
Georgia	0.473	1.053	0.335	9,078
Hawaii	0.001	0.002	0.001	17
Idaho	0.301	0.527	0.174	5,417
Illinois	0.859	1.922	0.598	13,890
Indiana	0.431	0.932	0.284	7,493
Iowa	0.103	0.180	0.056	1,628
Kansas	1.218	2.305	0.661	18,268
Kentucky	0.788	1.636	0.479	14,492
Louisiana	1.185	2.423	0.775	20,675
Maine	0.087	0.168	0.056	1,649
Maryland	0.366	0.702	0.215	4,990
Massachusetts	0.533	1.036	0.327	7,175
Michigan	0.505	1.062	0.348	8,981
Minnesota	0.300	0.625	0.196	4,931
Mississippi	0.564	1.122	0.338	10,233
Missouri	0.036	0.075	0.022	601
Montana	0.001	0.002	0.001	26
Nebraska	0.005	0.009	0.003	76
Nevada	0.023	0.043	0.014	333
New Hampshire	0.060	0.119	0.037	949
New Jersey	0.200	0.421	0.127	2,719
New Mexico	0.001	0.003	0.001	24
New York	0.254	0.455	0.143	3,220
North Carolina	0.498	0.988	0.316	9,164
North Dakota	0.045	0.076	0.022	599
Ohio	0.547	1.225	0.380	10,284
Oklahoma	0.055	0.116	0.037	1,118
Oregon	1.598	3.227	1.001	27,710
Pennsylvania	0.093	0.215	0.066	1,582
Rhode Island	0.007	0.012	0.004	92
South Carolina	0.784	1.664	0.522	15,875
South Dakota	0.019	0.031	0.010	307
Tennessee	1.374	3.035	0.916	25,344
Texas	1.789	4.395	1.379	33,855
Utah	0.242	0.555	0.177	5,150
Vermont	0.015	0.027	0.009	257
Virginia	0.009	0.018	0.005	141
Washington	0.793	1.696	0.537	12,926
West Virginia	5.323	10.155	3.051	89,649
Wisconsin	0.251	0.503	0.162	4,382
Wyoming	0.023	0.038	0.012	328
State totals	**26.608**	**54.658**	**17.020**	**458,955**
Interstate spillovers	**0.000**	**20.898**	**5.789**	**115,964**
USA Total	**26.608**	**75.556**	**22.810**	**574,918**

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

Appendix F-3

Impacts of Warehouse Soft Cost, Site Development, Hard Costs and Tenant Improvement on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.125	0.260	0.083	2,474
Alaska	0.022	0.040	0.013	299
Arizona	0.333	0.667	0.222	5,803
Arkansas	0.014	0.027	0.008	250
California	0.452	1.026	0.331	6,996
Colorado	0.085	0.191	0.062	1,490
Connecticut	0.022	0.041	0.013	268
Delaware	0.003	0.005	0.001	29
District of Columbia	0.000	0.000	0.000	0
Florida	0.375	0.766	0.257	6,980
Georgia	0.345	0.767	0.244	6,611
Hawaii	0.011	0.022	0.007	172
Idaho	0.004	0.007	0.002	70
Illinois	0.250	0.559	0.174	4,046
Indiana	0.428	0.926	0.282	7,440
Iowa	0.120	0.209	0.065	1,891
Kansas	0.089	0.169	0.048	1,339
Kentucky	0.064	0.133	0.039	1,176
Louisiana	0.315	0.643	0.206	5,487
Maine	0.012	0.022	0.007	220
Maryland	0.129	0.248	0.076	1,761
Massachusetts	0.182	0.354	0.112	2,456
Michigan	0.057	0.119	0.039	1,009
Minnesota	0.083	0.173	0.054	1,369
Mississippi	0.032	0.063	0.019	576
Missouri	0.024	0.050	0.015	402
Montana	0.005	0.008	0.003	88
Nebraska	0.016	0.027	0.009	243
Nevada	0.147	0.272	0.089	2,123
New Hampshire	0.019	0.037	0.011	297
New Jersey	0.240	0.504	0.153	3,263
New Mexico	0.063	0.120	0.038	1,063
New York	0.334	0.599	0.188	4,245
North Carolina	0.284	0.563	0.180	5,225
North Dakota	0.048	0.082	0.024	642
Ohio	0.183	0.410	0.127	3,441
Oklahoma	0.145	0.307	0.097	2,965
Oregon	0.102	0.205	0.064	1,763
Pennsylvania	0.578	1.333	0.407	9,824
Rhode Island	0.002	0.003	0.001	26
South Carolina	0.183	0.388	0.122	3,703
South Dakota	0.021	0.035	0.011	344
Tennessee	0.337	0.744	0.225	6,217
Texas	0.698	1.714	0.538	13,205
Utah	0.154	0.353	0.112	3,280
Vermont	0.034	0.063	0.020	591
Virginia	0.180	0.362	0.111	2,890
Washington	0.147	0.314	0.099	2,393
West Virginia	0.274	0.522	0.157	4,612
Wisconsin	0.070	0.141	0.045	1,226
Wyoming	0.072	0.122	0.039	1,045
State totals	**7.912**	**16.714**	**5.250**	**135,329**
Interstate spillovers	**0.000**	**5.742**	**1.531**	**35,537**
USA Total	**7.912**	**22.456**	**6.781**	**170,866**

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

Appendix F-4

Impacts of Retail and Entertainment Soft Cost, Site Development, Hard Costs and Tenant Improvement on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	0.389	0.806	0.257	7,690
Alaska	0.056	0.101	0.033	755
Arizona	0.490	0.976	0.325	8,567
Arkansas	0.225	0.433	0.134	3,996
California	1.907	4.317	1.394	29,508
Colorado	0.357	0.798	0.259	6,234
Connecticut	0.225	0.424	0.134	2,766
Delaware	0.047	0.083	0.020	504
District of Columbia	0.140	0.178	0.023	454
Florida	1.894	3.866	1.301	35,312
Georgia	0.906	2.010	0.640	17,318
Hawaii	0.050	0.094	0.031	759
Idaho	0.179	0.311	0.103	3,206
Illinois	0.986	2.190	0.683	16,042
Indiana	0.483	1.042	0.318	8,364
Iowa	0.383	0.666	0.209	6,037
Kansas	0.324	0.611	0.176	4,855
Kentucky	0.266	0.550	0.161	4,882
Louisiana	0.468	0.954	0.306	8,173
Maine	0.045	0.086	0.029	838
Maryland	0.478	0.915	0.281	6,516
Massachusetts	0.713	1.379	0.437	9,670
Michigan	0.467	0.978	0.321	8,279
Minnesota	0.470	0.975	0.307	7,708
Mississippi	0.254	0.503	0.151	4,573
Missouri	0.611	1.273	0.377	10,273
Montana	0.038	0.069	0.023	732
Nebraska	0.150	0.251	0.079	2,228
Nevada	0.199	0.366	0.119	2,884
New Hampshire	0.273	0.535	0.165	4,309
New Jersey	1.078	2.255	0.683	14,644
New Mexico	0.131	0.251	0.080	2,211
New York	1.660	2.976	0.935	21,330
North Carolina	1.066	2.101	0.674	19,448
North Dakota	0.040	0.068	0.020	526
Ohio	0.915	2.041	0.634	17,164
Oklahoma	0.260	0.551	0.174	5,329
Oregon	0.364	0.732	0.228	6,320
Pennsylvania	0.894	2.055	0.629	15,152
Rhode Island	0.040	0.072	0.022	561
South Carolina	0.402	0.849	0.267	8,115
South Dakota	0.046	0.075	0.024	746
Tennessee	0.662	1.457	0.441	12,189
Texas	2.893	7.082	2.226	54,575
Utah	0.352	0.805	0.257	7,506
Vermont	0.016	0.029	0.009	274
Virginia	0.762	1.525	0.469	12,255
Washington	0.595	1.269	0.402	9,726
West Virginia	0.085	0.162	0.049	1,438
Wisconsin	0.665	1.325	0.426	11,611
Wyoming	0.035	0.060	0.019	516
State totals	**26.435**	**55.481**	**17.463**	**445,069**
Interstate spillovers	**0.000**	**19.383**	**5.183**	**124,491**
USA Total	**26.435**	**74.864**	**22.646**	**569,560**

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

Appendix F-5

Impacts of Soft Cost, Site Development, Hard Costs and Tenant Improvement in Four Categories on State Economies, 2011

State	Direct Spending (in billions of $s)	Total Output (in billions of $s)	Personal Earnings (in billions of $s)	Jobs Supported
Alabama	1.361	2.825	0.899	26,927
Alaska	0.263	0.477	0.154	3,553
Arizona	4.253	8.514	2.834	74,117
Arkansas	0.414	0.798	0.247	7,366
California	4.577	10.367	3.346	70,817
Colorado	1.116	2.491	0.810	19,461
Connecticut	0.650	1.225	0.388	7,984
Delaware	0.197	0.350	0.087	2,143
District of Columbia	0.973	1.240	0.161	3,142
Florida	3.485	7.117	2.394	64,970
Georgia	2.875	6.385	2.032	55,020
Hawaii	0.301	0.569	0.188	4,589
Idaho	0.528	0.921	0.304	9,478
Illinois	3.090	6.880	2.144	50,136
Indiana	1.752	3.784	1.153	30,403
Iowa	0.785	1.366	0.428	12,373
Kansas	1.815	3.432	0.984	27,217
Kentucky	1.273	2.638	0.773	23,384
Louisiana	2.379	4.856	1.555	41,491
Maine	0.179	0.346	0.115	3,379
Maryland	1.456	2.792	0.856	19,864
Massachusetts	3.059	5.923	1.874	41,382
Michigan	1.315	2.759	0.904	23,339
Minnesota	1.560	3.240	1.018	25,605
Mississippi	0.984	1.955	0.588	17,801
Missouri	1.006	2.097	0.621	16,913
Montana	0.046	0.084	0.028	894
Nebraska	0.327	0.548	0.173	4,860
Nevada	0.497	0.914	0.298	7,180
New Hampshire	0.449	0.880	0.272	7,083
New Jersey	2.502	5.238	1.586	33,986
New Mexico	0.350	0.672	0.214	5,926
New York	6.530	11.711	3.678	83,762
North Carolina	3.059	6.037	1.935	55,920
North Dakota	0.203	0.344	0.101	2,692
Ohio	2.927	6.539	2.031	54,961
Oklahoma	0.834	1.767	0.558	17,067
Oregon	2.638	5.320	1.652	45,758
Pennsylvania	2.082	4.789	1.465	35,311
Rhode Island	0.090	0.163	0.049	1,266
South Carolina	1.708	3.619	1.137	34,555
South Dakota	0.185	0.300	0.096	2,978
Tennessee	2.863	6.315	1.908	52,771
Texas	7.948	19.481	6.119	150,102
Utah	3.634	8.321	2.653	77,550
Vermont	0.087	0.159	0.051	1,499
Virginia	1.729	3.462	1.063	27,788
Washington	2.507	5.352	1.695	40,929
West Virginia	5.988	11.425	3.433	100,889
Wisconsin	1.273	2.542	0.817	22,236
Wyoming	0.180	0.303	0.097	2,613
State totals	**92.284**	**191.631**	**59.967**	**1,553,431**
Interstate spillovers	**0.000**	**69.996**	**19.112**	**437,141**
USA Total	**92.284**	**261.627**	**79.078**	**1,990,572**

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

Appendix G: Operating Impacts by State

Appendix G-1

Impacts of Office Operations on State Economies, 2011

State	Direct Spending (in thousands of $)	Output Impacts (in thousands of $)	Earnings Impact (in thousands of $)	Jobs Supported
Alabama	7,463.65	13,771.83	4,175.92	128
Alaska	2,341.52	4,058.48	1,204.14	31
Arizona	2,722.45	4,985.47	1,567.32	40
Arkansas	2,268.60	3,848.19	1,132.28	35
California	21,069.82	44,818.39	13,404.05	298
Colorado	5,611.69	12,015.37	3,631.40	89
Connecticut	5,451.28	9,539.35	2,839.22	63
Delaware	416.90	706.85	175.46	5
District of Columbia	12,121.53	15,190.04	1,130.28	34
Florida	17,656.77	33,035.87	10,493.68	286
Georgia	9,613.10	18,984.12	5,762.32	158
Hawaii	2,522.58	4,400.81	1,367.73	35
Idaho	634.09	998.88	309.15	9
Illinois	7,277.69	15,026.31	4,464.86	104
Indiana	7,761.22	14,358.62	4,157.60	117
Iowa	2,806.12	4,362.72	1,289.93	39
Kansas	2,036.14	3,562.47	974.22	27
Kentucky	2,973.86	5,489.43	1,537.46	47
Louisiana	6,758.09	12,838.68	3,863.67	110
Maine	1,211.27	2,098.28	663.94	20
Maryland	12,318.98	22,019.54	6,364.00	162
Massachusetts	19,557.95	35,389.94	10,528.99	239
Michigan	5,502.55	10,208.40	3,147.63	84
Minnesota	6,185.99	11,549.93	3,458.47	90
Mississippi	1,474.27	2,577.49	759.26	24
Missouri	3,539.11	6,594.35	1,828.56	48
Montana	11.87	20.54	6.23	0
Nebraska	3,016.50	4,581.79	1,343.50	40
Nevada	2,242.21	3,718.19	1,140.53	28
New Hampshire	1,748.33	3,040.04	862.03	23
New Jersey	13,127.45	25,306.87	7,102.33	159
New Mexico	2,184.68	3,909.96	1,182.90	34
New York	21,712.10	36,764.04	10,079.74	224
North Carolina	20,493.75	36,306.96	11,047.50	326
North Dakota	1,281.78	2,073.80	582.76	18
Ohio	25,644.26	50,705.89	14,952.40	403
Oklahoma	8,137.21	16,246.62	4,734.99	139
Oregon	5,191.37	9,188.50	2,715.61	75
Pennsylvania	9,555.05	19,584.28	5,730.04	144
Rhode Island	240.95	403.31	111.13	3
South Carolina	6,378.05	11,701.18	3,489.61	109
South Dakota	1,620.50	2,381.00	695.81	22
Tennessee	7,038.84	13,694.84	4,012.84	106
Texas	46,606.52	105,082.60	31,140.98	812
Utah	15,216.20	32,092.34	9,587.70	288
Vermont	429.97	704.07	212.05	7
Virginia	12,591.79	23,358.44	6,670.38	181
Washington	9,419.16	17,758.97	5,267.39	134
West Virginia	2,991.53	5,231.47	1,471.64	45
Wisconsin	5,521.84	9,864.12	3,018.47	84
Wyoming	938.45	1,507.95	448.88	13
State totals	**435,754.27**	**747,657.58**	**217,838.98**	**5,737**
Interstate spillovers	**0.00**	**372,942.06**	**115,382.80**	**2,796**
USA total	**435,754.27**	**1,120,599.64**	**333,221.78**	**8,533**

Source: CRA, BOMA and BEA

Appendix G-2

Impacts of Industrial Operations on State Economies, 2011

State	Direct Spending (in thousands of $)	Output Impacts (in thousands of $)	Earnings Impact (in thousands of $)	Jobs Supported
Alabama	2,218.12	4,092.85	1,241.04	38
Alaska	93.73	162.45	48.20	1
Arizona	3,345.70	6,126.77	1,926.12	50
Arkansas	141.11	239.35	70.43	2
California	942.54	2,004.91	599.62	13
Colorado	797.07	1,706.62	515.79	13
Connecticut	450.69	788.67	234.73	5
Delaware	460.00	779.93	193.60	5
District of Columbia	0.00	0.00	0.00	0
Florida	639.98	1,197.40	380.35	10
Georgia	1,400.13	2,764.99	839.27	23
Hawaii	0.00	0.00	0.00	0
Idaho	1,409.67	2,220.65	687.27	21
Illinois	4,278.00	8,832.82	2,624.55	61
Indiana	3,984.64	7,371.76	2,134.53	60
Iowa	435.62	677.27	200.25	6
Kansas	1,507.65	2,637.81	721.36	20
Kentucky	1,418.64	2,618.66	733.42	22
Louisiana	916.55	1,741.22	524.00	15
Maine	116.38	201.61	63.79	2
Maryland	258.98	462.91	133.79	3
Massachusetts	895.62	1,620.62	482.16	11
Michigan	1,876.00	3,480.37	1,073.13	28
Minnesota	1,331.36	2,485.79	744.34	19
Mississippi	958.30	1,675.40	493.53	16
Missouri	419.75	782.11	216.87	6
Montana	0.00	0.00	0.00	0
Nebraska	37.15	56.42	16.54	0
Nevada	199.87	331.44	101.67	2
New Hampshire	339.25	589.90	167.27	4
New Jersey	167.67	323.23	90.71	2
New Mexico	0.00	0.00	0.00	0
New York	596.51	1,010.03	276.92	6
North Carolina	2,489.75	4,410.87	1,342.14	40
North Dakota	307.74	497.89	139.91	4
Ohio	3,447.36	6,816.39	2,010.05	54
Oklahoma	418.83	836.23	243.71	7
Oregon	1,166.79	2,065.17	610.35	17
Pennsylvania	492.89	1,010.24	295.58	7
Rhode Island	0.00	0.00	0.00	0
South Carolina	2,660.76	4,881.43	1,455.78	45
South Dakota	133.40	196.00	57.28	2
Tennessee	2,610.27	5,078.57	1,488.11	39
Texas	4,851.62	10,938.83	3,241.70	84
Utah	1,230.50	2,595.24	775.34	23
Vermont	30.71	50.28	15.14	0
Virginia	73.37	136.11	38.87	1
Washington	654.81	1,234.58	366.18	9
West Virginia	207.00	361.99	101.83	3
Wisconsin	1,980.76	3,538.40	1,082.77	30
Wyoming	123.05	197.72	58.86	2
State totals	**54,516.21**	**103,829.89**	**30,858.85**	**836**
Interstate spillovers	**0.00**	**36,365.75**	**10,829.76**	**232**
USA total	**54,516.21**	**140,195.63**	**41,688.61**	**1,068**

Source: CRA, Delta Associates and BEA

Appendix G-3

Impacts of Warehouse Operations on State Economies, 2011

State	Direct Spending (in thousands of $)	Output Impacts (in thousands of $)	Earnings Impact (in thousands of $)	Jobs Supported
Alabama	1,055.88	1,948.30	590.77	18
Alaska	61.57	106.72	31.66	1
Arizona	1,430.86	2,620.24	823.75	21
Arkansas	132.38	224.56	66.07	2
California	3,373.10	7,175.05	2,145.88	48
Colorado	668.56	1,431.47	432.63	11
Connecticut	171.44	300.01	89.29	2
Delaware	8.40	14.24	3.54	0
District of Columbia	0.00	0.00	0.00	0
Florida	2,192.99	4,103.09	1,303.33	36
Georgia	2,297.65	4,537.44	1,377.27	38
Hawaii	32.68	57.01	17.72	0
Idaho	28.22	44.46	13.76	0
Illinois	1,463.95	3,022.63	898.13	21
Indiana	4,052.24	7,496.84	2,170.74	61
Iowa	607.82	945.00	279.41	8
Kansas	374.05	654.45	178.97	5
Kentucky	422.69	780.24	218.53	7
Louisiana	1,328.21	2,523.26	759.35	22
Maine	83.75	145.08	45.91	1
Maryland	842.44	1,505.81	435.20	11
Massachusetts	1,132.15	2,048.62	609.49	14
Michigan	278.54	516.76	159.34	4
Minnesota	295.09	550.97	164.98	4
Mississippi	241.00	421.34	124.11	4
Missouri	76.36	142.27	39.45	1
Montana	10.42	18.03	5.47	0
Nebraska	71.15	108.07	31.69	1
Nevada	550.12	912.24	279.82	7
New Hampshire	114.91	199.81	56.66	1
New Jersey	930.80	1,794.39	503.59	11
New Mexico	202.94	363.21	109.88	3
New York	1,406.75	2,381.98	653.08	15
North Carolina	2,080.93	3,686.60	1,121.76	33
North Dakota	147.25	238.24	66.95	2
Ohio	974.90	1,927.66	568.44	15
Oklahoma	659.32	1,316.38	383.65	11
Oregon	916.61	1,622.36	479.48	13
Pennsylvania	4,341.62	8,898.71	2,603.62	65
Rhode Island	0.00	0.00	0.00	0
South Carolina	1,159.70	2,127.60	634.51	20
South Dakota	101.05	148.48	43.39	1
Tennessee	2,559.23	4,979.26	1,459.02	39
Texas	5,120.98	11,546.14	3,421.67	89
Utah	936.68	1,975.55	590.20	18
Vermont	347.68	569.31	171.46	5
Virginia	757.68	1,405.54	401.37	11
Washington	729.96	1,376.27	408.21	10
West Virginia	1,193.64	2,087.39	587.19	18
Wisconsin	465.70	831.91	254.57	7
Wyoming	304.58	489.42	145.69	4
State totals	**48,736.63**	**94,320.40**	**27,960.64**	**741**
Interstate spillovers	**0.00**	**31,012.29**	**9,308.32**	**213**
USA totals	**48,736.63**	**125,332.68**	**37,268.96**	**954**

Source: CRA, Delta Associates and BEA

Appendix G-4

Impacts of Retail Operations on State Economies, 2011

State	Direct Spending (in thousands of $)	Output Impacts (in thousands of $)	Earnings Impact (in thousands of $)	Jobs Supported
Alabama	3,704.76	6,835.97	2,072.82	63
Alaska	486.10	842.54	249.98	7
Arizona	3,278.03	6,002.87	1,887.17	49
Arkansas	2,074.60	3,519.11	1,035.46	32
California	18,044.26	38,382.62	11,479.27	256
Colorado	2,511.82	5,378.15	1,625.44	40
Connecticut	1,646.56	2,881.36	857.59	19
Delaware	863.95	1,464.83	363.61	10
District of Columbia	1,175.55	1,473.14	109.62	3
Florida	18,380.46	34,389.90	10,923.79	298
Georgia	7,126.46	14,073.45	4,271.77	117
Hawaii	724.22	1,263.46	392.67	10
Idaho	1,235.90	1,946.91	602.55	18
Illinois	8,377.12	17,296.31	5,139.36	119
Indiana	5,435.62	10,056.15	2,911.80	82
Iowa	5,428.73	8,440.15	2,495.50	75
Kansas	2,433.76	4,258.16	1,164.47	32
Kentucky	2,887.71	5,330.42	1,492.92	45
Louisiana	5,107.94	9,703.82	2,920.26	84
Maine	232.55	402.85	127.47	4
Maryland	6,660.04	11,904.48	3,440.58	88
Massachusetts	7,045.44	12,748.66	3,792.90	86
Michigan	5,286.70	9,807.96	3,024.16	80
Minnesota	7,105.46	13,266.69	3,972.53	103
Mississippi	2,953.64	5,163.89	1,521.14	48
Missouri	7,614.19	14,187.38	3,934.04	104
Montana	486.42	841.87	255.22	8
Nebraska	1,825.98	2,773.50	813.26	24
Nevada	1,873.86	3,107.37	953.17	23
New Hampshire	3,446.30	5,992.51	1,699.22	45
New Jersey	7,192.71	13,865.99	3,891.47	87
New Mexico	1,647.87	2,949.22	892.25	26
New York	11,359.62	19,234.69	5,273.65	117
North Carolina	9,969.56	17,662.19	5,374.26	159
North Dakota	373.92	604.96	170.00	5
Ohio	7,698.82	15,222.71	4,488.95	121
Oklahoma	2,701.74	5,394.24	1,572.12	46
Oregon	3,570.61	6,319.82	1,867.79	51
Pennsylvania	11,699.76	23,980.13	7,016.19	176
Rhode Island	481.83	806.52	222.22	6
South Carolina	3,878.60	7,115.69	2,122.09	66
South Dakota	159.08	233.74	68.31	2
Tennessee	6,398.62	12,449.23	3,647.86	96
Texas	31,188.54	70,320.04	20,839.18	543
Utah	3,098.94	6,535.95	1,952.64	59
Vermont	187.94	307.75	92.69	3
Virginia	7,129.74	13,226.04	3,776.91	102
Washington	4,577.24	8,629.97	2,559.69	65
West Virginia	662.56	1,158.66	325.94	10
Wisconsin	7,864.13	14,048.35	4,298.87	120
Wyoming	302.09	485.41	144.50	4
State totals	**257,598.08**	**494,287.77**	**146,127.30**	**3,836**
Interstate spillovers	**0.00**	**168,159.71**	**50,858.24**	**1,208**
USA totals	**257,598.08**	**662,447.48**	**196,985.54**	**5,045**

Source: CRA, Urban Land Institute and BEA

Appendix G-5

Impacts of Office, Industrial, Warehouse and Retail Operations on State Economies, 2011

State	Direct Spending (in thousands of $)	Output Impacts (in thousands of $)	Earnings Impact (in thousands of $)	Jobs Supported
Alabama	14,442.41	26,648.94	8,080.54	247
Alaska	2,982.91	5,170.19	1,533.98	40
Arizona	10,777.04	19,735.35	6,204.36	160
Arkansas	4,616.69	7,831.21	2,304.24	71
California	43,429.73	92,380.98	27,628.82	615
Colorado	9,589.13	20,531.61	6,205.26	151
Connecticut	7,719.97	13,509.39	4,020.83	90
Delaware	1,749.25	2,965.85	736.20	20
District of Columbia	13,297.08	16,663.18	1,239.90	38
Florida	38,870.20	72,726.26	23,101.14	630
Georgia	20,437.34	40,360.00	12,250.63	335
Hawaii	3,279.48	5,721.27	1,778.12	46
Idaho	3,307.89	5,210.90	1,612.73	48
Illinois	21,396.76	44,178.07	13,126.91	305
Indiana	21,233.71	39,283.37	11,374.67	320
Iowa	9,278.29	14,425.14	4,265.09	128
Kansas	6,351.60	11,112.88	3,039.03	83
Kentucky	7,702.90	14,218.75	3,982.33	121
Louisiana	14,110.79	26,806.97	8,067.28	231
Maine	1,643.95	2,847.81	901.11	27
Maryland	20,080.44	35,892.74	10,373.57	265
Massachusetts	28,631.17	51,807.84	15,413.53	350
Michigan	12,943.79	24,013.49	7,404.25	196
Minnesota	14,917.90	27,853.37	8,340.31	216
Mississippi	5,627.20	9,838.11	2,898.04	91
Missouri	11,649.40	21,706.11	6,018.92	159
Montana	508.71	880.43	266.91	9
Nebraska	4,950.76	7,519.78	2,204.99	66
Nevada	4,866.06	8,069.23	2,475.19	61
New Hampshire	5,648.79	9,822.25	2,785.18	73
New Jersey	21,418.63	41,290.48	11,588.10	259
New Mexico	4,035.50	7,222.40	2,185.04	64
New York	35,074.98	59,390.75	16,283.38	362
North Carolina	35,033.99	62,066.63	18,885.67	558
North Dakota	2,110.70	3,414.89	959.62	29
Ohio	37,765.34	74,672.65	22,019.84	593
Oklahoma	11,917.09	23,793.47	6,934.48	204
Oregon	10,845.38	19,195.84	5,673.22	156
Pennsylvania	26,089.33	53,473.36	15,645.43	392
Rhode Island	722.78	1,209.84	333.35	8
South Carolina	14,077.11	25,825.89	7,701.99	240
South Dakota	2,014.03	2,959.21	864.78	28
Tennessee	18,606.96	36,201.89	10,607.83	280
Texas	87,767.65	197,887.62	58,643.54	1,528
Utah	20,482.33	43,199.07	12,905.87	388
Vermont	996.30	1,631.41	491.35	16
Virginia	20,552.58	38,126.12	10,887.52	295
Washington	15,381.17	28,999.80	8,601.47	219
West Virginia	5,054.73	8,839.52	2,486.60	75
Wisconsin	15,832.42	28,282.79	8,654.68	241
Wyoming	1,668.17	2,680.51	797.93	23
State totals	**796,605.19**	**1,440,095.63**	**422,785.77**	**11,150**
Interstate spillovers	**0.00**	**608,479.81**	**186,379.11**	**4,450**
State totals	**796,605.19**	**2,048,575.44**	**609,164.88**	**15,600**

Source: CRA, BOMA, Delta Associates, Urban Land Institute and BEA

Appendix H: National and State Multipliers

What is a Multiplier?

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

Appendix H-1

Output, Earnings and Employment Multipliers: Construction

	MULTIPLIERS		
State	Output	Earnings	Employment
Alabama	2.1653	0.6774	20.29
Alaska	1.7968	0.5762	12.777
Arizona	2.0561	0.6792	16.8768
Arkansas	1.9538	0.5909	18.0997
California	2.2945	0.7357	15.4169
Colorado	2.2565	0.7247	17.4239
Connecticut	1.907	0.6002	12.3948
Delaware	1.8599	0.4895	12.1766
District of Columbia	1.2041	0.0829	1.6529
Florida	2.068	0.6884	18.5767
Georgia	2.2756	0.7163	19.6954
Hawaii	1.9126	0.6275	14.466
Idaho	1.7814	0.5839	18.0269
Illinois	2.3293	0.7145	15.5885
Indiana	2.1933	0.6589	17.7878
Iowa	1.7735	0.5498	15.8997
Kansas	1.9283	0.5471	15.1119
Kentucky	2.1303	0.6154	18.6385
Louisiana	2.0804	0.6587	17.3916
Maine	1.9457	0.6446	19.8014
Maryland	1.9419	0.5903	13.6347
Massachusetts	1.9851	0.6206	12.8515
Michigan	2.1539	0.6986	18.1191
Minnesota	2.1234	0.6593	16.5409
Mississippi	2.0229	0.6079	18.7363
Missouri	2.1669	0.6341	16.8823
Montana	1.885	0.6101	19.1868
Nebraska	1.6839	0.5287	15.1436
Nevada	1.8792	0.6127	13.8263
New Hampshire	2.0077	0.6085	15.0902
New Jersey	2.1645	0.6497	13.6576
New Mexico	1.8981	0.6073	17.642
New York	1.8077	0.5548	11.8508
North Carolina	2.0546	0.6505	19.2706
North Dakota	1.7	0.4996	13.886
Ohio	2.2959	0.7044	19.0197
Oklahoma	2.1514	0.6741	20.3712
Oregon	2.0644	0.6342	17.2528
Pennsylvania	2.3679	0.7177	17.3768
Rhode Island	1.8416	0.5453	13.897
South Carolina	2.1867	0.6778	20.5857
South Dakota	1.6658	0.5325	16.4091
Tennessee	2.262	0.6746	18.743
Texas	2.4996	0.7766	19.2181
Utah	2.334	0.7356	21.0421
Vermont	1.8379	0.5853	18.0288
Virginia	2.0713	0.624	15.8988
Washington	2.1853	0.6842	16.1248
West Virginia	1.9037	0.5604	16.3587
Wisconsin	2.0903	0.6641	17.5305
Wyoming	1.7051	0.537	13.9767
USA Total	**2.8817**	**0.8603**	**21.9468**

Note: U.S. multipliers calculated from BEA state-level data.

Appendix H-2

Output, Earnings and Employment Multipliers: Soft Costs

State	MULTIPLIERS		
	Output	Earnings	Employment
Alabama	1.5453	0.5628	16.7941
Alaska	1.9083	0.6322	17.7112
Arizona	1.6567	0.5849	20.9077
Arkansas	1.7575	0.6231	15.9004
California	2.0971	0.7039	15.7857
Colorado	2.0960	0.7335	17.5556
Connecticut	1.7492	0.5743	11.5883
Delaware	1.2743	0.1367	2.8682
District of Columbia	1.6592	0.6225	11.9808
Florida	1.8973	0.6798	19.0241
Georgia	1.9062	0.6529	15.9352
Hawaii	1.7483	0.6122	19.4420
Idaho	1.5284	0.5232	17.5865
Illinois	1.6257	0.5738	19.9684
Indiana	1.9629	0.6560	14.7816
Iowa	1.5417	0.5199	14.9226
Kansas	1.6579	0.5135	14.2839
Kentucky	1.7150	0.5592	16.7146
Louisiana	1.8039	0.6238	17.7647
Maine	1.8110	0.6181	12.9519
Maryland	1.7724	0.5716	13.6644
Massachusetts	1.6542	0.5655	17.4086
Michigan	1.7716	0.6204	15.5753
Minnesota	1.8087	0.6154	15.6734
Mississippi	1.7621	0.5344	14.1308
Missouri	1.6272	0.5244	16.4381
Montana	1.5893	0.5801	21.1401
Nebraska	1.6124	0.5322	13.1994
Nevada	1.6074	0.5254	18.0461
New Hampshire	1.6915	0.5864	19.6107
New Jersey	1.6899	0.5447	13.1475
New Mexico	2.0321	0.6313	12.8267
New York	1.7129	0.6104	18.3048
North Carolina	1.5084	0.5287	12.5965
North Dakota	1.6536	0.4862	9.3491
Ohio	1.8787	0.6330	17.3974
Oklahoma	1.9250	0.6364	20.9436
Oregon	1.7197	0.5762	17.9107
Pennsylvania	1.9128	0.6241	14.5753
Rhode Island	1.6491	0.5187	15.0769
South Carolina	1.7046	0.5912	18.0775
South Dakota	1.3860	0.4536	14.5830
Tennessee	1.8606	0.6150	16.5235
Texas	2.1684	0.7310	16.9492
Utah	2.0400	0.6989	23.0339
Vermont	1.7935	0.5654	12.5890
Virginia	1.6148	0.5645	17.0319
Washington	1.8338	0.6282	17.4873
West Virginia	1.9347	0.6576	20.0360
Wisconsin	1.4614	0.5148	17.1230
Wyoming	1.5884	0.5561	17.9063
USA Total	**2.5609**	**0.8368**	**19.3567**

Source: BEA

Appendix H-3

Output, Earnings and Employment Multipliers: Services to Buildings

State	MULTIPLIERS		
	Output	Earnings	Employment
Alabama	1.9302	0.6263	32.5786
Alaska	1.8096	0.5713	27.1234
Arizona	1.9606	0.656	26.384
Arkansas	1.7946	0.5686	30.8105
California	2.3224	0.7436	26.6646
Colorado	2.2594	0.7313	29.6195
Connecticut	1.9083	0.6021	24.8904
Delaware	1.8922	0.5011	23.628
District of Columbia	1.3561	0.1573	9.3368
Florida	2.0441	0.6839	30.0088
Georgia	2.1697	0.7013	30.9058
Hawaii	1.9799	0.6446	25.9724
Idaho	1.6515	0.5505	27.8536
Illinois	2.2961	0.7227	27.9856
Indiana	2.0422	0.6338	28.5382
Iowa	1.6281	0.5185	27.3752
Kansas	1.8587	0.5336	24.1606
Kentucky	1.9971	0.5979	29.9743
Louisiana	2.004	0.6443	31.6408
Maine	1.8445	0.6154	31.2976
Maryland	1.9583	0.606	27.1243
Massachusetts	1.9938	0.634	25.771
Michigan	2.0198	0.6693	29.7054
Minnesota	2.0619	0.6574	29.543
Mississippi	1.8562	0.5747	31.2693
Missouri	2.022	0.5999	25.5065
Montana	1.8036	0.5806	32.0825
Nebraska	1.6014	0.5182	29.0094
Nevada	1.7825	0.5925	25.3249
New Hampshire	1.903	0.5881	25.9153
New Jersey	2.2172	0.6612	24.7336
New Mexico	1.894	0.6135	27.8363
New York	1.8824	0.5733	21.8211
North Carolina	1.9332	0.6304	31.8785
North Dakota	1.6392	0.4958	27.7894
Ohio	2.1645	0.682	28.9837
Oklahoma	2.0684	0.6633	30.9879
Oregon	1.9128	0.6144	26.8027
Pennsylvania	2.2015	0.6786	28.6436
Rhode Island	1.8696	0.5691	23.6139
South Carolina	1.9819	0.6285	31.1222
South Dakota	1.5245	0.4975	28.7816
Tennessee	2.1092	0.658	25.8425
Texas	2.3998	0.7578	33.2554
Utah	2.2316	0.7102	33.6617
Vermont	1.7412	0.5566	30.5476
Virginia	1.9916	0.605	30.2489
Washington	2.1046	0.6695	28.0816
West Virginia	1.7688	0.5321	26.8939
Wisconsin	1.9229	0.6312	29.5816
Wyoming	1.6489	0.5174	28.9966
USA Total	**2.8178**	**0.8778**	**32.6195**

Source: BEA

Appendix H-4

Output, Earnings and Employment Multipliers: Management Services

State	MULTIPLIERS		
	Output	Earnings	Employment
Alabama	1.8876	0.7091	14.8562
Alaska	1.7347	0.6583	12.4927
Arizona	2.0147	0.7501	14.9046
Arkansas	1.7074	0.6348	12.2201
California	2.2938	0.8331	13.7503
Colorado	2.2744	0.8285	13.9145
Connecticut	1.9999	0.7178	9.8547
Delaware	1.7828	0.521	8.9037
District of Columbia	1.3782	0.1121	1.285
Florida	2.1042	0.7909	15.358
Georgia	2.2027	0.7882	14.9069
Hawaii	1.8857	0.7116	14.0453
Idaho	1.6643	0.6463	12.417
Illinois	2.2928	0.8143	13.066
Indiana	1.8641	0.6524	13.2036
Iowa	1.6444	0.6066	12.2681
Kansas	1.7459	0.6178	11.355
Kentucky	1.8676	0.6385	12.8888
Louisiana	1.8883	0.7156	14.8865
Maine	1.8819	0.7233	14.8387
Maryland	2.0073	0.6822	12.1145
Massachusetts	2.083	0.75	11.1838
Michigan	2.0013	0.736	12.882
Minnesota	2.0555	0.7413	12.0401
Mississippi	1.7259	0.6477	13.6865
Missouri	2.0359	0.6805	11.907
Montana	1.7415	0.6698	15.3957
Nebraska	1.6502	0.6095	11.0346
Nevada	1.8398	0.7008	11.2946
New Hampshire	1.8679	0.6147	11.2579
New Jersey	2.1581	0.7111	10.5498
New Mexico	1.7804	0.6825	15.1318
New York	1.8886	0.5653	7.8038
North Carolina	1.9182	0.7103	13.1103
North Dakota	1.5951	0.5985	12.5686
Ohio	2.0723	0.7423	13.826
Oklahoma	1.9268	0.7063	15.0338
Oregon	1.9291	0.6955	13.7001
Pennsylvania	2.1859	0.774	13.3444
Rhode Island	1.8612	0.6254	10.2613
South Carolina	1.9512	0.709	16.1509
South Dakota	1.5187	0.5208	10.1745
Tennessee	2.1193	0.7452	14.2839
Texas	2.3305	0.8297	15.7644
Utah	2.2044	0.8038	18.9188
Vermont	1.8011	0.6851	15.3617
Virginia	2.0348	0.6915	11.6482
Washington	2.0094	0.7	12.3477
West Virginia	1.6924	0.6212	13.8898
Wisconsin	1.9026	0.7008	13.4618
Wyoming	1.5584	0.6125	10.7878
USA Total	**2.7861**	**0.9959**	**23.0574**

Source: BEA

Appendix H-5

Output, Earnings and Employment Multipliers: Utilities

State	MULTIPLIERS		
	Output	Earnings	Employment
Alabama	1.5035	0.2927	5.7433
Alaska	1.6299	0.302	5.1412
Arizona	1.4093	0.289	5.1326
Arkansas	1.4204	0.2625	5.339
California	1.7177	0.314	4.7998
Colorado	1.8544	0.3715	6.4966
Connecticut	1.302	0.2324	3.2357
Delaware	1.3561	0.2253	3.7754
District of Columbia	1.1103	0.04	0.4913
Florida	1.3967	0.2891	5.5051
Georgia	1.4103	0.2749	4.9842
Hawaii	1.3287	0.2583	4.8233
Idaho	1.2868	0.232	4.6591
Illinois	1.5022	0.2856	4.6006
Indiana	1.4402	0.2714	5.2267
Iowa	1.2579	0.2221	4.1009
Kansas	1.5395	0.2665	5.1371
Kentucky	1.5032	0.2796	5.7969
Louisiana	1.6982	0.3295	6.1139
Maine	1.3605	0.2753	5.5838
Maryland	1.3589	0.254	3.9813
Massachusetts	1.3088	0.2249	3.1724
Michigan	1.3844	0.2648	4.7369
Minnesota	1.371	0.2555	4.5544
Mississippi	1.4817	0.287	6.037
Missouri	1.3698	0.2264	4.3349
Montana	1.5521	0.2943	6.0059
Nebraska	1.2209	0.1883	2.8326
Nevada	1.2446	0.2037	3.4088
New Hampshire	1.3059	0.2326	3.8329
New Jersey	1.3441	0.2262	3.4157
New Mexico	1.6417	0.3183	6.3992
New York	1.3038	0.2309	3.2708
North Carolina	1.3145	0.2413	4.605
North Dakota	1.5598	0.2667	4.9604
Ohio	1.5196	0.2828	5.483
Oklahoma	1.8881	0.3464	6.6799
Oregon	1.3063	0.2246	4.1289
Pennsylvania	1.5812	0.3029	5.1941
Rhode Island	1.2459	0.1789	3.0346
South Carolina	1.3605	0.2497	5.2594
South Dakota	1.2372	0.2234	4.2202
Tennessee	1.438	0.2767	5.3502
Texas	1.8996	0.3823	6.3751
Utah	1.7683	0.3426	7.0125
Vermont	1.2694	0.2118	3.9407
Virginia	1.4379	0.2646	4.3992
Washington	1.3946	0.2642	4.687
West Virginia	1.6648	0.2993	6.3306
Wisconsin	1.3571	0.2638	4.9638
Wyoming	1.5441	0.2897	5.2014
USA Total	**1.9757**	**0.4119**	**5.6339**

Source: BEA

Appendix H-6

Output, Earnings and Employment Multipliers

State	MULTIPLIERS		
	Output	Earnings	Jobs
Alabama	1.8452	0.5595	17.0938
Alaska	1.7333	0.5143	13.4251
Arizona	1.8312	0.5757	14.8373
Arkansas	1.6963	0.4991	15.4121
California	2.1271	0.6362	14.1605
Colorado	2.1411	0.6471	15.7943
Connecticut	1.7499	0.5208	11.6107
Delaware	1.6955	0.4209	11.2101
District of Columbia	1.2531	0.0932	2.8224
Florida	1.8710	0.5943	16.2191
Georgia	1.9748	0.5994	16.3912
Hawaii	1.7446	0.5422	13.8802
Idaho	1.5753	0.4875	14.6216
Illinois	2.0647	0.6135	14.2397
Indiana	1.8500	0.5357	15.0852
Iowa	1.5547	0.4597	13.8257
Kansas	1.7496	0.4785	13.0429
Kentucky	1.8459	0.5170	15.6716
Louisiana	1.8998	0.5717	16.3493
Maine	1.7323	0.5481	16.6600
Maryland	1.7874	0.5166	13.1762
Massachusetts	1.8095	0.5383	12.2273
Michigan	1.8552	0.5720	15.1759
Minnesota	1.8671	0.5591	14.5052
Mississippi	1.7483	0.5150	16.2455
Missouri	1.8633	0.5167	13.6356
Montana	1.7307	0.5247	16.9549
Nebraska	1.5189	0.4454	13.2938
Nevada	1.6583	0.5087	12.4575
New Hampshire	1.7388	0.4931	12.9899
New Jersey	1.9278	0.5410	12.1030
New Mexico	1.7897	0.5415	15.7573
New York	1.6933	0.4642	10.3183
North Carolina	1.7716	0.5391	15.9169
North Dakota	1.6179	0.4546	13.7855
Ohio	1.9773	0.5831	15.7008
Oklahoma	1.9966	0.5819	17.1056
Oregon	1.7700	0.5231	14.3974
Pennsylvania	2.0496	0.5997	15.0396
Rhode Island	1.6739	0.4612	11.7335
South Carolina	1.8346	0.5471	17.0474
South Dakota	1.4693	0.4294	13.7297
Tennessee	1.9456	0.5701	15.0567
Texas	2.2547	0.6682	17.4151
Utah	2.1091	0.6301	18.9313
Vermont	1.6375	0.4932	15.7379
Virginia	1.8551	0.5297	14.3573
Washington	1.8854	0.5592	14.2223
West Virginia	1.7488	0.4919	14.9207
Wisconsin	1.7864	0.5466	15.2334
Wyoming	1.6069	0.4783	13.6692
USA Total	**2.5716**	**0.7647**	**19.5829**

Source: BEA

*Average of operating costs for management consulting services, water, sewage. and other systems; and building and dwelling services.

Appendix I: NAIOP Survey of Members

NAIOP conducted surveys of its membership in 2006 and 2008 to determine the values of soft costs, site development costs and outlays for tenant improvements relative to the hard costs associated with building office, industrial, warehouse and retail buildings. The results of these surveys have been used in calculating the total building costs to determine the contribution of annual construction outlays on the U.S. economy. The results of these analyses have been reported in *The Contribution of Office, Industrial and retail Development and Construction on the U.S. Economy*, 2008, 2010, and 2011 funded by the NAIOP Research Foundation and distributed by NAIOP.

2006 Survey

	Soft Costs	Site Development Costs	Building Construction Costs	Tenant Improvement
Office	17.13	15.76	49.49	17.62
Manufacturing	12.05	18.58	55.69	13.68
Warehouse	14.23	16.81	54.90	14.07
Retail	17.72	16.06	52.39	13.83
Combined	16.29	16.40	52.47	14.84

2008 Survey

	Soft Costs	Site Development Costs	Building Construction Costs	Tenant Improvement
Office	17.43	14.24	49.74	18.58
Manufacturing	14.34	19.32	52.59	13.75
Warehouse	14.09	18.54	53.64	13.73
Retail	15.76	20.82	47.00	16.41
Combined	15.62	17.19	51.24	15.94

Small shifts in the allocation of costs across these four categories—soft costs, site development costs, hard costs, tenant improvements—have been documented in each of the previous two surveys. These shifts in cost allocation could be attributable to changes in the marketplace, changes in the mix of building types and changes in the distribution of construction activity among the states.

The Great Recession had a major impact on the real estate development industry and on the commercial construction sector. Because this impact may have accelerated the shift of costs across the four product types (office, warehouse, manufacturing and retail), a new survey was conducted from February 3-20, 2012. Questionnaires were emailed to 5,070 NAIOP members throughout the United States. Survey participants were mainly commercial real estate developers and owners involved in the construction of office, warehouse, manufacturing or retail buildings. There were a total of 223 completed responses for a response rate of 4.53 percent. This response rate was slightly higher than the response rates for the previous two surveys (3.79 percent and 3.74 percent). Eighty-eight survey respondents indicated office building development; 25 manufacturing facility development; 66 warehouse or flex buildings development; and 31 retail property development.

NAIOP tallied the survey results and delivered them to the George Mason University Center for Regional Development for analyses on February 23, 2012. The results of the survey are reported as percentages of total building cost as shown in the table below.

Several resources were used to calculate the soft costs, site development costs and outlays for tenant improvements in this report. They include the hard cost expenditures provided by McGraw-Hill Construction Analytics for the hard costs component of the construction budget. The other cost categories were derived by applying the percent distributions by building type developed from the 2012 NAIOP Members' Survey.

Building Cost Allocation Percentages, by Building Type, 2012

Building Type	Soft Costs	Site Development Costs	Hard Costs*	Tenant Improvement
Office	15.22	13.73	50.26	20.79
Manufacturing	13.13	17.12	57.04	12.71
Warehouse/Flex	12.59	17.01	56.73	13.67
Retail	15.52	19.68	47.29	17.52
Combined**	14.19	16.04	52.66	17.10

*building construction costs

** Weighted average reflecting the difference in the number 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, engineering, design, taxes, fees); 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 outlays associated with developing a new building and normally would include site preparation, building construction (labor and materials), landscaping, roadway and parking facilities, and any off-site improvements required to support the new facility. Tenant improvements may be included although these would exclude furniture and equipment provided by the tenant.

Direct Outlays — all spending associated with the construction and operation of a building. For a completed structure, direct outlays are those annual expenditures associated with building operations including management, maintenance and repairs, and operations (security, cleaning services, utilities, taxes). See Hard Costs and Soft Costs.

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 and not the occupied or usable building area.

Hard Costs — a category of construction costs that reflect the outlays for the building construction phase. Costs for labor and materials are two basic types of hard costs. Soft costs, site development and tenant improvement costs are reported independently from hard costs.

Indirect Benefit — the additional economic benefits (measured in dollars or jobs) resulting from the accumulated additional value generated by the direct outlays or 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 impacts of the payroll spending by workers in the 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 reflected in the base values for calculating industry economic impacts.

Interstate Spillovers — economic impacts that are generated by direct construction spending outlays in a given state that are realized by another state due to workers commuting across state lines (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.

Land Value — either assessed land value exclusive of structures or purchase price.

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

output multiplier measures the contribution (impact) of a direct outlay 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 outlay (expressed in jobs supported per $1,000,000 in direct spending); and

personal earnings multiplier measures the total personal earnings (wages and salaries) generated within the state or nation as a result of a direct outlay 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).

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 Costs — a category of construction costs that reflect the professional services and administrative and management processes required to support the construction project. They may precede actual on-site construction by several years and include legal and other consultant services, architectural and engineering services, management and administration, inspections, loan origination fees, real estate taxes and other governmental fees, and insurance required to support the construction of the building.

Tenant Improvements — a category of construction costs that reflect 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, shelves, windows, bathrooms, etc. The builder or the tenant may pay for these improvements.

Total Output — the sum of the direct and indirect benefits (outlays) reflecting the combination of the initial expenditures by a firm and its subsequent accumulated value as this spending is recycled throughout the economy inclusive of benefits (induced) generated by the re-spending of personal earnings and 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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