

BOMA 2022 OFFICE MARKET STUDY

The Impact of U.S. Office Buildings Operations on the Economy

Conducted by:
Business Research Division
Leeds School of Business
University of Colorado Boulder
www.colorado.edu/business/brd



Contents

2	Table of Contents
3	Background
6	Executive Summary
7	Research Approach
8	Building Expenditures & the National Economy
10	85 Office Markets
15	City by City: How Building Expenditures Impact the Top 30
17	Trends to Watch
21	Conclusion
22	Appendix A: Glossary of Terms & Usage
23	Appendix B: Office Market Inventory and Annual Operating Costs by State and MSA
28	Appendix C: Jobs Supported by Office Building Operating Expenditures
33	Appendix D: Economic Multipliers & Impact Calculations
34	Appendix E: Aggregate Economic Impact Multipliers for Building Operations
39	Appendix F: NCREIF Definitions of Operating Expenditures
40	Appendix G: BOMA Local Associations

Background

Acknowledgements

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- University of Colorado Boulder, Leeds School of Business, Business Research Division
- National Council of Real Estate Investment Fiduciaries (NCREIF)
- CoStar

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actively and responsibly represent and promote the interests of the commercial real estate industry and disseminate education programs on the commercial real estate industry. This document was prepared by the Business Research Division at the University of Colorado's Leeds School of Business for BOMA International to provide information to those in the commercial real estate industry and other interested parties about the economic impact of office building operations (including management, maintenance and repair, servicing and utilities) in the office markets served by BOMA local associations. Because the market boundaries of BOMA local associations are not always coterminous with the metro areas that they represent, the data presented in this document may differ according to the geographic areas in question.

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About the Authors

Formed in 1906, the Leeds School of Business is the eighth-oldest business school in the United States. As part of the University of Colorado, the Leeds School embraces the University’s research and teaching mission with prominent faculty teaching 4,500 undergraduate and graduate students in accounting, finance, marketing, and management degree programs.



A center within the Leeds School of Business, the Business Research Division (BRD) was formed shortly after the school came into existence. Continuing with the inaugural mission, the BRD conducts applied industry and economic research for multiple constituencies external to the school. Faculty and staff who contributed to this report have extensive experience in conducting real estate and economic research. The project team included Brian Lewandowski, Executive Director of the Business Research Division; Dr. Richard Wobbekind, Faculty Director of the BRD and Associate Dean for at the Leeds School of Business; Dr. Michael P. Kercheval, Executive Director, CU Real Estate Center; and Adam Illig, Data Scientist with the BRD.

For more information about the project team or the Business Research Division, please visit: www.colorado.edu/business/brd.



About BOMA International

Founded in 1907, the Building Owners and Managers Association (BOMA) International is a federation of U.S. local associations and global affiliates. The leading trade association for commercial real estate professionals for more than 100 years, it represents the owners, managers, service providers and other property professionals of all commercial building types, including office, industrial, medical, corporate and mixed-use. BOMA International is the partner individuals in the commercial real estate industry choose to maximize value for their careers, organizations, and assets. Its mission is to advance a vibrant commercial real estate industry through advocacy,

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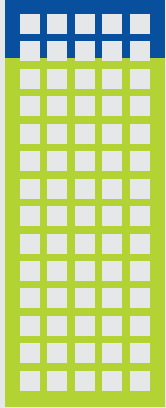
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Market Summary

13%

VACANCY



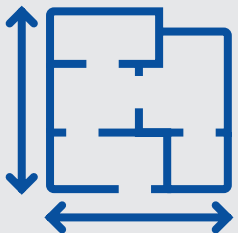
1.7 million
Jobs Supported

\$145 billion
Contribution
to GDP

\$73 billion
Personal Income



Size of BOMA Office Markets



8.6

billion
square feet

Executive Summary

The U.S. office market facilitates economic activity, providing space for business activities ranging from finance and accounting to engineering and programming. But the office market itself is an economic engine, beginning with the design and building of new space and continuing with the administration and maintenance of existing office space. In dense, urban settings, office space often is affiliated with vibrant central business districts, with office workers commuting by foot, train or car, and eating lunch and shopping near where they work. In suburban markets, office space is often still conjoined with other economic activity in mixed use developments. While the office landscape has shifted due to the change in work habits post-pandemic, their importance as an economic engine remains pronounced.

The 8.6 billion square feet of private-sector office space in 85 markets served by BOMA International equates to direct spending of \$134.9 billion and directly employs an estimated

853,700 workers. Adding in the multiplicative impacts of spending on goods and services and the associated labor to support building operations, the total economic impact grows to \$255.9 billion, supporting 1.7 million jobs. Thus, for each dollar spent on office building operations, the BOMA markets gained \$1.9 in total output.

In addition to building operations, there is economic activity from new construction. In 2022, the U.S. recorded \$75.5 billion in new office construction, the third-largest value of activity (behind 2019 and 2020) in nominal dollars (not adjusted for inflation), increasing 0.8% year-over-year. The 0.8% growth in 2022 follows the 7% decline in 2021. Activity started strong in 2023, increasing 16.4% year-to-date through March compared to the same period in 2022. While under construction, the flow of new construction will become the future stock of inventory that will be counted in future years' operations.

The 8.6 billion square feet of private-sector office space in 85 markets served by BOMA International equates to direct spending of \$134.9 billion and directly employs an estimated 853,700 workers.

Research Approach



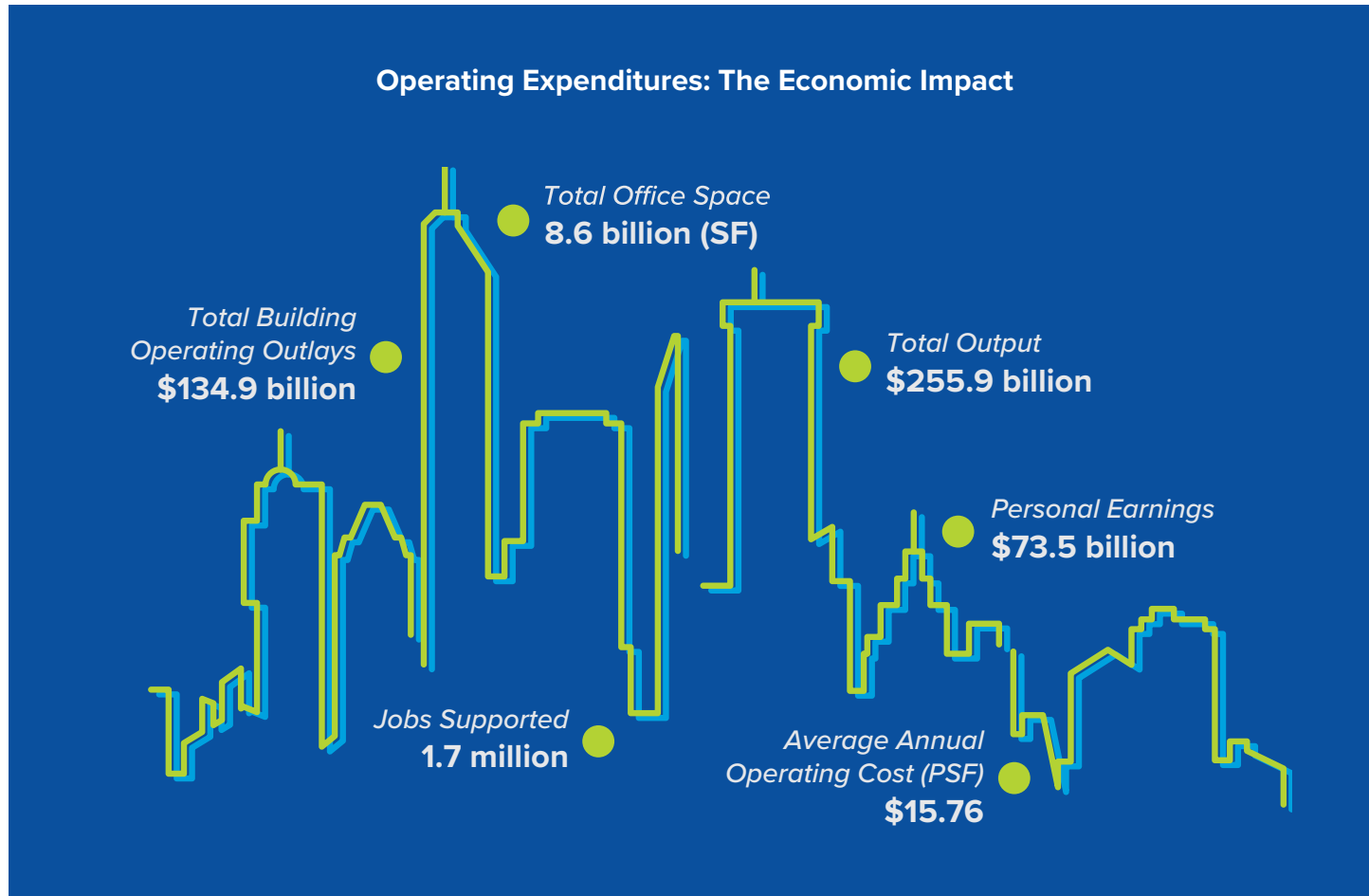
The BOMA 2022 Office Market Study focuses on all commercial, privately owned office buildings of 25,000 square feet or larger within the office markets served by BOMA International's 85 U.S. local associations. It includes both tenant-occupied and owner-occupied buildings, but it excludes government-owned assets. Applying these filters, office space totaled 8.6 billion square feet in the 85 covered markets.

The 2022 square footage estimates were sourced from CoStar based on an aggregation of counties that coincide with BOMA local association boundaries, some of which are statewide, while others are regional or metropolitan statistical areas (MSAs).

The 2022 operating cost data for these office buildings were sourced from the National Council of Real Estate Investment Fiduciaries (NCREIF). NCREIF publishes operating expenses for administrative, marketing, utility, maintenance, insurance, management, tax, and other (see definitions in

Appendix F). NCREIF supplies expenses for a majority of BOMA markets; for the office markets where operating cost data were not collected, estimates were made based on similar markets based on the building stock (square footage).

Multipliers were sourced from the Bureau of Economic Analysis. The Regional Input-Output Modeling System (RIMS II) multipliers were released in March 2023 for the 2021 economy. Multipliers were purchased for all states and for metropolitan statistical areas that coincide with BOMA's major markets. The economic impact of existing building operations is derived from direct spending on operations and estimating the flow of spending through the economy. Some of the spending remains in the local economy, while other spending "leaks" out of the economy as some goods and services are sourced from suppliers in other states or countries. These multipliers and the economic impact calculations are discussed in Appendix D and are presented by state and metropolitan area in Appendix E.



Building Expenditures & the National Economy

The national office building inventory in the 85 BOMA markets generated annual expenditures of \$134.9 billion, or \$15.76 per square foot. The expenses for operating these buildings supported other businesses through the procurement of services from

other companies (i.e., supply chain) and the wages and salaries paid to workers delivering services to buildings—the multiplier effect. Table 1 presents a summary of the economic impacts generated by annual expenditures for office building operations.

Annual Office Construction Put in Place

The U.S. Census Bureau publishes estimates of the value of construction put in place, including the value of private office buildings. This new office space that is under construction will become part of the future stock of inventory that will provide productive work space for office-occupying industries and will record operating expenses to keep buildings functioning, rented, and insured. In 2022, the U.S. recorded \$75.5 billion in new office construction, the third-largest value of activity (behind 2019 and 2020) in nominal

dollars (not adjusted for inflation), increasing 0.8% year-over-year. The 0.8% growth in 2022 follows the 7% decline in 2021. Activity started strong in 2023, increasing 16.4% year-to-date through March compared to the same period in 2022.

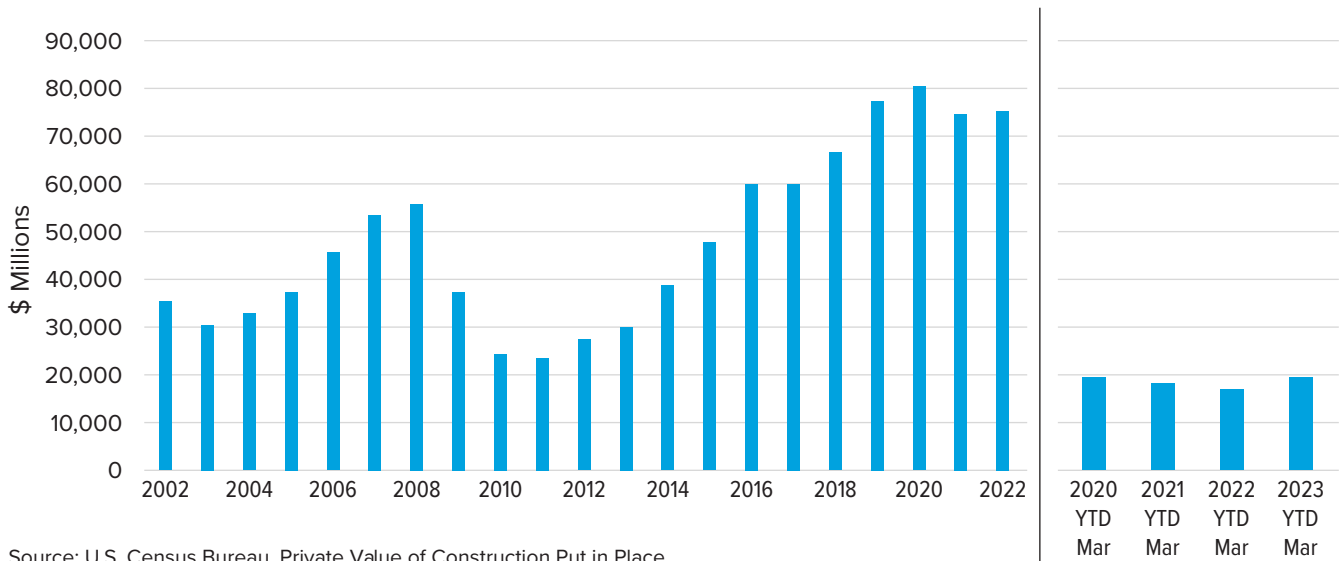
The Ripple Effect

The \$134.9 billion in operating outlays starts a ripple effect that spreads economic activity through the economy. The economic activity quantified in this report examines the upstream impact of spending that supports building operations—specifically, administrative, marketing, utility, maintenance, insurance, management, tax, and other operating expenditures. Take maintenance as an example. As

building owners contract out building maintenance, it supports other businesses that provide those maintenance and repair services, and those companies employ workers, pay salaries, provide benefits, rent space, buy vehicles. Furthermore, they source parts from manufacturers and wholesalers. This is how money gets spent and re-spent in the economy—the multiplier effect.

The economic activity related to operating expenses refers to the direct effect, while the purchases of goods and services in the upstream supply chain refers to the indirect effect, and the salaries and wages that are paid to workers refer to the induced impact.

Value of Private Office Construction



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



85 Office Markets

Table 1 shows the estimated economic impact of office inventory by state and metropolitan area.

For each listed locale, there are six data columns:

Column 1—State—identifies BOMA region by state.

Column 2—Total Expenditures—is the total annual expenditures for office building operations. The square footage of this office space from CoStar was multiplied by the average 2022 operating cost from NCREIF in each respective market area.

Column 3—State Output—represents the total multiplied impact of the direct total expenditures on building operations on the state's economy.

Column 4—State GDP—represents the total contribution of the annual building operating expenditures in each office market to their respective state's gross domestic product. This measure represents total sales minus intermediate inputs.

Column 5—Earnings—represents the earnings generated as a result of the building operating expenditures. This is income that accrued to workers residing in the state or metropolitan area within which the local associations are located. This encompasses all workers in businesses that benefit from the payroll spending of employees involved in building operations and the re-spending of these payroll dollars across all sectors of the local or state economies.

Column 6—Jobs Supported—represents an estimated headcount (not FTE) of the direct, indirect and induced employment impact of the expenditures shown in column two.

Table 1: Economic Impacts of Office Building Operations by State and Metropolitan Area

<i>State</i>	<i>Total Expenditures (\$ Millions)</i>	<i>State Output (\$ Millions)</i>	<i>State GDP (\$ Millions)</i>	<i>Earnings (\$ Millions)</i>	<i>Jobs Supported (Thousands)</i>
ALABAMA					
BOMA/Alabama	\$882.3	\$1,704.1	\$946.5	\$510.6	13.8
BOMA/North Alabama	\$260.6	\$503.3	\$279.5	\$150.8	4.1
ALASKA					
BOMA/Anchorage	\$125.8	\$200.3	\$114.1	\$62.2	1.6
ARIZONA					
BOMA/Greater Phoenix	\$1,399.5	\$2,717.7	\$1,571.0	\$844.6	20.1
BOMA/Greater Tucson	\$151.3	\$293.7	\$169.8	\$91.3	2.2
ARKANSAS					
BOMA/Greater Little Rock	\$361.4	\$654.5	\$361.9	\$195.6	5.3
BOMA/Northwest Arkansas	\$159.5	\$288.9	\$159.7	\$86.3	2.3
CALIFORNIA					
BOMA/Greater Los Angeles	\$6,502.1	\$12,506.3	\$7,114.5	\$3,867.7	81.9
BOMA/Inland Empire	\$445.1	\$856.2	\$487.0	\$264.8	5.6
BOMA/Oakland-East Bay	\$1,670.7	\$3,213.4	\$1,828.0	\$993.8	21.1
BOMA/Orange County	\$1,786.3	\$3,435.8	\$1,954.6	\$1,062.6	22.5
BOMA/Sacramento	\$1,511.3	\$2,906.8	\$1,653.6	\$899.0	19.0
BOMA/San Diego	\$1,345.1	\$2,587.2	\$1,471.8	\$800.1	17.0
BOMA/San Francisco	\$4,863.3	\$9,354.2	\$5,321.4	\$2,892.9	61.3
BOMA/Silicon Valley	\$1,902.1	\$3,658.6	\$2,081.3	\$1,131.5	24.0
COLORADO					
BOMA/Denver Metro	\$2,708.4	\$5,488.1	\$3,153.2	\$1,703.8	37.4
BOMA/Southern Colorado	\$491.9	\$996.7	\$572.7	\$309.4	6.8
CONNECTICUT					
BOMA/Greater Hartford	\$858.2	\$1,553.6	\$890.4	\$449.5	9.9
BOMA/Southern Connecticut	\$956.6	\$1,731.7	\$992.6	\$501.0	11.1
D.C. AREA					
BOMA/Metropolitan Washington (AOBA)	\$9,010.8	\$11,054.1	\$6,367.5	\$926.8	25.0
FLORIDA					
BOMA/Ft. Lauderdale and the Palm Beaches	\$1,531.1	\$2,996.9	\$1,729.6	\$935.1	25.0
BOMA/Jacksonville	\$673.9	\$1,319.0	\$761.2	\$411.5	11.0
BOMA/Miami-Dade	\$1,495.3	\$2,926.8	\$1,689.2	\$913.2	24.4
BOMA/Orlando	\$870.9	\$1,704.7	\$983.8	\$531.9	14.2
BOMA/Greater Tampa Bay	\$1,186.9	\$2,323.2	\$1,340.8	\$724.9	19.4
BOMA/Tallahassee	\$138.9	\$271.9	\$156.9	\$84.8	2.3

BOMA 2022 Office Market Study

<i>State</i>	<i>Total Expenditures (\$ Millions)</i>	<i>State Output (\$ Millions)</i>	<i>State GDP (\$ Millions)</i>	<i>Earnings (\$ Millions)</i>	<i>Jobs Supported (Thousands)</i>
GEORGIA					
BOMA/Georgia	\$3,510.4	\$7,370.0	\$4,189.4	\$2,219.6	55.4
HAWAII					
BOMA/Hawaii	\$443.2	\$765.1	\$438.5	\$236.8	5.7
IDAHO					
BOMA/Boise	\$314.3	\$561.4	\$319.6	\$172.8	4.8
ILLINOIS					
BOMA/Chicago	\$4,836.8	\$10,499.7	\$5,857.7	\$3,071.9	64.5
BOMA/Peoria	\$441.9	\$959.4	\$535.2	\$280.7	5.9
BOMA/Suburban Chicago	\$3,947.8	\$8,570.0	\$4,781.1	\$2,507.3	52.6
INDIANA					
BOMA/Indiana	\$881.6	\$1,764.2	\$969.1	\$514.4	12.1
IOWA					
BOMA/Iowa	\$849.9	\$1,489.8	\$833.1	\$436.0	11.7
KANSAS					
BOMA/Wichita	\$163.4	\$309.2	\$172.2	\$83.5	2.0
KENTUCKY					
BOMA/Kentucky	\$828.3	\$1,591.2	\$869.8	\$441.8	11.1
LOUISIANA					
BOMA/Shreveport	\$98.7	\$184.8	\$102.8	\$55.9	1.5
MARYLAND					
BOMA/Baltimore	\$1,870.6	\$3,355.8	\$1,938.0	\$953.1	22.1
MASSACHUSETTS					
BOMA/Boston	\$7,632.3	\$13,833.2	\$7,998.8	\$4,038.5	86.2
MICHIGAN					
BOMA/Metro Detroit	\$2,437.8	\$4,814.8	\$2,702.7	\$1,475.8	34.5
BOMA/Mid-Michigan	\$165.4	\$326.6	\$183.3	\$100.1	2.3
BOMA/West Michigan	\$482.9	\$953.8	\$535.4	\$292.4	6.8
MINNESOTA					
BOMA/Duluth	\$64.3	\$125.4	\$70.0	\$37.7	0.8
BOMA/Greater Minneapolis	\$1,552.7	\$3,030.8	\$1,692.1	\$910.5	20.5
BOMA/St. Paul	\$538.5	\$1,051.2	\$586.9	\$315.8	7.1
MISSISSIPPI					
BOMA/Mississippi	\$380.7	\$679.3	\$374.7	\$199.3	5.6
MISSOURI					
BOMA/Kansas City	\$1,248.8	\$2,485.9	\$1,399.3	\$690.5	17.5
BOMA/St. Louis	\$1,630.5	\$3,245.8	\$1,826.9	\$901.5	22.8

BOMA 2022 Office Market Study

<i>State</i>	<i>Total Expenditures (\$ Millions)</i>	<i>State Output (\$ Millions)</i>	<i>State GDP (\$ Millions)</i>	<i>Earnings (\$ Millions)</i>	<i>Jobs Supported (Thousands)</i>
NEBRASKA					
BOMA/Omaha	\$463.3	\$811.2	\$460.5	\$241.5	6.2
NEVADA					
BOMA/Nevada	\$508.3	\$873.4	\$504.3	\$265.5	6.9
NEW JERSEY					
BOMA/New Jersey	\$2,436.9	\$4,857.4	\$2,761.9	\$1,363.1	29.3
NEW YORK					
BOMA/Capital Region- Albany	\$515.0	\$882.0	\$508.4	\$244.4	5.5
BOMA/Greater Buffalo	\$523.6	\$896.6	\$516.8	\$248.4	5.6
BOMA/Greater Rochester	\$522.2	\$894.4	\$515.5	\$247.8	5.6
BOMA/Long Island	\$1,088.6	\$1,864.3	\$1,074.6	\$516.5	11.7
BOMA/New York	\$19,254.5	\$32,975.3	\$19,007.1	\$9,136.3	206.8
BOMA/Westchester	\$741.5	\$1,269.9	\$732.0	\$351.8	8.0
NORTH CAROLINA					
BOMA/Greater Charlotte	\$2,146.2	\$4,368.5	\$2,478.0	\$1,309.7	33.8
BOMA/Raleigh-Durham	\$877.9	\$1,786.9	\$1,013.6	\$535.7	13.8
OHIO					
BOMA/Akron	\$416.4	\$868.1	\$477.9	\$254.6	6.1
BOMA/Greater Cincinnati	\$971.8	\$2,026.0	\$1,115.5	\$594.3	14.2
BOMA/Greater Cleveland	\$1,074.3	\$2,239.7	\$1,233.1	\$657.0	15.7
BOMA/Columbus	\$1,124.3	\$2,343.8	\$1,290.4	\$687.5	16.4
BOMA/Dayton	\$454.0	\$946.4	\$521.1	\$277.6	6.6
BOMA/Toledo	\$171.0	\$356.4	\$196.2	\$104.5	2.5
OKLAHOMA					
BOMA/Oklahoma City	\$472.2	\$891.8	\$500.1	\$273.4	7.4
BOMA/Tulsa	\$449.8	\$849.5	\$476.3	\$260.4	7.1
OREGON					
BOMA/Oregon	\$1,286.9	\$2,386.0	\$1,361.9	\$704.1	15.8
PENNSYLVANIA					
BOMA/Philadelphia	\$691.6	\$1,407.7	\$788.8	\$408.3	9.0
BOMA/Pittsburgh	\$1,856.3	\$3,778.2	\$2,117.3	\$1,096.0	24.1
TENNESSEE					
BOMA/Chattanooga	\$170.0	\$362.8	\$203.0	\$105.7	2.4
BOMA/Knoxville	\$212.3	\$453.1	\$253.5	\$132.1	3.0
BOMA/Memphis	\$443.3	\$946.2	\$529.5	\$275.8	6.4
BOMA/Nashville	\$793.2	\$1,693.2	\$947.5	\$493.5	11.4

<i>State</i>	<i>Total Expenditures (\$ Millions)</i>	<i>State Output (\$ Millions)</i>	<i>State GDP (\$ Millions)</i>	<i>Earnings (\$ Millions)</i>	<i>Jobs Supported (Thousands)</i>
TEXAS					
BOMA/Austin	\$1,883.0	\$4,240.4	\$2,384.8	\$1,284.0	31.9
BOMA/Corpus Christi	\$97.8	\$220.2	\$123.8	\$66.7	1.7
BOMA/Greater Dallas	\$4,127.8	\$9,295.3	\$5,227.6	\$2,814.6	69.9
BOMA/Fort Worth	\$614.1	\$1,382.8	\$777.7	\$418.7	10.4
BOMA/Houston	\$4,417.4	\$9,947.5	\$5,594.4	\$3,012.0	74.8
BOMA/San Antonio	\$805.1	\$1,813.1	\$1,019.7	\$549.0	13.6
UTAH					
BOMA/Utah	\$983.2	\$2,005.8	\$1,130.2	\$610.2	15.2
WASHINGTON					
BOMA/Seattle-King County	\$2,346.1	\$4,264.3	\$2,416.1	\$1,285.9	28.1
BOMA/Spokane	\$132.2	\$240.3	\$136.2	\$72.5	1.6
BOMA/South Puget Sound	\$301.1	\$547.3	\$310.1	\$165.0	3.6
WISCONSIN					
BOMA/Wisconsin	\$1,876.3	\$3,565.6	\$1,992.7	\$1,073.6	25.9
TOTAL OF REGIONS	\$134,944.5	\$255,931.4	\$145,320.0	\$73,468.4	1,701.0

City by City: How Building Expenditures Impact the Top 30



The state-level economic impacts of the national office inventory, as reported in Table 1, include 30 of the largest BOMA-covered metropolitan areas. In Table 2, these 30 MSAs are highlighted separately.

Table 2: Metropolitan Area Office Market Economic Impacts

<i>Metropolitan Area</i>	<i>Total Expenditures (\$ Millions)</i>	<i>Output (\$ Millions)</i>	<i>GDP (\$ Millions)</i>	<i>Earnings (\$ Millions)</i>	<i>Jobs Supported (Thousands)</i>
Atlanta	\$3,510.4	\$7,138.0	\$4,089.1	\$2,129.2	53.4
Austin	\$1,883.0	\$3,546.5	\$2,063.8	\$1,075.2	28.1
Boston	\$7,632.3	\$13,118.9	\$7,590.9	\$3,559.4	76.8
Chicago	\$4,836.8	\$10,255.9	\$5,752.4	\$3,045.7	67.4
Dallas	\$4,127.8	\$8,742.5	\$4,992.4	\$2,641.6	66.7
Denver Metro	\$2,708.4	\$5,330.2	\$3,057.4	\$1,584.7	34.9
Fort Worth	\$614.1	\$1,300.6	\$742.7	\$393.0	9.9
Greater Charlotte	\$2,146.2	\$4,281.2	\$2,445.1	\$1,249.1	32.7
Greater Cleveland	\$1,074.3	\$1,983.9	\$1,125.8	\$537.6	13.2
Greater Los Angeles	\$6,502.1	\$12,400.9	\$7,044.8	\$3,497.7	74.4
Greater Phoenix	\$1,399.5	\$2,765.7	\$1,600.3	\$856.2	20.3
Greater Tampa Bay	\$1,186.9	\$2,293.1	\$1,330.7	\$689.2	18.4
Houston	\$4,417.4	\$3,303.7	\$1,719.5	\$867.6	15.3
Indianapolis	\$572.9	\$413.4	\$216.0	\$105.6	1.9
Metro Detroit	\$2,437.8	\$1,655.8	\$857.4	\$414.4	7.3
Miami-Dade	\$1,495.3	\$1,002.4	\$527.0	\$263.6	5.0
Minneapolis	\$1,552.7	\$1,120.7	\$577.7	\$286.7	4.8
Nashville	\$793.2	\$589.7	\$310.7	\$153.8	2.6
New York City	\$19,254.5	\$12,339.7	\$6,429.3	\$3,094.5	47.7
Oakland-East Bay	\$1,670.7	\$943.6	\$483.9	\$206.3	3.0
Orlando	\$870.9	\$580.2	\$304.7	\$141.9	2.7
Philadelphia	\$691.6	\$502.6	\$258.4	\$124.9	2.0
Portland Metro	\$1,286.9	\$905.2	\$473.1	\$233.5	3.7
Raleigh-Durham	\$877.9	\$569.2	\$299.5	\$140.5	2.6
San Diego	\$1,345.1	\$815.6	\$426.6	\$203.1	3.0
San Francisco	\$4,863.3	\$2,746.8	\$1,408.6	\$600.5	8.7
Seattle-King County	\$2,346.1	\$1,431.1	\$742.9	\$360.7	5.4
St. Louis	\$1,630.5	\$1,217.7	\$624.9	\$317.9	5.1
St. Paul	\$538.5	\$388.7	\$200.4	\$99.4	1.7
Washington, D.C.	\$9,010.8	\$4,955.0	\$2,584.4	\$1,173.2	19.7
Metro Totals	\$93,277.7	\$108,638.6	\$60,280.5	\$30,046.6	638.5



Trends to Watch

No one truly anticipated the significant impacts that the pandemic and resultant remote-work modality would have on office-space usage. On one hand, many traditional service-sector office-occupying companies found new ways to reduce their office-space requirements and expense. In the process they transformed the hybrid work option into a workforce recruiting tool. Historical measures of office space per employee quickly become obsolete as the industry grappled with the seeming possibility that many firms could thrive on 20% to 30% less space, even while adding new workers to their payrolls. Indeed, office-occupying employment has recovered the most quickly, and has risen more than other sectors. In general, occupancy of office space, overall, has yet to recover and continues to move lower.

Several high-profile office-property receiverships, in historically strong markets such as New York

and Los Angeles, have captured the news. What is often overlooked are the pockets of office strength, especially in many non-CDB submarkets, and amongst newer, well-amenitized buildings. The emerging message is that we are witnessing an accelerated reprioritization of those characteristics which determine a building's success. Anecdotal evidence, and discussions with recent university students entering the workplace, reinforce the notion that many new employees place a high value on having face-to-face mentors at work and that the option of doing more work via Zoom, rather than in person, is more of a turn-off than a work benefit. In general, both employers and employees acknowledge that while routine tasks can often be completed more efficiently sans disruption, creativity, team spirit, and career-advancement visibility can only be done in person. This is a strong case for the office sector's recovery, one which we've tended to address more from a space-planning need than an employee- and employer-productivity standpoint. If workers are more productive in "private" space, then the proverbial private offices will make a comeback, in some fashion. If casual-encounter creativity is to

be encouraged, then replacing pool tables with comfortable, well-lit coffee corners will have great appeal.

Employers want happy, productive employees. Workers want rewarding careers, convivial environments, and safe places to work. Today, longer-than “necessary” commutes, perceptions of crime or simply inadequate safety, and tired building stock have dinged the desirability of some of the nation’s major CBD markets, often to the benefit of suburban clusters in many of those same metro areas. Long-term there may be an office renaissance in the making due to continued economic growth, potentially fewer job options for workers compared to today’s ultra-low unemployment rate, a genuine repricing of office rents, and a concerted effort to understand and respond to needs of both the workers and their employers. These are secular shifts in the office sector, which we will weather, just as we did through worker automations of the 1950s and 1960s, the moves to the suburbs in the 1970s and 1980s, the consolidations into office parks of the 1990s, and the urban center rebirths of the 2000s. The post-pandemic worker craves in-person social and intellectual interaction but expects some work-life flexibility. The counterbalance to, and beneficiaries from AI, will be the collaborative

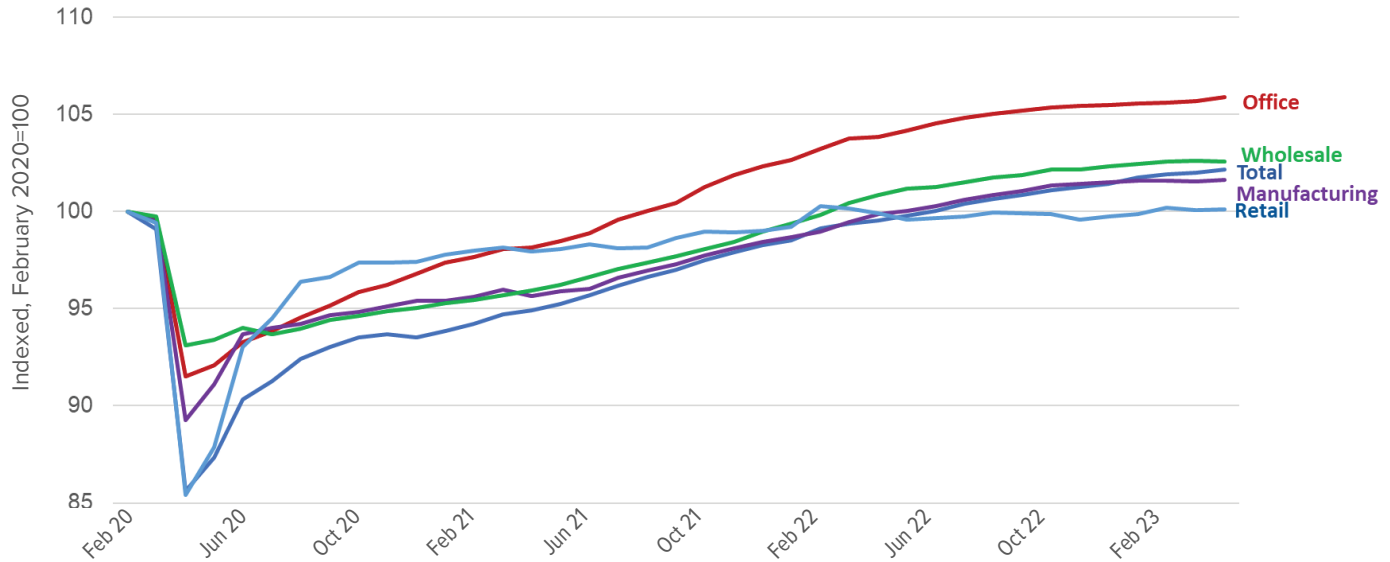
human spirit, convened in a temple of collective creativity, we call the office.

Employment

Every industry has an office-occupying component, providing a space for the administrative functions of operations to sales and support services. While some industries are not primarily office-occupying (e.g., mining, tourism, and healthcare, etc.), other industries primarily occupy office space (e.g., finance, accounting, software development, engineering, etc.). The pandemic-induced recession disrupted most industries, but many of these industries have recovered.

Examining the predominately office-occupying industries of Professional and Business Services, Finance, and Information, the collective industries lost 8.5% of employment (2.8 million jobs) from February to April 2020 (compared to a loss of 14.4%, or 21.9 million jobs across the U.S. economy). While office industries recorded smaller relative losses, the industries recovered sooner, too, returning to new peak levels in August 2021 versus June 2022 for the broader economy. As of April 2023, office employment was up 2% year-over-year, and up 5.9% from February 2020.

National Employment Recovery



Source: Bureau of Labor Statistics (Seasonally Adjusted). *Office includes PBS, Information, and Financial Activities

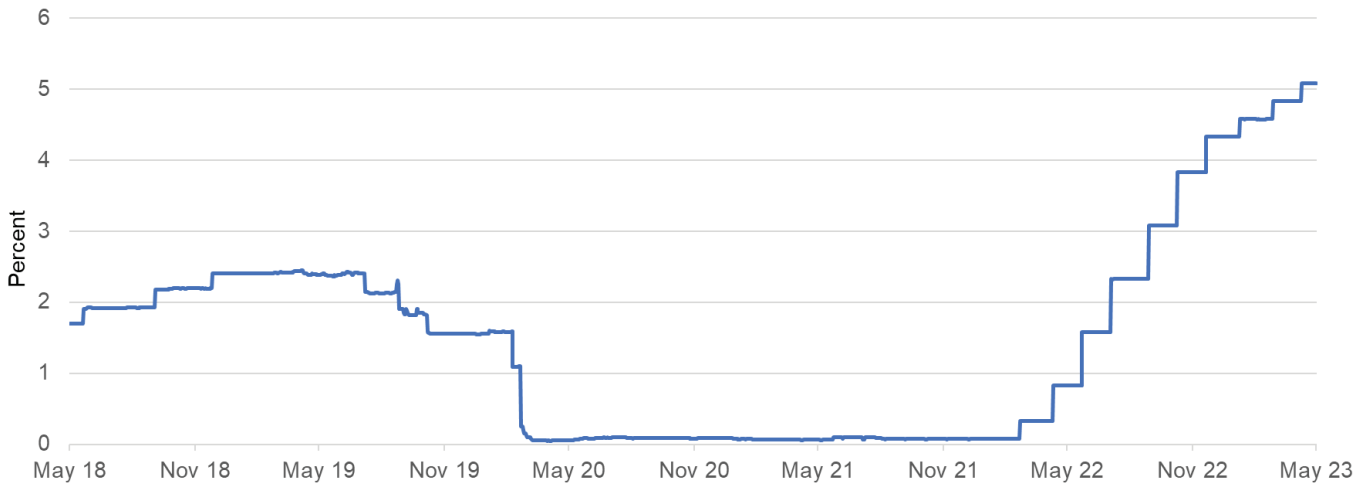
Work from Home

The return of employment has not meant the return to the office. According to the 2021 Business Response Survey by the Bureau of Labor Statistics, industries universally increased teleworking due to the pandemic. Behind Educational Services, the Information, Professional and Business Services, and Financial Activities industries recorded the greatest increases in teleworking. Office occupancy masks the true impact of this—establishments may still retain the space, but employees are often working remotely, reducing the daily occupancy of the owned or leased space. The Kastle Back to Work Barometer illustrates this phenomenon by indexing 10 metropolitan areas from across the country. Weekly occupancy stood at 49% at the end of May 2023, according to Kastle, with mid-week activity at 57.6% and Mondays and Fridays at 32.4%. The daily occupancy has impacts on other industries surrounding offices—from restaurants to retail.

Interest Rates

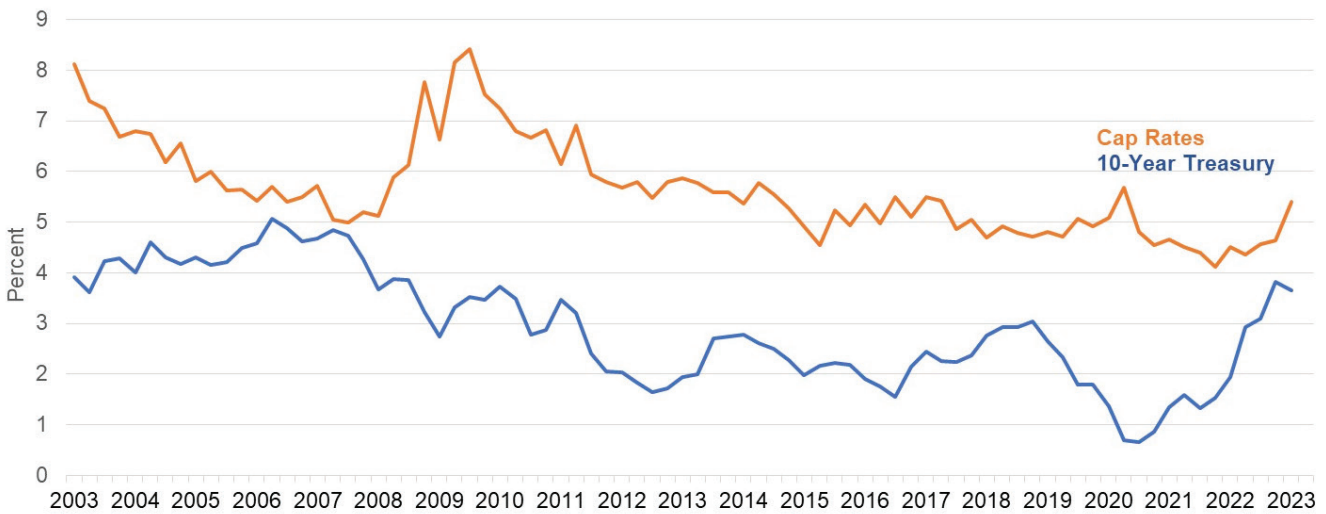
Since the rapid rise in inflation that commenced in Q2 2021, the Federal Reserve has taken aggressive measures to quell the rise in prices. The Fed increased rates 10 times over the past two years, increasing the target federal funds rate by 500 basis points. The rise in interest rates coupled with decreased occupancy has led to an increase in cap rates. Additionally, the spate of bank failures coupled with a \$1 trillion outflow of commercial deposits over the past year has led to further tightening of lending standards. These conditions lead to concerns for the owners of office space operating in markets with high vacancy rates as they face refinancing. Based on data from CoStar, 73% of BOMA's markets recorded an increase in vacancy rates from Q1 2022 to Q1 2023.

Effective Federal Funds Rate



Source: Board of Governors of the Federal Reserve System.

Cap Rates and 10-Year Treasury



Sources: NCREIF (Value-Weighted Cap Rate) and the Federal Reserve Bank (Market Yield on U.S. Treasury Securities at 10-Year Constant Maturity, Quoted on an Investment Basis).

The Fed increased rates 10 times over the past two years, increasing the target federal funds rate by 500 basis points. The rise in interest rates coupled with decreased occupancy has led to an increase in cap rates.

BOMA 2022 Office Market Study: Conclusion

To the extent that the economy continues to expand, so, too, should the benefits of building expenditures to the local, state and national economies. While the economic benefits from construction end when the building is ready for occupancy, the economic benefits flowing from the annual operating expenditures associated with the office building inventory extend over the lifespan of the buildings and grow as this inventory expands, supporting the economy's vitality, creating new jobs, generating personal income and contributing year after year to the local tax base.

The annual operating expenditures for privately owned commercial office buildings in the United States clearly continue to be a major source of economic activity, jobs, and personal income, all to the benefit of their host economies.

The key findings of this research are summarized below and in Table 3:

The operating expenditure for the national inventory of office buildings included in this analysis totaled \$134.9 billion in 2022, or \$15.76 per square foot. In turn, those expenditures:

- Added \$255.9 billion to total output (direct, indirect, and induced), reflecting a total output multiplier of 1.90.
- Contributed \$145.3 billion to GDP in the selected markets.
- Generated \$73.5 billion in personal earnings. Supported direct employment of 853,700 jobs.
- Supported 847,300 additional indirect and induced jobs through the spending and re-spending of payroll dollars in both state and national economies.



Table 3: Economic Impacts of Office Building Operating Expenditures, 2022

Total Output (Billions)	Total Earnings (Billions)	Jobs Supported (Millions)
\$255.9	\$73.5	1.7

Appendix A: Glossary of Terms & Usage

BOMA Local Associations: The 85 BOMA local associations are defined by their general office market areas. These markets often (but not always) align with boundaries of states or metropolitan statistical areas.

Direct Outlays: The annual spending associated with office building operations, including administrative, marketing, utility, maintenance, insurance, management, tax, and other.

Direct Impact: Initial economic activity (e.g., sales, expenditures, employment, production, etc.) by a company or industry.

Economic Impact: Generalized gross output, describing direct, indirect and induced activity, as these dollars are re-cycled through the local, state and U.S. economies.

Gross Domestic Product (GDP): A measure of economic activity, GDP is the total value added by resident producers of final goods and services.

Gross Output (Output): The total value of production is gross output. Unlike GDP, gross output includes intermediate goods and services.

Labor Income: Total compensation of employees (wages and benefits) and sole proprietors (profits).
Employment: Full-time and part-time workers.

Indirect Impact: The upstream (backward) economic activity impacted by purchases along a company or industry supply chain.

Induced Impact: Economic activity derived from workers spending their earnings on goods and services in the economy.

Appendix B: Office Market Inventory and Annual Operating Costs by State and MSA

<i>State/Region</i>	<i>Operating Expense Per Square Foot</i>	<i>Total Rentable Square Feet (Millions)</i>
ALABAMA		
BOMA/Alabama	\$14.19	62.2
BOMA/North Alabama	\$14.19	18.4
ALASKA		
BOMA/Anchorage	\$9.77	12.9
ARIZONA		
BOMA/Greater Phoenix	\$9.86	142.0
BOMA/Greater Tucson	\$9.86	15.3
ARKANSAS		
BOMA/Greater Little Rock	\$15.68	23.0
BOMA/Northwest Arkansas	\$10.22	15.16
CALIFORNIA		
BOMA/Greater Los Angeles	\$19.28	337.3
BOMA/Inland Empire	\$10.80	41.2
BOMA/Oakland-East Bay	\$19.14	87.3
BOMA/Orange County	\$14.64	122.0
BOMA/Sacramento	\$13.98	108.1
BOMA/San Diego	\$14.83	90.7
BOMA/San Francisco	\$26.56	183.1
BOMA/Silicon Valley	\$15.35	123.9
COLORADO		
BOMA/Denver Metro	\$16.35	165.7
BOMA/Southern Colorado	\$21.73	22.6
CONNECTICUT		
BOMA/Greater Hartford	\$12.79	67.1
BOMA/Southern Connecticut	\$14.87	64.4
D.C. AREA		
BOMA/Metropolitan Washington (AOBA)	\$18.99	474.4

<i>State/Region</i>	<i>Operating Expense Per Square Foot</i>	<i>Total Rentable Square Feet (Millions)</i>
ALABAMA		
BOMA/Alabama	\$14.19	62.2
BOMA/North Alabama	\$14.19	18.4
ALASKA		
BOMA/Anchorage	\$9.77	12.9
ARIZONA		
BOMA/Greater Phoenix	\$9.86	142.0
BOMA/Greater Tucson	\$9.86	15.3
ARKANSAS		
BOMA/Greater Little Rock	\$15.68	23.0
BOMA/Northwest Arkansas	\$10.22	15.6
CALIFORNIA		
BOMA/Greater Los Angeles	\$19.28	337.3
BOMA/Inland Empire	\$10.80	41.2
BOMA/Oakland-East Bay	\$19.14	87.3
BOMA/Orange County	\$14.64	122.0
BOMA/Sacramento	\$13.98	108.1
BOMA/San Diego	\$14.83	90.7
BOMA/San Francisco	\$26.56	183.1
BOMA/Silicon Valley	\$15.35	123.9
COLORADO		
BOMA/Denver Metro	\$16.35	165.7
BOMA/Southern Colorado	\$21.73	22.6
CONNECTICUT		
BOMA/Greater Hartford	\$12.79	67.1
BOMA/Southern Connecticut	\$14.87	64.4
D.C. AREA		
BOMA/Metropolitan Washington (AOBA)	\$18.99	474.4
FLORIDA		
BOMA/Ft. Lauderdale and the Palm Beaches	\$15.93	96.1
BOMA/Jacksonville	\$12.79	52.7
BOMA/Miami-Dade	\$16.24	92.1
BOMA/Orlando	\$10.96	79.5
BOMA/Greater Tampa Bay	\$12.03	98.7
BOMA/Tallahassee	\$10.22	13.6

<i>State/Region</i>	<i>Operating Expense Per Square Foot</i>	<i>Total Rentable Square Feet (Millions)</i>
GEORGIA		
BOMA/Georgia	\$12.51	280.7
HAWAII		
BOMA/Hawaii	\$15.68	28.3
IDAHO		
BOMA/Boise	\$15.68	20.0
ILLINOIS		
BOMA/Chicago	\$21.44	225.6
BOMA/Peoria	\$15.68	28.2
BOMA/Suburban Chicago	\$21.44	184.1
INDIANA		
BOMA/Indiana	\$6.46	88.7
IOWA		
BOMA/Iowa	\$12.79	66.5
KANSAS		
BOMA/Wichita	\$10.22	16.0
KENTUCKY		
BOMA/Kentucky	\$12.79	64.8
LOUISIANA		
BOMA/Shreveport	\$13.19	7.5
MARYLAND		
BOMA/Baltimore	\$13.93	134.3
MASSACHUSETTS		
BOMA/Boston	\$24.90	306.5
MICHIGAN		
BOMA/Metro Detroit	\$15.40	158.3
BOMA/Mid-Michigan	\$10.22	16.2
BOMA/West Michigan	\$13.74	35.1
MINNESOTA		
BOMA/Duluth	\$13.74	4.7
BOMA/Greater Minneapolis	\$13.74	113.0
BOMA/St. Paul	\$13.74	39.2
MISSISSIPPI		
BOMA/Mississippi	\$15.68	24.3

<i>State/Region</i>	<i>Operating Expense Per Square Foot</i>	<i>Total Rentable Square Feet (Millions)</i>
MISSOURI		
BOMA/Kansas City	\$12.79	97.7
BOMA/St. Louis	\$15.40	105.9
NEBRASKA		
BOMA/Omaha	\$13.74	33.7
NEVADA		
BOMA/Nevada	\$9.45	53.8
NEW JERSEY		
BOMA/New Jersey	\$8.94	272.5
NEW YORK		
BOMA/Capital Region- Albany	\$10.80	47.7
BOMA/Greater Buffalo	\$13.74	38.1
BOMA/Greater Rochester	\$13.74	38.0
BOMA/Long Island	\$16.32	66.7
BOMA/New York	\$28.67	671.5
BOMA/Westchester	\$12.79	58.0
NORTH CAROLINA		
BOMA/Greater Charlotte	\$9.73	220.6
BOMA/Raleigh-Durham	\$8.57	102.5
OHIO		
BOMA/Akron	\$13.74	30.3
BOMA/Greater Cincinnati	\$12.79	76.0
BOMA/Greater Cleveland	\$12.79	84.0
BOMA/Columbus	\$12.79	87.9
BOMA/Dayton	\$10.80	42.0
BOMA/Toledo	\$10.22	16.7
OKLAHOMA		
BOMA/Oklahoma City	\$10.80	43.7
BOMA/Tulsa	\$10.80	41.6
OREGON		
BOMA/Oregon	\$13.54	95.0
PENNSYLVANIA		
BOMA/Philadelphia	\$2.69	256.9
BOMA/Pittsburgh	\$15.87	117.0

<i>State/Region</i>	<i>Operating Expense Per Square Foot</i>	<i>Total Rentable Square Feet (Millions)</i>
TENNESSEE		
BOMA/Chattanooga	\$10.80	15.7
BOMA/Knoxville	\$10.80	19.6
BOMA/Memphis	\$10.80	41.0
BOMA/Nashville	\$10.80	73.4
TEXAS		
BOMA/Austin	\$21.44	87.8
BOMA/Corpus Christi	\$12.64	7.7
BOMA/Greater Dallas	\$15.31	269.5
BOMA/Fort Worth	\$7.95	77.3
BOMA/Houston	\$14.90	296.5
BOMA/San Antonio	\$12.64	63.7
UTAH		
BOMA/Utah	\$10.47	93.9
WASHINGTON		
BOMA/Seattle-King County	\$14.50	161.8
BOMA/Spokane	\$10.22	12.9
BOMA/South Puget Sound	\$14.50	20.8
WISCONSIN		
BOMA/Wisconsin	\$15.40	121.8
TOTAL OF REGIONS	\$15.76	8,561

Appendix C: Jobs Supported by Office Building Operating Expenditures

<i>Region</i>	<i>Total Rentable Square Feet (Millions)</i>	<i>Jobs (Thousands)</i>	<i>Direct Jobs (Thousands)</i>	<i>Indirect Jobs (Thousands)</i>
ALABAMA				
BOMA/Alabama	62.2	13.8	6.8	7.0
BOMA/North Alabama	18.4	4.1	2.0	2.1
ALASKA				
BOMA/Anchorage	12.9	1.6	1.0	0.6
ARIZONA				
BOMA/Greater Phoenix	142.0	20.1	9.8	10.3
BOMA/Greater Tucson	15.3	2.2	1.1	1.1
ARKANSAS				
BOMA/Greater Little Rock	23.0	5.3	3.0	2.4
BOMA/Northwest Arkansas	15.6	2.3	1.3	1.0
CALIFORNIA				
BOMA/Greater Los Angeles	337.3	81.9	42.0	40.0
BOMA/Inland Empire	41.2	5.6	2.9	2.7
BOMA/Oakland-East Bay	87.3	21.1	10.8	10.3
BOMA/Orange County	122.0	22.5	11.5	11.0
BOMA/Sacramento	108.1	19.0	9.8	9.3
BOMA/San Diego	90.7	17.0	8.7	8.3
BOMA/San Francisco	183.1	61.3	31.4	29.9
BOMA/Silicon Valley	123.9	24.0	12.3	11.7
COLORADO				
BOMA/Denver Metro	165.7	37.4	17.4	20.0
BOMA/Southern Colorado	22.6	6.8	3.2	3.6
CONNECTICUT				
BOMA/Greater Hartford	67.1	9.9	5.3	4.6
BOMA/Southern Connecticut	64.4	11.1	5.9	5.1
D.C. AREA				
BOMA/Metropolitan Washington (AOBA)	474.4	25.0	18.6	6.4

<i>Region</i>	<i>Total Rentable Square Feet (Millions)</i>	<i>Jobs (Thousands)</i>	<i>Direct Jobs (Thousands)</i>	<i>Indirect Jobs (Thousands)</i>
FLORIDA				
BOMA/Ft. Lauderdale and the Palm Beaches	96.1	25.0	12.2	12.9
BOMA/Jacksonville	52.7	11.0	5.4	5.7
BOMA/Miami-Dade	92.1	24.4	11.9	12.6
BOMA/Orlando	79.5	14.2	6.9	7.3
BOMA/Greater Tampa Bay	98.7	19.4	9.4	10.0
BOMA/Tallahassee	13.6	2.3	1.1	1.2
GEORGIA				
BOMA/Georgia	280.7	55.4	25.5	29.9
HAWAII				
BOMA/Hawaii	28.3	5.7	3.2	2.5
IDAHO				
BOMA/Boise	20.0	4.8	2.6	2.2
ILLINOIS				
BOMA/Chicago	225.6	64.5	29.4	35.0
BOMA/Peoria	28.2	5.9	2.7	3.2
BOMA/Suburban Chicago	184.1	52.6	24.0	28.6
INDIANA				
BOMA/Indiana	136.5	12.1	6.0	6.1
IOWA				
BOMA/Iowa	66.5	11.7	6.5	5.1
KANSAS				
BOMA/Wichita	16.0	2.0	1.0	1.0
KENTUCKY				
BOMA/Kentucky	64.8	11.1	5.8	5.3
LOUISIANA				
BOMA/Shreveport	7.5	1.5	0.8	0.7
MARYLAND				
BOMA/Baltimore	134.3	22.1	11.7	10.4
MASSACHUSETTS				
BOMA/Boston	306.5	86.2	46.6	39.7
MICHIGAN				
BOMA/Metro Detroit	158.3	34.5	16.7	17.9
BOMA/Mid-Michigan	16.2	2.3	1.1	1.2
BOMA/West Michigan	35.1	6.8	3.3	3.5

<i>Region</i>	<i>Total Rentable Square Feet (Millions)</i>	<i>Jobs (Thousands)</i>	<i>Direct Jobs (Thousands)</i>	<i>Indirect Jobs (Thousands)</i>
MINNESOTA				
BOMA/Duluth	4.7	0.8	0.4	0.4
BOMA/Greater Minneapolis	113.0	20.5	10.1	10.3
BOMA/St. Paul	39.2	7.1	3.5	3.6
MISSISSIPPI				
BOMA/Mississippi	24.3	5.6	3.1	2.5
MISSOURI				
BOMA/Kansas City	97.7	17.5	8.6	8.9
BOMA/St. Louis	105.9	22.8	11.2	11.6
NEBRASKA				
BOMA/Omaha	33.7	6.2	3.3	2.9
NEVADA				
BOMA/Nevada	53.8	6.9	3.8	3.1
NEW JERSEY				
BOMA/New Jersey	272.5	29.3	14.3	15.0
NEW YORK				
BOMA/Capital Region- Albany	47.7	5.5	3.1	2.4
BOMA/Greater Buffalo	38.1	5.6	3.1	2.5
BOMA/Greater Rochester	38.0	5.6	3.1	2.5
BOMA/Long Island	66.7	11.7	6.5	5.2
BOMA/New York	671.5	206.8	115.3	91.4
BOMA/Westchester	58.0	8.0	4.4	3.5
NORTH CAROLINA				
BOMA/Greater Charlotte	220.6	33.8	16.8	17.0
BOMA/Raleigh-Durham	102.5	13.8	6.9	6.9
OHIO				
BOMA/Akron	30.3	6.1	2.8	3.2
BOMA/Greater Cincinnati	76.0	14.2	6.6	7.6
BOMA/Greater Cleveland	84.0	15.7	7.3	8.4
BOMA/Columbus	87.9	16.4	7.6	8.7
BOMA/Dayton	42.0	6.6	3.1	3.5
BOMA/Toledo	16.7	2.5	1.2	1.3
OKLAHOMA				
BOMA/Oklahoma City	43.7	7.4	3.8	3.6
BOMA/Tulsa	41.6	7.1	3.7	3.4

<i>Region</i>	<i>Total Rentable Square Feet (Millions)</i>	<i>Jobs (Thousands)</i>	<i>Direct Jobs (Thousands)</i>	<i>Indirect Jobs (Thousands)</i>
OREGON				
BOMA/Oregon	95.0	15.8	7.9	7.9
PENNSYLVANIA				
BOMA/Philadelphia	256.9	9.0	4.2	4.7
BOMA/Pittsburgh	117.0	24.1	11.4	12.7
TENNESSEE				
BOMA/Chattanooga	15.7	2.4	1.1	1.3
BOMA/Knoxville	19.6	3.0	1.4	1.6
BOMA/Memphis	41.0	6.4	2.9	3.4
BOMA/Nashville	73.4	11.4	5.2	6.1
TEXAS				
BOMA/Austin	87.8	31.9	13.9	18.0
BOMA/Corpus Christi	7.7	1.7	0.7	0.9
BOMA/Greater Dallas	269.5	69.9	30.5	39.4
BOMA/Fort Worth	77.3	10.4	4.5	5.9
BOMA/Houston	296.5	74.8	32.6	42.2
BOMA/San Antonio	63.7	13.6	5.9	7.7
UTAH				
BOMA/Utah	93.9	15.2	6.8	8.5
WASHINGTON				
BOMA/Seattle-King County	161.8	28.1	15.4	12.7
BOMA/Spokane	12.9	1.6	0.9	0.7
BOMA/South Puget Sound	20.8	3.6	2.0	1.6
WISCONSIN				
BOMA/Wisconsin	121.8	25.9	13.3	12.6
TOTAL OF REGIONS	8,561.1	1,701.0	853.7	847.3

Appendix D: Economic Multipliers & Impact Calculations

The total economic impacts of annual outlays for the operation of office buildings reflect the combination of direct outlays and the effects as spending circulating through the economy. The total value of these combined direct and indirect values was estimated by the application of industry multipliers that have been calculated for state and metropolitan statistical areas by the Bureau of Economic Analysis of the U.S. Department of Commerce, employing its Regional Input-Output Model System (RIMS II).

For this analysis, state and metropolitan area multipliers were purchased for: utilities; nonresidential structures; maintenance and repair; services to buildings and dwellings; insurance agencies, brokerages, and related activities; real estate; and advertising, public relations, and related services. These multipliers were weighed by their share of national operating costs for office buildings published by NCREIF. The weights were applied to multipliers for each state, region, and metropolitan statistical area to generate an office operating expenditure multiplier unique to each geography. These aggregated multipliers were applied to the market data for each of the BOMA local associations to calculate the total economic impacts generated by gross operating costs.

The results of these calculations are estimates of:

- (1) Output value, the total contribution to the U.S., state, and metropolitan area economies.*
- (2) Personal earnings by residents of the state or metropolitan area in which the spending occurs.*
- (3) Jobs supported by these outlays.*

The differences in economic impact are primarily driven by the magnitude of direct spending—the result of the size of the market (total square feet) and the cost of building operations in the market (operating costs per square foot). Additionally, the multipliers differ by geography. The differences in the multipliers are impacted by the composition of the local economy (e.g., the goods and services available in the local market, relative income levels in the local market, etc.)

Appendix E: Aggregate Economic Impact Multipliers for Building Operations

State/Region	State Multipliers			Metro Multipliers		
	Output	Earnings	Jobs (per million)	Output	Earnings	Jobs (per million)
ALABAMA						
BOMA/Alabama	1.93	0.58	15.67			
BOMA/North Alabama	1.93	0.58	15.67			
ALASKA						
BOMA/Anchorage	1.59	0.49	13.02			
ARIZONA						
BOMA/Greater Phoenix	1.94	0.60	14.36	1.98	0.61	14.50
BOMA/Greater Tucson	1.94	0.60	14.36			
ARKANSAS						
BOMA/Greater Little Rock	1.81	0.54	14.67			
BOMA/Northwest Arkansas	1.81	0.54	14.67			
CALIFORNIA						
BOMA/Greater Los Angeles	1.92	0.59	12.60	1.91	0.54	11.44
BOMA/Inland Empire	1.92	0.59	12.60			
BOMA/Oakland-East Bay	1.92	0.59	12.60	0.56	0.12	1.78
BOMA/Orange County	1.92	0.59	12.60			
BOMA/Sacramento	1.92	0.59	12.60			
BOMA/San Diego	1.92	0.59	12.60	0.61	0.15	2.26
BOMA/San Francisco	1.92	0.59	12.60	0.56	0.12	1.78
BOMA/Silicon Valley	1.92	0.59	12.60			
COLORADO						
BOMA/Denver Metro	2.03	0.63	13.82	1.97	0.59	12.89
BOMA/Southern Colorado	2.03	0.63	13.82			
CONNECTICUT						
BOMA/Greater Hartford	1.81	0.52	11.58			
BOMA/Southern Connecticut	1.81	0.52	11.58			
D.C. AREA						
BOMA/Metropolitan Washington (AOBA)	1.23	0.10	2.77	0.55	0.13	2.19

State/Region	State Multipliers			Metro Multipliers		
	Output	Earnings	Jobs (per million)	Output	Earnings	Jobs (per million)
FLORIDA						
BOMA/Ft. Lauderdale and the Palm Beaches	1.96	0.61	16.35			
BOMA/Jacksonville	1.96	0.61	16.35			
BOMA/Miami-Dade	1.96	0.61	16.35	0.67	0.18	3.32
BOMA/Orlando	1.96	0.61	16.35	0.67	0.16	3.06
BOMA/Greater Tampa Bay	1.96	0.61	16.35	1.93	0.58	15.47
BOMA/Tallahassee	1.96	0.61	16.35			
GEORGIA						
BOMA/Georgia	2.10	0.63	15.78	2.03	0.61	15.21
HAWAII						
BOMA/Hawaii	1.73	0.53	12.81			
IDAHO						
BOMA/Boise	1.79	0.55	15.19			
ILLINOIS						
BOMA/Chicago	2.17	0.64	13.33	2.12	0.63	13.93
BOMA/Peoria	2.17	0.64	13.33			
BOMA/Suburban Chicago	2.17	0.64	13.33			
INDIANA						
BOMA/Indiana	2.00	0.58	13.70	0.72	0.18	3.36
IOWA						
BOMA/Iowa	1.75	0.51	13.71			
KANSAS						
BOMA/Wichita	1.89	0.51	12.37			
KENTUCKY						
BOMA/Kentucky	1.92	0.53	13.45			
LOUISIANA						
BOMA/Shreveport	1.87	0.57	15.29			
MARYLAND						
BOMA/Baltimore	1.79	0.51	11.81			
MASSACHUSETTS						
BOMA/Boston	1.81	0.53	11.30	1.72	0.47	10.06
MICHIGAN						
BOMA/Metro Detroit	1.98	0.61	14.17	0.68	0.17	3.00
BOMA/Mid-Michigan	1.98	0.61	14.17			
BOMA/West Michigan	1.98	0.61	14.17			

State/Region	State Multipliers			Metro Multipliers		
	Output	Earnings	Jobs (per million)	Output	Earnings	Jobs (per million)
MINNESOTA						
BOMA/Duluth	1.95	0.59	13.18			
BOMA/Greater Minneapolis	1.95	0.59	13.18	0.72	0.18	3.10
BOMA/St. Paul	1.95	0.59	13.18	0.72	0.18	3.10
MISSISSIPPI						
BOMA/Mississippi	1.78	0.52	14.58			
MISSOURI						
BOMA/Kansas City	1.99	0.55	14.00			
BOMA/St. Louis	1.99	0.55	14.00	0.75	0.19	3.12
NEBRASKA						
BOMA/Omaha	1.75	0.52	13.35			
NEVADA						
BOMA/Nevada	1.72	0.52	13.52			
NEW JERSEY						
BOMA/New Jersey	1.99	0.56	12.02			
NEW YORK						
BOMA/Capital Region- Albany	1.71	0.47	10.74			
BOMA/Greater Buffalo	1.71	0.47	10.74			
BOMA/Greater Rochester	1.71	0.47	10.74			
BOMA/Long Island	1.71	0.47	10.74			
BOMA/New York	1.71	0.47	10.74	0.64	0.16	2.48
BOMA/Westchester	1.71	0.47	10.74			
NORTH CAROLINA						
BOMA/Greater Charlotte	2.04	0.61	15.75	1.99	0.58	15.24
BOMA/Raleigh-Durham	2.04	0.61	15.75	0.65	0.16	2.92
OHIO						
BOMA/Akron	2.08	0.61	14.57			
BOMA/Greater Cincinnati	2.08	0.61	14.57			
BOMA/Greater Cleveland	2.08	0.61	14.57	1.85	0.50	12.33
BOMA/Columbus	2.08	0.61	14.57			
BOMA/Dayton	2.08	0.61	14.57			
BOMA/Toledo	2.08	0.61	14.57			
OKLAHOMA						
BOMA/Oklahoma City	1.89	0.58	15.69			
BOMA/Tulsa	1.89	0.58	15.69			

State/Region	State Multipliers			Metro Multipliers		
	Output	Earnings	Jobs (per million)	Output	Earnings	Jobs (per million)
OREGON						
BOMA/Oregon	1.85	0.55	12.30	0.70	0.18	2.85
PENNSYLVANIA						
BOMA/Philadelphia	2.04	0.59	13.00	0.73	0.18	2.85
BOMA/Pittsburgh	2.04	0.59	13.00			
TENNESSEE						
BOMA/Chattanooga	2.13	0.62	14.34			
BOMA/Knoxville	2.13	0.62	14.34			
BOMA/Memphis	2.13	0.62	14.34			
BOMA/Nashville	2.13	0.62	14.34	0.74	0.19	3.32
TEXAS						
BOMA/Austin	2.25	0.68	16.93	1.88	0.57	14.93
BOMA/Corpus Christi	2.25	0.68	16.93			
BOMA/Greater Dallas	2.25	0.68	16.93	2.12	0.64	16.17
BOMA/Fort Worth	2.25	0.68	16.93	2.12	0.64	16.17
BOMA/Houston	2.25	0.68	16.93	0.75	0.20	3.46
BOMA/San Antonio	2.25	0.68	16.93			
UTAH						
BOMA/Utah	2.04	0.62	15.50			
WASHINGTON						
BOMA/Seattle-King County	1.82	0.55	11.98	0.61	0.15	2.32
BOMA/Spokane	1.82	0.55	11.98			
BOMA/South Puget Sound	1.82	0.55	11.98			
WISCONSIN						
BOMA/Wisconsin	1.90	0.57	13.82			

Appendix F: NCREIF Definitions of Operating Expenditures

Admin Expense: Office expenses, licenses, legal, travel, audit. Excludes amounts allocated to repairs and maintenance, marketing and advertising, or property management fees.

Marketing Expense: Marketing costs, including salaries, advertising, and promotions.

Utility Expense: All utility costs, including water, sewer, power, fuel oil, etc.

Maintenance Expense: Materials and labor, maintenance salaries, cleaning and janitorial, engineering costs.

Insurance Expense: Premiums paid to insure the property.

Management Fee Expense: Fees paid to an external property manager, along with uncapitalized leasing agent fees.

Tax Expense: Real estate taxes, personal property taxes.

Other Expense: All other expenses accrued during the quarter going into the NOI calculation that is not otherwise categorized.

Source: The National Council of Real Estate Investment Fiduciaries. NCREIF Property Data Collection and Reporting Procedures Manual, Updated 2021.

Appendix G: BOMA Local Associations

BOMA Local	Primary Market	Local Association Territory
ALABAMA		
BOMA/Alabama	Birmingham	Counties – Autauga, Baldwin, Barbour, Bibb, Blount, Bullock, Butler, Calhoun, Chambers, Chilton, Choctaw, Clarke, Clay, Cleburne, Coffee, Conecuh, Coosa, Covington, Crenshaw, Dale, Dallas, Elmore, Escambia, Fayette, Geneva, Greene, Hale, Henry, Houston, Jefferson, Lamar, Lee, Lowndes, Macon, Marengo, Mobile, Monroe, Montgomery, Perry, Pickens, Pike, Randolph, Shelby, St. Clair, Sumpter, Talladega, Tuscaloosa, Walker, Washington, Wilcox
BOMA/North Alabama	Huntsville	Alabama Counties – Cherokee, Cullman, Colbert, Dekalb, Franklin, Jackson, Lauderdale, Lawrence, Limestone, Madison, Marion, Marshall, Morgan, Winston Tennessee Counties – Franklin, Giles, Lawrence, Lincoln
ALASKA		
BOMA/Anchorage	Anchorage	Entire State
ARIZONA		
BOMA/Greater Phoenix	Phoenix	Maricopa County
BOMA/Greater Tucson	Tucson	Pima County
ARKANSAS		
BOMA/Greater Little Rock	Little Rock	Pulaski County
BOMA/Northwest Arkansas	Bentonville	Counties – Benton, Boone, Carroll, Washington, Madison, Franklin, Crawford, Sebastian
CALIFORNIA		
BOMA/Greater Los Angeles	Los Angeles	Los Angeles County
BOMA/Inland Empire	Palm Springs	Counties – Riverside, San Bernardino
BOMA/Oakland-East Bay	Oakland	Counties – Alameda, Contra Costa
BOMA/Orange County	Orange County	Counties – Orange
BOMA/Sacramento	Sacramento	Counties – Alpine, Amador, Butte, Colusa, El Dorado, Fresno, Glenn, Lassen, Madera, Mariposa, Merced, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Sierra, Stanislaus, Sutter, Tehama, Tuolumne, Yolo, Yuba
BOMA/San Diego	San Diego	San Diego County
BOMA/San Francisco	San Francisco	Counties – San Mateo, Marin, Sonoma, San Francisco
BOMA/Silicon Valley	San Jose	Counties – Santa Clara, Santa Cruz, San Benito, Monterrey

BOMA Local	Primary Market	Local Association Territory
COLORADO		
BOMA/Denver Metro	Denver	Counties – Adams, Arapahoe, Boulder, Denver, Douglas, Jefferson
BOMA/Southern Colorado	Colorado Springs	Counties – El Paso, Pueblo, Teller
CONNECTICUT		
BOMA/Greater Hartford	Hartford	Connecticut Counties – Hartford; Tolland; New Haven County municipalities of Meriden, Wallingford, and North Haven; Middlesex County municipality of Cromwell Massachusetts Counties – Hampden
BOMA/Southern Connecticut	Fairfield, New Haven	Counties – Fairfield County; New Haven County municipalities of Milford, West Haven, New Haven, and East Haven
D.C. AREA		
BOMA/Metropolitan Washington (AOBA)	Washington, D.C.	District of Columbia; Maryland Counties – Montgomery, Prince George's Virginia Counties – Arlington, Clarke, Culpeper, Fairfax, Fauquier, Frederick, Loudoun, Prince William, Shenandoah, Stafford, Rappahannock, Warren Virginia Independent Cities – Alexandria, Fairfax, Falls Church
FLORIDA		
BOMA/Ft. Lauderdale and the Palm Beaches	Fort Lauderdale	Counties – Broward, Palm Beach, Martin
BOMA/Jacksonville	Jacksonville	Counties – Alachua, Baker, Bradford, Clay, Duval, Flagler, Marion, Nassau, Putnam, St. Johns, Union
BOMA/Miami-Dade	Miami	Counties – Dade, Monroe
BOMA/Orlando	Orlando	Counties – Orange, Osceola, Seminole, Brevard, Lake, Volusia
BOMA/Greater Tampa Bay	Tampa	Counties – Hillsborough, Polk, Pasco, Pinellas, Manatee, Sarasota
BOMA/Tallahassee	Tallahassee	Counties – Leon, Gadsden, Wakulla, Jefferson
GEORGIA		
BOMA/Georgia	Atlanta	Entire State
HAWAII		
BOMA/Hawaii	Entire State	Entire State
IDAHO		
BOMA/Boise	Boise	Idaho Counties – Butte, Ada, Adams, Blaine, Canyon, Cassia, Custer, Camas, Elmore, Gem, Gooding, Idaho, Minidoka, Owyhee, Payette, Twin Falls, Valley, Washington Oregon Counties – Baker, Malheur, Union, Wallowa
ILLINOIS		
BOMA/Chicago	Metropolitan Chicago – Central Business District	Chicago City (please note that this is just Chicago City—The rest of Cook County is in Suburban Chicago)
BOMA/Peoria	Peoria	Counties – Peoria, Woodford, Marshall, Stark, Fulton, Tazewell, Knox, Sangamon, Logan, McLean, Macon, LaSalle, Henry, Champaign
BOMA/Suburban Chicago	Chicago – Suburban	Counties – all of Cook County outside of Chicago City limits, DuPage, Will, Kankakee, Lake, Kane, Kendall, McHenry, DeKalb
INDIANA		
BOMA/Indiana	Indianapolis	Entire State

BOMA Local	Primary Market	Local Association Territory
IOWA		
BOMA/Iowa	Des Moines	Entire State
KANSAS		
BOMA/Wichita	Wichita	Counties – Cowley, Butler, Sedgwick, Greenwood, Dickinson, Reno, Barber, McPherson, Rice, Harvey, Sumner
KENTUCKY		
BOMA/Kentucky	Louisville	Entire State, with the exception of Boone, Kenton, and Campbell Counties (these are in Cincinnati's territory)
LOUISIANA		
BOMA/Shreveport	Shreveport	Parishes – Caddo
MARYLAND		
BOMA/Baltimore	Baltimore	Counties – Anne Arundel, Baltimore, Carroll, Frederick, Harford, Howard, Independent Cities – Baltimore City
MASSACHUSETTS		
BOMA/Boston	Boston	Counties – Suffolk, Middlesex, Norfolk, Worcester, Plymouth, Bristol
MICHIGAN		
BOMA/Metro Detroit	Detroit	Counties – Lapeer, Livingston, Macomb, Monroe, Oakland, St. Clair, Wayne, Washtenaw
BOMA/Mid-Michigan	Lansing	Counties – Clinton, Eaton, Gratiot, Ingham, Ionia, Montcalm, Shiawassee
BOMA/West Michigan	Grand Rapids	Counties – Allegan, Kalamazoo, Kent, Muskegon, Ottawa
MINNESOTA		
BOMA/Duluth	Duluth	Counties – St. Louis
BOMA/Greater Minneapolis	Minneapolis	Counties – Anoka, Hennepin
BOMA/St. Paul	St. Paul	Counties – Ramsey, Washington
MISSISSIPPI		
BOMA/Mississippi	Jackson	Entire State
MISSOURI		
BOMA/Kansas City	Kansas City	Missouri Counties – Cass, Clay, Jackson, Platte, Ray Kansas Counties – Johnson, Leavenworth, Wyandotte
BOMA/St. Louis	St. Louis	Missouri Counties – Crawford, Franklin, Gasconade, Iron, Jefferson, Lincoln, Madison, Montgomery, Pike, St. Charles, St. Francois, St. Genevieve, St. Louis, Warren, Washington Independent Cities – St. Louis Illinois Counties – Bond, Calhoun, Clinton, Fayette, Greene, Jefferson, Jersey, Macoupin, Madison, Montgomery, Marion, Monroe, Montgomery, Perry, Randolph, St. Clair, Washington
NEBRASKA		
BOMA/Omaha	Omaha	Counties – Douglas
NEVADA		
BOMA/Nevada	Las Vegas	Entire State

BOMA Local	Primary Market	Local Association Territory
NEW JERSEY		
BOMA/New Jersey	Newark	Counties – Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, Warren
NEW YORK		
BOMA/Capital Region-Albany	Albany	Counties – Albany, Columbia, Fulton, Greene, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Ulster, Warren, Washington
BOMA/Greater Buffalo	Buffalo	Counties – Allegany, Cattaraugus, Chautauqua, Erie, Niagara, Orleans, Wyoming
BOMA/Greater Rochester	Rochester	Counties – Livingston, Monroe, Ontario
BOMA/Long Island	Long Island	Counties – Nassau, Suffolk
BOMA/New York	New York City – All Boroughs	Counties – Bronx, Kings, New York, Queens, Richmond
BOMA/Westchester	White Plains	Counties – Westchester, Putnam, Dutchess, Rockland, Orange
NORTH CAROLINA		
BOMA/Greater Charlotte	Charlotte	North Carolina Counties – Alexander, Alleghany, Ashe, Avery, Buncombe, Burke, Cabarrus, Caldwell, Catawba, Cherokee, Clay, Cleveland, Davie, Davidson, Forsyth, Gaston, Graham, Guilford, Haywood, Henderson, Iredell, Jackson, Lincoln, McDowell, Macon, Madison, Mecklenburg, Mitchell, Polk, Randolph, Rockingham, Rowan, Rutherford, Stanly, Stokes, Surry, Swain, Transylvania, Union, Watauga, Wilkes, Yadkin, Yancey South Carolina Counties – Entire State
BOMA/Raleigh-Durham	Raleigh-Durham	Counties – Alamance, Anson, Beaufort, Bertie, Bladen, Brunswick, Camden, Carteret, Caswell, Chatham, Chowan, Columbus, Craven, Cumberland, Currituck, Dare, Duplin, Durham, Edgecombe, Franklin, Gates, Granville, Greene, Halifax, Harnett, Hertford, Hoke, Hyde, Johnston, Jones, Lee, Lenoir, Martin, Montgomery, Moore, Nash, New Hanover, Northampton, Onslow, Orange, Pamlico, Pasquotank, Pender, Perquimans, Person, Pitt, Richmond, Robeson, Sampson, Scotland, Tyrrell, Vance, Wake, Warren, Washington, Wayne, Wilson
OHIO		
BOMA/Akron	Akron	Counties – Summit, Stark, Portage, Wayne
BOMA/Greater Cincinnati	Cincinnati	Ohio Counties – Hamilton, Clermont, and the southern portions of Butler and Warren Counties in Ohio (the northern portions of both counties are in Dayton's territory, with the north/south boundary being Route 63.) Kentucky Counties – Boone, Kenton, Campbell Indiana Counties – Dearborn, Franklin
BOMA/Greater Cleveland	Cleveland	Counties – Cuyahoga, Geauga, Lake, Lorain
BOMA/Columbus	Columbus	Counties – Champaign, Delaware, Fairfield, Franklin, Licking, Madison, Pickaway, Union
BOMA/Dayton	Dayton	Counties – Clark, Clinton, Darke, Greene, Miami, Montgomery, Preble, and the northern portions of Butler and Warren Counties (the southern portions of each county are in Greater Cincinnati's territory, with the north/south boundary being Route 63)
BOMA/Toledo	Toledo	Counties – Hancock, Lucas, Wood
OKLAHOMA		
BOMA/Oklahoma City	Oklahoma City	Counties – Cleveland, Oklahoma
BOMA/Tulsa	Tulsa	Counties – Cherokee, Craig, Creek, Delaware, Mayes, Muskogee, Nowata, Okmulgee, Osage, Pawnee, Rogers, Tulsa, Wagoner, Washington

BOMA Local	Primary Market	Local Association Territory
OREGON		
BOMA/Oregon	Portland	Entire State
PENNSYLVANIA		
BOMA/Philadelphia	Philadelphia	Pennsylvania Counties – Berks, Bucks, Chester, Delaware, Montgomery, Philadelphia Delaware Counties – New Castle, Kent New Jersey Counties – Atlantic, Burlington, Camden, Gloucester
BOMA/Pittsburgh	Pittsburgh	Counties – Allegheny, Armstrong, Beaver, Bedford, Butler, Cambria, Clarion, Erie, Greene, Fayette, Jefferson, Lawrence, Mercer, Somerset, Washington, Westmoreland West Virginia Counties – Hancock, Brook, Ohio, Marshall
TENNESSEE		
BOMA/Chattanooga	Chattanooga	Counties – Bledsoe, Bradley, Hamilton, McMinn, Meigs, Polk, Rhea, Sequatchie
BOMA/Knoxville	Knoxville	Counties – Anderson, Blount, Knox
BOMA/Memphis	Memphis	Counties – Shelby
BOMA/Nashville	Nashville	Counties – Cheatham, Davidson, Dickson, Robertson, Rutherford, Sumner, Williamson, Wilson
TEXAS		
BOMA/Austin	Austin	Counties – Travis
BOMA/Corpus Christi	Corpus Christi	Counties – Nueces
BOMA/Greater Dallas	Dallas	Counties – Dallas, Collin, Grayson, Ellis, Kaufman, Van Zandt
BOMA/Fort Worth	Fort Worth	Counties – Tarrant, Denton, Wise, Lubbock, Wichita
BOMA/Houston	Houston	Counties – Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, Waller
BOMA/San Antonio	San Antonio	Counties – Bexar
UTAH		
BOMA/Utah	Salt Lake City	Entire State
WASHINGTON		
BOMA/Seattle-King County	Seattle	Counties – King
BOMA/Spokane	Spokane	Counties – Spokane
BOMA/South Puget Sound	Tacoma	Counties – Pierce, Thurston, Kitsap
WISCONSIN		
BOMA/Wisconsin	Milwaukee	Entire State



BOMA International

1101 15th Street, NW, Suite 800

Washington, DC 20005

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