



WISCONSIN **REALTORS**® ASSOCIATION



THE IMPACT OF REAL ESTATE ON WISCONSIN'S ECONOMY

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SPECIAL REPORT

THE IMPACT OF REAL ESTATE ON WISCONSIN'S ECONOMY

The impact of construction and real estate services on state GDP, personal income and employment is very large and spread widely across the state, second only to manufacturing in its impact on the state's economy. However, construction employment in the state has declined since 2001, and new construction is failing to provide adequate shelter for residents and productive workplaces for employers relative to the nation as a whole.

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Construction and real estate services directly generate 15.8 percent of GDP, support 380,000 jobs, and produce almost \$18 billion in personal income. **8**

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ABOUT THE WISCONSIN REALTORS® ASSOCIATION

The WRA is one of the largest trade associations in the state, headquartered in Madison, Wis. The WRA represents and provides services to more than 16,500 members statewide, made up of practicing real estate sales agents, brokers, appraisers, inspectors, bankers and other professionals who touch real estate. The WRA is under the direction of a statewide board of directors, comprised of members from the top real estate firms around the state.



ABOUT THE AUTHOR

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ACKNOWLEDGEMENTS AND DISCLAIMERS

All statements in this document are the opinion of Dr. Eppli himself and do not necessarily reflect the views of the University of Wisconsin, or any city, county or state agency.

Wisconsin REALTORS® Association

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RESULTS OF STUDY

KEY FINDINGS

IMPACT OF CONSTRUCTION AND REAL ESTATE SERVICE INDUSTRIES ON THE WISCONSIN ECONOMY (2017)

15.8% of Wisconsin's GDP is directly attributable to construction and real estate services.

380,000 total Wisconsin jobs, 15.4 percent of state jobs, are supported by construction and real estate services.

\$17.6 billion in aggregate Wisconsin personal earnings supported by construction and real estate services, or 15.1 percent of state private earnings.

26% is the gap between the U.S. and Wisconsin in the direct contribution of construction and real estate services as a percent of employment: 7.6 percent for Wisconsin and 9.6 percent for the U.S.



ABOUT THIS STUDY EXECUTIVE SUMMARY

THE IMPACT OF REAL ESTATE ON WISCONSIN'S ECONOMY

The impact of construction and real estate services on the Wisconsin economy is impressive: these services directly generate 15.8 percent of the state's GDP, support 380,000 jobs and produce almost \$18 billion in personal earnings. Whether measured by contribution to the GDP, personal earnings or employment, the impact of construction and real estate services exceeds 15 percent of the state's economy. However, earnings and employment in construction and real estate services are declining. For the period of 2001 to 2017, construction and real estate services declined from 16.3 percent to 15.1 percent of state GDP, and employment fell as a share of the state's employment from 16.5 percent to 15.4 percent. Additionally, the percent of employment attributable to construction and real estate services in Wisconsin is 26 percent lower than the nation: 7.6 percent for Wisconsin versus 9.6 percent for the U.S. Finally, the state has seen a dramatic reduction in subdivision employment over the last two decades.





TAKEAWAYS, SYNTHESIS AND POLICY IMPLICATIONS

In addition to the outsized impact that construction and real estate services have on the Wisconsin economy and low unemployment rate, this research creates three noteworthy takeaways that should solicit thoughtful policy consideration:

- For the 2001-2017 period, the Wisconsin economy realized solid employment growth, while total direct and indirect construction employment fell by 20,807 workers, or 6.9 percent. During that same period, U.S. construction employment grew by 3.5 percent. Both residential and non-residential construction sustained job losses. Why is the state's construction employment absolute growth and share of the state's employment falling?
- In 2017, Wisconsin consistently maintained a lower share of GDP attributable to construction at 7.6 percent, when compared to that same figure for the U.S. at 9.6 percent. What impediments to construction exist in Wisconsin that limit the share of GDP to construction that do not exist in other states?
- The number of employees in subdivision development in Wisconsin declined 46 percent from 2001 to 2017 and declined 61 percent from the 2005 peak subdivision employment. What business or regulatory attributes are contributing to the decline in subdivision employment?

These takeaways reveal that Wisconsin is not keeping pace with the nation in providing the housing and commercial buildings necessary to shelter its residents and create productive commercial properties for business and economic growth. To attract, retain and grow the state's workforce and compete for millennial and generation Z talent, Wisconsin must provide innovative and productive workplaces as well as build interesting and engaging housing and neighborhoods. Declining construction employment in Wisconsin, the low percent of Wisconsin GDP attributable to construction, and the drop in subdivision development jobs run counter to the direct economic growth in the construction sector and the indirect economic growth that new buildings and residences provide for business to grow and families to flourish.

Municipal leaders, state regulators, local regulators, financial intermediaries and other private organizations must focus on policies, regulations and real estate development initiatives that encourage residential and commercial real estate property and building development, construction workforce development, and availability of acquisitions, development and construction loans. Without thoughtful and sustainable new investment in commercial and residential real estate development, the state's economic growth will continue to underperform national growth rates.

INTRODUCTION

SPECIAL REPORT

THE IMPACT OF REAL ESTATE *ON WISCONSIN'S ECONOMY*



Purpose of this report: To examine the economic contribution of commercial and residential real estate on Wisconsin's economy.

The impact of commercial and residential construction and the real estate industry on Wisconsin's GDP, employee earnings and employment is vast. Residential and commercial real estate construction and services provide the space needed for companies to grow and residents to live.

The study uses detailed GDP, earnings and employment data from the U.S. Bureau of Labor Statistics, the Federal Reserve and the Bureau of Economic Analysis for the period of 2001 to 2018. Exhibits and tables contained in the study include mapped data, graphs and tables that provide a detailed picture of the state of Wisconsin's economy and the direct, indirect and induced impact of the construction and real estate industries on the state's economy.

THE IMPACT OF CONSTRUCTION AND REAL ESTATE SERVICES *ON THE WISCONSIN ECONOMY*

The influence of construction and real estate services on the Wisconsin economy can be measured using a variety of metrics. The broadest measure of the direct economic impact of construction and real estate services on the state's economy is the contribution these industries have on state GDP. Other measures include the impact of construction and real estate services on personal earnings and employment. This section begins with a discussion of the impact of construction and real estate services on state GDP, followed by an analysis of the impact of these two industries on personal earnings and employment. The section ends with a comparison of construction and real estate services in Wisconsin with that of the U.S.

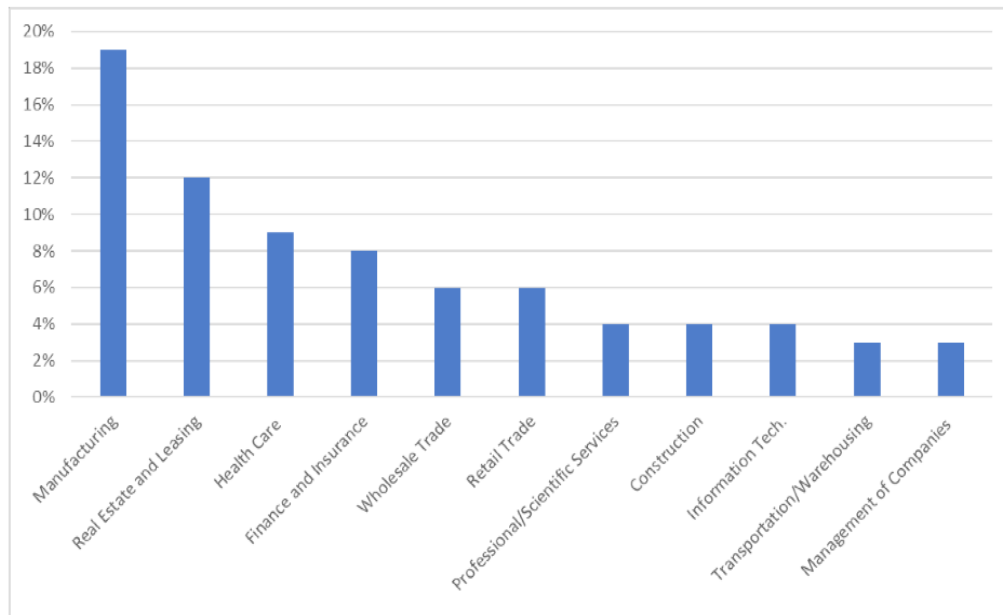
THE IMPACT OF REAL ESTATE SERVICES AND CONSTRUCTION *ON STATE GDP*

Exhibit 1 reveals the contribution of private industries on the state's GDP. Using the Bureau of Economic Analysis' two-digit North American Industry Classification System (NAICS) categories, manufacturing unsurprisingly is the largest share of state GDP, responsible for a strong 18.6 percent.

Real estate and leasing is next with a contribution to GDP of 11.8 percent attributable to this sector. An additional 4.0 percent contribution to state GDP is attributable to construction, for a combined impact of real estate and leasing and construction of 15.8 percent of state GDP. Together, real estate and leasing and construction approaches the effect that manufacturing has on Wisconsin's economy.

While the contribution of real estate and construction to state GDP is very large, both industries are stable to declining. As seen in Exhibit 2, since 2009 real estate and leasing remained at roughly 12 percent of GDP, construction is similarly stable-to-declining from pre-Great Recession levels of 4.6 percent to 4.8 percent in 2001-2007 to 4.0 percent in 2017, a 15 percent decline in the contribution of construction pre versus post Great Recession.

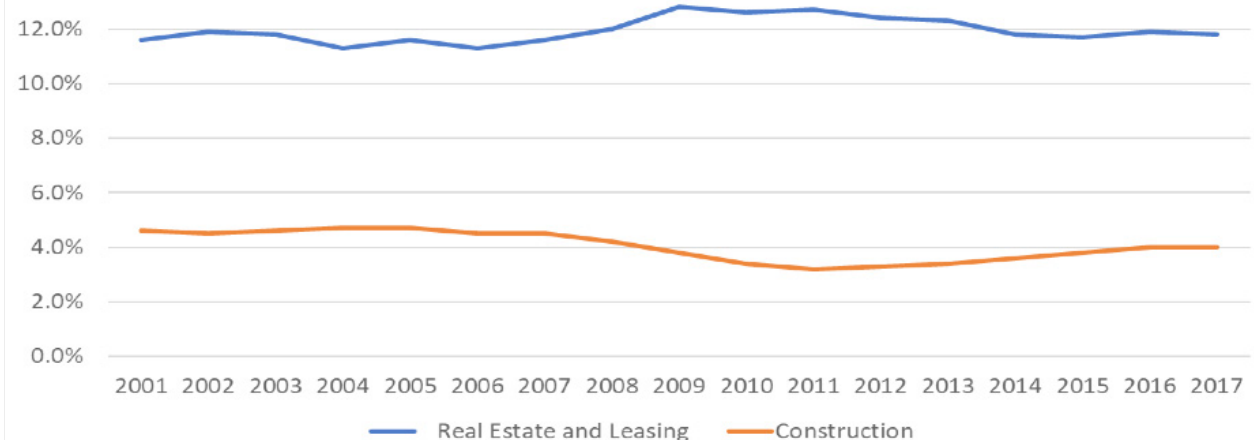
EXHIBIT 1 Private Industries in Wisconsin with the Largest Contribution to State GDP in 2017 as a Percent of State GDP



Data secured from the Bureau of Economic Analysis at apps.bea.gov/regional/downloadzip.cfm.

Note: Exhibit 10 does not include industries that comprise less than 2.5% of state GDP, including: Administrative and Support and Waste Management and Remediation Services; Accommodation and Food Services; Other Services (except government); Agriculture, Forestry, Fishing and Hunting; Education Services; Arts Entertainment and Recreation; and Mining, Quarrying, and Oil and Gas Extraction.

EXHIBIT 2 Contribution of Construction and Real Estate and Leasing to Wisconsin GDP, 2001-2017, as a Percent of State GDP



Data secured from the Bureau of Economic Analysis at apps.bea.gov/regional/downloadzip.cfm.

The influence of real estate and leasing as a percent of GDP is large and includes the impact of rent as reported by the Bureau of Economic Analysis (BEA). In the calculation of real estate and leasing as a percent of GDP, rent is considered consumption, which is included in GDP. The BEA discusses how rent is included in real estate and leasing as follows: Within GDP, personal consumption expenditures include the consumption of housing services by persons who own the housing that they occupy (referred to as "owner-occupants") as well as by those who rent their housing. The imputation ensures that GDP will not change if a house is rented by a landlord or is lived in by its owner.

Imputed rent for homeowners is the estimated rent a homeowner would pay for the set of housing amenities that homeowners consume, therefore effectively paying themselves for that consumption.

THE IMPACT OF CONSTRUCTION AND REAL ESTATE SERVICES ON STATE EMPLOYMENT AND PERSONAL EARNINGS

Another approach to measuring the impact of construction and real estate services on Wisconsin's economy is through its impact on aggregate personal earnings and employment. To complete this analysis, we investigate the influence of residential construction, non-residential construction and real estate services on personal earnings and employment in Wisconsin for the years 2001-2017. The analysis includes two primary steps: 1) Select and secure the appropriate NAICS industry codes and data from the BLS; and 2) Apply the appropriate personal earnings and employment multipliers from the Bureau of Economic Analysis. Steps 1 and 2 are detailed in Appendix A.

Table 1 presents the outcome of the two-step

analysis followed by the detailed data inputs and analysis required to generate this table. The direct, indirect and induced impact of construction and real estate services earnings and employment on the Wisconsin economy is large. More than \$17.6 billion in personal earnings and over 380,000 employees support construction and real estate activity in Wisconsin, which accounts for 15.1 percent of personal earnings and 15.4 percent of employment. The direct impact of construction and real estate services in Wisconsin is similarly large with over \$9.5 billion in personal earnings and 186,000 jobs, accounting for approximately 8 percent of personal earnings and employment in the state.

TABLE 1

Total Impact of Construction and Real Estate Services on the Wisconsin Economy, 2001-2017

Year	Direct				Direct, Indirect, and Induced			
	Earnings (in millions \$)	Employment	Total Construction and Real Estate Service Earnings as a Percent of Total Wisconsin Earnings	Total Construction and Real Estate Service Employment as a Percent of Wisconsin Employment	Earnings (in millions \$)	Employment	Total Construction and Real Estate Service Earnings as a Percent of Total Wisconsin Earnings	Total Construction and Real Estate Service Employment as a Percent of Wisconsin Employment
2001	6,443	185,042	8.8%	7.9%	11,896.46	387,158	16.3%	16.5%
2002	6,558	185,850	8.8%	8.0%	12,121.50	389,549	16.3%	16.9%
2003	6,754	186,865	8.9%	8.1%	12,513.89	392,876	16.4%	17.0%
2004	7,066	191,469	8.8%	8.2%	13,094.28	402,070	16.3%	17.2%
2005	7,381	194,432	8.9%	8.2%	13,661.57	407,792	16.4%	17.2%
2006	7,729	195,909	8.9%	8.2%	14,289.86	410,039	16.4%	17.2%
2007	7,970	194,423	8.8%	8.1%	14,706.46	405,047	16.2%	16.9%
2008	7,796	185,380	8.4%	7.8%	14,369.81	383,214	15.5%	16.0%
2009	6,796	165,184	7.8%	7.3%	12,532.17	339,089	14.4%	15.0%
2010	6,522	158,175	7.3%	7.0%	12,035.54	323,788	13.5%	14.4%
2011	6,599	157,430	7.1%	6.9%	12,177.83	321,609	13.1%	14.1%
2012	6,839	158,105	7.1%	6.8%	12,608.94	322,772	13.0%	13.9%
2013	7,209	162,105	7.2%	6.9%	13,293.56	329,901	13.3%	14.1%
2014	7,647	166,586	7.4%	7.0%	14,087.24	338,781	13.6%	14.2%
2015	8,397	174,196	7.7%	7.2%	15,468.28	354,708	14.2%	14.7%
2016	8,968	179,861	8.0%	7.3%	16,520.07	365,619	14.7%	14.9%
2017	9,553	186,879	8.2%	7.6%	17,609.35	380,799	15.1%	15.4%



ANALYSIS OF TABLE 1

For the 2001-2017 period, construction and real estate services supported personal earnings growth of \$5.7 billion, or 48 percent growth, from \$11.9 billion to \$17.6 billion, returning a 2.49 percent compound annual growth rate (CAGR). Wisconsin's employment growth for construction and real estate services was 1.0 percent for the 2001-2017 period for a 0.06 percent CAGR. The construction and real estate services employment growth rate of 1.0 percent is below total Wisconsin and U.S. employment growth rates for all private industries, which grew 5.7 percent and 12.0 percent, respectively, for the 2001-2017 period.

**MORE THAN \$17.6
BILLION IN PERSONAL
EARNINGS AND
OVER 380,000
EMPLOYEES SUPPORT
CONSTRUCTION AND
REAL ESTATE ACTIVITY
IN WISCONSIN,
WHICH ACCOUNTS
FOR 15.1 PERCENT OF
PERSONAL EARNINGS
AND 15.4 PERCENT OF
EMPLOYMENT**

THE IMPACT OF CONSTRUCTION ON PERSONAL EARNINGS AND EMPLOYMENT

Here we more narrowly explore the impact of construction on personal earnings and employment in Wisconsin, which allows us to separately analyze the contribution of the residential construction and non-residential construction industries on the state's personal earnings and employment.

The combined effect of residential and non-residential real estate construction on Wisconsin's economy is notable, with a total impact of \$13.6 billion in earnings and 281,000 jobs supporting approximately 11.5 percent of Wisconsin personal

earnings and employment; see table 2. The direct impact of the construction industry is similarly large, with 124,000 jobs and \$7.5 billion in personal earnings contributed to the state's economy in 2017. While the construction industry supports a sizable share of the state's economy, its influence is falling across time, as both personal earnings and employment have declined by 1.5 percent of the state's GDP, from 13 percent in 2001 to 11.5 percent in 2017.

TABLE 2 Total Impact of Residential and Non-residential Construction on the Wisconsin Economy, 2001-2017

Year	Direct				Direct, Indirect, and Induced			
	Earnings (in millions \$)	Employment	Total Construction and Real Estate Service Earnings as a Percent of Wisconsin Earnings	Total Construction and Real Estate Service Employment as a Percent of Wisconsin Employment	Earnings (in millions \$)	Employment	Total Construction and Real Estate Service Earnings as a Percent of Wisconsin Earnings	Total Construction and Real Estate Service Employment as a Percent of Wisconsin Employment
2001	5,211	132,858	7.1%	5.7%	9,515.62	302,557	13.0%	12.9%
2002	5,233	131,700	7.1%	5.7%	9,564.98	300,312	12.9%	13.0%
2003	5,286	130,890	6.9%	5.7%	9,674.55	298,744	12.7%	12.9%
2004	5,558	133,981	6.9%	5.7%	10,173.69	305,593	12.7%	13.1%
2005	5,836	135,953	7.0%	5.7%	10,670.62	309,981	12.8%	13.1%
2006	6,137	136,536	7.0%	5.7%	11,207.14	311,213	12.9%	13.0%
2007	6,354	134,850	7.0%	5.6%	11,584.47	306,983	12.8%	12.8%
2008	6,193	126,459	6.7%	5.3%	11,275.51	287,513	12.2%	12.0%
2009	5,269	108,761	6.0%	4.8%	9,586.67	247,094	11.0%	10.9%
2010	4,976	102,100	5.6%	4.5%	9,055.09	232,012	10.2%	10.3%
2011	5,036	100,903	5.4%	4.4%	9,170.52	229,624	9.9%	10.1%
2012	5,244	102,057	5.4%	4.4%	9,543.80	232,354	9.9%	10.0%
2013	5,534	104,023	5.5%	4.4%	10,077.85	236,301	10.1%	10.1%
2014	5,939	107,887	5.7%	4.5%	10,811.34	244,991	10.4%	10.3%
2015	6,527	114,126	6.0%	4.7%	11,881.92	259,064	10.9%	10.7%
2016	6,985	118,551	6.2%	4.8%	12,717.61	269,157	11.3%	11.0%
2017	7,460	123,962	6.4%	5.0%	13,598.33	281,750	11.6%	11.4%

RESIDENTIAL CONSTRUCTION

IN WISCONSIN

In 2017, residential construction in Wisconsin supported almost 126,000 employees and \$5.6 billion in earnings were supported by residential construction, which accounts for 5.1 percent of employment and 4.8 percent of earnings in the state; see table 3. The direct impact of residential construction in Wisconsin is \$3.0 billion in earnings and 53,000 employees. For the 2001-2017 period, the total direct, indirect and induced construction and real estate service earnings grew \$1.6 billion or 40 percent from \$4.0 billion to \$5.7 billion and returned a 2.1

percent compound annual growth rate, on par with CPI inflation for that period. Employment in residential real estate fell by 8.6 percent for the 2001-2017 period for a -0.56 percent CAGR. As a percent of the Wisconsin economy, the direct, indirect and induced impact of residential real estate construction employment contracted from 5.5 percent in 2001 to 4.8 percent in 2017, with a similar contraction in state residential construction earnings as a percent of Wisconsin earnings.

TABLE 3 Residential Construction Impact on the Wisconsin Economy, 2001-2017

Year	Direct Impact				Direct , Indirect, and Induced Impacts			
	Earnings (in millions \$)	Employment	Residential Construction Earnings as a Percent of Wisconsin Earnings	Residential Construction Employment as a Percent of Wisconsin Employment	Earnings (in millions \$)	Employment	Residential Construction Earnings as a Percent of Wisconsin Earnings	Residential Construction Employment as a Percent of Wisconsin Employment
2001	2,147	58,150	2.9%	2.5%	4,048	137,876	5.5%	5.9%
2002	2,179	58,292	2.9%	2.5%	4,115	138,382	5.5%	6.0%
2003	2,229	58,648	2.9%	2.5%	4,214	139,375	5.5%	6.0%
2004	2,357	60,122	2.9%	2.6%	4,455	142,752	5.5%	6.1%
2005	2,448	60,651	2.9%	2.6%	4,623	143,899	5.6%	6.1%
2006	2,541	60,189	2.9%	2.5%	4,788	142,648	5.5%	6.0%
2007	2,590	58,605	2.9%	2.4%	4,868	138,683	5.4%	5.8%
2008	2,491	54,492	2.7%	2.3%	4,674	128,763	5.1%	5.4%
2009	2,109	46,537	2.4%	2.1%	3,948	109,762	4.5%	4.9%
2010	1,996	43,801	2.2%	1.9%	3,736	103,314	4.2%	4.6%
2011	2,034	43,511	2.2%	1.9%	3,806	102,677	4.1%	4.5%
2012	2,103	43,954	2.2%	1.9%	3,937	103,809	4.1%	4.5%
2013	2,216	44,425	2.2%	1.9%	4,153	104,802	4.2%	4.5%
2014	2,375	46,076	2.3%	1.9%	4,452	108,719	4.3%	4.6%
2015	2,610	48,774	2.4%	2.0%	4,894	115,115	4.5%	4.8%
2016	2,785	50,659	2.5%	2.1%	5,227	119,597	4.6%	4.9%
2017	3,011	53,366	2.6%	2.2%	5,654	126,032	4.8%	5.1%

NONRESIDENTIAL CONSTRUCTION IN WISCONSIN

The effect of non-residential construction as a percent of earnings and employment ranges from 5.6 percent to 7.5 percent for earnings and 5.8 percent to 7.5 percent for employment for the 2001-2017 period; see table 4. In 2017, the direct, indirect and induced impacts generated almost \$7.9 billion in earnings and employed over 155,000 employees. Since 2010, earnings had a 2.7 percent CAGR, and both earnings and employment have contracted as a share of Wisconsin's economy.

TABLE 4
Nonresidential Construction Impact on the Wisconsin Economy, 2001-2017

Year	Direct				Direct, Indirect, and Induced			
	Earnings (in millions \$)	Employment	Non-Residential Construction Earnings as a Percent of Wisconsin Earnings	Non-Residential Construction Employment as a Percent of Wisconsin Employment	Earnings (in millions \$)	Employment	Non-Residential Construction Earnings as a Percent of Wisconsin Earnings	Non-Residential Construction Employment as a Percent of Wisconsin Employment
2001	3,064	74,708	4.2%	3.2%	5,468	164,682	7.5%	7.0%
2002	3,054	73,408	4.1%	3.2%	5,450	161,930	7.3%	7.0%
2003	3,058	72,242	4.0%	3.1%	5,460	159,369	7.2%	6.9%
2004	3,202	73,859	4.0%	3.2%	5,719	162,840	7.1%	7.0%
2005	3,387	75,302	4.1%	3.2%	6,048	166,082	7.3%	7.0%
2006	3,595	76,347	4.1%	3.2%	6,419	168,565	7.4%	7.1%
2007	3,764	76,245	4.2%	3.2%	6,717	168,300	7.4%	7.0%
2008	3,702	71,967	4.0%	3.0%	6,602	158,750	7.1%	6.6%
2009	3,160	62,224	3.6%	2.8%	5,639	137,332	6.5%	6.1%
2010	2,980	58,299	3.4%	2.6%	5,319	128,698	6.0%	5.7%
2011	3,002	57,392	3.2%	2.5%	5,365	126,946	5.8%	5.6%
2012	3,141	58,103	3.2%	2.5%	5,607	128,545	5.8%	5.6%
2013	3,318	59,598	3.3%	2.5%	5,925	131,499	5.9%	5.6%
2014	3,564	61,811	3.4%	2.6%	6,359	136,273	6.1%	5.7%
2015	3,918	65,352	3.6%	2.7%	6,988	143,949	6.4%	6.0%
2016	4,200	67,892	3.7%	2.8%	7,491	149,560	6.7%	6.1%
2017	4,449	70,596	3.8%	2.9%	7,944	155,719	6.8%	6.3%

THE IMPACT OF REAL ESTATE SERVICES ON THE WISCONSIN ECONOMY

Approximately 3.5 percent to 4.0 percent of Wisconsin earnings and employment are supported by real estate services; see table 5. Different from construction, where the share of earnings and employment relative to the state has decreased, real estate service earnings and employment are stable or slightly grew over the 2001-2017 period. Direct employment in real estate services grew by 20.5 percent since 2001, adding over 10,000 professionals to the field. In 2017, direct, indirect and induced real estate services supported almost 100,000 jobs and \$4.0 billion in earnings.

TABLE 5

Real Estate Services Impact on the Wisconsin Economy, 2001-2017

Year	Direct				Direct, Indirect, and Induced			
	Earnings (in millions \$)	Employment	Real Estate Service Wages as a Percent of Wisconsin Earnings	Real Estate Service Employment as a Percent of Wisconsin Employment	Earnings (in millions \$)	Employment	Real Estate Service Earnings as a Percent of Wisconsin Earnings	Real Estate Service Employment as a Percent of Wisconsin Employment
2001	1,232	52,184	1.7%	2.2%	2,381	84,601	3.3%	3.6%
2002	1,325	54,150	1.8%	2.3%	2,557	89,237	3.4%	3.9%
2003	1,468	55,975	1.9%	2.4%	2,839	94,133	3.7%	4.1%
2004	1,508	57,488	1.9%	2.5%	2,921	96,477	3.6%	4.1%
2005	1,545	58,479	1.9%	2.5%	2,991	97,811	3.6%	4.1%
2006	1,593	59,373	1.8%	2.5%	3,083	98,826	3.5%	4.1%
2007	1,616	59,573	1.8%	2.5%	3,122	98,064	3.4%	4.1%
2008	1,603	58,921	1.7%	2.5%	3,094	95,701	3.3%	4.0%
2009	1,527	56,423	1.8%	2.5%	2,946	91,995	3.4%	4.1%
2010	1,546	56,075	1.7%	2.5%	2,980	91,776	3.4%	4.1%
2011	1,563	56,527	1.7%	2.5%	3,007	91,985	3.2%	4.0%
2012	1,595	56,048	1.6%	2.4%	3,065	90,418	3.2%	3.9%
2013	1,675	58,082	1.7%	2.5%	3,216	93,600	3.2%	4.0%
2014	1,709	58,699	1.6%	2.5%	3,276	93,790	3.2%	3.9%
2015	1,869	60,070	1.7%	2.5%	3,586	95,644	3.3%	4.0%
2016	1,983	61,310	1.8%	2.5%	3,802	96,462	3.4%	3.9%
2017	2,093	62,917	1.8%	2.5%	4,011	99,049	3.4%	4.0%

CONSTRUCTION AND REAL ESTATE SERVICES *IN WISCONSIN* COMPARED TO THE UNITED STATES

Supporting 15.6 percent of state GDP, 15.1 percent of the state's personal earnings, and 15.4 percent of Wisconsin's employment, the size and scope of the construction and real estate services in Wisconsin is remarkable. But how does Wisconsin's construction and real estate service industries compare to similar metrics for the nation?

On average, the direct impact of construction and real estate service employment on Wisconsin's economy is 2.1 percentage points lower than the same metric for the U.S.; see table 6. Furthermore, the difference in the gap between construction

and real estate services employment in Wisconsin and the U.S. is growing over time. In short, the U.S. had 26 percent more employees as a share of construction and real estate services, 7.6 percent versus 9.6 percent than Wisconsin. This persistent underinvestment in commercial and residential real estate in the state limits not only growth in real estate-related industries but may also limit economic growth more broadly as Wisconsin does not adequately invest in buildings for new businesses and employees as the rest of the U.S.

TABLE 6

Comparison of the Direct Impact of Construction and Real Estate Services on the Wisconsin and U.S. Economies, 2001-2017

Year	Wisconsin's Construction and Real Estate Service Employment as a Percent of Wisconsin Employment	United States' Construction and Real Estate Services Employment as a Percent of United States Employment
2001	7.9%	9.7%
2002	8.0%	9.9%
2003	8.1%	10.1%
2004	8.2%	10.3%
2005	8.2%	10.6%
2006	8.2%	10.8%
2007	8.1%	10.6%
2008	7.8%	10.2%
2009	7.3%	9.5%
2010	7.0%	9.1%
2011	6.9%	9.0%
2012	6.8%	8.9%
2013	6.9%	9.1%
2014	7.0%	9.2%
2015	7.2%	9.3%
2016	7.3%	9.5%
2017	7.6%	9.6%

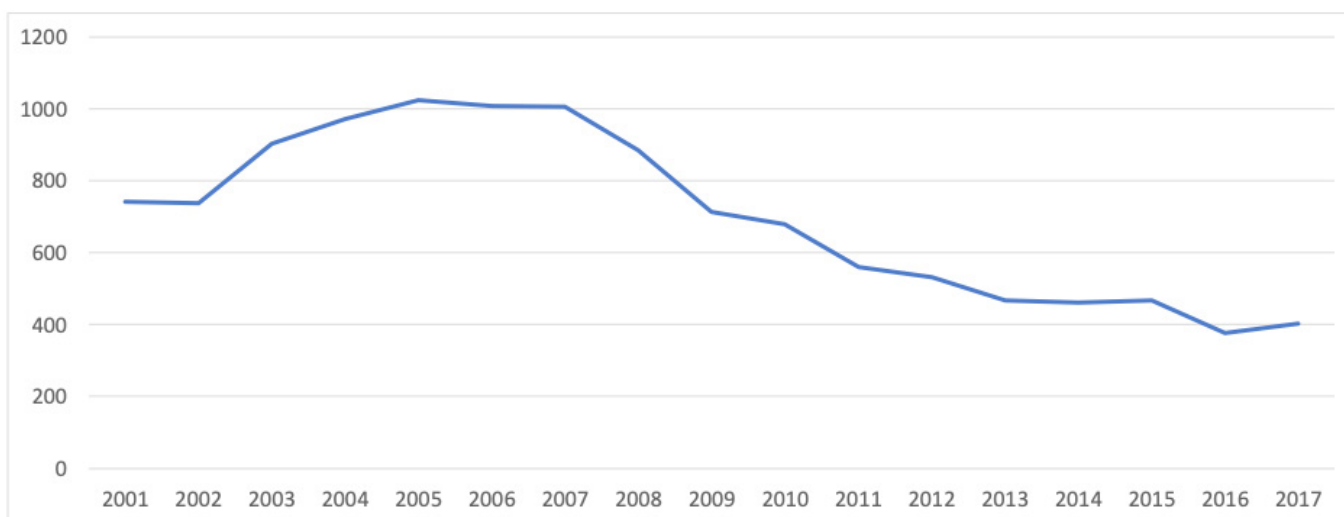
IN SHORT, THE U.S. HAD 26 PERCENT MORE EMPLOYEES AS A SHARE OF CONSTRUCTION AND REAL ESTATE SERVICES THAN WISCONSIN.

SUBDIVISION EMPLOYMENT IN WISCONSIN

One potential reason for the lack of construction employment in Wisconsin might be attributable to a lack of finished lots for residential and commercial development; see exhibit 3. Since the Great Recession, the employment in subdivision development, and by extension finished lots, has fallen dramatically. Subdivision employment peaked in 2005 with 1,023 jobs and fell 61 percent to 402 jobs in 2017.

Nine years into the current economic recovery, subdivision employment is at or near long-term lows. Dramatic reductions in acquisition, development and construction loans attributable to increased bank regulation since the Great Recession are likely limiting funding for finished lots and finished lot availability for both commercial and residential development.

EXHIBIT 3 Subdivision Employment in Wisconsin





THE IMPACT OF CONSTRUCTION AND REAL ESTATE SERVICES *ON WISCONSIN'S ECONOMY*

Construction and real estate services generate 15.8 percent of the state's GDP, supporting 380,000 jobs and producing almost \$18 billion in personal earnings. Similarly, the impact of construction and real estate services on personal earnings and employment is also 15 percent to 16 percent of the state's personal earnings and employment.

However, for the 2001-2017 period, total construction employment in Wisconsin fell by 20,807 jobs or 6.9 percent. During that same period, U.S. construction employment grew by 3.5 percent. On a similarly negative note, Wisconsin consistently maintained a lower share of GDP attributable to construction than that of the U.S., 7.6 percent versus 9.6 percent in 2017, or a 26 percent lower share of GDP attributable to construction than the U.S. And the number of employees in the subdivision development declined 46 percent from 2001 to 2017.

Wisconsin is failing to keep pace with the nation in providing housing and commercial buildings necessary to shelter its residents and provide productive commercial properties for business. To attract, retain and grow the state's work force and compete for millennial and generation Z talent, Wisconsin must provide innovative and productive workplaces as well as build interesting and engaging housing and neighborhoods.

APPENDIX A: MEASURING THE IMPACT OF PERSONAL EARNINGS AND EMPLOYMENT

DIRECT, INDIRECT AND INDUCED **PERSONAL EARNINGS**

To provide an accurate picture of the impact of construction and real estate services on the Wisconsin economy, it is critically important to use credible data sources, earnings/employment multipliers and analysis methods. This section discusses the personal earnings and employment data that was secured, followed by a presentation of the multipliers used to complete the analysis of direct, indirect and induced effects of construction and real estate services on the Wisconsin economy.

Direct Earnings and Employment

All personal earnings and employment data used in this analysis are obtained from the Bureau of Labor Statistics (BLS). The extracted data is the earnings and employment for private establishments of all sizes, not seasonally adjusted (NSA), for the 2001-2017 period. Private earnings and employment data provides the best detail and often is the only data available for some of the construction and real estate service industries examined. Overall, private employment in Wisconsin accounted for 2,473,083 jobs of the 2,850,145 jobs in 2017. In Wisconsin, 86.8 percent of all employment is private, with the remaining 13.2 percent being federal, state and local government employment.

By focusing on private earnings and employment, the data does not include non-payroll spending; spending for materials; overhead; utilities; equipment leasing; or purchases by subcontractors, supplier and vendors. Nor does it include government earnings and employment on construction and real estate services. While more expansive data on the construction and real estate service

industries is available, the data often includes broad-brush categories and less detail.

The BLS data used in this research was downloaded by individual NAICS code. NAICS is the standard for classifying business establishments into industry groups according to similarity in the processes used to produce goods or services. All industries have at least one associated NAICS code. NAICS classifications begin with 20 primary two-digit codes for industry sectors like manufacturing, construction and so on. From there, the NAICS hierarchy includes 96 subcategories and 317 industry groups. Subcategories have three-digit codes, and industries have four-digit codes and in total, with over 2,000 NAICS category codes in total. Exhibit A1 presents the NAICS coding hierarchy system for the construction industry, which has 23 as its two-digit category code. Within the “Construction” two-digit code is the three-digit subcategory Code 236 titled “Construction of Buildings” and a four-digit category Code 2362 titled “Non-Residential Building Construction.”

For this analysis, it is tempting to simply use the construction classification code 23; however, code classification 23 includes subcode 237, “Heavy and Civil Engineering Construction,” and roads, bridges, utility and other non-building construction. While code 237 is indirectly impacted by residential and non-residential construction, industries in this code are not included in the analysis.

Code 2362, “Non-Residential Building Construction,” in Exhibit A1 below, includes all non-residential building construction such as office, retail and industrial building construction, but excludes residential building construction — both apartment and single-family construction — and non-building construction. More narrowly, code 23621 includes only “Industrial Building Construction.”

EXHIBIT A1

North American Industry Classification System (NAICS) Structure

NAICS Code	NAICS Category Description
23	Construction
236	Construction of Buildings
2362	Non-Residential Building Construction
23621	Industrial Building Construction

The NAICS classification codes and the earnings and employment data used in this analysis are presented in Table A1. Residential Building Construction and Non-Residential Building Construction include 11,859 and 15,574 employees, respectively, of the 123,962 employees included in the broader construction category. The relatively small number of residential and non-residential building employees is a definitional one, and those categories only include construction companies that are responsible for constructing entire structures; as such, it does not include specialty subcontractors in industries that more narrowly work in a subsector of non-residential construction such as foundations, framing, exterior finishes or interior finishes. These specialty trade contractors are included in Code 238, “Specialty Trade Contractors.”⁴

Taking a closer look at Table A1, NAICS classification code 5413, “Architectural and Engineering Services,”

is a category that includes 18,223 employees. The review of U.S. Census definitions confirms that code 5413 narrowly includes residential and non-residential building construction-related service earnings with the following definition:

This industry group comprises establishments primarily engaged in offering (1) architectural services for residential, institutional, leisure, commercial and industrial buildings and structures as well as for landscape purposes; (2) offering engineering services, including drafting services or building inspection.⁵

⁴ BLS data does not designate which Specialty Trade Contractor earnings/employment are attributable to residential and non-residential construction. To allocate the earnings and employment to non-residential and residential construction, a calculation necessary for analyses later in this appendix, we allocate Specialty Trade Contractor employment based on the relative percent of GDP that residential and non-residential construction contribute to the national economy, which is 43% to residential construction and 57% to commercial construction.

⁵ Definition obtained from the U.S. Census at www.census.gov

TABLE A1**Direct Impact of Construction and Real Estate Services Employment and Wages by NAICS Subcategory, 2017**

NAICS Code	Category Name	Earnings ^a (in millions)	Employment ^b	Category Earnings as a Percent of Total Earnings	Category Employment as a Percent of Total Employment
Construction					
2361	Residential Building Construction	523.1	11,859	0.45%	0.48%
2362	Non-Residential Building Construction	1,151.2	15,574	0.99%	0.63%
2372	Land Subdivision	32.4	402	0.03%	0.02%
2380	Specialty Trade Contractors	4,253.2	75,756	3.64%	3.06%
5413	Architectural and Engineering Services	1,370.1	18,223	1.17%	0.74%
54141	Interior Design Services	13.8	285	0.01%	0.01%
54162	Environmental Consulting Services	67.1	1,000	0.06%	0.04%
56291	Remediation Services	48.8	863	0.04%	0.03%
	Total Direct Residential and Non-Residential Construction	7,459.8	123,962	6.39%	5.01%
Real Estate Services					
531	Real Estate	782.5	19,071	0.67%	0.77%
5617	Services to Buildings and Dwellings	938.6	38,365	0.80%	1.55%
522292	Real Estate Credit	158.5	1,740	0.14%	0.07%
52231	Mortgage and Non-Mortgage Loan Brokers	58.9	748	0.05%	0.03%
541191	Title, Abstract and Settlement Offices	64.6	1,395	0.06%	0.06%
5612	Facilities Support Services	53.8	692	0.05%	0.03%
561622	Locksmiths	9.0	222	0.01%	0.01%
562991	Septic Tank and Related Services	27.1	684	0.02%	0.03%
	Total Direct Real Estate Services	2,093.0	62,917	1.79%	2.54%
	Total Direct Construction and Real Estate Services	9,552.8	186,879	8.18%	7.56%

^a Bureau of Labor Statistics, total wages in millions in private total, all industries for all establish sizes in Wisconsin — Statewide, NSA.

^b Bureau of Labor Statistics, total employment in millions in private total, all industries for all establish sizes in Wisconsin — Statewide, NSA.

The Architecture and Engineering Code 5413 narrowly captures building construction with other NAICS codes for manufacturing engineering, healthcare engineering and other engineering-related industries. Full definitions for all construction and real estate services NAICS classification codes included in this study are provided in Appendix B.

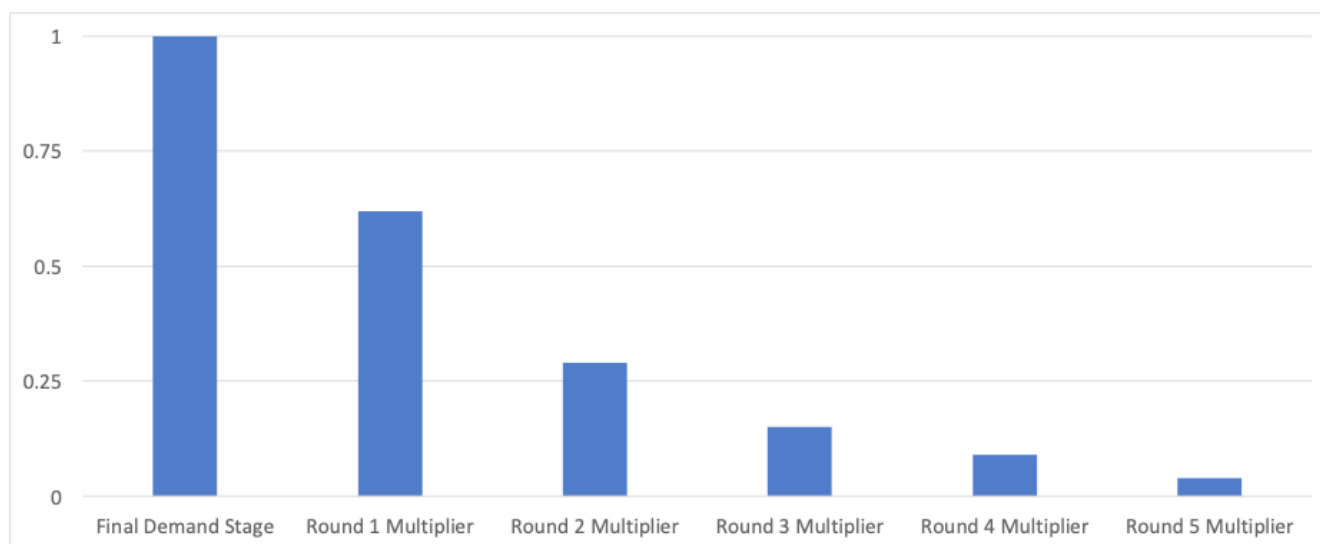
Like the construction code discussion in the top half of Table A1, the bottom half of the table presents the real estate service industry NAICS codes. NAICS codes 531 and 5617 represent Real Estate and Services to Buildings and Dwellings, respectively, and provide a significant contribution to the earnings and employment, as expected.

Indirect and Induced Earnings and Employment

To calculate the indirect and induced impact of personal wages and employment, RIMS II Final Demand Multipliers and RIMS II Direct Effect Employment Multipliers for Wisconsin are obtained from the Bureau of Economic Analysis.⁶ The Regional Input-Output Multiplier System (RIMS II) includes two impacts on direct spending: indirect effects and induced effects. Indirect effects, or “ripple effects,” of direct earnings and employment in an industry are best described as the business-to-business impact of the primary industry to a secondary industry. For example, a carpenter making cabinets for a new home would purchase finished wood and cabinet hardware from lumber and cabinet hardware vendors in round 1, generating a 0.62 multiplier, or a 0.62 multiplier on the primary cabinet-making NAICS code; see Exhibit A2.

EXHIBIT A2

Example of the Impact of an Earnings/Employment Multiplier



The vendors to the cabinet industry provide inputs including materials, drafting, electrical utilities and other services to generate the finished wood product and hardware. In round 2, the vendors to the finished wood supplier and hardware supplier generate a 0.29 multiplier to create their output product, continuing on to rounds 3, 4 and 5, rippling through the economy. To reiterate, the indirect effects are from the primary industry that hires subcontractors, who hire other subcontractors and use utilities and other business-to-business materials and services.

Induced effects come from the retail spending of the direct and indirect industry earnings. The induced effects come from the earnings generated by the retail consumption of goods. RIMS II multipliers include the impact of both the indirect and induced effects. Table A2 provides the RIMS II multipliers for the construction and real estate service industries for the state of Wisconsin.⁷

⁶ Earnings and employment multipliers were obtained directly from the Bureau of Economic Analysis in January 2019 at www.bea.gov.

⁷ A complete discussion of the Regional Input-Output Modeling System (RIMS II) can be found in the RIMS II modeling guide, RIMS II: An Essential Modeling Tool for Regional Developers and Planners, at www.bea.gov/sites/default/files/methodologies/RIMSII_User_Guide.pdf.

TABLE A2**Regional Input-Output Model System (RIMS II) Earnings and Employment Type II Multipliers (Total Multipliers) for Wisconsin, 2016**

RIMS Code	Category Name	Earnings^b	Employment^b
Construction			
2334B0	Residential Building Construction	2.0893	2.6506
2332C0	Non-Residential Building Construction	1.6490	1.9469
5416A0	Land Subdivision ^c	1.6542	1.6759
2334B0/2332C0	Specialty Trade Contractors ^d	1.8383	2.2495
541300	Architectural and Engineering Services	1.8227	2.4538
541400	Interior Design Services ^e	1.6242	1.5544
5416A0	Environmental Consulting Services	1.6539	1.6759
562000	Remediation Services	2.1299	2.4047
Real Estate Services			
531000	Real Estate	2.1220	1.5918
561700	Services to Buildings and Dwellings	1.7406	1.4227
522A00	Real Estate Credit ^f	1.9743	2.7667
522A00	Mortgage and Non-Mortgage Loan Brokers ^f	1.9743	2.7667
541100	Title, Abstract and Settlement Offices ^g	1.5253	2.3695
561200	Facilities Support Services	2.0944	2.4886
561200	Locksmiths ^h	2.0944	2.4886
561200	Septic Tank and Related Services	2.1299	2.4047

^a A full discussion of the Regional Input-Output Modeling System (RIMS II) can be found in the RIMS II modeling guide, RIMS II: An Essential Modeling Tool for Regional Developers and Planners, at www.bea.gov/sites/default/files/methodologies/RIMSII_User_Guide.pdf.

^b The RIMS II multipliers were obtained from the Bureau of Economic Analysis at apps.bea.gov/regional/rims/rismii, Table 1.5, Total Multipliers for Output, Earnings, Employment and Value Added by Detailed Industry, Wisconsin (Type II).

^c Land subdivision multiplier was not provided, used the Environmental and Other Technical Consulting Services multiplier.

^d Specialty Contractor multiplier was not provided, used 43% of the Residential Building multiplier and 57% of the Non-Residential Building multiplier based on Residential and Non-Residential contribution to GDP.

^e Interior Design Services multiplier was not provided, used the Specialized Design Services multiplier.

^f Real Estate Credit and Mortgage and Non-Mortgage Loan Broker multipliers were not provided, used Non-Depository Credit Intermediation and Brokerage.

^g Title Abstract and Settlement Office multiplier was not provided, used the Legal Services multiplier.

^h Locksmith multiplier not provided, used the Facilities Support Services multiplier.

Appendix B: North American Industry Code Definitions (NAICS) for Construction and Real Estate Services

Residential Building Construction (NAICS 2361) This industry group comprises establishments primarily responsible for the construction or remodeling and renovation of single-family and multifamily residential buildings. Included in this industry are residential housing general contractors (i.e., new construction, remodeling, or renovating existing residential structures), for-sale builders and remodels of residential structures, residential project construction management firms, and residential design-build firms.

Non-Residential Building Construction (NAICS 2362) This industry group comprises establishments primarily responsible for the construction (including new work, additions, alterations, maintenance, and repairs) of non-residential buildings. This industry group includes non-residential general contractors, non-residential for-sale builders, non-residential design-build firms, and non-residential project construction management firms.

Land Subdivision (NAICS 2372) This industry group comprises establishments primarily engaged in servicing land and subdividing real property into lots, for subsequent sale to builders. Servicing of land may include excavation work for the installation of roads and utility lines. The extent of work may vary from project to project. Land subdivision precedes building activity and the subsequent building is often residential but may also be commercial tracts and industrial parks. These establishments may do all the work themselves or subcontract the work to others. Establishments that perform only the legal subdivision of land are not included in this industry.

Specialty Trade Contractors (NAICS 238) The Specialty Trade Contractors subsector comprises establishments whose primary activity is performing specific activities (e.g., pouring concrete, site preparation, plumbing, painting, and electrical work) involved in building construction or other activities that are similar for all types of construction, but that are not responsible for the entire project. The work performed may include new work, additions, alterations, maintenance, and repairs. The production work performed by establishments in this subsector is usually subcontracted from establishments of the general contractor type or for-sale builders, but especially in remodeling and repair construction, work also may be done directly for the owner of the property. Specialty trade contractors usually perform most of their work at the construction site, although they may have shops where they perform prefabrication and other work. Establishments primarily engaged in preparing sites for new construction are also included in this subsector.

There are substantial differences in types of equipment, work force skills, and other inputs required by specialty trade contractors. Establishments in this subsector are classified based on the underlying production function for the specialty trade in which they specialize. Throughout the Specialty Trade Contractors subsector, establishments commonly provide both the parts and labor required to complete work. For example, electrical contractors supply the current-carrying and noncurrent-carrying wiring devices that are required to install a circuit. Plumbing, heating, and air-conditioning contractors also supply the parts required to complete a contract.

Establishments that specialize in activities primarily related to heavy and civil engineering construction that are not normally performed on buildings, such as the painting of lines on highways are classified in Subsector 237, Heavy and Civil Engineering Construction.

Establishments that are primarily engaged in selling construction materials are classified in Sector 42, Wholesale Trade, or Sector 44-45, Retail Trade, based on the characteristics of the selling unit.

Architectural and Engineering Services (NAICS 5413) This industry group comprises establishments primarily engaged in offering (1) architectural services for residential, institutional, leisure, commercial, and industrial buildings and structures as well as for landscape purposes; (2) offering engineering services, including drafting services or building inspection services; (3) offering geophysical surveying and mapping services; (4) surveying and mapping services, except geophysical; and (5) offering testing laboratory services except medical and veterinary (the testing can occur in a laboratory or on-site).

Interior Design Services (NAICS 54141) This industry comprises establishments primarily engaged in planning, designing, and administering projects in interior spaces to meet the physical and aesthetic needs of people using them, taking into consideration building codes, health and safety regulations, traffic patterns and floor planning, mechanical and electrical needs, and interior fittings and furniture. Interior designers and interior design consultants work in areas, such as hospitality design, health care design, institutional design, commercial and corporate design, and residential design. This industry also includes interior decorating consultants engaged exclusively in providing aesthetic services associated with interior spaces.

Environmental Consulting Services (NAICS 54162) This industry comprises establishments primarily engaged in providing advice and assistance to businesses and other organizations on environmental issues, such as the control of environmental contamination from pollutants, toxic substances, and hazardous materials. These establishments identify problems (e.g., inspect buildings for hazardous materials), measure and evaluate risks, and recommend solutions. They employ a multidisciplined staff of scientists, engineers, and other technicians with expertise in areas, such as air and water quality, asbestos contamination, remediation, and environmental law. Establishments providing sanitation or site remediation consulting services are included in this industry.

Remediation Services (NAICS 56291) This industry comprises establishments primarily engaged in one or more of the following: (1) remediation and clean-up of contaminated buildings, mine sites, soil, or ground water; (2) integrated mine reclamation activities, including demolition, soil remediation, waste water treatment, hazardous material removal, contouring land, and revegetation; and (3) asbestos, lead paint, and other toxic material abatement.

Real Estate (NAICS 531) Industries in the Real Estate subsector group establishments that are primarily engaged in renting or leasing real estate to others; managing real estate for others; selling, buying, or renting real estate for others; and providing other real estate related services, such as appraisal services.

This subsector includes equity Real Estate Investment Trusts (REITs) that are primarily engaged in leasing buildings, dwellings, or other real estate property to others. Mortgage REITs are classified in Subsector 525, Funds, Trusts, and Other Financial Vehicles.

Establishments primarily engaged in subdividing and developing unimproved real estate and constructing buildings for sale are classified in Subsector 236, Construction of Buildings. Establishments primarily engaged in subdividing and improving raw land for subsequent sale to builders are classified in Subsector 237, Heavy and Civil Engineering Construction.

Services to Buildings and Dwelling (NAICS 5617) This industry group comprises establishments primarily engaged in (1) offering exterminating and pest control services; (2) offering janitorial services; (3) offering landscaping services; (4) offering carpet and upholstery cleaning services; and (5) offering all other services to buildings and dwellings, such as building exterior cleaning services (except sandblasting), swimming pool cleaning and maintenance services, and drain and gutter cleaning services.

Real Estate Credit (NAICS 52292) This U.S. industry comprises establishments primarily engaged in lending funds with real estate as collateral.

Mortgage and Non-Mortgage Loan Brokers (NAICS 52231) This industry comprises establishments primarily engaged in arranging loans by bringing borrowers and lenders together on a commission or fee basis.

Title Abstract, and Settlement Offices (NAICS 541191) This U.S. industry comprises establishments (except offices of lawyers and attorneys) primarily engaged in one or more of the following activities: (1) researching public land records to gather information relating to real estate titles; (2) preparing documents necessary for the transfer of the title, financing, and settlement; (3) conducting final real estate settlements and closings; and (4) filing legal and other documents relating to the sale of real estate. Real estate settlement offices, title abstract companies, and title search companies are included in this industry.

Facilities Support Services (NAICS 5612) This industry group comprises establishments primarily engaged in providing operating staff to perform a combination of support services within a client's facilities. Establishments in this industry typically provide a combination of services, such as janitorial, maintenance, trash disposal, guard and security, mail routing, reception, laundry, and related services to support operations within facilities. These establishments provide operating staff to carry out these support activities; but are not involved with or responsible for the core business or activities of the client. Establishments providing

facilities (except computer and/or data processing) operation support services and establishments providing private jail services or operating correctional facilities (i.e., jails) on a contract or fee basis are included in this industry.

Locksmiths (NAICS 561622) This U.S. industry comprises establishments primarily engaged in (1) selling mechanical or electronic locking devices, safes, and security vaults, along with installation, repair, rebuilding, or adjusting services or (2) installing, repairing, rebuilding, and adjusting mechanical or electronic locking devices, safes, and security vaults.

Septic Tank and Related Services (NAICS 562991) This U.S. industry comprises establishments primarily engaged in (1) pumping (i.e., cleaning) septic tanks and cesspools and/or (2) renting and/or servicing portable toilets.



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