

NSCA Electronic Systems Outlook

Summer Edition

2024



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EXECUTIVE SUMMARY

KEY TAKEAWAYS

- Total U.S. engineering and construction spending is forecast to end 2024 up 6%, or in line with 2023 growth of approximately 6%. Spending in reported target nonresidential building segments is forecast to end 2024 up 6% from 2023, compared to up 21% between 2023 and 2022.
- Most segments are realizing slowing growth, and a few are contracting after the strong growth experienced last year. Residential construction accounts for most of the difference between total and targeted spending growth.
- Strong, double-digit investment growth in target building segments, including government and manufacturing, will drive a significant portion of increased spending through 2024.
- Conversely, anticipate some contraction in lodging and retail this year, as these segments are under pressure with a pullback in mixed-use investments, along with long-term effects of a higher-for-longer interest rate climate.

2024 Construction Segments (2024 compared to 2023)

- | Up (5% or more) | Stable (0% to 4%) | Down (Less than 0%) |
|---------------------|-------------------|---------------------|
| • Education | • Corporate | • Lodging |
| • Government | • Healthcare | • Retail |
| • Houses of Worship | | |
| • Manufacturing | | |

CONSTRUCTION OUTLOOK

FMI projects that the industry overall will continue to grow over our forecast period. Single-family residential—the largest industry segment and one that creates demand for other types of construction—is projected to benefit from what’s perceived to be the conclusion of anti-inflation interest rate hikes.

Multifamily residential is projected to suffer for the next few years from the conclusion of a rapid building cycle, while residential improvements will grow slowly over the same time.

Other building construction sectors are generally positive in the near term, driven largely by legislation, such as the Infrastructure Investment and Jobs Act (IIJA), Inflation Reduction Act (IRA), and CHIPS and Science Act. In the latter years of our forecast period, many of these sectors will experience challenges; overall, nonresidential building construction is expected to grow 1% to 3% per year.

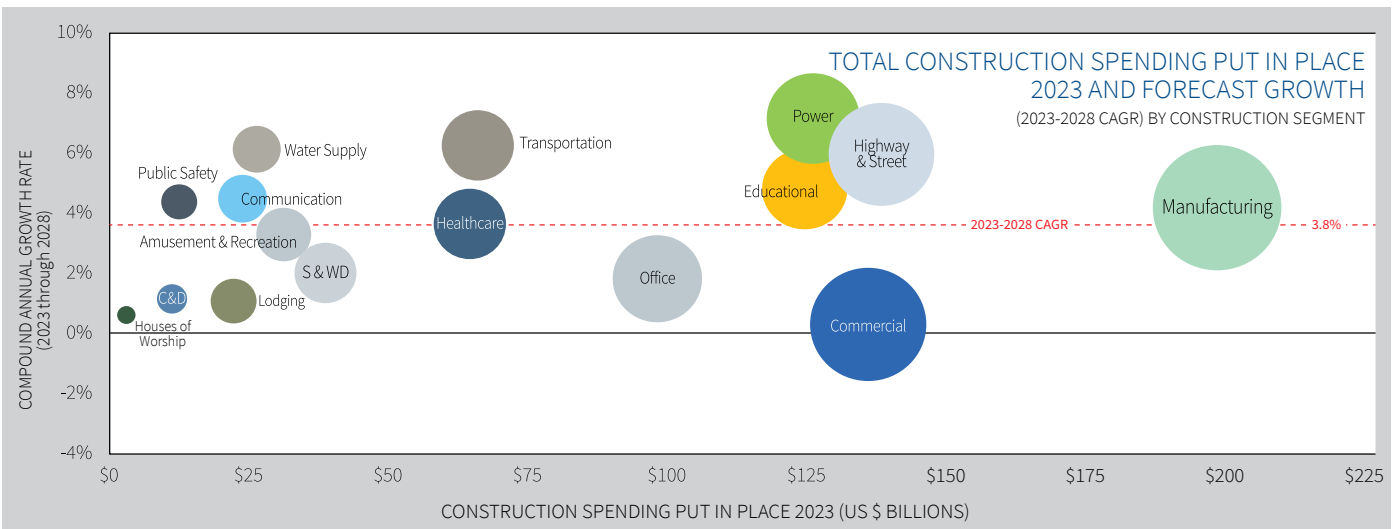
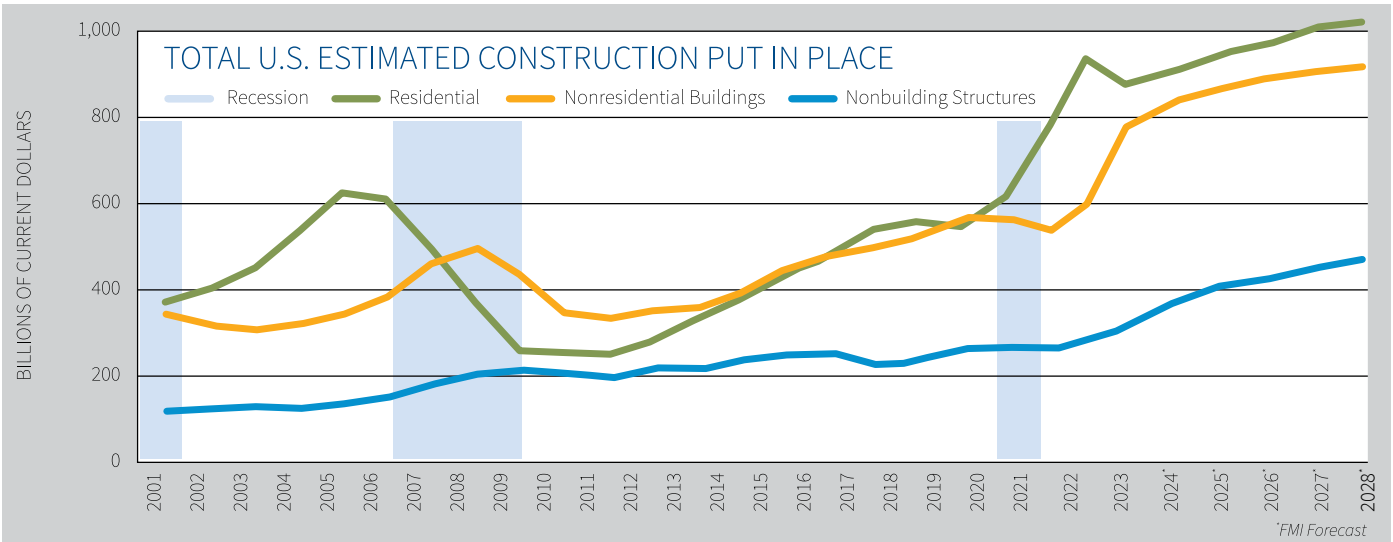
COMMERCIAL ELECTRONIC SYSTEMS CONSTRUCTION PUT IN PLACE

Estimated Forecast for the United States / Millions of Current Dollars

	2024
Target Commercial Building Construction Volume	710,841
Target Commercial Electronic Systems Construction	40,488
Share of Total Construction	5.70%

Visit the Summary section of this report on pages 18-19, which provides outlines for all the markets and electronic systems, in addition to showing Canadian construction trends.

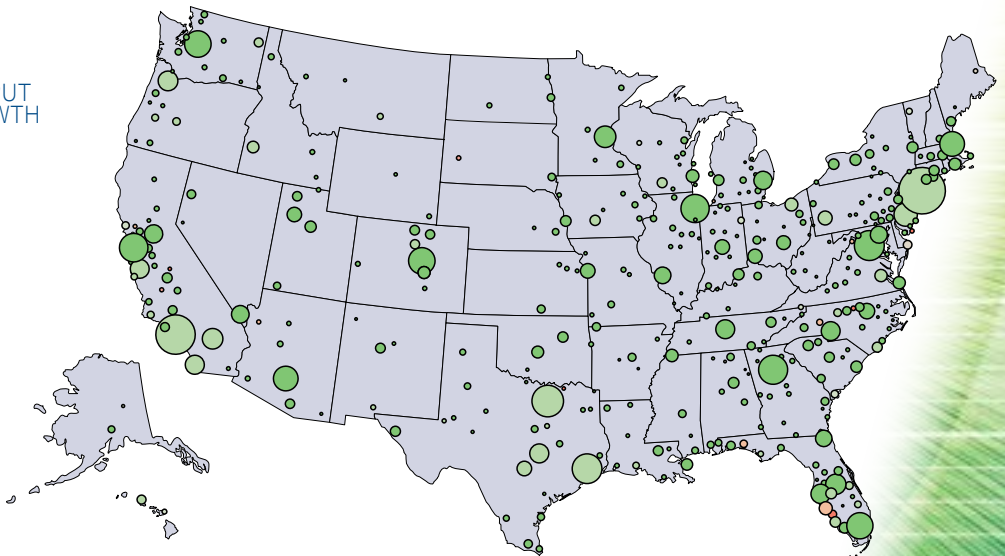
EXECUTIVE SUMMARY



TOTAL CONSTRUCTION SPENDING PUT IN PLACE 2023 AND FORECAST GROWTH (2023-2028 CAGR) BY METROPOLITAN STATISTICAL AREA

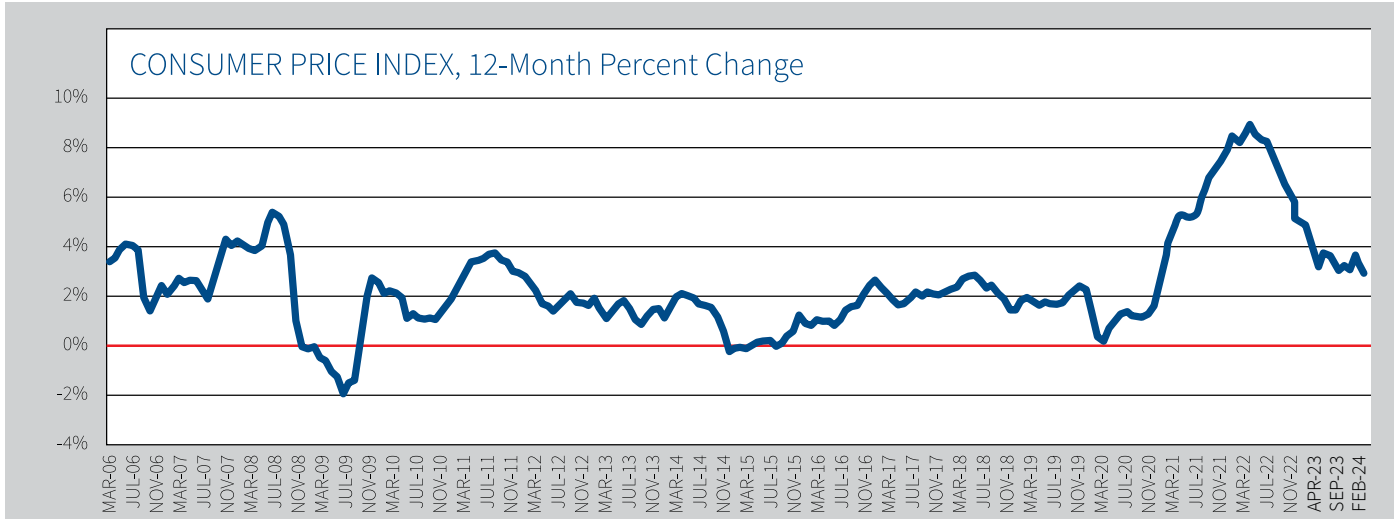
Bubble Size Represents Total Put in Place Construction Spend (2023)
 CAGR 2023-2028

-15% 15%



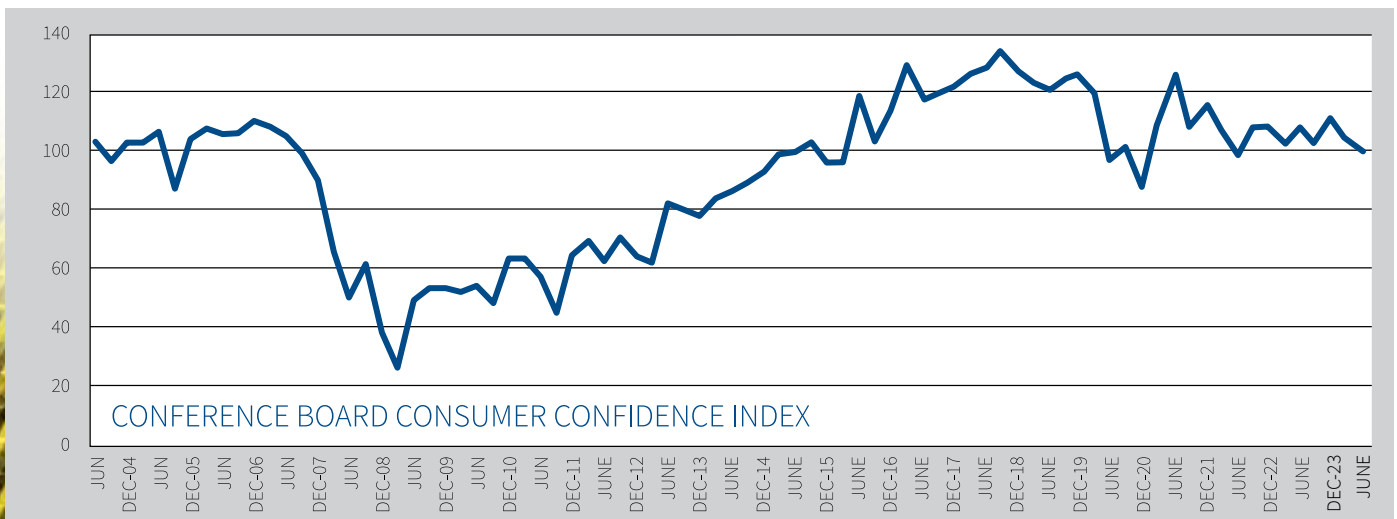
EXECUTIVE SUMMARY

KEY ECONOMIC INDICATORS It is important to consider key economic indicators, such as CPI, CCI, and unemployment rates, when evaluating this report. They provide the general pulse of the economy. These three factors determine interest rates and funding of construction projects. The Fed (formerly known as the Federal Reserve Bank/Federal Reserve) controls interest rates, which CPI, CCI, and unemployment all affect. The graphs below highlight historical changes in CPI, CCI, and unemployment rates.



CPI is a measure of the average change over time in the price paid by urban households for a set of consumer goods and services. An increase in CPI usually leads to adjustments in interest rates in order to control costs of goods and adjust for inflation. Additionally, CPI is often used in calculating wages, pensions, and salaries.

The CPI graph shows the national percent of change of costs for consumer goods and services over the course of the last 15 years.



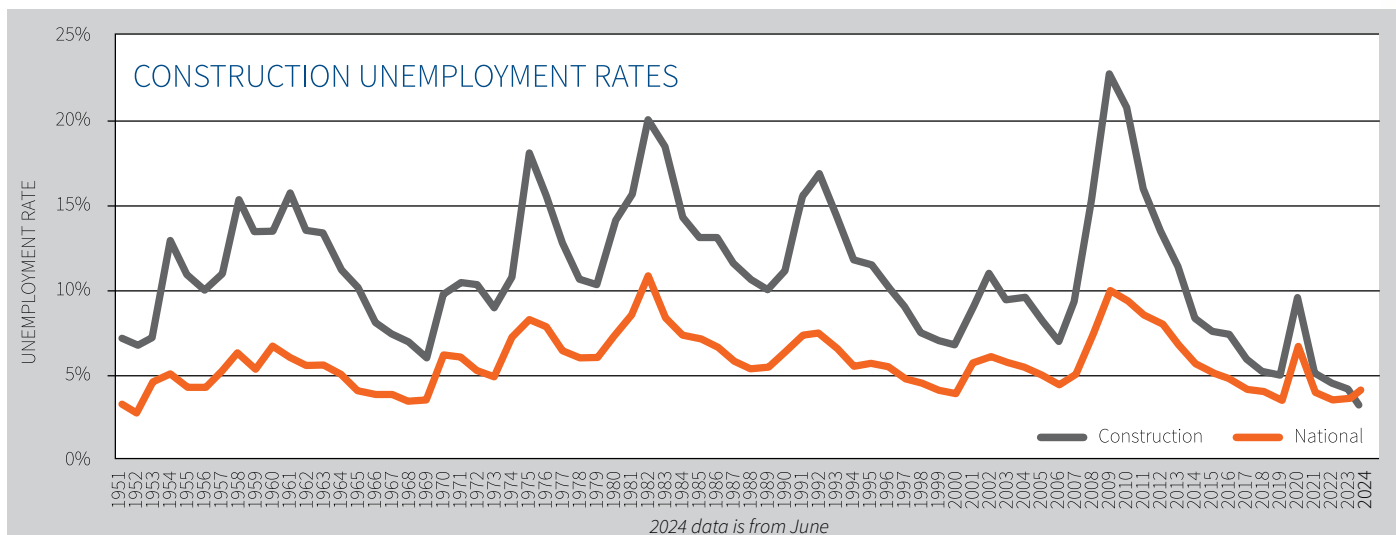
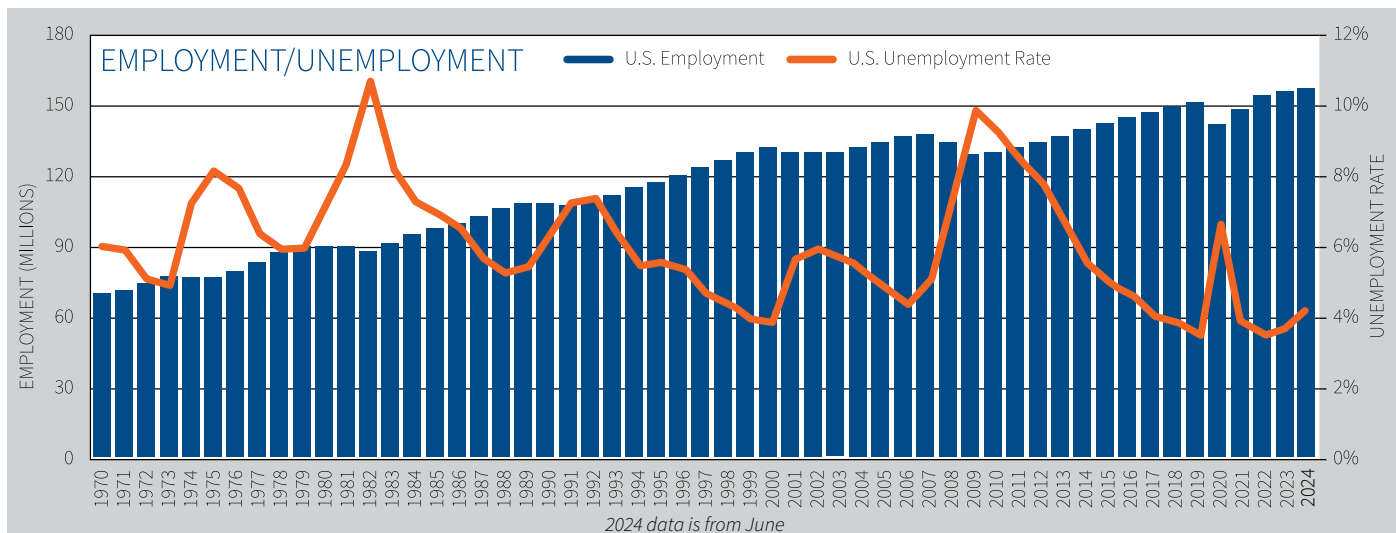
CCI is calculated based on a survey of 5,000 U.S. households; it is interpreted by the Conference Board, which extracts data from the survey to forecast future spending by consumers. In general, a 5% swing in either direction is needed to influence a change in decision-making.

EXECUTIVE SUMMARY

With a U.S. election season heating up, it's natural for NSCA members to brace for changes that will impact the economy and their businesses. The reality, meanwhile, is that indicating numbers influencing the Fed don't signal significant change since our last bi-annual report. While CPI hasn't changed much since Spring 2023, it has dropped significantly since the spike in 2022. CCI remains fairly steady since 2021. At the time of publication, the U.S. Department of Labor was reporting healthy unemployment data.

The low unemployment rate reflects contrast for NSCA members struggling to attract, onboard, and retain employees at nearly every level. This challenge is stoked by adjacent industries reaching into our member companies to recruit their top talent. NSCA members that provide traditional AV, physical security, alarm, and life safety systems at low margin are especially vulnerable, because we are seeing dramatic compensation differences with the building automation and control, MSPs, IT VARs, solutions providers, and bundled services providers. The higher billed rates tend to drive up labor costs for businesses that have not prepared for increases.

NSCA is stepping up its efforts to assist members in understanding the transition to managed and value-added services to combat low-margin business and compete for top technical talent. Without question, talent management will be a top priority to address in finding growth opportunities for members.



EXECUTIVE SUMMARY

RESIDENTIAL CONSTRUCTION

STABLE 4%

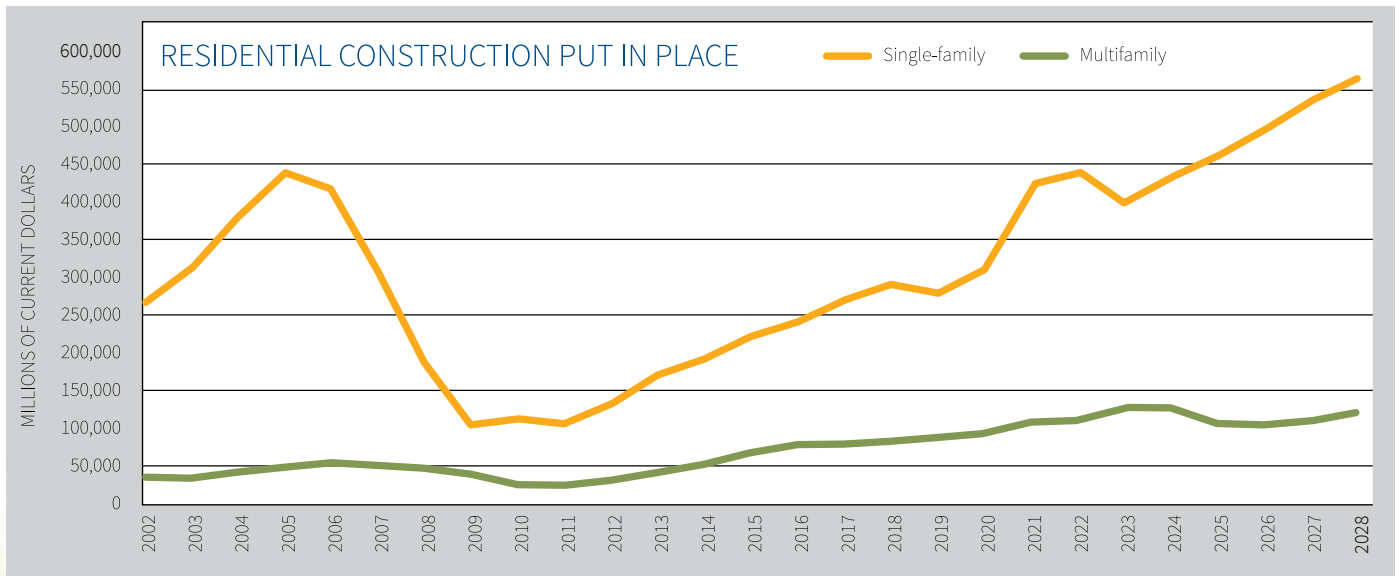
\$915 Billion

2024/2023 Comparison

Trends:

- Homebuilders are aggressively and increasingly competing with existing homeowners' listings this year.
- In the wake of a 1.5-million-home shortage, affordability remains a major challenge as the home-price-to-median-household income ratio continues to reach new highs.
- Multifamily development is expected to remain challenged over the next several years as the rate of new supply completions outpaces rental demand.
- Homeowners will likely curtail spending outside of general repair and maintenance due to moderating home prices and continuing high material, labor, and financing costs.

Drivers include unemployment rates, core CPI, income, mortgage rates, home prices, housing starts, and housing permits.



While the residential sector does not directly create demand for NSCA members, we recognize the impact that housing has on other construction segments. Commercial, healthcare, and educational segments in particular tend to follow changes in the housing sector. Likewise, home equity values have a direct impact on consumer confidence and discretionary spending that drive certain markets, such as retail and hospitality. When residential markets are booming, it puts additional pressure on NSCA members to recruit and retain key employees whose skills can be used by residential integration companies.

EXECUTIVE SUMMARY

VERTICAL MARKET OUTLOOK Each of the market segments detailed in this report (corporate, education, government, healthcare, houses of worship, lodging, manufacturing and retail) feature a 2024 outlook to show growth potential and the evaluation of electronic systems for that market, as well as trends and drivers. This information is based upon actual data through Q1 of 2024 and forecasted for the remainder of the year.

Consultants and integrators will find this data helpful in the very early stages of design and should consider using the “percentage of total vertical market construction” averages as a starting point in discussions with clients, tracking how their local marketplace compares to national averages.

Furthermore, this information is critical when budgeting for a project. It can be used to measure growth opportunities and monitor market-share potential. These averages can be used when working with clients to show comparable solutions that fit within the average dollars spent on systems in each vertical market. It gives a baseline average for a good-better-best solution and helps guide clients by avoiding underfunding, which leads to a subpar system installation.

The graphs throughout this report specifically outline the systems involved in the low-voltage industry:

- **Acoustics, Audio, and AV:** includes, but not limited to, cable and satellite television systems, public address, paging and intercom systems, security cameras, videoconferencing, video projectors, CCTV, and touchscreen controls.
- **Phone Systems, Data Networks, IT:** includes, but not limited to, phone and computer systems and cabling, buses, networks, and fiber optics.
- **Building Automation & Control:** includes, but not limited to, energy metering and monitoring, mechanical systems, malfunction alarms, humidity and ventilation, water systems monitoring, emergency power, electrical fault detection, and leak detection.
- **Life Safety – Fire & Security:** includes, but not limited to, fire, smoke and security alarm systems, flood safety, air quality sensors, building access systems, and nurse call systems.
- **Lighting, Digital Signage:** includes, but not limited to, building lighting control, emergency lighting, accent lighting, and digital signage.

DATA COLLECTION This biannual report includes forecasting and systems modeling. FMI generates a forecast for building construction put in place (new construction, repair, and renovation). Econometric modeling is used to estimate demand. Each market segment has an independent algorithm based on five to eight metrics that have historically correlated best to changes in activity for that market segment over the past 50 years. A preliminary forecast is generated based on projections for each metric (retail sales, consumer confidence, population under age 18) supporting each market segment. The preliminary forecast is then adjusted based on database records for current/planned projects, funding and timing of those projects, contractor backlogs, and FMI’s direct interaction with engineers, architects, owners, and contractors in the field.

Next, the forecast for total construction put in place is modeled to its components and systems. This report is based on analysis of proprietary project records (what goes into construction of a K-12 school of a certain size and geography, for example), and through discussion with architects and estimators. Emerging trends (code changes) are explored through supporting secondary research; final adjustments to the model are then made.

VERTICAL MARKET OUTLOOKS Corporate

CORPORATE

STABLE 0%

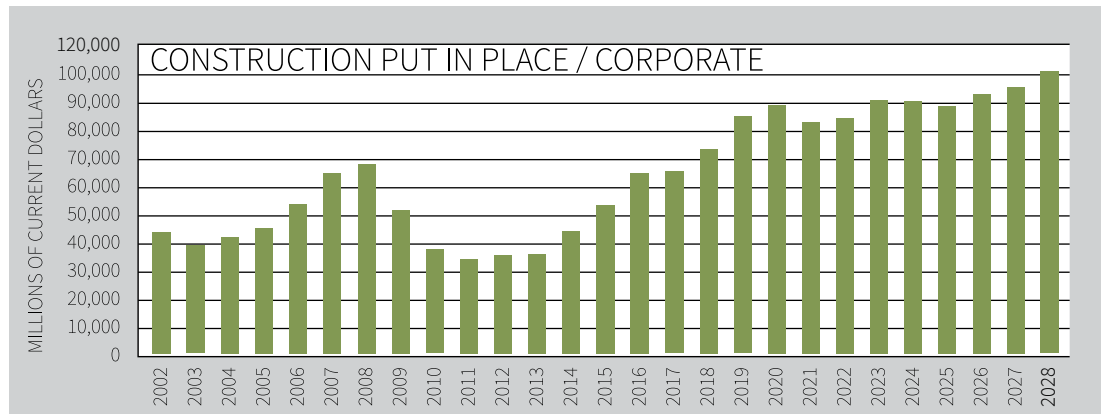
\$95 Billion

2024/2023 Comparison

Trends:

- Expect 2024 and 2025 to be a continuation of 2023 as vacancies across traditional U.S. offices remain at nearly 20%, the highest level since the late 1970s.
- Office tenants have generally been relocating to higher-quality spaces with corporate relocations and tenant improvements driving most of the construction spending.

Key drivers include office vacancy rates and unemployment rates.



CORPORATE CONSTRUCTION

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Millions of Current Dollars	66,083	73,758	85,363	89,315	86,497	91,769	95,239	94,900	93,640	93,756	97,084	102,390
% Change From Year Prior	1.1%	11.6%	15.7%	4.6%	-3.2%	6.1%	3.8%	-0.4%	-1.3%	0.1%	3.5%	5.5%

SYSTEMS OUTLOOK / CORPORATE in Millions of Current Dollars

	Acoustics, Audio, AV	Phone Systems, Data Networks, IT	Building Automation & Control	Life Safety: Fire & Security	Lighting, Digital Signage	All Systems
2019 Total	739.7	1,434.5	347.4	1,423.3	538	4,482.9
2020 Total	574.9	1,629	467.1	1,533.1	586.9	4,791.1
2021 Total	694.9	1,743.6	492.8	1,566.7	555.9	5,053.9
2022 Total	736	1,857.2	526.1	1,628.7	565.9	5,313.8
2023 Total	870.3	2,175.8	627.9	1,896.1	646.5	6,216.7
2024 Summer Outlook	865.6	2,150.1	620.9	1,847.3	633.1	6,117.0
% of Total Construction	0.91%	2.27%	0.65%	1.95%	0.67%	6.45%

2019 through 2023 Totals – total electronic systems construction put in place in their respective years

2024 Summer Outlook – outlook of total 2024 electronic systems construction put in place based on actual data from 2024 Q1 and Q2 and forecasted for the remainder of 2024

% of total construction – percentage of 2024 dollars spent on electronic systems in relation to the total dollars spent on construction in each vertical market

Education VERTICAL MARKET OUTLOOKS

EDUCATION

UP 7%

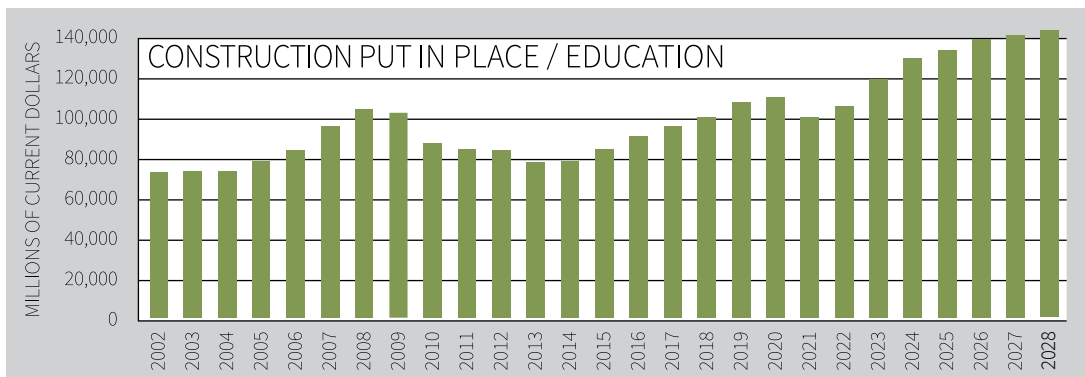
\$128 Billion

2024/2023 Comparison

Trends:

- Higher-education construction spending is increasing into mid-2024, outpacing K-12 construction spending, led by dormitory and instructional facility investments.
- Local bond measures will be the primary driver for increasing K-12 construction activities over the forecast period, and this year's election cycle will create opportunities for additional planning activity.

Key drivers include population change in those younger than age 18, population change in ages 18-24, stock market, government spending, and nonresidential structure investment.



EDUCATION CONSTRUCTION

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Millions of Current Dollars	96,685	101,210	108,952	110,692	100,988	104,035	120,226	128,460	135,351	140,048	142,533	146,468
% Change From Year Prior	5.5%	4.7%	7.6%	1.6%	-8.8%	3.0%	15.6%	6.8%	5.4%	3.5%	1.8%	2.8%

SYSTEMS OUTLOOK / EDUCATION in Millions of Current Dollars

	Acoustics, Audio, AV	Phone Systems, Data Networks, IT	Building Automation & Control	Life Safety: Fire & Security	Lighting, Digital Signage	All Systems
2019 Total	825.9	791.4	309.7	3,509.9	1,445.2	6,882.1
2020 Total	591.3	1,256.5	369.5	3,621.6	1,552.1	7,390.9
2021 Total	656.1	1,117.1	301.4	3,511	1,507.2	7,092.8
2022 Total	648.2	1,109.6	303	3,494.5	1,490.1	7,045.4
2023 Total	753.4	1,333.6	398.3	4,321.2	1,853.2	8,659.8
2024 Summer Outlook	809.9	1,438.3	423.6	4,640.6	1,996.8	9,309.2
% of Total Construction	0.63%	1.12%	0.33%	3.61%	1.55%	7.25%

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% of total construction – percentage of 2024 dollars spent on electronic systems in relation to the total dollars spent on construction in each vertical market

VERTICAL MARKET OUTLOOKS Government

GOVERNMENT

UP 18%

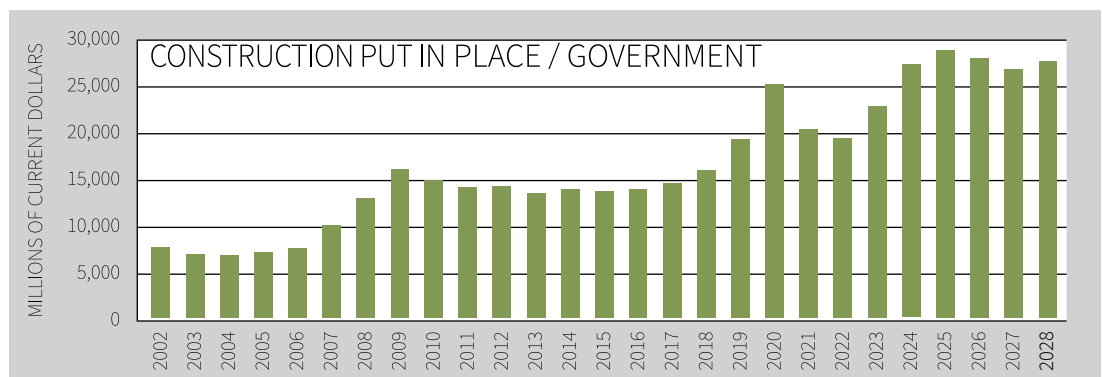
\$27 Billion

2024/2023 Comparison

Trends:

- Government construction investment has risen rapidly over the past year, led by police, fire, and other public safety facilities, including armory and military structures.
- Federal Bureau of Investigation crime data released through early 2024 shows a 15% decline in violent crime and a 15% drop in property crime year over year.

Key drivers include population, government spending, incarceration rates, and nonresidential structure investment.



GOVERNMENT CONSTRUCTION

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Millions of Current Dollars	14,705	16,169	19,442	25,358	20,272	19,647	22,931	27,023	28,865	28,222	27,195	27,885
% Change From Year Prior	4.7%	10.0%	20.2%	30.4%	-20.1%	-3.1%	16.7%	17.8%	6.8%	-2.2%	-3.6%	2.5%

SYSTEMS OUTLOOK / GOVERNMENT in Millions of Current Dollars

	Acoustics, Audio, AV	Phone Systems, Data Networks, IT	Building Automation & Control	Life Safety: Fire & Security	Lighting, Digital Signage	All Systems
2019 Total	65.4	243.9	107.1	577	196.3	1,189.7
2020 Total	40.8	312.6	163.1	618.4	224.2	1,359
2021 Total	51.2	321.1	170.8	608.1	215.2	1,366.5
2022 Total	50.9	334	180.6	612.2	216.9	1,394.6
2023 Total	61.0	395.5	215.9	721.8	253.8	1,648.0
2024 Summer Outlook	74.8	480.8	260.3	872.7	306.2	1,994.8
% of Total Construction	0.28%	1.78%	0.96%	3.23%	1.13%	7.38%

2019 through 2023 Totals – total electronic systems construction put in place in their respective years

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% of total construction – percentage of 2024 dollars spent on electronic systems in relation to the total dollars spent on construction in each vertical market

Healthcare VERTICAL MARKET OUTLOOKS

HEALTHCARE

STABLE 3%

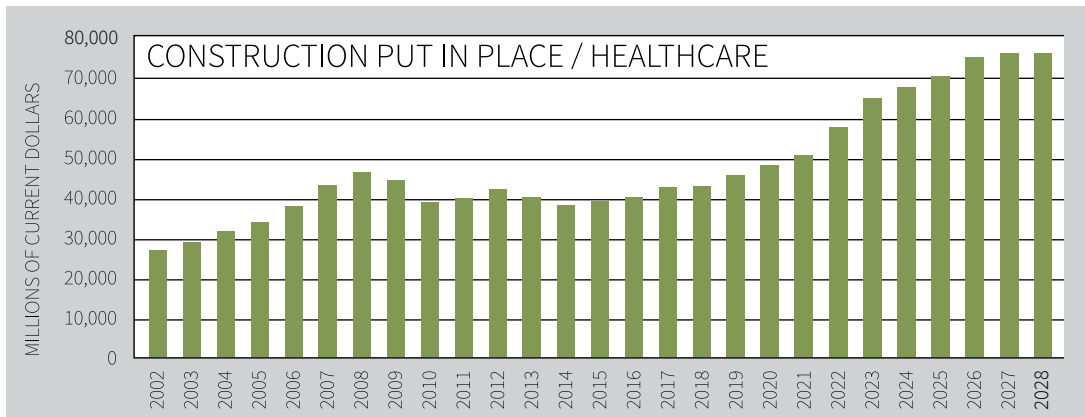
\$68 Billion

2024/2023 Comparison

Trends:

- The healthcare sector will see strong investment levels in 2024 and 2025, led by hospital construction; however, most of these large projects face resource constraints and delays. Medical office investment has decreased somewhat in recent months, while specialty-care investment has started to rebound.
- Mergers and acquisitions activity over the next several years will remain strong as the mix of traditional and digital healthcare becomes more common and desirable, blending interest across the technology, telecom, and retail industries.

Key drivers include population change, population change in ages 75 and up, uninsured population, government spending, and nonresidential structure investment.



HEALTHCARE CONSTRUCTION

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Millions of Current Dollars	43,120	43,450	46,263	48,599	50,327	58,098	65,429	67,513	70,735	74,691	75,876	76,069
% Change From Year Prior	6.3%	0.8%	6.5%	5.0%	3.6%	15.4%	12.6%	3.2%	4.8%	5.6%	1.6%	0.3%

SYSTEMS OUTLOOK / HEALTHCARE in Millions of Current Dollars

	Acoustics, Audio, AV	Phone Systems, Data Networks, IT	Building Automation & Control	Life Safety: Fire & Security	Lighting, Digital Signage	All Systems
2019 Total	109.1	724.6	140.3	1,527.2	615.5	3,116.7
2020 Total	137.5	876.4	189	1,580.9	653	3,436.7
2021 Total	118.3	955.4	218.4	1,656	691.5	3,639.5
2022 Total	144.1	1,012.7	240.8	1,699.2	696	3,792.8
2023 Total	166.2	1,235.1	277.0	2,107.7	831.1	4,617.1
2024 Summer Outlook	182.1	1,337.0	301.8	2,279.9	888.0	4,988.9
% of Total Construction	0.27%	1.98%	0.45%	3.38%	1.32%	7.39%

2019 through 2023 Totals – total electronic systems construction put in place in their respective years

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% of total construction – percentage of 2024 dollars spent on electronic systems in relation to the total dollars spent on construction in each vertical market

VERTICAL MARKET OUTLOOKS Houses of Worship

HOUSES OF WORSHIP

UP 7%

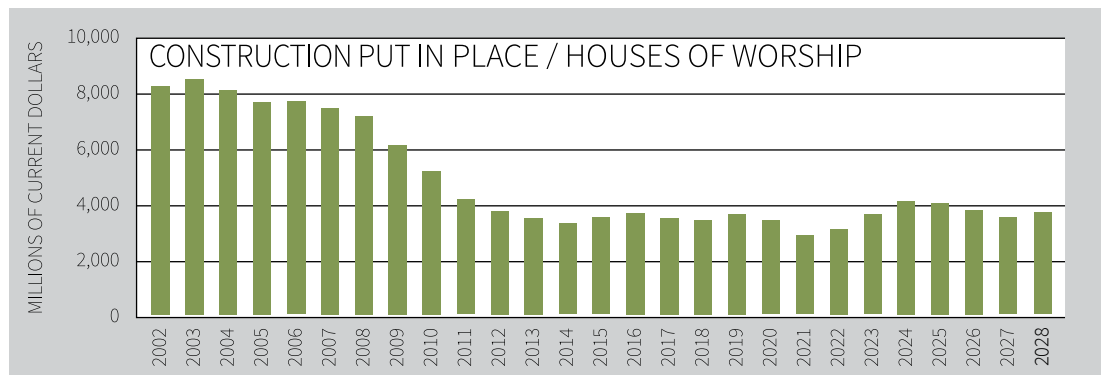
\$4 Billion

2024/2023 Comparison

Trends:

- Strain on members' disposable incomes into 2025 will likely reduce donations, a primary source of revenue for religious institutions.
- The permanence of and preference for online/hybrid services reduce overall construction needs.
- In-person church attendance has been in decline for the past several decades and is expected to continue to fall in the forecast period.

Key drivers include GDP, population, income, and personal savings.



HOUSES OF WORSHIP CONSTRUCTION

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Millions of Current Dollars	3,586	3,499	3,730	3,472	3,096	3,187	3,801	4,065	4,044	3,812	3,638	3,718
% Change From Year Prior	-4.4%	-2.4%	6.6%	-6.9%	-10.8%	2.9%	19.3%	7.0%	-0.5%	-5.7%	-4.6%	2.2%

SYSTEMS OUTLOOK / HOUSES OF WORSHIP in Millions of Current Dollars

	Acoustics, Audio, AV	Phone Systems, Data Networks, IT	Building Automation & Control	Life Safety: Fire & Security	Lighting, Digital Signage	All Systems
2019 Total	26.6	20.7	26.6	72.8	50.2	196.7
2020 Total	20.6	26.8	26.8	80.3	51.5	206
2021 Total	23.4	27.9	24.9	77.7	49.2	203.1
2022 Total	23.7	28	22.3	73.9	46.1	194
2023 Total	31.7	35.3	28.7	95.6	62.4	253.7
2024 Summer Outlook	36.6	40.4	33.1	110.0	71.4	291.5
% of Total Construction	0.90%	0.99%	0.81%	2.71%	1.76%	7.17%

2019 through 2023 Totals – total electronic systems construction put in place in their respective years

2024 Summer Outlook – outlook of total 2024 electronic systems construction put in place based on actual data from 2024 Q1 and Q2 and forecasted for the remainder of 2024

% of total construction – percentage of 2024 dollars spent on electronic systems in relation to the total dollars spent on construction in each vertical market

Lodging VERTICAL MARKET OUTLOOKS

LODGING

DOWN 6%

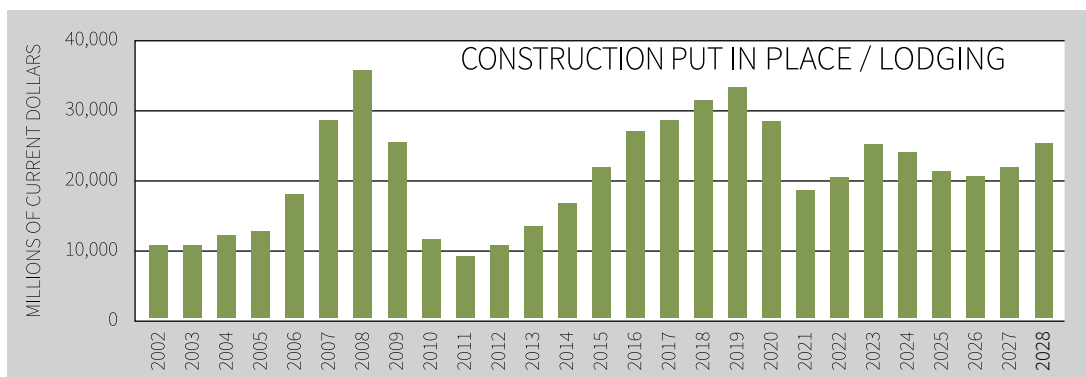
\$23 Billion

2024/2023 Comparison

Trends:

- Destination cities continue to see increased demand tied to recovery in group business travel alongside improved competitiveness with aggregator business models such as Airbnb and VRBO.
- Last month STR Inc. and Tourism Economics significantly lowered their expectations for 2024 hotel occupancy, rates, and revenue based on persistent inflation imposing weakness across lower-tier segments.

Key drivers include occupancy rates, RevPAR, average daily rates, and room starts.



LODGING CONSTRUCTION

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Millions of Current Dollars	28,660	31,464	33,461	28,483	19,082	20,236	24,740	23,251	21,266	20,539	21,806	24,395
% Change From Year Prior	5.8%	9.8%	6.3%	-14.9%	-33.0%	6.0%	22.3%	-6.0%	-8.5%	-3.4%	6.2%	11.9%

SYSTEMS OUTLOOK / LODGING in Millions of Current Dollars

	Acoustics, Audio, AV	Phone Systems, Data Networks, IT	Building Automation & Control	Life Safety: Fire & Security	Lighting, Digital Signage	All Systems
2019 Total	176.2	255.5	88.1	801.7	440.5	1,762
2020 Total	129.4	266.4	68.5	669.7	388.1	1,522.1
2021 Total	87.2	198.9	54.5	485	264.3	1,089.9
2022 Total	88.6	198.4	52	468.3	253.5	1,060.8
2023 Total	113.0	262.8	73.5	623.9	339.9	1,413.1
2024 Summer Outlook	106.8	252.1	71.0	595.3	326.4	1,351.5
% of Total Construction	0.46%	1.08%	0.31%	2.56%	1.40%	5.81%

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% of total construction – percentage of 2024 dollars spent on electronic systems in relation to the total dollars spent on construction in each vertical market

VERTICAL MARKET OUTLOOKS Manufacturing

MANUFACTURING

UP 21%

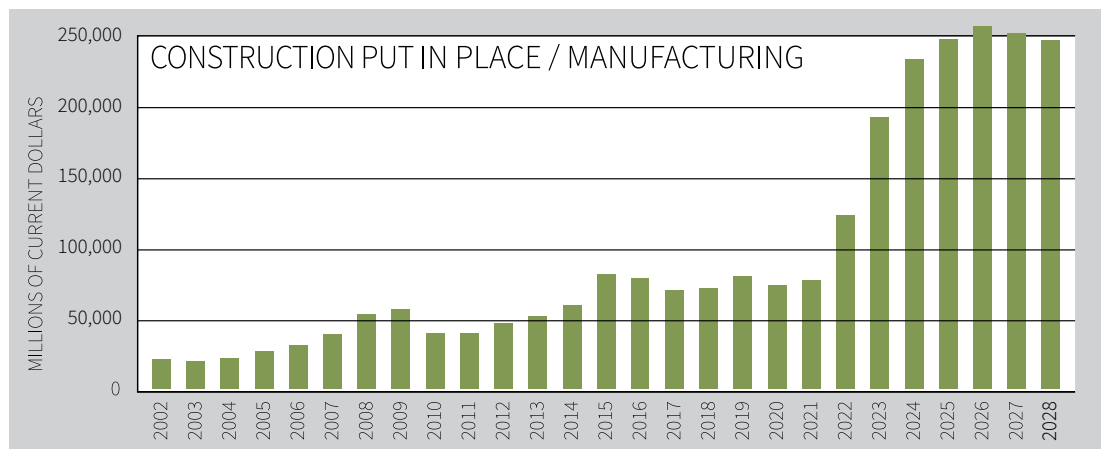
\$234 Billion

2024/2023 Comparison

Trends:

- The manufacturing construction investment boom continues, with a focus on large-scale investments in semiconductors, electric vehicles and batteries, clean energy, and biomanufacturing. Growth through early 2024, however, has been led by investments in plastics and rubber.
- The Manufacturing ISM PMI for June remains just below the 50% threshold at 48.5%, indicating sector contraction.
- Talent shortages and supply chain complexities will continue to cause strain on available resources and across planned investments in infrastructure and power.

Key drivers include PMI, industrial production, capacity utilization, durable goods orders, and manufacturing inventories.



MANUFACTURING CONSTRUCTION

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Millions of Current Dollars	70,682	72,508	80,978	75,425	82,030	125,025	193,630	234,056	247,824	258,182	254,440	248,435
% Change From Year Prior	-11.2%	2.6%	11.7%	-6.9%	8.8%	52.4%	54.9%	20.9%	5.9%	4.2%	-1.4%	-2.4%

SYSTEMS OUTLOOK / MANUFACTURING in Millions of Current Dollars

	Acoustics, Audio, AV	Phone Systems, Data Networks, IT	Building Automation & Control	Life Safety: Fire & Security	Lighting, Digital Signage	All Systems
2019 Total	65.3	244.8	1,224.1	1,207.8	522.3	3,264.2
2020 Total	42.3	287.8	1,354.3	1,235.8	465.5	3,385.6
2021 Total	35.9	314.2	1,463.5	1,301.9	475.9	3,591.4
2022 Total	41.6	422.5	1,907	1,650.7	595.6	4,617.3
2023 Total	96.3	904.9	3,994.9	3,417.3	1,212.9	9,626.3
2024 Summer Outlook	110.1	1,051.8	4,614.6	3,876.7	1,360.2	11,013.4
% of Total Construction	0.05%	0.45%	1.97%	1.66%	0.58%	4.71%

2019 through 2023 Totals – total electronic systems construction put in place in their respective years

2024 Summer Outlook – outlook of total 2024 electronic systems construction put in place based on actual data from 2024 Q1 and Q2 and forecasted for the remainder of 2024

% of total construction – percentage of 2024 dollars spent on electronic systems in relation to the total dollars spent on construction in each vertical market

Retail VERTICAL MARKET OUTLOOKS

RETAIL

DOWN 7%

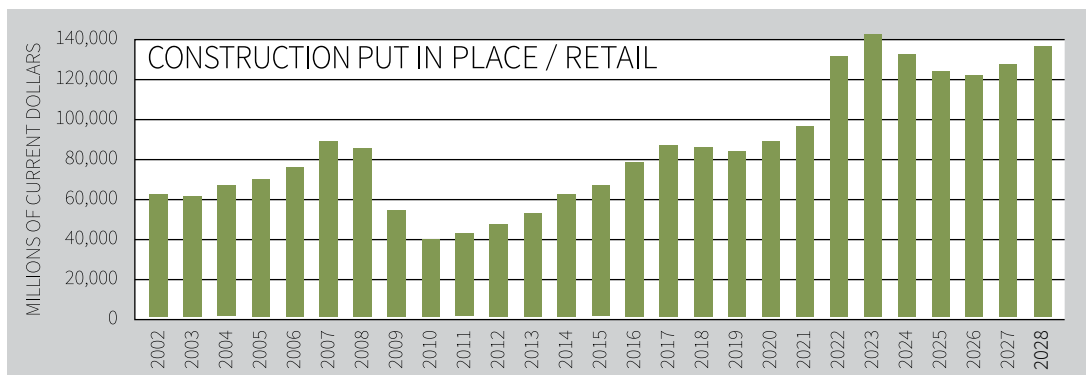
\$132 Billion

2024/2023 Comparison

Trends:

- Consumer retail spending remains strong, up 2% from this time last year.
- There will likely be ongoing challenges for new starts tied to increased financial stress on consumers and reduced multifamily and mixed-use development investment over the next several years.
- Commercial property valuations have stabilized through 2024, albeit at depressed levels after significant declines that started mid-2022.

Key drivers include retail sales, CPI, income, home prices, housing starts, and housing permits.



RETAIL CONSTRUCTION

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Millions of Current Dollars	87,626	86,422	84,345	89,714	97,394	131,503	141,702	131,573	123,257	121,210	126,236	135,956
% Change From Year Prior	11.3%	-1.4%	-2.4%	6.4%	8.6%	35.0%	7.8%	-7.1%	-6.3%	-1.7%	4.1%	7.7%

SYSTEMS OUTLOOK / RETAIL in Millions of Current Dollars

	Acoustics, Audio, AV	Phone Systems, Data Networks, IT	Building Automation & Control	Life Safety: Fire & Security	Lighting, Digital Signage	All Systems
2019 Total	151	497.3	248.6	1,411.9	1,243.1	3,551.8
2020 Total	122.7	556.4	261.8	1,227.3	1,104.6	3,272.8
2021 Total	110.2	651.9	330.6	1,359	1,221.2	3,672.8
2022 Total	139.3	813.2	417.8	1,644.4	1,478.2	4,492.9
2023 Total	155.1	1,017.7	536.0	1,942.8	1,790.4	5,442.0
2024 Summer Outlook	159.9	1,005.7	523.2	1,943.6	1,789.1	5,421.4
% of Total Construction	0.12%	0.76%	0.40%	1.48%	1.36%	4.12%

2019 through 2023 Totals – total electronic systems construction put in place in their respective years

2024 Summer Outlook – outlook of total 2024 electronic systems construction put in place based on actual data from 2024 Q1 and Q2 and forecasted for the remainder of 2024

% of total construction – percentage of 2024 dollars spent on electronic systems in relation to the total dollars spent on construction in each vertical market

CONSTRUCTION OUTLOOK SUMMARIES

ESTIMATED 2023 FORECAST FOR THE UNITED STATES

Segmentation by System Type and Market Segment

Millions of Current Dollars

July 2024 Forecast	Acoustics, Audio, AV	Phone Systems, Data Networks, IT	Building Automation & Control	Life Safety: Fire & Security	Lighting, Digital Signage & Other	Total
Corporate	865.6	2,150.1	620.9	1,847.3	633.1	6,117.0
Education	809.9	1,438.3	423.6	4,640.6	1,996.8	9,309.2
Government	74.8	480.8	260.3	872.7	306.2	1,994.8
Healthcare	182.1	1,337.0	301.8	2,279.9	888.0	4,988.9
Houses of Worship	36.6	40.4	33.1	110.0	71.4	291.5
Lodging	106.8	252.1	71.0	595.3	326.4	1,351.5
Manufacturing	110.1	1,051.8	4,614.6	3,876.7	1,360.2	11,013.4
Retail	159.9	1,005.7	523.2	1,943.6	1,789.1	5,421.4
Total Nonresidential Buildings	2,345.8	7,756.1	6,848.4	16,166.3	7,371.2	40,487.7

CONSTRUCTION OUTLOOK / U.S. in Millions of Current Dollars (July 2024 Forecast)

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Corporate	65,335	66,083	73,758	85,363	89,315	86,497	91,769	95,239	94,900	93,640	93,756	97,084	102,390
Education	91,629	96,685	101,210	108,952	110,692	100,988	104,035	120,226	128,460	135,351	140,048	142,533	146,468
Government	14,046	14,705	16,169	19,442	25,358	20,272	19,647	22,931	27,023	28,865	28,222	27,195	27,885
Healthcare	40,574	43,120	43,450	46,263	48,599	50,327	58,098	65,429	67,513	70,735	74,691	75,876	76,069
Houses of Worship	3,752	3,586	3,499	3,730	3,472	3,096	3,187	3,801	4,065	4,044	3,812	3,638	3,718
Lodging	27,077	28,660	31,464	33,461	28,483	19,082	20,236	24,740	23,251	21,266	20,539	21,806	24,395
Manufacturing	79,633	70,682	72,508	80,978	75,425	82,030	125,025	193,630	234,056	247,824	258,182	254,440	248,435
Retail	78,696	87,626	86,422	84,345	89,714	97,394	131,503	141,702	131,573	123,257	121,210	126,236	135,956
Target Nonresidential Buildings	400,742	411,148	428,480	462,534	471,058	459,686	553,500	667,698	710,841	724,982	740,460	748,808	765,316
Total Commercial Buildings	486,615	503,985	530,357	568,513	579,781	564,913	665,982	792,365	839,022	861,335	884,825	896,766	918,709
Total Nonresidential Buildings	485,964	545,754	563,877	553,442	644,257	808,968	932,768	877,596	915,391	930,150	954,869	1,011,147	1,085,513
Total Nonbuilding Structures	251,090	230,104	238,951	269,085	275,533	279,495	303,954	353,700	381,224	404,788	422,330	438,213	459,004
Total Construction Put in Place	1,223,669	1,279,843	1,333,185	1,391,040	1,499,571	1,653,376	1,902,704	2,023,661	2,135,637	2,196,273	2,262,024	2,346,126	2,463,226

CONSTRUCTION OUTLOOK / U.S. % Change From Year Prior (July 2024 Forecast)

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Corporate	21.2%	1.1%	11.6%	15.7%	4.6%	-3.2%	6.1%	3.8%	-0.4%	-1.3%	0.1%	3.5%	5.5%
Education	7.4%	5.5%	4.7%	7.6%	1.6%	-8.8%	3.0%	15.6%	6.8%	5.4%	3.5%	1.8%	2.8%
Government	1.4%	4.7%	10%	20.2%	30.4%	-20.1%	-3.1%	16.7%	17.8%	6.8%	-2.2%	-3.6%	2.5%
Healthcare	2.3%	6.3%	0.8%	6.5%	5%	3.6%	15.4%	12.6%	3.2%	4.8%	5.6%	1.6%	0.3%
Houses of Worship	4.3%	-4.4%	-2.4%	6.6%	-6.9%	-10.8%	2.9%	19.3%	6.9%	-0.5%	-5.7%	-4.6%	2.2%
Lodging	23.0%	5.8%	9.8%	6.3%	-14.9%	-33.0%	6.0%	22.3%	-6.0%	-8.5%	-3.4%	6.2%	11.9%
Manufacturing	-4.2%	-11.2%	2.6%	11.7%	-6.9%	8.8%	52.4%	54.9%	20.9%	5.9%	4.2%	-1.4%	-2.4%
Retail	17.5%	11.3%	-1.4%	-2.4%	6.4%	8.6%	35.0%	7.8%	-7.1%	-6.3%	-1.7%	4.1%	7.7%
Target Nonresidential Buildings	9%	3%	4%	8%	2%	-2%	20%	21%	6.5%	2%	2%	1%	2%
Total Commercial Buildings	7.5%	3.6%	5.2%	7.2%	2%	-2.6%	17.9%	19.0%	6%	2.7%	2.7%	1.3%	2.4%
Total Nonresidential Buildings	10.8%	12.3%	3.3%	-1.9%	16.4%	25.6%	15.3%	-5.9%	4%	1.6%	2.7%	5.9%	7.4%
Total Nonbuilding Structures	0.9%	-8.4%	3.8%	12.6%	2.4%	1.4%	8.8%	16.4%	8%	6.2%	4.3%	3.8%	4.7%
Total Construction Put in Place	7.3%	4.6%	4.2%	4.3%	7.8%	10.3%	15.1%	6.4%	6%	2.8%	3.0%	3.7%	5.0%

NOTE: "Nonbuilding Structures" are generally horizontal construction projects, including roadways, bridges, tunnels, etc. This data is construction-related, and only projects with building permits were factored into the data.

CANADA CONSTRUCTION OUTLOOK

FMI does work extensively in Canada with a team dedicated to that area. The historic rule of thumb for Canada was that it was 10% of the United States — no matter what you were talking about. Over the past eight years, that has changed dramatically; today, total Canadian construction volume is closer to one-quarter of the United States. The recession in Canada was not nearly as deep or broad, and the residential sector held up relatively well. The government invested heavily in real infrastructure projects, especially in Ontario. And the oil and gas industry created a boom in Western Canada. We are expecting moderation in the rate of Canada's growth, but the economy will show steady gains for the next 10 years. It is estimated that the Canadian volume is about 18% of the U.S. systems contracting based on the nonresidential building sector; however, drivers and owner practices are different in Canada, which needs to be taken into consideration. NSCA will review this information in the reports to come.

CONSTRUCTION OUTLOOK/CANADA in Millions of Current Canadian Dollars

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Corporate	8,637	8,670	9,754	10,882	11,231	10,287	10,874	11,548	11,319	11,199	11,251	11,685	12,088
Education	6,645	7,729	7,678	6,744	6,938	7,915	8,279	8,744	9,202	9,703	10,031	10,326	9,981
Government	1,904	2,236	2,306	2,812	2,935	2,789	3,006	3,243	3,318	3,514	3,709	3,835	3,752
Healthcare	4,823	5,168	5,252	5,319	5,756	6,311	7,153	7,733	8,248	9,030	9,717	10,554	10,876
Houses of Worship	413	386	382	444	415	318	312	361	371	371	381	388	392
Lodging	2,569	2,557	2,766	2,750	2,569	2,634	3,405	3,375	3,275	3,294	3,373	3,562	3,632
Manufacturing	17,916	16,221	20,116	23,189	20,883	22,021	26,142	29,940	35,156	41,692	41,680	40,665	40,945
Retail	13,357	13,472	14,002	16,072	15,013	15,393	19,897	19,719	19,198	18,725	19,035	19,811	20,423
Target Commercial Buildings	56,264	56,439	62,255	68,214	65,740	67,668	79,070	84,662	90,088	97,528	99,176	100,824	102,089
Total Commercial Buildings	71,725	72,214	79,749	86,063	85,012	87,943	102,026	110,346	116,334	125,521	129,217	131,658	133,433
Total Residential Buildings	105,454	113,821	118,714	118,428	126,065	161,807	174,997	164,107	162,056	164,170	168,191	175,574	183,322
Total Nonbuilding Structures	83,136	85,994	81,197	78,920	66,093	75,847	94,995	103,334	108,551	114,686	120,639	124,365	129,892
Total Construction Put in Place	260,314	272,030	279,660	283,411	277,170	325,598	372,018	377,788	386,942	404,378	418,046	431,596	446,647

CONSTRUCTION OUTLOOK / CANADA % Change From Year Prior

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Corporate	0.4%	12.5%	11.6%	3.2%	-8.4%	6.2%	6.2%	-2.0%	-1.1%	0.5%	3.9%	3.5%
Education	16.3%	-0.7%	-12.2%	2.9%	14.1%	5.6%	5.6%	5.2%	5.5%	3.4%	2.9%	-3.3%
Government	17.4%	3.1%	21.9%	4.2%	-5.0%	7.9%	7.9%	2.3%	5.9%	5.6%	3.4%	-2.2%
Healthcare	7.1%	1.6%	1.3%	8.2%	9.6%	8.1%	8.1%	6.7%	9.5%	7.6%	8.6%	3.1%
Houses of Worship	-6.6%	-1.1%	16.4%	-6.5%	-23.5%	15.5%	15.5%	2.9%	-0.1%	2.8%	1.7%	1.0%
Lodging	-0.5%	8.2%	-0.6%	-6.6%	2.5%	-0.9%	-0.9%	-3.0%	0.6%	2.4%	5.6%	2.0%
Manufacturing	-9.5%	24%	15.3%	-9.9%	5.4%	14.5%	14.5%	17.4%	18.6%	0.0%	-2.4%	0.7%
Retail	0.9%	3.9%	14.8%	-6.6%	2.5%	-0.9%	-0.9%	-2.6%	-2.5%	1.7%	4.1%	3.1%
Target Commercial Buildings	0.3%	10.3%	9.6%	-3.6%	2.9%	16.8%	7.1%	6.4%	8.3%	1.7%	1.7%	1.3%
Total Commercial Buildings	0.7%	10.4%	7.9%	-1.4%	3.4%	16.0%	8.2%	5.4%	7.9%	2.9%	1.9%	1.3%
Total Residential Buildings	7.9%	4.3%	-0.2%	5.0%	28.4%	8.2%	-6.2%	-1.2%	1.3%	2.4%	4.4%	4.4%
Total Nonbuilding Structures	3.4%	-5.6%	-2.8%	-14.4%	14.8%	25.2%	8.8%	5.0%	5.7%	5.2%	3.1%	4.4%
Total Construction Put in Place	4.5%	2.8%	1.3%	-2.2%	17.5%	14.3%	1.6%	2.4%	4.5%	3.4%	3.2%	3.5%

NOTE: We don't have the actual system type values per category determined as of yet. For now, use the averages in the U.S. to estimate value.

NOTE: "Nonbuilding Structures" are generally horizontal construction projects, including roadways, bridges, tunnels, etc. This data is construction-related project based, and only projects with building permits were factored into the data.



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