



2023
HEAVY CIVIL
CONSTRUCTION INDEX
Fourth Quarter Report



November 2023

EXECUTIVE SUMMARY



The 2023 fourth quarter Heavy Civil Construction Index declined to 52.6 from 56.1, marking the first decrease since the second quarter of 2022. All four economic measures, including outlooks towards the overall economy, the economy where we do business, our engineering and construction (E&C) business, and E&C where we do business, weakened. Respondents' sentiments toward their E&C businesses recorded the largest decline this quarter, falling to 58.7 from 68.4.

Contractors continue to expect that most heavy civil segments will strengthen through the end of the year. Conversely, like last quarter, commercial and residential site development are expected to weaken. Respondents anticipate that public utilities, ports/marine/docks and highway/bridge will be the strongest segments through the end of the year.

Backlog book-to-burn rates improved slightly, led by a sizable drop in the share of respondents who recorded decreases, offsetting a moderately weaker share of respondents who saw improvements. Half of the respondents indicated that their backlogs are higher this quarter compared to a year ago, and about three-quarters (76%) indicated that backlogs are either higher or at the level needed or anticipated at this point in the year.

A majority, or 80%, of respondents indicated that margins on work acquired this quarter are the same or better than they were a year ago. A similar share (81%) reported margins were either up or about the same as last quarter.

This quarter 27% of respondents saw an increase in competitive pressures, versus 26% in the third quarter. Similarly, bid prices continue to climb for most, with 63%

HCCI INDEX MOVEMENT			
Current Reading for Q4 2023		Previous Reading for Q3 2023	
52.6		Q4 2023	Q3 2023
Overall U.S. Economy	↓	49.5	52.9
Economy Where We Do Business	↓	50.0	54.0
Our Engineering and Construction Business	↓	58.7	68.4
Engineering and Construction Where We Do Business	↓	61.4	65.5
Backlog	↓	58.3	63.9
Book/Burn Rate	↑	64.2	63.7
Cost of Materials	↓	31.3	31.9
Cost of Labor	↓	17.6	20.5
Productivity	↓	47.2	50.0

of respondents reporting a slight or significant increase, compared to 69% last quarter. There was also a small but notable increase in the share of contractors seeing new competitors, with 20% of respondents identifying new entrants to their markets in the last six months, compared to 14% last quarter.

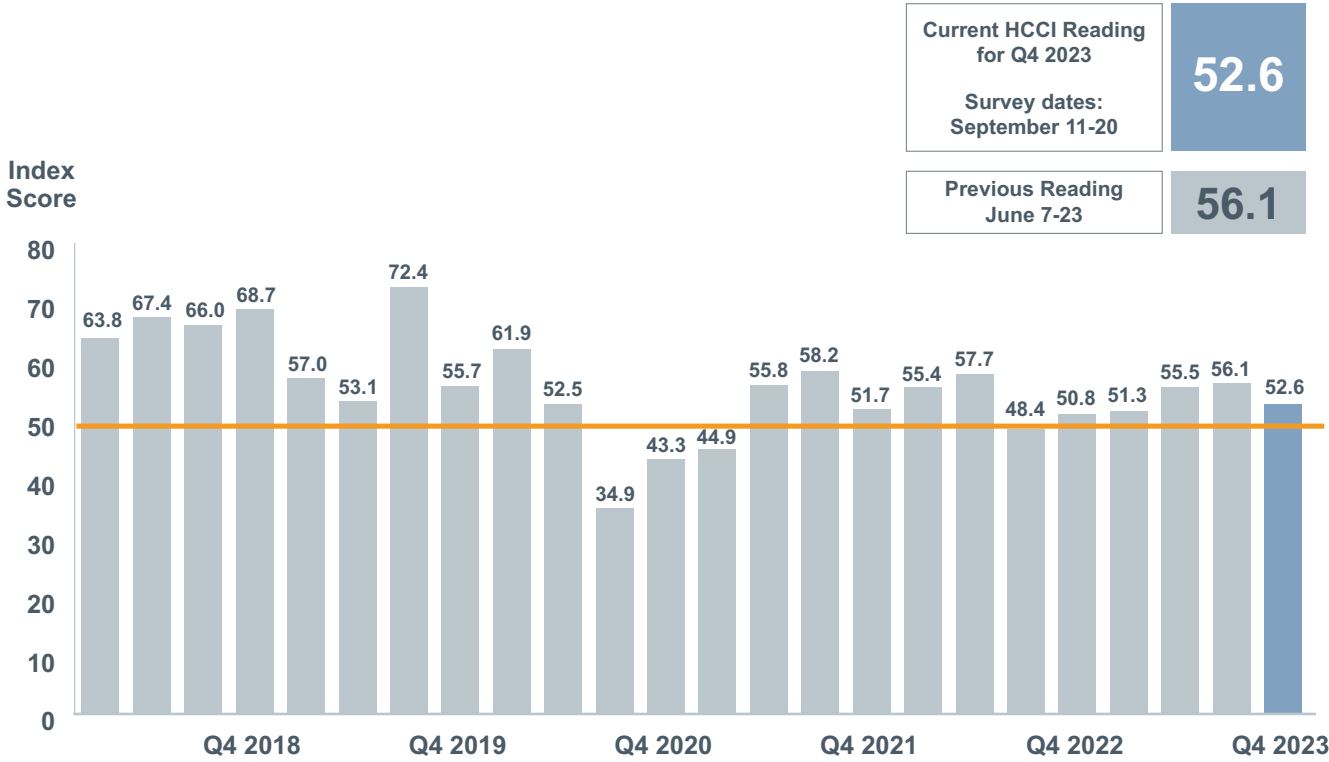
EXECUTIVE SUMMARY



Heavy Civil Construction Index (HCCI)

Q1 2018 to Q4 2023

Scores above 50 indicate expansion; below 50, contraction

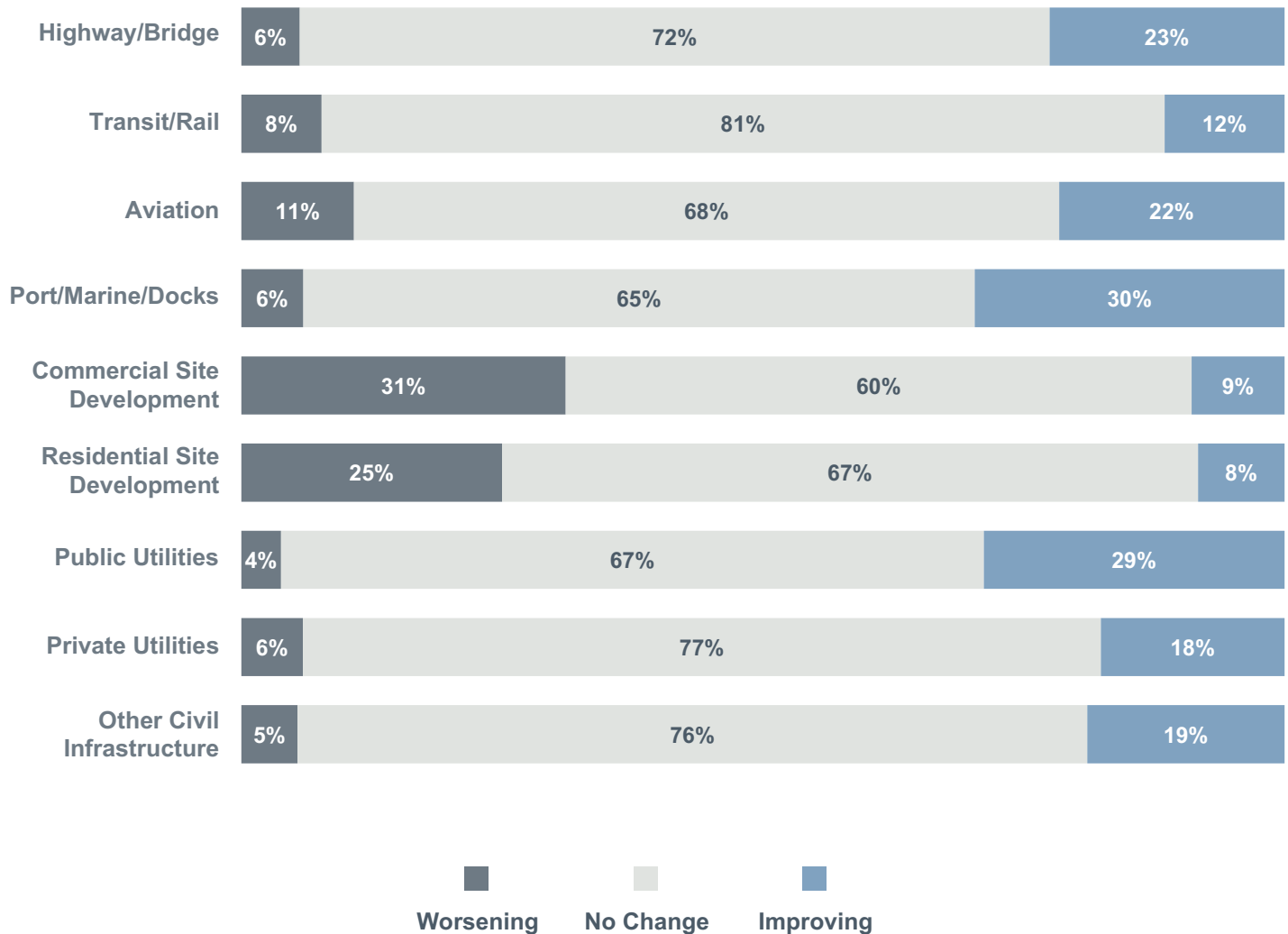


Source: FMI Heavy Civil Construction Survey Q4 2023

EXECUTIVE SUMMARY



Perception of Change by Segment for Next Quarter

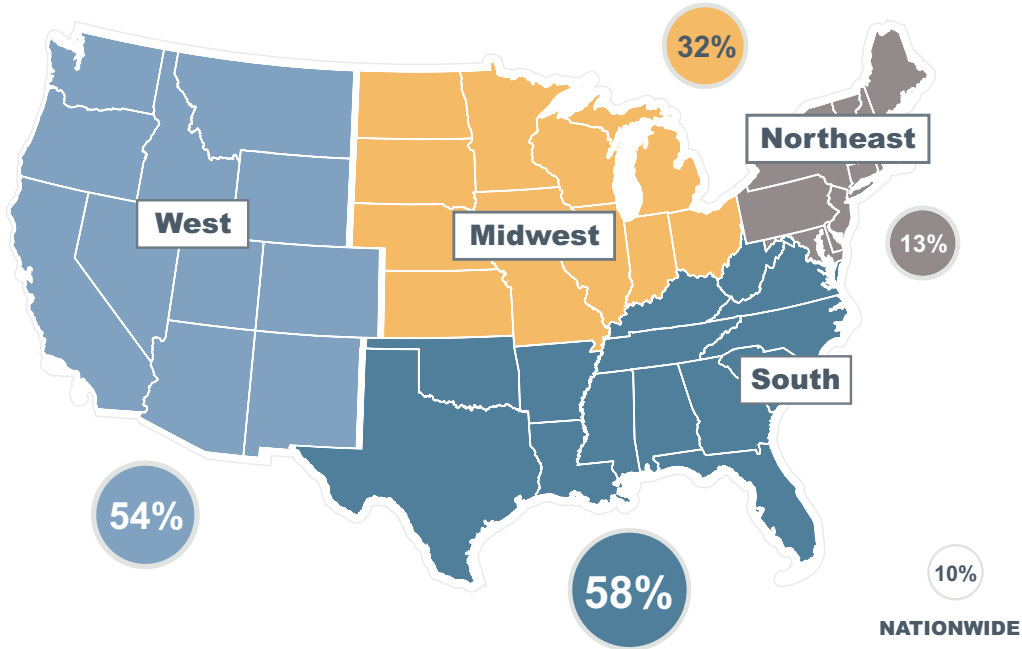


DEMOGRAPHIC INFORMATION

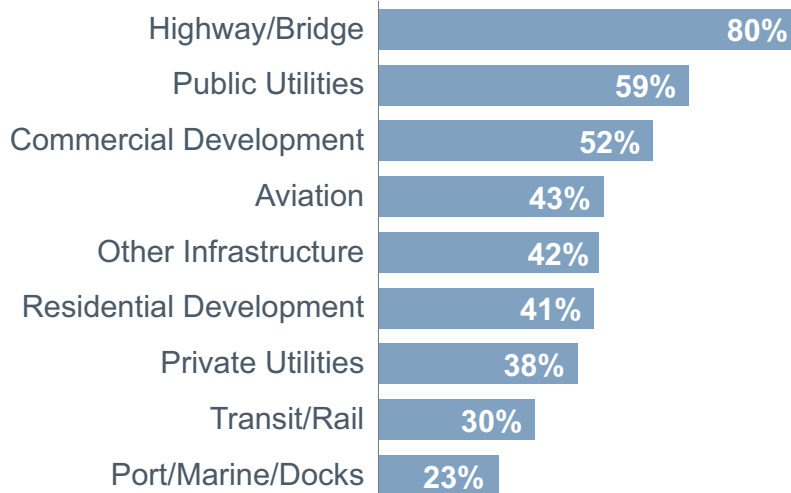


Where Survey Participants Work

By Geography



By Discipline



Respondents are able to select more than one option.



MARKET CONDITIONS

MARKET CONDITIONS



- Contractors continue to build backlog faster than they are burning it. Improvements this quarter were led by a 5% decrease in the share of contractors that indicated a declining backlog book/burn rate at 16% in the fourth quarter, down from 21% in third quarter.
- Half of all respondents indicated their backlog levels are either significantly or somewhat higher than this same quarter last year. Further, 76% of contractors reported that their backlogs are exceeding or at levels needed or expected at this point in the year. Written commentary suggests improved project selectivity and a tight labor market are contributing to healthy backlogs.
- A majority, or 80%, of respondents indicated that margins on work acquired this quarter are the same or

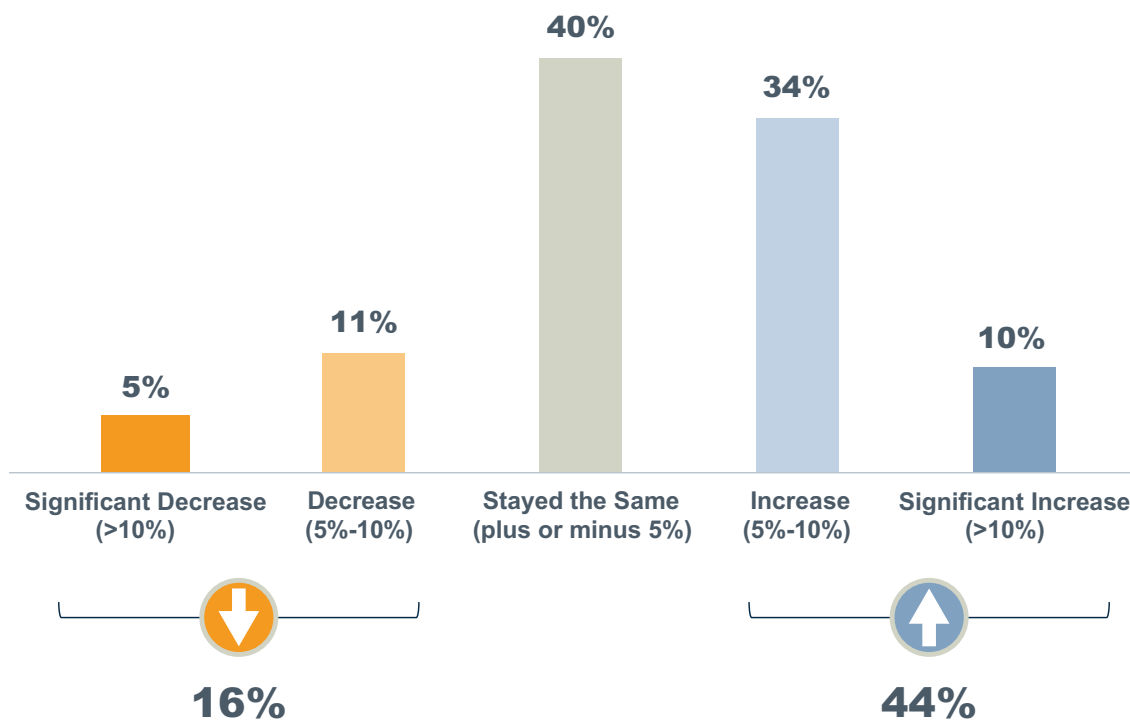
better than they were one year ago. A similar share (81%) reported margins were either up or about the same as last quarter, but down slightly from 91% last quarter.

- This quarter 27% of respondents reported an increase in competitive pressures, versus 26% in the third quarter. Bid prices continue to increase for most, with 63% of respondents reporting a slight or significant increase, compared to 69% last quarter.
- More contractors are seeing new competitors in their markets, with 20% of respondents seeing more competition in their markets in the last six months compared to 14% last quarter.

Backlog Book/Burn Rate

(Year Over Year)

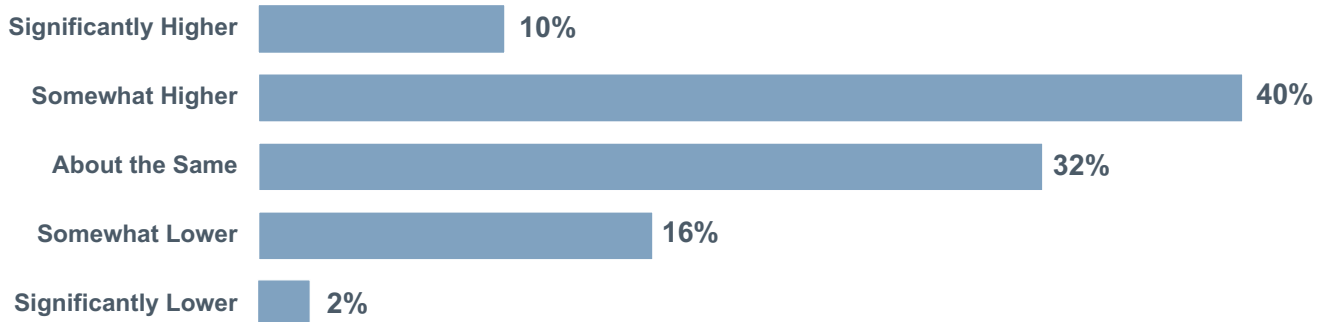
Book/burn rate is the pace backlog is added compared to how quickly it is used.



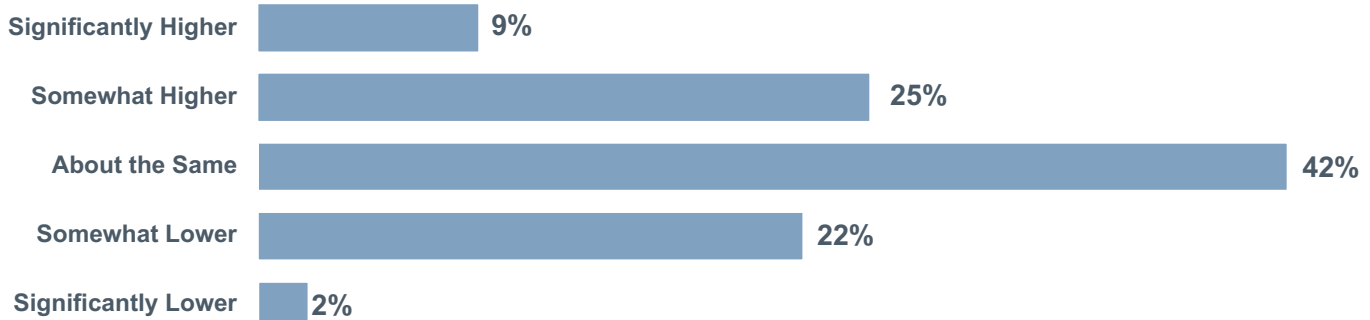


Backlog

How does your backlog in the most recent quarter compare to that of the same quarter last year?



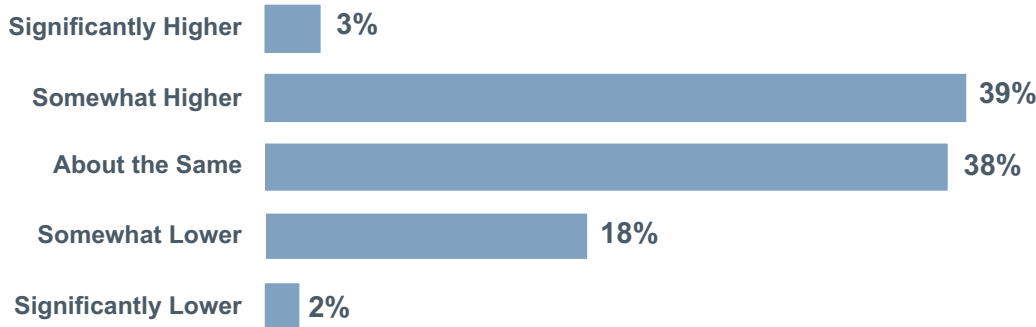
What is your current backlog compared to your anticipated/needed backlog at this point in the year?



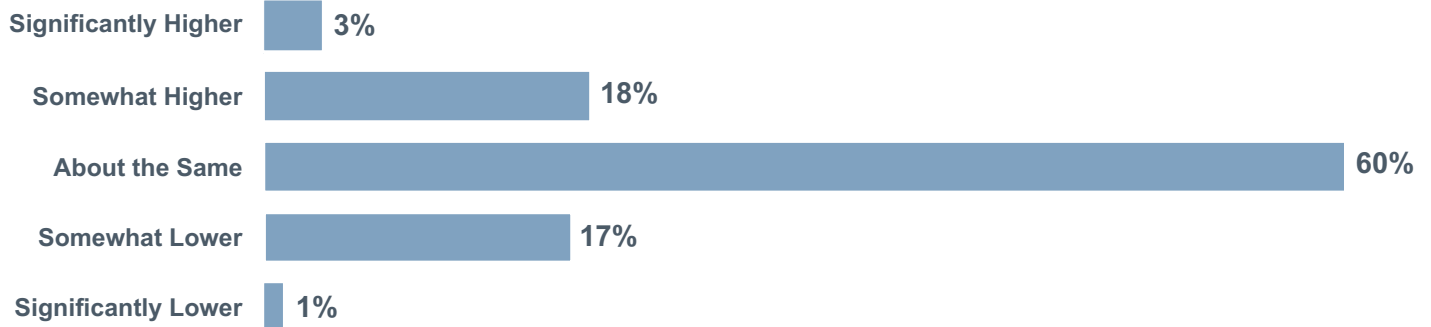


Margins

How would you compare margins on the work you have acquired in this quarter with that of the same quarter last year? (i.e., year-over-year change)



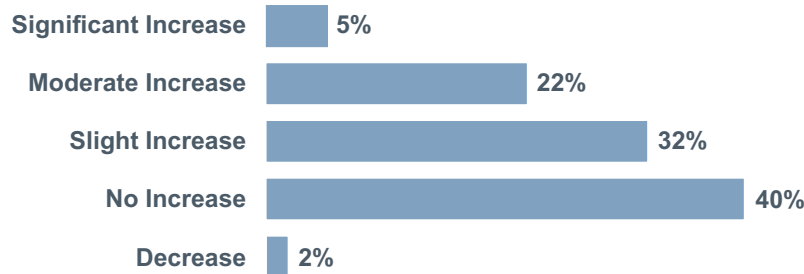
How would you compare margins on the work you have acquired in this quarter compared to the previous quarter?



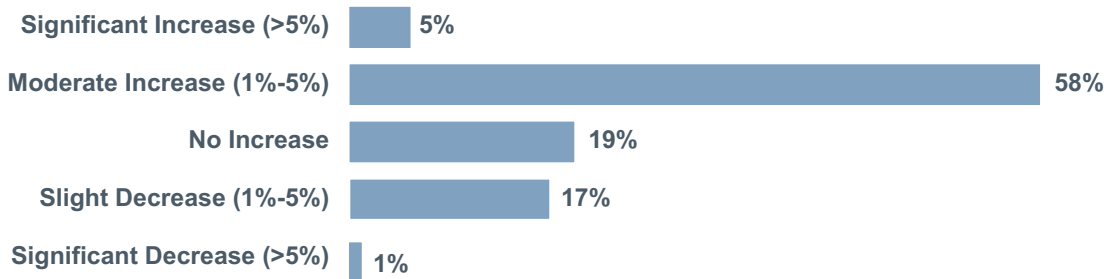


Competitive Landscape

How has the competitive landscape changed in the last quarter in terms of the number of competitors?



How have bid prices been impacted in the last quarter?



In the past six months, have you experienced an increase in nontraditional civil firms (new entrants) in the market?





CURRENT ISSUES

Technology and Artificial Intelligence Investment

This quarter we asked HCCI members about their current and planned investments across various technologies.

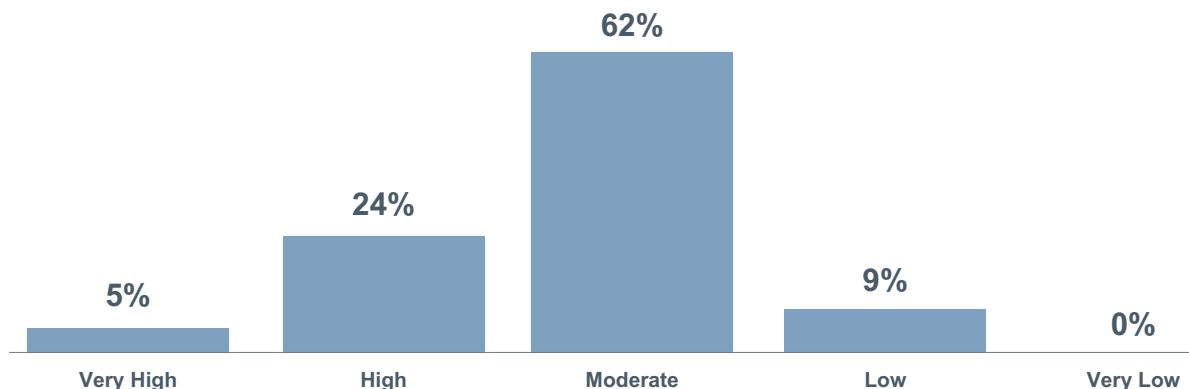
CURRENT ISSUES

Technology and Artificial Intelligence Investment



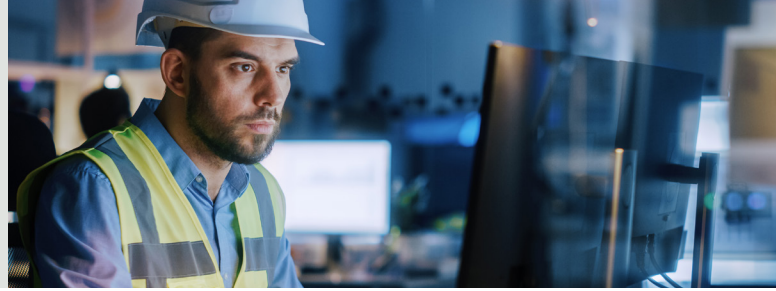
- Slightly fewer than 30% of respondents rated their current level of technological advancement as either high or very high.
- When asked about investments in new software over the next three years, nearly half plan to spend on project management and fleet and equipment optimization. Further, between 30% and 40% of respondents reported planned software investments in safety, scheduling, job site optimization and estimating.
- One in 5 respondents are currently using artificial intelligence or machine learning in their operations and approximately one-third are not using it but plan to over the next 12 to 24 months. The majority are planning to use AI in information accessibility, contract and document review and accounts payable.
- Respondents highlighted the most common sources of concerns and challenges in integrating technology and innovation due to a lack of understanding capabilities (35%), adoption/buy-in (27%), cost/ROI (26%) and skills gaps (25%).
- More than half of all respondents believe that they would greatly benefit from technology supporting project controls and performance tracking (60%) and equipment optimization (55%). Further, a large portion of respondents identified they would greatly benefit from technological innovation in labor productivity (34%), scheduling/project coordination (33%), estimating (29%), safety (27%) and proposal development (27%).

On a scale of 1 to 5, how would you rate your company's current level of technological advancement?

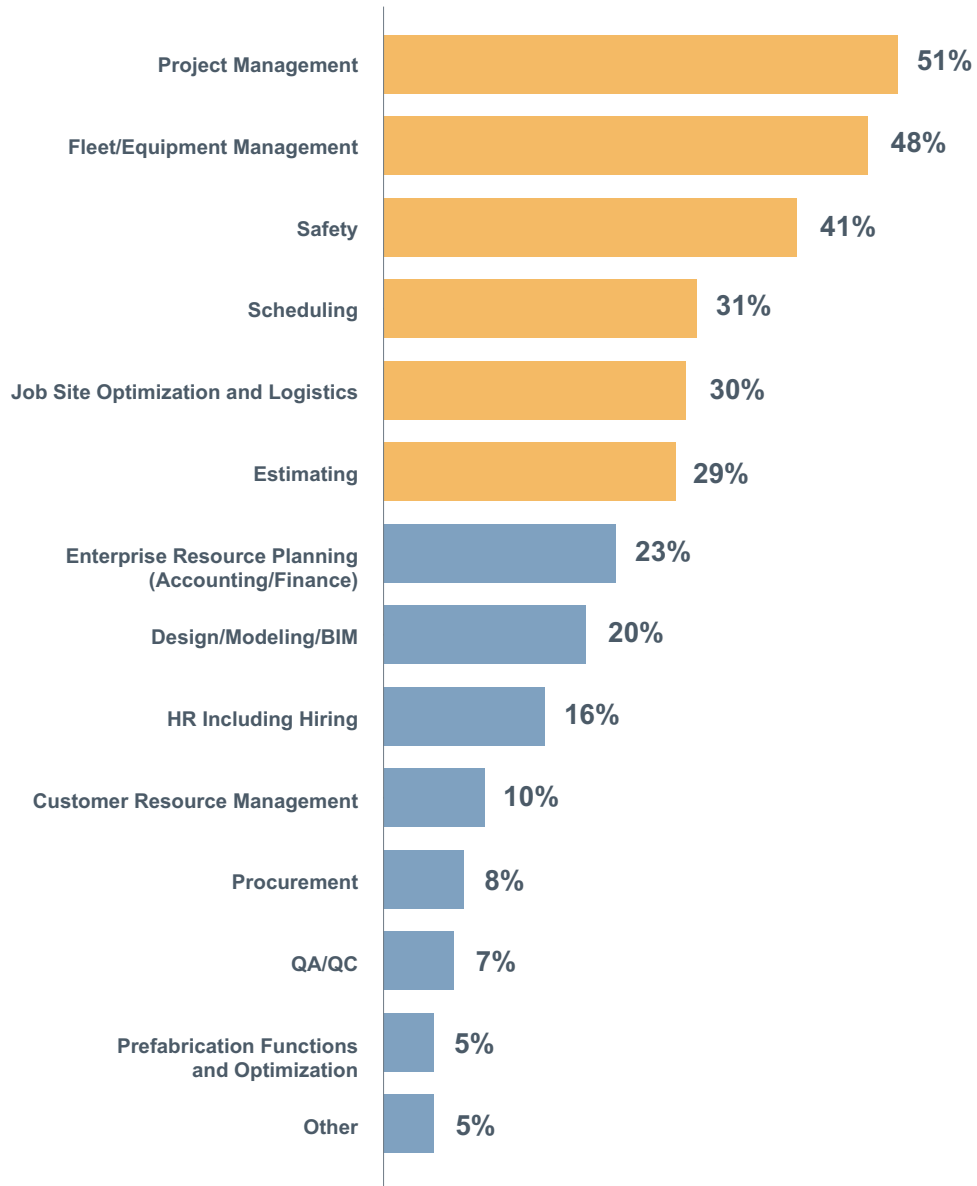


CURRENT ISSUES

Technology and Artificial Intelligence Investment



What areas do you plan to invest in software in the next three years?

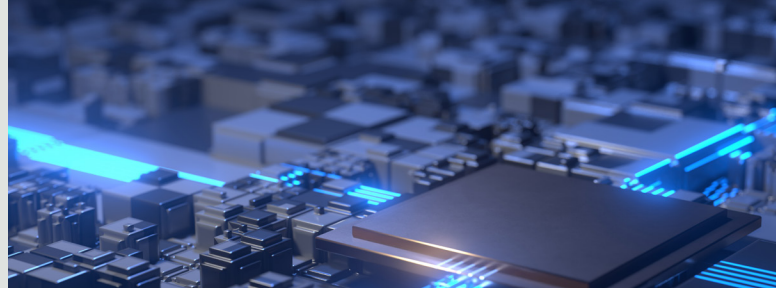


Respondents were asked to select all that apply.

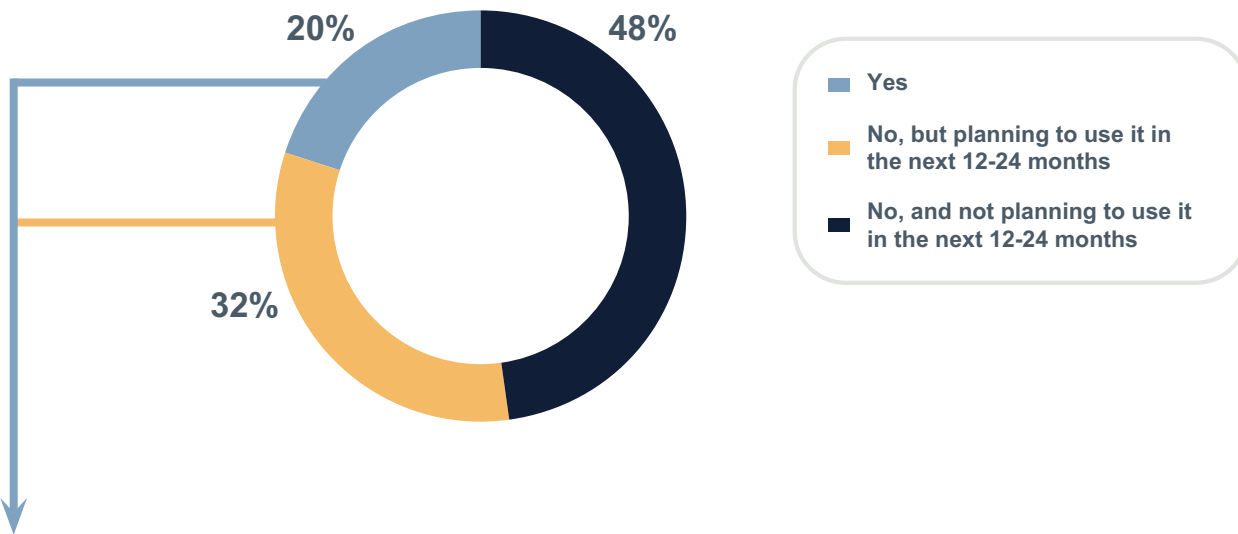
Other included responses on AI and accounting software.

CURRENT ISSUES

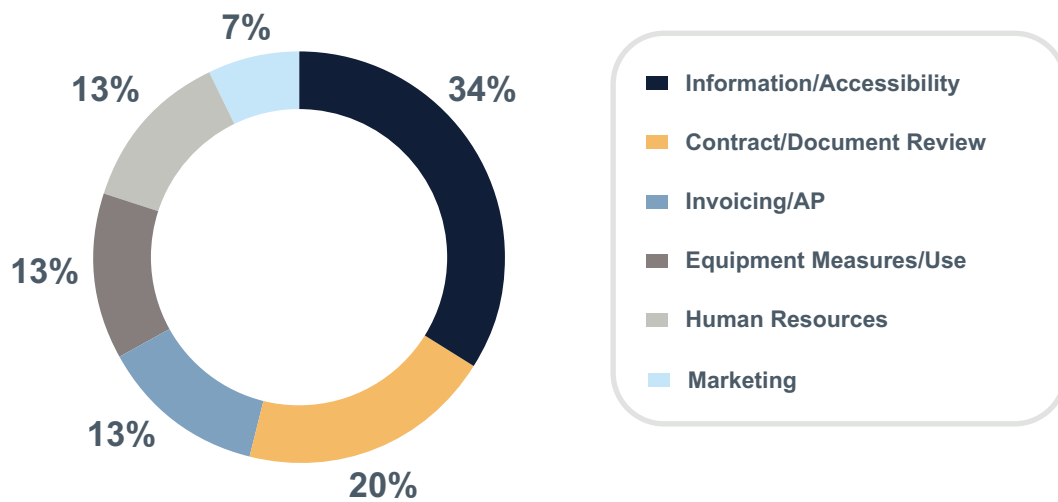
Technology and Artificial Intelligence Investment



Is your company currently using any form of AI or machine learning in its operations?



Please specify either how you currently use or are planning to use AI or machine learning.

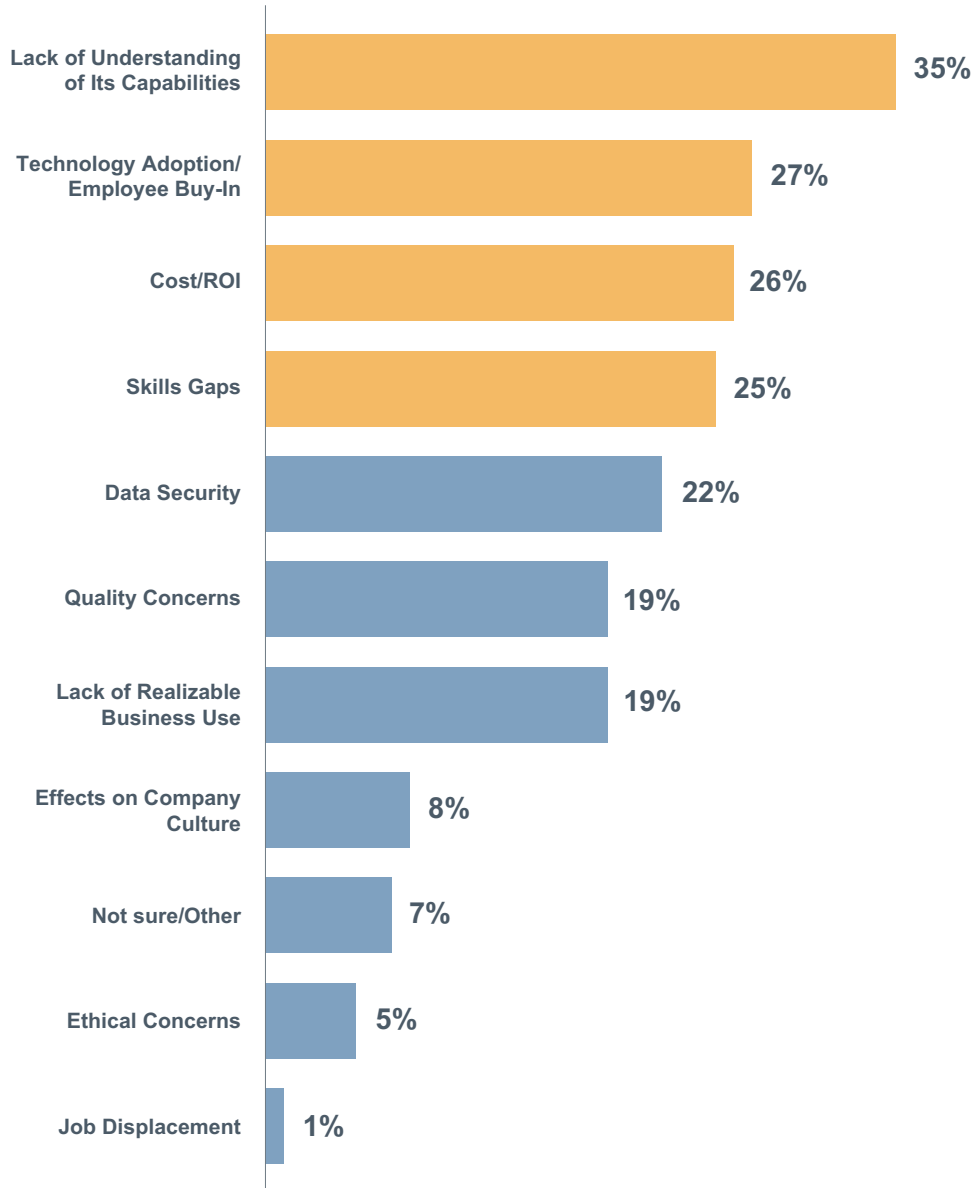


CURRENT ISSUES

Technology and Artificial Intelligence Investment



What are your primary concerns/challenges regarding the integration of technological innovation (including AI) into your business processes?



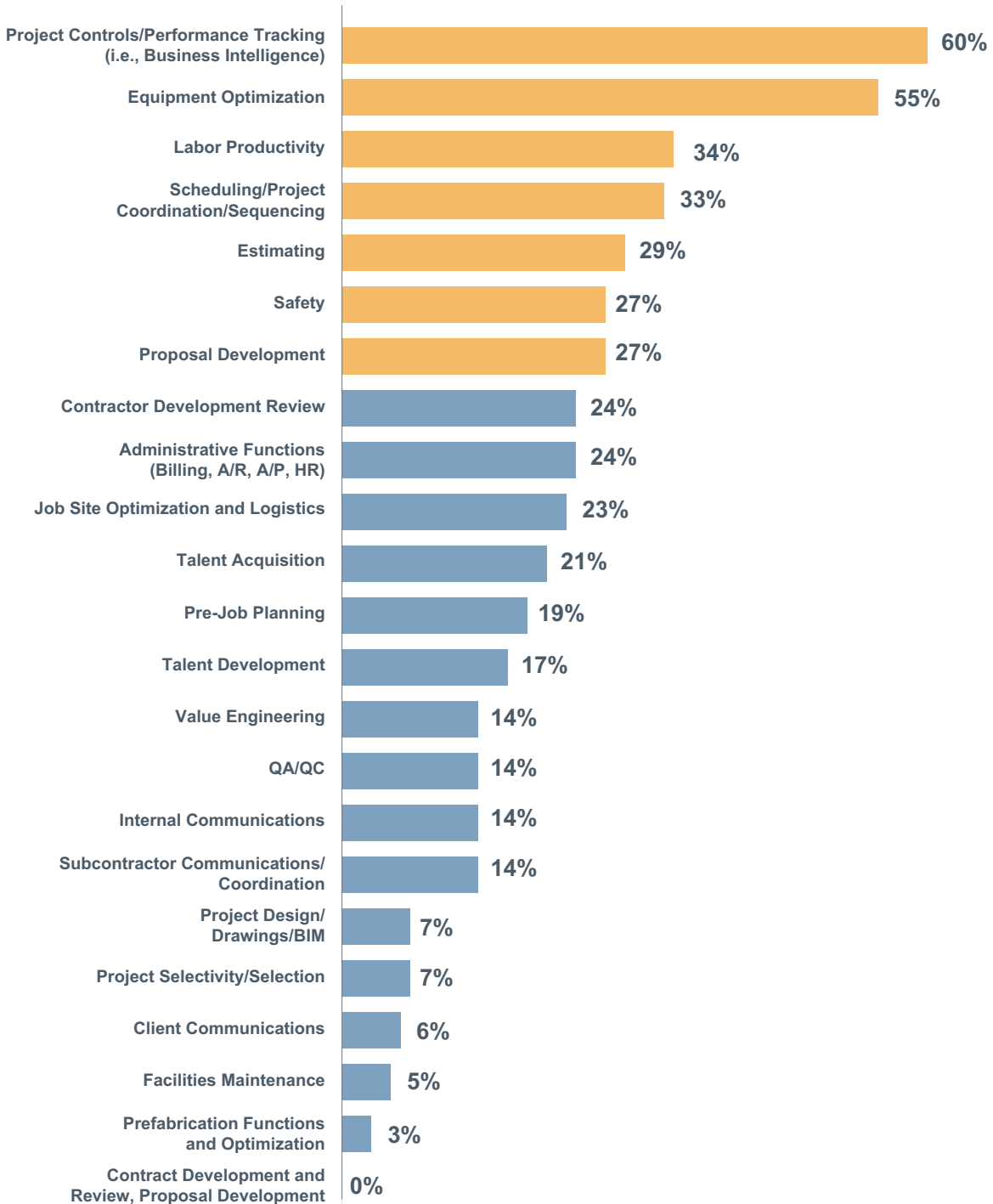
Respondents were asked to select no more than five.

CURRENT ISSUES

Technology and Artificial Intelligence Investment



What areas do you believe would benefit most from technological innovation (including AI) across your business?



Respondents were asked to select no more than five.



HEAVY CIVIL CONSTRUCTION OUTLOOK

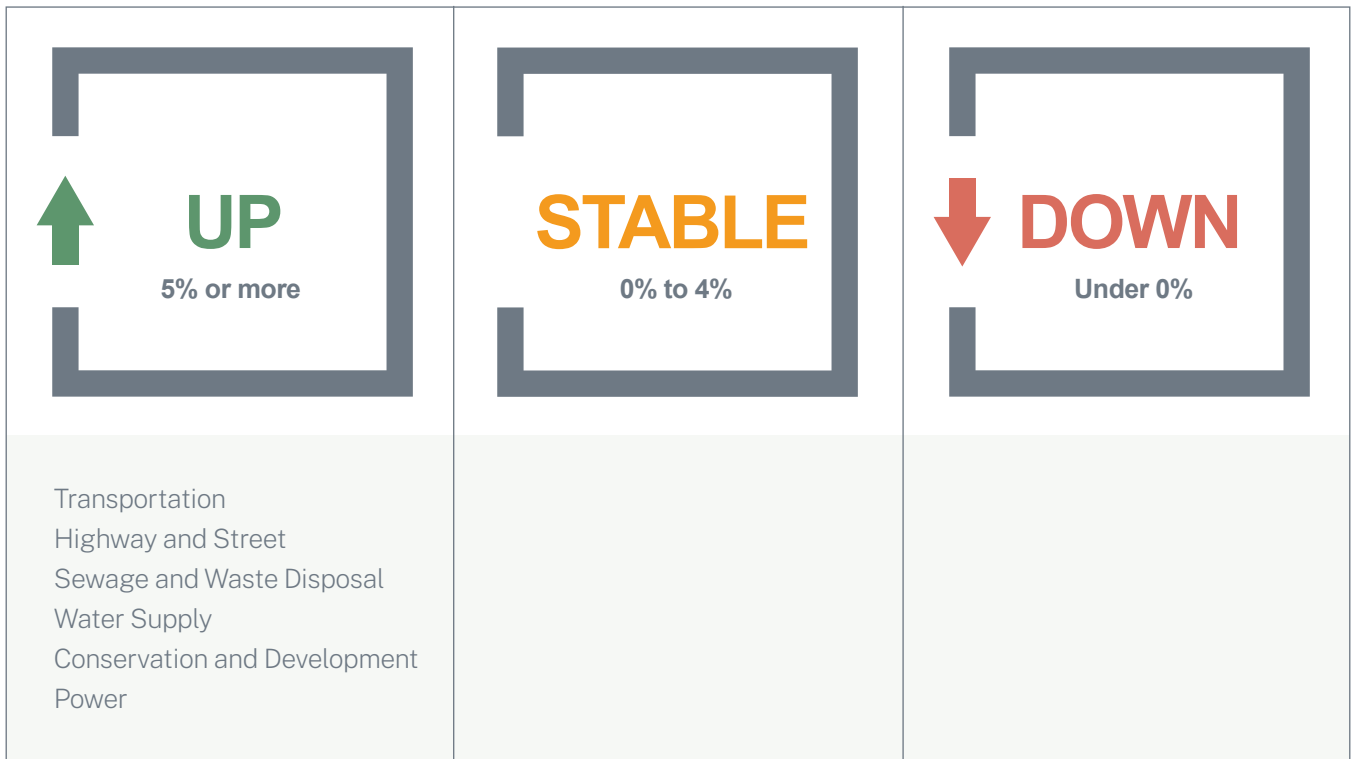
HEAVY CIVIL CONSTRUCTION OUTLOOK



Key Findings

- Total heavy civil construction put in place is expected to grow slightly more than 10% in 2023.
- Several segments that are forecast to see double-digit expansion for 2023 include highway and street, sewage and waste disposal, water supply, and conservation and development.
- Air, rail/transit and bridges are likely to expand in double digits due to funds from the Infrastructure Investment and Jobs Act (IIJA) that will continue to support state transportation programs.
- Every subsegment of heavy civil construction is expected to realize robust long-term growth through 2027 with average annual rates at 5% or higher. Long-term expansion in heavy civil construction put in place will be led by air, rail/transit, bridge and sewage/waste disposal investment.

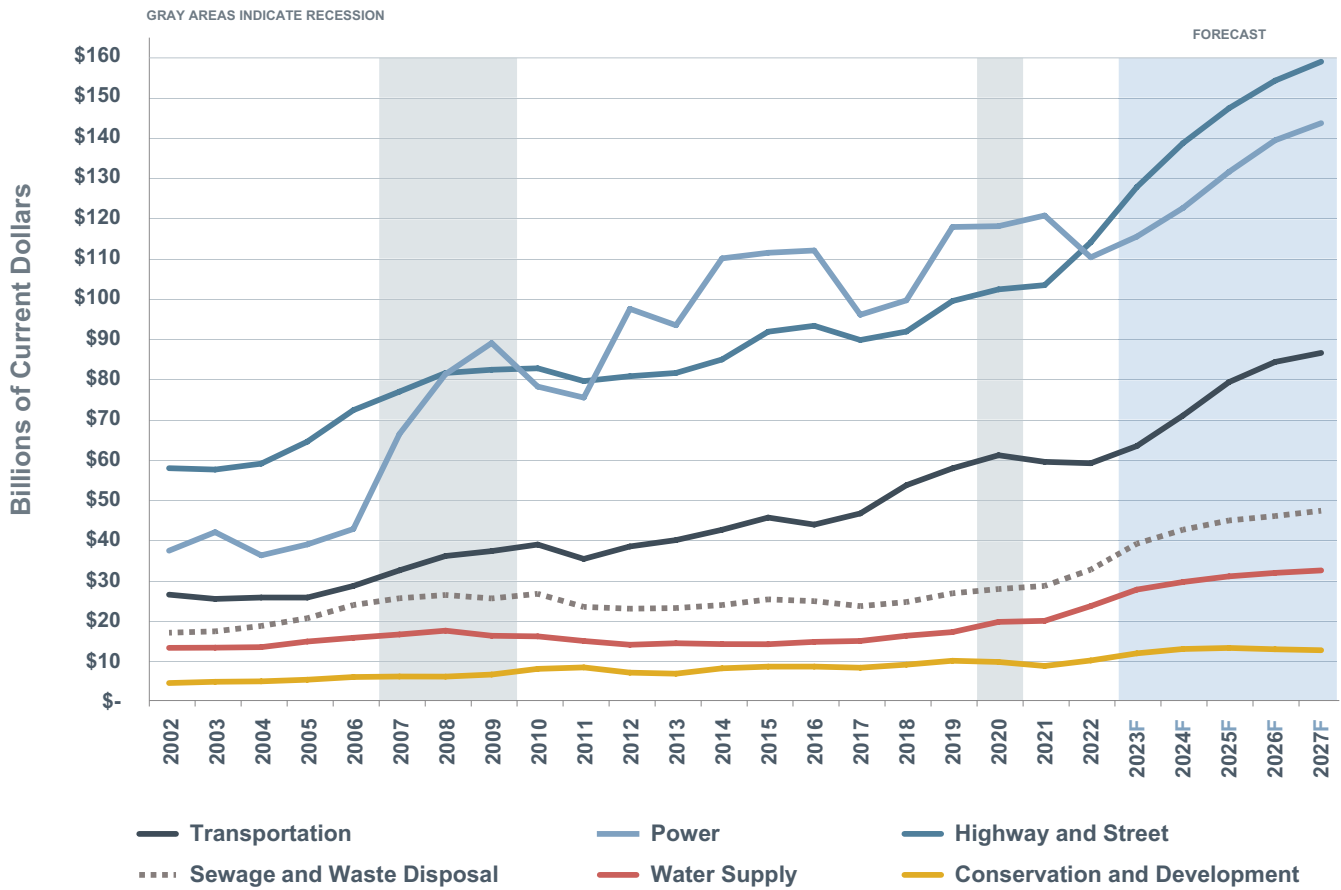
U.S. 2023 Segment Performance 2023/2022 Comparison



HEAVY CIVIL CONSTRUCTION OUTLOOK



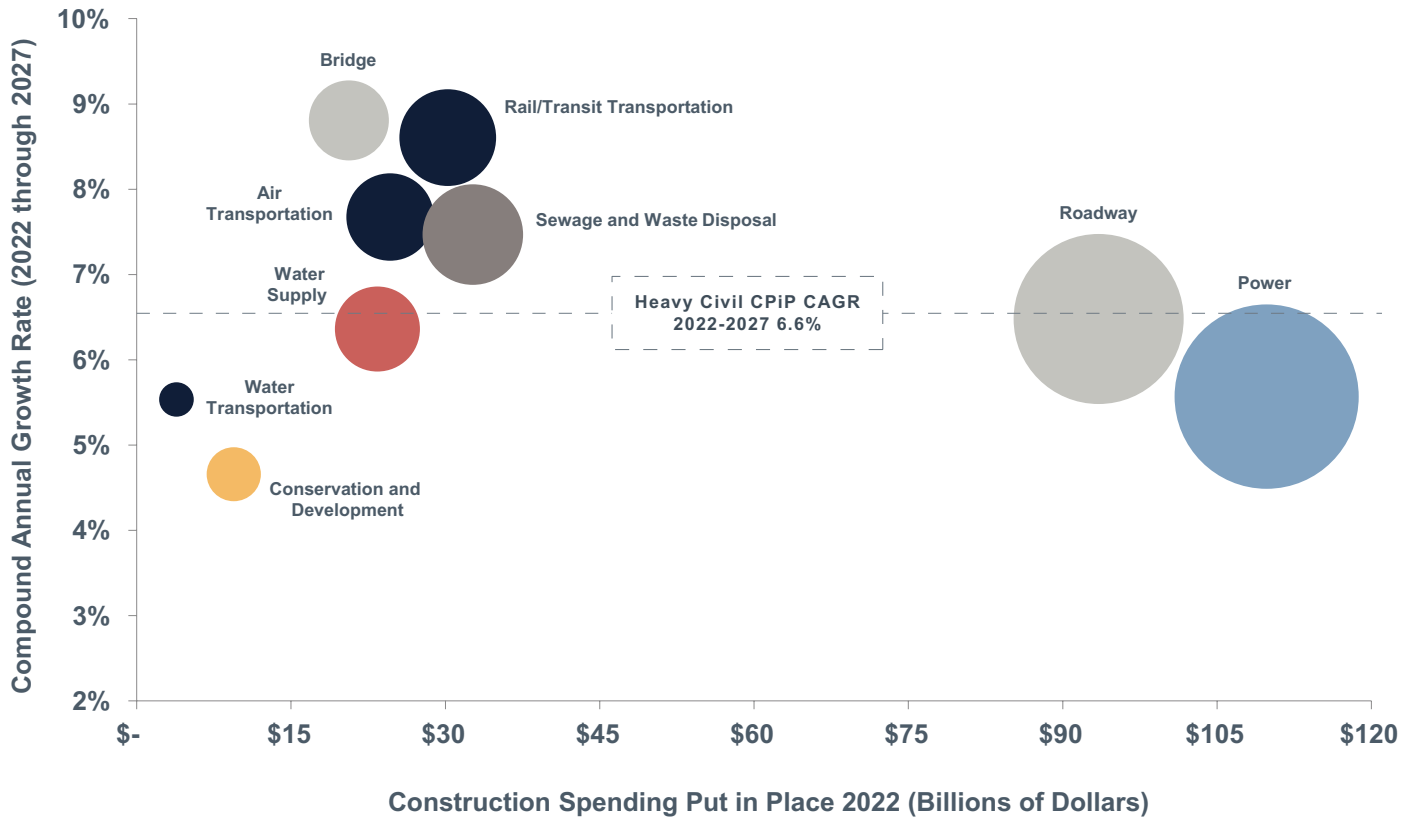
Heavy Civil Construction Put in Place



HEAVY CIVIL CONSTRUCTION OUTLOOK



Heavy Civil Construction Spending Put in Place 2022 and Forecast Growth (2022 through 2027) by Segment



HEAVY CIVIL CONSTRUCTION OUTLOOK



Heavy Civil Construction Put in Place Estimated for the United States

Millions of Current Dollars

4th Quarter 2023 Forecast, Based on 2nd Quarter 2023 Actuals and 3rd Quarter 2023 Assumptions

	2018	2019	2020	2021	2022	2023F	2024F	2025F	2026F	2027F
TRANSPORTATION	53,218	57,449	60,733	59,075	58,726	63,041	70,668	79,068	84,122	86,387
Air	22,008	24,428	27,736	26,817	24,626	26,269	29,319	33,120	35,027	35,642
Rail/Transit	28,200	28,898	28,874	28,358	30,237	32,671	36,932	41,257	44,165	45,689
Port/Water	3,010	4,123	4,123	3,901	3,863	4,101	4,416	4,691	4,930	5,056
POWER	99,569	117,960	118,168	119,108	109,816	115,549	122,703	131,779	139,701	143,991
HIGHWAY AND STREET	91,745	99,402	102,321	103,381	114,107	127,964	138,957	147,725	154,652	159,402
Roadway	63,344	72,675	80,332	80,769	93,484	105,777	114,510	119,881	124,447	127,951
Bridge	28,401	26,727	21,989	22,612	20,623	22,187	24,447	27,844	30,205	31,451
SEWAGE AND WASTE DISPOSAL	23,931	26,119	27,189	28,811	32,660	38,560	42,058	44,382	45,489	46,817
WATER SUPPLY	15,477	16,397	18,952	20,284	23,402	27,046	28,946	30,369	31,237	31,854
CONSERVATION AND DEVELOPMENT	8,229	9,207	8,903	7,911	9,434	11,065	12,155	12,419	12,086	11,845
TOTAL HEAVY CIVIL PUT IN PLACE	\$292,169	\$326,534	\$336,266	\$338,570	\$348,145	\$383,224	\$415,486	\$445,742	\$467,287	\$480,297

Heavy Civil Construction Put in Place Estimated for the United States

Change From Prior Year/Current Dollar Basis

4th Quarter 2023 Forecast, Based on 2nd Quarter 2023 Actuals and 3rd Quarter 2023 Assumptions

	2018	2019	2020	2021	2022	2023F	2024F	2025F	2026F	2027F
TRANSPORTATION	15.3%	8.0%	5.7%	-2.7%	-0.6%	7.3%	12.1%	11.9%	6.4%	2.7%
Air	28.0%	11.0%	13.5%	-3.3%	-8.2%	6.7%	11.6%	13.0%	5.8%	1.8%
Rail/Transit	6.1%	2.5%	-0.1%	-1.8%	6.6%	8.0%	13.0%	11.7%	7.0%	3.5%
Port/Water	27.8%	37.0%	0.0%	-5.4%	-1.0%	6.2%	7.7%	6.2%	5.1%	2.6%
POWER	3.8%	18.5%	0.2%	0.8%	-7.8%	5.2%	6.2%	7.4%	6.0%	3.1%
HIGHWAY AND STREET	2.4%	8.3%	2.9%	1.0%	10.4%	12.1%	8.6%	6.3%	4.7%	3.1%
Roadway	7.0%	14.7%	10.5%	0.5%	15.7%	13.1%	8.3%	4.7%	3.8%	2.8%
Bridge	-6.7%	-5.9%	-17.7%	2.8%	-8.8%	7.6%	10.2%	13.9%	8.5%	4.1%
SEWAGE AND WASTE DISPOSAL	4.5%	9.1%	4.1%	6.0%	13.4%	18.1%	9.1%	5.5%	2.5%	2.9%
WATER SUPPLY	9.2%	5.9%	15.6%	7.0%	15.4%	15.6%	7.0%	4.9%	2.9%	2.0%
CONSERVATION AND DEVELOPMENT	10.2%	11.9%	-3.3%	-11.1%	19.3%	17.3%	9.9%	2.2%	-2.7%	-2.0%
TOTAL HEAVY CIVIL PUT IN PLACE	5.8%	11.8%	3.0%	0.7%	2.8%	10.1%	8.4%	7.3%	4.8%	2.8%

ABOUT THE AUTHORS



Brian Moore is a partner at FMI, focusing on consulting with contractors on various strategic, organizational and operational issues. Brian works in identifying future construction trends, market conditions and competitive issues that impact strategic decisions. Brian's clients count on him as a thought leader and trusted advisor as they plan the future of their business. Often this involves combining in-depth market and company analysis with judgment and experience to chart the organization's future. He works with clients to help them develop the organizational capabilities that match their chosen strategy so they can achieve desired results. Brian can be reached at [***brian.moore@fmicorp.com***](mailto:brian.moore@fmicorp.com).



Brian Strawberry is chief economist at FMI. Brian leads FMI's efforts in market sizing, forecasting, building products and construction material pricing, and consumption trends. He focuses on primary research methods, including the implementation and analysis of surveys and interviews. Brian also leads and manages various external market research engagements and constructs tools and models for efficiently performing high-quality analyses. He can be reached at [***brian.strawberry@fmicorp.com***](mailto:brian.strawberry@fmicorp.com).



Jackson Mathis conducts primary and secondary research for FMI's clients across the engineering and construction industry. He is responsible for conducting interviews with subject matter experts, designing surveys and analyzing market research data. Jackson works with partners and consultants to deliver quality projects that help drive growth and solve business problems. He can be reached at [***jackson.mathis@fmicorp.com***](mailto:jackson.mathis@fmicorp.com).



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