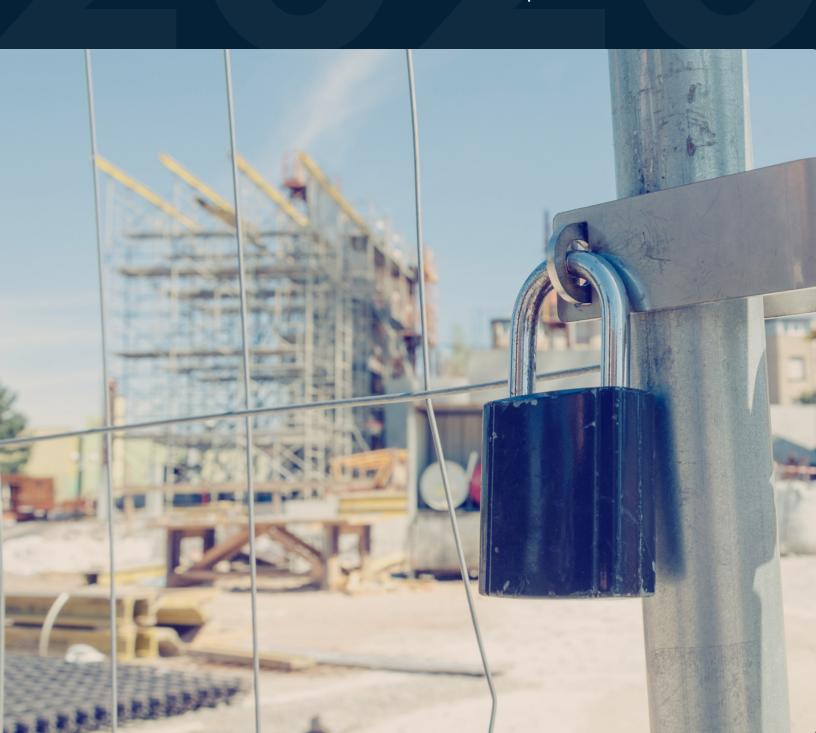


FMI's North American Engineering and Construction Outlook

Second Quarter 2020 Report



Recent economic disruptions considered in the following forecast include the domestic and foreign impact of COVID-19, recognition of a recession beginning in March 2020, high volatility across financial and equity markets, emergency policies set in place by the Federal Reserve, some early government stimulus, significantly lower oil prices, mounting political uncertainty, and social unrest headed into the 2020 presidential election. Based on the speed, breadth and apparent lasting impacts of these various factors, FMI is anticipating the current recession to continue through the remainder of 2020 and possibly into 2021. Depth and reach of these disruptions will remain under close watch.

FMI U.S. Engineering and Construction Outlook Second Quarter 2020 Report

Key Takeaways

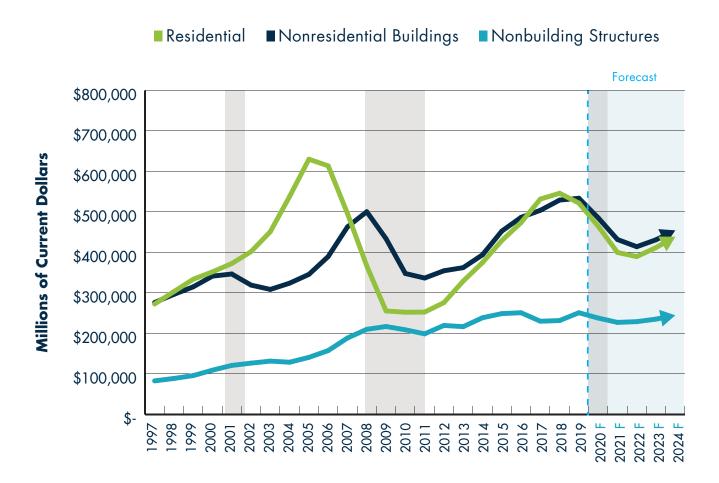
■ Total engineering and construction spending for the U.S. is forecast to end down 9 percent in 2020, compared to 0 percent growth in 2019.



- All sectors and segments will see spending declines in 2020. Declines will be led by an abrupt contraction across residential and private nonresidential building segments. Current anticipated low-performing segments forecast in 2020 include religious (-20 percent), amusement and recreation (-17 percent), multifamily residential (-17 percent) and lodging (-15 percent). Milder declines are anticipated in select infrastructure and nonbuilding segments, including communication (-1 percent), highway and street (-3 percent), transportation (-4 percent) and public safety (-4 percent).
- All segments that were previously in the up or stable categories have been downgraded to reflect the broad declines stated above. No segments remain in the up or stable categories.
- FMI's third quarter 2020 Nonresidential Construction Index (NRCI) at 36.9 reflects a stark 31 percent decline in industry sentiment from the second quarter reading. This is the most severe quarter-to-quarter decline reported in the history of conducting the NRCI. The diffusion index score, below the growth threshold of 50, indicates significant projected losses in future engineering and construction opportunities.



Total Construction Put in Place Estimated for the U.S.

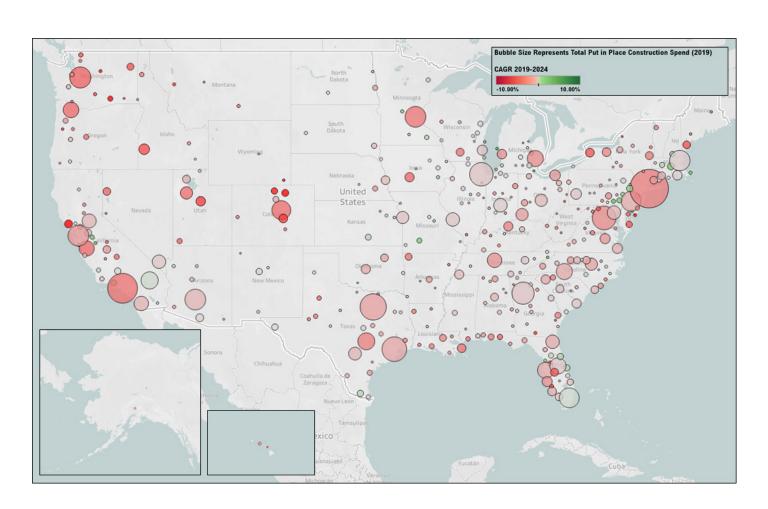


Throughout the value of construction put in place includes the cost of architectural and engineering work.

Source: U.S. Census and FMI Forecast



Total Construction Put in Place 2019 and Forecast Growth (2019-2024 CAGR) by Metropolitan Statistical Area



Source: U.S. Census and FMI Forecast

RESIDENTIAL CONSTRUCTION PUT IN PLACE

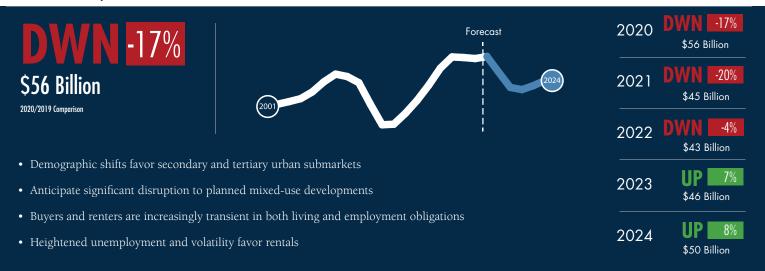
Single-Family Residential

Drivers: Unemployment rate, core CPI, income, mortgage rate, home prices, housing starts, housing permits



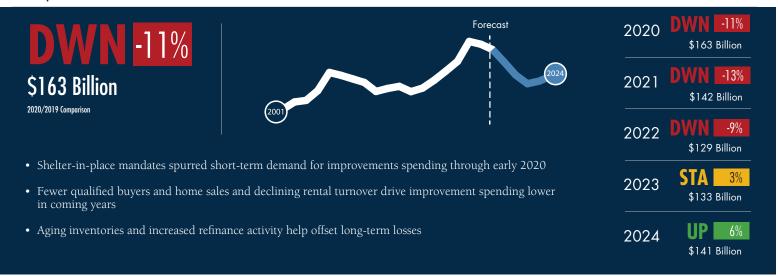
Multifamily Residential

Drivers: Unemployment rate, core CPI, income, mortgage rate, home prices, housing starts, housing permits



Improvements

Drivers: Unemployment rate, core CPI, income, mortgage rate, home prices, housing starts, housing permits





Nonresidential Construction Index (NRCI) Q1 2011 to Q3 2020

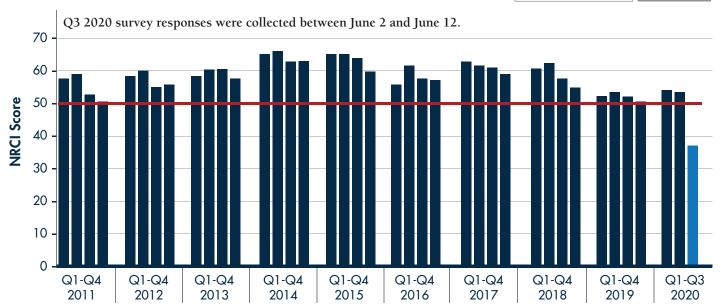
(Scores above 50 indicate expansion; scores below 50 indicate contraction)

NRCI scores are based on a diffusion index where scores above 50 represent improving or expanding industry conditions, a score of 50 represents conditions remaining the same, and a score below 50 represents worse conditions than last quarter (or contraction).

Current NRCI Reading for Q3 2020

Previous Reading

53.2

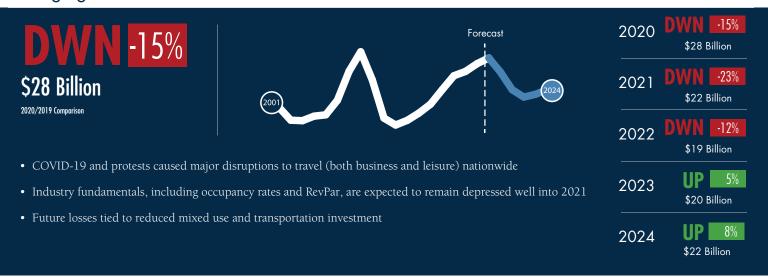


The data in the NRCI is presented as a sampling of construction industry executives voluntarily serving as panelists for this FMI survey. Responses are based on their experience and opinions, and the analysis is based on FMI's interpretation of the aggregated results.

NONRESIDENTIAL CONSTRUCTION PUT IN PLACE

Lodging

Drivers: Occupancy rate, RevPAR, average daily rate, room starts



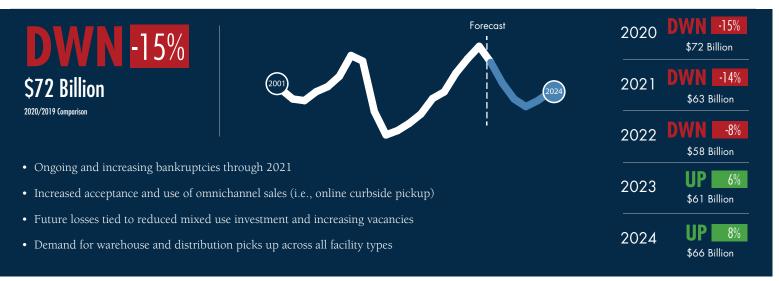
Office

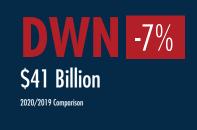
Drivers: Office vacancy rate, unemployment rate



Commercial

Drivers: Retail sales, CPI, income, home prices, housing starts, housing prices







- Demand and adoption for health care services and technologies (e.g., telehealth and wearables) are
 expected to jump substantially in the wake of COVID-19 and 5G deployment
- Rapidly increasing adoption of telehealth significantly challenges capital plans for clinics and outpatient facilities
- Project pipeline suggests a potential resurgence in larger health care campuses



Educational

Drivers: Population change younger than age 18, population change ages 18-24, stock markets, government spending, nonresidential structure investment

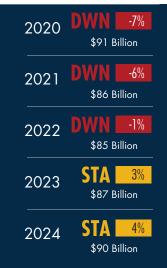
DVVN -7%

\$91 Billion

2020/2019 Comparison



- K-12 and higher education both experience significant revenue losses; a fall/September start will be critical for many
- Industrywide prioritization in establishing and/or refining an online presence
- Increased focus on facility design in safety and well-being
- Maintenance backlogs receive much needed support through future infrastructure stimulus



Religious

Drivers: GDP, population, income, personal savings

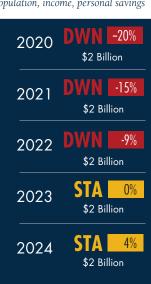
DWN -20%

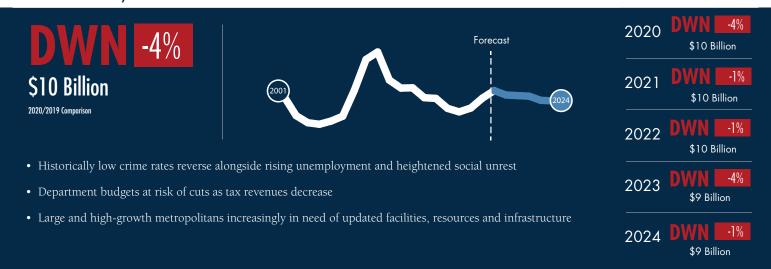
22 Rillion

2020/2019 Comparison



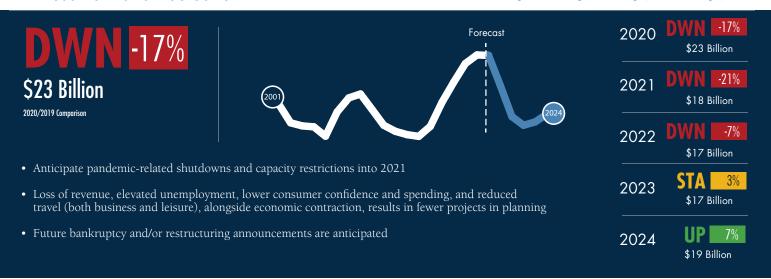
- Shelter-in-place mandates, rising unemployment and weakening consumer confidence weigh on existing capital plans
- Trend in declining attendance and religious affiliation continues
- Ongoing shift away from traditional worship facilities into community-focused service and gathering places





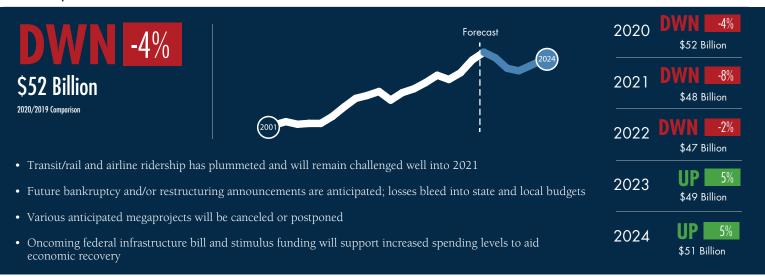
Amusement and Recreation

Drivers: Income, personal savings rate, unemployment rate, employment



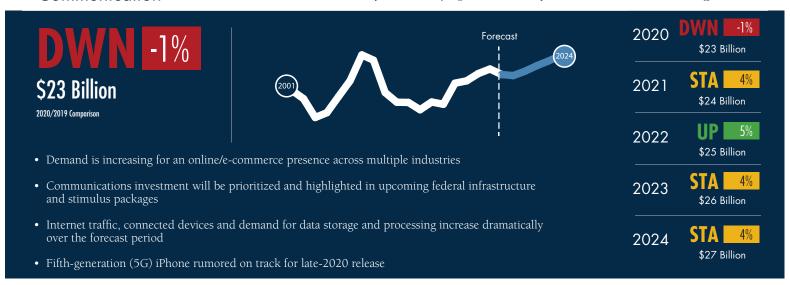
Transportation

Drivers: Population, government spending, transportation funding



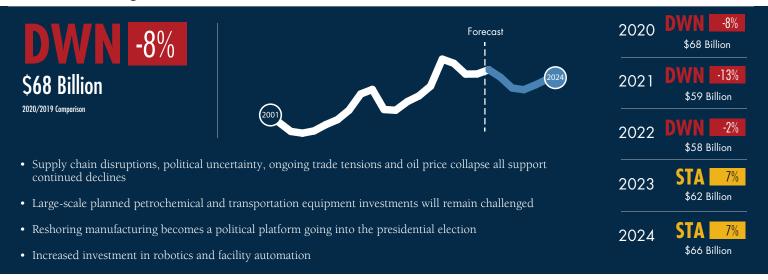
Communication

Drivers: Population, security/regulation standards, private investment, innovation/technology investment



Manufacturing

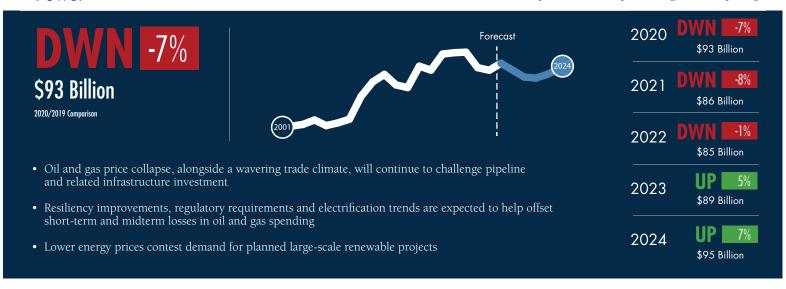
Drivers: PMI, industrial production, capacity utilization, durable goods orders, manufacturing inventories



NONBUILDING STRUCTURES CONSTRUCTION PUT IN PLACE

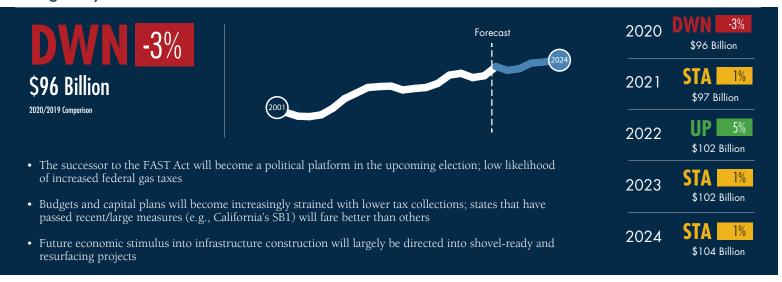
Power

Drivers: Population, industrial production, government spending



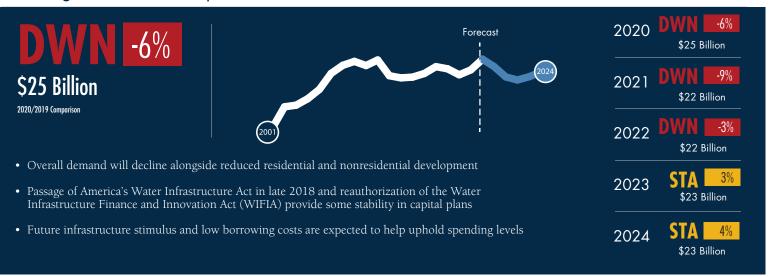
Highway and Street

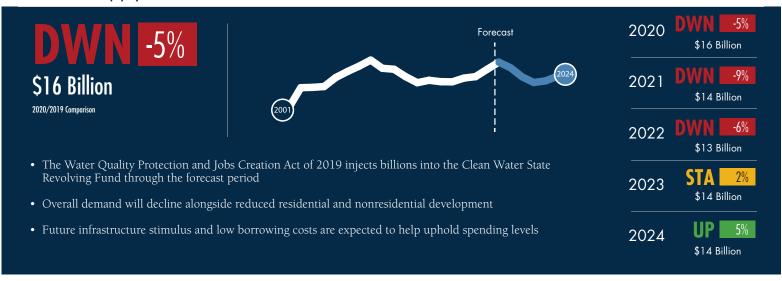
Drivers: Population, government spending, nonresidential structure investment



Sewage and Waste Disposal

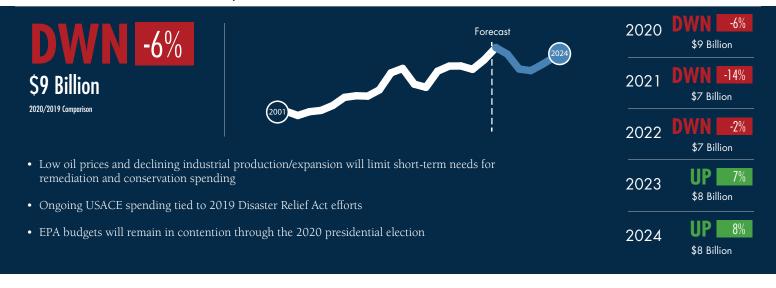
Drivers: Population, industrial production, government spending





Conservation and Development

Drivers: Population, government spending



Construction Put in Place Estimated for the United States

Millions of Current Dollars

2nd Quarter 2020 Forecast (based on Q1 2020 Actuals)

	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
RESIDENTIAL BUILDINGS										
Single-family	221,683	242,939	270,365	289,855	272,518	246,133	212,931	217,766	232,957	248,220
Multifamily	58,686	66,835	66,404	65,670	67,153	55,772	44,614	43,046	45,992	49,769
Improvements*	148,857	163,913	194,986	190,611	182,299	162,834	142,340	128,978	133,054	140,829
Total Residential Buildings	429,226	473,687	531,755	546,136	521,970	464,740	399,885	389,790	412,002	438,817
NONRESIDENTIAL BUILDINGS										
Lodging	22,012	27,077	28,660	31,496	33,560	28,404	22,008	19,301	20,318	21,957
Office	56,013	67,907	68,685	74,450	79,233	73,593	62,109	56,056	57,744	61,169
Commercial	66,977	78,696	87,626	95,420	85,361	72,348	62,508	57,787	61,386	66,468
Health Care	39,665	40,574	43,120	42,642	44,248	41,001	38,224	37,963	39,335	40,079
Educational	85,346	91,629	96,685	97,777	97,963	91,286	85,826	84,693	86,917	90,144
Religious	3,598	3,752	3,586	3,262	2,943	2,368	2,003	1,823	1,816	1,883
Public Safety	8,505	8,177	8,539	9,468	10,173	9,761	9,702	9,651	9,259	9,208
Amusement and Recreation	20,527	23,652	26,569	27,924	27,846	23,181	18,302	16,941	17,470	18,683
Transportation	45,106	43,339	46,137	51,446	54,694	52,332	47,991	46,948	49,131	51,355
Communication	21,691	22,179	23,696	24,645	23,499	23,270	24,173	25,308	26,291	27,368
Manufacturing	83,143	79,633	70,682	70,782	74,297	68,019	59,076	57,686	61,678	66,299
Total Nonresidential Buildings	452,583	486,615	503,985	529,312	533,817	485,561	431,922	414,156	431,344	454,612
NONBUILDING STRUCTURES										
Power	111,495	112,067	95,951	93,176	100,429	93,407	86,136	85,002	88,956	94,899
Highway and Street	91,701	93,187	89,620	91,124	98,793	95,625	96,992	101,655	102,460	103,737
Sewage and Waste Disposal	24,599	24,151	22,901	23,931	26,142	24,606	22,456	21,823	22,505	23,446
Water Supply	13,353	13,940	14,168	15,317	16,429	15,555	14,137	13,251	13,502	14,198
Conservation and Development	7,735	7,745	7,464	8,253	9,276	8,720	7,489	7,357	7,879	8,475
Total Nonbuilding Structures	248,883	251,090	230,104	231,801	251,069	237,914	227,210	229,087	235,302	244,755
Total Put in Place	\$1,130,692	\$1,211,392	\$1,265,844	\$1,307,249	\$1,306,856	\$1,188,215	\$1,059,018	\$1,033,034	\$1,078,649	\$1,138,185

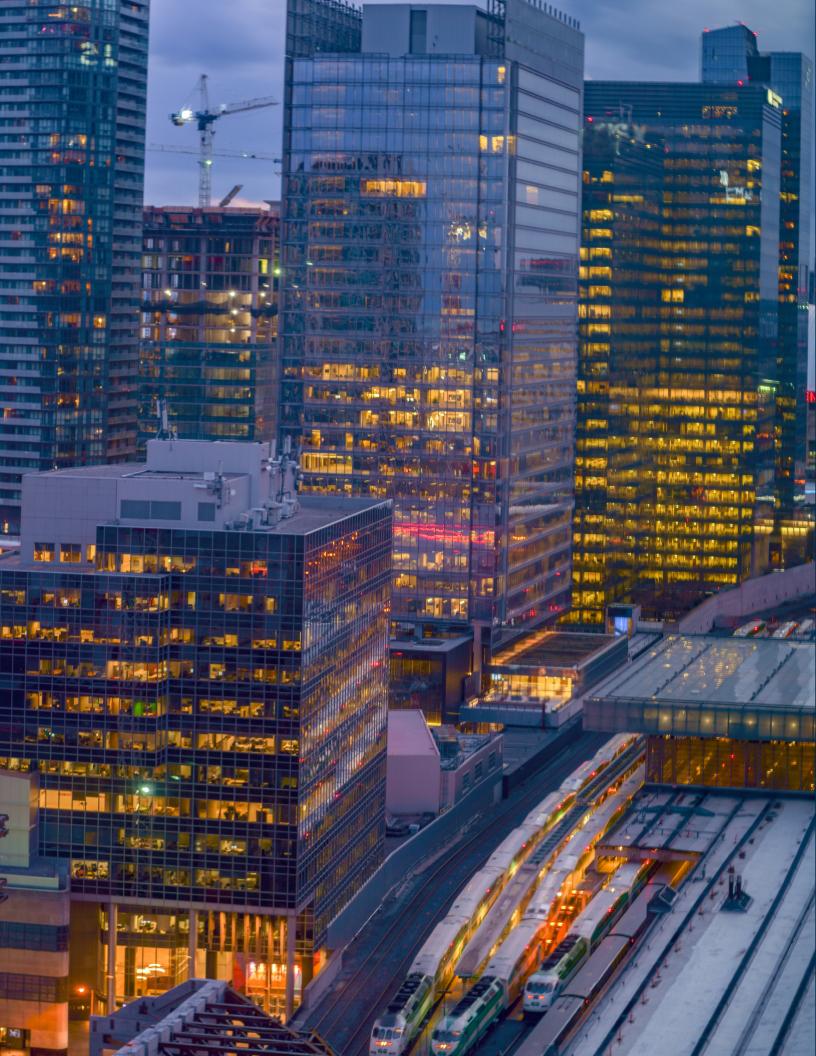
Construction Put in Place Estimated for the United States

Change From Prior Year - Current Dollar Basis

2nd Quarter 2020 Forecast (based on Q1 2020 Actuals)

	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
RESIDENTIAL BUILDINGS										
Single-family	14%	10%	11%	7%	-6%	-10%	-13%	2%	7%	7%
Multifamily	27%	14%	-1%	-1%	2%	-17%	-20%	-4%	7%	8%
Improvements*	11%	10%	19%	-2%	-4%	-11%	-13%	-9%	3%	6%
Total Residential Buildings	15%	10%	12%	3%	-4%	-11%	-14%	-3%	6%	7%
NONRESIDENTIAL BUILDINGS										
Lodging	32%	23%	6%	10%	7%	-15%	-23%	-12%	5%	8%
Office	20%	21%	1%	8%	6%	-7%	-16%	-10%	3%	6%
Commercial	7%	17%	11%	9%	-11%	-15%	-14%	-8%	6%	8%
Health Care	3%	2%	6%	-1%	4%	-7%	-7%	-1%	4%	2%
Educational	7%	7%	6%	1%	0%	-7%	-6%	-1%	3%	4%
Religious	6%	4%	-4%	-9%	-10%	-20%	-15%	-9%	0%	4%
Public Safety	-10%	-4%	4%	11%	7%	-4%	-1%	-1%	-4%	-1%
Amusement and Recreation	22%	15%	12%	5%	0%	-17%	-21%	-7%	3%	7%
Transportation	7%	-4%	6%	12%	6%	-4%	-8%	-2%	5%	5%
Communication	25%	2%	7%	4%	-5%	-1%	4%	5%	4%	4%
Manufacturing	37%	-4%	-11%	0%	5%	-8%	-13%	-2%	7%	7%
Total Nonresidential Buildings	15%	8%	4%	5%	1%	-9%	-11%	-4%	4%	5%
NONBUILDING STRUCTURES										
Power	1%	1%	-14%	-3%	8%	-7%	-8%	-1%	5%	7%
Highway and Street	8%	2%	-4%	2%	8%	-3%	1%	5%	1%	1%
Sewage and Waste Disposal	6%	-2%	-5%	4%	9%	-6%	-9%	-3%	3%	4%
Water Supply	0%	4%	2%	8%	7%	-5%	-9%	-6%	2%	5%
Conservation and Development	6%	0%	-4%	11%	12%	-6%	-14%	-2%	7%	8%
Total Nonbuilding Structures	4%	1%	-8%	1%	8%	-5%	-4%	1%	3%	4%
Total Put in Place	12%	7%	4%	3%	0%	-9%	-11%	-2%	4%	6%

^{*}Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.



FMI Canadian Engineering and Construction Outlook Second Quarter 2020 Report





Total Construction Put in Place Estimated for Canada

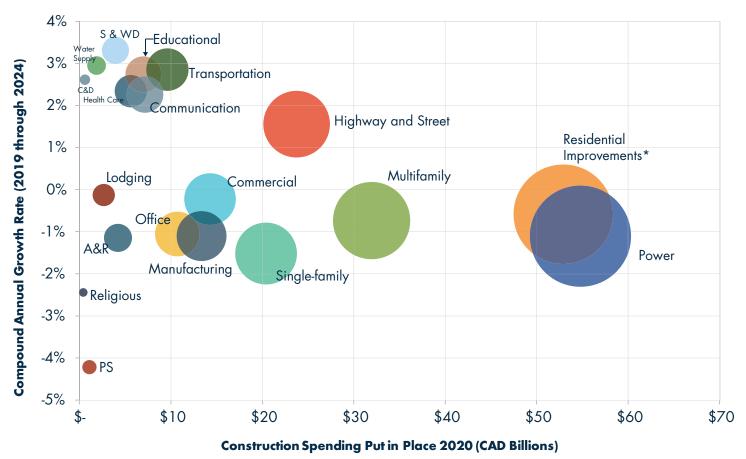




Source: Statistics Canada and FMI Forecast



Total Construction Put in Place Estimated for Canada



*Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

Source: Statistics Canada and FMI Forecast

Construction Put in Place Estimated for Canada

Millions of Current Canadian Dollars

2nd Quarter 2020 Forecast (based on Q1 2020 Actuals)

	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
RESIDENTIAL BUILDINGS										
Single-family	25,628	26,964	28,106	26,395	22,790	20,398	19,676	20,048	20,555	21,113
Multifamily	23,529	24,483	28,307	32,635	35,696	31,945	30,957	32,069	33,322	34,405
Improvements*	53,731	55,646	60,764	59,456	58,240	52,916	51,494	53,114	54,803	56,564
Total Residential Buildings	102,888	107,092	117,177	118,486	116,727	105,259	102,127	105,232	108,680	112,082
NONRESIDENTIAL BUILDINGS										
Lodging	2,728	2,766	2,633	2,646	2,877	2,648	2,555	2,660	2,763	2,859
Office	9,608	9,111	9,628	10,415	11,886	10,704	10,266	10,538	10,923	11,273
Commercial	13,926	13,381	13,568	14,117	15,552	14,272	13,827	14,399	14,864	15,379
Health Care	5,278	4,975	5,018	5,118	5,459	5,605	5,740	5,807	5,959	6,130
Educational	5,999	6,767	7,775	7,757	6,768	6,984	7,230	7,409	7,538	7,747
Religious	442	413	386	382	444	404	377	377	383	392
Public Safety	953	948	863	898	1,120	1,076	924	954	903	903
Amusement and Recreation	3,560	4,432	4,480	4,741	4,710	4,199	4,076	4,232	4,301	4,447
Transportation	6,057	7,056	7,855	9,745	9,755	9,607	10,020	10,511	10,852	11,230
Communication	5,227	5,781	6,578	6,915	7,055	7,152	7,368	7,582	7,688	7,891
Manufacturing	12,978	13,149	12,466	14,545	14,797	13,340	12,915	12,979	13,585	14,001
Total Nonresidential Buildings	66,757	68,779	71,250	77,279	80,424	75,993	75,298	77,449	79,759	82,252
NONBUILDING STRUCTURES										
Power	70,830	61,084	65,579	62,437	65,674	54,782	52,920	57,952	59,948	62,129
Highway and Street	19,044	17,725	20,039	22,266	22,827	23,737	24,843	24,371	24,242	24,661
Sewage and Waste Disposal	5,476	5,114	3,655	3,769	3,872	3,915	4,259	4,380	4,518	4,557
Water Supply	3,707	3,000	1,657	1,742	1,785	1,859	1,976	1,985	2,021	2,064
Conservation and Development	344	611	505	591	571	585	616	646	635	650
Total Nonbuilding Structures	99,401	87,534	91,435	90,805	94,729	84,878	84,614	89,334	91,364	94,061
Total Put in Place	\$269,046	\$263,405	\$279,862	\$286,570	\$291,880	\$266,130	\$262,039	\$272,015	\$279,803	\$288,395

Construction Put in Place Estimated for Canada

Millions of Current Canadian Dollars

2nd Quarter 2020 Forecast (based on Q1 2020 Actuals)

•		,								
	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
RESIDENTIAL BUILDINGS										
Single-family	1%	5%	4%	-6%	-14%	-10%	-4%	2%	3%	3%
Multifamily	2%	4%	16%	15%	9%	-11%	-3%	4%	4%	3%
Improvements*	4%	4%	9%	-2%	-2%	-9%	-3%	3%	3%	3%
Total Residential Buildings	3%	4%	9%	1%	-1%	-10%	-3%	3%	3%	3%
NONRESIDENTIAL BUILDINGS										
Lodging	17%	1%	-5%	1%	9%	-8%	-4%	4%	4%	3%
Office	-12%	-5%	6%	8%	14%	-10%	-4%	3%	4%	3%
Commercial	-4%	-4%	1%	4%	10%	-8%	-3%	4%	3%	3%
Health Care	12%	-6%	1%	2%	7%	3%	2%	1%	3%	3%
Educational	5%	13%	15%	0%	-13%	3%	4%	2%	2%	3%
Religious	11%	-7%	-7%	-1%	16%	-9%	-7%	0%	2%	2%
Public Safety	44%	-1%	-9%	4%	25%	-4%	-14%	3%	-5%	0%
Amusement and Recreation	-16%	24%	1%	6%	-1%	-11%	-3%	4%	2%	3%
Transportation	-6%	16%	11%	24%	0%	-2%	4%	5%	3%	3%
Communication	4%	11%	14%	5%	2%	1%	3%	3%	1%	3%
Manufacturing	-9%	1%	-5%	17%	2%	-10%	-3%	0%	5%	3%
Total Nonresidential Buildings	-4%	3%	4%	8%	4%	-6%	-1%	3%	3%	3%
NONBUILDING STRUCTURES										
Power	-24%	-14%	7%	-5%	5%	-17%	-3%	10%	3%	4%
Highway and Street	18%	-7%	13%	11%	3%	4%	5%	-2%	-1%	2%
Sewage and Waste Disposal	71%	-7%	-29%	3%	3%	1%	9%	3%	3%	1%
Water Supply	-32%	-19%	-45%	5%	2%	4%	6%	0%	2%	2%
Conservation and Development	157%	78%	-17%	17%	-3%	3%	5%	5%	-2%	2%
Total Nonbuilding Structures	-16%	-12%	4%	-1%	4%	-10%	0%	6%	2%	3%
Total Put in Place	-6%	-2%	6%	2%	2%	-9%	-2%	4%	3%	3%

^{*}Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

About the Authors



Jay Bowman is a principal with FMI. Jay assists a broad range of stakeholders in the construction industry, from program managers and general contractors to specialty trades and materials producers, with the identification and assessment of the risks influencing the strategic and tactical decisions they face. In this role, Jay's primary responsibilities include research design and interpretation, based on developing an understanding of the context within which these organizations operate. Jay can be reached at **jbowman@fminet.com**.



Brian Strawberry is a senior economist with FMI. Brian's expertise is in economic and statistical modeling. He leads FMI's efforts in market sizing, forecasting, and building product/ construction material pricing and consumption trends. Brian's combination of analytical skills and creative problem-solving abilities has proven valuable for many contractors, owners and private equity groups as well as industry associations and internal research initiatives. Brian can be reached at btrawberry@fminet.com.



Emily Beardall is a senior analyst for FMI's strategy practice. Emily is responsible for creating and developing tools to deliver innovative solutions for our clients. She is committed to utilizing these strategic tools to improve company performance and profitability. Emily can be reached at *ebeardall@fminet.com*.



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