



# FMI U.S. Construction Outlook

## Second Quarter 2018 Report





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### Key Takeaways

- Total engineering and construction spending for the U.S. is forecast to end up 6 percent in 2018, compared to up 4 percent in 2017.

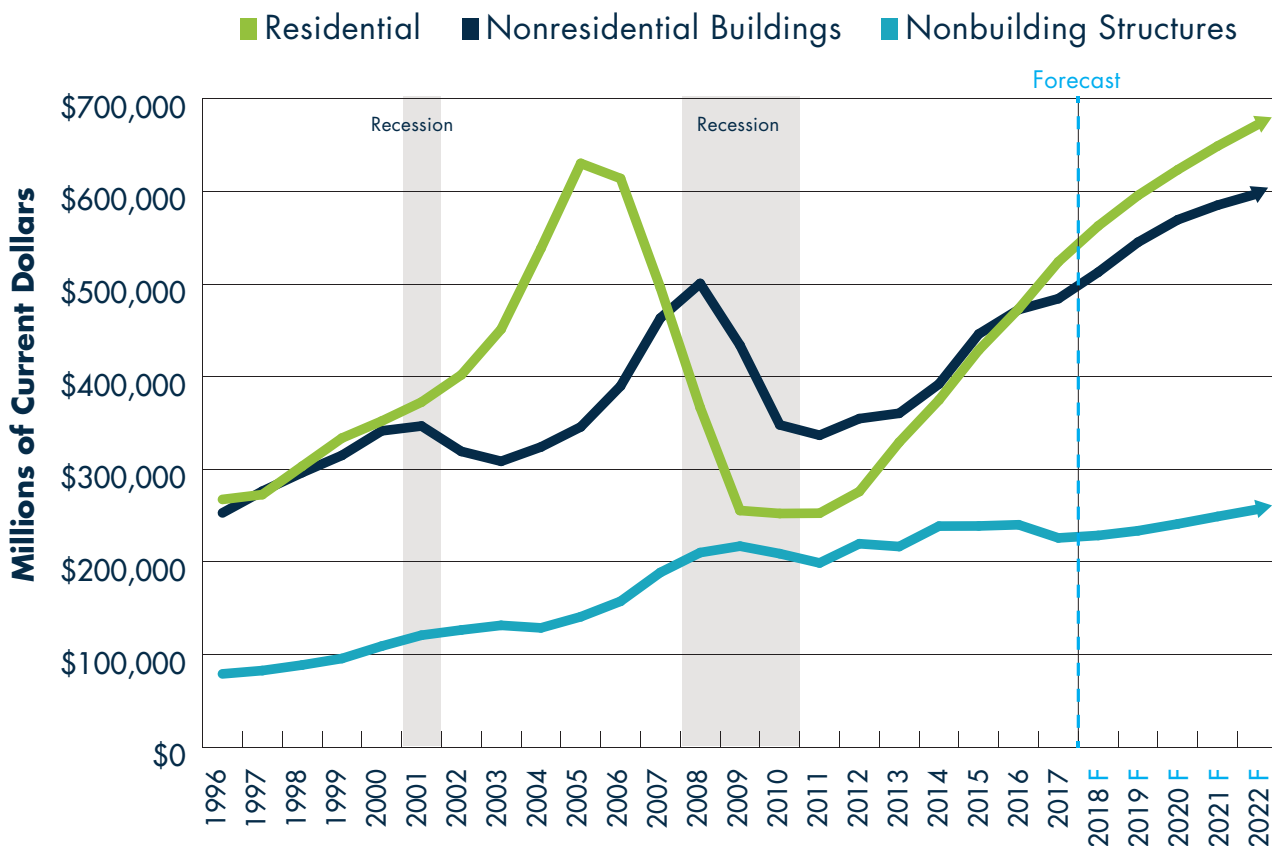


- Spending growth in 2018 is forecast to be led by select nonresidential and residential segments. Current top-three-performing segments forecast in 2018 include transportation (+10 percent), residential improvements (+9 percent) and office (+9 percent). The bottom-three-performing segments include power (-1 percent), sewage and waste disposal (+1 percent), and religious (+2 percent).
- Second quarter adjustments indicate several additional stabilizing segments. Newly stabilized segments include commercial and health care, two prior growth segments from Q1; also religious; sewage and waste disposal; and water supply construction; all three of which were previously forecast as down last quarter. Lastly, power was moved from stable to down, and conservation and development was elevated from down to growth, based on reported actuals through Q1.





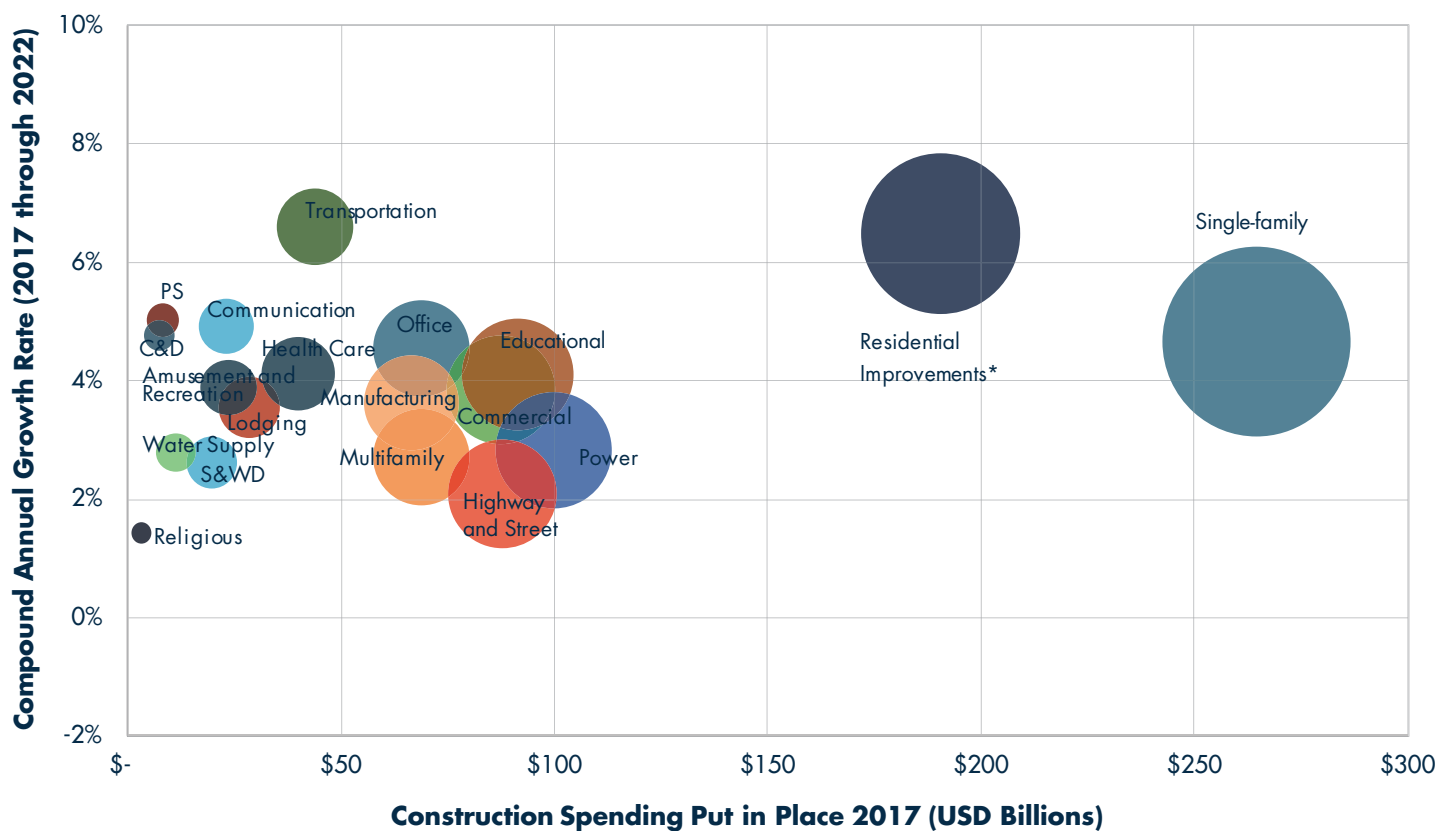
## Total Construction Put in Place Estimated for the U.S.



Source: U.S. Census and FMI Forecast



## Total Construction Spending Put in Place 2017 and Forecast Growth (2017-2022 CAGR) by Construction Segment



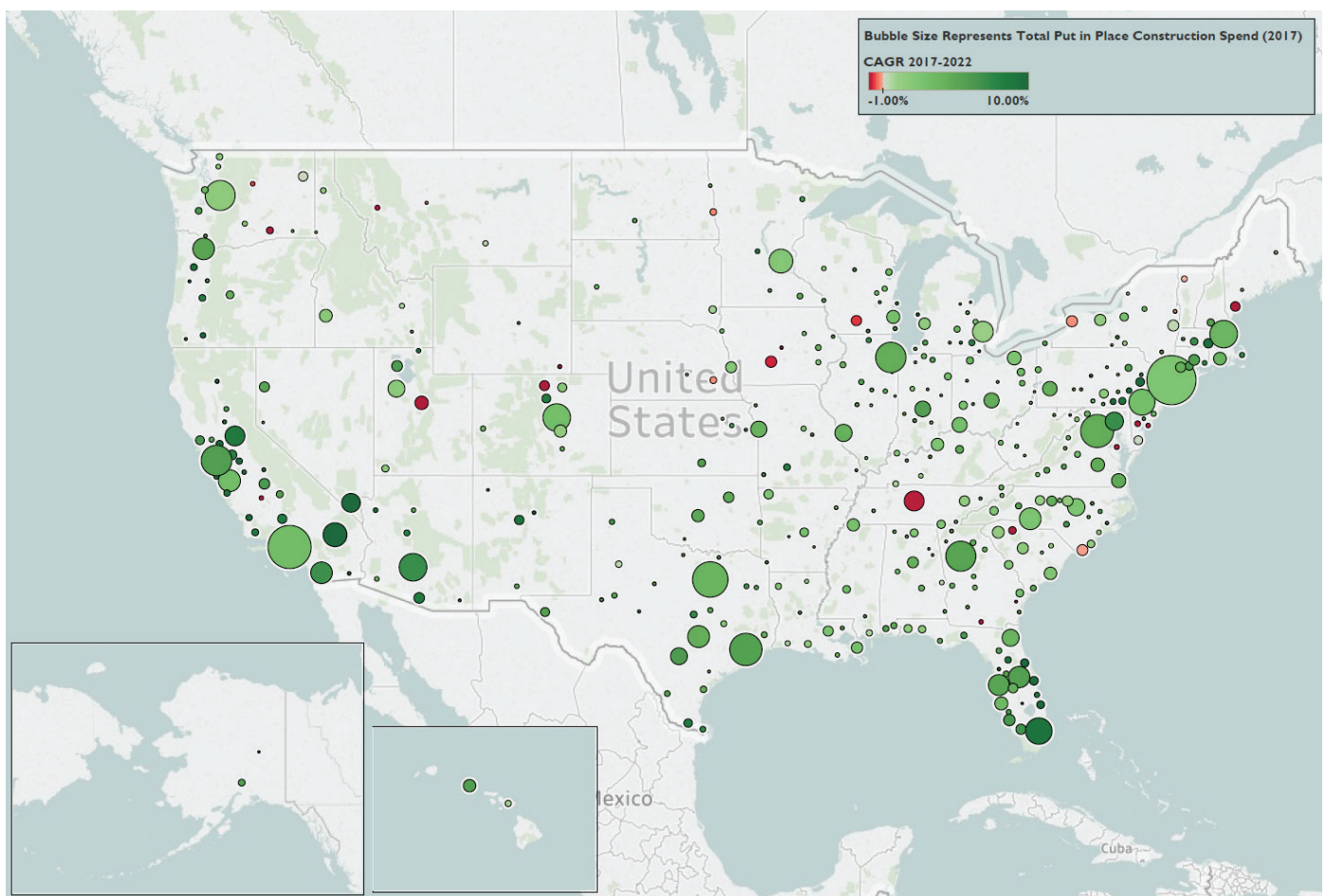
\* Residential improvements include additions, alterations and major replacements. It does not include maintenance and repairs.

Source: FMI Forecast





## Total Construction Spending Put in Place 2017 and Forecast Growth (2017-2022 CAGR) by Metropolitan Statistical Area



Source: FMI Forecast

# RESIDENTIAL CONSTRUCTION PUT IN PLACE

## Single-Family Residential

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

**UP** 7%

**\$283 Billion**

2018/2017 Comparison



- Low unemployment rates, wage improvements, inventories, tax restructure and increasing interest rates are all driving increased demand
- Buyers are showing an increasing willingness to pay, indicating a seller's market

2018	<b>UP</b> 7%	\$283 Billion
2019	<b>STA</b> 4%	\$295 Billion
2020	<b>UP</b> 5%	\$308 Billion
2021	<b>UP</b> 5%	\$324 Billion
2022	<b>STA</b> 3%	\$332 Billion

## Multifamily Residential

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

**STA** 4%

**\$72 Billion**

2018/2017 Comparison



- Vacancy rates remain low, and prices continue to rise, particularly in dense urban cores
- Rental demand is expected to increase due to the removal of residential tax incentives and rising interest rates

2018	<b>STA</b> 4%	\$72 Billion
2019	<b>STA</b> 3%	\$74 Billion
2020	<b>STA</b> 2%	\$75 Billion
2021	<b>STA</b> 1%	\$76 Billion
2022	<b>STA</b> 3%	\$79 Billion

## Improvements

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

**UP** 9%

**\$208 Billion**

2018/2017 Comparison



- Constrained (and rising) home sales are driving above-average improvements
- Demand remains strong due to rising home prices, increasing wages and low unemployment

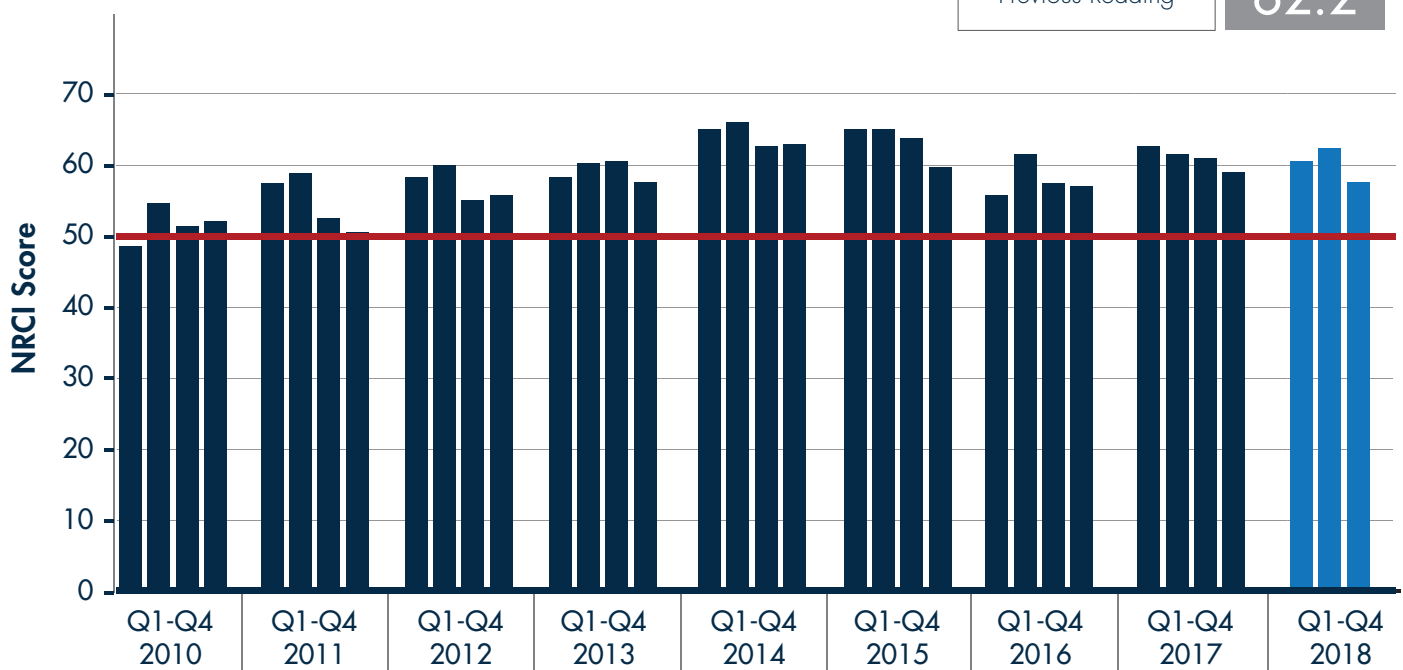
2018	<b>UP</b> 9%	\$208 Billion
2019	<b>UP</b> 9%	\$227 Billion
2020	<b>UP</b> 5%	\$240 Billion
2021	<b>STA</b> 4%	\$249 Billion
2022	<b>UP</b> 5%	\$261 Billion





## Nonresidential Construction Index (NRCI) Scores Since Inception Q1 2010 to Q3 2018 (Scores above 50 indicate expansion; scores below 50 indicate contraction)

Current NRCI Reading for Q3 2018	57.4
Previous Reading	62.2





# NONRESIDENTIAL CONSTRUCTION PUT IN PLACE

## Lodging

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

**STA** **4%**

**\$30 Billion**

2018/2017 Comparison



- Low unemployment, income growth and competitive rates are driving demand for leisure travel
- Business travel is projected to rise through 2018
- Facilities are seen increasingly investing in IT, analytics and smart building features

2018	<b>STA</b> <b>4%</b>	\$30 Billion
2019	<b>UP</b> <b>6%</b>	\$32 Billion
2020	<b>UP</b> <b>6%</b>	\$34 Billion
2021	<b>STA</b> <b>0%</b>	\$33 Billion
2022	<b>STA</b> <b>2%</b>	\$34 Billion

## Office

Drivers: Office vacancy rate, unemployment rate

**UP** **9%**

**\$75 Billion**

2018/2017 Comparison



- Corporate relocations and demand for mission-critical facilities are driving the overall trend
- Reduced tax rates will increase investment levels through 2018
- Rents are up, but speculative starts have slowed through Q1

2018	<b>UP</b> <b>9%</b>	\$75 Billion
2019	<b>UP</b> <b>8%</b>	\$81 Billion
2020	<b>STA</b> <b>4%</b>	\$84 Billion
2021	<b>STA</b> <b>2%</b>	\$86 Billion
2022	<b>STA</b> <b>0%</b>	\$86 Billion

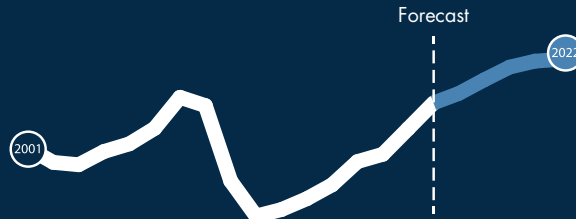
## Commercial

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

**UP** **5%**

**\$91 Billion**

2018/2017 Comparison



- Ongoing rise in e-commerce, gas prices and interest rates continues to shape commercial spending
- Increased warehouse and distribution center spending continues, driven by outdated facilities alongside new technological and logistics needs

2018	<b>UP</b> <b>5%</b>	\$91 Billion
2019	<b>UP</b> <b>6%</b>	\$97 Billion
2020	<b>UP</b> <b>5%</b>	\$102 Billion
2021	<b>STA</b> <b>2%</b>	\$105 Billion
2022	<b>STA</b> <b>1%</b>	\$106 Billion

## Health Care

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

**UP** 5%

**\$42 Billion**

2018/2017 Comparison



- Aging populations and rising rate of chronic illness continue to drive outpatient facility investment
- Repeal of the Affordable Care Act increases number of uninsured, cutting into profitability

2018	<b>UP</b> 5%
	\$42 Billion
2019	<b>STA</b> 4%
	\$44 Billion
2020	<b>STA</b> 3%
	\$45 Billion
2021	<b>STA</b> 4%
	\$47 Billion
2022	<b>UP</b> 5%
	\$49 Billion

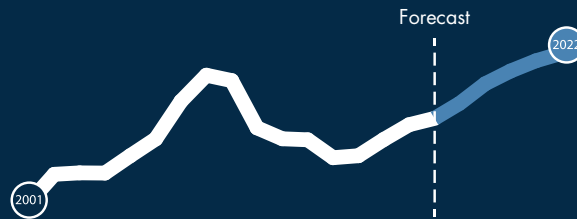
## Educational

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

**UP** 5%

**\$96 Billion**

2018/2017 Comparison



- Projected increase in the percentage of U.S. population under 18 years old
- Public school enrollments expected to rise in most states, with concentrations in the South and West
- Any upcoming federal infrastructure package is expected to include funding for schools

2018	<b>UP</b> 5%
	\$96 Billion
2019	<b>UP</b> 6%
	\$102 Billion
2020	<b>STA</b> 4%
	\$106 Billion
2021	<b>STA</b> 3%
	\$109 Billion
2022	<b>STA</b> 2%
	\$112 Billion

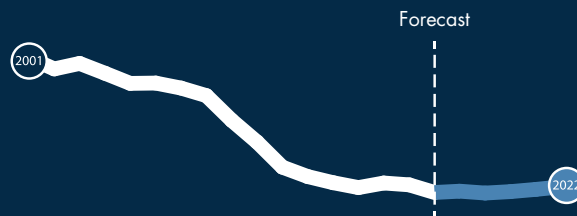
## Religious

Drivers: GDP, population, income, personal savings

**STA** 2%

**\$3 Billion**

2018/2017 Comparison



- An increase in the use of rented or shared worship space
- Declining share of Americans donating to religious organizations
- Declining religiosity among U.S. population

2018	<b>STA</b> 2%
	\$3 Billion
2019	<b>DWN</b> -2%
	\$3 Billion
2020	<b>STA</b> 2%
	\$3 Billion
2021	<b>STA</b> 3%
	\$3 Billion
2022	<b>STA</b> 3%
	\$3 Billion



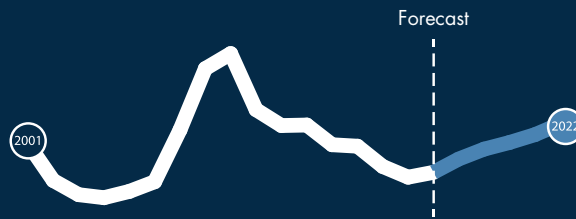
## Public Safety

Drivers: Population, government spending, incarceration rate, nonresidential structure investment

**UP** **8%**

**\$9 Billion**

2018/2017 Comparison



- Increased national defense spending driven from 2018 Consolidated Appropriations Bill
- State and local governments face fiscal constraints
- High-growth metropolitans need updated and/or new facilities (e.g., overcrowded prisons)

2018	<b>UP</b> <b>8%</b>
	\$9 Billion
2019	<b>UP</b> <b>5%</b>
	\$9 Billion
2020	<b>STA</b> <b>3%</b>
	\$10 Billion
2021	<b>STA</b> <b>4%</b>
	\$10 Billion
2022	<b>UP</b> <b>5%</b>
	\$10 Billion

## Amusement and Recreation

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

**UP** **7%**

**\$25 Billion**

2018/2017 Comparison



- Uptick in professional sports spending, including team relocations and significant golf course expansion plans
- Casino construction is a trend seen nationwide in efforts to boost state and local tax revenues

2018	<b>UP</b> <b>7%</b>
	\$25 Billion
2019	<b>UP</b> <b>5%</b>
	\$26 Billion
2020	<b>STA</b> <b>4%</b>
	\$27 Billion
2021	<b>STA</b> <b>2%</b>
	\$28 Billion
2022	<b>STA</b> <b>2%</b>
	\$29 Billion

## Transportation

Drivers: Population, government spending, transportation funding

**UP** **10%**

**\$48 Billion**

2018/2017 Comparison



- Transportation agencies are generally increasing spending alongside an increased use of alternative delivery
- Numerous large and complex projects are expected to break ground in the coming years (e.g., rail and airport)

2018	<b>UP</b> <b>10%</b>
	\$48 Billion
2019	<b>UP</b> <b>6%</b>
	\$51 Billion
2020	<b>UP</b> <b>7%</b>
	\$54 Billion
2021	<b>UP</b> <b>6%</b>
	\$58 Billion
2022	<b>UP</b> <b>5%</b>
	\$60 Billion

## Communication

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

**UP** **8%**

**\$25 Billion**

2018/2017 Comparison



- Demand for bandwidth (alongside technology innovation) increasing
- Connectivity is becoming a requirement for economic activity and growth (e.g., HQ relocations, data and distribution centers, etc.)

2018	<b>UP</b> <b>8%</b>
	\$25 Billion
2019	<b>UP</b> <b>6%</b>
	\$26 Billion
2020	<b>STA</b> <b>4%</b>
	\$27 Billion
2021	<b>STA</b> <b>3%</b>
	\$28 Billion
2022	<b>STA</b> <b>4%</b>
	\$29 Billion

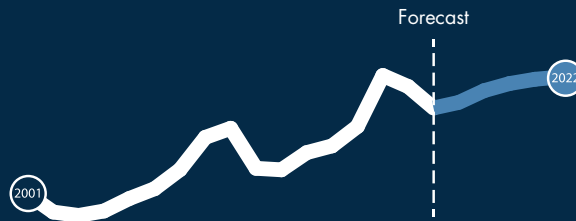
## Manufacturing

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

**STA** **3%**

**\$69 Billion**

2018/2017 Comparison



- Tax overhaul and new tariffs create several considerations for manufacturers; pros and cons vary by industry
- Manufacturing capacity utilization rates remain low, and general investment climate is improving

2018	<b>STA</b> <b>3%</b>
	\$69 Billion
2019	<b>UP</b> <b>7%</b>
	\$74 Billion
2020	<b>STA</b> <b>4%</b>
	\$77 Billion
2021	<b>STA</b> <b>2%</b>
	\$78 Billion
2022	<b>STA</b> <b>1%</b>
	\$79 Billion



# NONBUILDING STRUCTURES CONSTRUCTION PUT IN PLACE

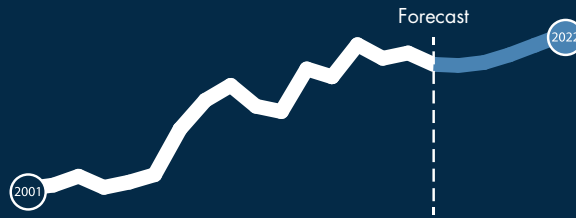
## Power

Drivers: Population, industrial production, government spending

**DWN** -1%

**\$99 Billion**

2018/2017 Comparison



- Generation spending is declining due to load demands, pressure to manage the cost of power, and a shortage of new power plant projects
- T&D spending remains stable, driven by regulatory requirements, grid hardening and powerline upgrades (e.g., distributed generation)

2018	<b>DWN</b> -1%	\$99 Billion
2019	<b>STA</b> 2%	\$101 Billion
2020	<b>STA</b> 4%	\$105 Billion
2021	<b>UP</b> 5%	\$110 Billion
2022	<b>UP</b> 5%	\$115 Billion

## Highway and Street

Drivers: Population, government spending, nonresidential structure investment

**STA** 3%

**\$90 Billion**

2018/2017 Comparison



- Federal funding is flat, but states are successfully passing increased gas taxes and user fees
- Staffing and resource limitations are a growing burden on state and local agencies
- Public-private-partnership opportunities remain limited to select markets

2018	<b>STA</b> 3%	\$90 Billion
2019	<b>STA</b> 3%	\$93 Billion
2020	<b>STA</b> 2%	\$95 Billion
2021	<b>STA</b> 2%	\$96 Billion
2022	<b>STA</b> 1%	\$97 Billion

## Sewage and Waste Disposal

Drivers: Population, industrial production, government spending

**STA** 1%

**\$20 Billion**

2018/2017 Comparison



- Limited local resources to plan, build, maintain or improve infrastructure
- Some federal relief is expected through the 2018 Consolidated Appropriations Act, 2018
- Residential construction and technology advancements will drive demand

2018	<b>STA</b> 1%	\$20 Billion
2019	<b>STA</b> 2%	\$20 Billion
2020	<b>STA</b> 3%	\$21 Billion
2021	<b>STA</b> 3%	\$22 Billion
2022	<b>STA</b> 4%	\$22 Billion

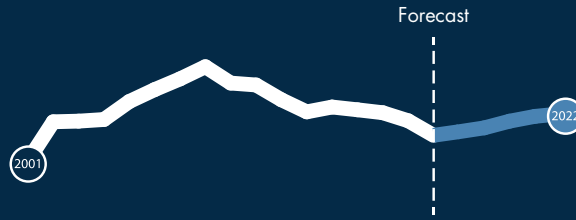
## Water Supply

Drivers: Population, industrial production, government spending

**STA** **3%**

**\$12 Billion**

2018/2017 Comparison



- Similar to sewage and waste disposal, funding sources are limited, but increased federal relief is expected
- Engineers in this space have been busy through Q1 2018, indicating construction spending may follow in upcoming quarters

2018	<b>STA</b> <b>3%</b>
	\$12 Billion
2019	<b>STA</b> <b>3%</b>
	\$12 Billion
2020	<b>STA</b> <b>4%</b>
	\$12 Billion
2021	<b>STA</b> <b>3%</b>
	\$13 Billion
2022	<b>STA</b> <b>2%</b>
	\$13 Billion

## Conservation and Development

Drivers: Population, government spending

**UP** **6%**

**\$8 Billion**

2018/2017 Comparison



- Increased federal spending is expected, driven from the Consolidated Appropriations Act, 2018
- Hurricane cleanup efforts in Texas and Florida are ongoing

2018	<b>UP</b> <b>6%</b>
	\$8 Billion
2019	<b>STA</b> <b>4%</b>
	\$8 Billion
2020	<b>STA</b> <b>4%</b>
	\$8 Billion
2021	<b>UP</b> <b>5%</b>
	\$9 Billion
2022	<b>UP</b> <b>5%</b>
	\$9 Billion



## Construction Put in Place Estimated for the United States

Millions of Current Dollars

2nd Quarter 2018 Forecast (based on 1st Quarter 2018 Actuals)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>RESIDENTIAL BUILDINGS</b>										
Single-family	171,837	194,091	221,680	242,905	264,643	282,747	294,797	308,338	324,038	332,330
Multifamily	35,169	46,250	58,228	66,368	68,792	71,833	73,742	75,490	76,189	78,664
Improvements*	122,210	134,519	148,854	163,889	190,541	208,090	227,084	239,516	248,670	260,951
<b>Total Residential Buildings</b>	<b>329,217</b>	<b>374,860</b>	<b>428,762</b>	<b>473,161</b>	<b>523,976</b>	<b>562,671</b>	<b>595,623</b>	<b>623,344</b>	<b>648,897</b>	<b>671,945</b>
<b>NONRESIDENTIAL BUILDINGS</b>										
Lodging	13,484	16,738	21,908	26,923	28,504	29,743	31,578	33,575	33,421	33,933
Office	37,979	46,582	55,521	67,262	68,786	74,857	81,013	83,870	85,561	85,937
Commercial	53,159	62,841	65,899	76,578	87,319	91,295	96,965	102,279	104,768	105,535
Health Care	40,689	38,647	39,147	38,703	40,080	41,951	43,604	44,937	46,647	49,031
Education	79,060	79,681	84,771	89,391	91,369	96,116	102,211	106,200	109,402	111,739
Religious	3,590	3,386	3,577	3,501	3,182	3,236	3,158	3,218	3,311	3,417
Public Safety	9,506	9,437	8,484	7,982	8,210	8,838	9,301	9,612	9,978	10,487
Amusement and Recreation	15,207	16,773	20,258	22,455	23,564	25,109	26,324	27,408	27,851	28,520
Transportation	39,459	42,043	44,843	42,205	43,769	48,042	51,027	54,416	57,658	60,275
Communication	17,783	17,298	21,696	22,038	23,022	24,851	26,301	27,291	28,161	29,281
Manufacturing	50,548	58,648	79,930	75,328	66,374	68,689	73,607	76,571	78,350	79,307
<b>Total Nonresidential Buildings</b>	<b>360,464</b>	<b>392,074</b>	<b>446,034</b>	<b>472,366</b>	<b>484,179</b>	<b>512,727</b>	<b>545,089</b>	<b>569,377</b>	<b>585,108</b>	<b>597,463</b>
<b>NONBUILDING STRUCTURES</b>										
Power	93,317	110,089	102,972	105,755	99,815	99,223	100,787	104,796	109,815	114,790
Highway and Street	81,364	84,743	90,626	91,390	87,787	90,124	92,583	94,518	96,206	97,379
Sewage and Waste Disposal	22,425	23,173	24,380	22,771	19,712	19,892	20,364	20,995	21,563	22,439
Water Supply	13,597	13,380	13,150	12,522	11,383	11,663	11,965	12,489	12,866	13,063
Conservation and Development	5,967	7,310	7,726	7,719	7,236	7,703	7,979	8,280	8,662	9,132
<b>Total Nonbuilding Structures</b>	<b>216,670</b>	<b>238,695</b>	<b>238,854</b>	<b>240,157</b>	<b>225,933</b>	<b>228,605</b>	<b>233,678</b>	<b>241,078</b>	<b>249,111</b>	<b>256,804</b>
<b>Total Put in Place</b>	<b>\$906,351</b>	<b>\$1,005,629</b>	<b>\$1,113,650</b>	<b>\$1,185,684</b>	<b>\$1,234,088</b>	<b>\$1,304,002</b>	<b>\$1,374,390</b>	<b>\$1,433,799</b>	<b>\$1,483,115</b>	<b>\$1,526,212</b>

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

## Construction Put in Place Estimated for the United States

Change From Prior Year - Current Dollar Basis

2nd Quarter 2018 Forecast (based on 1st Quarter 2018 Actuals)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>RESIDENTIAL BUILDINGS</b>										
Single-family	29%	13%	14%	10%	9%	7%	4%	5%	5%	3%
Multifamily	37%	32%	26%	14%	4%	4%	3%	2%	1%	3%
Improvements*	5%	10%	11%	10%	16%	9%	9%	5%	4%	5%
<b>Total Residential Buildings</b>	<b>19%</b>	<b>14%</b>	<b>14%</b>	<b>10%</b>	<b>11%</b>	<b>7%</b>	<b>6%</b>	<b>5%</b>	<b>4%</b>	<b>4%</b>
<b>NONRESIDENTIAL BUILDINGS</b>										
Lodging	24%	24%	31%	23%	6%	4%	6%	6%	0%	2%
Office	0%	23%	19%	21%	2%	9%	8%	4%	2%	0%
Commercial	12%	18%	5%	16%	14%	5%	6%	5%	2%	1%
Health Care	-4%	-5%	1%	-1%	4%	5%	4%	3%	4%	5%
Education	-7%	1%	6%	5%	2%	5%	6%	4%	3%	2%
Religious	-7%	-6%	6%	-2%	-9%	2%	-2%	2%	3%	3%
Public Safety	-9%	-1%	-10%	-6%	3%	8%	5%	3%	4%	5%
Amusement and Recreation	-2%	10%	21%	11%	5%	7%	5%	4%	2%	2%
Transportation	4%	7%	7%	-6%	4%	10%	6%	7%	6%	5%
Communication	10%	-3%	25%	2%	4%	8%	6%	4%	3%	4%
Manufacturing	6%	16%	36%	-6%	-12%	3%	7%	4%	2%	1%
<b>Total Nonresidential Buildings</b>	<b>2%</b>	<b>9%</b>	<b>14%</b>	<b>6%</b>	<b>3%</b>	<b>6%</b>	<b>6%</b>	<b>4%</b>	<b>3%</b>	<b>2%</b>
<b>NONBUILDING STRUCTURES</b>										
Power	-4%	18%	-6%	3%	-6%	-1%	2%	4%	5%	5%
Highway and Street	1%	4%	7%	1%	-4%	3%	3%	2%	2%	1%
Sewage and Waste Disposal	1%	3%	5%	-7%	-13%	1%	2%	3%	3%	4%
Water Supply	3%	-2%	-2%	-5%	-9%	2%	3%	4%	3%	2%
Conservation and Development	-4%	23%	6%	0%	-6%	6%	4%	4%	5%	5%
<b>Total Nonbuilding Structures</b>	<b>-1%</b>	<b>10%</b>	<b>0%</b>	<b>1%</b>	<b>-6%</b>	<b>1%</b>	<b>2%</b>	<b>3%</b>	<b>3%</b>	<b>3%</b>
<b>Total Put in Place</b>	<b>7%</b>	<b>11%</b>	<b>11%</b>	<b>6%</b>	<b>4%</b>	<b>6%</b>	<b>5%</b>	<b>4%</b>	<b>3%</b>	<b>3%</b>

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

## About the Authors

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**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](mailto:jbowman@fminet.com).



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