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# FMI U.S. Construction Outlook

## Third Quarter 2018 Report



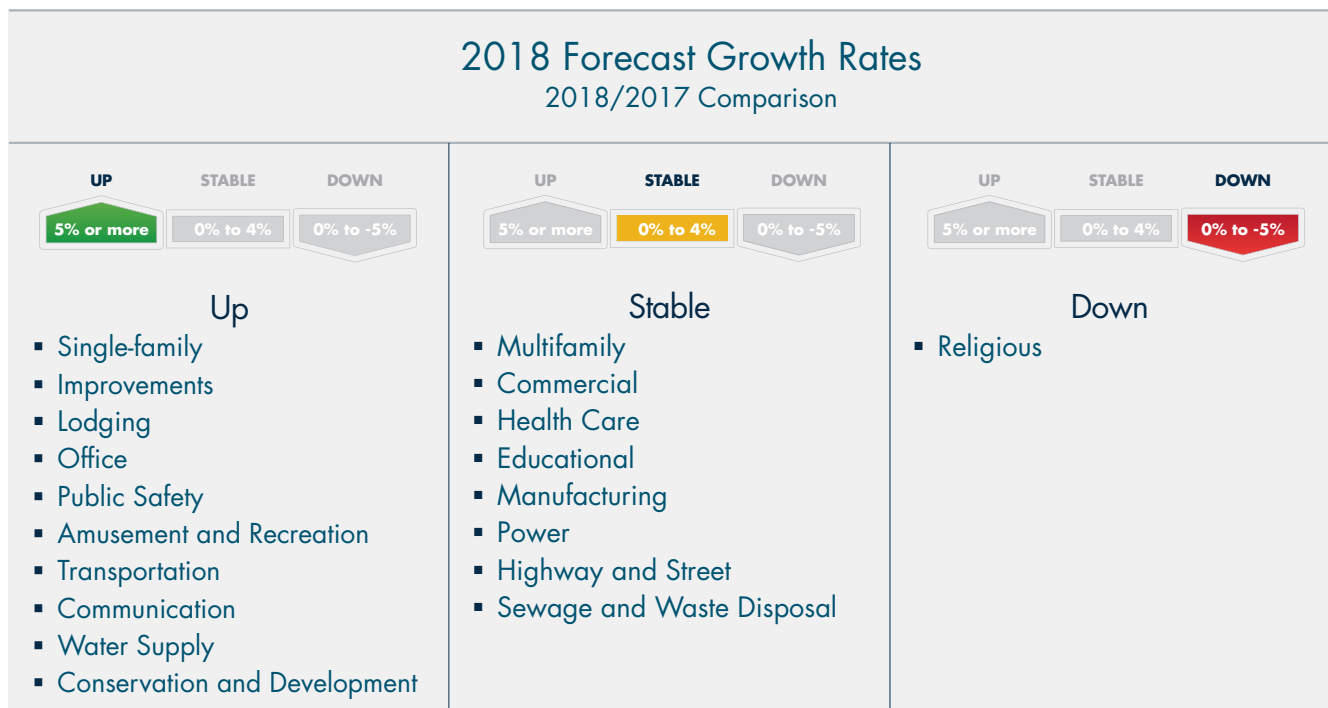


# FMI U.S. Construction Outlook

## Third Quarter 2018 Report

### Key Takeaways

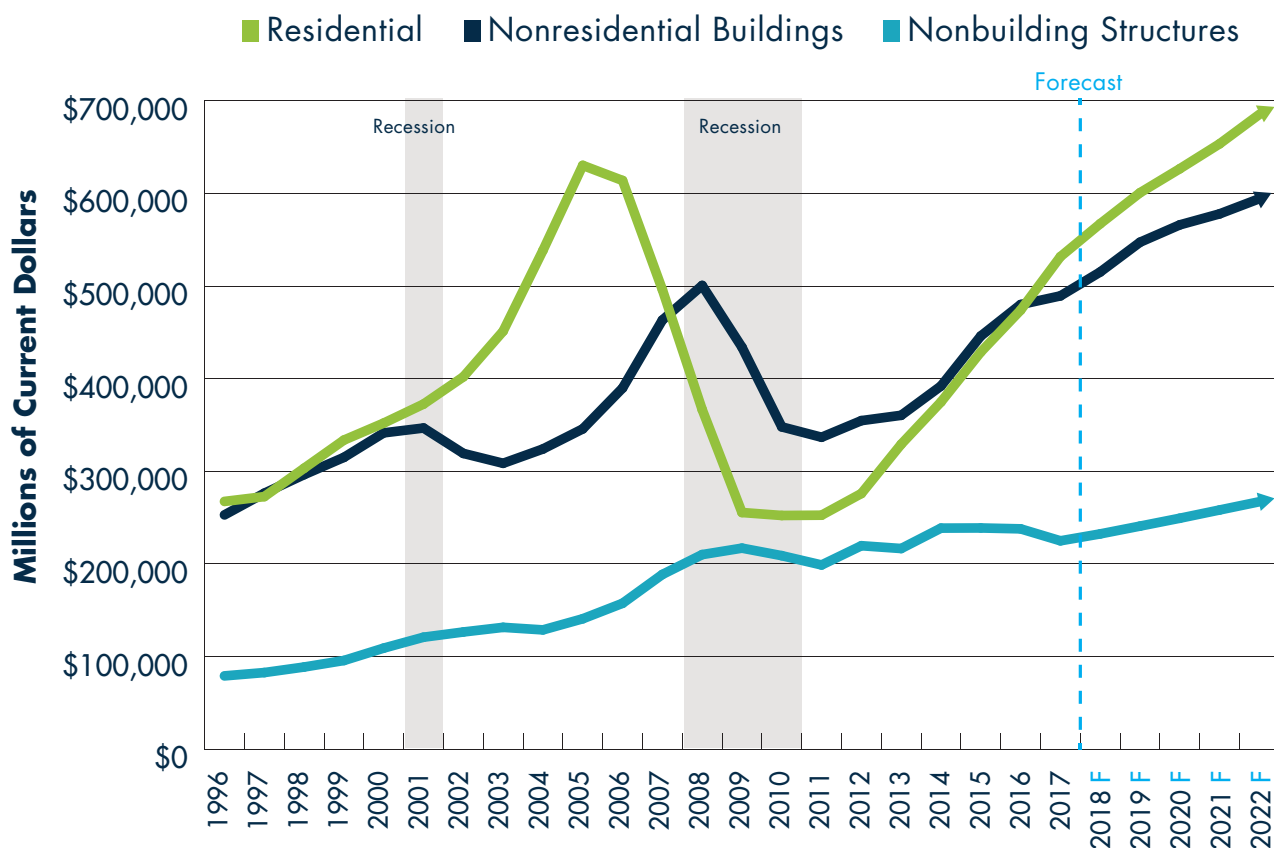
- Total engineering and construction spending for the U.S. is forecast to end up 6 percent in 2018, compared to up 5 percent in 2017.



- Spending growth in 2018 is forecast to be led by select nonresidential and residential segments. Current top-three-performing segments forecast through year-end 2018 include transportation (+13 percent), public safety (+10 percent) and conservation and development (+10 percent). The bottom-three-performing segments include religious (-4 percent), power (+2 percent) and manufacturing (+2 percent).
- Several segments appear to be strengthening into the third quarter of 2018. These include lodging and water supply, both of which have outperformed expectations and are now considered growth segments through 2018. Additionally, power spending has increased in recent months, and the segment has been promoted from a down segment into our stable territory at 2 percent growth through 2018.
- Two segments that were downgraded this quarter are educational and religious. Educational spending has been shifted downward to stable at only 3 percent growth. Religious spending has been downgraded from a stable segment to down, with an expected 4 percent decline through the year-end.



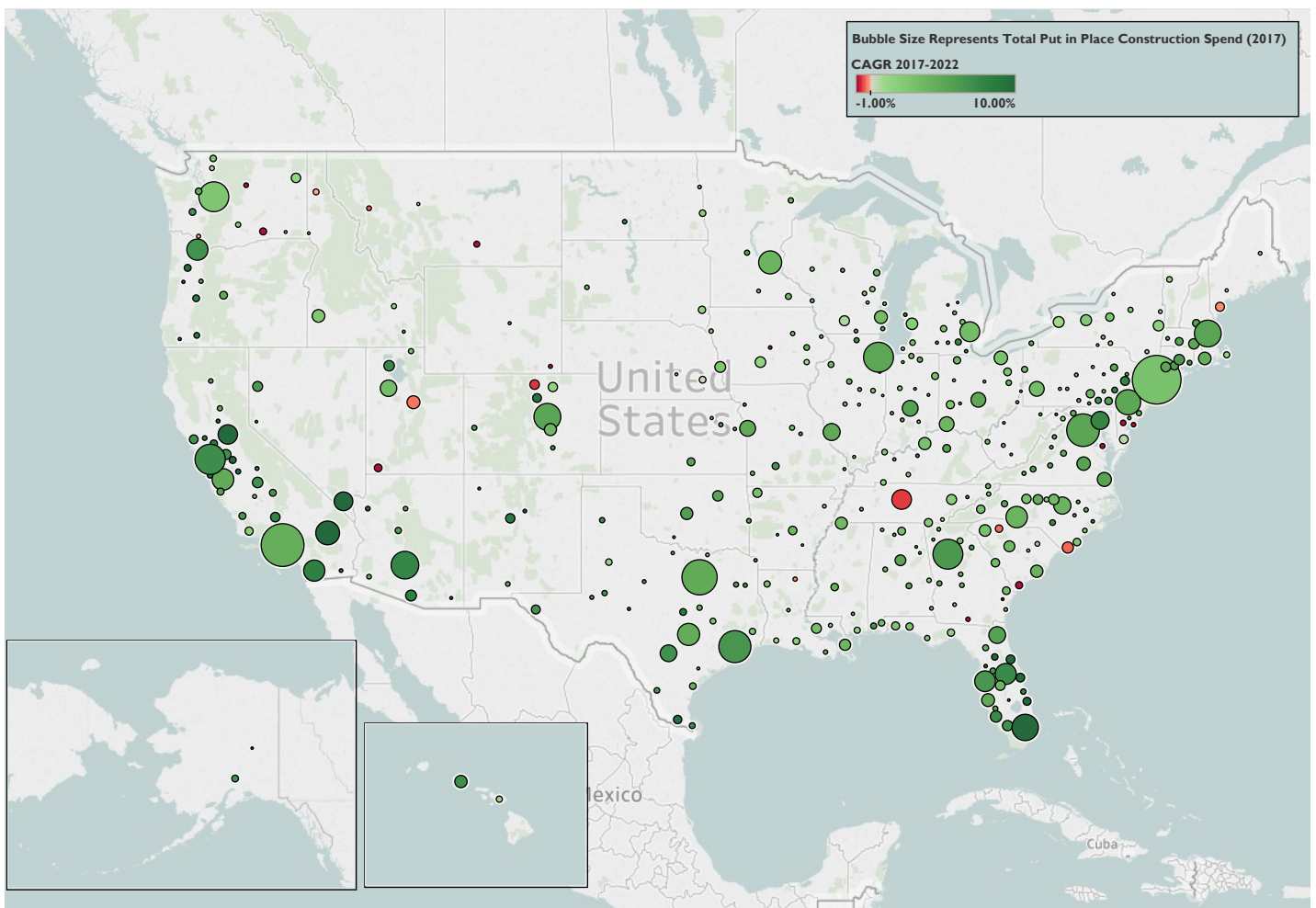
## Total Construction Put in Place Estimated for the U.S.



Source: U.S. Census and FMI Forecast



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

**\$289 Billion**

2018/2017 Comparison



- Low unemployment rates, wage improvements, inventories, tax restructure and increasing interest rates are all driving short-term demand
- Buyers are showing an increasing willingness to pay, indicating a seller's market
- Rising interest rates are expected to limit mid- and long-term forecast growth rates

2018	<b>UP</b> <b>7%</b>	\$289 Billion
2019	<b>UP</b> <b>5%</b>	\$304 Billion
2020	<b>STA</b> <b>4%</b>	\$317 Billion
2021	<b>UP</b> <b>5%</b>	\$333 Billion
2022	<b>UP</b> <b>5%</b>	\$349 Billion

## Multifamily Residential

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

**STA** **3%**

**\$68 Billion**

2018/2017 Comparison



- Vacancy rates remain low, and prices continue to rise, particularly in dense urban cores
- Rental demand continues to increase and prices continue to rise
- Rental vacancy rates appear to be stabilizing

2018	<b>STA</b> <b>3%</b>	\$68 Billion
2019	<b>STA</b> <b>3%</b>	\$70 Billion
2020	<b>STA</b> <b>2%</b>	\$71 Billion
2021	<b>STA</b> <b>2%</b>	\$73 Billion
2022	<b>STA</b> <b>3%</b>	\$75 Billion

## Improvements

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

**UP** **8%**

**\$210 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> <b>8%</b>	\$210 Billion
2019	<b>UP</b> <b>8%</b>	\$226 Billion
2020	<b>UP</b> <b>5%</b>	\$238 Billion
2021	<b>STA</b> <b>4%</b>	\$248 Billion
2022	<b>UP</b> <b>5%</b>	\$261 Billion



## Nonresidential Construction Index (NRCI) Scores Since Inception Q1 2010 to Q4 2018

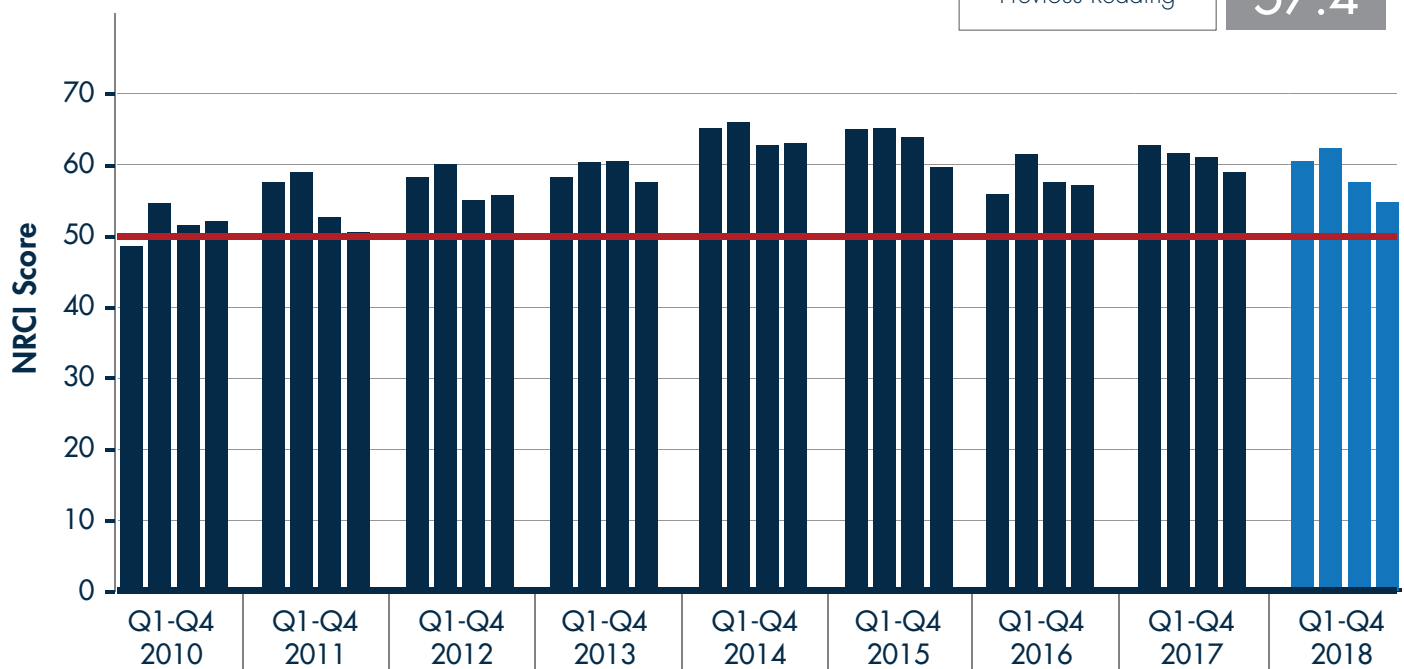
(Scores above 50 indicate expansion; scores below 50 indicate contraction)

Current NRCI Reading  
for Q4 2018

**54.6**

Previous Reading

**57.4**



# NONRESIDENTIAL CONSTRUCTION PUT IN PLACE

## Lodging

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

**UP** **8%**

**\$31 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, but a looming trade war could decrease demand for international travel
- Private equity firms are becoming increasingly prevalent across the industry
- Facility owners are seen investing in IT, analytics and smart building features

2018	<b>UP</b> <b>8%</b>
	\$31 Billion
2019	<b>UP</b> <b>6%</b>
	\$33 Billion
2020	<b>STA</b> <b>2%</b>
	\$33 Billion
2021	<b>STA</b> <b>0%</b>
	\$33 Billion
2022	<b>STA</b> <b>3%</b>
	\$34 Billion

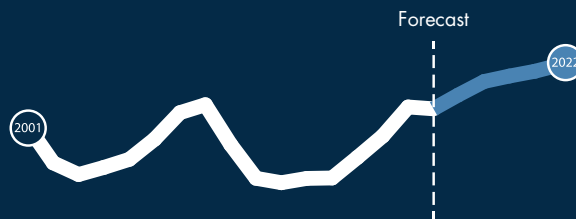
## Office

Drivers: Office vacancy rate, unemployment rate

**UP** **9%**

**\$73 Billion**

2018/2017 Comparison



- Net absorption remains positive, and low vacancy rates in major metropolitan areas (e.g., New York City and San Francisco) will continue to bolster demand
- Corporate relocations and demand for mission-critical facilities are driving the overall trend
- New deliveries are expected to remain elevated through the next 12 months, into 2019

2018	<b>UP</b> <b>9%</b>
	\$73 Billion
2019	<b>UP</b> <b>8%</b>
	\$78 Billion
2020	<b>STA</b> <b>3%</b>
	\$81 Billion
2021	<b>STA</b> <b>2%</b>
	\$83 Billion
2022	<b>STA</b> <b>3%</b>
	\$85 Billion

## Commercial

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

**STA** **4%**

**\$91 Billion**

2018/2017 Comparison



- Overall vacancy has increased with over 2,500 closures through 2018 by Sears, Bon-Ton, Toys "R" Us and others
- 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>STA</b> <b>4%</b>
	\$91 Billion
2019	<b>UP</b> <b>6%</b>
	\$97 Billion
2020	<b>STA</b> <b>4%</b>
	\$100 Billion
2021	<b>STA</b> <b>1%</b>
	\$101 Billion
2022	<b>STA</b> <b>2%</b>
	\$103 Billion

## Health Care

Drivers: Population change, population change in ages 75 and up, uninsured population, government spending, nonresidential structure investment

**STA** **2%**

**\$43 Billion**

2018/2017 Comparison



- Aging populations and rising rate of chronic illness continue to drive outpatient facility investments
- Increased use of green building techniques is driving demand for workers with appropriate skills/experience

2018	<b>STA</b> <b>2%</b>	\$43 Billion
2019	<b>STA</b> <b>4%</b>	\$45 Billion
2020	<b>STA</b> <b>3%</b>	\$46 Billion
2021	<b>STA</b> <b>3%</b>	\$47 Billion
2022	<b>STA</b> <b>4%</b>	\$49 Billion

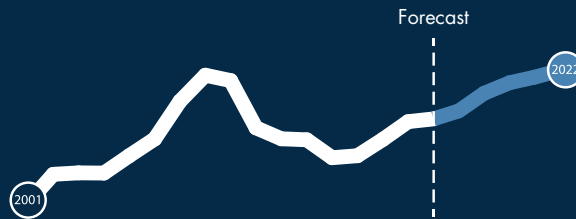
## Educational

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

**STA** **3%**

**\$94 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
- College and university budgets have struggled to keep up with the rate of inflation
- Any upcoming federal infrastructure package is expected to include funding for schools

2018	<b>STA</b> <b>3%</b>	\$94 Billion
2019	<b>UP</b> <b>6%</b>	\$99 Billion
2020	<b>STA</b> <b>3%</b>	\$103 Billion
2021	<b>STA</b> <b>2%</b>	\$104 Billion
2022	<b>STA</b> <b>2%</b>	\$106 Billion

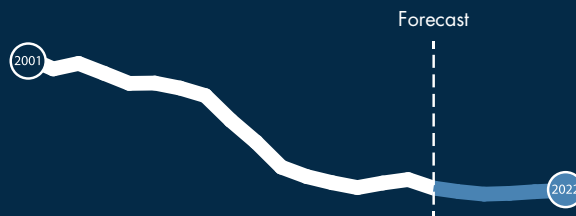
## Religious

Drivers: GDP, population, income, personal savings

**DWN** **4%**

**\$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

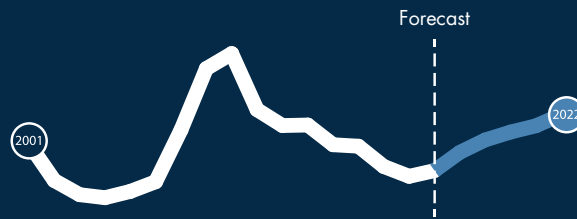
2018	<b>DWN</b> <b>4%</b>	\$3 Billion
2019	<b>DWN</b> <b>3%</b>	\$3 Billion
2020	<b>STA</b> <b>1%</b>	\$3 Billion
2021	<b>STA</b> <b>2%</b>	\$3 Billion
2022	<b>STA</b> <b>2%</b>	\$3 Billion

## Public Safety

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

**UP** **10%****\$9 Billion**

2018/2017 Comparison



- Increased defense spending driven from 2018 Consolidated Appropriations Bill and the National Defense Authorization Act
- 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>10%</b>
	\$9 Billion
2019	<b>UP</b> <b>6%</b>
	\$10 Billion
2020	<b>STA</b> <b>4%</b>
	\$10 Billion
2021	<b>STA</b> <b>3%</b>
	\$10 Billion
2022	<b>UP</b> <b>5%</b>
	\$11 Billion

## Amusement and Recreation

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

**UP** **5%****\$26 Billion**

2018/2017 Comparison



- Uptick in sports spending resulting from team relocations, a wave of soccer stadiums and significant golf course expansions
- Casino construction is a trend seen nationwide in efforts to boost state and local tax revenues

2018	<b>UP</b> <b>5%</b>
	\$26 Billion
2019	<b>UP</b> <b>7%</b>
	\$28 Billion
2020	<b>STA</b> <b>3%</b>
	\$29 Billion
2021	<b>STA</b> <b>1%</b>
	\$29 Billion
2022	<b>STA</b> <b>3%</b>
	\$30 Billion

## Transportation

Drivers: Population, government spending, transportation funding

**UP** **13%****\$51 Billion**

2018/2017 Comparison



- Urbanization is influencing increased demand for connectivity
- Agencies are increasing spending alongside an increased use of alternative delivery
- Owners are more often bundling projects as construction costs steadily rise

2018	<b>UP</b> <b>13%</b>
	\$51 Billion
2019	<b>UP</b> <b>8%</b>
	\$55 Billion
2020	<b>UP</b> <b>9%</b>
	\$60 Billion
2021	<b>UP</b> <b>6%</b>
	\$64 Billion
2022	<b>UP</b> <b>5%</b>
	\$67 Billion

## Communication

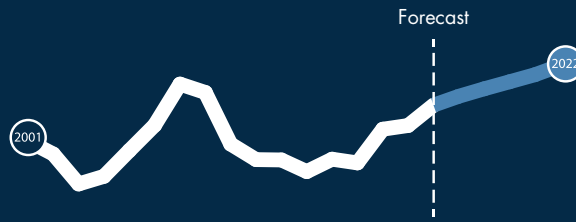
Drivers: Population, security/regulation standards, private investment, innovation/technology investment

**UP** **5%**

**\$26 Billion**

2018/2017 Comparison

- Bandwidth needs remain high, as providers work to bring new capacity online in efforts to keep up with public demand
- Connectivity is becoming a requirement for economic activity and growth (e.g., HQ relocations, data and distribution centers, etc.)



2018	<b>UP</b> <b>5%</b>
	\$26 Billion
2019	<b>STA</b> <b>4%</b>
	\$27 Billion
2020	<b>STA</b> <b>3%</b>
	\$28 Billion
2021	<b>STA</b> <b>3%</b>
	\$29 Billion
2022	<b>STA</b> <b>4%</b>
	\$30 Billion

## Manufacturing

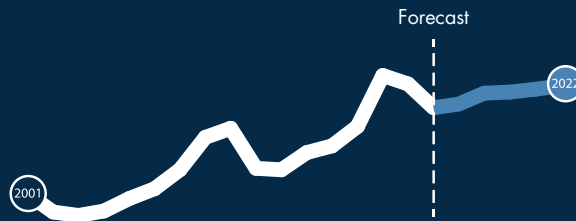
Drivers: PMI, industrial production, capacity utilization, durable goods orders, manufacturing inventories

**STA** **2%**

**\$68 Billion**

2018/2017 Comparison

- Tax overhaul and new tariffs create several considerations for manufacturers; pros and cons vary by industry
- Continued low-capacity utilization and vacancy rates, coupled with increasing demand, suggest improving investment conditions



2018	<b>STA</b> <b>2%</b>
	\$68 Billion
2019	<b>UP</b> <b>7%</b>
	\$73 Billion
2020	<b>STA</b> <b>1%</b>
	\$73 Billion
2021	<b>STA</b> <b>2%</b>
	\$74 Billion
2022	<b>STA</b> <b>2%</b>
	\$76 Billion

# NONBUILDING STRUCTURES CONSTRUCTION PUT IN PLACE

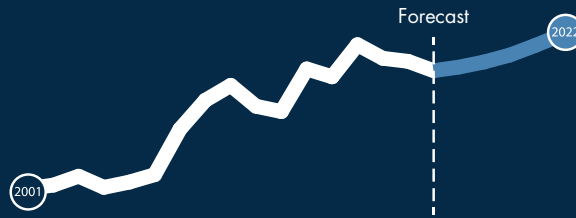
## Power

Drivers: Population, industrial production, government spending

**STA** **2%**

**\$98 Billion**

2018/2017 Comparison



- Continued shift from coal to natural gas and renewable fuel sources will alter future project mix, including plant decommissioning
- T&D spending remains stable, driven by regulatory requirements, grid hardening and powerline upgrades (e.g., distributed generation)

2018	<b>STA</b> <b>2%</b>	\$98 Billion
2019	<b>STA</b> <b>3%</b>	\$101 Billion
2020	<b>STA</b> <b>4%</b>	\$105 Billion
2021	<b>UP</b> <b>5%</b>	\$110 Billion
2022	<b>UP</b> <b>5%</b>	\$115 Billion

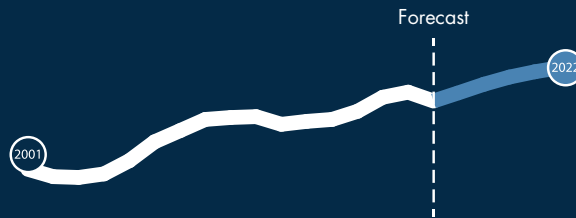
## Highway and Street

Drivers: Population, government spending, nonresidential structure investment

**STA** **4%**

**\$93 Billion**

2018/2017 Comparison



- Federal funding is flat, but states are successfully passing increased gas taxes and user fees
- State and local agencies are working to develop in-house expertise in alternative delivery, and projects are increasingly using design-build
- Public-private-partnership opportunities remain limited to select markets, fragmented by inconsistent legislation and oversight

2018	<b>STA</b> <b>4%</b>	\$93 Billion
2019	<b>STA</b> <b>4%</b>	\$96 Billion
2020	<b>STA</b> <b>3%</b>	\$99 Billion
2021	<b>STA</b> <b>2%</b>	\$101 Billion
2022	<b>STA</b> <b>2%</b>	\$103 Billion

## Sewage and Waste Disposal

Drivers: Population, industrial production, government spending

**STA** **3%**

**\$21 Billion**

2018/2017 Comparison



- Some federal relief is seen through the 2018 Consolidated Appropriations Bill
- Residential construction and technology advancements will drive demand, but local resources remain a long-term limitation

2018	<b>STA</b> <b>3%</b>	\$21 Billion
2019	<b>STA</b> <b>4%</b>	\$22 Billion
2020	<b>UP</b> <b>5%</b>	\$23 Billion
2021	<b>STA</b> <b>3%</b>	\$24 Billion
2022	<b>STA</b> <b>4%</b>	\$25 Billion

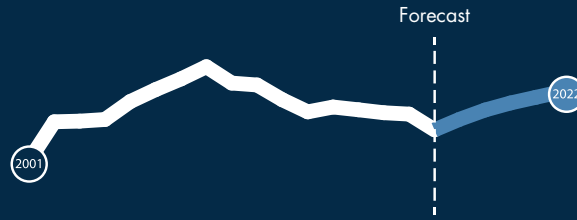
## Water Supply

Drivers: Population, industrial production, government spending

**UP** **7%**

**\$13 Billion**

2018/2017 Comparison



- Similar to sewage and waste disposal, local funding sources are limited, but continued federal relief is expected
- Engineers in this space have been busy through the first half of 2018

2018	<b>UP</b> <b>7%</b>
	\$13 Billion
2019	<b>UP</b> <b>6%</b>
	\$13 Billion
2020	<b>STA</b> <b>4%</b>
	\$14 Billion
2021	<b>STA</b> <b>3%</b>
	\$14 Billion
2022	<b>STA</b> <b>3%</b>
	\$15 Billion

## Conservation and Development

Drivers: Population, government spending

**UP** **10%**

**\$8 Billion**

2018/2017 Comparison



- Increased USACE spending driven from 2018 Consolidated Appropriations Bill
- Hurricane cleanup efforts are getting underway in the Carolinas and are still ongoing in Texas and Florida
- Recent EPA budget cuts are expected to limit future growth through 2019 and 2020

2018	<b>UP</b> <b>10%</b>
	\$8 Billion
2019	<b>UP</b> <b>7%</b>
	\$8 Billion
2020	<b>STA</b> <b>4%</b>
	\$9 Billion
2021	<b>UP</b> <b>6%</b>
	\$9 Billion
2022	<b>UP</b> <b>5%</b>
	\$10 Billion

## Construction Put in Place Estimated for the United States

Millions of Current Dollars

3rd Quarter 2018 Forecast (based on 2nd 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	242,938	270,338	288,993	304,201	316,970	332,669	348,835
Multifamily	35,169	46,250	58,228	67,084	66,354	68,119	70,121	71,310	72,577	75,044
Improvements*	122,210	134,519	148,854	163,911	194,965	210,105	226,350	238,302	248,256	261,407
<b>Total Residential Buildings</b>	<b>329,217</b>	<b>374,860</b>	<b>428,762</b>	<b>473,933</b>	<b>531,657</b>	<b>567,218</b>	<b>600,673</b>	<b>626,583</b>	<b>653,502</b>	<b>685,286</b>
<b>NONRESIDENTIAL BUILDINGS</b>										
Lodging	13,484	16,738	21,908	26,969	28,672	30,896	32,791	33,407	33,403	34,402
Office	37,979	46,582	55,521	67,616	66,850	72,757	78,271	80,543	82,527	85,249
Commercial	53,159	62,841	65,899	78,151	87,733	91,396	96,719	100,170	101,003	102,602
Health Care	40,689	38,647	39,147	40,157	41,916	42,941	44,833	46,262	47,424	49,168
Education	79,060	79,681	84,771	90,348	91,213	93,711	99,241	102,527	104,296	106,445
Religious	3,590	3,386	3,577	3,721	3,366	3,217	3,112	3,144	3,214	3,265
Public Safety	9,506	9,437	8,484	8,023	8,290	9,150	9,731	10,101	10,395	10,918
Amusement and Recreation	15,207	16,773	20,258	23,155	24,851	26,212	27,921	28,747	28,925	29,736
Transportation	39,459	42,043	44,843	43,274	45,173	50,866	55,129	60,225	63,726	66,905
Communication	17,783	17,298	21,696	22,178	24,831	25,993	26,967	27,882	28,803	30,009
Manufacturing	50,548	58,648	79,930	76,380	66,448	68,005	72,544	73,004	74,162	75,585
<b>Total Nonresidential Buildings</b>	<b>360,464</b>	<b>392,074</b>	<b>446,034</b>	<b>479,972</b>	<b>489,343</b>	<b>515,144</b>	<b>547,258</b>	<b>566,013</b>	<b>577,878</b>	<b>594,283</b>
<b>NONBUILDING STRUCTURES</b>										
Power	93,317	110,089	102,972	101,389	96,513	98,376	101,068	104,630	109,609	114,948
Highway and Street	81,364	84,743	90,626	92,738	89,053	92,519	96,074	99,061	101,260	103,038
Sewage and Waste Disposal	22,425	23,173	24,380	23,149	20,386	20,943	21,859	22,936	23,671	24,512
Water Supply	13,597	13,380	13,150	13,042	11,806	12,645	13,365	13,914	14,357	14,796
Conservation and Development	5,967	7,310	7,726	7,588	7,244	7,962	8,498	8,821	9,380	9,879
<b>Total Nonbuilding Structures</b>	<b>216,670</b>	<b>238,695</b>	<b>238,854</b>	<b>237,906</b>	<b>225,002</b>	<b>232,445</b>	<b>240,865</b>	<b>249,362</b>	<b>258,276</b>	<b>267,174</b>
<b>Total Put in Place</b>	<b>\$906,351</b>	<b>\$1,005,629</b>	<b>\$1,113,650</b>	<b>\$1,191,811</b>	<b>\$1,246,002</b>	<b>\$1,314,807</b>	<b>\$1,388,796</b>	<b>\$1,441,958</b>	<b>\$1,489,656</b>	<b>\$1,546,743</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

3rd Quarter 2018 Forecast (based on 2nd Quarter 2018 Actuals)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>RESIDENTIAL BUILDINGS</b>										
Single-family	29%	13%	14%	10%	11%	7%	5%	4%	5%	5%
Multifamily	37%	32%	26%	15%	-1%	3%	3%	2%	2%	3%
Improvements*	5%	10%	11%	10%	19%	8%	8%	5%	4%	5%
<b>Total Residential Buildings</b>	<b>19%</b>	<b>14%</b>	<b>14%</b>	<b>11%</b>	<b>12%</b>	<b>7%</b>	<b>6%</b>	<b>4%</b>	<b>4%</b>	<b>5%</b>
<b>NONRESIDENTIAL BUILDINGS</b>										
Lodging	24%	24%	31%	23%	6%	8%	6%	2%	0%	3%
Office	0%	23%	19%	22%	-1%	9%	8%	3%	2%	3%
Commercial	12%	18%	5%	19%	12%	4%	6%	4%	1%	2%
Health Care	-4%	-5%	1%	3%	4%	2%	4%	3%	3%	4%
Education	-7%	1%	6%	7%	1%	3%	6%	3%	2%	2%
Religious	-7%	-6%	6%	4%	-10%	-4%	-3%	1%	2%	2%
Public Safety	-9%	-1%	-10%	-5%	3%	10%	6%	4%	3%	5%
Amusement and Recreation	-2%	10%	21%	14%	7%	5%	7%	3%	1%	3%
Transportation	4%	7%	7%	-3%	4%	13%	8%	9%	6%	5%
Communication	10%	-3%	25%	2%	12%	5%	4%	3%	3%	4%
Manufacturing	6%	16%	36%	-4%	-13%	2%	7%	1%	2%	2%
<b>Total Nonresidential Buildings</b>	<b>2%</b>	<b>9%</b>	<b>14%</b>	<b>8%</b>	<b>2%</b>	<b>5%</b>	<b>6%</b>	<b>3%</b>	<b>2%</b>	<b>3%</b>
<b>NONBUILDING STRUCTURES</b>										
Power	-4%	18%	-6%	-2%	-5%	2%	3%	4%	5%	5%
Highway and Street	1%	4%	7%	2%	-4%	4%	4%	3%	2%	2%
Sewage and Waste Disposal	1%	3%	5%	-5%	-12%	3%	4%	5%	3%	4%
Water Supply	3%	-2%	-2%	-1%	-9%	7%	6%	4%	3%	3%
Conservation and Development	-4%	23%	6%	-2%	-5%	10%	7%	4%	6%	5%
<b>Total Nonbuilding Structures</b>	<b>-1%</b>	<b>10%</b>	<b>0%</b>	<b>0%</b>	<b>-5%</b>	<b>3%</b>	<b>4%</b>	<b>4%</b>	<b>4%</b>	<b>3%</b>
<b>Total Put in Place</b>	<b>7%</b>	<b>11%</b>	<b>11%</b>	<b>7%</b>	<b>5%</b>	<b>6%</b>	<b>6%</b>	<b>4%</b>	<b>3%</b>	<b>4%</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).



**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. The combination of Brian's 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 [bstrawberry@fminet.com](mailto:bstrawberry@fminet.com).

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