Industry Focus. Powerful Results.™

2017 FMI's Construction Outlook

Second Quarter Report With Third Quarter Nonresidential Construction Index

NRCI

If you are an executive for a construction firm in nonresidential building markets and would like to become a panelist for the “FMI Nonresidential Construction Index,” please send your information or questions about this survey to Phil Warner at pwarner@fminet.com. The survey is sent to panelists quarterly and should take approximately 10 minutes to complete. Panelists will receive the full quarterly report free of charge.

NRCI for Nonbuilding Construction—Heavy, Highway and Civil

Inaugurated in the third quarter of 2017, the NRCI for nonbuilding contractors parallels the format of the of the NRCI with a special focus on the nonbuilding sector represented by heavy, highway and civil contractors, H/H/C.

If you are an executive for an H/H/C construction firm in nonbuilding markets and would like to become a panelist for the “FMI Nonresidential Construction Index,” please send your information or questions about this survey to Phil Warner at pwarner@fminet.com. The survey is sent to panelists quarterly and should take approximately 10 minutes to complete. Panelists will receive the full quarterly report free of charge.

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SECOND QUARTER 2017 CONSTRUCTION OUTLOOK

CONSTRUCTION FORECAST

Our second quarter forecast and the results of the third quarter NRCI survey closely match the recent comments by Federal Reserve Board Chair Janet Yellen to the House Financial Services Committee:

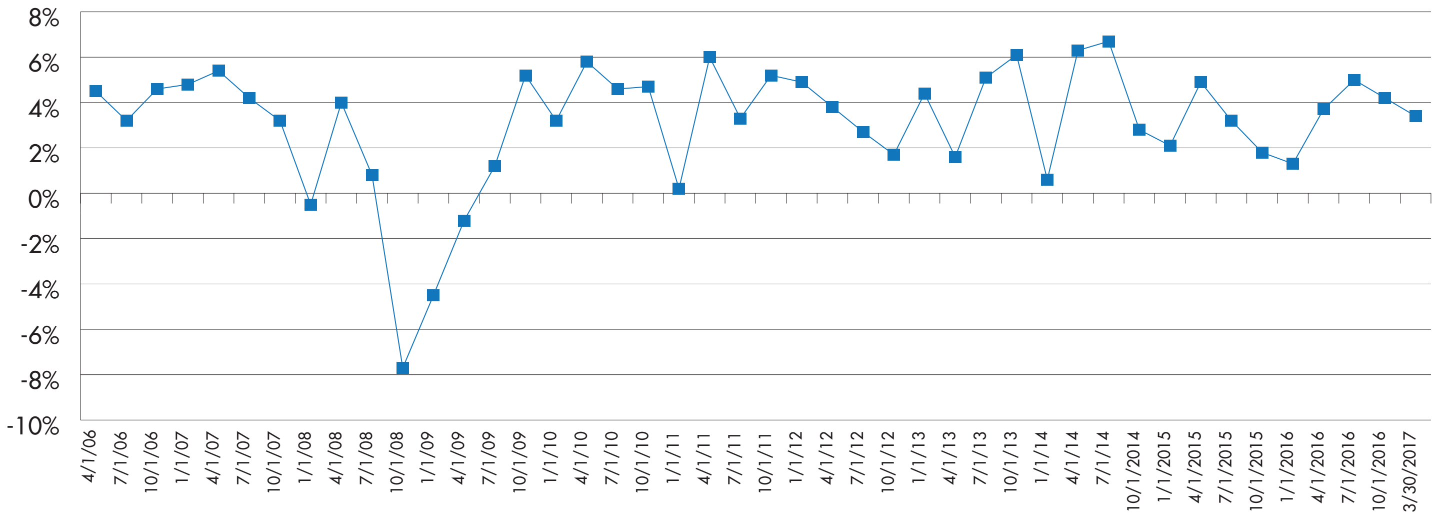
> The economy appears to have grown at a moderate pace, on average, so far this year. Although inflation-adjusted gross domestic product is currently estimated to have increased at an annual rate of only 1.5 percent in the first quarter, more recent indicators suggest that growth rebounded in the second quarter. In particular, growth in household spending, which was weak earlier in the year, has picked up in recent months and continues to be supported by job gains, rising household wealth and favorable consumer sentiment. In addition, business fixed investment has turned up this year after having been soft last year. (Testimony of Federal Reserve Chair Janet Yellen, July 7, 2017, to the House Financial Services Committee, https://www.bloomberg.com/news/articles/2017-07-12/yellen-testimony-to-house-financial-services-panel-full-text)

Federal Reserve Board Chair Yellen also noted that "Possible changes in fiscal and other government policies here in the United States represent another source of uncertainty." In brief, the Fed feels that the economy is strong enough to raise short-term interest rates by a quarter point in June. FMI's forecast has moderated from a total expected growth in construction put in place of 6% last quarter to 5% for the second quarter. The NRCI index slipped from 61.4 in the second quarter to 60.8 for the third quarter. In both cases, there are some signs of weaker growth in most markets but still solid growth in the industry overall.

Weaker growth in infrastructure-related markets, primarily nonbuilding structures, appears to be due in part to a more realistic outlook as to when or if there will be a strong boost to infrastructure spending this year. For instance, in the second round of our new NRCI survey of heavy/highway/civil contractors, one respondent noted. "There is a lot of work to bid right now, 2018 is the question." While both indexes are still showing solid expectations for growth, the components that keep the indexes from rising are moderated outlooks for the overall economy and rising costs of labor and materials. Nonetheless, median backlogs for contractors are reported at 12 months, and the NRCI has been at that level for over a year now.

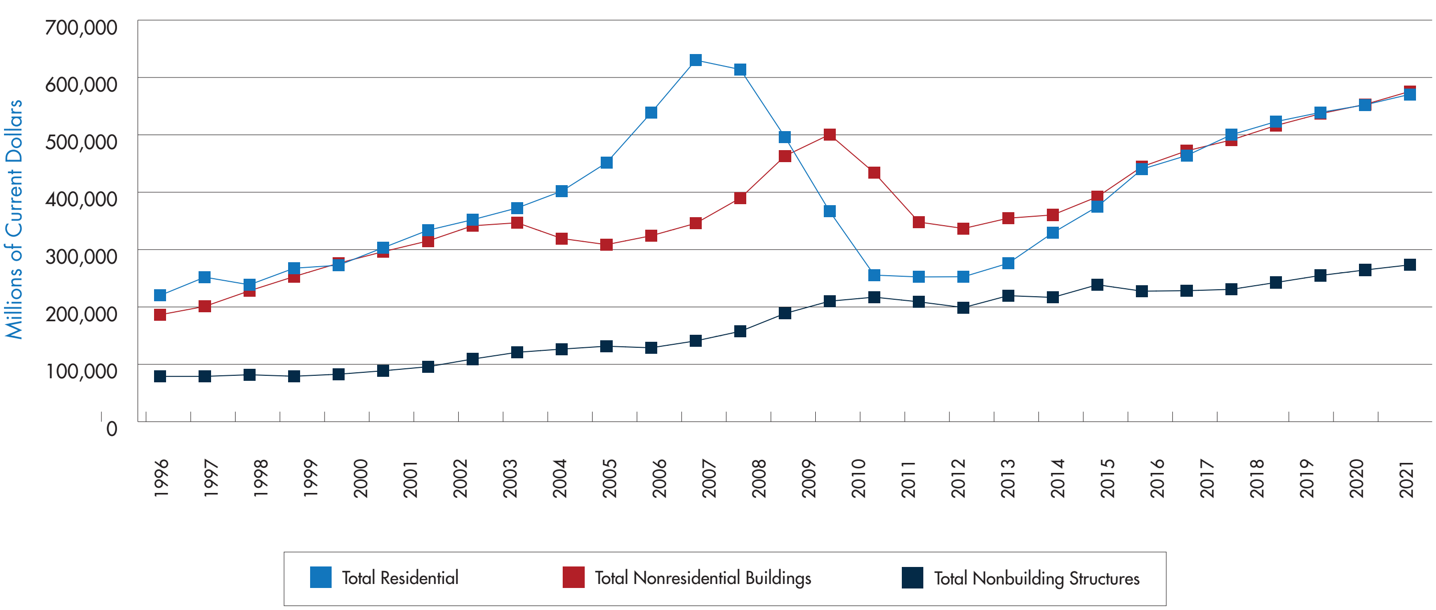
While there is some uncertainty as to growth in 2018 and beyond, it appears that, as we have been reporting, the industry will continue to see slow but solid growth with hot spots and cooling local markets around the country. While local and global politics will continue to provide sources of uncertainty, much of the slow growth can be explained by "natural" economic causes, as rising costs of labor and materials and lower productivity act as governors that keep the economy from overheating, so to speak. Higher wages, while threatening to profit margins, should help to keep consumer spending in solid territory, and that is the primary engine to economic growth. However, productivity increases are needed to offset wage growth to maintain profitability and avoid inflation that could make investors slow down development plans. It is always a balancing act.

GROSS DOMESTIC PRODUCT
PERCENT CHANGE, QUARTERLY, SEASONALLY ADJUSTED ANNUAL RATE



Source: FMI Research Services

FMI CONSTRUCTION PUT IN PLACE
ESTIMATED FOR THE UNITED STATES



Source: FMI Research Services

SECOND QUARTER 2017 NONRESIDENTIAL CONSTRUCTION INDEX

NRCI SUMMARY

The Index score for the NRCI slipped 0.6 points, essentially unchanged in the third quarter. The backlog index continues to indicate a median of 12 months, unchanged for the last four quarters, and the cost of labor index is still indicating higher costs. When labor and materials costs rise, the overall NRCI index decreases somewhat. Nonetheless, as we have noted before, rising costs of labor and materials indicate that the economy continues to support these increases. Although the Index number changed little this quarter, panelists' outlook for the overall economy slipped 4.3 points while the outlook for their businesses gained 1.8 points. Expected growth in backlogs is also down somewhat. With the exception of manufacturing, the near-term outlook for all markets improved.

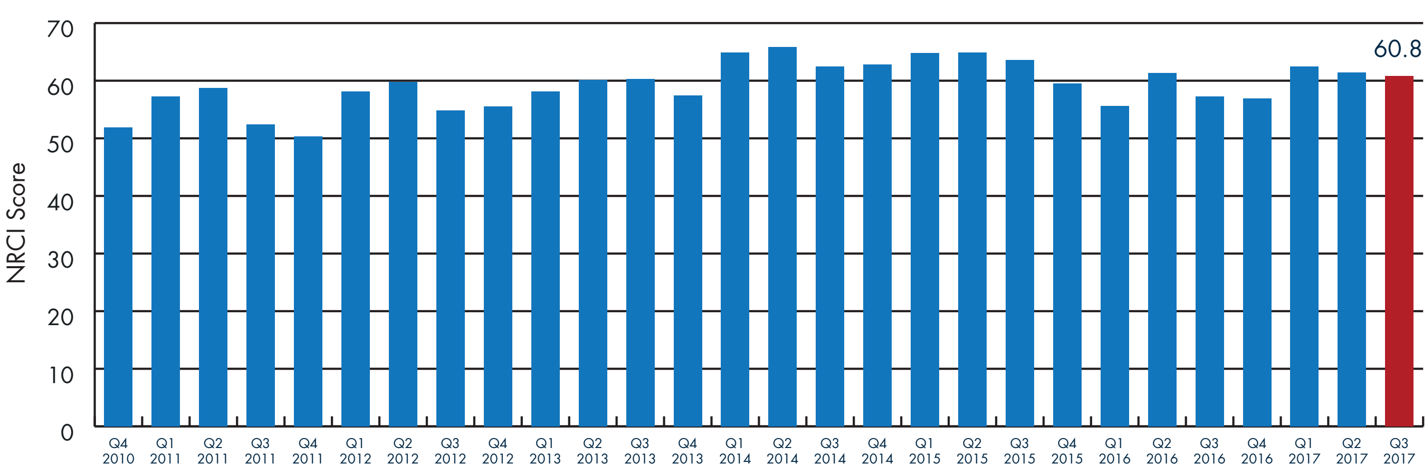
NEW NRCI FOR HEAVY, HIGHWAY AND CIVIL CONTRACTORS (H/H/C)

We now have two quarters of results for our new NRCI for H/H/C contractors and an improving response rate. We sent out our inaugural NRCI survey for H/H/C contractors in the second quarter. We are still developing a baseline for this report, so we are not yet publishing the detailed results. However, like the panelists for the NRCI, H/H/C contractors indicated a slowing outlook for the overall economy, while their own business have improved, and backlogs are in line with NRCI results. H/H/C contractors are optimistic about their markets with the caveat that many rely on government spending, and there is always uncertainty about that.

Current NRCI Reading for **Q3 2017** **60.8**

Previous Reading **61.4**

NRCI SCORES SINCE INCEPTION — Q4 2010 TO Q3 2017
Scores above 50 indicate expansion, below 50 contraction.



CURRENT ISSUES FOR NONRESIDENTIAL BUILDING CONTRACTORS (NRCI)

For our current issues questions this quarter, we asked NRCI panelists about particular drivers to growth and for any slowdowns in their markets. Current issues questions are optional; therefore, the response rate is small compared to the overall Index. In this case, we aren't looking to determine a specific trend; rather, we are looking for some more detail to the growth or market slowdowns that we might not see in our regular questions. Overall, there were no surprises in the response; however, the results do help to add further support to what we see in our overall construction forecast. There were more responses to the questions about market growth causes than for causes of any slowdown in particular markets. It is also interesting that the same causes for growth also fit many of the causes for any slowdown that was reported. For instance, private sector spending and credit availability for manufacturing construction projects was given a high rating as a reason for growth in that sector and a high reason for market slowdown. Public sector spending was given weak ratings as a cause for both growth and any slowdowns. However, few are seeing any significant slowdowns in their markets, and growth continues in line with our overall forecast.

COMMENTS ON MARKET GROWTH:

- Energy savings for large government projects.
- Florida continues to thrive in the post-recession economy.
- Not seeing "notable" growth in our markets, just sustaining activity.
- Our local market has been strong for several years, and there is no sign of things letting up in the near future.
- Our market is highly dependent on federal spending.
- Overall, market remains consistent with economy, 2-3%, with some hot spots, like tech.
- Pent-up demand had been getting by with current brick and mortar.
- Public sector funding is growing slightly due to improved economic climate. Technology, demand and competition are driving health care.
- Started the year with significant backlog, but a large portion of the project starts have been delayed, now seeing improving project starts which bodes well for next year.
- Still substantial opportunities in NTX although smaller sizes.
- The state of Illinois politics (uncertainty) is shifting focus and projects to Wisconsin and Indiana. In spite of the uncertain political and economic climate in Illinois, local municipalities are no longer able to postpone major capital building construction projects.
- We see the New England market as stable.

COMMENTS ON MARKET SLOWDOWN:

- Increase in project costs plus uncertainty of demand are causing hesitation.
- No current slowdown.
- Not seeing any slowdown in the markets we are in.
- Our markets are still good.
- Stable market in New England.

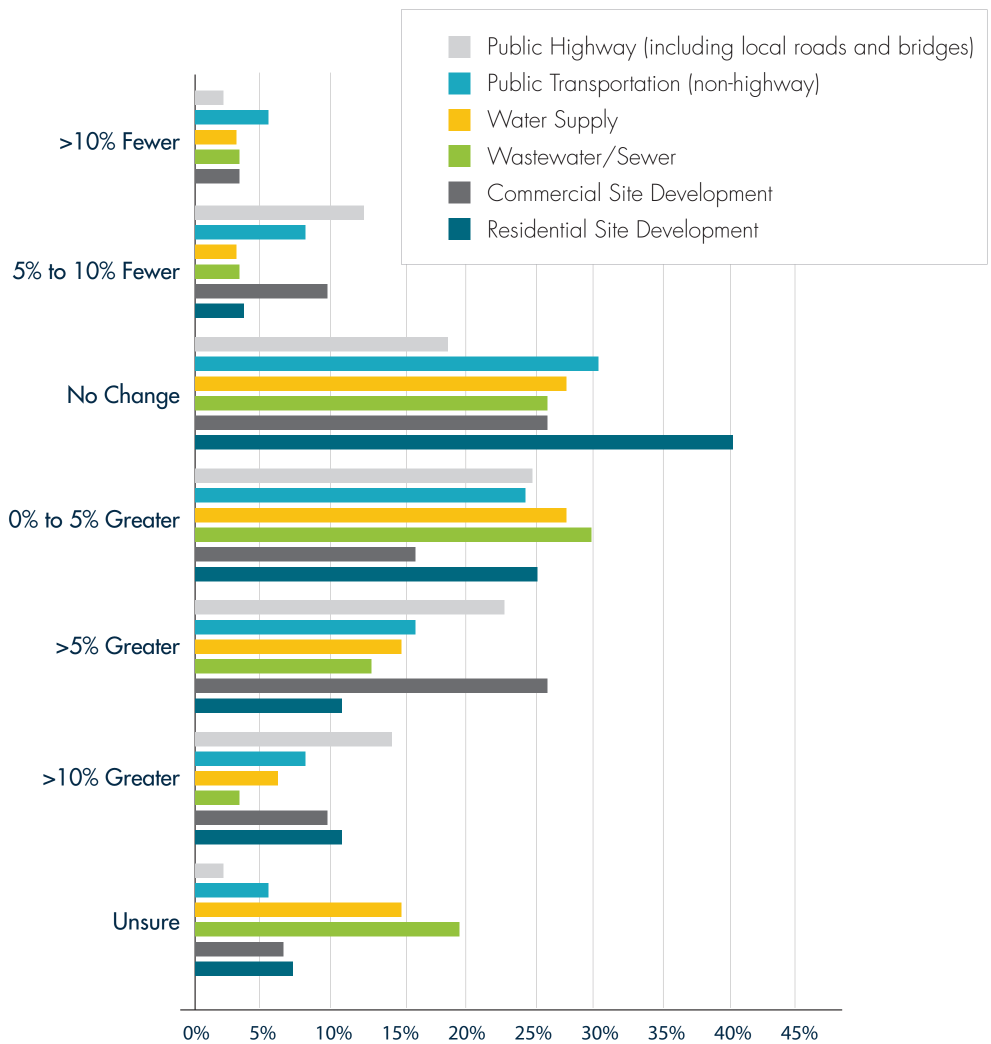
CURRENT ISSUES FOR NONRESDENTIAL HEAVY/HIGHWAY/CIVIL CONTRACTORS (NRCI FOR H/H/C)

While most H/H/C contractors are indicating strong backlogs, there doesn't appear to be quite as much of a capacity problem as nonresidential building contractors are seeing in some areas. For our current issues questions this quarter, we asked H/H/C NRCI panelists about project opportunity growth and profit margins. After a solid few years of growth, it appears that project opportunities are still on the rise in most markets. Commercial site development was one of the strongest markets of growth in project areas. When compared to our construction forecast for the nonbuilding markets in this report, project opportunities for panelists appear to be in line with our national forecast.

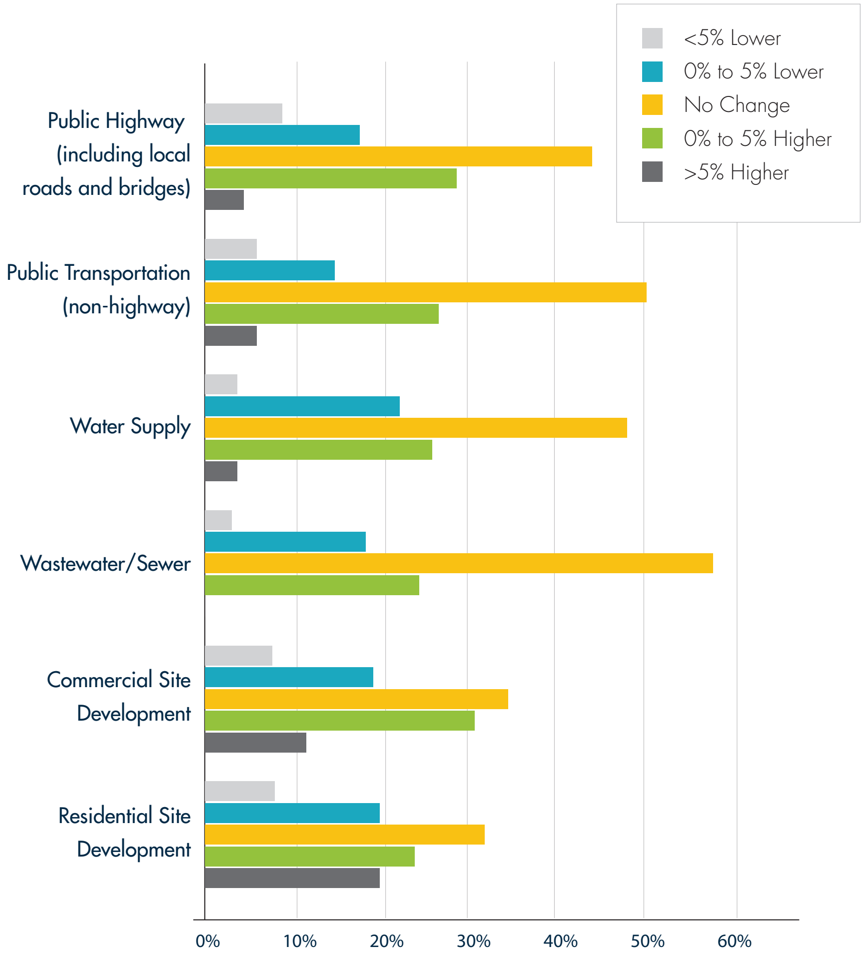
Even though there are still solid opportunities for projects out there, increasing profit margins is still a challenge as competition is still high, especially in less specialized markets, as two respondents noted:

- Margins are trending down slightly; however, should be up in next six to 12 months due to greater demand. Cost of labor and materials will also rise, causing short-term market adjustments.
- There is still a fair amount of overcapacity. In sectors with lower barriers to entry (small diameter water/sewer pipeline for instance), there is downward pressure on margins. Same for uncomplicated site jobs. Jobs that require extensive expertise or equipment fleets are a bit better.

Compared to one year ago, for each market below in which you work, please indicate your estimate of the change in potential project opportunities.



Compared to one year ago, margin on projects in each of the markets listed below tends to be: (H/H/C NRCI, Results)



RESIDENTIAL CONSTRUCTION

The forecast calls for only 6% growth in multifamily construction in 2017 and just 3% in 2018. Even though multifamily vacancy rates are still low, we expect a low point in the cycle as single-family construction picks up 2% to 8% for 2017, then back to 6% for 2018. With unemployment at or below "full employment" rates and wages continuing to improve, first-time homebuyers can begin to see homeownership as a good investment again. Two drivers affecting growth are the low inventory of homes for sale and the potential for interest rate increases later in the year. The result is that new home sales slipped 1.2% in April. Seniors looking to downsize should have more luck selling their homes as prices improve and housing inventory is low. As a barometer for the economy, residential construction is subject to fluctuations, and the recent drop in housing starts by 5.5% in May indicates continuing fluctuations.

SINGLE-FAMILY HOUSING

UP 8%

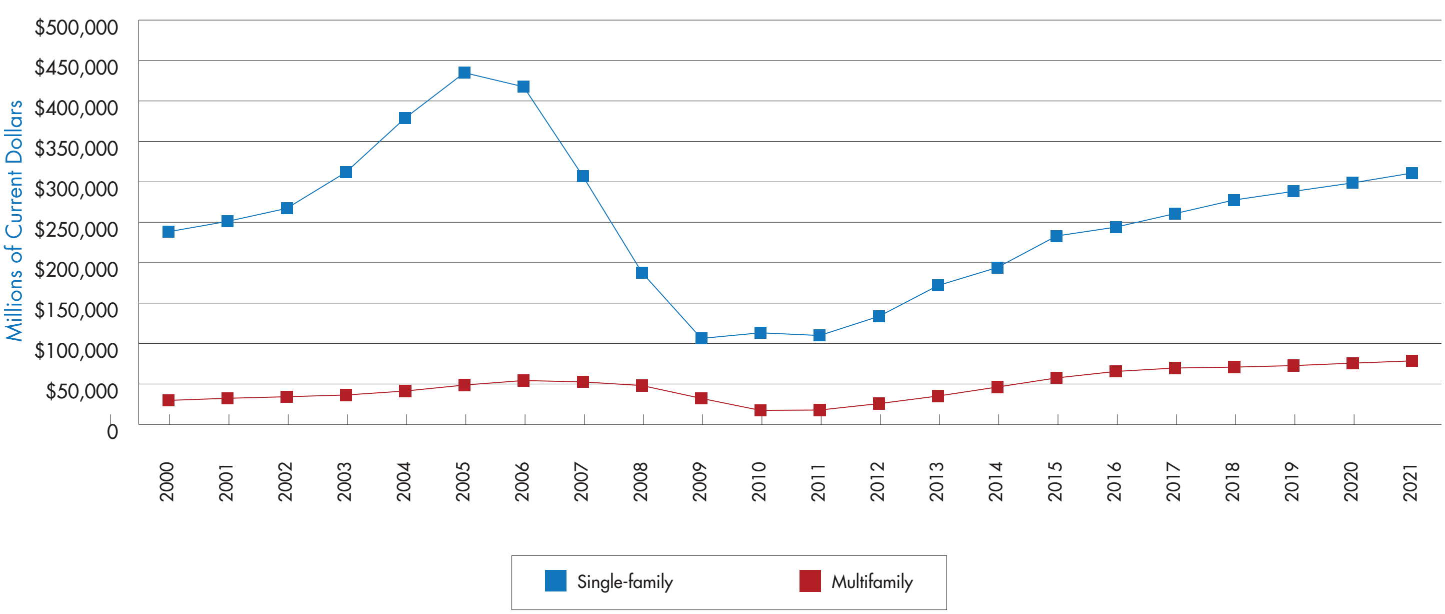
$266.5 Billion

MULTIFAMILY HOUSING

UP 6%

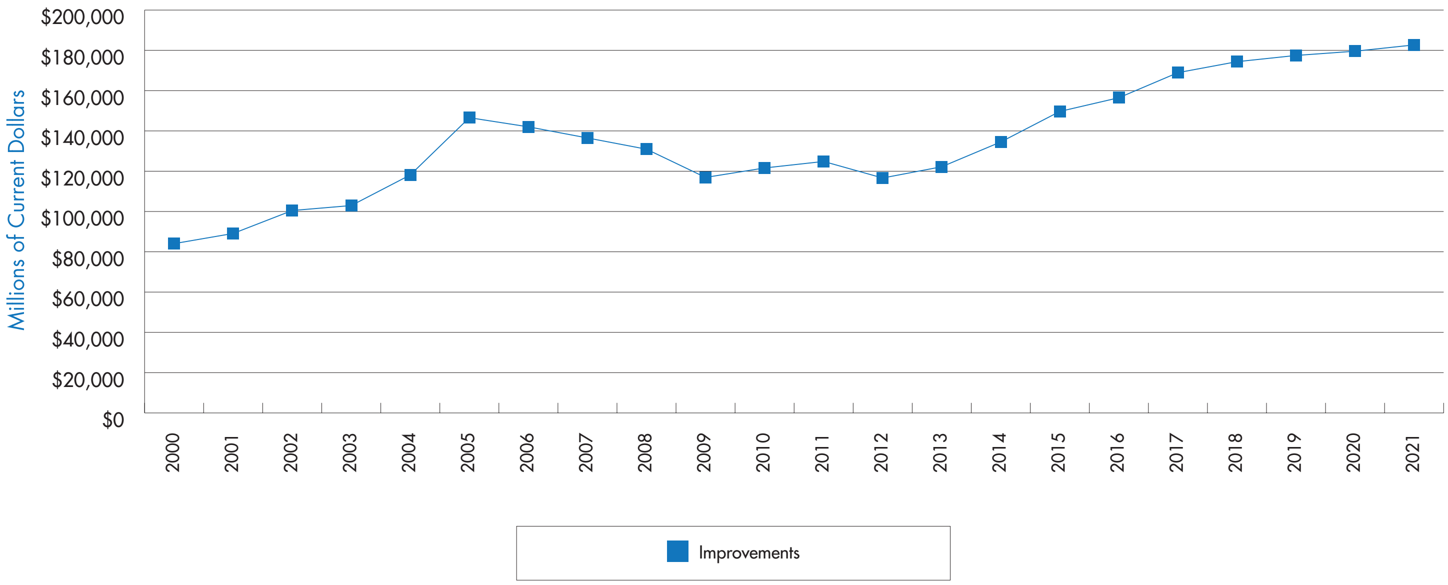
$65 Billion

RESIDENTIAL CONSTRUCTION PUT IN PLACE
Forecast as of Q2 2017



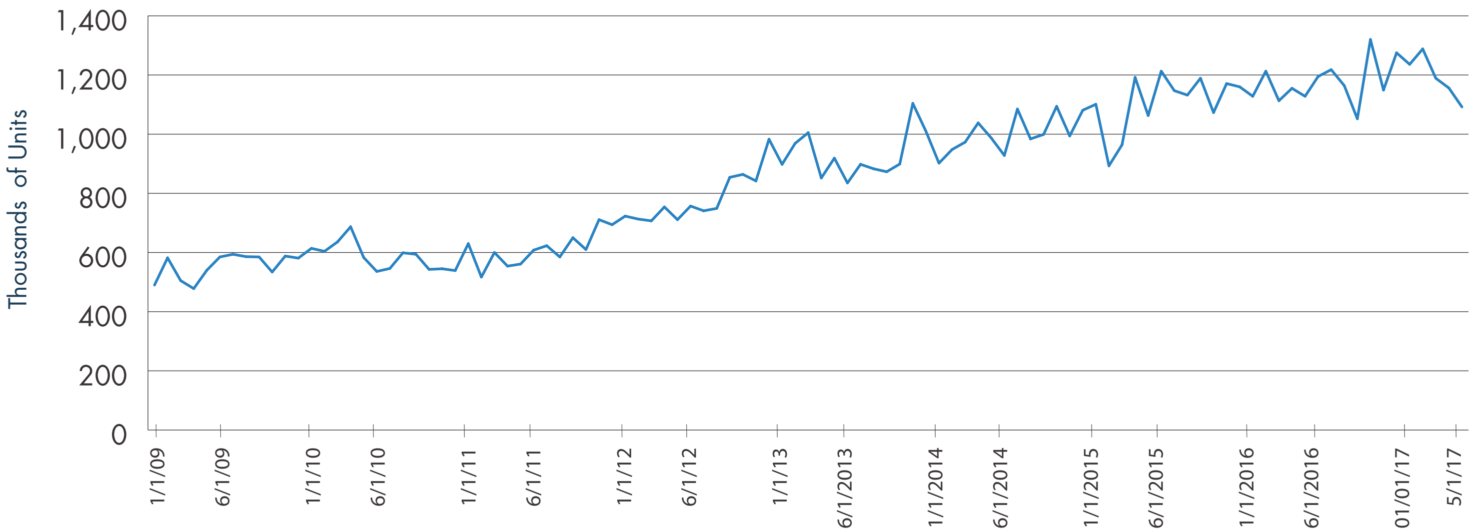
Source: FMI Research Services

RESIDENTIAL CONSTRUCTION IMPROVEMENTS PUT IN PLACE
Forecast as of Q2 2017



Source: FMI Research Services

NEW PRIVATELY OWNED HOUSING UNITS STARTED
Seasonally Adjusted Annual Rate



Source: Federal Reserve Economic Data

TRENDS:

- "National vacancy rates in the first quarter 2017 were 7.0 percent for rental housing and 1.7 percent for homeowner housing. The rental vacancy rate of 7.0 percent was virtually unchanged from the rate in the first quarter 2016 (7.0 percent) and not statistically different from the rate in the fourth quarter 2016 (6.9 percent). The homeowner vacancy rate of 1.7 percent was virtually unchanged from the rate in the first quarter 2016 (1.7 percent) and lower than the rate in the fourth quarter 2016 (1.8 percent). (U.S. Census Bureau, April 2017)
- "The S&P CoreLogic Case-Shiller U.S. National Home Price NSA Index, covering all nine U.S. census divisions, reported a 5.5% annual gain in April, down from 5.6% last month. The 10-City Composite annual increase came in at 4.9%, down from 5.2% the previous month. The 20-City Composite posted a 5.7% year-over-year gain, down from 5.9% in March." (S&P Down Jones Indices, June 27, 2017)
- According to the U.S. Census Bureau, "Privately owned housing starts in May were at a seasonally adjusted annual rate of 1,092,000. This is 5.5 percent (±11.9 percent)* below the revised April estimate of 1,156,000 and is 2.4 percent (±11.4 percent)* below the May 2016 rate of 1,119,000. Single-family housing starts in May were at a rate of 794,000; this is 3.9 percent (±10.4 percent)* below the revised April figure of 826,000. The May rate for units in buildings with five units or more was 284,000." (June 16, 2017)

DRIVERS:

- Unemployment rate
- Core CPI
- Income
- Mortgage rates
- Home prices
- Housing starts
- Housing permits

Lodging

Our forecast for lodging construction in 2017 dropped from 10% to just 6% and is expected to drop to just 4% growth in 2018. New supply of rooms is beginning to surpass absorption, thus putting downward pressure on revenue per room and occupancy rates. The industry is also facing some new competition in the market with the rise of startups like Airbnb. Nonetheless, the hotel industry is showing solid performance as revenue per available room (RevPAR) continues a long streak of improvement. Renovation of key properties will continue to be active so that established properties can continue to attract guests looking for new services and amenities.

UP 6%

$29 Billion

TRENDS:

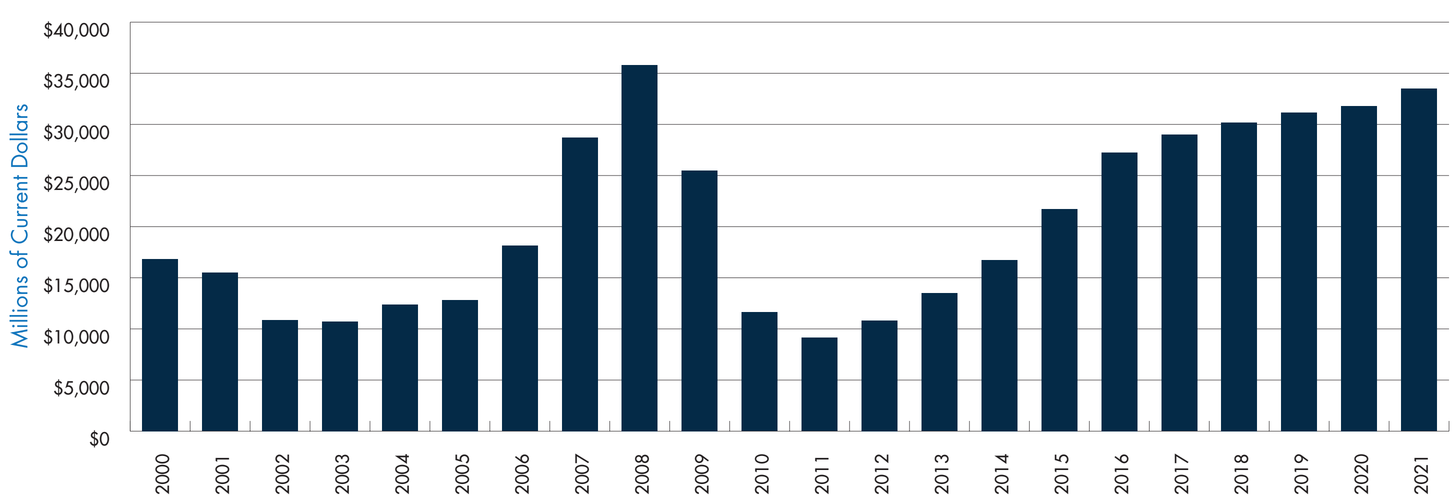
- According to STR, "The U.S. hotel industry reported positive year-over-year results in the three key performance metrics during the week of 25 June through 1 July 2017, according to data from STR.
- In comparison with the week of 26 June through 2 July 2016, the industry recorded the following:
  - Occupancy: +3.8% to 74.2%
  - Average daily rate (ADR): +2.8% to US$127.75
  - Revenue per available room (RevPAR): +6.8% to US$94.80." (Hotel News Now, July 8, 2017)
- STR's October 2016 Pipeline Report shows "549,142 rooms in 4,510 projects Under Contract in the United States. The total represents a 24.4% increase in the number of rooms Under Contract compared with September 2015." (Hospitality Net, October 12, 2016)
- "In 2016, RevPAR growth for the 60 markets covered by CBRE's Hotel Horizons® forecast reports averaged 2.8 percent. This is below the aggregate 3.6 percent RevPAR growth achieved by hotels located outside of the 60 markets." (CBRE Hotels' Americas Research, reported in HospitalityNet, March 22, 2017)

DRIVERS:

- Occupancy rate
- RevPar
- Average daily rate
- Room starts

LODGING CONSTRUCTION PUT IN PLACE

Forecast as of Q2 2017



Source: FMI Research Services

Office

Office construction will slow to 9% growth in 2017. That is much less than the 25% improvement enjoyed in 2016. After three high-growth years post-recession, it appears office construction is on the downward leg of its current cycle. Vacancy rates are increasing in major metros that have had a boom in office space in recent years. After several years of high-tech firm growth moving to the city, it is possible that there may be a growing interest in the suburbs again.

UP 9%

$75 Billion

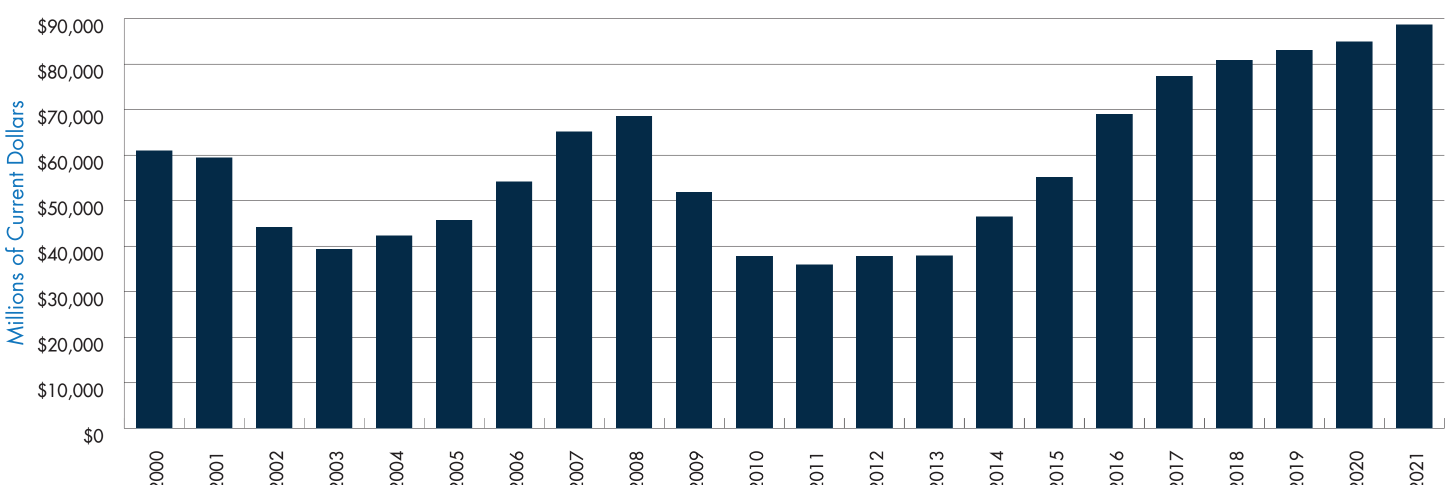
TRENDS:

- CBRE reports, "Vacant space in the U.S. office market rose modestly during the first quarter of 2017 (Q1 2017) to 13.0 percent. The 10 basis points (bps) increase was attributable to increased office supply, according to the latest analysis from CBRE Group, Inc." (CBRE, April 7, 2017).

DRIVERS:

- Office vacancy rate
- Unemployment rate

OFFICE CONSTRUCTION PUT IN PLACE
Forecast as of Q2 2017



Source: FMI Research Services

Commercial

Given the rapidly evolving state of the retail environment, 10% growth in construction for 2017 and a forecast of just 5% in 2018 are symptomatic of the continuing store closing for major chains, including Sears, Macy's, Staples and J.C. Penney. Store closings reflect a couple of market trends—the move to shopping on the internet and the economic bifurcation that sends most shoppers to the lowest-price retail stores and the wealthier shoppers to upscale, multiuse centers.

UP 10%
$82 Billion

The move from traditional shopping venues will likely result in a merging of online and brick-and-mortar shopping with brick and mortar becoming more of a destination or event-related atmosphere. Some of the fastest-growing areas in commercial retail construction have been drinking places and food services; however, building materials and garden supply stores are currently experiencing the highest growth rate.

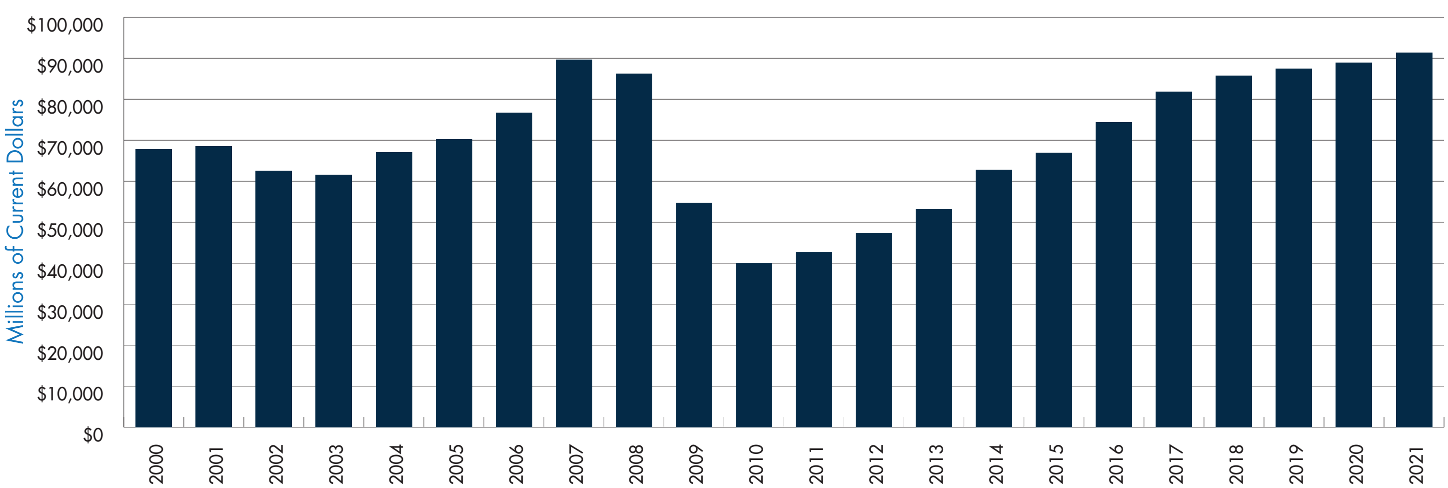
TRENDS:

- The U.S. Census Bureau announced, "Advance estimates of U.S. retail and food services sales for May 2017, adjusted for seasonal variation and holiday and trading-day differences, but not for price changes, were $473.8 billion, a decrease of 0.3 percent (±0.5 percent) from the previous month, and 3.8 percent (±0.9 percent) above May 2016. Total sales for the March 2017 through May 2017 period were up 4.4 percent (±0.7 percent) from the same period a year ago." (U.S. Department of Commerce, June 14, 2017)
- The Conference Board Consumer Confidence Index reached 118.9 in June (1985=100), up from 117.6 in May. "Consumer confidence increased moderately in June," said Lynn Franco, director of economic indicators at The Conference Board. "Consumers' assessment of current conditions improved to a nearly 16-year high. (July 2001. 151.3)." (The Conference Board, June 27, 2017)

DRIVERS:

- Retail sales
- CPI
- Income
- Home prices
- Housing starts
- Housing permits

COMMERCIAL CONSTRUCTION PUT IN PLACE
Forecast as of Q2 2017



Source: FMI Research Services

Health Care

FMI is forecasting $42.4 billion in construction put in place for 2017 and 4% growth in 2018. Traditional large hospital projects are returning to the drawing boards with fewer large hospital projects in the works. The bulk of the work will be renovation and additions as well as outpatient care. New facility designs are upping the game for a patient-centered environment as well as reducing concerns for the spread of supergerms. Construction will continue to become more collaborative and integrated with the various communities involved. The uncertain future of government health care policy and challenges of updating to the latest technologies and security measures will be top challenges in the years ahead.

UP 2%
$42.4 Billion

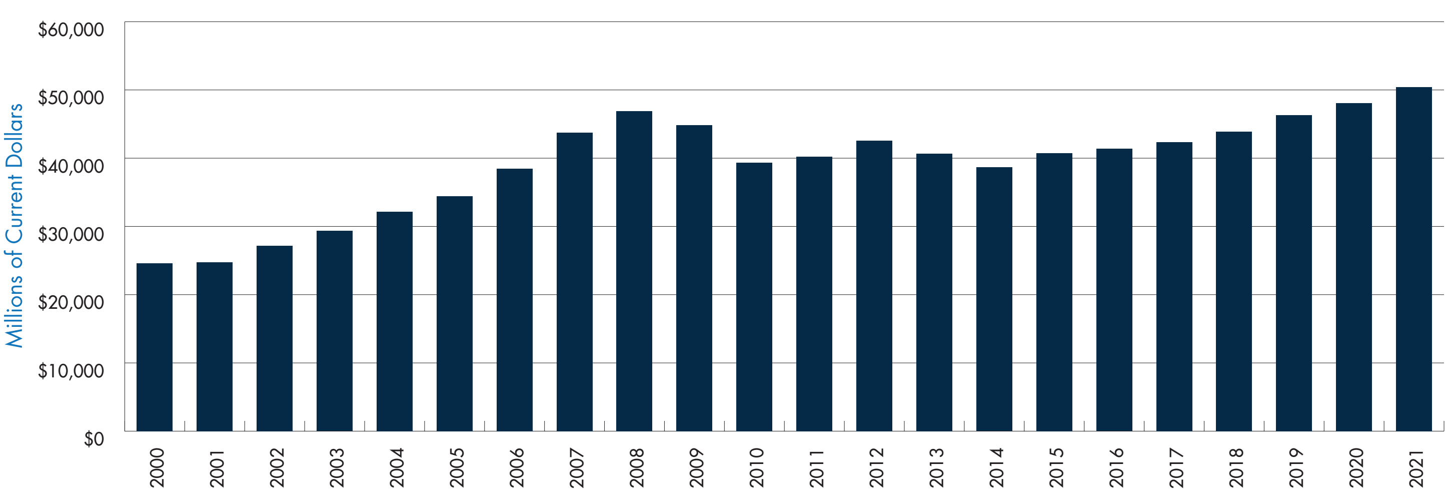
TRENDS:

- The Bureau of Labor Statistics reports, "Employment of registered nurses is projected to grow 16 percent from 2014 to 2024, much faster than the average for all occupations."
- Health Facilities Management magazine says, the "industry is moving away from large-scale new construction, according to survey results. While 70 percent of respondents said they have projects currently under construction or planned in the next three years, a full three-fourths of those were expansions or renovations." (2016 Hospital Construction Survey, Health Facilities Management)
- The new model for hospitals is the medical center with a cluster of offices, including beds, which will deliver more of a patient's needs.
- The number of outpatient facilities will continue to grow, pressed by the need to lower health care costs and to improve health facility profits.

DRIVERS:

- ↑ Population change younger than age 18
- ↑ Population change ages 18-24
- ↑ Stock market
- ↓ Government spending
- ↑ Nonresidential structure investment

HEALTH CARE CONSTRUCTION PUT IN PLACE
Forecast as of Q2 2017



Source: FMI Research Services

Education

UP 3%
$91.4 Billion

FMI forecasts education construction put in place for 2017 to grow 3% to $91.4 billion. Growth for 2018 is expected to be 5% for a total of $95.0 billion by year-end. Development will be driven by population growth and the increasing need to bring schools into compliance for safety and the health of the student populations. Higher education will either embrace distance learning or continue to compete with it, similar to retail stores versus online shopping.

Schools increasingly need to have security measures in place due to continued threats of terrorism and deranged people entering the school with weapons. There also need to be funding solutions to improve the deplorable conditions in inner-city schools in depressed areas like Detroit. To prepare students for future careers, all schools should include modern technology or be renovated and updated for modern computing and collaborative environments.

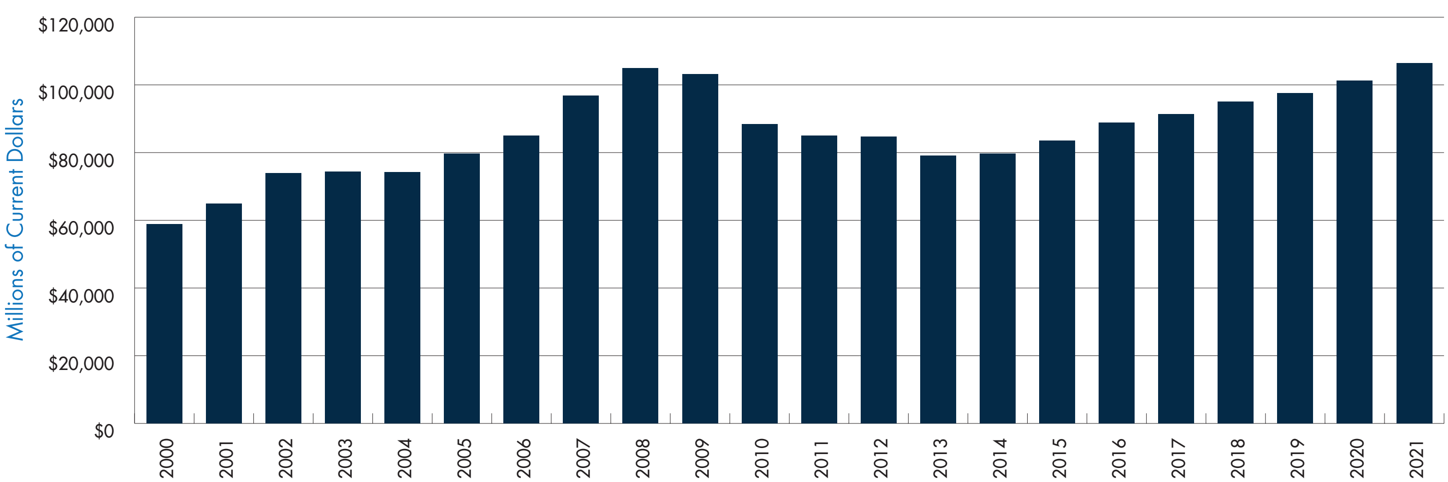
TRENDS:

- Significantly less funding from federal government and states for K-12 schools.
- Enrollment growth 2.5 million in the next four years.
- The National Center for Education Construction reports that, "Total public school enrollment in pre-K through grade 12 increased in 30 states and the District of Columbia from 2003–04 to 2013–14, with increases of 15 percent or more occurring in five states (Utah, Texas, Idaho, Nevada and Colorado). During this period, total enrollment declined in the other 20 states, with decreases of 10 percent or more occurring in four states (Michigan, Rhode Island, Vermont and New Hampshire)." (NCES, May 2016)
- New designs for schools will be more flexible for changing classrooms and greater use of natural light. Expect more use of prefabrication and modular building designs.

DRIVERS:

- Population change younger than age 18
- Population change ages 18-24
- Stock market
- Government spending
- Nonresidential structure investment

EDUCATION CONSTRUCTION PUT IN PLACE
Forecast as of Q2 2017



Source: FMI Research Services

Religious

We expect the growth rate for religious buildings to continue to slow to 3% in 2017 to reach $3.9 billion. With more people working, there is more money available to support religious building, in some cases involving larger building projects. Nonetheless, slow growth will return to this sector. Future uncertainty for growth is due to many changes in the religious landscape, including the mix of religious faiths in America and fewer people who consider themselves regular churchgoers, even if they still belong to a certain faith. Many new churches are small and established in existing buildings like those found in vacated shopping centers.

UP 3%

$3.9 Billion

TRENDS:

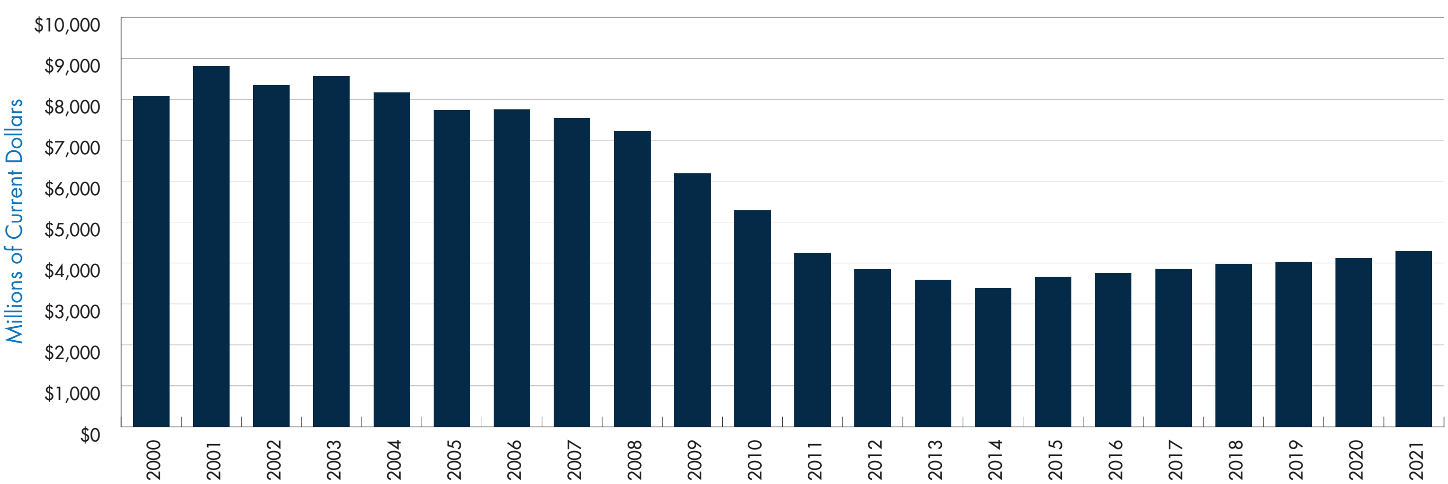
- The lending environment continues to be a challenge for many congregations.
- Establishing a capital campaign is becoming increasingly common.
- Many churches are seeing tremendous declines in contributions and tithes.

DRIVERS:

- GDP
- Population
- Income
- Personal savings rate

RELIGIOUS CONSTRUCTION PUT IN PLACE

Forecast as of Q2 2017



Source: FMI Research Services

Public Safety

Spending for public safety construction declined 7% in 2016 and is expected to lose another 1% in 2017. Although the private prison sector took a serious blow when the federal government under President Obama announced the results of a long investigation and plans to phase out the use of private prisons, Attorney General Sessions has been directed by President Trump to overturn the phaseout and favors the greater use of private prisons.

UP 1%
$8 Billion

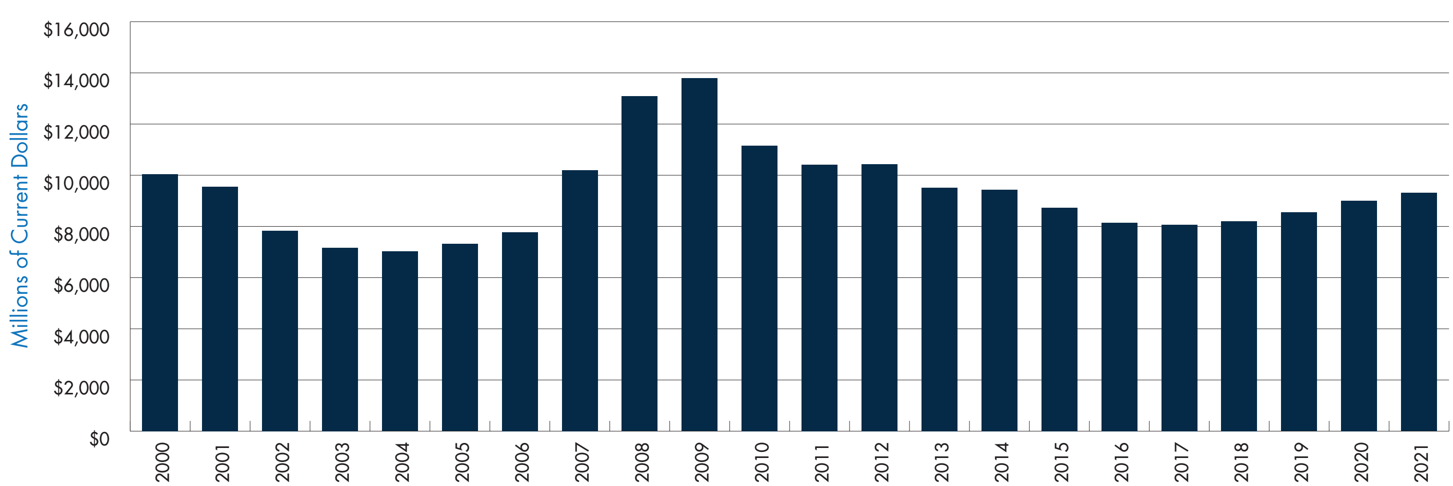
TRENDS:

- "Six states (Hawaii, Mississippi, Montana, New Mexico, North Dakota and Oklahoma) housed at least 20% of their prison population in privately operated facilities at year-end 2015. Almost 7% of state prisoners (91,300 inmates) and 18% of federal prisoners (34,900) were held in private prison facilities in 2015. An additional 6% of state prisoners (80,400 inmates) were in the custody of local jails at year-end 2015." (Bureau of Justice Statistics, Prisoners in 2015, December 2016)
- The rise in deportations and the roundup of illegal aliens may greatly increase the need for prison capacity.

DRIVERS:

- ↑ Population
- ↓ Government spending
- ↓ Incarceration rate
- ↑ Nonresidential structure investment

PUBLIC SAFETY CONSTRUCTION PUT IN PLACE
Forecast as of Q2 2017



Source: FMI Research Services

Amusement and Recreation

Our forecast for amusement and recreation construction for 2017 predicts 4% growth. That is slower than the last few years but translates into $22.7 billion in construction put in place, as the highly competitive market for sports venues continues to shift. Nonetheless, we may be looking at the slower side of the cycle in the next few years as growth drops to around 2%. With the addition of domes and retracting roofs as well as bars, restaurants, shopping, luxury boxes and on and on, sports venues are creating the model for a future of climate-controlled cities.

UP 4%

$22.7 Billion

TRENDS:

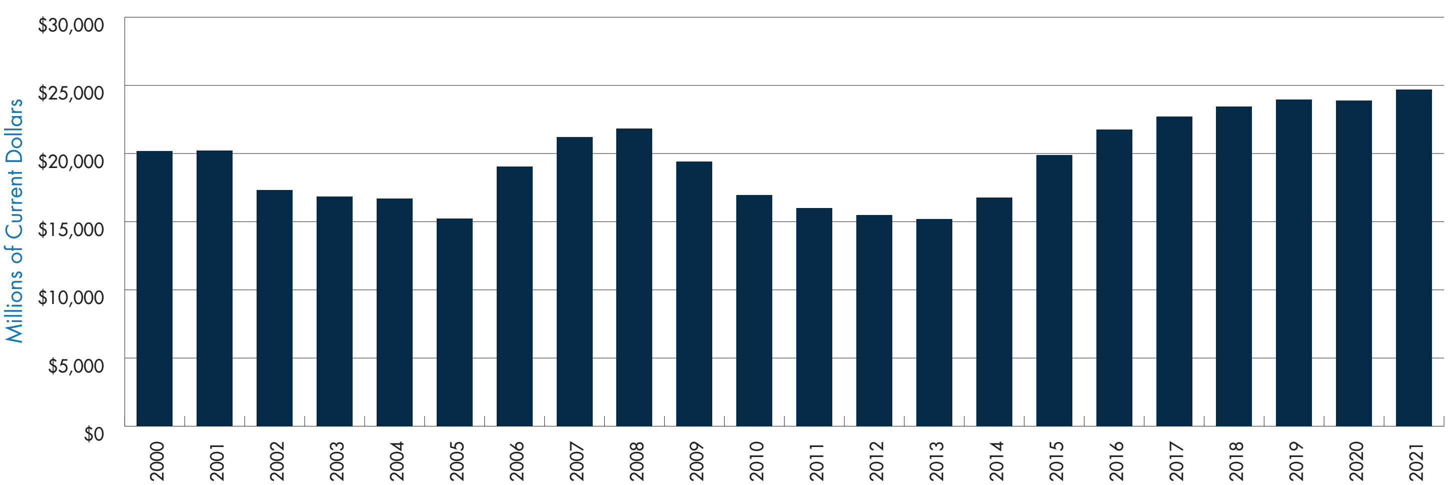
- The Rams return to Los Angeles will mean a new home for the team. The recently announced 70,000-seat stadium for the Los Angeles Rams will be a mixed-use project in Inglewood, California. (prnewswire.com, July 14, 2016) The new stadium is set to open in 2019.
- The new stadium for the San Diego Chargers was turned down, so now the team is moving to Los Angeles. San Diego State will use the old Chargers stadium.
- The Oakland Raiders move to Las Vegas has been approved by the NFL owners.
- A dedicated soccer stadium is being built in Orlando for the Orlando City Soccer Club expansion franchise. The opening is planned for the 2016 season.
- The $1.4 billion Mercedes-Benz Stadium will host the Atlanta Falcons and the Atlanta United FC in 2017. The stadium will have a retractable roof.
- Competition in the gaming sector will draw business away from some existing gambling centers, such as Atlantic City and Las Vegas, as well as from other public arenas.

DRIVERS:

- Income
- Personal savings
- Unemployment rate

AMUSEMENT AND RECREATION CONSTRUCTION PUT IN PLACE

Forecast as of Q2 2017



Source: FMI Research Services

Transportation

Transportation construction growth slowed -6% in 2016, but our forecast calls for a recovery of 1% in 2017 to reach $42.9 billion. Aviation transportation for cargo and passengers will continue to grow at around the same pace as GDP growth; however, airports will increasingly need to be able to accommodate larger, wide-bodied aircraft as airlines replace older fleets. Although many people in the industry do not expect Trump's infrastructure plan to be taken up in Congress at least before the end of 2017, funding is in place from the Surface Transportation Reauthorization and Reform Act and other bills. Nonetheless, President Trump's current budget proposes to cut the Department of Transportation (DOT) by $2.4 billion (13%). (The Hill, 3/16/17)

UP 1%

$42.9 Billion

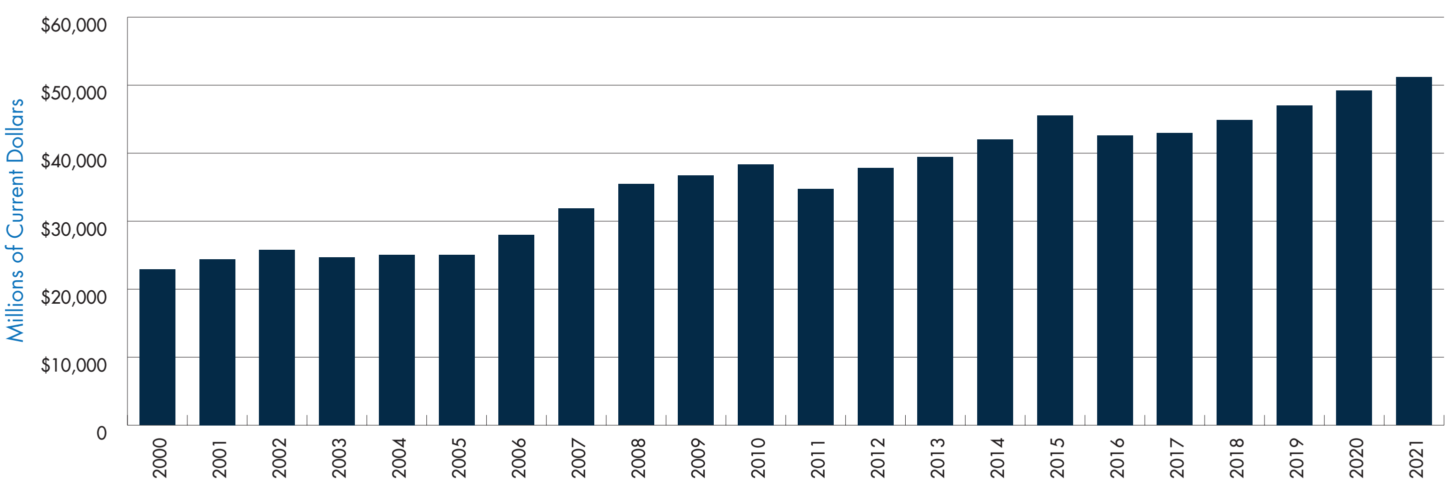
TRENDS:

- According to the Association of American Railroads (AAR) report for June 10, 2017, "Total carloads for the week ending June 10 were 265,717 carloads, up 7.1 percent compared with the same week in 2016, while U.S. weekly intermodal volume was 279,600 containers and trailers, up 5.3 percent compared to 2016."
- The 2016-2036 FAA forecast indicates, "The number of aircraft in the U.S. commercial fleet is forecast to increase from 6,871 in 2015 to 8,414 in 2036, an average annual growth rate of 1.0 percent a year. Increased demand for air travel and growth in air cargo are expected to fuel increases in both the passenger and cargo fleets." (FAA Aerospace Forecast Fiscal Years 2016-2036)
- Congress passed the Water Infrastructure Improvements Act for the Nation, or WIIN Act, which includes the Water Resources Development Act (WRDA) of 2016. The WIIN Act "is comprehensive legislation to address the needs of America's harbors, locks, dams, flood protection and other water resources infrastructure critical to the nation's economic growth, health and competitiveness."

DRIVERS:

- Population
- Government spending
- Transportation funding

TRANSPORTATION CONSTRUCTION PUT IN PLACE
Forecast as of Q2 2017



Source: FMI Research Services

Communication

Communication construction put in place dropped 4% in 2016, but is expected to recover to a 6% growth rate in 2017 to reach $20.8 billion. The trend for communications is likely to be more integration and mergers in order to capture market share. The current trend is for building more data centers and beefing up security and privacy against potential interlopers and severe weather events. The increasing need for data storage is not driven just by corporate and government use. The trend continues to merge telecommunications for entertainment and data that will be offered by a few competing service providers. Add to this the growing Internet of Things (IoT) that will connect smartphones and computers to anything that has a chip and the ability to connect to the internet, such as automobiles, manufacturing equipment, personal monitoring devices and kitchen appliances.

UP 6%

$20.8 Billion

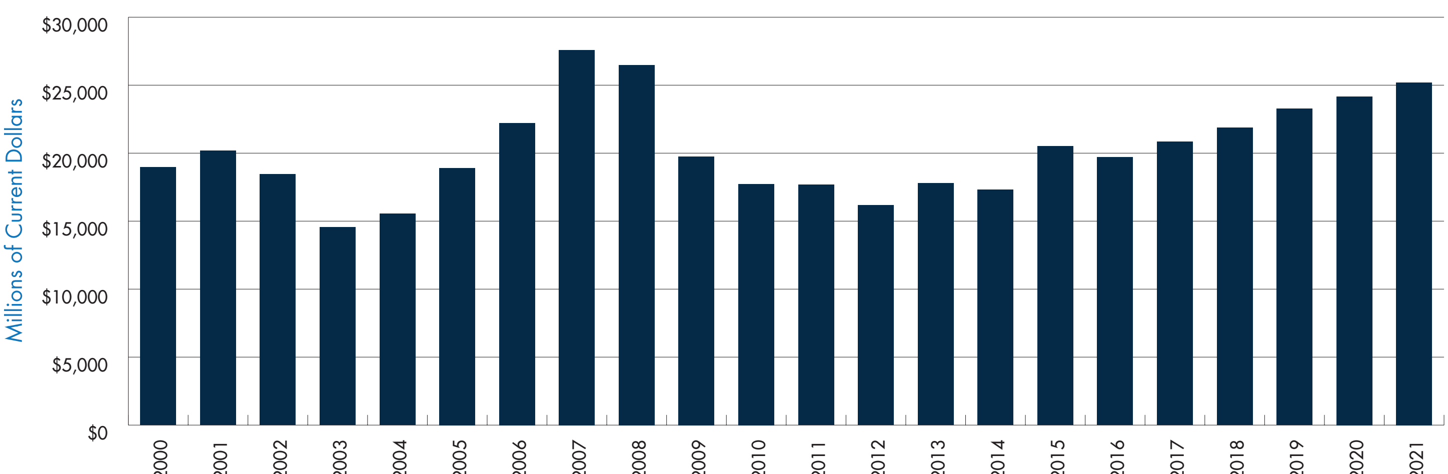
TRENDS:

- Communications infrastructure will continue to be challenged with keeping up with the technology as 4G moves to 5G and 4K video is already moving to 5K, pushing bandwidth and storage capacity.
- "Mini towers" for increasing coverage and spectrum will proliferate rapidly in the next five years.
- Growth activity for Google's Google Fiber arm has been "paused," and layoffs are underway as Google reconsiders its plans for deploying high-speed gigabit connections in selected metro areas. Google is currently looking at more wireless solutions.
- Data security is critical for large businesses and governments in the face of potential disasters and threats from hackers and foreign enemies recently made more public by some high-profile hacks during the elections, including a billion Yahoo accounts.

DRIVERS:

- Innovation/technology
- Global mobility
- Population
- Security/regulatory standards
- Private investment

COMMUNICATION CONSTRUCTION PUT IN PLACE
Forecast as of Q2 2017



Source: FMI Research Services

Manufacturing

Manufacturing construction growth has been subject to some sharp ups and downs in the last decade, and we now expect growth to drop 3% in 2017 to reach just over $72.9 billion and jump to 8% in 2018. The manufacturing utilization rate is currently at just 72.6 for the first quarter 2017. Increasing energy prices may spur some capacity additions in the oil and gas sector, but price increases haven't been that stable at this point. The completion of the Panama Canal expansion project is expected to decrease costs and increase shipments from Gulf Coast ports between the U.S. and Asia. Increasing labor costs and the low unemployment rate in the U.S. may delay further return of manufacturing from abroad despite lower energy costs.

DOWN 3%
$72.9 Billion

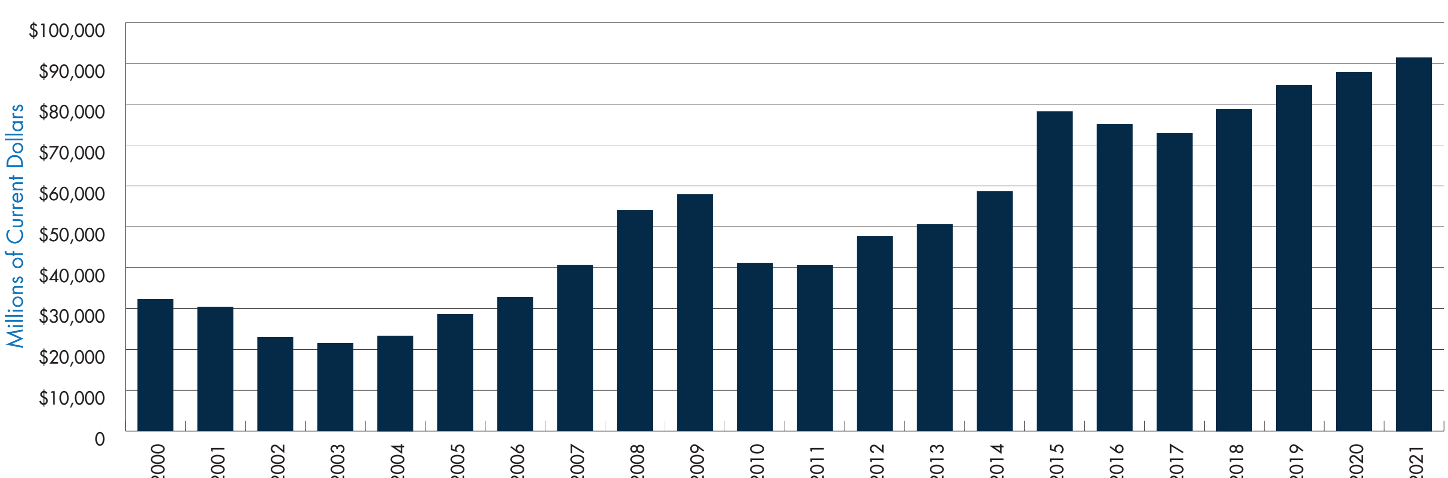
TRENDS:

- Current manufacturing capacity utilization rates are well below the historical average of 78.5 (1972-2015).
- The U.S. Department of Commerce reports, "New orders for manufactured durable goods in May decreased $2.5 billion or 1.1 percent to $228.2 billion, the U.S. Census Bureau announced today. This decrease, down two consecutive months, followed a 0.9 percent April decrease. Excluding transportation, new orders increased 0.1 percent. Excluding defense, new orders decreased 0.6 percent. Transportation equipment, also down two consecutive months, drove the decrease, $2.7 billion or 3.4 percent to $75.4 billion." (June 26, 2017)
- "Nondefense new orders for capital goods in May decreased $1.7 billion or 2.4 percent to $68.3 billion. Shipments increased $0.3 billion or 0.4 percent to $70.1 billion. Unfilled orders decreased $1.8 billion or 0.3 percent to $695.0 billion. Inventories decreased less than $0.1 billion or virtually unchanged to $176.8 billion. Defense new orders for capital goods in May decreased $0.8 billion or 8.2 percent to $9.2 billion. Shipments increased less than $0.1 billion or 0.3 percent to $10.2 billion. Unfilled orders decreased $1.1 billion or 0.8 percent to $140.4 billion. Inventories increased less than $0.1 billion or 0.1 percent to $22.5 billion." (U.S. Census Bureau June 26, 2017)
- "The June PMI® registered 57.8 percent, an increase of 2.9 percentage points from the May reading of 54.9 percent. The New Orders Index registered 63.5 percent, an increase of 4 percentage points from the May reading of 59.5 percent" according to The Manufacturing ISM® Report on Business®.

DRIVERS:

- ↑ PMI
- ↓ Industrial production
- ↓ Capacity utilization
- ↓ Durable goods orders
- ↑ Manufacturing inventories

MANUFACTURING CONSTRUCTION PUT IN PLACE
Forecast as of Q2 2017



Source: FMI Research Services

NONBUILDING STRUCTURES

Power

Construction for power-generating facilities grew 4% in 2016 to reach $95.7 billion for construction put in place. We expect just 2% growth in 2017. New electrical capacity has been largely generated by solar and wind facilities from large facilities to rooftops in your local shopping mall. Traditional power plants must be updated to keep up with changing requirements as well as to manage distributed generation sources. President Trump overturned President Obama's order and has now given the go-ahead for the Keystone XL pipeline, which could increase construction by year's end. Trump also signed an executive order overturning Obama's energy regulations, particularly those concerning coal mining. So far, the order has not substantially saved jobs or stopped the inevitable closing of coal plants.

UP 2%

$98 Billion

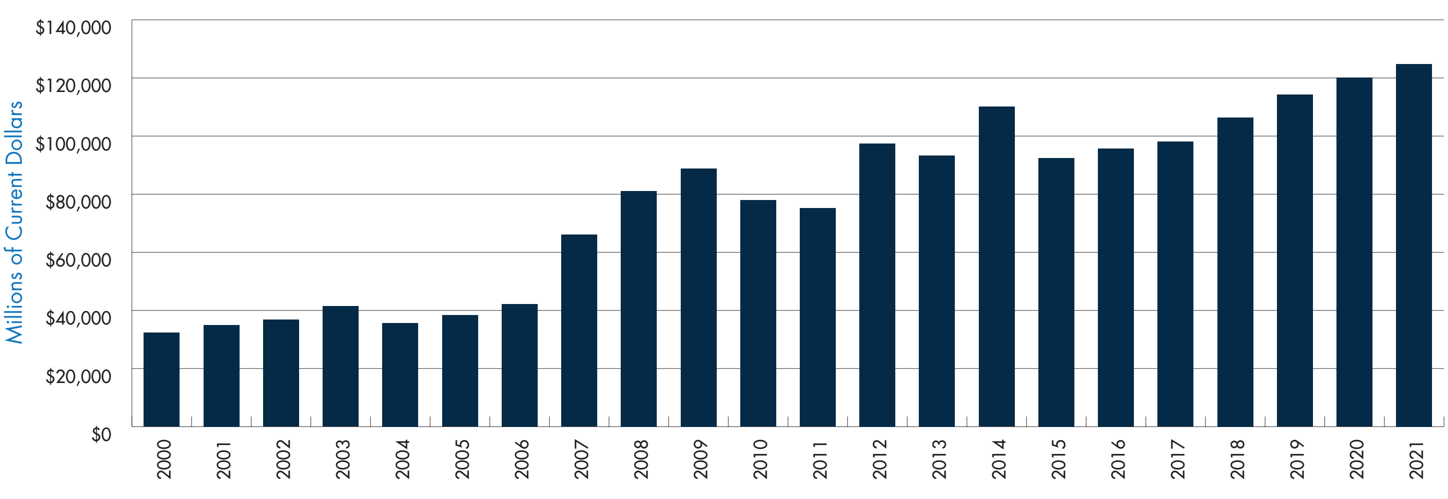
TRENDS:

- Power companies are placing greater emphasis on flexibility to respond to peak needs alongside hydropower, solar and wind-generating facilities.
- Electricity generated by gas, wind and solar power led the added capacity put in place in 2016. Coal represents 24.62% of annual capacity in the U.S., while natural gas is up to 43.14%. Solar power represents only 2.04% capacity and wind, 6.99%. (Office of Energy Projects, Energy Infrastructure Update, December 2016)

DRIVERS:

- Industrial production
- Population
- Nonresidential structure investment

POWER CONSTRUCTION PUT IN PLACE
Forecast as of Q2 2017



Source: FMI Research Services

Highway and Street

Highway and street construction increased just 1% in 2016 to $91.0 billion. FMI forecasts 2% growth for 2017 and another 3% in 2018. The Fixing America's Surface Transportation (FAST) Act for highway and transportation funding removed some uncertainty for highway funding; however, we do not expect a significant jump in spending over current levels. Although much political discussion is being generated around infrastructure with highways, streets and bridges being high on the list, no real plans are in place at the federal budget level. For future funding, expect that the sector will depend more on state budgets and public-private partnerships or some variation on that approach.

UP 3%
$92.9 Billion

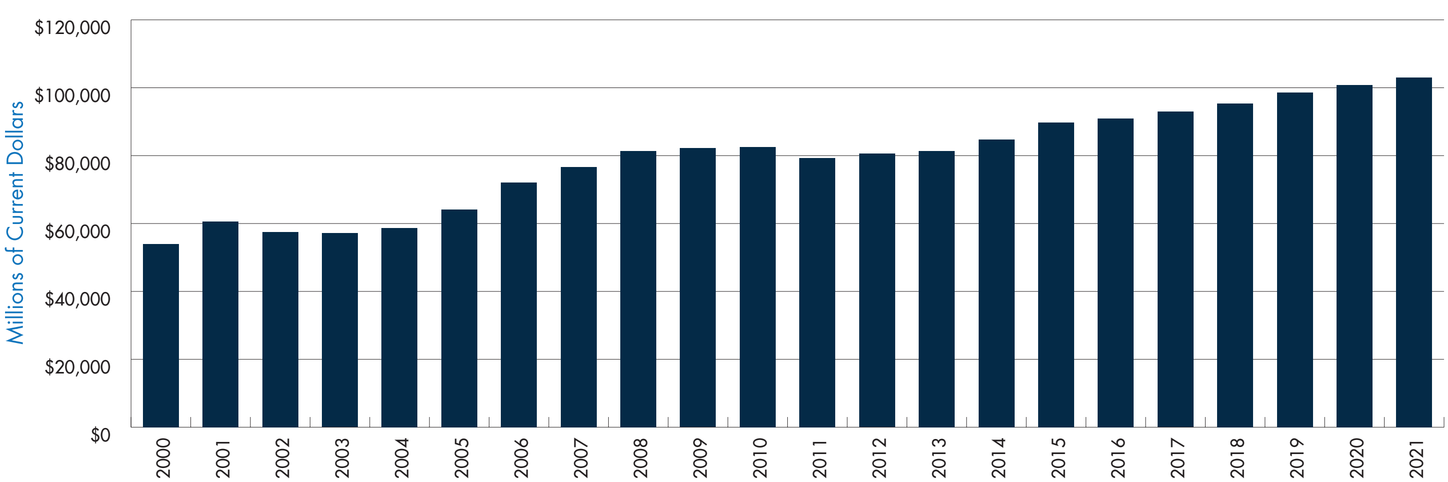
TRENDS:

- ARTBA reports, "The use of public-private partnerships (P3s) continues to be an important tool for funding highway and bridge construction projects. Five highway-related P3 projects came to financial close in 2016, totaling over $3.3 billion in investment." (ARTBA U.S. Transportation Construction Market Forecast 2017)
- The Trump campaign pledged to spend $1,000,000,000,000 on infrastructure spread out over 10 years. While there is a lot of bipartisan agreement that the country needs to invest in infrastructure, it is expected by many in the industry that there will be no significant action on this proposal until 2018.

DRIVERS:

- Population
- Government spending
- Nonresidential structure investment

HIGHWAY AND STREET CONSTRUCTION PUT IN PLACE
Forecast as of Q2 2017



Source: FMI Research Services

Sewage and Waste Disposal

Construction put in place for sewage and waste disposal construction dropped 9% in 2016. The FMI forecast now calls for a reduction of 6% in 2017. A significant percentage of the work to replace or build new metropolitan sewage and waste disposal is being done under court-ordered consent decrees. The EPA, in its recent "EPA National Enforcement Initiative: Keeping Raw Sewage and Contaminated Stormwater Out of Our Nation's Waters" report (March 2016), lists 38 cases going back to the earliest in 1978 up to today. The total "Estimated Cost to Bring CSS (SSS) into Compliance" is $31,079,834,799, averaging $839,995,535 per case. That figure does not include the costs to the EPA and municipal defendants for legal fees or fines, nor does it include cost overruns to complete the projects. Only four of the cases have met final obligations, and about a dozen won't be completed for more than a decade. With the new administration, there will be growing uncertainty as to the reach of the EPA as executive orders are overturned and staff is cut.

DOWN 6%
$20.8 Billion

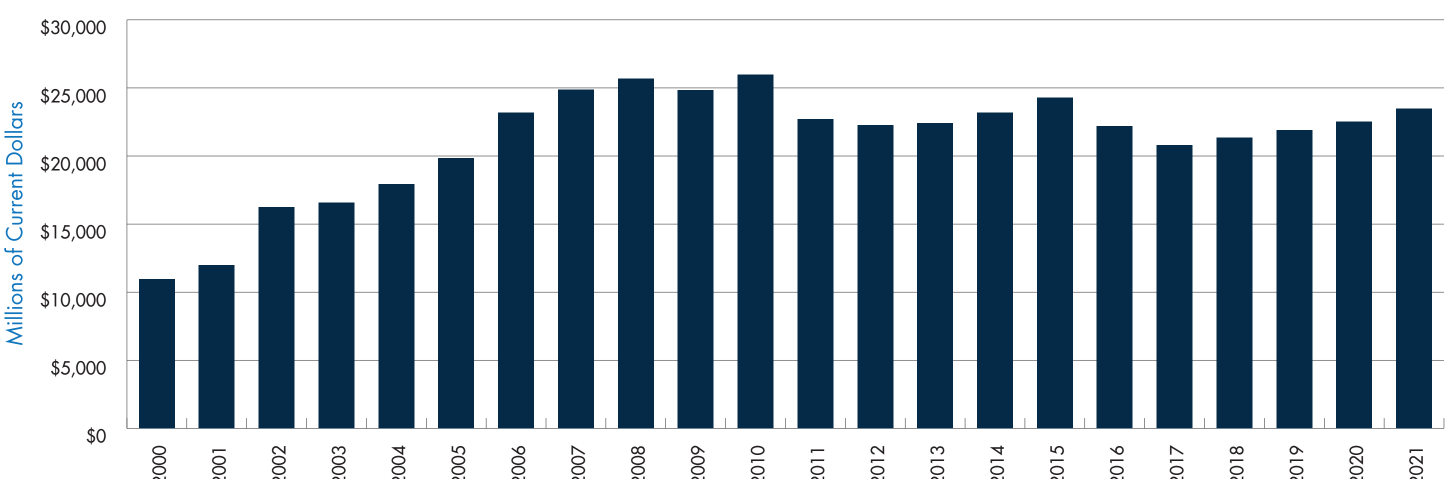
TRENDS:

- Growth, driven by aging infrastructure and regulation, is on the horizon, but the length of the horizon is still unknown. Slow water infrastructure markets in the aftermath of the recession continue to build the backlog of necessary work as existing infrastructure ages.
- In need of replacement and upgrades, the 16,000 wastewater systems nationwide discharge more than 850 billion gallons of untreated sewage into surface waters each year.
- Combined sewer systems (stormwater and sewage) serve roughly 950 communities with about 40 million people. Most communities with CSOs are located in the Northeast and Great Lakes.

DRIVERS:

- ↑ Population
- ↓ Industrial production
- ↑ Government spending

SEWAGE AND WASTE DISPOSAL CONSTRUCTION PUT IN PLACE
Forecast as of Q2 2017



Source: FMI Research Services

Water Supply

Water supply construction lost 9% in 2016, and we expect an additional drop of 3% for 2017. In some regions of the nation, specifically California, water is the new oil. Like oil, one of the concerns for water besides scarcity is storage and conveyance to the right place according to need. More people will be asked to pay more for water as water becomes a scarcer commodity, considering increased population, agricultural and industrial needs. Whether one believes in global climate change or not, states will need to be strategic and proactive in both freshwater needs and sewage disposal and recycling.

DOWN 3%
$11 Billion

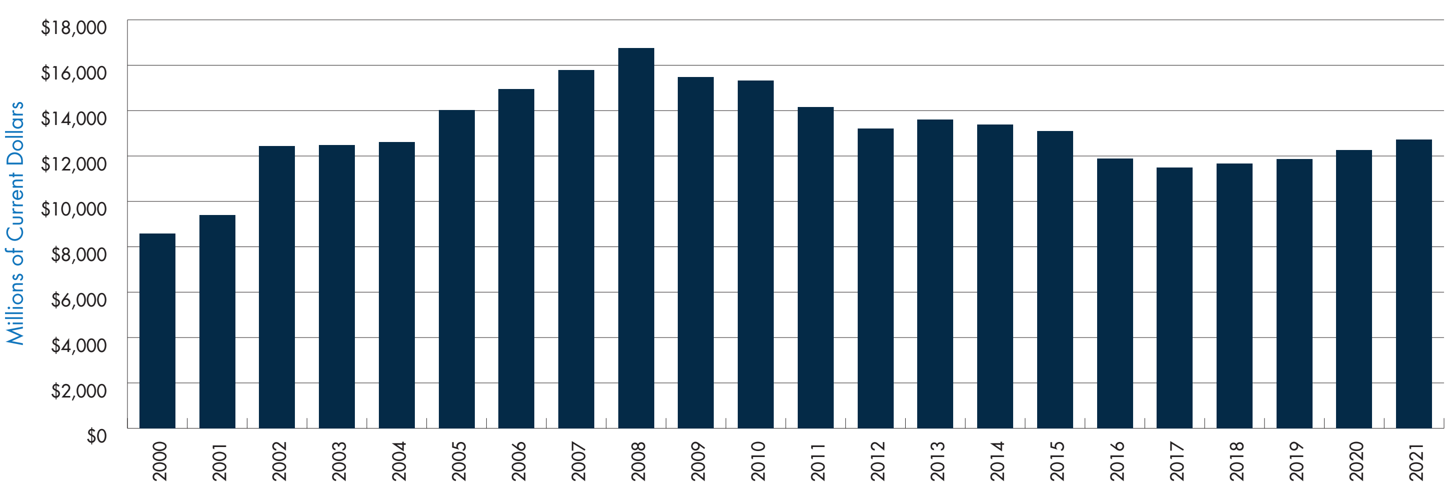
TRENDS:

- "Local governments are stuck on an unsustainable financial treadmill when it comes to providing water and wastewater services; decisions made by Congress and the administration to eliminate or reduce financial assistance without reducing unwarranted and costly mandates have placed a severe financial burden on our nation's cities and our citizens." (Testimony Before the Senate Environment and Public Works Committee Subcommittee on Fisheries, Water and Wildlife, The United States Conference of Mayors, Mayor Rick Gray, Lancaster, Pennsylvania, March 27, 2017)
- "About 23 percent of U.S. water utilities are unsure if they have lead service lines, according to a survey by the engineering consultant Black & Veatch. One in 10 utilities is aware it has lead pipes, the survey found, but has no plans to replace them. Five percent have plans to partially replace lead pipes." (E&E Publishing, July 7, 2016)

DRIVERS:

- ↑ Population
- ↓ Industrial production
- ↑ Government spending

WATER SUPPLY CONSTRUCTION PUT IN PLACE
Forecast as of Q2 2017



Source: FMI Research Services

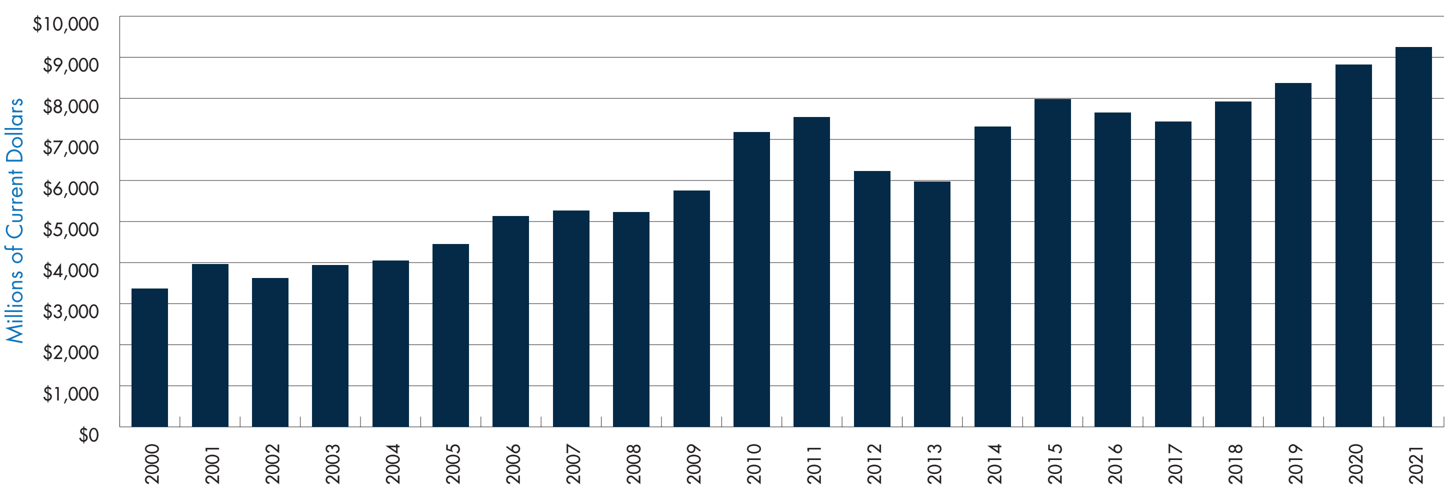
Conservation and Development

Conservation and development construction lost 4% in 2016. We expect another slide of 3% in 2017 to reach $7.4 billion. The future of federal spending for conservation and development is insecure as the Trump administration drastically cuts programs and employment in the EPA, rolling back orders from the previous administration. The good news is that states are picking up the challenge of conservation and cleaner air, recognizing the benefits to their citizens and future business growth.

DOWN 3%
$7.4 Billion

DRIVERS:
- Population
- Government spending

CONSERVATION AND DEVELOPMENT CONSTRUCTION PUT IN PLACE
Forecast as of Q2 2017



Source: FMI Research Services

Construction Put in Place
Estimated for the United States

Millions of Current Dollars
2nd Quarter 2017 Forecast (Based on Q4 2016 Actuals)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
RESIDENTIAL BUILDINGS										
Single-family	133,668	171,837	194,091	233,049	246,258	266,488	282,221	293,726	301,733	313,771
Multifamily	25,758	35,169	46,250	57,533	61,162	64,661	66,483	67,952	70,999	74,162
Improvements*	116,631	122,210	134,519	149,673	156,480	168,926	174,372	177,465	179,578	182,690
Total Residential Buildings	**276,057**	**329,217**	**374,860**	**440,255**	**463,900**	**500,076**	**523,076**	**539,143**	**552,310**	**570,623**
NONRESIDENTIAL BUILDINGS										
Lodging	10,836	13,484	16,738	21,728	27,249	28,984	30,201	31,178	31,786	33,488
Office	37,800	37,979	46,582	55,188	69,066	75,097	80,175	82,822	84,814	87,927
Commercial	47,335	53,159	62,841	66,924	74,465	81,833	85,814	87,507	88,888	91,392
Health Care	42,544	40,689	38,647	40,734	41,361	42,383	43,908	46,303	48,075	50,449
Education	84,672	79,060	79,681	83,517	88,819	91,368	94,970	97,591	101,305	106,384
Religious	3,846	3,590	3,386	3,667	3,747	3,862	3,965	4,034	4,119	4,282
Public Safety	10,431	9,506	9,437	8,729	8,145	8,059	8,196	8,547	9,010	9,308
Amusement and Recreation	15,480	15,207	16,773	19,878	21,763	22,696	23,446	23,965	23,905	24,707
Transportation	37,862	39,459	42,043	45,566	42,620	42,940	44,866	47,019	49,253	51,165
Communication	16,165	17,783	17,298	20,507	19,698	20,828	21,877	23,271	24,162	25,195
Manufacturing	47,741	50,548	58,648	78,178	75,178	72,978	78,848	84,642	87,802	91,455
Total Nonresidential Buildings	**354,712**	**360,464**	**392,074**	**444,616**	**472,111**	**491,030**	**516,267**	**536,878**	**553,118**	**575,750**
NONBUILDING STRUCTURES										
Power	97,434	93,317	110,089	92,435	95,675	98,053	106,400	114,217	120,073	124,848
Highway and Street	80,546	81,364	84,743	89,751	90,944	92,928	95,316	98,588	100,806	103,066
Sewage and Waste Disposal	22,261	22,425	23,173	24,285	22,183	20,808	21,341	21,909	22,531	23,501
Water Supply	13,218	13,597	13,380	13,107	11,895	11,488	11,665	11,854	12,258	12,717
Conservation and Development	6,228	5,967	7,310	7,985	7,647	7,430	7,917	8,375	8,818	9,250
Total Nonbuilding Structures	**219,687**	**216,670**	**238,695**	**227,563**	**228,344**	**230,708**	**242,639**	**254,943**	**264,486**	**273,382**
Total Put in Place	**850,456**	**906,351**	**1,005,629**	**1,112,434**	**1,164,355**	**1,221,813**	**1,281,981**	**1,330,964**	**1,369,913**	**1,419,755**

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

Construction Put in Place
Estimated for the United States

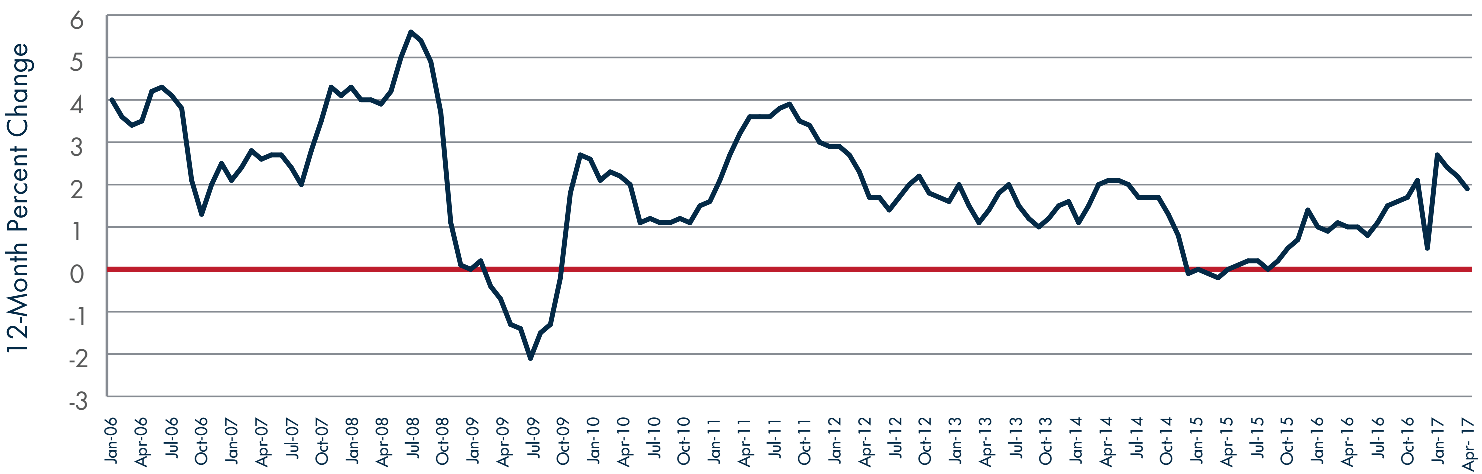
Change From Prior Year - Current Dollar Basis
2nd Quarter 2017 Forecast (Based on Q4 2016 Actuals)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
RESIDENTIAL BUILDINGS										
Single-family	22%	29%	13%	20%	6%	8%	6%	4%	3%	4%
Multifamily	45%	37%	32%	24%	6%	6%	3%	2%	4%	4%
Improvements*	-7%	5%	10%	11%	5%	8%	3%	2%	1%	2%
Total Residential Buildings	**9%**	**19%**	**14%**	**17%**	**5%**	**8%**	**5%**	**3%**	**2%**	**3%**
NONRESIDENTIAL BUILDINGS										
Lodging	19%	24%	24%	30%	25%	6%	4%	3%	2%	5%
Office	5%	0%	23%	18%	25%	9%	7%	3%	2%	4%
Commercial	11%	12%	18%	6%	11%	10%	5%	2%	2%	3%
Health Care	6%	-4%	-5%	5%	2%	2%	4%	5%	4%	5%
Education	0%	-7%	1%	5%	6%	3%	4%	3%	4%	5%
Religious	-9%	-7%	-6%	8%	2%	3%	3%	2%	2%	4%
Public Safety	0%	-9%	-1%	-8%	-7%	-1%	2%	4%	5%	3%
Amusement and Recreation	-3%	-2%	10%	19%	9%	4%	3%	2%	0%	3%
Transportation	9%	4%	7%	8%	-6%	1%	4%	5%	5%	4%
Communication	-9%	10%	-3%	19%	-4%	6%	5%	6%	4%	4%
Manufacturing	18%	6%	16%	33%	-4%	-3%	8%	7%	4%	4%
Total Nonresidential Buildings	**5%**	**2%**	**9%**	**13%**	**6%**	**4%**	**5%**	**4%**	**3%**	**4%**
NONBUILDING STRUCTURES										
Power	30%	-4%	18%	-16%	4%	2%	9%	7%	5%	4%
Highway and Street	2%	1%	4%	6%	1%	2%	3%	3%	2%	2%
Sewage and Waste Disposal	-2%	1%	3%	5%	-9%	-6%	3%	3%	3%	4%
Water Supply	-7%	3%	-2%	-2%	-9%	-3%	2%	2%	3%	4%
Conservation and Development	-17%	-4%	23%	9%	-4%	-3%	7%	6%	5%	5%
Total Nonbuilding Structures	**10%**	**-1%**	**10%**	**-5%**	**0%**	**1%**	**5%**	**5%**	**4%**	**3%**
Total Put in Place	**8%**	**7%**	**11%**	**11%**	**5%**	**5%**	**5%**	**4%**	**3%**	**4%**

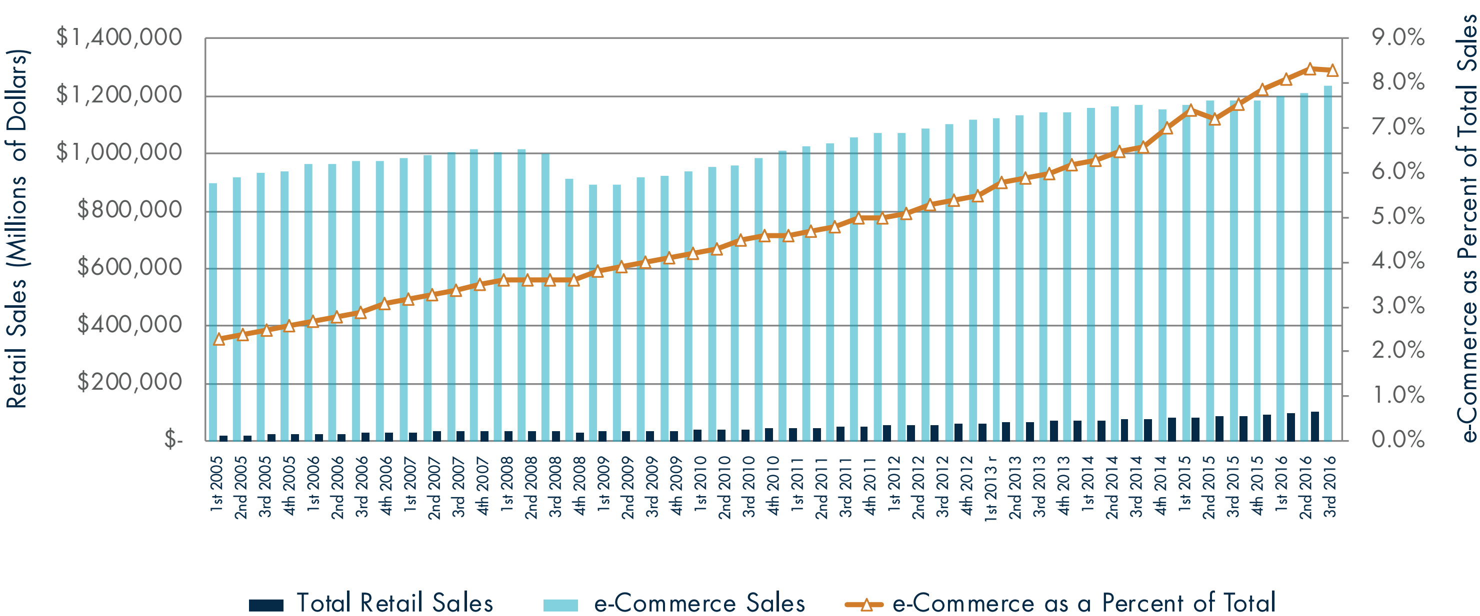
*Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

APPENDIX

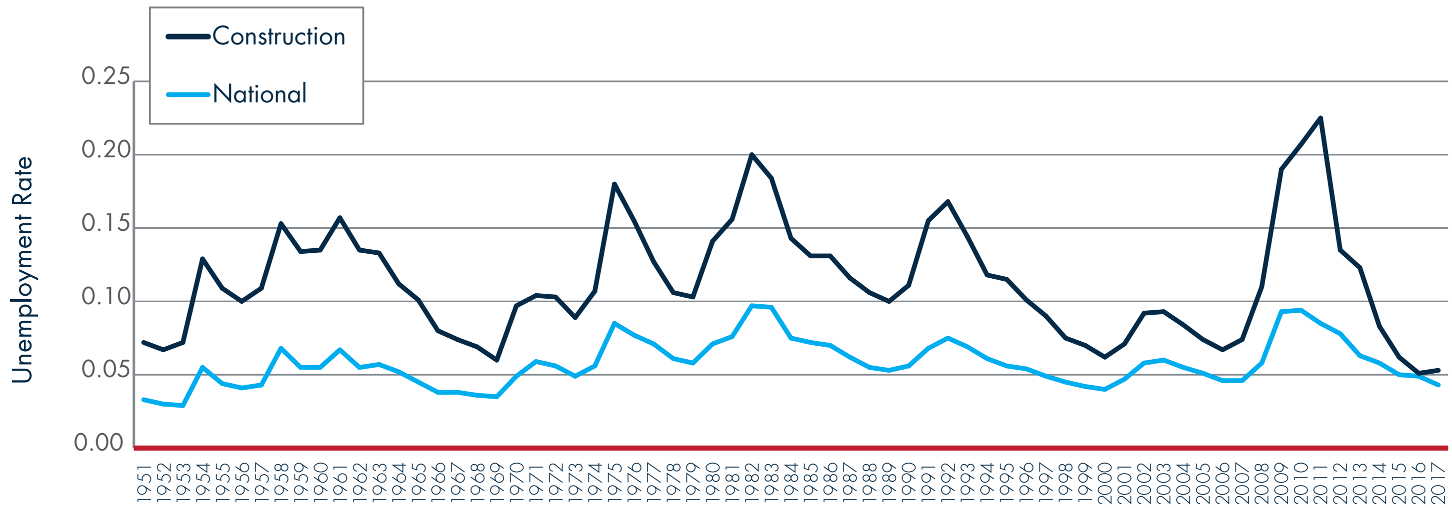
CONSUMER PRICE INDEX
All Urban Consumers, 12-Month Percent Change



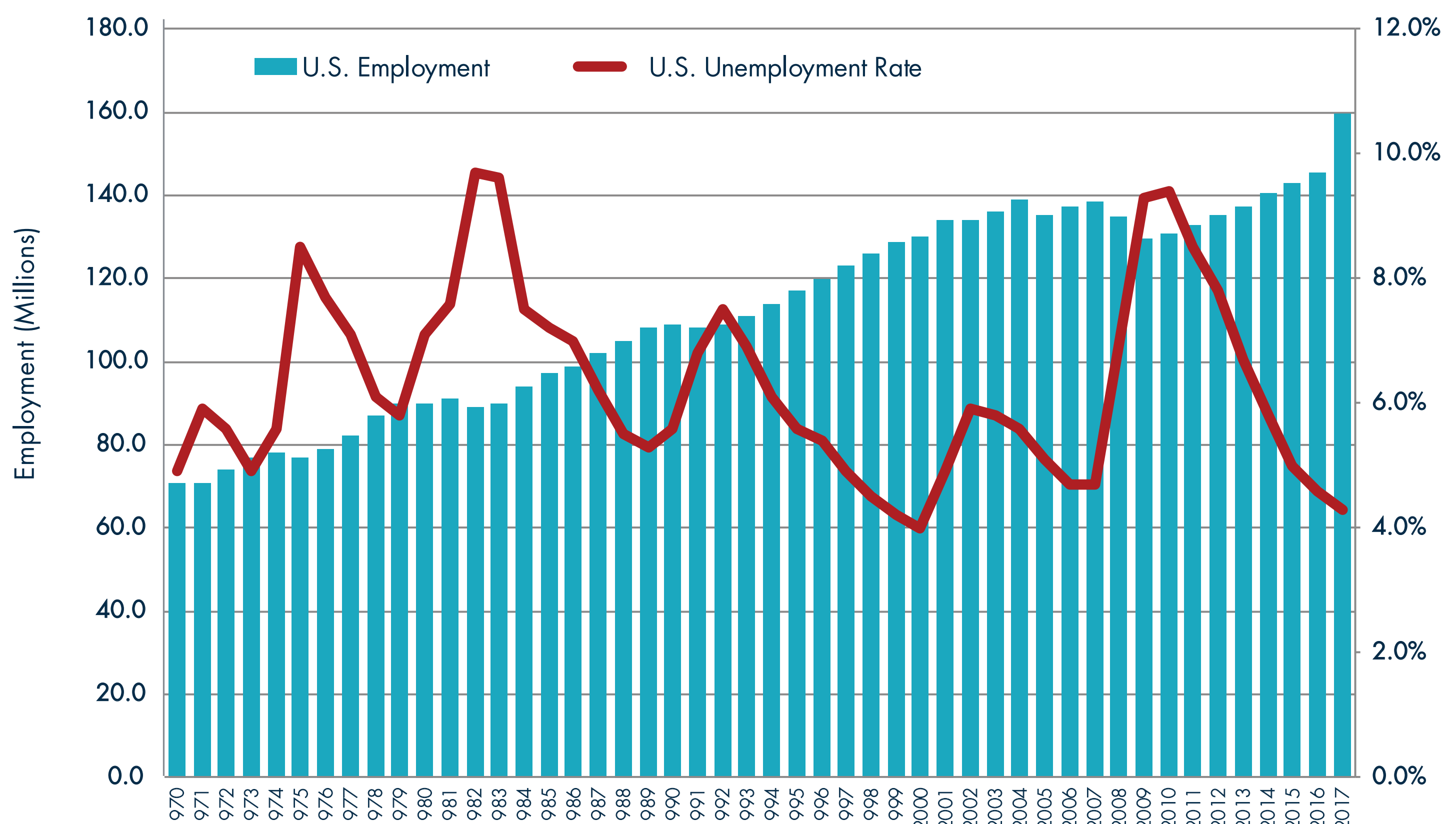
TOTAL RETAIL SALES VS. E-COMMERCE SALES GROWTH HISTORY



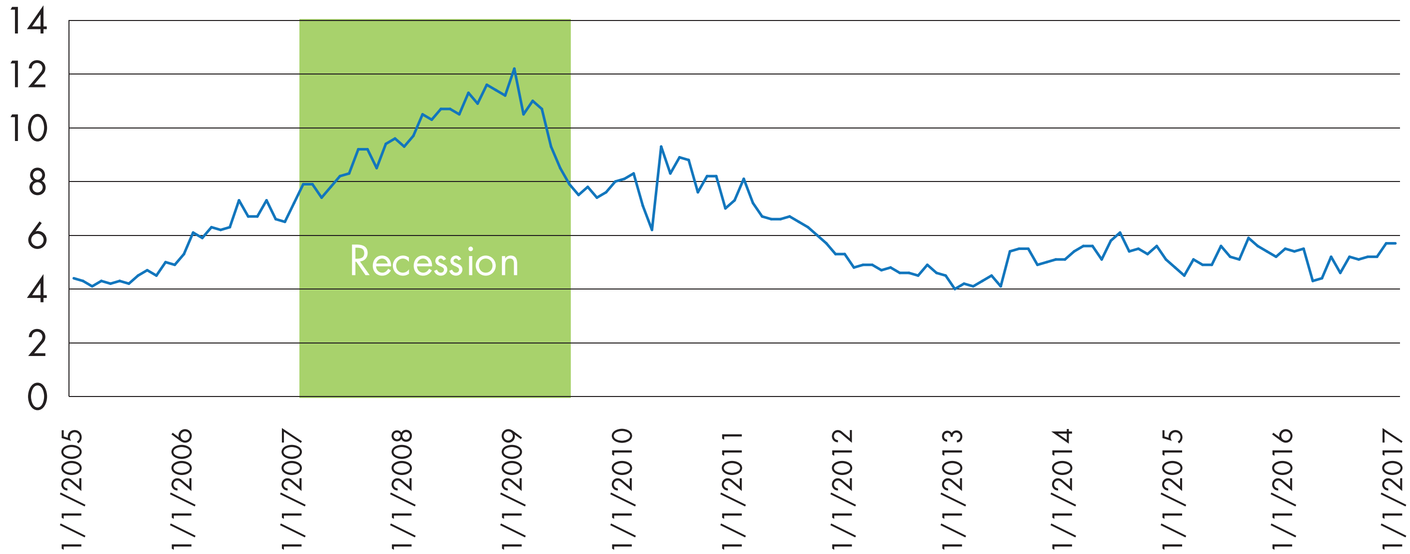
CONSTRUCTION UNEMPLOYMENT RATES



EMPLOYMENT AND UNEMPLOYMENT RATE COMPARISON

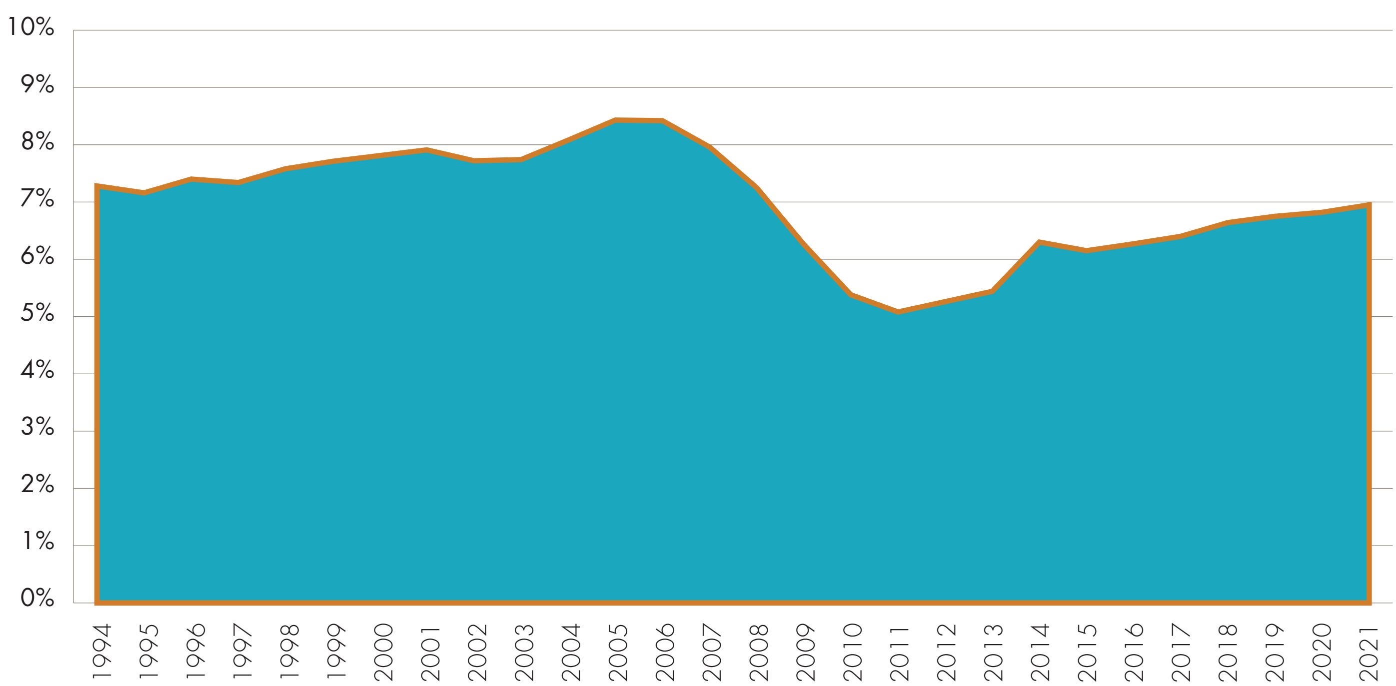


MONTHLY HOUSING SUPPLY

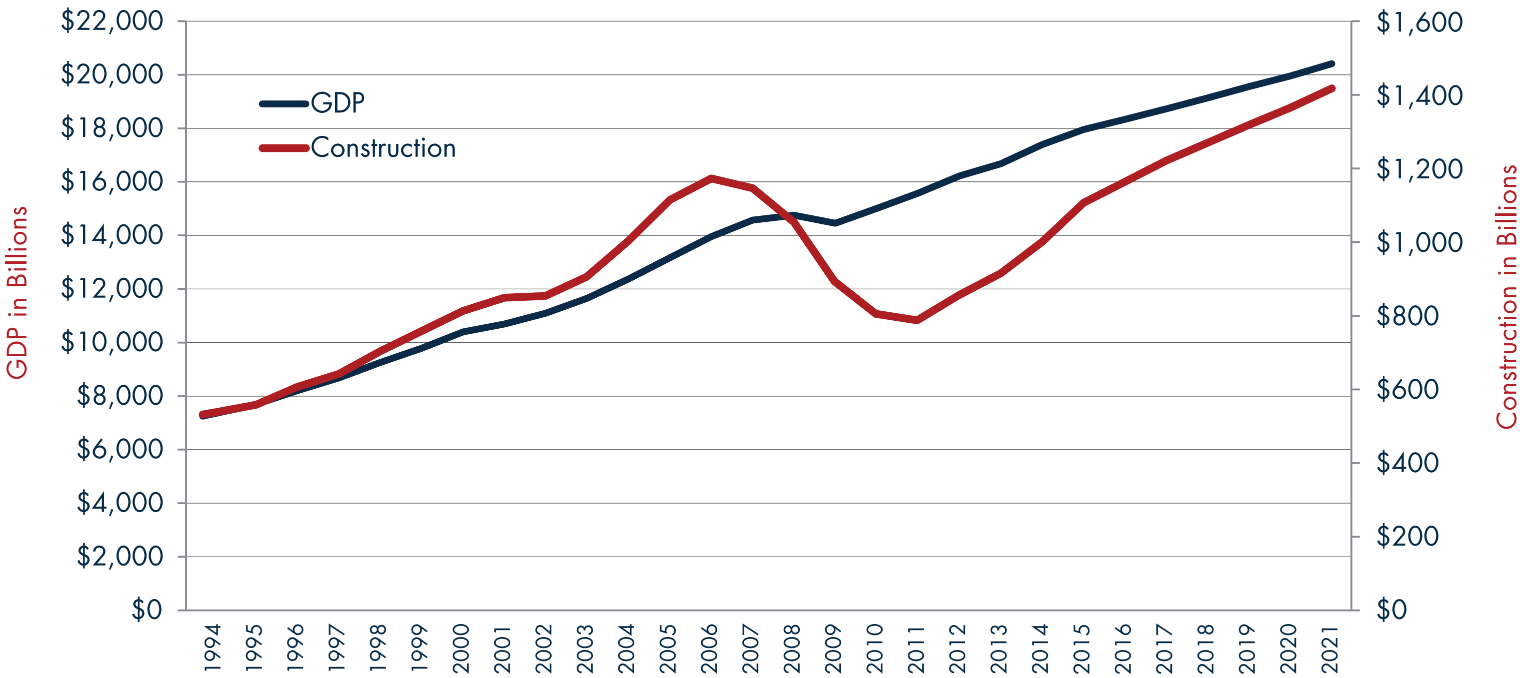


Federal Reserve Economic Data, https://research.stlouisfed.org/fred2

CONSTRUCTION AS A PERCENTAGE OF GDP



CONSTRUCTION SPENDING AND NOMINAL GDP



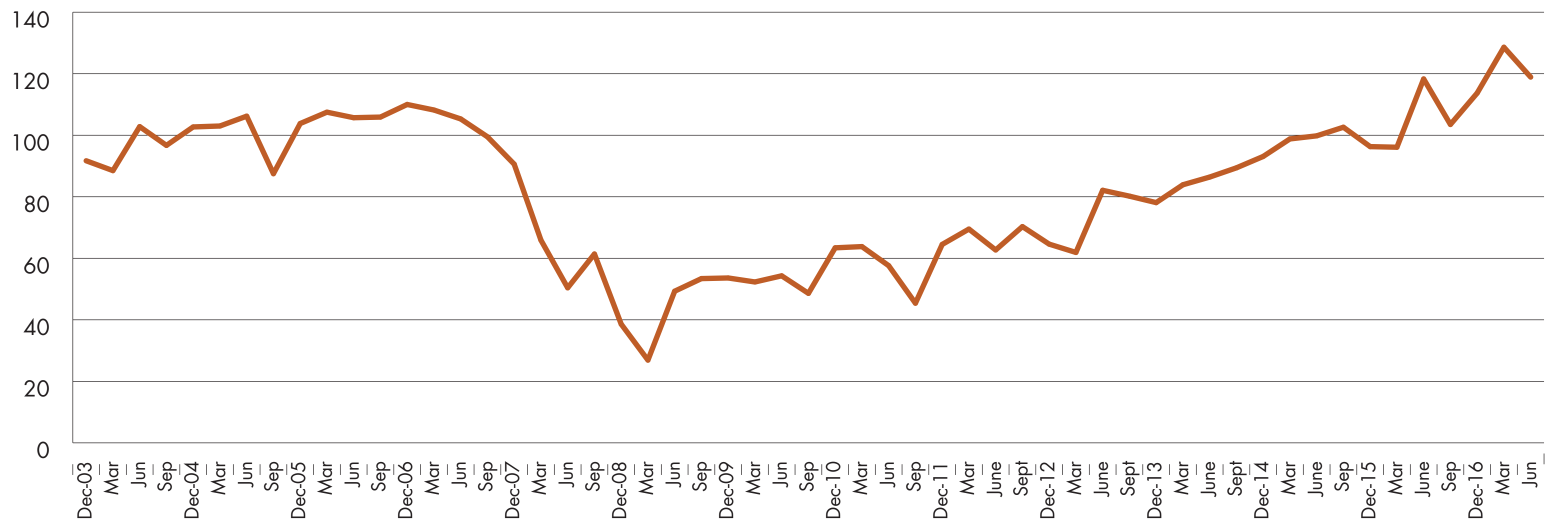
VALUE OF PUBLIC CONSTRUCTION PUT IN PLACE – SEASONALLY ADJUSTED RATE

(Millions of dollars, Details may not add to totals due to rounding.)

Value of Construction Put in Place – Seasonally Adjusted Annual Rate (Millions of Dollars)	Total Construction Put in Place (April 2016)	% of Total Construction Put in Place (April 2016)	Total Construction Put in Place (Q2 2017 Forecast)	% of Total Construction Put in Place (Q2 2017)
*Public Construction	287,902	25%	275,253	23%
*State and Local	266,369	23%	253,704	21%
*Federal	21,533	2%	21,549	2%
FMI Forecast: Private Construction Put in Place	876,453	75%	946,560	77%
FMI Forecast: Construction Put in Place	1,164,355	100%	1,221,813	100%

*from U.S. Census Bureau Construction Spending Report

CONFERENCE BOARD CONSUMER CONFIDENCE INDEX



NRCI COMPONENT INDEXES — COMPARISONS OF RESULTS: Q4 2016 TO Q3 2017

	NRCI components Q4 2016	NRCI components Q1 2017	NRCI components Q2 2017	NRCI components Q3 2017
The overall economy	58.5	73.8	74.6	70.2
The overall economy where panelists do business	60.2	72.0	74.8	70.2
Panelists' construction businesses	66.7	75.3	74.4	75.5
Nonresidential building construction market where panelists do business	64.6	73.7	73.2	71.4
Cost of construction materials	26.4	20.1	15.4	21.6
Cost of labor	16.2	15.3	13.7	10.6
Productivity	48.1	50.0	49.6	46.8
Expected change in backlog	61.3	65.1	68.4	63.5
Approximate current signed backlog in months	12.0	12.0	12.0	12.0

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

NRCI COMPONENTS — BUSINESS OUTLOOK SUMMARY BY MARKET SECTOR

	Results Q3, 2017		
Sector	3 Months	1 Year	3 Years
Commercial	61.8	60.9	42.7
Education	67.4	66.2	59.0
Health care	73.9	74.6	68.8
Lodging	60.8	55.1	40.7
Manufacturing	63.5	70.2	60.5
Office	62.4	58.1	44.4
Other	75.0	77.5	70.0

About FMI

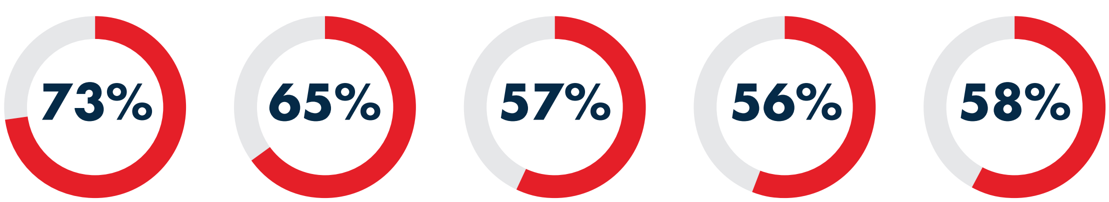
For over 60 years, FMI has been the leading **management consulting and investment banking** firm dedicated exclusively to **engineering and construction, infrastructure and the built environment**.

FMI serves all sectors of the industry as a trusted advisor. More than six decades of context, connections and insights lead to transformational outcomes for clients and the industry.

Sector Expertise

- A/E and Environmental
- General Contractors/CM
- Heavy Civil
- Industrial
- Specialty Trades
- Utility T&D
- Cleantech and Energy Services
- Construction Materials
- Building Products
- Oil and Gas
- Private Equity
- Owners

FMI Client Highlights



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7639 East Pinnacle Peak Road
Suite 100
Scottsdale, AZ 85255
602.381.8108

Raleigh (headquarters)
5171 Glenwood Avenue
Suite 200
Raleigh, NC 27612
919.787.8400

Tampa
308 South Boulevard
Tampa, FL 33606
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